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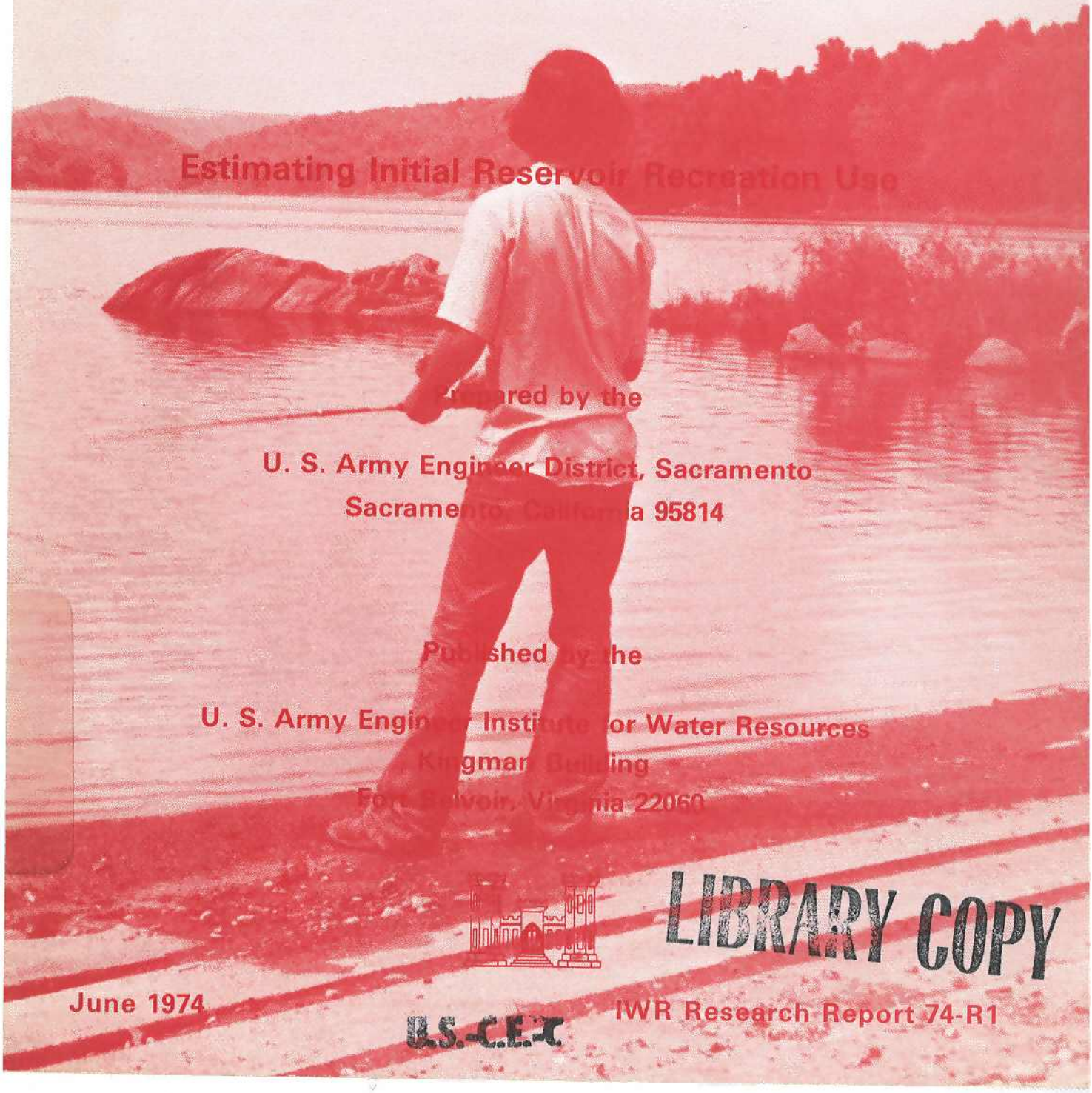
PLAN FORMULATION AND EVALUATION STUDIES — RECREATION

Volume II of V



Estimating Initial Reservoir Recreation Use

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PLAN FORMULATION AND EVALUATION STUDIES - RECREATION

Volume II of V

Estimating Initial Reservoir Recreation Use

(Including Supplement 1 - Supplemental Reservoir Recreation Data - 1969)

A Report Submitted to the
Department of the Army
Office of the Chief of Engineers

Published by the
U. S. Army Engineer Institute for Water Resources
Kingman Building
Fort Belvoir, Virginia 22060

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PREFACE

In 1962, the Chief of Engineers initiated a Corps-wide method of sampling the existing recreation use on Corps of Engineers civil works reservoir projects. The data collected were incorporated into existing planning processes and provided the basis for improved administration of operating projects. The availability of data with which to describe recreation use provided the foundation for specialized studies such as those presented in this report. An evaluation of the data collected indicated that improvements could be made to make the data more useful. Consequently, in 1965 the Director of Civil Works authorized studies to be undertaken to:

a. Evaluate the recreation-use data collection procedure and recommend methods for improving the statistical accuracy of such data and applying standardized data collection on a Corps-wide basis.

b. Develop methodology for recreation-use prediction. Preliminary methodology to be developed as soon as possible and a long-range research program initiated to improve and refine the methodology.

c. Develop methodology for determination of the number and type of recreation facilities needed to serve a given number of recreation days of use (facility load criteria).

d. Develop methodology for determination of recreation benefits.

Studies to date have been performed under the general functional direction of Mr. Harold L. Blakey, Office, Chief of Engineers, with the actual work being assigned and performed in the Sacramento District under the direct supervision of Mr. Dale A. Crane. This report is the third of a series to be published indicating significant results obtained from these studies. The first was Contract Report No. 1, entitled "Analysis of Recreational Use of Selected Reservoirs in California." The second was Technical Report No. 1, entitled "Evaluation of Recreation Use Survey Procedures."

This report presents preliminary results of the studies authorized by the Director of Civil Works and provides a method of estimating initial project recreation use. It is anticipated that further research and analysis of data will provide refinements to this methodology, which will be published at a later date. Staff research efforts were performed by Mr. Charles R. DesJardins, Mr. Richard Brown, and Mr. Ronald Hyra. Just prior to publication of this report, the research project leader, Mr. Dale Crane, assumed new duties in the Ohio River Division; supervision of the continuing research studies is being conducted by Mr. Fred Kindel and Mr. Arthur M. Kinsky, Sacramento District. An Advance Concepts Group, established by the Office, Chief of Engineers, comprised of Mr. Harold L. Blakey, OCE; Mr. Gordon Jones, Southwestern Division; Mr. Lester Duck, Ohio River Division; and Mr. R.T. Lierboe, Missouri River Division, reviewed a preliminary draft and suggested changes which have been incorporated into the report. Dr. Jack L. Knetsch, Director of the Center for Natural Resources Policy Studies, George Washington University, provided expert consultant services and invaluable assistance throughout the entire study. Special appreciation is extended to the office and field personnel in the Savannah, Nashville, Little Rock, Fort Worth, Tulsa, Portland, and Sacramento Districts who collected the data which provides the basis for this report.

SUMMARY

This report presents methodology for estimating initial recreation use at prospective Corps of Engineers reservoirs. It is the outgrowth of recreation-use studies instituted by the Office of the Chief of Engineers, Washington, D.C.

The procedure described herein utilizes the "most similar project" concept; i.e., an existing reservoir that is most comparable in size, operation, and anticipated recreation-use characteristics. Relating recreation-use information from an existing reservoir to a reservoir under study provides the basis for the use estimating technique.

The report provides general descriptions, pertinent project information, and recreation-use data for 52 existing Corps reservoirs. It includes detailed discussion and evaluation of a prospective reservoir project and general criteria for selecting a similar project from among those reservoirs included herein. For illustrative purposes, an example detailing the application of the methodology is furnished.

While the methodology eliminates much of the "guess work" previously associated with estimating the recreation use and benefits for Corps reservoir projects, it is emphasized that it is by no means the "last word" or final solution. There are inherent deficiencies in the method. However, as more recreation-use data are collected and analyzed, it is planned that the technique will be revised and improved.

ESTIMATING INITIAL RESERVOIR RECREATION USE

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ESTIMATING INITIAL RESERVOIR RECREATION USE

PART I: GENERAL

Introduction

1. Recreation-use surveys to obtain information for reporting public attendance were instituted Corps-wide by the Office of the Chief of Engineers (OCE) in December 1962. An important purpose of the surveys was to assemble a body of data describing recreation use to provide a factual basis for estimating recreation use at reservoirs included in the Corps' civil works program. The original surveys provided limited information for recreation planning purposes and resulted in a proposal by the Sacramento District for a refined survey with a more rigid, statistical approach, which was adopted by OCE in 1966 on a test basis. Fifty-two reservoirs in seven districts were selected for the test program. The modified survey was conducted for three years: 1966, 1967, and 1968. During this period, approximately 735,000 people in over 238,000 vehicles were surveyed. The Sacramento District was designated to oversee the survey and be the repository for the data and was further assigned research functions as follows:

a. Evaluate the data collection procedure and recommend methods for improving the statistical accuracy of such data and/or applying standardized data collection on a nationwide basis.[1/]

b. Develop methodology for recreation-use prediction.[2/] Preliminary methodology to be developed as soon as possible and a long-range research program to be initiated for improvement of such methodology.

c. Develop methodology for determination of the number and type of recreation facilities needed to serve a given number of recreation days of use (facility load criteria).

d. Develop methodology for determination of recreation benefits.

Purpose and Scope

2. The purpose of this report is to furnish preliminary methodology and data useful in estimating initial recreation use at reservoirs (item 1b above, in part). This methodology is based upon the initial analysis of data collected by the seven districts participating in the program. The participating districts and the names and location of the reservoir projects included in the survey are provided in appendix A. A sample copy of the recreation-use survey form used is included as chart 1. The scope of the report covers discussion and presentation of results from preliminary recreation-use data analysis, discussion and presentation of methodology for estimating initial recreation use, supplying for each participating reservoir pertinent descriptive data (appendix A), per capita use rates calculated by regression techniques (appendix B), and summaries of recreation-use data (appendix C). It will be noted that the pertinent data sheets for reservoirs shown in appendix A include attendance data for the calendar years 1964 through 1968 inclusive. However, except for Sacramento District projects, 1964 and 1965 data were not included in the analysis. The 1964 and 1965 Sacramento data were collected utilizing essentially the same technique as the modified survey and were therefore included in the analysis.

1/ Results of this effort are published in Technical Report No. 1, "Evaluation of Recreation Use Survey Procedures," October 1969.

2/ Assistance in developing a methodology was obtained from the University of California, Davis. Results of this effort are published in Contract Report No. 1, "Analysis of Recreational Use of Selected Reservoirs in California," July 1969.

PART II: THE RECREATION-USE SURVEY

The Survey

3. The recreation-use survey was designed as a standardized data collection procedure to provide consistent, reliable recreation-use statistics for each reservoir surveyed. The recreation-use data derived from the survey represent the recorded responses of a sample population of recreationists at 52 reservoirs of various sizes and characteristics selected from districts in widely different sections of the United States. About 238,000 elementary sampling units (vehicles), comprising about 735,000 individuals, were surveyed. Accordingly, the data collected reflects a diversity of regional conditions and population characteristics. Each survey of recreation use was conducted in such a manner that data obtained were representative of almost all recreationists visiting that particular reservoir. Data were collected for selected weekends and weekdays at recreation areas that were representative of the various types of recreation opportunity available at the reservoir being surveyed. The survey year was divided into three four-month periods—February through May, June through September, and October through January. Normally, the survey was conducted for a minimum of 12 hours per day on a weekday and weekend day in the same week. Traffic entering the project was metered continuously throughout the year at both surveyed and non-surveyed entrances. Samples of this traffic were surveyed by means of personal questionnaire interviews with those driving into recreation areas (a copy of the survey form is presented as chart 1). Statistics describing various components of total recreation use at the reservoir are estimated from this sample through the use of weighted means, activity participation percentages, and other standard statistical methods. Aggregate estimates are functions of sample measurements and mechanical traffic counts. Survey data are used with traffic measurements to estimate total annual attendance expressed in recreation days.[3/] A detailed discussion and evaluation of the survey procedures is provided in Technical Report No. 1, "Evaluation of Recreation Use Survey Procedures," dated October 1969.

Reliability of Survey Estimates

4. Improved data collection and recreation-use estimating procedures are two major objectives of the research program. Present procedures have evolved from a concentration on standardization in order to avoid undesirable variation in collecting similar kinds of data. (The emphasis underlying the development of the existing procedures has been on implementing such a standardized program within the constraints inherent in the Corps of Engineers organizational structure.) Special "error-edits" were incorporated into automatic data processing programs to cross-check and assist in correcting data collection deficiencies. Although not indicative of the reliability of the various component recreation-use statistics, standard statistical measures were used to determine the reliability of the survey-collected statistics in estimating recreation use. The following tabulation indicates the magnitude of sampling error found in reliability measures.

Size of Estimate (Thousands)	Standard Error (Thousands)
50	10
250	19
500	30
750	41
1000	52
1250	63
1500	74
1750	85

Tabulated Data

5. The data shown in appendix C (recreation-use data summaries) are tabulations by district, project, survey period and year of surveyed visitation, number of people surveyed, average party size per surveyed vehicle, and percent of participation in each of the major recreation activities. With regard to the recreation activity data, it will be noted that the sum of the

3/ Supplement No. 1 to Senate Document 97, issued by the Ad Hoc Water Resources Council 4 June 1964, defines a recreation day as "A standard unit of use consisting of a visit by one individual to a recreation development or area for recreation purposes during any reasonable portion or all of a 24-hour period."

percentages shown for the various activities exceeds 100 percent; this is the result of visitors taking part in more than one activity during their stay at the reservoir. The categories listed in the survey summaries are generally self-explanatory; however, the following definitions and additional information are provided for clarification.

a. **Percent of visitors on weekend.** – This is a ratio of weekend autos to total autos metered during the survey week.

b. **Pleasure boating.** – Pleasure boating is a boating activity exclusive of any other boat-associated activity such as fishing from a boat or water skiing.

c. **Sightseeing.** – Sightseeing is the activity of a visitor who takes part in no other specifically listed activity while visiting the reservoir.

d. **Weighted average.** – Weighted averages are determined according to the total number of vehicles surveyed, with appropriate weight given to the numbers included in each of the survey periods. Columns labeled weighted average are composites of spring, summer, and fall survey results for each reservoir. Lines labeled district weighted average are composites of spring, summer, and fall survey results for all reservoirs in each district. In the three categories pertaining to duration of visit, zero values were excluded during the weighing process.

PART III: PROJECT DATA

Data for Participating Projects

6. Pertinent project data such as location, size, number of access areas, attendance, and similar information considered necessary to adequately describe a project were obtained for each reservoir included in the survey. Those data were compiled and are included in appendix A. This information is provided as an aid to evaluating reservoir characteristics that may influence recreation use and also to provide a basis for selection of an existing project that is most similar to a proposed project. Detailed discussion on selection of the most "similar project" is contained in paragraph 10.

Definition of Terms

7. Since there could be a great diversity in the meaning of the terms used in this report, standardization of the following terms was made for clear understanding of the project data provided in appendix A.

a. **Pool size, maximum.** – Refers to surface area of pool at full reservoir (corresponds to storage normally cited as reservoir capacity).

b. **Pool size, average recreation.** – Refers to surface area of the pool storage representative of long-term average conditions occurring during the seasonal period of greatest public use.

c. **Number of access areas.** – Recreation areas accessible by road.

d. **Recreation facilities:**

(1) **Tent and trailer space.** – A space provided exclusively for camping regardless of type of camping equipment used.

(2) **Day-use area.** – An area designated for day-use activity which may or may not have recreation facility development.

(3) **Boat-launch lane.** – A launch lane is determined by width, each lane being 12 feet wide; including abandoned roads if so used. (A boat-launch ramp may be comprised of one or more boat-launch lanes.)

e. **Total attendance (or use).** – The total annual attendance, expressed in recreation days (may refer to single activity or all activities combined).

f. **Percent of annual attendance during peak months of use.** – The percent of annual attendance by month for the months of highest attendance averaged for all years of available data.

g. **Number of competing water-oriented recreation opportunities.** – The number of natural lakes, reservoirs, and rivers within the specified distance in road miles from the reservoir which have developed areas and recreation facilities provided for public use.

PART IV: ESTIMATING USE

Synopsis of Procedure

8. Briefly stated, the recreation-use prediction method is comprised of the steps noted below. Each step is discussed in more detail in paragraphs that follow.

a. Evaluate the proposed reservoir project characteristics.

b. Select a similar project or similar projects by comparing such characteristics with the information provided in appendix A.

c. Evaluate the day-use market area of the similar project.

d. Determine the day-use market area of the proposed project.

e. Select a per capita use curve for the similar project or projects from appendix B.

f. Modify the per capita use curve to reflect the dissimilarities between the similar projects and the proposed projects.

g. Determine the county populations within the day-use market area for the anticipated year that project operation will begin and derive per capita use rates for each county population by measuring road-mile distance from the project to the center of the most populated city within the county (proxy for centroid of county population).

h. Calculate annual day use from each county—per capita rate x country population.

i. Sum the contribution from each county to find initial annual day use for the project.

j. Determine the percent of total day use that the foregoing estimate represents—if 100 percent, it is used "as is"; if less, adjust accordingly.

k. Determine the percentage of camping use for the similar project or projects from the recreation-use data summaries provided in appendix C and apply this to the day use to get total use (see paragraph 17).

The recreation use as predicted from the above procedure will provide the initial year total recreation use in recreation days. A detailed example of how this procedure is used is discussed in Part V: Example of Method.

Project Area Evaluation

9. Project characteristics are discussed in the following subparagraphs.

a. **Reservoir area characteristics.** – The primary physical characteristics to be considered are the various measurements of reservoir size and the topography of the reservoir basin. Studies to date, while not conclusive, indicate the best measures of size are the surface area and miles of shoreline associated with the average pool available for recreation during the months of highest public use. However, the size characteristics must be considered in relationship to the topography of the reservoir basin; e.g., a steep "V" basin provides limited littoral areas which are often essential to fishery production and limited shoreline suitable for recreationists to distribute themselves around the water area.

b. **Accessibility.** – Perhaps the major consideration in evaluating access to the project is the quality and number of major access routes from the nearby population centers to the general reservoir area. County, state, and federal highway agencies should be contacted to obtain information relative to future improvements of existing roads or construction of new roads in the general area which will influence the flow of traffic to the potential reservoir area. The addition of new roads or the improvement of old roads may substantially shorten travel distance (or time) and may lead to enlarging the market area, resulting in a larger potential demand population. Possibly of equal importance is the amount of access which can be provided to the reservoir shoreline for the public to distribute themselves by auto. A reservoir with limited access to the water will not have as great a potential to support recreation use as one which allows recreationists to distribute themselves around the entire shoreline. Observations and examination of recreation use at reservoirs with differing access features indicate that the ability to disperse about a reservoir adjacent to the water is an important consideration in attendance levels.

c. **Reservoir fluctuations.** – The amount of fluctuation in a reservoir is generally considered an important influence on recreation-use potential. Analysis of Corps data at the University of California, Davis, indicates that large variations in water level and water surface area deter camping use (Contract Report No. 1). Large reservoir drawdowns are usually considered to be detrimental to recreation potential, while small drawdowns provide comparatively more potential. However, this may not always be true; in some cases, when reservoir levels drop, extensive

amounts of land may be exposed that are highly suitable for recreation use. In some cases, where steep slopes are encountered at high reservoir levels and gentle slopes at lower levels, recreation use of the reservoir margin is increased with drawdown.

d. **Alternative recreation opportunities.** – The phrase "alternative recreation opportunities" is characterized by various substitute terms of which the most commonly used is "competition." The importance of alternative opportunities in predicting recreation use has been recognized in various published literature. Discussion has not only centered around similar alternative opportunities but also in whether supplemental recreation opportunities should be evaluated. For example, a city with a large, uncrowded park system with or without water-oriented activities may be considered as an alternative recreation opportunity. Fortunately, the per capita use rate curves included in appendix B reflect the alternative opportunity choice available to the market area of origin in each case. Studies to date indicate that alternative opportunities may be a significant variable and, when considering selection of a similar project, careful evaluation of alternatives available to the market area of the similar project and the project being studied should be made. However, because of the difficulty in determining the amount of all types of alternatives and the degree to which each type constitutes a different recreation commodity, alternative opportunities considered should be restricted to water-oriented outdoor recreation opportunities only.

e. **Recreation facilities.** – Regression studies conducted to date show some degree of correlation between recreation use and various measures of facility development such as investment, camp sites, boat-launching ramps, etc. Unfortunately, it is unclear whether existing recreation use leads to increased facility development or if increased development attracts more users. Because of this circular causality, no clear indication of the effect of facilities on use is available (other than those for access, see paragraph 9b). Accordingly, the planner should make value judgments concerning the influence of anticipated facility development programs between the proposed project and any similar projects.

f. **Activity limitation.** – The planner must be careful to evaluate possible recreation activity limitations posed by various factors. Existing county and state laws regarding water-contact sports and water safety should be considered as possible limiting factors. Another example might be high elevation reservoirs which are generally too cold to expect significant swimming use. Also, anticipated poor water quality should be evaluated as a possible deterrent to recreation attendance to the extent that such conditions may limit fish production or water-contact sports. Another limiting factor might be the expectation of high fire hazard in forested areas calling for restrictions (fire-season closures) on recreation use.

g. **Reservoir area quality.** – Water quality, climate, vegetation, and scenic and aesthetic values are generally similar from project to project in the source geographic region but may vary considerably from region to region. However, extremes may occur that significantly affect recreation use. Operational evidence from the majority of participating projects included in the research program indicates that the primary attraction to recreationists appears to be the water area. Accordingly, the evaluation of the recreation potential of project lands should be based on best use of the water area for specific activities. For example, a moderate to gently sloping shoreline may be best suited to swimming and shore fishing and similar activities which are shoreline-associated, while camping areas may be somewhat more remotely located to take advantage of favorable slopes for development, potential for future campground expansion, etc.

Selection of Similar Project

10. Subsequent to evaluation of the proposed project characteristics discussed in paragraph 9, an existing similar project or projects should be selected by evaluation of the same project characteristics (see appendix A). If sufficient information is available from another similar existing project not discussed in this report, such data should be used. Evaluation of per capita use rates (appendix B) and other data as shown in appendix C does not reflect geographical similarities between projects. Accordingly, unless evidence to the contrary is available, the planner should not limit consideration of the similar project because of geographic location. After selection of the similar project or projects, evaluation of the day-use market area conditions may provide further information which will modify this selection. Further discussion is contained in paragraph 14. The planner should be alert to unusual socio-economic characteristics on a broad scale. An example would be a large

area predominantly composed of retirement communities. Another important consideration is alternative water-oriented recreation opportunities. Information about alternative opportunities such as the latest attendance estimates, attendance trends, kinds of recreation facilities, expected development level, and degree of saturation should be obtained for proper evaluation. Water projects that are expected to be built at some future date should also be considered. When comparing attendance estimates from alternative recreation areas administered by different agencies, extreme caution should be used because agencies often collect recreation data using different measuring criteria or collect data in the same manner but use a different descriptive term.

Day-Use Market Area Evaluation

11. For purposes of this report, the day-use market area is defined as the area which contributes 80 percent or more of the annual day-use visitation to a reservoir project. The per capita use curves provided in appendix B extended to the outer boundary (in road miles) of the market area. A brief description of the derivation of the per capita curves included in appendix B is as follows: The area surrounding the participating project was divided into 13 distance zones. Zones 1 through 5 are each 10 miles wide and zones 6 through 13 are each 25 miles wide. These zones were determined by measuring road mile distance along major and secondary access routes from the visitors' origin to the reservoir. To calculate a per capita visitation rate by distance zone, an estimate of the population within each zone and an estimate of aggregate recreation use by each zone was made. The annual recreation use contributed from a particular zone divided by the population for that zone yielded a zonal per capita use rate (the number of visits to the project for each person in a particular zone in one year). Zonal per capita day-use rates were averaged for 1966, 1967, and 1968 and then plotted against distance for each of the 52 reservoirs. It will be noted that for most projects not all of the available per capita rates have been used. In most cases, the rates for at least zones 1 through 5 are plotted; to conform with the definition of the market area, additional zones were added until the 80 percent level was reached or exceeded. Accordingly, the rates shown represent between 80 percent and 100 percent of the day-use visitation. In those instances where regression curves are excluded, the data from which regressions would have been calculated were considered unusable for delineating per capita recreation use.

Description of Per Capita Use Rate Charts

12. Selected data for each of the 52 reservoirs are presented on charts contained in appendix B. The charts are semi-logarithmic, with six cycles on the vertical scale allowing measurement of per capita rates from .0001 to 100. The horizontal scale represents road miles. The plotted points are averaged per capita day-use rates for all years for which per capita visitation is available. When one of the five regression equations was applicable, a regression curve of per capita rate on distance was plotted. On projects for which all five equations were rejected, only the points recording the averaged survey estimates for all years are shown. The measure presented to indicate the regression, r^2, is the coefficient of determination for the plotted values, not for the values of the transformation regressed. The reliability of the per capita rates has not been estimated since the indicators of aggregate estimate reliability are not applicable to estimates by origin. The data collection and population partition by zone for each project was accomplished by the district administering the participating project. Consequently, it is likely that there exists some variability in error among districts.

Day-Use Market Area

13. The day-use market area for a proposed reservoir project under study is established using the existing market area of the similar project with appropriate adjustment by the planner based on his experience and personal knowledge of the area. The market area of the proposed project need not have a minimum 50 mile radius; the area can and often will be smaller or considerably larger depending on the location of the major using population. If, when establishing the counties to include in the market area, there is some doubt as to where the boundary should be drawn, the general criteria for selection is inclusion of those counties which have approximately one-half of their population and/or land area within the tentative day-use market area boundary.

Selection of Per Capita Rates

14. No two projects are identical; therefore, the recreation planner must empirically modify information about the existing project to obtain estimates applicable to the proposed project. Although available recreation attendance information includes both day-use and camping data, it should be noted that the per capita visitation data shown in appendix B are based on day-use data only. Estimates of camping use are not neglected; the procedure for making such estimates is discussed in paragraph 17. The initial selection of a similar project from which to obtain per capita use rates should be based on approximate reservoir size in terms of the surface area of the average recreation pool. Further review of the projects within each average recreation pool category can be obtained from the pertinent data sheets and the narrative descriptions contained in appendix A. In general, the reservoir most similar in physical characteristics and water-oriented competition should serve as the similar reservoir. However, when possible, consideration should be given to selecting a similar reservoir near the site of the proposed reservoir. If the planner has difficulty in obtaining a similar project based on comparison of average recreation pools, the next smaller and next larger category should be examined. In the absence of a single most similar project, it may be desirable to use the characteristics and data from two or more projects. The recreation-use data from the similar project(s) is used to adjust the similar project per capita rates to more nearly fit the prospective project. The difference among the per capita rates of day use for various projects may be associated with differences in either project or population variables. In all instances, including those projects not depicting a regression line, the available per capita rates can provide a benchmark to guide the planner's judgment. Under ideal conditions when the proposed and similar project are alike, no adjustment would be required. However, dissimilarities do exist and will have an effect upon the magnitude and the slope of the per capita line. The following variables should be examined carefully for differences between the similar project and the project under study. Adjustment in per capita rates should be based upon differences in these variables. However, it should be noted that extremes in any of these variables (e.g., polluted water unfit for contact) may affect recreation use out of proportion of their normal influence.

a. **Size and Quality:**
   Surface area (average recreation pool)
   Land area and gradient
   Length of shoreline
   Fishery potential
   Water quality
b. **Accessibility:**
   Number of major access routes
   Quality of access routes
   Number of access points
   Length of shoreline accessible by auto
c. **Reservoir fluctuation:**
   Extent
   Frequency
   Duration
d. **Alternative outdoor water-oriented recreation opportunities:**
   Number
   User capacity
   Quality of recreation experience
   Relative price of the recreation experience
e. **Recreation facilities:**
   Number and type
   Quality
f. **Activity limitation:**
   Size of project
   Laws or regulations
   Water temperature
   Water quality
   Weather conditions

Estimating Initial Day Use

15. The per capita use rates shown in appendix B, although calculated on the basis of fixed-distance zones, yield estimates for any applicable county distance. The per capita use curve for the proposed project will provide a per capita use value for any county at the appropriate road mile distance from the proposed project. Road mile distance to the population center of any county is determined, and the appropriate per capita value is applied to the total county population. This procedure is repeated for each county and the resulting recreation use is totaled. Generally, the most populated city can be used as a proxy for a calculated population center (centroid). Road mile distance from the center of the city to the project is measured and the value from the adjusted per capita curve corresponding with that

road mile distance is recorded as the per capita use value for the county. (Additional discussion of this is contained in Part V, and in Contract Report No. 1.) In the case of those counties with two or more major population centers, it may be necessary to treat those populations as separate units with separate per capita values. The reason for dividing a county into individual units is that per capita day-use visitation generally decreases rapidly as distance increases. When two or more large population centers exist with a single county, selection of a single centroid could lead to selection of a distorted per capita value. An additional problem is relating both population estimates and per capita use values to the initial year of use for the proposed project relates to time lag between the investigation and the anticipated year that operation of the completed project is commenced. This projection has often been made for periods up to 20 years in the future. The required population variable should be projected to the initial year of project operation based on the same projections used in formulating other project purposes. However, to maintain a relatively conservative use estimate, it is generally not advisable to attempt projection of a changing per capita rate from the year(s) the data was collected to the initial year unless substantial evidence is available which will justify such an adjustment.

Example of Initial Day Use Determination

16. Consider, for example, that Black Butte Reservoir was selected as the most similar project to the prospective project under investigation. Also, assume that the prospective reservoir is such that the selected market area includes seven counties. The road mile distances to the county centroids and the county populations are listed in the following tabulation. The estimated day use from each county and total estimated day use from the market area is included (products of column (c) and (d) values). The per capita rates used below were read from page 30, appendix B.

(a)	(b)	(c)	(d)	(e)
County	**Road Miles**	**Per Capita Rate**	**Projected Population**	**Day Use (Recreation Days)**
1	67	.16	82,030	13,125
2	47	.40	12,075	4,830
3	16	2.30	20,911	48,095
4.	55	.27	56,988	15,390
5	60	.22	2,247	495
6	22	1.50	33,380	50,070
7	21	1.55	33,859	52,480
			TOTAL	184,485

(Rounding might result in a total of 184,000, 185,000, 180,000, or 200,000, depending upon relative imputed accuracy.)

In some cases, it is necessary to modify this day-use estimate by application of a percentage value representing the planner's judgment of any additional differing influences between the project under study and the similar project(s). from which data was derived. An example of such a differing influence could be the additional day use contributed by visitors to resorts in the vicinity of the project under study who would use the project on a day-use basis. If judgment indicated a 10 percent increase due to such an influence in the above example, 18,400 would be added to 184,000 for a total use estimate of 202,400, or 200,000 by rounding. (This discussion relates to item j, paragraph 8, and the last two sentences in paragraph 26.)

Estimating Total Initial Use

17. If, in the planner's judgment, there is no camping anticipated at the prospective project, the previously calculated day-use estimate will represent

total initial use of the project. However, if camping is anticipated, the total initial use will be a combination of camping and day use. In this case, the total initial use may be estimated as follows:

$$\text{Total initial use} = (\text{day use}) \div \left(1.00 - \frac{\%\ \text{of camping}}{100}\right)$$

Appendix C indicates that the average percent for camping on Black Butte Reservoir, which was previously selected as the similar project, is 3 percent. Hence, the day use contribution to total use (denominator for the previous equation) is (1.00 - .03) = .97 or 97 percent. Using the day use estimate of 184,000 recreation days as determined above, the total use may be estimated as follows:

Total use = (184,000) ÷ .97 = 190,000 recreation days

Projection of Potential Recreation Use

18. An important part of the recreation analysis of the prospective project is the estimation of potential future recreation use anticipated for a project over its economic life. Although there are many factors that may affect future recreation use projections, there are essentially two basic items to be considered: population projections and anticipated increases in future per capita use rates. Most published literature indicates that the per capita rate for water-oriented outdoor recreation use is increasing. However, since available Corps data cover such a relatively short period, it has not been found desirable to project per capita use increases for project formulation studies. (Although not reported here, a preliminary projection of per capita use rates in California was constructed from available data and has been useful in indicating the scope of anticipated per capita use increases.) Further studies will be made in an attempt to determine incremental annual change in per capita use rates for wider application. In the interim, it is suggested that existing rates be applied assuming no change over the life of the project.

Additional Considerations in Use Prediction

19. An important consideration is the estimation of existing recreation use at prospective reservoir areas under pre-project conditions. This evaluation depends primarily upon inspection of the resources of the potential reservoir area and evaluation of available recreation use information in the area. This amount of recreation use must be subtracted from the initial use estimate prepared for the reservoir project. Another important consideration is estimating the physical potential of the project to support recreation use. For each reservoir, and the physical resources made available, there will be a certain level of recreation use beyond which there would be detriment to the existing natural resources; "elbow-room," or the degree of tolerance to crowding is also important. This principle applies to individual recreation areas as well as an entire reservoir project. Thus, attendance can generally be expected to reach a maximum practical level and then oscillate about that level for the remainder of project life. In cases where reservoir resources are large, and the surrounding user population is comparatively low, the maximum practical level may not be reached within the economic life constraint.

Conclusions

20. The foregoing methodology is an interim procedure for estimating initial reservoir recreation use pending the development of more exact prediction techniques. It is recognized that there are inherent deficiencies in the method and that additional data and more extensive research are needed before further refinements are possible. Current data collection and research efforts are directed toward more precise definition and quantification of variables influencing recreation use and the development of more accurate procedures for estimating use.

PART V: EXAMPLE OF METHOD

Application of the Method

21. An initial recreation-use estimate for Pine Hollow Reservoir, a hypothetical multipurpose reservoir project under investigation on Lee Creek in western Arkansas and eastern Oklahoma, is discussed in the following paragraphs.

Similar Projects and Pertinent Data

22. Examination of pertinent data for the 52 projects included in appendix A shows two projects as being most similar to Pine Hollow: Black Butte in California and Hills Creek in Oregon. For comparison, pertinent data for Pine Hollow, Black Butte, and Hills Creek are presented in the tabulation on the following page.

Day-Use Market Area

23. Comparison of day-use recreation attendance data for the similar projects shows that the majority of day-use visits originate from within 50 road miles of those projects. Fifty road miles (in this example) is also applicable as the day-use market area boundary for the Pine Hollow project. Applying the criteria for selection of counties to be included in the day-use market area; i.e., 50 percent or more of land area and/or population of a county is within the boundary of the day-use market area, there would be nine counties expected to contribute the majority of day-use recreationists to the project. (Bear in mind, however, that strict adherence to these criteria is often neither possible nor is it recommended; they are provided as guidelines only and should be viewed within that context. Selection of counties or parts of counties with their respective population should be an informed judgment decision made by the planner based on his personal knowledge and expertise and not simply selection that is based on conformance to criteria only.)

Per Capita Recreation Use

24. Per capita recreation use for the two existing reservoirs is shown on a work sheet (chart 2), and the anticipated per capita use rate for Pine Hollow has been entered.

Counties and Populations

25. With the counties and populations determined and a per capita recreation use curve established as shown in chart 2, the road mile distances to the most populated city within each county and the per capita use rates corresponding to those distances are recorded. (However, in determining such rates, it should be understood that using the most populated city as the center of population for a county is merely a guideline. If, in the planner's judgment there are circumstances which justify establishing more than one per capita rate per county as in the case of large counties with more than one major population center, it is advisable to do so.) The data presented in the tabulation shown in paragraph 26 contains two adjustments–both based on the planner's judgment. The first is an adjustment whereby a measurement to the most populated city (Crawford County, 18 miles) would have resulted in an extremely conservative per capita rate for the county and not a true reflection of anticipated use (Crawford County, 0-10 miles). The second utilizes only one-half of a county population (Le Flore County), which is a judgment decision based on knowledge of the area and anticipated use patterns.

PERTINENT DATA COMPARATIVE TABULATION

Item	Pine Hollow	Hills Creek	Black Butte
Location (State)	Arkansas	Oregon	California
Maximum pool:			
Acre-feet	124,000	356,000	160,000
Surface acres	2,850	2,819	4,560
Average recreation pool:			
Surface acres	2,200	2,700	2,845
Shoreline miles	26	35	25
Year impoundment began	–	1961	1963
Number of access areas	4±	5	5
Recreation facilities:			
Tent and trailer spaces	–	58	37
Day-use areas (capacity in recreation days)	–	1,500	10,000
Boat launch lanes	–	5	7
Attendance (recreation days):			
1967	–	99,600	179,700
1966	–	107,446	213,390
1965	–	95,500	155,820
1964	–	66,413	107,600
Recreation season	Apr-Sep	May-Sep	Apr-Sep
Project purpose (FC = flood control, R = recreation, C = conservation, P = power, WS = water supply, and I = irrigation)	FC, WS, R	FC, C, P	FC, I
Timber cover	Dense	Dense	Sparse
Reservoir terrain	Moderate to steep	Steep	Moderate
In National Forest	Yes	Yes	No
Access:			
Paved road, about ½ of reservoir	Yes	Yes	Yes
Limited access, about ½ of reservoir	Yes	No	Yes
Overnight lodging nearby	Yes	Yes	No
Competing water-oriented recreation areas:			
0-25 miles - lake (acres)	14,800	5,385	1,250
- river (miles)	0	0	35
25-50 miles - lake (acres)	84,500	16,452	3,923

Initial Day Use

26. The tabulation presented below summarizes the data used in determining initial year day use for the Pine Hollow project and also details the derivation of such use.

Based on the criteria that the day-use market area used here comprises between 80 and 100 percent of the estimated day use to the project, a further decision has to be made from similar project data as to what the percent of total day use that the foregoing estimate represents. In this example, it is assumed that, on the basis of regression curves for the similar projects, virtually all of the day-use visitation to the project will originate from within the market area used, therefore, the estimate derived represents 100 percent of base year day use.

Camping Use and Total Initial Use

27. The day-use estimate is now used as the basis for estimating total initial year recreation use. To do this, an estimate of the percent of anticipated camping use to total use for the project must be made. Examination of camping data for the Little Rock District, in which the Pine Hollow project would be located, shows that the weighted average of campers on the projects in that district represents 15 percent of the total use. Empirical adjustments to this percent may be made if warranted. However, for illustrative purposes, the percent is used "as is" in the following calculation.

Total annual use = 137,000 ÷ (1.00 - 0.15) = 161,176

Total project base year recreation use (rounded) = 160,000 recreation days

County	Population	Distance Road Miles	Use Rate	Day Use
Crawford	7,000	(0-10)	6.9	48,300
"	17,200	18	1.1	18,920
Sebastian	73,600	23	0.62	45,632
Adair	14,800	28	0.37	5,476
Washington	72,600	40	0.15	10,890
Le Flore	16,000 (1)	41	0.145	2,320
Sequoyah	21,500	46	0.105	2,257
Cherokee	22,600	48	0.092	2,079
Franklin	11,300	49	0.090	1,017
Madison	10,300	69	0.045	463
				137,355

Total annual base year day use (rounded) = 137,000

(1) One-half of county population

CORPS OF ENGINEERS

RECREATIONAL—USE SURVEY

DATE (DAY / MO. / YR.) 1 2 3 4 5 6 | DISTRICT 7 8 | PROJECT 9 10 11 12

AREA 13 14 | WEATHER | START OF PERIOD 15 16 | END OF PERIOD 17 18 | MADE BY | WEEK-END 1 19 | WEEK-DAY 0 19 | SHEET NUMBER 20 21 22

SURVEY NUMBER 23 | WEEKLY DISTRIBUTION OF VEHICLES | WEEKDAY % (MON–FRI) 24 25 26 | 1 27 28

LINE NUMBER	NUMBER OF PERSONS IN VEHICLE	TRAILER 1/ BOAT	TRAILER 2/ CAMP	FEES: ANNUAL STICKER	FEES: ENTRANCE AND USER FEES PAID ($)	ACTIVITIES—NUMBER OF PERSONS: OVER-NIGHT USE: CAMPING ON PROJECT	OVER-NIGHT USE: TYPE 3/	DAY—USE: FISHING	HUNTING	PICNICKING	USING PICNIC FACILITIES	SWIMMING	WATER SKIING	PLEASURE BOATING	SIGHTSEEING ONLY	OTHER	OTHER: TYPE 4/	DURATION OF VISIT: OVER-NIGHT (No. of days): CAMPING ON PROJECT	OVER-NIGHT (No. of days): STAYING IN AREA	DAY-USE (Hrs.)	VISITS PER YEAR	DISTANCE TO RESIDENCE (Miles)	STATE—COUNTY CODE	FLAG—LC=3	RESIDENCE (city and county)
29,30,31,32,33,34				35,36,37,38,39		40,41,42		43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61										62,63,64,65,66,67			68,69,70	71,72,73,74	75,76,77,78,79,80		
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29,30,31,32,33,34				35,36,37,38,39		40,41,42		43,44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61										62,63,64,65,66,67			68,69,70	71,72,73,74	75,76,77,78,79,80		

SAMPLE

CODES: 1/ TRAILER & BOAT (T): CARTOP BOAT (C): MOORED ON PROJECT (M): RENTAL BOAT (R)
2/ HOUSE TRAILER (H): CAMPER PICKUP (P)
3/ WEEKEND (W): VACATION DESTINATION (D): VACATION ENROUTE (R)
4/ SAILING (S): HORSEBACK RIDING & HIKING (H): OTHER (Ø)

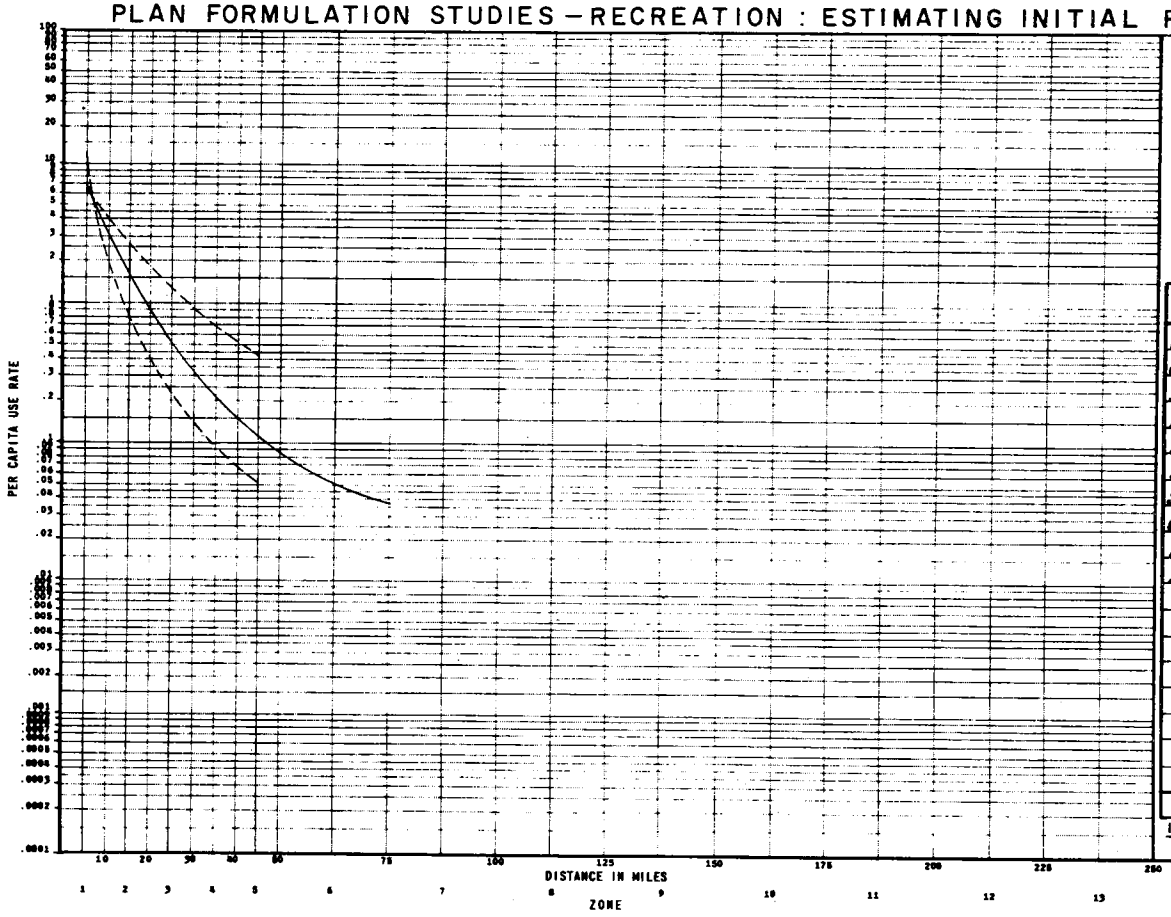
Chart 1

ENG FORM 3912 MAY 69 REINSTATES ENG FORM 3912, 1 APR 66, WHICH MAY BE USED. (EC 1120-2-48)

☆ U. S. GOVERNMENT PRINTING OFFICE : 1969 3[illegible]- (4252)

WORK SHEET

PLAN FORMULATION STUDIES – RECREATION : ESTIMATING INITIAL PROJECT RECREATION USE



PER CAPITA USE RATES

PROJECT: *PINE HOLLOW*

LEGEND

----- SIMILAR PROJECT (S)

——— PROPOSED PROJECT

COUNTY	DIST.	P.C. RATE	COUNTY POP. 1/	DAY USE
CRAWFORD	0-10	6.9	7,000	48,300
CRAWFORD	18	1.1	17,200	18,920
SEBASTION	23	.62	73,600	45,632
ADAIR	28	.37	14,800	5,476
WASHINGTON	40	.15	72,600	10,890
LE FLORE	41	.145	16,000	2,320
SEQUOYAH	46	.105	21,500	2,257
CHEROKEE	48	.092	22,600	2,079
FRANKLIN	49	.090	11,300	1,017
MADISON	69	.045	10,300	463
TOTAL				137,354
rounded				137,000

1/ ESTIMATED FOR BASE YEAR

Chart 2

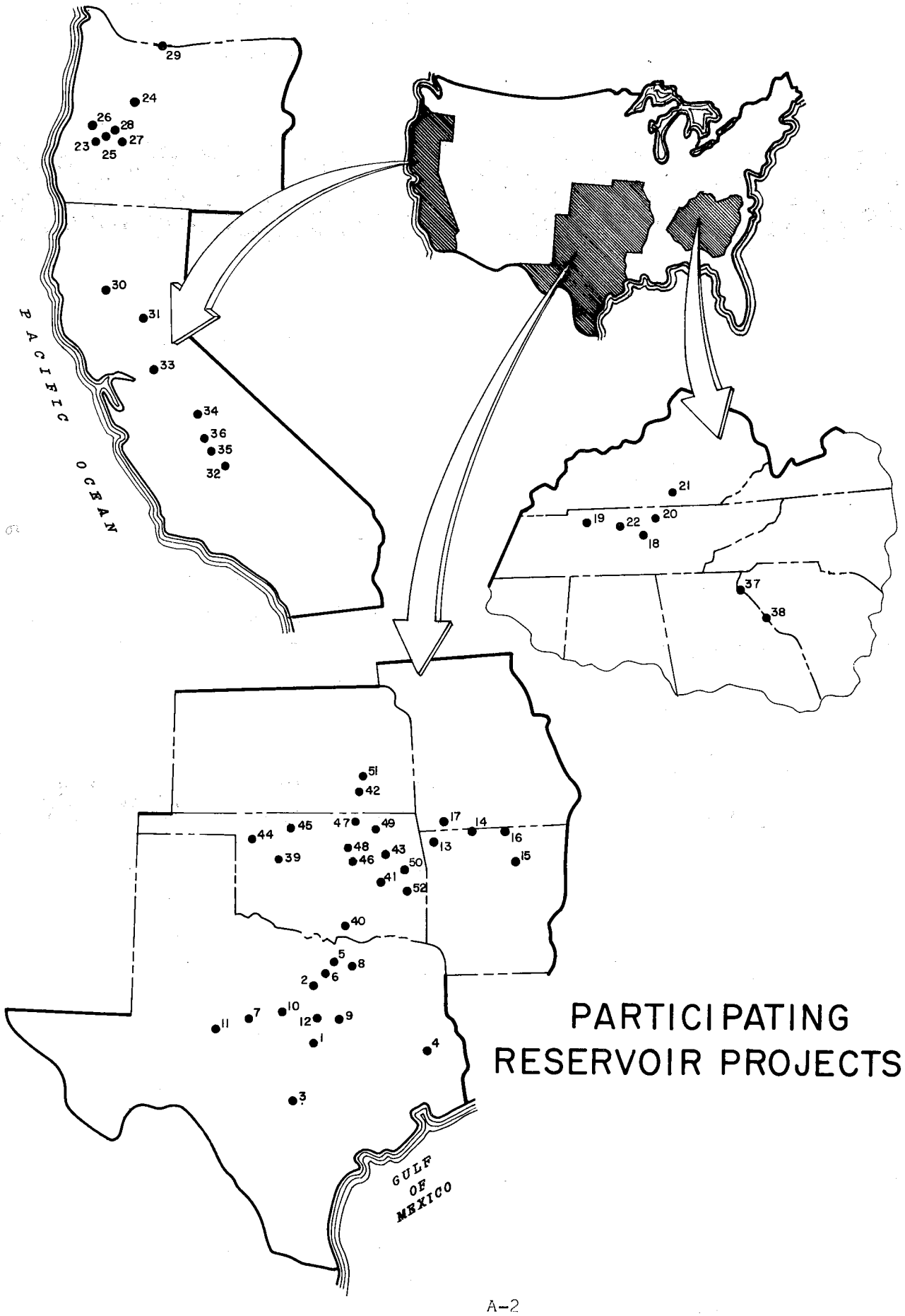
TECHNICAL REPORT No. 2
OCTOBER 1969

PLAN FORMULATION AND EVALUATION STUDIES-RECREATION

estimating initial reservoir recreation use

APPENDIX A

PROJECT DATA


PACIFIC OCEAN
GULF OF MEXICO
PARTICIPATING RESERVOIR PROJECTS

PROJECT DATA

List of Projects

District	Project	Page No.
Fort Worth	Belton	A-5, 6, 7
	Benbrook	A-9, 10, 11
	Canyon	A-13, 14, 15
	Dam B	A-17, 18, 19
	Garza-Little Elm	A-21, 22, 23
	Grapevine	A-25, 26, 27
	Hords Creek	A-29, 30, 31
	Lavon	A-33, 34, 35
	Navarro Mills	A-37, 38, 39
	Proctor	A-41, 42, 43
	San Angelo	A-45, 46, 47
	Whitney	A-49, 50, 51
Little Rock	Beaver	A-53, 54, 55
	Bull Shoals	A-57, 58, 59
	Greers Ferry	A-61, 62, 63
	Norfolk	A-65, 66, 67
	Table Rock	A-69, 70, 71
Nashville	Center Hill	A-73, 74, 75
	Cheatham	A-77, 78, 79
	Dale Hollow	A-81, 82, 83
	Lake Cumberland	A-85, 86, 87
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Portland	Cottage Grove	A-93, 94, 95
	Detroit	A-97, 98, 99
	Dorena	A-101, 102, 103
	Fern Ridge	A-105, 106, 107
	Hills Creek	A-109, 110, 111
	Lookout Point	A-113, 114, 115
	The Dalles	A-117, 118, 119
Sacramento	Black Butte	A-121, 122, 123
	Englebright	A-125, 126, 127
	Isabella	A-129, 130, 131
	New Hogan	A-133, 134, 135
	Pine Flat	A-137, 138, 139
	Success	A-141, 142, 143
	Terminus	A-145, 146, 147
Savannah	Clark Hill	A-149, 150, 151
	Hartwell	A-153, 154, 155
Tulsa	Canton	A-157, 158, 159
	Denison	A-161, 162, 163
	Eufaula	A-165, 166, 167
	Fall River	A-169, 170, 171
	Fort Gibson	A-173, 174, 175
	Fort Supply	A-177, 178, 179
	Great Salt Plains	A-181, 182, 183
	Heyburn	A-185, 186, 187
	Hulah	A-189, 190, 191
	Keystone	A-193, 194, 195
	Oologah	A-197, 198, 199
	Tenkiller	A-201, 202, 203
	Toronto	A-205, 206, 207
	Wister	A-209, 210, 211

PERTINENT DATA

Project Name: **Belton Reservoir** District: **Fort Worth**

Project Location:

State or States: **Texas**

County or Counties: **Bell & Coryell**

River or Rivers: **Leon**

Major Highway Access Routes: **State 317 & 236**

Project Purposes: **Flood control & conservation**

Year Impoundment Began: 1954

Pool Size:

Maximum:	Acre Feet	1,097,600
	Surface Acres	23,620
	Shoreline Miles	**Not Available**
Average Recreation:	Surface Acres	7,400
	Shoreline Miles	110

Number of Access Areas: 13

Recreation Facilities:

Tent and Trailer Spaces:	126
Day Use Areas (Capacity in Recreation Days) 1/	16,200
Boat Launch Lanes:	27

Attendance (Recreation Days):	
1968	1,551,400
1967	1,888,600
1966	1,793,200
1965	1,606,000
1964	1,728,600

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	8.8	10.9	13.6	15.1	14.1	7.7	70.2

1/ Average weekend day of peak month of use.

BELTON RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

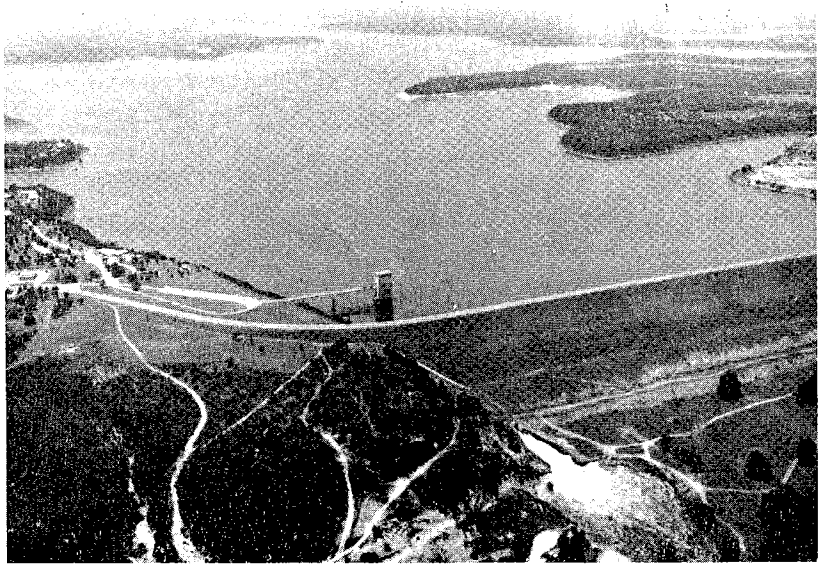
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Brazos River	25-50		50	No	Yes	36,500 (1967)
Lampasas River	0-50	40	40	No	Yes	58,400 (1967)
Leon River	0-50	40	35	No	Yes	54,750 (1967)
Middle Bosque River	25-50		20	No	Yes	14,600 (1967)
San Gabriel River	25-50		80	No	Yes	58,400 (1967)
Waco Reservoir	0-50		7,270	Yes	No	1,204,600 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

BELTON RESERVOIR

1. Reservoir description. - Belton Reservoir is located in the Leon River Valley of Bell and Coryell Counties 16.7 miles upstream from the confluence of the Leon and Little Rivers and is about 3 miles north of Belton, Texas, and about 8 miles west of Temple, Texas. The surrounding area is characterized by buttes, mesas, and divides with stands of oak, elm, mesquite, juniper, and ash. The terrain in the area ranges from flats in the narrow valley of the flood plains of the Leon River and Cowhouse Creek to steep slopes and near vertical bluffs in the uplands. The project area comprises 24,225 acres in fee of which 7,400 are in the pool at the conservation pool level, and 3,268 acres are in the 14 designated park areas.

2. Recreational resources. - Access to the reservoir is provided by three state highways, State (Farm to Market) highways, and county gravel and hard surface roads. The climate of the reservoir area is characterized by moderately humid and generally mild temperatures. All types of water-oriented recreation activities are allowed. Fishing, swimming, picnicking, and sightseeing are the more popular activities. There are many motels in the area and five subdivisions around the reservoir. The towns of Belton, Temple, and Killeen as well as Fort Hood are all within 10 miles of the reservoir and contribute about 70 percent of the visitation. About 90 percent of the visitation originates from within the 50-mile zone of influence which has an estimated population of 381,000. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Benbrook** District: **Fort Worth**

Project Location:

State or States: **Texas**

County or Counties: **Tarrant**

River or Rivers: **Clear Fork of Trinity**

Major Highway Access Routes: U.S. 377

Project Purposes: **Flood control & conservation**

Year Impoundment Began: 1952

Pool Size:

Maximum:	Acre Feet	164,800
	Surface Acres	5,820
	Shoreline Miles	82
Average Recreation:	Surface Acres	3,770
	Shoreline Miles	40

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	70
Day Use Areas (Capacity in Recreation Days) 1/	21,700
Boat Launch Lanes:	22

Attendance (Recreation Days):

1968	2,387,900
1967	1,995,500
1966	1,849,400
1965	1,689,400
1964	1,526,800

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	10.7	12.1	14.0	18.1	12.1	6.6	73.6

1/ Average weekend day of peak month of use.

BENBROOK RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

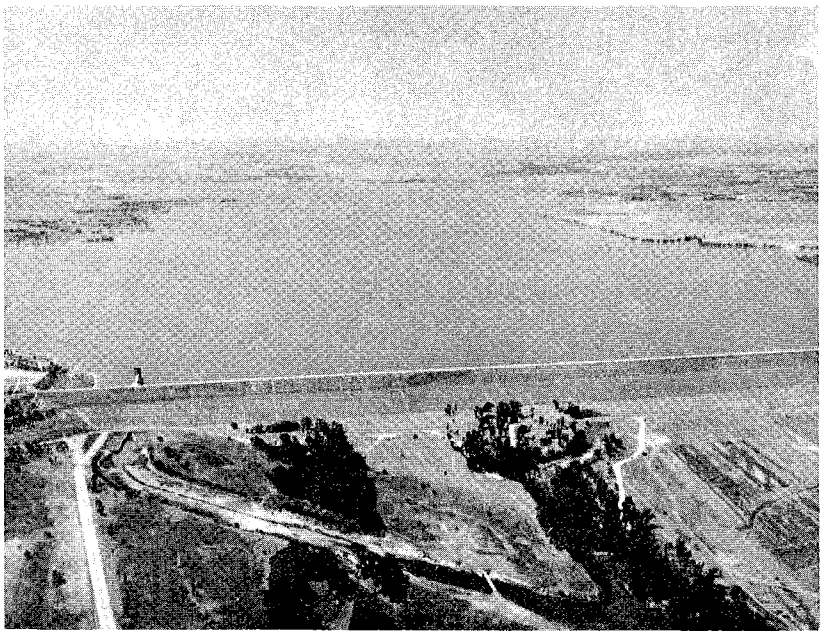
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/ 0-25	SIZE OR LENGTH 1/ 25-50	RECREATION FACILITIES PUBLIC	RECREATION FACILITIES PRIVATE	ESTIMATED ANNUAL ATTENDANCE
Brazos River	0-50	25	50	No	Yes	55,000 (1967)
Bridgeport Lake	25-50		10,399	Yes	Yes	1,500,000 (1967)
Cleburn Reservoir	0-25	1,545		Yes	Yes	270,000 (1967)
Eagle Mountain Lake	25-50		8,500	Yes	Yes	1,000,000 (1967)
Garza-Little Elm Reservoir	25-50		23,280	Yes	No	2,206,800 (1967)
Grapevine Reservoir	25-50		7,380	Yes	No	2,807,200 (1967)
Lake Arlington	25-50		2,275	Yes	Yes	750,000 (1967)
Lake North	25-50		820	Yes	Yes	15,000 (1967)
Lake Waxahachie	25-50		645	Yes	Yes	120,000 (1967)
Lake Weatherford	25-50		1,280	Yes	Yes	238,000 (1967)
Lake Worth	25-50		3,267	Yes	Yes	600,000 (1967)
Mountain Creek Reservoir	25-50		2,950	Yes	Yes	500,000 (1967)
Whitney Reservoir	25-50		15,760	Yes	No	3,102,500 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

BENBROOK RESERVOIR

1. Reservoir description. - Benbrook Reservoir is located on the Clear Fork of the Trinity River 15 river miles upstream of its confluence with the West Fork of the Trinity River in Tarrant County, Texas. The area within the reservoir limits is characterized by a gently sloping valley bordered by abrupt, steep slopes on the east and south sides and by more gradual slopes on the north and west sides. Timber in the reservoir area is sparse except along the streambanks. The project has 2,896 acres in the 5 designated park areas and 3,770 surface acres at the conservation pool level available for recreation.

2. Recreational resources. - U. S. Highway No. 377 extending west-southwest from Fort Worth passes within one-half mile of the west end of the dam and crosses the Clear Fork within the reservoir area. A hard surfaced county road extending southwest from Fort Worth provides access to the east end of the dam. Several all weather county roads leading from these two roads provide access to the various park areas. The reservoir lies in a region characterized by a relative mild climate having hot days and warm nights during the summer and comparatively mild temperatures during the winter. All types of water-oriented recreation activities as well as an 18-hole golf course are available. The nearest population center is the Fort Worth metropolitan area which is approximately 12 miles from the reservoir. About 90 percent of the visitation originates from within 25 miles of the reservoir. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Canyon District: Fort Worth

Project Location:

State or States: Texas

County or Counties: Comal

River or Rivers: Guadalupe

Major Highway Access Routes: U.S. 81 & 281

Project Purposes: Flood control & conservation

Year Impoundment Began: 1964

Pool Size:

Maximum:	Acre Feet	740,900
	Surface Acres	12,890
	Shoreline Miles	109
Average Recreation:	Surface Acres	8,240
	Shoreline Miles	80

Number of Access Areas: 7

Recreation Facilities:

Tent and Trailer Spaces:	145
Day Use Areas (Capacity in Recreation Days) 1/	10,200
Boat Launch Lanes:	37

Attendance (Recreation Days):	
1968	1,427,300
1967	1,112,900
1966	956,000
1965	631,400
1964	94,500

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	12.4	10.1	12.7	15.9	12.1	7.2	70.4

1/ Average weekend day of peak month of use.

CANYON RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

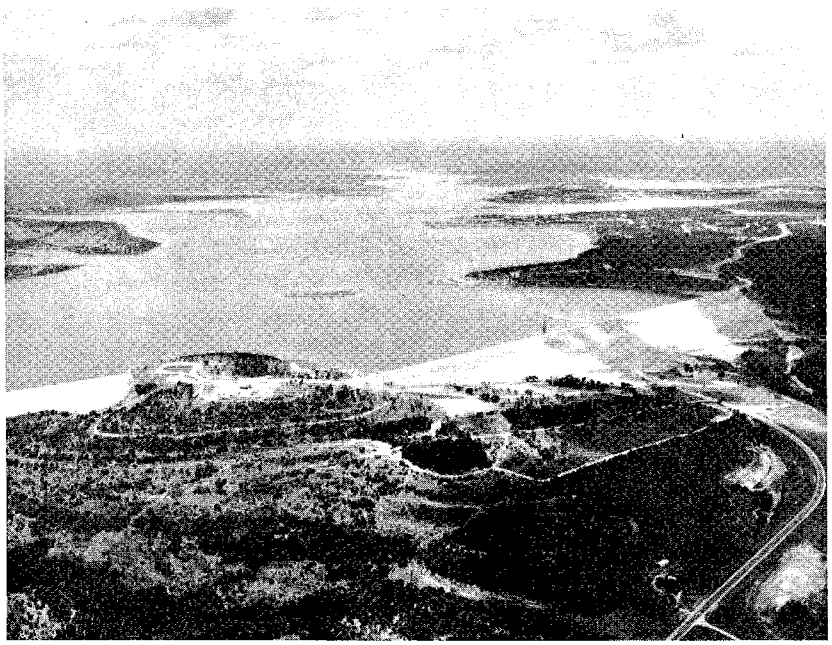
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Guadalupe River	0-50	30	35	Yes	Yes	47,500 (1967)
Lake Austin	25-50		1,830	Yes	Yes	350,000 (1967)
Lake McQueeney	0-25	396		Yes	Yes	50,000 (1967)
Lake Travis	25-50		29,000	Yes	Yes	750,000 (1967)
Lake Victor Braunig	25-50		1,350	Yes	Yes	250,000 (1967)
Pedernales River	25-50		50	No	Yes	36,500 (1967)
San Marcos River	0-50	10	25	Yes	Yes	25,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

CANYON RESERVOIR

1. Reservoir description. - Canyon Reservoir is located at river mile 303.0 on the Guadalupe River about 12 airline miles northwest of New Braunfels, Texas. The reservoir is entirely within the Edwards Plateau physiographical province of Texas. The Edwards Plateau region is an area of rocky, rugged hills and narrow valleys and is sharply accentuated by the steep hills and limestone bluffs that mark the Balcones Escarpment. The tree cover in the area consists of cedar, oak, elm, sycamore, pecan, hackberry, mesquite, cottonwood, and cypress. The project has 1,511 acres in the 7 designated park areas and 8,240 surface acres at the conservation pool level available for recreation.

2. Recreation resources. - Canyon Reservoir is readily accessible over hard-surfaced federal and state highways and county roads. The reservoir lies to the northwest of U. S. Highway No. 81 and to the east of U. S. Highway No. 281, two of the major traffic arteries in the state of Texas. Canyon Reservoir lies in a moderately humid region and experiences a generally mild climate. The summer days are hot and the nights cool and the winters are normally short and comparatively mild. All types of water-oriented recreation activities are allowed. Fishing, swimming, picnicking, and sightseeing are the more popular activities during the season. There are many motels in the area and subdivisions are springing up all around the reservoir. The nearest population center is the San Antonio metropolitan area which is approximately 45 miles from the reservoir. About 60 percent of the visitation originates from within the 50 mile zone of influence and about 25 percent originates beyond the 100 mile zone of influence. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Dam "B" District: Fort Worth

Project Location:

State or States: Texas

County or Counties: Jasper & Tyler

River or Rivers: Neches

Major Highway Access Routes: U.S. 190, State 92

Project Purposes: Conservation

Year Impoundment Began: 1951

Pool Size:

Maximum:	Acre Feet	124,700
	Surface Acres	16,830
	Shoreline Miles	59
Average Recreation:	Surface Acres	13,700
	Shoreline Miles	55

Number of Access Areas: 8

Recreation Facilities:

Tent and Trailer Spaces:	274
Day Use Areas (Capacity in Recreation Days) 1/	6,250
Boat Launch Lanes:	18

Attendance (Recreation Days):	
1968	654,300
1967	683,200
1966	876,700
1965	874,300
1964	816,200

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	11.9	10.2	16.4	17.7	13.6	7.5	77.3

1/ Average weekend day of peak month of use.

DAM "B" RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

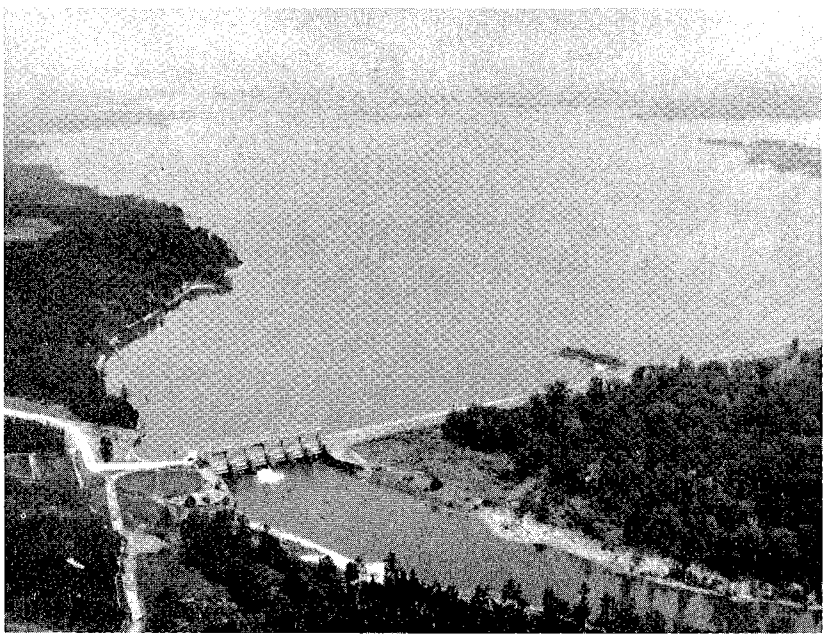
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Neches River	0-50	15	25	No	Yes	30,000 (1967)
Sabine River	25-50		80	No	Yes	58,400 (1967)
Sam Rayburn Reservoir	25-50		113,400	Yes	No	2,172,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

DAM "B" RESERVOIR

1. Reservoir description.- Dam "B" is located on the Neches River in the east-central and west-central portions of Tyler and Jasper Counties. The land within the reservoir area is characterized by low rolling hills in the upland portion through which the Neches River has cut a relatively narrow valley. The timber in the area consists of virgin and second growth timber including pine, oak, sweet gum, sour gum, pecan, dogwood, magnolia, cypress, and walnut. The project has 1,718 acres in the eight designated park areas and 13,700 surface acres at the conservation pool level available for recreation. The Texas Parks and Wildlife Department has leased three of the designated park areas and has developed them into a state park.

2. Recreation resources.- Dam "B" is readily accessible from U. S. Highway 190 which crosses the reservoir about 4 miles above the damsite between Woodville and Jasper, Texas. State (Farm-to-Market) Highway 92 lies adjacent to the southwest quadrant of the reservoir and passes in front of the project office. Dam "B" lies in a region characterized by comparatively long, hot, humid summers and moderate winters. All types of water oriented recreation activities are allowed. Fishing, sightseeing, and camping are the more popular activities during the season. Most of the motels are about 15 miles from the project and the subdivisions are small in size and number. The nearest large population center is the Beaumont metropolitan area, which is approximately 55 miles from the reservoir. About 37 percent of the visitation originates from within 50 miles of the reservoir and 84 percent from within the 100 mile zone of influence. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Garza-Little Elm District: Fort Worth

Project Location:

State or States: Texas

County or Counties: Denton

River or Rivers: Elm Fork of Trinity

Major Highway Access Routes: I-35E, U.S. 77, State 121 & 24

Project Purposes: Flood control & conservation

Year Impoundment Began: 1954

Pool Size:

Maximum:	Acre Feet	989,700
	Surface Acres	39,080
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	22,970
	Shoreline Miles	183

Number of Access Areas: 21

Recreation Facilities:

Tent and Trailer Spaces:	230
Day Use Areas (Capacity in Recreation Days) 1/	17,700
Boat Launch Lanes:	66

Attendance (Recreation Days):

1968	2,137,400
1967	2,206,800
1966	2,166,500
1965	2,371,500
1964	2,515,900

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	9.7	11.2	14.3	14.2	13.2	9.7	72.3

1/ Average weekend day of peak month of use.

GARZA-LITTLE ELM RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

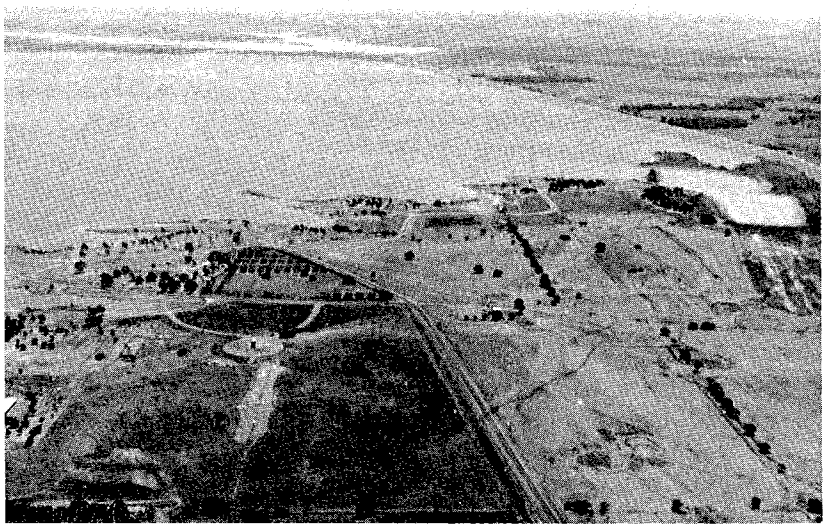
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Benbrook Reservoir	25-50		3,770	Yes	No	1,995,500 (1967)
Eagle Mountain Reservoir	25-50		8,500	Yes	Yes	1,000,000 (1967)
Grapevine Reservoir	0-25	7,380		Yes	No	2,807,200 (1967)
Lake Arlington	25-50		2,275	Yes	Yes	750,000 (1967)
Lake Weatherford	25-50		1,280	Yes	Yes	238,000 (1967)
Lake Worth	25-50		3,267	Yes	Yes	600,000 (1967)
Lavon Reservoir	25-50		11,080	Yes	No	2,694,100 (1967)
Mountain Creek Reservoir	25-50		2,940	Yes	Yes	500,000 (1967)
North Lake	0-25	820		Yes	Yes	15,000 (1967)
Trinity River	0-50	25	25	No	Yes	36,500 (1967)
White Rock Lake	0-25	1,095		Yes	Yes	185,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

GARZA-LITTLE ELM RESERVOIR

1. Reservoir description. - Garza-Little Elm Reservoir is located on the Elm Fork of the Trinity River about one mile north of Lewisville, Texas, and lies entirely within Denton County. The area within the reservoir limits is characterized by a rather broad valley bordered by fairly steep slopes rising to the gently rolling upland areas. Most of the area was in cultivation or used as pasture prior to the construction of the dam. The project has 5,366 acres in the 21 designated park areas and has 22,970 surface acres at the conservation pool level available for recreation.

2. Recreation resources. - The reservoir is readily accessible by hard surface FM highways and county roads which connect with the following highways: Interstate Highway 35E, U. S. Highway 77, State Highway 121, and State Highway 24. The reservoir is located in a region characterized by a relatively mild climate. The summer days are hot, the nights warm, and the winter periods are normally short and comparatively mild. All types of water-oriented recreation activities are allowed. Pleasure boating, picnicking, fishing, water skiing, and swimming are the more popular activities during the season. There are several motels and subdivisions around the reservoir. The reservoir is within 20 miles of the Dallas metropolitan area and about 10 miles from Denton, Texas. Approximately 95 percent of the visitation originates within 25 miles of the reservoir. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Grapevine** District: **Fort Worth**

Project Location:

State or States: **Texas**

County or Counties: **Denton & Tarrant**

River or Rivers: **Denton Creek**

Major Highway Access Routes: **U.S. 377, State 121 & 114**

Project Purposes: **Flood control & conservation**

Year Impoundment Began: 1952

Pool Size:

Maximum:	Acre Feet	435,500
	Surface Acres	12,740
	Shoreline Miles	**Not Available**
Average Recreation:	Surface Acres	7,380
	Shoreline Miles	60

Number of Access Areas: 12

Recreation Facilities:

Tent and Trailer Spaces:	216
Day Use Areas (Capacity in Recreation Days) 1/	32,120
Boat Launch Lanes:	24

Attendance (Recreation Days):	
1968	2,704,100
1967	2,809,200
1966	2,389,800
1965	2,026,300
1964	2,011,100

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	8.1	13.9	15.8	18.9	14.0	7.0	77.7

1/ Average weekend day of peak month of use.

GRAPEVINE RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

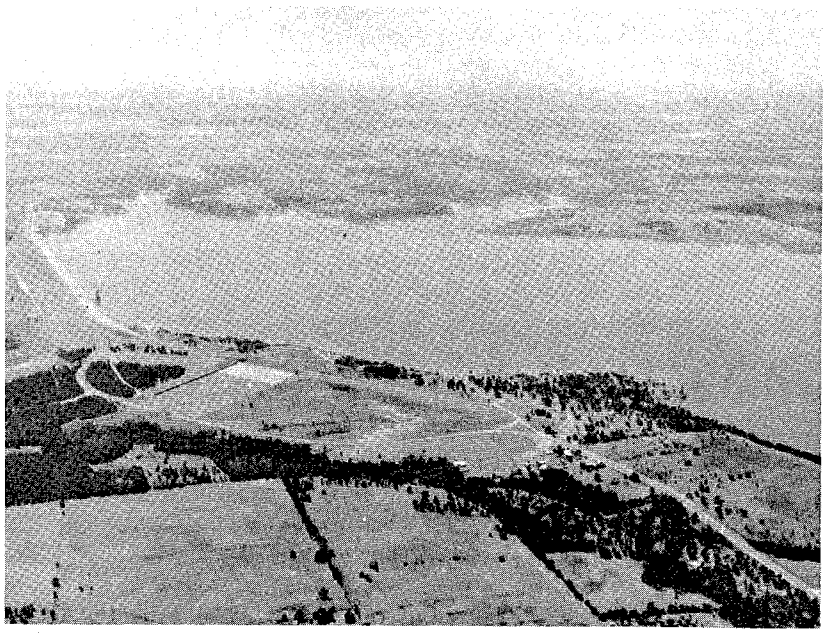
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Bardwell Reservoir	25-50		3,570	Yes	No	487,500 (1967)
Benbrook Reservoir	25-50		3,770	Yes	No	1,995,500 (1967)
Eagle Mountain Reservoir	0-25	8,500		Yes	Yes	1,000,000 (1967)
Garza-Little Elm Reservoir	0-25	23,280		Yes	No	2,206,800 (1967)
Lake Arlington	25-50		2,275	Yes	Yes	750,000 (1967)
Lake Weatherford	25-50		1,280	Yes	Yes	238,000 (1967)
Lake Worth	25-50		3,267	Yes	Yes	600,000 (1967)
Lavon Reservoir	25-50		11,080	Yes	No	2,694,100 (1967)
Mountain Creek Reservoir	0-25	2,940		Yes	Yes	500,000 (1967)
North Lake	0-25	820		Yes	Yes	15,000 (1967)
Trinity River	0-50	30	25	No	Yes	400,000 (1967)
White Rock Lake	0-25	1,095		Yes	Yes	185,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

GRAPEVINE RESERVOIR

1. Reservoir description. - Grapevine Reservoir is located on Denton Creek about 20 miles northwest of the city of Dallas, and about 20 miles northeast of Fort Worth. The reservoir occupies portions of Tarrant and Denton Counties, Texas. The valley throughout the reservoir area is flanked by fairly steep, irregular hills. Prior to construction, most of the reservoir area was cultivated or used for grazing, and about 3 percent of the area was covered with scrub oak and brush. The project has 3,863 acres in the 12 designated park areas and 7,380 surface acres at the conservation pool level available for recreation.

2. Recreation resources. - Grapevine Reservoir is readily accessible from U. S. Highway 377 which crosses the reservoir in the upper reaches, State Highway 114, which parallels the southwestern shoreline, and State Highway 121, which crosses Denton Creek just downstream from the dam. The project lies in a region characterized by a relatively mild climate. Summers are long, with high day and warm night temperatures and the winter periods are normally short and comparatively mild. All types of water-oriented recreation activities are allowed. Water skiing, swimming, fishing and picnicking are the more popular activities during the season. The nearest large population center is the Dallas-Fort Worth metropolitan area, which is approximately 20 miles from the project. About 95 percent of the visitation originates from within 25 miles of the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Hords Creek District: Fort Worth

Project Location:

State or States: Texas

County or Counties: Coleman

River or Rivers: Hords Creek

Major Highway Access Routes: State 53

Project Purposes: Flood control & conservation

Year Impoundment Began: 1948

Pool Size:

Maximum:	Acre Feet	25,310
	Surface Acres	1,260
	Shoreline Miles	18
Average Recreation:	Surface Acres	510
	Shoreline Miles	11

Number of Access Areas: 3

Recreation Facilities:

Tent and Trailer Spaces:	50
Day Use Areas (Capacity in Recreation Days) 1/	2,580
Boat Launch Lanes:	14

Attendance (Recreation Days):	
1968	136,500
1967	204,100
1966	201,000
1965	204,400
1964	232,500

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.4	11.2	16.9	19.6	17.5	10.1	82.7

1/ Average weekend day of peak month of use.

HORDS CREEK RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

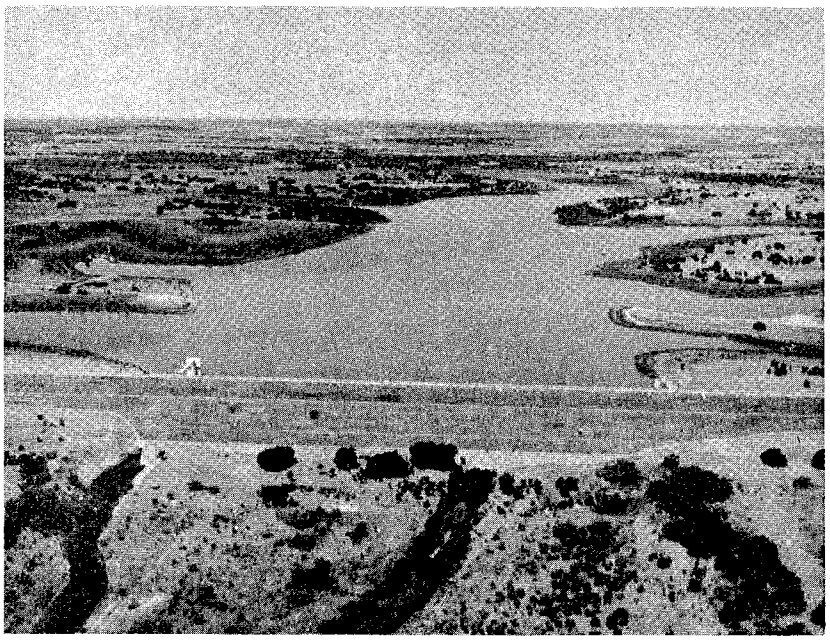
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Coleman Lake	0-25	2,000		Yes	Yes	375,000 (1967)
Colorado River	0-50	32	55	No	Yes	60,000 (1967)
Concho River	25-50		30	No	Yes	22,000 (1967)
Lake Abilene	25-50		641	Yes	Yes	100,000 (1967)
Lake Brownwood	0-25	7,300		Yes	Yes	500,000 (1967)
Lake Graham	25-50		2,550	Yes	Yes	450,000 (1967)
Lake Lawn	25-50	40		No	Yes	7,500 (1967)
Lake Santa Anna	0-25	40		No	Yes	7,500 (1967)
Lake Scarborough	0-25	150		No	Yes	25,000 (1967)
Lake Winters	0-25	175		No	Yes	32,000 (1967)
Oak Creek Reservoir	25-50	2,375		Yes	Yes	400,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

HORDS CREEK RESERVOIR

1. Reservoir description. - Hords Creek Reservoir is located in the Colorado River Basin on Hords Creek in the central part of Coleman County, Texas. The land within the reservoir area is characterized by low rolling hills through which Hords Creek has cut a relatively narrow valley. In general, the area is covered with scattered growths of live oak, mesquite, and other species of trees. The project has 1,215 acres in the three designated park areas and 510 surface acres at conservation pool level available for recreation.

2. Recreation resources. - The reservoir area is primarily served by the hard surfaced State (Farm-to-Market) Highway No. 53, which extends to the west from Coleman, Texas along the northern boundary of the project. Graveled county roads parallel the reservoir on the south and west. Hords Creek Reservoir lies in a semi-arid region characterized by moderate winters and comparatively long summers. All types of water-oriented recreation activities are allowed. Fishing, picnicking, swimming and camping are the more popular activities during the season. There are few motels near the area and no subdivisions. The nearest large population center is Abilene, Texas, which is approximately 45 miles from the project. Approximately 65 percent of the visitation originates from within 25 miles of the project, 84 percent from within 50 miles, and about 12 percent is from beyond 100 miles. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Lavon District: Fort Worth

Project Location:

State or States: Texas

County or Counties: Collin

River or Rivers: East Fork of Trinity

Major Highway Access Routes: State 24 & 78

Project Purposes: Flood control & conservation

Year Impoundment Began: 1953

Pool Size:

Maximum:	Acre Feet	423,400
	Surface Acres	20,050
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	11,080
	Shoreline Miles	83

Number of Access Areas: 11

Recreation Facilities:

Tent and Trailer Spaces:	128
Day Use Areas (Capacity in Recreation Days) 1/	23,120
Boat Launch Lanes:	42

Attendance (Recreation Days):	
1968	2,766,900
1967	2,694,100
1966	2,376,900
1965	3,077,000
1964	3,364,700

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	10.4	10.4	11.9	13.9	10.1	7.4	64.1

1/ Average weekend day of peak month of use.

LAVON RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

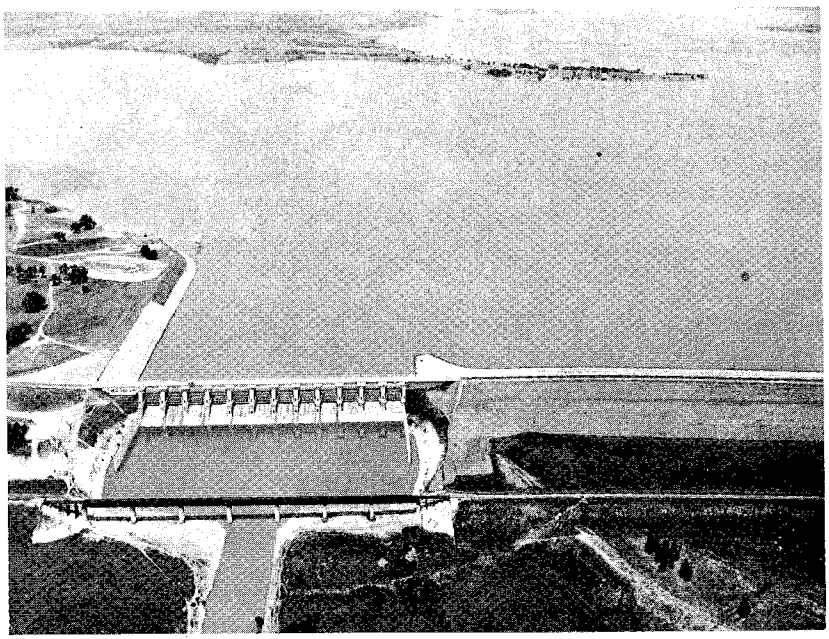
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Brush Creek Reservoir	25-50		1,180	Yes	No	200,000 (1967)
Garza-Little Elm Reservoir	25-50		23,280	Yes	No	2,206,800 (1967)
Grapevine Reservoir	25-50		7,380	Yes	No	2,807,200 (1967)
Lake Tawakoni	25-50		36,700	Yes	Yes	2,500,000 (1967)
Mountain Creek Reservoir	25-50		2,940	Yes	Yes	500,000 (1967)
North Lake	25-50		820	Yes	No	15,000 (1967)
Terrell Lake	25-50		885	Yes	No	150,000 (1967)
White Rock Lake	0-25	1,095		Yes	Yes	185,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

LAVON RESERVOIR

1. Reservoir description. - Lavon Dam is located on the East Fork of the Trinity River in the southeast portion of Collin County, Texas. The area within the reservoir limits is characterized by a gently sloping valley bordered by moderate sloping banks. Most of the valley land and slopes are cultivated or utilized as pasture; the remainder is covered with a fairly heavy growth of native timber. The project has 1,204 acres in the eleven designated park areas and 11,080 surface acres at the conservation pool level available for recreation.

2. Recreation resources. - Lavon Reservoir is readily accessible either by direct access or all-weather county roads which connect with State Highways 24 and 78. The reservoir lies in a region characterized by relatively mild climate. The summer days are hot, the nights warm, and the winter periods are normally short and comparatively mild. All types of water-oriented recreation activities are allowed. Fishing, picnicking, swimming, water skiing, and pleasure boating are the more popular activities during the season. There are few motels near the reservoir, but there are several subdivisions around the perimeter. The largest population center near the reservoir is the Dallas metropolitan area, which is about 30 miles from the project. Nearly all of the visitation originates within 30 miles of the reservoir. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Navarro Mills** District: **Fort Worth**

Project Location:

State or States: **Texas**

County or Counties: **Navarro & Hill**

River or Rivers: **Richland Creek**

Major Highway Access Routes: **State 171, 31 & 22**

Project Purposes: **Flood control & conservation**

Year Impoundment Began: **1963**

Pool Size:

Maximum:	Acre Feet	212,000
	Surface Acres	11,700
	Shoreline Miles	97
Average Recreation:	Surface Acres	5,070
	Shoreline Miles	38

Number of Access Areas: 3

Recreation Facilities:

Tent and Trailer Spaces:	33
Day Use Areas (Capacity in Recreation Days) 1/	3,280
Boat Launch Lanes:	12

Attendance (Recreation Days):

1968	407,200
1967	409,200
1966	401,500
1965	430,300
1964	432,100

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	9.7	10.5	12.2	14.3	11.9	10.6	69.9

1/ Average weekend day of peak month of use.

NAVARRO MILLS RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Bardwell Reservoir	25-50		3,570	Yes	No	487,500 (1967)
Brazos River	25-50		60	No	Yes	43,800 (1967)
Cedar Creek Reservoir	25-50		33,750	Yes	Yes	750,000 (1967)
Lake Halbert	0-25	650		No	Yes	60,000 (1967)
Lake Mexia	25-50		1,200	Yes	Yes	200,000 (1967)
Lake Springfield	25-50		750	Yes	Yes	197,900 (1966)
Lake Trinidad	25-50		753	Yes	Yes	50,000 (1967)
Lake Waxahachie	25-50		645	Yes	Yes	120,000 (1967)
Waco Reservoir	25-50		7,260	Yes	No	1,204,600 (1967)
Whitney Reservoir	25-50		15,760	Yes	No	3,102,500 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

NAVARRO MILLS RESERVOIR

1. Reservoir description. - Navarro Mills Dam is located on Richland Creek, 63.9 river miles above its confluence with the Trinity River. The reservoir area is located in Navarro and Hill Counties, Texas, about 16 miles southwest of Corsicana, Texas. The area within the reservoir area varies from steep slopes to rather low flats. The tree growth in the area is very sparse, except for a narrow fringe adjacent to the creek bed and draws. The project has 1,265 acres in the three designated park areas and 5,070 surface acres at the conservation pool level available for recreation.

2. Recreation resources. - Navarro Mills is readily accessible over hard surfaced state highways and county roads. It lies in a region characterized by a generally mild climate having hot summer days and warm nights and comparatively short and mild winters. All types of water-oriented recreation activities are allowed. Picnicking, fishing and swimming are the more popular activities during the season. The nearest population center of any size is Corsicana, Texas, which is about 16 miles from the project. About 70 percent of the visitation originates from within the 50 mile zone of influence and 20 percent from within the 50-100 mile zone of influence. A photo representative of the project is shown below.

PERTINENT DATA

Project Name: Proctor District: Fort Worth

Project Location:

State or States: Texas

County or Counties: Comanche

River or Rivers: Leon

Major Highway Access Routes: U.S. 377 & 67, State 6

Project Purposes: Flood control & conservation

Year Impoundment Began: 1963

Pool Size:

Maximum:	Acre Feet	374,200
	Surface Acres	14,010
	Shoreline Miles	132
Average Recreation:	Surface Acres	4,610
	Shoreline Miles	50

Number of Access Areas: 4

Recreation Facilities:

Tent and Trailer Spaces:	98
Day Use Areas (Capacity in Recreation Days) 1/	5,440
Boat Launch Lanes:	12

Attendance (Recreation Days):	
1968	368,400
1967	500,600
1966	411,000
1965	225,600
1964	358,900

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	13.6	14.0	13.1	16.0	11.9	8.1	76.7

1/ Average weekend day of peak month of use.

PROCTOR RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

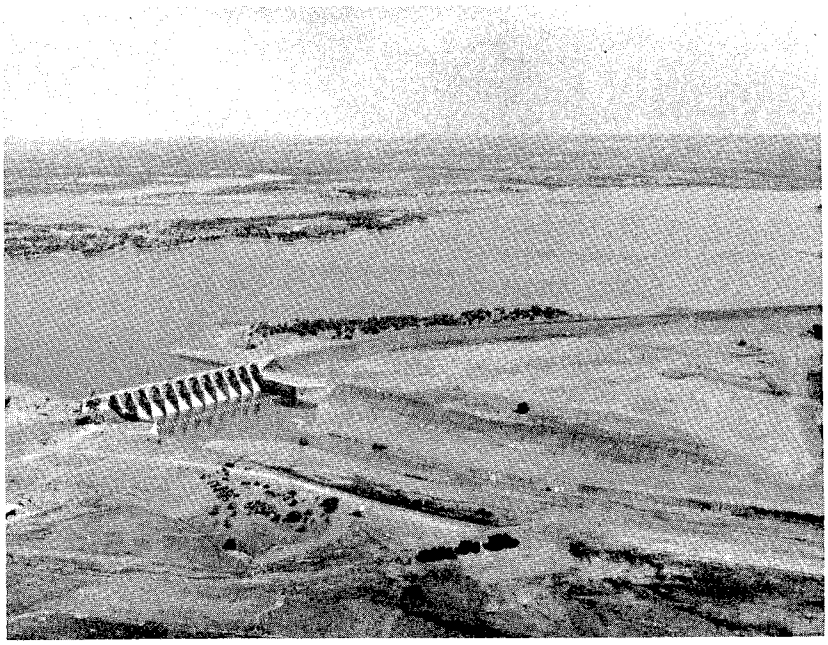
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Lake Brownwood	25-50		7,300	Yes	Yes	500,000 (1967)
Lake Cisco	25-50		1,050	Yes	Yes	75,000 (1967)
Lake Comanche	0-25	200		No	Yes	25,000 (1967)
Lake Leon	25-50		1,500	Yes	Yes	100,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

PROCTOR RESERVOIR

1. Reservoir description. - Proctor Dam is located on the Leon River in the east central portion of Comanche County, approximately 8 miles northeast of Comanche, Texas. The area within the reservoir area varies from gentle slopes in the downstream area to low flats in the upstream area. The tree cover adjacent to the Leon River and tributary streams is heavy, consisting of pecan, hackberry, oak, and cottonwood, and in the uplands the tree cover is rather sparse consisting of scrub oak, hackberry and honey locust. The project has 1,390 acres in the four designated park areas and 4,610 surface acres at the conservation pool level available for recreation.

2. Recreation resources. - Proctor Reservoir is readily accessible over hard surfaced roads which connect with U. S. Highways 67 and 377, which cross the river about one mile downstream from the dam, and State Highway 6, which crosses the reservoir in the upper reaches. The project lies in a moderately humid region and experiences a generally mild climate. In summer the days are hot and the nights warm. The winter temperatures are generally mild. All types of water oriented recreation activities are allowed. Fishing, swimming, camping and picnicking are the more popular activities during the season. The project is about 97 miles from Fort Worth, 110 miles from Waco, and 130 miles from Dallas, Texas. About 60 percent of the visitation originates from within the 50 mile zone of influence and 25 percent originates from beyond 100 miles. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: San Angelo District: Fort Worth

Project Location:

State or States: Texas

County or Counties: Tom Green

River or Rivers: North Concho

Major Highway Access Routes: U.S. 87 & 67

Project Purposes: Flood control & conservation

Year Impoundment Began: 1952

Pool Size:

Maximum:	Acre Feet	396,400
	Surface Acres	12,700
	Shoreline Miles	44
Average Recreation:	Surface Acres	5,440
	Shoreline Miles	27

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	48
Day Use Areas (Capacity in Recreation Days) 1/	3,030
Boat Launch Lanes:	29

Attendance (Recreation Days):	
1968	324,800
1967	481,500
1966	512,900
1965	830,400
1964	1,691,700

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	11.2	11.9	10.3	10.3	8.7	7.9	60.3

1/ Average weekend day of peak month of use.

SAN ANGELO RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

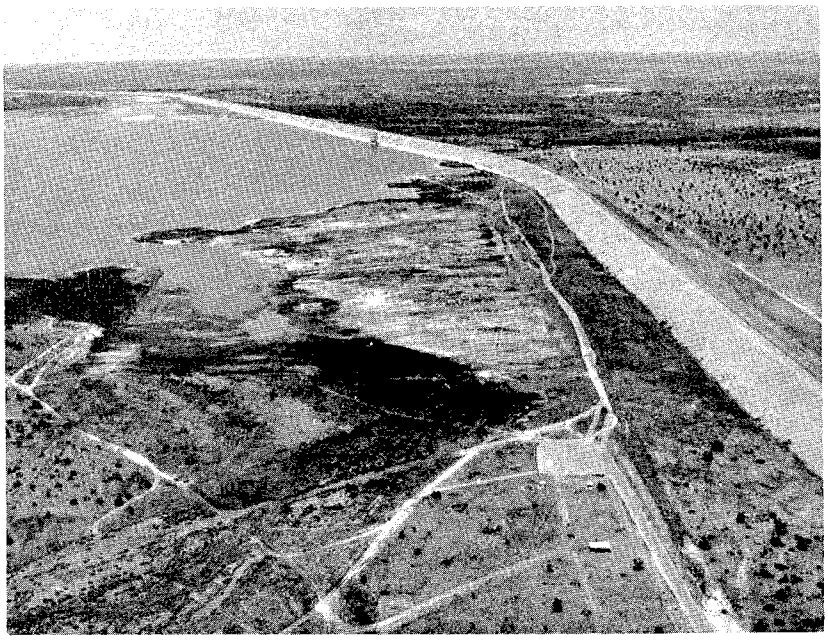
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Colorado River	25-50		80	No	Yes	58,400 (1967)
Concho River	0-50	20	25	No	Yes	32,850 (1967)
Lake Nasworthy	0-25	1,596		No	Yes	100,000 (1967)
Oak Creek Reservoir	25-50		2,375	Yes	Yes	400,000 (1967)
Twin Buttes Reservoir	0-25	22,680		Yes	Yes	500,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

SAN ANGELO RESERVOIR

1. Reservoir description. - San Angelo Dam is located on the North Concho River, approximately 2.3 miles northwest of San Angelo, Texas, in Tom Green County. The land within the reservoir area is generally characterized as moderately rolling terrain. Tree cover in the area is generally sparse and fairly heavy in the upper reaches along the river banks and consists primarily of pecan, willow, hackberry, mesquite, and scrub oak. The project has 4,790 acres in the four designated park areas and 5,440 surface acres at the conservation pool level available for recreation. However, the pool has reached the conservation pool level one time (1957) since it was constructed.

2. Recreation resources. - San Angelo Reservoir is readily accessible by hard surfaced roads which connect with U. S. Highways 87 and 67. The project lies in a semi-arid region characterized by a relatively moderate climate. Summer temperatures are high and freezing temperatures during the winter seldom prevail for more than a few days. All types of water-oriented recreation activities are allowed. Fishing is the most popular activity at the project. Since the project is located adjacent to the urban center of San Angelo, motels are plentiful. San Angelo is the only large population center within 100 miles of the project. About 70 percent of the visitation originates within 10 miles of the project and about 20 percent originates from beyond 100 miles. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Whitney District: Fort Worth

Project Location:

State or States: Texas

County or Counties: Hill, Bosque, Johnson & Somervell

River or Rivers: Brazos

Major Highway Access Routes: State 22 & 174

Project Purposes: Flood control & power

Year Impoundment Began: 1951

Pool Size:

Maximum:	Acre Feet	1,999,500
	Surface Acres	49,820
	Shoreline Miles	240
Average Recreation:	Surface Acres	16,200
	Shoreline Miles	190

Number of Access Areas: 19

Recreation Facilities:

Tent and Trailer Spaces:	457
Day Use Areas (Capacity in Recreation Days) 1/	28,400
Boat Launch Lanes:	73

Attendance (Recreation Days):	
1968	3,119,900
1967	3,102,500
1966	3,377,100
1965	3,130,200
1964	4,224,700

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	8.9	10.2	14.2	13.7	11.6	8.8	67.4

1/ Average weekend day of peak month of use.

WHITNEY RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

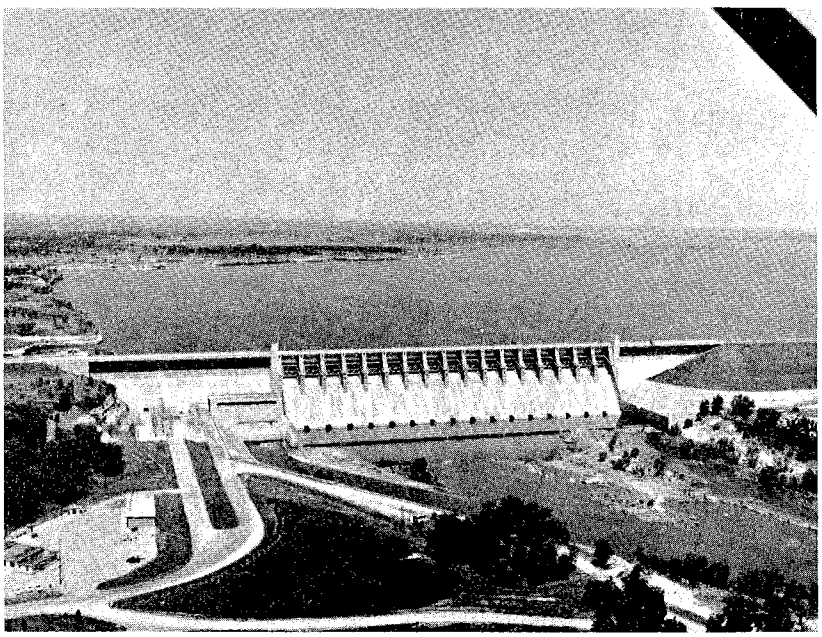
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Belton Reservoir	25-50		7,400	Yes	No	1,877,200 (1967)
Benbrook Reservoir	25-50		3,770	Yes	No	1,995,500 (1967)
Bosque River	0-50	25	25	No	Yes	36,500 (1967)
Brazos River	0-50	20	20	No	Yes	29,200 (1967)
Cedar Creek Reservoir	25-50		33,750	Yes	Yes	750,000 (1967)
Cleburne Reservoir	25-50		1,545	Yes	Yes	270,000 (1967)
Lake Waxahachie	25-50		645	Yes	Yes	120,000 (1967)
Navarro Mills Reservoir	25-50		5,070	Yes	No	409,200 (1967)
Waco Reservoir	0-25	7,270		Yes	No	1,204,600 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

WHITNEY RESERVOIR

1. Reservoir description. - Whitney Dam is located on the Brazos River about 38 miles upstream from Waco, Texas. The dam is located in Hill and Bosque Counties, and the reservoir occupies portions of Johnson, Hill, Somerville, and Bosque Counties. The reservoir area is a scenic region characterized by a gently sloping valley bordered by steep, stony bluffs. The timber is restricted to hills and plateaus surrounding the reservoir. The project has 8,142 acres in the 19 designated park areas and 16,200 surface acres at the conservation pool level available for recreation.

2. Recreation resources. - Whitney Reservoir is readily accessible by hard surface roads which connect with State Highway 22 which crosses the dam and State Highway 174, which crosses the upper part of the reservoir. The project lies in a region characterized by a relatively moderate climate, having high day and moderate night temperatures in the summer and short winters which are comparatively mild. All types of water-oriented recreation activities are allowed. Fishing, swimming, picnicking, and pleasure boating are the more popular activities during the season. Subdivisions and commercial establishments are numerous around the reservoir. The metropolitan areas of Waco, Fort Worth and Dallas are all within 100 miles of the project. About 50 percent of the visitation originates within the 50 mile zone of influence and about 40 percent originates within the 50 to 100 mile zone. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Beaver Reservoir** District: **Little Rock**

Project Location:

State or States: **Arkansas**

County or Counties: **Benton, Carroll & Washington**

River or Rivers: **White**

Major Highway Access Routes: **U.S. 62, State 264, 187, 94, 68, 45 & 12**

Project Purposes: **Flood control, power & water supply**

Year Impoundment Began: **1964**

Pool Size:

Maximum:	Acre Feet	1,952,000
	Surface Acres	31,700
	Shoreline Miles	483
Average Recreation:	Surface Acres	28,220
	Shoreline Miles	449

Number of Access Areas: 16

Recreation Facilities:

Tent and Trailer Spaces:	138
Day Use Areas (Capacity in Recreation Days) 1/	22,100
Boat Launch Lanes:	125

Attendance (Recreation Days):

1968	1,781,785
1967	1,687,900
1966	1,536,000
1965	548,200
1964	313,400

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	9.5	11.3	13.8	14.9	12.8	10.8	73.1

1/ Average weekend day of peak month of use.

BEAVER RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

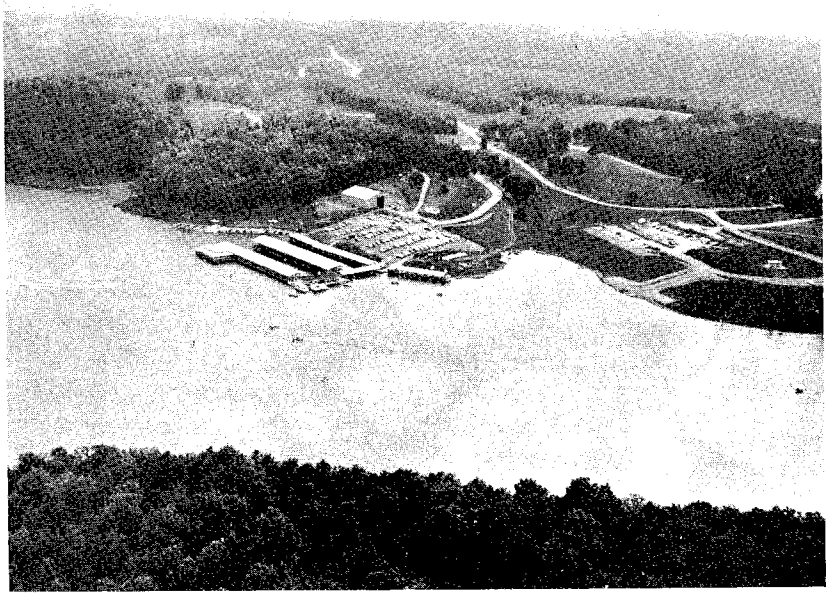
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Devils Den State Park	25-50		4,800	Yes	No	640,100 (1967)
Lake Taneycomo	25-50		1,700	No	Yes	Not Available
Lake Wedington	0-25	102		Yes	No	43,700 (1967)
Pensacola	25-50		46,500	No	Yes	Not Available
Roaring River State Park	0-25	3,028		Yes	No	1,290,500 (1967)
Table Rock Reservoir	0-50	4,300	38,800	Yes	No	3,377,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

BEAVER RESERVOIR

1. Reservoir description. - Beaver Reservoir is located in the Ozark Mountain region of northwestern Arkansas. The reservoir area is irregular in shape with many deep coves and arms. The shoreline is generally steep with many overhanging bluffs and ledge outcrops. The principal timber growth in the area is oak, of which there are numerous species. The project area comprises 38,046 acres of land and water. This acreage includes approximately 2,527 acres of flowage easement land.

2. Recreational resources. - The Beaver Reservoir area is encircled by a well developed network of Federal, State and County roads. Eleven public use areas containing some 2,201 acres have been developed at 100 percent Federal expense. Seven of these areas contain commercial boat docks. The climate of the reservoir area is moderate with a mean temperature of 58° F. and an average annual rainfall of about 48 inches. Water quality is excellent and all types of water-oriented recreation activities are allowed. For a number of years, the general area has been a popular vacation and retirement area. A number of modern motels are located in the vicinity of Fayetteville, Springdale, and Rogers on the west side of the reservoir and in Eureka Springs on the east side of the reservoir. Private subdivisions are continuing to be developed on lands adjoining Government ownership. Approximately 80 percent of the day use visitors come from within 50 miles of the project and about 70 percent of the campers traveled over 75 miles to the project last year. It is estimated that 1,348,900 persons reside within 125 road miles of the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Bull Shoals Reservoir District: Little Rock

Project Location:

State or States: Arkansas & Missouri

County or Counties: (Ark) Boone, Marion & Baxter
(Mo) Taney & Ozark

River or Rivers: White

Major Highway Access Routes: (Ark) State 281, 202, 178, 125 & 14
(Mo) U.S. 160, State 125, 86, 76 HH, K, W & I

Project Purposes: Flood control & power

Year Impoundment Began: 1951

Pool Size:

Maximum:	Acre Feet	5,408,000
	Surface Acres	71,240
	Shoreline Miles	1,050
Average Recreation:	Surface Acres	45,440
	Shoreline Miles	740

Number of Access Areas: 29

Recreation Facilities:

Tent and Trailer Spaces:	489
Day Use Areas (Capacity in Recreation Days) 1/	23,000
Boat Launch Lanes:	184

Attendance (Recreation Days):	
1968	2,781,347
1967	1,970,553
1966	1,992,600
1965	2,137,800
1964	2,249,601

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	10.5	10.6	13.1	16.0	14.6	9.1	73.9

1/ Average weekend day of peak month of use.

BULL SHOALS RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

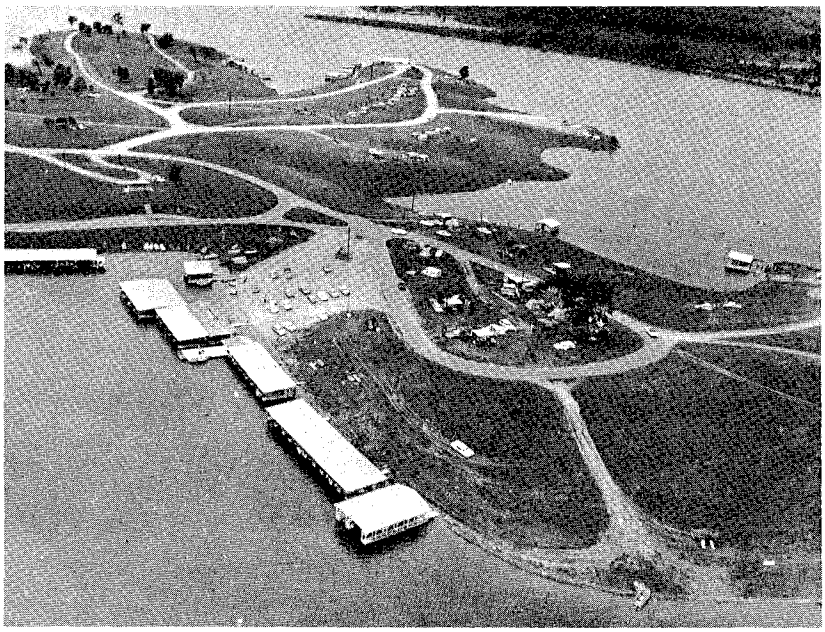
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Beaver Reservoir	25-50		28,220	Yes	No	1,687,900 (1967)
Lake Taneycomo	0-25	1,700		No	Yes	Not Available
Norfork Reservoir	0-50	11,000	11,000	Yes	No	1,531,500 (1967)
Roaring River State Park	25-50		3,028	Yes	No	1,290,500 (1967)
Table Rock Reservoir	0-50	23,100	20,000	Yes	No	3,377,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

BULL SHOALS RESERVOIR

1. Reservoir description. - Bull Shoals Reservoir is located in the center of the Ozark Mountains. The project area is rugged and generally wooded, primarily with numerous species of oak. The shoreline of the reservoir is very irregular with numerous coves extending outward from the main channel of the White River. The project area is comprised of some 101,082 acres of land and water. This acreage includes approximately 1,106 acres of flowage easement land.

2. Recreational resources. - Bull Shoals Reservoir is located in a nationally known resort and vacation area. The project is encircled by a network of good Federal and State highways. Numerous farm-to-market roads interconnect these highways to afford access throughout the reservoir area. Seventeen public use areas containing some 3,514 acres are being developed and maintained at 100 percent Federal expense. Three other public use areas containing 1,447 acres are being developed and maintained at 100 percent State or local interest expense. There are 13 commercial boat docks on Bull Shoals Reservoir. The climate of the reservoir area is moderate with a mean temperature of 59° F. and an average annual rainfall of about 45 inches. The water quality of the reservoir is excellent, and all types of water-oriented recreation activities are allowed. A number of motels and resorts are located on private lands adjoining Government-owned lands. Overnight accommodations are available in four of the public use areas maintained by the Corps. Approximately 80 percent of the day use visitors come from within 100 miles of the project and about 70 percent of the campers traveled over 125 miles to the project last year. It is estimated that 1,382,000 persons reside within 125 road miles of the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Greers Ferry Reservoir District: Little Rock

Project Location:

State or States: Arkansas

County or Counties: Cleburne & Van Buren

River or Rivers: Little Red

Major Highway Access Routes: U.S. 65, State 337, 330, 110, 92, 25 & 16

Project Purposes: Flood control & power

Year Impoundment Began: 1961

Pool Size:

Maximum:	Acre Feet	2,844,000
	Surface Acres	40,480
	Shoreline Miles	343
Average Recreation:	Surface Acres	31,460
	Shoreline Miles	276

Number of Access Areas: 15

Recreation Facilities:

Tent and Trailer Spaces:	314
Day Use Areas (Capacity in Recreation Days) 1/	32,500
Boat Launch Lanes:	56

Attendance (Recreation Days):	
1968	2,006,564
1967	1,631,000
1966	1,431,000
1965	1,428,400
1964	1,400,156

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	9.3	12.5	17.5	20.4	15.8	7.8	83.3

1/ Average weekend day of peak month of use.

GREERS FERRY RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

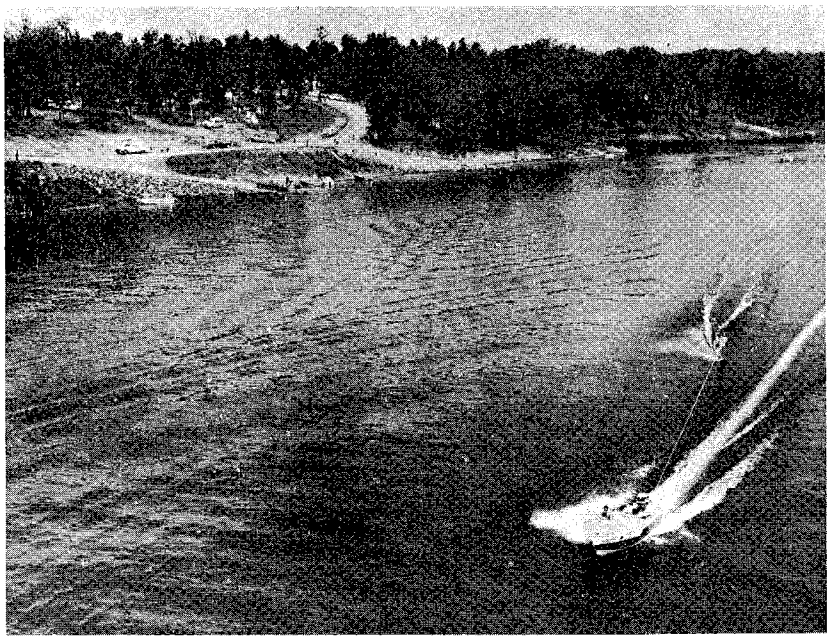
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Buffalo River State Park	25-50		1,600	Yes	No	770,100 (1967)
Lake Conway	25-50		6,700	Yes	No	Not Available
Petit Jean State Park	25-50		3,980	Yes	No	816,100 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

GREERS FERRY RESERVOIR

1. Reservoir description. - Greers Ferry Reservoir is located in the foothills of the scenic Ozark Mountains. The reservoir is irregular in shape with numerous arms and coves. Steep bluff formations on both sides of the central portion of the reservoir confine the water to a channel that divides the reservoir into two large lakes. The area is generally wooded and rugged with interesting geologic formations overlooking the reservoir. Principal tree growths consist of a number of species of oak and pine. The project area comprises 45,744 acres of land and water. This acreage includes approximately 4,847 acres of flowage easement land.

2. Recreational resources. - Greers Ferry Reservoir is located in a popular vacation and retirement area. This area has a mild climate, scenic terrain and a long season for outdoor recreation. The average mean temperature is about 60° F. and the average annual rainfall is about 50 inches. The reservoir area is encircled by a well developed network of Federal, State and county roads. Fourteen public use areas containing some 1,913 acres have been developed at 100 percent Federal expense. There are nine commercial boat docks to serve the visiting public. A number of modern motels have been constructed near the project. Private subdivisions are continuing to be developed on lands adjoining Government ownership. A Federal fish hatchery is located on project lands downstream from the dam. In 1967, this hatchery produced approximately 60,000 pounds of rainbow trout; 25,000 pounds of which were stocked in the lake. Approximately 80 percent of the day use visitors come from with 100 miles of the project and about 80 percent of the campers traveled over 50 miles to the project last year. An estimated 1,112,100 persons reside within 125 road miles of the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Norfork Reservoir District: Little Rock

Project Location:

State or States: Arkansas & Missouri

County or Counties: (Ark) Baxter & Fulton
(Mo) Ozark

River or Rivers: North Fork

Major Highway Access Routes: (Ark) U.S. 62, State 201, 177, 101 & 5
(Mo) U.S. 160, State 101 & "O"

Project Purposes: Flood control & power

Year Impoundment Began: 1943

Pool Size:

Maximum:	Acre Feet	1,983,000
	Surface Acres	30,700
	Shoreline Miles	510
Average Recreation:	Surface Acres	21,990
	Shoreline Miles	380

Number of Access Areas: 25

Recreation Facilities:

Tent and Trailer Spaces:	247
Day Use Areas (Capacity in Recreation Days) 1/	16,200
Boat Launch Lanes:	72

Attendance (Recreation Days):

1968	1,767,096
1967	1,531,500
1966	1,533,500
1965	1,504,200
1964	1,486,525

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.7	8.9	16.3	19.2	14.8	9.3	76.2

1/ Average weekend day of peak month of use.

NORFORK RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

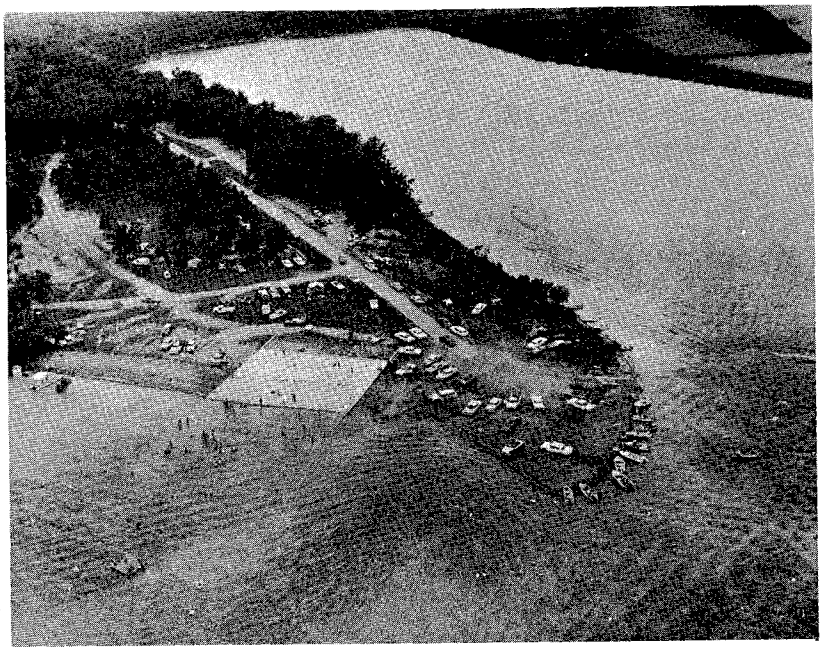
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Buffalo River State Park	25-50		1,600	Yes	No	770,100 (1967)
Bull Shoals Reservoir	0-50	18,000	27,440	Yes	No	1,974,000 (1967)
Lake Taneycomo	25-50		1,700	No	Yes	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

NORFORK RESERVOIR

1. Reservoir description. - Norfork Reservoir is located on the North Fork River in Baxter and Fulton Counties, Arkansas, and Ozark County, Missouri. The project area is rugged and generally wooded, primarily with numerous species of oak. There are numerous steep, rocky slopes and bluffs along the shoreline of the reservoir. The project area is comprised of some 54,113 acres of land and water.

2. Recreational resources. - Norfork Reservoir is located in an established resort and vacation area. The project is encircled by a network of good Federal and State highways with numerous farm-to-market roads interconnecting these highways to afford access throughout the reservoir area. In addition, two free ferries operated by the State connect the severed portions of U. S. Highway 62 and Arkansas Highway 101. An estimated 249,600 persons rode these ferries for recreational pursuits during 1967. Twenty-one public use areas containing some 4,404 acres have been developed and are being maintained at 100 percent Federal expense. There are 11 commercial boat docks operating on the reservoir. A Federal fish hatchery is located on project lands downstream from the dam. Water quality is excellent and all types of water-oriented recreation activities are allowed. The climate of the reservoir area is moderate with a mean temperature of 56° F. and an average annual rainfall of about 45 inches. A number of motels and resorts are located on private lands adjoining Government-owned lands. Approximately 80 percent of the day use visitors come from within 75 miles of the project and about 80 percent of the campers traveled over 100 miles to the project last year. It is estimated that 898,600 persons reside within 125 road miles of the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Table Rock Reservoir District: Little Rock

Project Location:

State or States: Missouri & Arkansas

County or Counties: (Mo) Stone, Barry & Taney
(Ark) Carroll & Boone

River or Rivers: White

Major Highway Access Routes: (Mo) U.S. 65 & 62, State 265, 165, 86, 76, 39, 13, H & M

Project Purposes: Flood control & power

Year Impoundment Began: 1958

Pool Size:

Maximum:	Acre Feet	3,462,000
	Surface Acres	52,250
	Shoreline Miles	857
Average Recreation:	Surface Acres	43,070
	Shoreline Miles	745

Number of Access Areas: 22

Recreation Facilities:

Tent and Trailer Spaces:	869
Day Use Areas (Capacity in Recreation Days) 1/	72,700
Boat Launch Lanes:	322

Attendance (Recreation Days):

1968	3,931,751
1967	3,377,000
1966	3,217,000
1965	3,331,600
1964	2,872,283

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	6.9	9.2	16.5	18.6	18.1	9.5	78.8

1/ Average weekend day of peak month of use.

TABLE ROCK RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

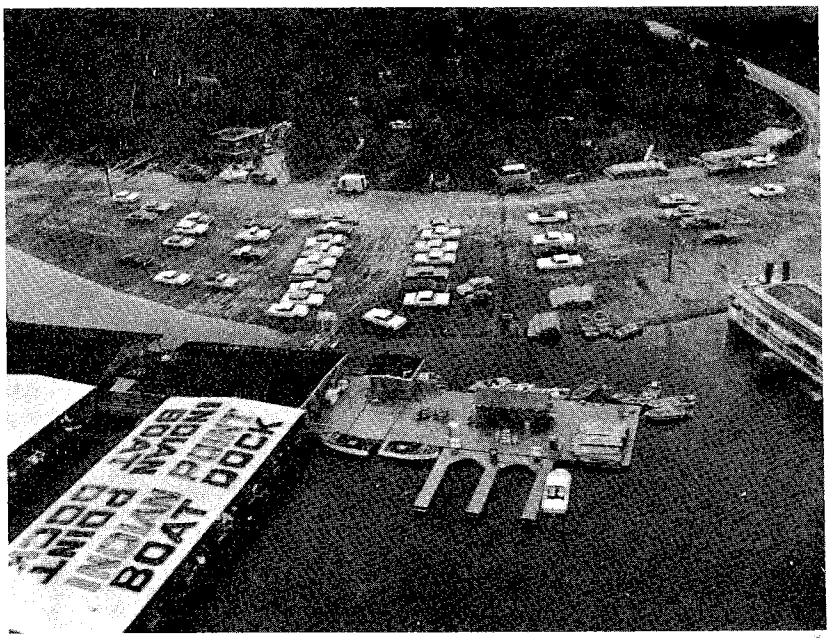
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Beaver Reservoir	0-50	17,000	11,220	Yes	No	1,687,900 (1967)
Buffalo River State Park	25-50		1,600	Yes	No	770,100 (1967)
Bull Shoals Reservoir	0-50	22,700	22,740	Yes	No	1,974,000 (1967)
Lake Taneycomo	0-25	1,700		No	Yes	Not Available
Roaring River State Park	0-25		3,028	Yes	No	1,290,500 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

TABLE ROCK RESERVOIR

1. Reservoir description. - Table Rock Reservoir is located in the scenic Ozark Mountain region of southwest Missouri and northwest Arkansas. The reservoir area is characterized by narrow ridges between deeply cut valleys that are well wooded with deciduous trees and shrubs interspersed with pine and cedar. The project area is comprised of 61,213 acres of land and water. This acreage includes some 3,459 acres of flowage easement land.

2. Recreational resources. - The Table Rock Reservoir area is encircled by a well developed network of Federal, State and County roads. The Corps is continuing development and maintenance of 19 public use areas containing some 1,513 acres. Four other areas adjacent to the reservoir are being developed; two by the U. S. Forest Service and two by State and local governments. There are 11 commercial boat docks in operation on the reservoir. The Missouri Conservation Commission has developed and is managing a fish hatchery on project lands below the dam. A continuous stocking program of rainbow trout is carried out in the water immediately downstream from the dam. The climate of the reservoir area is moderate with a mean temperature of 59° F. and an average annual rainfall of about 45 inches. Water quality is excellent and all types of water-oriented recreation activities are allowed. For a number of years, the general area has been a popular vacation and retirement area. Resort, motel, and business developments in the area are mostly oriented toward the tourist trade. Private subdivisions are continuing to be developed on lands adjoining Government ownership. Approximately 65 percent of the day use visitors came from within 250 miles of the project and about 47 percent of the campers traveled over 250 miles to the project last year. An estimated 9,199,600 persons reside within 250 road miles of the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Center Hill District: Nashville

Project Location:

State or States: Tennessee

County or Counties: De Kalb, Warren, White & Putnam

River or Rivers: Caney Fork

Major Highway Access Routes: I-40, U.S. 70, State 56

Project Purposes: Flood control & power

Year Impoundment Began: 1948

Pool Size:

Maximum:	Acre Feet	2,092,000
	Surface Acres	23,060
	Shoreline Miles	415
Average Recreation:	Surface Acres	18,220
	Shoreline Miles	370

Number of Access Areas: 46

Recreation Facilities:

Tent and Trailer Spaces:	159
Day Use Areas (Capacity in Recreation Days) 1/	54,000
Boat Launch Lanes:	47

Attendance (Recreation Days):	
1968	2,287,300
1967	1,988,000
1966	2,203,500
1965	2,010,000
1964	1,903,150

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	8.2	11.7	17.0	18.0	13.8	7.3	76.0

1/ Average weekend day of peak month of use.

CENTER HILL RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

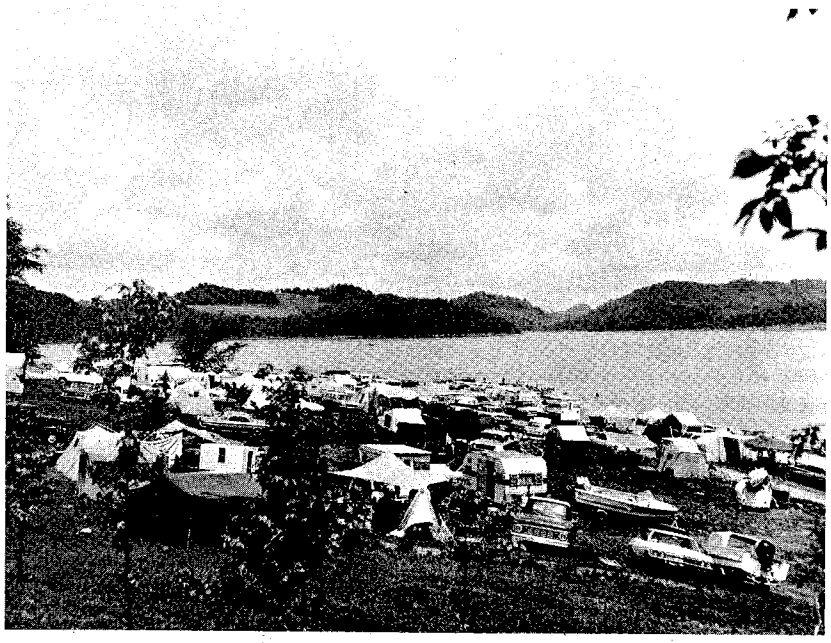
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Dale Hollow	25-50		8	Yes	Yes	1,323,100 (1967)
J. Percy Priest	25-50		5	Yes	No	Not Available
Old Hickory	25-50	32	52	Yes	Yes	4,977,000 (1967)
Woods Reservoir	25-50		8	Yes	Yes	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

CENTER HILL RESERVOIR

1. Reservoir description. - The project is located at Mile 26.6 on the Caney Fork River. The general topography of the reservoir shoreline is predominantly steep and rugged bluffs. Normally, the water level fluctuation is about seven feet during the recreation season, with the greatest storage occurring in April. The project area comprises 39,052 acres of land and water area of which 20,332 acres of land is available to recreation.

2. Recreational resources. - Access to the reservoir is principally by one State and two Federal highways. In addition, a limited access highway runs only a few miles from the lower end of the project. The climate of the project area is generally moderate with rainfall distributed throughout the year. The nearest large urban area is Nashville, Tennessee, which lies 55 miles from the project and has a population of approximately 300,000 people. About 90% of the visitation to the project originates from less than 100 miles. All types of water related recreational opportunities are allowed on the project. There are many homes and numerous cabins and motel units around the perimeter of the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Cheatham District: Nashville

Project Location:

State or States: Tennessee

County or Counties: Cheatham & Dickson

River or Rivers: Cumberland

Major Highway Access Routes: U.S. 70 & 41A, State 49, 12 & 47

Project Purposes: Navigation & power

Year Impoundment Began: 1954

Pool Size:

Maximum:	Acre Feet	104,000
	Surface Acres	7,450
	Shoreline Miles	185
Average Recreation:	Surface Acres	7,450
	Shoreline Miles	185

Number of Access Areas: 29

Recreation Facilities:

Tent and Trailer Spaces:	25
Day Use Areas (Capacity in Recreation Days) 1/	25,500
Boat Launch Lanes:	36

Attendance (Recreation Days):

1968	1,120,000
1967	1,107,800
1966	1,053,300
1965	1,004,500
1964	997,100

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	10.5	11.5	13.1	12.9	10.9	7.8	66.7

1/ Average weekend day of peak month of use.

CHEATHAM RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

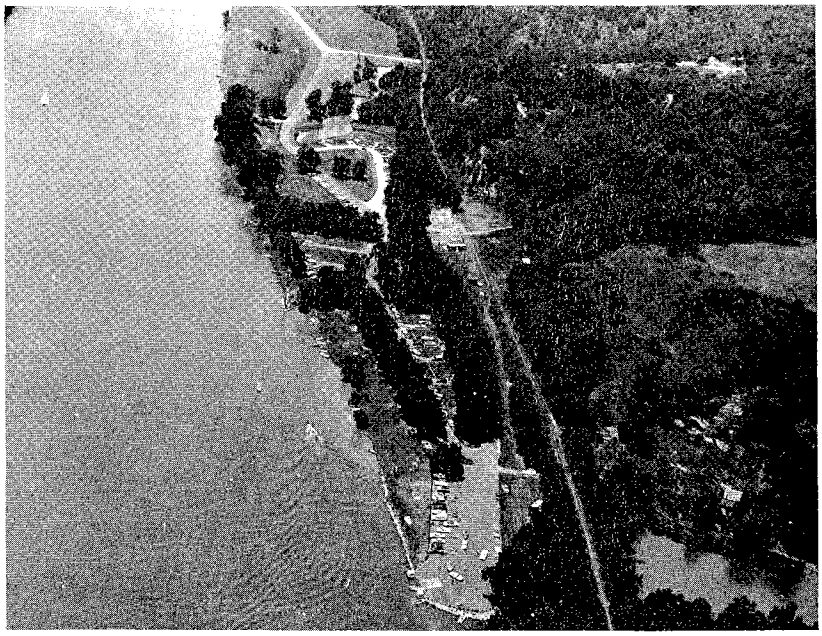
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
J. Percy Priest	0-25	24	11	Yes	No	Not Available
Kentucky Lake	25-50		75	Yes	Yes	Not Available
Lake Barkley	0-25	45	73	Yes	Yes	1,629,800 (1967)
Marrowbone Lake	0-25	60		Yes	Yes	11,750 (1967)
Old Hickory	0-25	20	81	Yes	Yes	4,977,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

CHEATHAM RESERVOIR

1. Reservoir description. - The project is located at Mile 148.7 of the Cumberland River which is 42 river miles downstream from Nashville, Tennessee. The topography of the reservoir area is generally flat to rolling. Normally, the fluctuation of the water level during the recreation season is about three feet. The project area comprises 10,797 acres of which 2,799 acres of land are available for recreation purposes.

2. Recreational resources. - Access to the reservoir is principally by three State and two Federal highways. The closest urban population area is Nashville, Tennessee, which is some 20 road miles from the project. The climate of the project area is generally moderate with rainfall distributed throughout the year. Almost 100% of the visitors to the project originate from within 100 miles of the project. Weekend cottages and subdivisions for primary dwellings are expanding rapidly. All types of water related activities are permitted on the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Dale Hollow** District: **Nashville**

Project Location:

State or States: **Tennessee & Kentucky**

County or Counties: **(Tenn) Clay, Pickett, Overton & Fentress**
(Ky) Clinton & Cumberland

River or Rivers: **Obey**

Major Highway Access Routes: **(Ky) State 61**
(Tenn) State 53, 52 & 42, U.S. 127

Project Purposes: **Flood control & power**

Year Impoundment Began: 1943

Pool Size:

Maximum:	Acre Feet	1,706,000
	Surface Acres	30,990
	Shoreline Miles	620
Average Recreation:	Surface Acres	27,700
	Shoreline Miles	590

Number of Access Areas: 48

Recreation Facilities:

Tent and Trailer Spaces:	122
Day Use Areas (Capacity in Recreation Days) 1/	84,000
Boat Launch Lanes:	105

Attendance (Recreation Days):

1968	1,543,100
1967	1,323,100
1966	1,348,100
1965	1,332,700
1964	1,328,900

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	8.0	11.6	16.5	22.3	13.7	9.4	81.5

1/ Average weekend day of peak month of use.

DALE HOLLOW RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Barren River	25-50		10,000	Yes	Yes	Not Available
Center Hill	25-50		23	Yes	Yes	1,988,000 (1967)
Lake Cumberland	0-25	7	43	Yes	Yes	4,437,100 (1967)
Old Hickory	25-50		10	Yes	Yes	4,977,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

DALE HOLLOW RESERVOIR

1. Reservoir description. - The project is located in Clay County, Tennessee, on the Obey River, 7.3 miles above its confluence with the Cumberland River at Celina, Tennessee. The reservoir lies in Clay, Fentress, Pickett and Overton County, Tennessee, and Cumberland and Clinton Counties, Kentucky. The surrounding area is characterized by very steep ridges and valley slopes covered in timberland and brush. Normally, the water level fluctuation is about 9 feet during the recreation season, with the greatest storage occurring in April. The project area comprises 52,482 acres of land and water area of which 27,700 acres of land is available to recreation.

2. Recreational resources. - Access to the reservoir is provided by paved roads around the entire circumference. Four State and one Federal highway provide the major access routes. The climate of the reservoir is characterized by warm summers and moderately cold winters. All types of water-oriented recreational opportunities are allowed. About 50% of the visitation originates from over 100 miles from the reservoir. There are some motel units throughout the area and many families have camping or weekend type cottages located around the reservoir shoreline. A State park is adjacent to the reservoir property boundary on the lower end. A photo representative of the project is shown below.

PERTINENT DATA

Project Name: Lake Cumberland District: Nashville

Project Location:

State or States: Kentucky

County or Counties: Wayne, Russell, Pulaski, Clinton, McCreary, Laurel & Whitley

River or Rivers: Cumberland

Major Highway Access Routes: U.S. 127 & 27, State 80 & 90

Project Purposes: Flood control & power

Year Impoundment Began: 1950

Pool Size:

Maximum:	Acre Feet	6,089,000
	Surface Acres	63,530
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	50,250
	Shoreline Miles	1,085

Number of Access Areas: 119

Recreation Facilities:

Tent and Trailer Spaces:	626
Day Use Areas (Capacity in Recreation Days) 1/	130,000
Boat Launch Lanes:	84

Attendance (Recreation Days):

1968	4,930,700
1967	4,437,100
1966	4,684,400
1965	3,840,100
1964	3,676,400

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.9	12.4	16.1	21.9	15.4	9.2	82.9

1/ Average weekend day of peak month of use.

LAKE CUMBERLAND

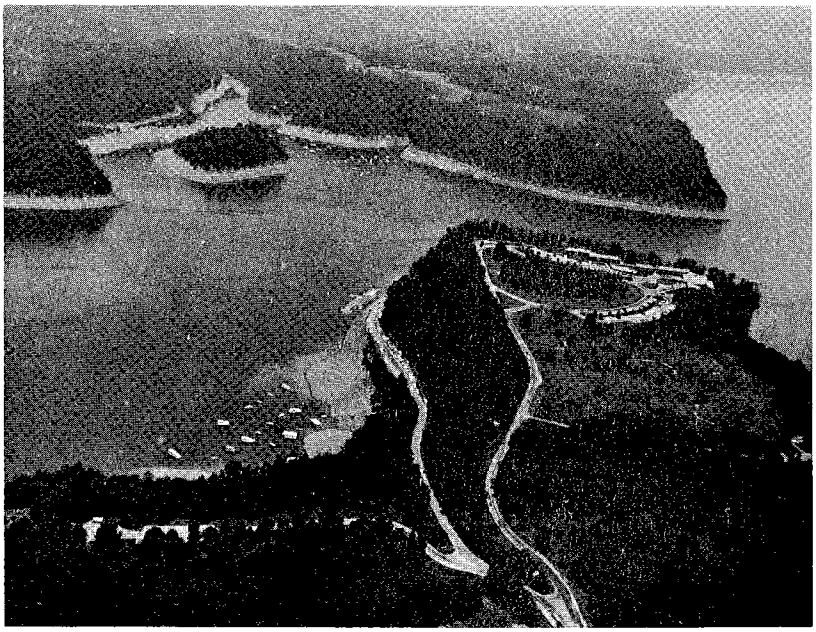
COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Dale Hollow	0-25	49	12	Yes	Yes	1,323,100 (1967)
Nerrington Lake	25-50		8	No	Yes	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

1. Reservoir description. - The project is located in Russell, Clinton, Wayne, Pulaski, McCreary, Laurel and Whitley Counties, Kentucky. The dam is located at Mile 460.9 on the Cumberland River. The project lies in two distinct topographic and geologic divisions; the upper part lies in the Cumberland Plateau and the lower part lies in the Mississippi Plateau. The topography of the reservoir shoreline is generally rugged. Normally, the fluctuation of the water level is around 20 feet during the recreation season, with the greatest storage occurring in April. The project area comprises 101,384 acres of land and water area of which 45,358 acres of land is available to recreation.

2. Recreational resources. - Access to the reservoir is provided by paved roads around its entire shoreline. Two State and two Federal highways provide the major access to the reservoir. The climate of the reservoir region is generally moderate with rainfall distributed throughout the year. The nearest major urban area is Lexington, Kentucky, which lies about 120 miles from the project. The 1960 population of Lexington was approximately 63,000 people. About 60% of the visitation to the reservoir originates from over 100 miles. All types of water related recreational opportunities are allowed on the project. There are many homes and week-end cottages around the reservoir as well as motels to serve the visiting public. Two State parks are located adjacent to the reservoir. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Old Hickory District: Nashville

Project Location:

State or States: Tennessee

County or Counties: Sumner, Davidson, Wilson, Trousdale & Smith

River or Rivers: Cumberland

Major Highway Access Routes: I-40, U.S. 31E, State 24, 45 & 109

Project Purposes: Power & navigation

Year Impoundment Began: 1956

Pool Size:

Maximum:	Acre Feet	545,000
	Surface Acres	22,500
	Shoreline Miles	440
Average Recreation:	Surface Acres	22,500
	Shoreline Miles	370

Number of Access Areas: 104

Recreation Facilities:

Tent and Trailer Spaces:	83
Day Use Areas (Capacity in Recreation Days) 1/	81,750
Boat Launch Lanes:	100

Attendance (Recreation Days):

1968	5,607,700
1967	4,964,700
1966	5,273,100
1965	4,902,500
1964	3,900,700

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.4	13.8	19.2	18.8	14.6	8.5	82.3

1/ Average weekend day of peak month of use.

OLD HICKORY RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Barren River	25-50		10,000	Yes	Yes	Not Available
Center Hill	0-25	21	43	Yes	Yes	1,988,000 (1967)
Cheatham	0-25	68		Yes	Yes	1,107,800 (1967)
Dale Hollow	25-50		12	Yes	Yes	1,323,100 (1967)
J. Percy Priest	0-25	35		Yes	Yes	Not Available
Lake Barkley	25-50		21	Yes	Yes	1,629,800 (1967)
Marrowbone Lake	0-25	60		Yes	Yes	11,750 (1967)

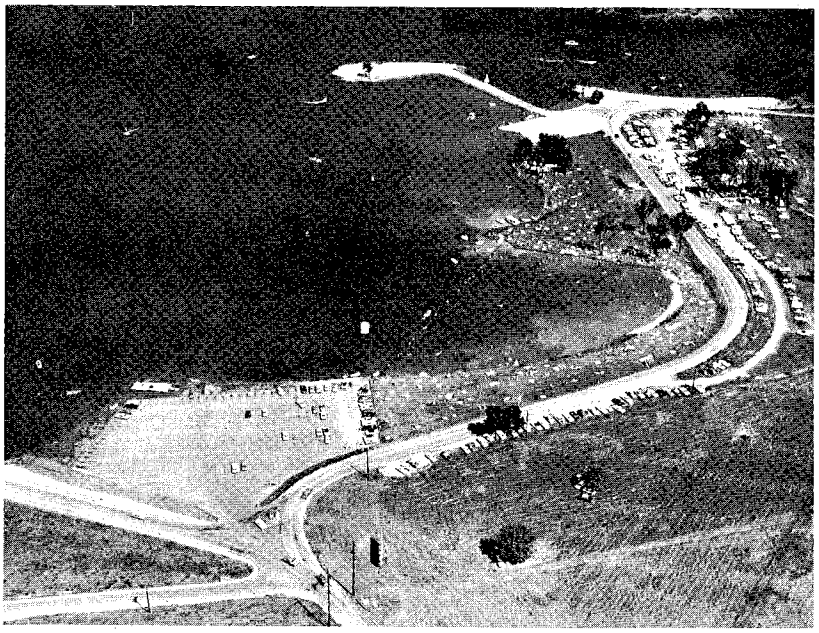
A-60

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

OLD HICKORY RESERVOIR

1. Reservoir description. - The project is located at Mile 216.2 of the Cumberland River which is approximately 15 miles from Nashville, Tennessee. The topography of the reservoir area is generally flat to rolling. Normally, the water level fluctuation during the recreation season is about two feet. The project area comprises 29,078 acres of land and water area of which 10,199 acres of land is available to recreation.

2. Recreational resources. - Access to the reservoir is principally by one State and one Federal highway which run parallel to the project and two State highways which cross the reservoir. In addition, a limited access interstate highway runs parallel to the project within 10 miles of the reservoir. The closest major urban area is Nashville, Tennessee, which has a population of approximately 300,000 people. The climate of the project area is generally moderate with rainfall distributed over the year. About 98% of the visitors to the project come from within 100 miles of the project. The lower end of the project shoreline is heavily urbanized with subdivisions. The small amount of publically owned land available along the shoreline is the limiting factor in further recreation development of the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Cottage Grove District: Portland

Project Location:

State or States: Oregon

County or Counties: Lane

River or Rivers: Coast Fork Willamette

Major Highway Access Routes: I-5

Project Purposes: Flood control, navigation & irrigation

Year Impoundment Began: 1942

Pool Size:

Maximum:	Acre Feet	33,000
	Surface Acres	1,251
	Shoreline Miles	9
Average Recreation:	Surface Acres	1,161
	Shoreline Miles	9

Number of Access Areas: 4

Recreation Facilities:

Tent and Trailer Spaces:	30
Day Use Areas (Capacity in Recreation Days) 1/	9,000
Boat Launch Lanes:	4

Attendance (Recreation Days):

1968	181,223
1967	235,100
1966	158,854
1965	197,700
1964	197,111

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	5.8	11.8	21.9	31.6	14.5	5.0	90.6

1/ Average weekend day of peak month of use.

COTTAGE GROVE RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Dorena Reservoir	0-25	1,900		Yes	No	192,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

COTTAGE GROVE RESERVOIR

1. Reservoir description. - The project is located in Lane County, Oregon, on the Coast Fork of the Willamette River 6 miles south of the town of Cottage Grove at about 800 feet elevation in the foothills of the Calapooya Mountains. Some farmland exists adjacent to the project, but the surrounding hills are mostly timbered with commercial Douglas fir, cedar, and hemlock. The shoreline is variable in topography from very flat to quite steep. The pool is drawn down each summer for conservation purposes starting early in August. By mid-September, the pool is 80 percent evacuated. Total project area is 1,570 acres with over 1,100 acres of water at full pool.

2. Recreational resources. - The entire perimeter of the reservoir is served by paved roads linking with Interstate Highway No. 5 four miles from the dam. The climate is characterized by mild, wet winters and warm, relatively dry summers with few seasonal extremes. A limited sport fishery is present for warm-water species of fish as well as trout. General recreation activities include picnicking, camping, boating, waterskiing, swimming, and sightseeing. Use of part of the westerly shoreline is limited because a road closely skirts the reservoir. Lodging accommodations are 6 miles or more from the project near the town of Cottage Grove and along Interstate Highway No. 5. The town of Cottage Grove and the Eugene-Springfield metropolitan area are the major population centers which utilize the project recreation resources. About 75 percent of recreation use originates within 25 miles of the project. A photo representative of the project is shown below.

PERTINENT DATA

Project Name: Detroit District: Portland

Project Location:

State or States: Oregon

County or Counties: Marion & Linn

River or Rivers: North Santiam

Major Highway Access Routes: State 22

Project Purposes: Navigation, irrigation, power & flood control

Year Impoundment Began: 1952

Pool Size:

Maximum:	Acre Feet	461,450
	Surface Acres	3,721
	Shoreline Miles	38
Average Recreation:	Surface Acres	3,708
	Shoreline Miles	36.5

Number of Access Areas: 11

Recreation Facilities:

Tent and Trailer Spaces:	394
Day Use Areas (Capacity in Recreation Days) 1/	8,000
Boat Launch Lanes:	7

Attendance (Recreation Days):

1968	597,520
1967	572,452
1966	561,295
1965	348,000
1964	359,093

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.9	10.9	18.0	22.1	20.3	10.5	89.7

1/ Average weekend day of peak month of use.

DETROIT RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Green Peter Reservoir	25-50		3,720	Yes	No	100,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

DETROIT RESERVOIR

1. Reservoir description. - The project is on the North Santiam River in Linn and Marion Counties about 45 miles east of Salem at about 1,600 feet elevation on the westerly slope of the Cascade Range and is mostly within the Willamette National Forest. Rugged timber producing slopes surround the project. Shoreline slopes are moderate to very steep, limiting development. Most years, the pool remains adequately full throughout the summer. The total project area is about 7,200 acres with 3,720 acres of water at full pool.

2. Recreational resources. - State Highway No. 22, a major east-west route, traverses the right shoreline. Graveled forest access roads serve most of the left shoreline. The climate is characterized by mild, wet winters and warm, relatively dry summers with few seasonal extremes. Trout and kokanee (land-locked salmon) provide an excellent fishery. General recreation activities include picnicking, camping, boating, waterskiing, swimming, and sightseeing. Limited areas are available for public use development because of steep shoreline topography. Lodging and restaurant accommodations are available in the town of Detroit six miles from the reservoir. The project receives significant numbers of recreationists originating from local, intermediate, and out-of-state areas. A photo representative of the project is shown below.

PERTINENT DATA

Project Name: Dorena District: Portland

Project Location:

State or States: Oregon

County or Counties: Lane

River or Rivers: Row

Major Highway Access Routes: I-5

Project Purposes: Flood control, navigation & irrigation

Year Impoundment Began: 1949

Pool Size:

Maximum:	Acre Feet	77,500
	Surface Acres	1,900
	Shoreline Miles	12
Average Recreation:	Surface Acres	1,750
	Shoreline Miles	12

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	53
Day Use Areas (Capacity in Recreation Days) 1/	2,000
Boat Launch Lanes:	2

Attendance (Recreation Days):

1968	192,017
1967	192,100
1966	181,086
1965	201,900
1964	195,383

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	9.0	12.2	15.2	19.9	12.6	7.1	76.0

1/ Average weekend day of peak month of use.

DORENA RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

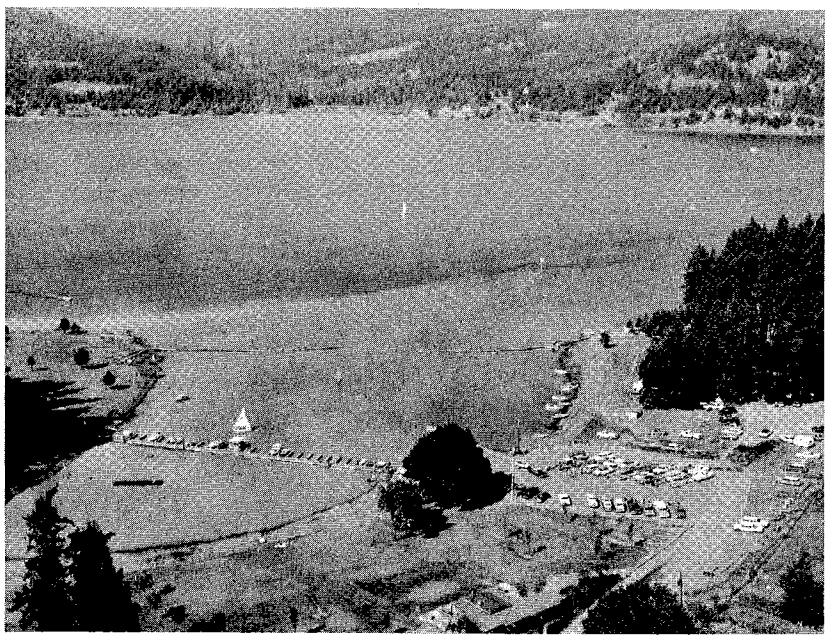
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Cottage Grove Reservoir	0-25	1,158		Yes	No	235,000 (1967)
Fall Creek Reservoir	25-50		1,880	Yes	No	218,000 (1967)
Fern Ridge Reservoir	25-50		9,000	Yes	Yes	1,169,000 (1967)
Hills Creek Reservoir	25-50		2,735	Yes	No	100,000 (1967)
Lookout Point-Dexter	25-50		5,385	Yes	Yes	318,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

DORENA RESERVOIR

1. Reservoir description. - The project is located on the Row River, a tributary of the Coast Fork of the Willamette River in Lane County, Oregon, about 6 miles east of the town of Cottage Grove at about 800 feet elevation in the foothills of the Calapooya Mountains. A small amount of grazing land lies adjacent to the project with the nearby hills used mostly for lumber production. The shoreline varies from flat and swampy to moderately steep. The pool is drawn down each summer for conservation starting about mid-July and is 80 percent evacuated by mid-September. The total project area is about 2,500 acres, including over 1,900 acres of water at full pool.

2. Recreational resources. - The entire perimeter of the reservoir is served by paved roads linked to Interstate Highway No. 5 about 5 miles west of the project. The climate is characterized by mild, wet winters and warm, relatively dry summers with few seasonal extremes. A good sport fishery exists which includes trout as well as warm-water species. Other activities include picnicking, camping, boating, waterskiing, swimming, and sightseeing. Recreational use potential is limited by roads and a railroad which closely border the project. The nearest lodging accommodations are 5 miles along Interstate Highway No. 5 near the town of Cottage Grove. The residents of Cottage Grove and the Eugene-Springfield metropolitan area provide the majority of project recreation use. About 75 percent of the use originates from within 30 miles from the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Fern Ridge** District: **Portland**

Project Location:

State or States: **Oregon**

County or Counties: **Lane**

River or Rivers: **Long Tom River & Coyote Creek**

Major Highway Access Routes: I-5, U.S. 99, State 126 & 36

Project Purposes: **Flood control, irrigation & navigation**

Year Impoundment Began: 1941

Pool Size:

Maximum:	Acre Feet	101,200
	Surface Acres	8,925
	Shoreline Miles	32
Average Recreation:	Surface Acres	8,925
	Shoreline Miles	32

Number of Access Areas: 12

Recreation Facilities:

Tent and Trailer Spaces:	20
Day Use Areas (Capacity in Recreation Days) 1/	18,000
Boat Launch Lanes:	9

Attendance (Recreation Days):

1968	1,284,656
1967	1,169,100
1966	820,346
1965	548,300
1964	575,632

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	6.4	10.5	18.3	24.4	18.2	6.9	84.7

1/ Average weekend day of peak month of use.

FERN RIDGE RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

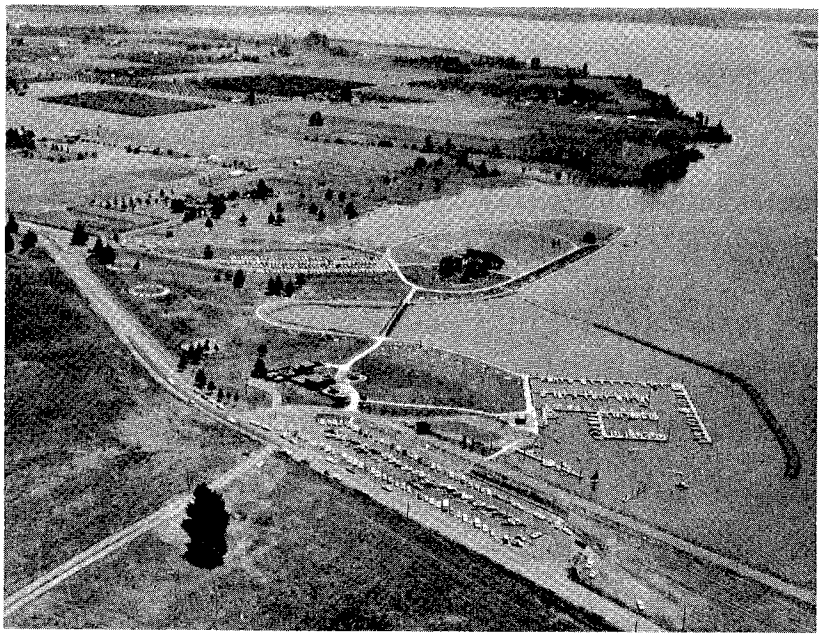
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Cottage Grove Reservoir	25-50		1,158	Yes	No	235,000 (1967)
Dorena Reservoir	25-50		1,900	Yes	No	192,000 (1967)
Fall Creek Reservoir	25-50		1,880	Yes	No	218,000 (1967)
Lookout Point-Dexter	25-50		5,385	Yes	Yes	318,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

FERN RIDGE RESERVOIR

1. Reservoir description. - The project is located on the Long Tom River and Coyote Creek in Lane County about 12 miles northwest of Eugene at about 370 feet elevation. The surrounding land is mostly very flat. The area adjacent to the project is both agricultural and residential with numerous groves of deciduous and coniferous trees. The shoreline is flat and swampy to moderate in slope. The full pool level generally has been maintained until early in October, but future authorized irrigation withdrawals will alter the operation schedule. Total project area is about 12,000 acres, including 9,000 acres of water at full pool.

2. Recreational resources. - Good roads, mostly paved, provide access to the usable portion of the shoreline. Ready access to Interstate Highway No. 5, U. S. Highway 99 and State 126 and 36 is provided. The climate is characterized by mild, wet winters and warm, relatively dry summers with few seasonal extremes. A fair warm-water fishery exists in the reservoir and a good combination trout and warm-water fishery is provided by downstream borrow pits and the Long Tom River within the project. General recreational activities include picnicking, camping, boating, waterskiing, swimming, and sightseeing. Inadequate project lands limit the public recreation use; however, additional land acquisition is proposed. Winds sometime limit boating activities on the reservoir. Lodging accommodations are available in Eugene and along highways within 10 miles of the project. Utilization of the project is mostly by the population of the Eugene-Springfield metropolitan area. About 90 percent of recreational use originates from within 25 miles from the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Hills Creek District: Portland

Project Location:

State or States: Oregon

County or Counties: Lane

River or Rivers: Middle Fork Willamette

Major Highway Access Routes: State 58

Project Purposes: Flood control, conservation & power

Year Impoundment Began: 1961

Pool Size:

Maximum:	Acre Feet	356,000
	Surface Acres	2,819
	Shoreline Miles	35
Average Recreation:	Surface Acres	2,819
	Shoreline Miles	35

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	58
Day Use Areas (Capacity in Recreation Days) 1/	1,500
Boat Launch Lanes:	5

Attendance (Recreation Days):	
1968	160,035
1967	99,600
1966	107,446
1965	95,500
1964	66,413

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	5.3	11.3	14.0	21.5	20.3	12.0	84.4

1/ Average weekend day of peak month of use.

HILLS CREEK RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

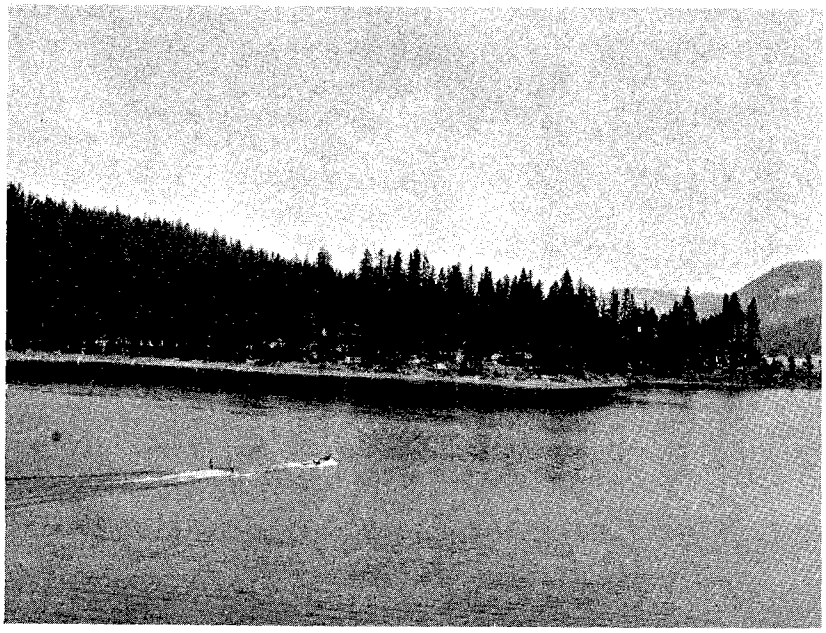
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Cresent Lake	25-50		3,672	Yes	No	200,000 (1967)
Dorena Reservoir	25-50		1,900	Yes	No	192,000 (1967)
Fall Creek Reservoir	25-50		1,880	Yes	No	218,000 (1967)
Lookout Point-Dexter	0-25	5,385		Yes	Yes	318,000 (1967)
Odell Lake	25-50		3,000	Yes	No	229,000 (1967)
Waldo Lake	25-50		6,000	Yes	No	45,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

HILLS CREEK RESERVOIR

1. Reservoir description. - The project is located on the Middle Fork of the Willamette River in Lane County and about 4 miles southeast of the town of Oakridge. The area is in the Willamette National Forest at about 1,500 feet elevation in the Cascade Range of mountains. The shoreline is mostly very steep and the area is heavily timbered with stands of Douglas fir, hemlock, and cedar. The pool usually remains near full throughout most of the summer, with a drawdown of about 10 to 20 feet by 1 September. The total project area is 5,400 acres with 2,700 acres of water at full pool.

2. Recreational resources. - A good paved road serves the west shoreline and a narrow gravel road serves the east shoreline of the reservoir. U. S. Highway No. 58 passes within 2 miles of the project. The climate is characterized by mild, wet winters and warm, relatively dry summers with few seasonal extremes. A good trout fishery is maintained at the reservoir. General recreation activities include picnicking, camping, boating, waterskiing, swimming, and sightseeing. Recreation development is generally limited to small sites due to steepness of the shoreline. Motel accommodations are available along Highway No. 58 at Oakridge. Public use is mostly local with about 75 percent originating from within 10 miles of the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Lookout Point** District: **Portland**

Project Location:

State or States: **Oregon**

County or Counties: **Lane**

River or Rivers: **Middle Fork Willamette**

Major Highway Access Routes: **State 58**

Project Purposes: **Flood control, power, navigation & irrigation**

Year Impoundment Began: 1954

Pool Size:

Maximum:	Acre Feet	483,500
	Surface Acres	5,385
	Shoreline Miles	44
Average Recreation:	Surface Acres	5,300
	Shoreline Miles	44

Number of Access Areas: 7

Recreation Facilities:

Tent and Trailer Spaces:	125
Day Use Areas (Capacity in Recreation Days) 1/	5,000
Boat Launch Lanes:	10

Attendance (Recreation Days):

1968	275,431
1967	317,700
1966	268,970
1965	436,900
1964	386,802

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	6.5	8.0	19.2	21.6	16.2	10.3	81.8

1/ Average weekend day of peak month of use.

LOOKOUT POINT RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

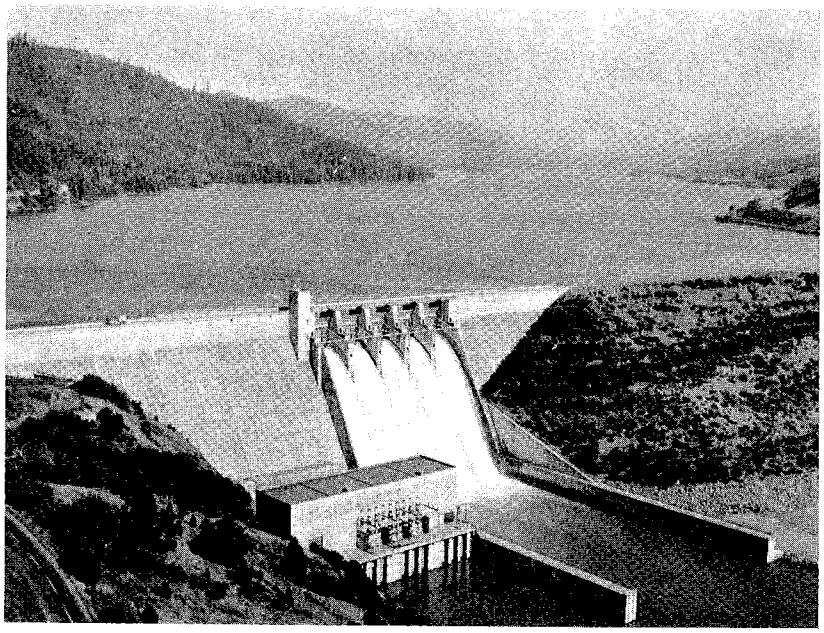
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Cottage Grove Reservoir	25-50		1,158	Yes	No	235,000 (1967)
Cougar Reservoir	25-50		1,280	Yes	No	113,000 (1967)
Cresent Lake	25-50		3,672	Yes	No	200,000 (1967)
Davis Lake	25-50		3,720	Yes	No	160,000 (1967)
Dorena Reservoir	0-25	1,900		Yes	No	192,000 (1967)
Fall Creek Reservoir	0-25	1,880		Yes	No	218,000 (1967)
Fern Ridge Reservoir	25-50		9,000	Yes	Yes	1,169,000 (1967)
Hills Creek Reservoir	0-25	2,735		Yes	No	100,000 (1967)
Odell Lake	25-50		3,000	Yes	No	229,000 (1967)
Waldo Lake	25-50		6,000	Yes	No	45,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

LOOKOUT POINT RESERVOIR
(LOOKOUT POINT & DEXTER RESERVOIRS)

1. Reservoir description. - The project is located on the Middle Fork of the Willamette River in Lane County, Oregon, on the westerly slope of the Cascade Range, partially within the Willamette National Forest at elevations ranging from about 700 to 1,000 feet. Little farmland is adjacent to the project which is surrounded mostly by commercially timbered slopes of fir, hemlock and cedar. The shoreline topography is moderate to steep. Lookout Point pool usually remains full or nearly full throughout the summer recreation season. Dexter Reregulating Reservoir immediately downstream remains nearly full, with a maximum 5 feet fluctuation throughout the year. Total project area is about 8,500 acres with about 5,385 acres of water at maximum pool.

2. Recreational resources. - Paved roads serve most of the reservoir shoreline. The exception is a gravel road traversing the right shoreline. State Highway No. 58 serves the entire left shoreline. The climate is characterized by mild, wet winters and warm, relatively dry summers with few seasonal extremes. A poor sport fishery exists as a result of a scrap fish problem. General recreation activities include picnicking, camping, boating, waterskiing, swimming, and sightseeing. Topography is good for recreational development at Dexter. Closely traversing roads and a railroad limit recreational development at both impoundments. Limited lodging and eating accommodations are located along Highway No. 58 near the project. About 70 percent of recreational use originates within 30 miles from the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: The Dalles District: Portland

Project Location:

State or States: Oregon & Washington

County or Counties: (Ore) Wasco & Sherman
(Wash) Klickitat

River or Rivers: Columbia

Major Highway Access Routes: I-80, U.S. 830, 197 & 97

Project Purposes: Navigation, power & irrigation

Year Impoundment Began: 1957

Pool Size:

Maximum:	Acre Feet	330,000
	Surface Acres	9,400
	Shoreline Miles	70
Average Recreation:	Surface Acres	9,400
	Shoreline Miles	70

Number of Access Areas: 10

Recreation Facilities:

Tent and Trailer Spaces:	54
Day Use Areas (Capacity in Recreation Days) 1/	3,000
Boat Launch Lanes:	7

Attendance (Recreation Days):

1968	398,698
1967	311,700
1966	228,000
1965	201,500
1964	234,195

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	9.4	10.4	15.2	19.8	18.3	9.6	82.7

1/ Average weekend day of peak month of use.

THE DALLES

COMPETING WATER-ORIENTED RECREATION AREAS

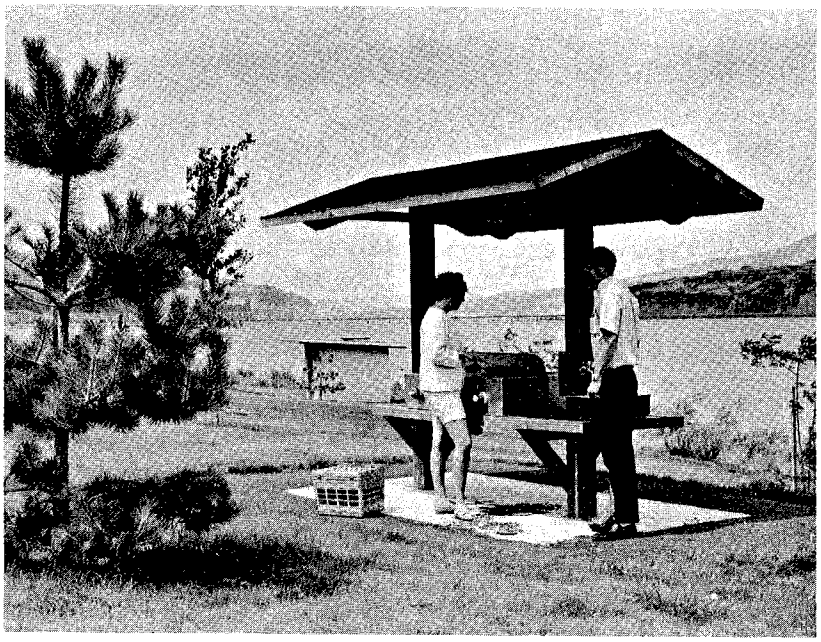
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Bonneville Reservoir	0-50	10,000	10,000	Yes	Yes	1,134,000 (1967)
Lake Umatilla (John Day Project)	0-50	25	30	Yes	No	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

THE DALLES DAM & LAKE CELILO

1. Reservoir description. - The project is a run-of-the-river power plant and navigation installation on the Columbia River in Wasco County, Oregon, and Klickitat County, Washington. It is about 200 miles from the Pacific Ocean, immediately east of The Dalles, Oregon, and 90 miles east of Portland, Oregon. The reservoir is surrounded by semi-arid hills, fruit orchards and grain fields. The shoreline is generally rugged with limited flat to moderate topography. The pool is generally stable throughout the year at about elevation 160 except for backwater effect during flood periods usually occurring in late spring. The total project area is 13,500 acres, including 9,400 acres of water, 2,300 acres fee owned land, and 1,800 acres of flowage easement.

2. Recreational resources. - Major highways and railroads traverse both shores of the reservoir, the most important highway being Interstate No. 80N along the Oregon shore. Other U. S. highways are 830, 197 and 97. The climate is semi-arid with temperatures commonly above 90° in the summer and subfreezing temperatures common in the winter. Temperature extremes recorded have been 115° and minus 30°. The generally fair sport fishery includes a variety of species such as salmon, steelhead, sturgeon, trout, and small-mouth bass. General recreation activities include picnicking, boating, waterskiing, swimming, and sightseeing. Closely skirting highways and railroads limit the recreational development potential. Lodging and restaurants are available along Interstate Highway No. 80N near the project. About 25 percent of the users originate from within 25 miles. Almost 50 percent of visitation occurs from over 100 miles, much of which is sightseeing by out-of-state visitors. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Black Butte Reservoir** District: **Sacramento**

Project Location:

State or States: **California**

County or Counties: **Tehama & Glenn**

River or Rivers: **Stony Creek**

Major Highway Access Routes: **State 32**

Project Purposes: **Flood control & irrigation**

Year Impoundment Began: 1963

Pool Size:

Maximum:	Acre Feet	160,000
	Surface Acres	4,560
	Shoreline Miles	40
Average Recreation:	Surface Acres	2,845
	Shoreline Miles	25

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	37
Day Use Areas (Capacity in Recreation Days) 1/	10,000
Boat Launch Lanes:	7

Attendance (Recreation Days):

1968	150,700
1967	179,700
1966	213,390
1965	155,820
1964	107,600

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	15.3	13.9	15.1	16.0	10.2	6.7	77.2

1/ Average weekend day of peak month of use.

BLACK BUTTE RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
East Park Reservoir	25-50		1,820	Yes	No	38,900 (1967)
Lake Pillsbury	25-50		2,003	Yes	Yes	Not Available
Letts Valley Reservoir	25-50		33	No	Yes	Not Available
Sacramento River	0-50	35	67	Yes	Yes	Not Available
Stony Gorge Reservoir	0-25	1,275		Yes	No	31,986 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

BLACK BUTTE RESERVOIR

1. Reservoir description. - Stony Creek Basin is located on the eastern slope of the Coast Range. Elevations in the basin range from about 400 feet at the damsite to about 7,000 feet in the higher reaches. The total land and water surface available for recreation is approximately 8,100 acres. The predominant soil of the area is a gravelly clay which supports native grasses and scattered oak trees. Gradient of the terrain in the general area is considered moderate.

2. Recreational resources. - Access to the project is provided by two two-lane paved roads, both from the same direction. The general reservoir area is characterized by hot, dry summers and moderate, wet winters. Normal annual rainfall in the area of the reservoir is about 17-20 inches of which about 90% occurs during the months of November through April. Temperatures in the basin have varied from a high of 120° F. and a low of 18° F.; mean summer temperature is 80° F. and the winter mean is 52° F. A warm water fishery is developing quite well. The water source is unpolluted and reservoir water quality is good, except during periods of high inflow when the reservoir becomes quite turbid. There are no commercial developments on the reservoir and there are no motels or other campgrounds nearby. The nearest population center, Orland, is 10 miles from the project -- in 1960 the population numbered 2,500 people. A photo representative of the project is shown below.

PERTINENT DATA

Project Name: **Englebright Reservoir** District: **Sacramento**

Project Location:

State or States: **California**

County or Counties: **Yuba & Nevada**

River or Rivers: **Yuba**

Major Highway Access Routes: **State 20**

Project Purposes: **Debris control**

Year Impoundment Began: 1941

Pool Size:

Maximum:	Acre Feet	70,000
	Surface Acres	815
	Shoreline Miles	24
Average Recreation:	Surface Acres	750
	Shoreline Miles	10

Number of Access Areas: 2

Recreation Facilities:

Tent and Trailer Spaces:	0
Day Use Areas (Capacity in Recreation Days) 1/	4,000
Boat Launch Lanes:	2

Attendance (Recreation Days):

1968	104,180
1967	108,500
1966	125,370
1965	131,970
1964	103,200

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.1	11.7	16.9	20.2	16.4	8.7	81.0

1/ Average weekend day of peak month of use.

ENGLEBRIGHT RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

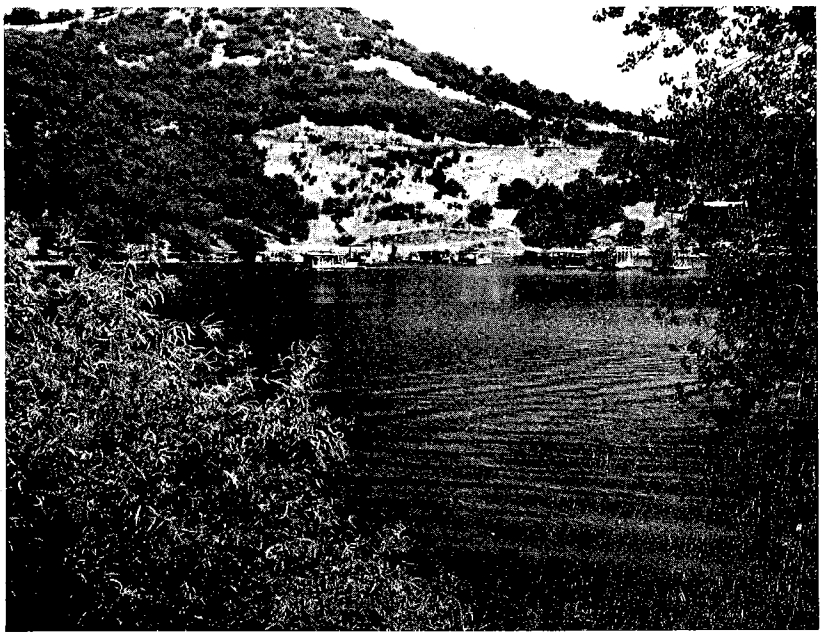
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Bullards Bar	0-25	515		Yes	Yes	Not Available
Camp Far West	0-25	2,680		Yes	No	Not Available
Feather River	25-50		25	Yes	Yes	Not Available
Folsom Lake	25-50		11,450	Yes	Yes	3,946,310 (1967)
French Meadows	25-50		1,418	No	Yes	Not Available
Lake Combie	25-50		360	Yes	No	Not Available
Lake Spaulding	25-50		674	Yes	Yes	Not Available
Lake Valley Reservoir	25-50		312	No	Yes	Not Available
Merle Collins Reservoir	0-25	975		Yes	No	Not Available
Rollins Reservoir	0-25	825		No	Yes	Not Available
Sacramento River	25-50		40	Yes	Yes	Not Available
Sly Creek Reservoir	25-50		562	No	Yes	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

ENGLEBRIGHT RESERVOIR

1. Reservoir description. - The Yuba River Basin is located in the foothills of the northern Sierra Nevada Mountains. Elevations in the basin range from about 500 feet at the damsite to about 5,000 feet in the higher reaches. The total land and water surface available for recreation is approximately 1,800 acres. Typical in the area is a clay loam soil covered with native grass and heavy stands of oak. Slopes in the area are considered steep.

2. Recreational resources. - Access to the project is provided by one two-lane access road which splits to provide both access points. Access to the upper reaches of the reservoir is by boat only. The general reservoir area is characterized by hot, dry summers and moderate, wet winters. Normal annual rainfall in the area of the reservoir is about 20 inches of which about 90% occurs during the months of November through April. The maximum and minimum average summer temperatures are 97° and 47°, respectively. The high recorded is 118°. There are no motels or other campgrounds nearby. The water source is unpolluted and the water quality is good. A marina offers rental boats, boat stalls and off-shore boat mooring. The nearest population center is Marysville which is 20 miles from the project -- in 1960 the population numbered 9,600 people. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Isabella Reservoir District: Sacramento

Project Location:

State or States: California

County or Counties: Kern

River or Rivers: Kern

Major Highway Access Routes: State 178

Project Purposes: Flood control & irrigation

Year Impoundment Began: 1954

Pool Size:

Maximum:	Acre Feet	570,000
	Surface Acres	11,400
	Shoreline Miles	38
Average Recreation:	Surface Acres	6,520
	Shoreline Miles	30

Number of Access Areas: 30

Recreation Facilities:

Tent and Trailer Spaces:	745
Day Use Areas (Capacity in Recreation Days) 1/	35,000
Boat Launch Lanes:	17

Attendance (Recreation Days):

1968	1,699,520
1967	1,604,900
1966	1,429,890
1965	1,312,530
1964	1,246,600

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	9.2	15.9	12.7	18.1	13.9	11.3	81.1

1/ Average weekend day of peak month of use.

ISABELLA RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

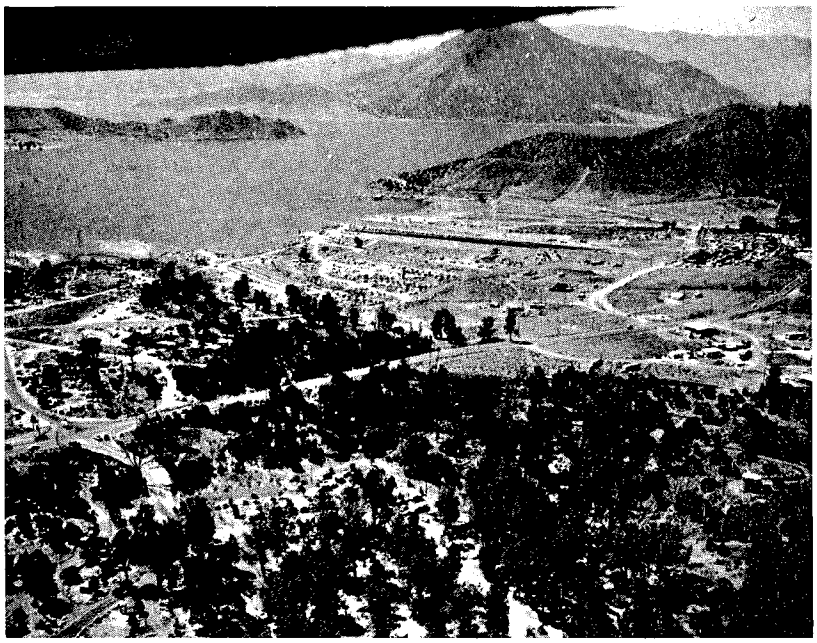
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Lake Ming	25-50		200	No	Yes	451,700 (1963)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

ISABELLA RESERVOIR

1. Reservoir description. - The Kern River Basin is located on the western slopes of the Sierra Nevada Mountains. Elevations in the basin range from about 2,500 feet at the damsite to 6,500 feet in the higher reaches. The total land and water surface available for recreation is approximately 15,200 acres. Soil in this area generally consists of decomposed granite covered with native grass and scattered trees and brush. Slopes in the area are considered moderate.

2. Recreational resources. - Access to the project is provided by two two-lane paved roads. The reservoir has paved roads around its entire circumference. The general reservoir area is characterized by warm, dry summers and moderate winters. Normal annual rainfall in the area of the reservoir is about 10 inches of which about 90% occurs during the months of November through April. Temperatures have varied from 20° in winter to 110° in summer with an annual mean temperature of about 65°. Both warm and cold water species of fish are present and fishing is very good to excellent. There are motels and other campgrounds nearby. The water source is unpolluted and the water quality is good. A marina offers rental boats, boat stalls and off-shore boat mooring. The nearest population center is Bakersfield which is 45 miles from the project -- in 1960 the population numbered 56,800 people. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **New Hogan Reservoir** District: **Sacramento**

Project Location:

State or States: **California**

County or Counties: **Calaveras**

River or Rivers: **Calaveras**

Major Highway Access Routes: **State 12**

Project Purposes: **Flood control & irrigation**

Year Impoundment Began: 1963

Pool Size:

Maximum:	Acre Feet	325,000
	Surface Acres	4,410
	Shoreline Miles	50
Average Recreation:	Surface Acres	2,650
	Shoreline Miles	42

Number of Access Areas: 3

Recreation Facilities:

Tent and Trailer Spaces:	25
Day Use Areas (Capacity in Recreation Days) 1/	10,000
Boat Launch Lanes:	3

Attendance (Recreation Days):	
1968	348,860
1967	300,500
1966	344,210
1965	248,880
1964	103,400

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	10.7	13.8	14.4	16.4	12.3	7.8	75.4

1/ Average weekend day of peak month of use.

NEW HOGAN RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

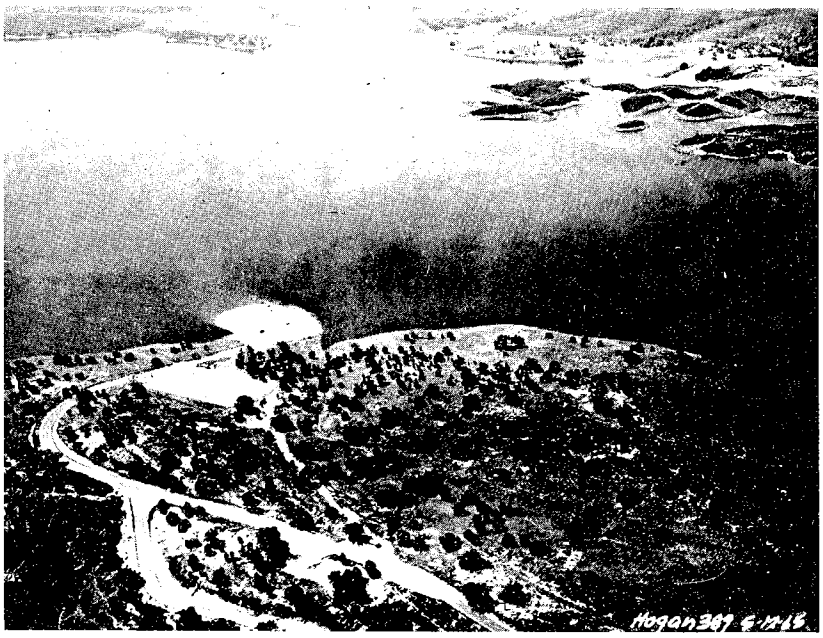
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Beardsley Reservoir	25-50		650	No	Yes	Not Available
Commanche Reservoir	0-25	7,699		Yes	No	Not Available
Don Pedro Reservoir	25-50		3,100	Yes	No	Not Available
Lyons Reservoir	25-50		170	Yes	No	Not Available
Melones Reservoir	25-50		1,843	Yes	No	Not Available
Modesto Reservoir	25-50		3,800	Yes	Yes	Not Available
Pardee Reservoir	0-25	2,257		Yes	No	20,000 (1959)
Phoenix Reservoir	25-50		50	Yes	No	Not Available
Salt Spring Valley Reservoir	25-50		920	Yes	No	Not Available
San Joaquin Delta Waterways	25-50		100	Yes	Yes	Not Available
San Joaquin River	25-50		6	Yes	No	Not Available
Tulloch Reservoir	25-50		1,260	Yes	Yes	Not Available
Woodward Reservoir	25-50		2,427	Yes	No	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

NEW HOGAN RESERVOIR

1. Reservoir description. - The Calaveras River Basin is located in the central portion of the central valley on the western slope of the Sierra Nevada Mountains. Elevations in the basin range from about 550 feet at the damsite to about 6,000 feet in the higher reaches. The total land and water surface available for recreation is approximately 6,100 acres. The soil is generally gravelly and covered with native grass and scattered oak. Slopes in the area are considered moderate.

2. Recreational resources. - Access to the project is provided by three two-lane paved roads. The general reservoir area is characterized by long, hot, dry summers and short, mild, wet winters. Normal annual rainfall in the area of the reservoir is about 27 inches of which about 90% occurs during the months of November through April. Temperatures normally range from a winter low of about 30° to a summer high of about 105°. A very good warm water fishery has been established in the reservoir. There are no motels or campgrounds nearby. The water source is unpolluted and the water quality is good. A marina offers rental boats, boat stalls and off-shore boat mooring. The nearest population center is Stockton which is 37 miles from the project -- in 1960 the population numbered 86,300 people. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Pine Flat Reservoir District: Sacramento

Project Location:

State or States: California

County or Counties: Fresno

River or Rivers: Kings

Major Highway Access Routes: State 180

Project Purposes: Flood control & irrigation

Year Impoundment Began: 1954

Pool Size:

Maximum:	Acre Feet	1,000,000
	Surface Acres	6,000
	Shoreline Miles	67
Average Recreation:	Surface Acres	3,450
	Shoreline Miles	53

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	194
Day Use Areas (Capacity in Recreation Days) 1/	15,000
Boat Launch Lanes:	11

Attendance (Recreation Days):

1968	528,990
1967	592,200
1966	589,240
1965	491,050
1964	663,200

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	11.0	14.0	12.0	15.6	12.7	8.6	73.9

1/ Average weekend day of peak month of use.

PINE FLAT RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

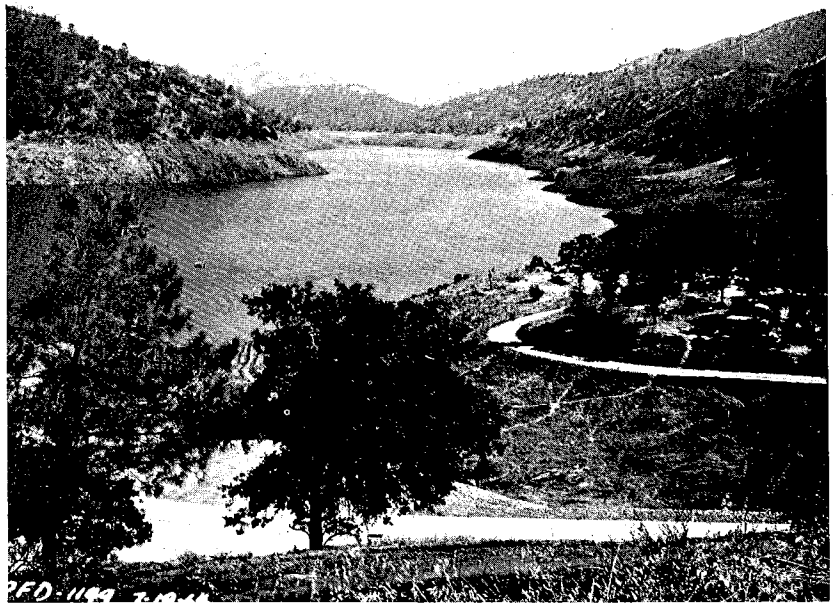
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Bass Lake	25-50		1,165	Yes	No	Not Available
Courtright Reservoir	0-25	1,621		No	Yes	Not Available
Florence Lake	25-50		962	Yes	Yes	Not Available
Hume Lake	25-50		85	Yes	Yes	Not Available
Huntington Lake	25-50		1,441	Yes	Yes	Not Available
Kerckhoff Reservoir	0-25	160		No	Yes	Not Available
Kings River	0-50	5	10	Yes	No	Not Available
Lake Edison	25-50		1,890	Yes	No	Not Available
Mammoth Pool Reservoir	25-50		1,000	Yes	No	Not Available
Millerton Reservoir	0-25	4,900		Yes	Yes	720,000 (1967)
Redinger Reservoir	0-25	1,165		No	Yes	Not Available
Shaver Lake	0-25	2,177		Yes	Yes	Not Available
Terminus Reservoir	25-50		1,945	Yes	Yes	215,410 (1967)
Wishon Reservoir	0-25	1,000		Yes	Yes	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

PINE FLAT RESERVOIR

1. Reservoir description. - The Kings River Basin is located on the west slope of the southern Sierra Nevada Mountains. Elevations in the basin range from about 500 feet at the damsite to 14,000 feet in the higher reaches. The total land and water surface available for recreation is approximately 13,000 acres. Soil in this area generally consists of decomposed granite covered with brush and scattered deciduous trees. Slopes in the area are considered steep.

2. Recreational resources. - Access to the project is provided by three two-lane paved roads. The general reservoir area is characterized by hot, dry summers and mild, wet winters. Normal annual rainfall in the area of the reservoir is about 18 inches of which about 90% occurs during the months of November through April. Temperatures have varied from 18° in winter to a high of 114° in summer with an annual mean temperature of 68°. Both warm and cold water species of fish are present and fishing is considered fair. There are motels and other campgrounds nearby. The water source is unpolluted and the water quality is good. Two marinas offer rental boats, boat stalls and off-shore boat mooring. The nearest population center is Fresno which is 32 miles from the project -- in 1960 the population numbered 133,900 people. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Success Reservoir** District: **Sacramento**

Project Location:

State or States: **California**

County or Counties: **Tulare**

River or Rivers: **Tule**

Major Highway Access Routes: **State 190**

Project Purposes: **Flood control & irrigation**

Year Impoundment Began: **1961**

Pool Size:

Maximum:	Acre Feet	80,000
	Surface Acres	2,450
	Shoreline Miles	30
Average Recreation:	Surface Acres	600
	Shoreline Miles	7

Number of Access Areas: 6

Recreation Facilities:

Tent and Trailer Spaces:	50
Day Use Areas (Capacity in Recreation Days) 1/	12,000
Boat Launch Lanes:	7

Attendance (Recreation Days):	
1968	486,270
1967	401,000
1966	565,990
1965	568,050
1964	603,200

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	12.4	13.5	13.6	13.6	11.0	8.3	72.4

1/ Average weekend day of peak month of use.

SUCCESS RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

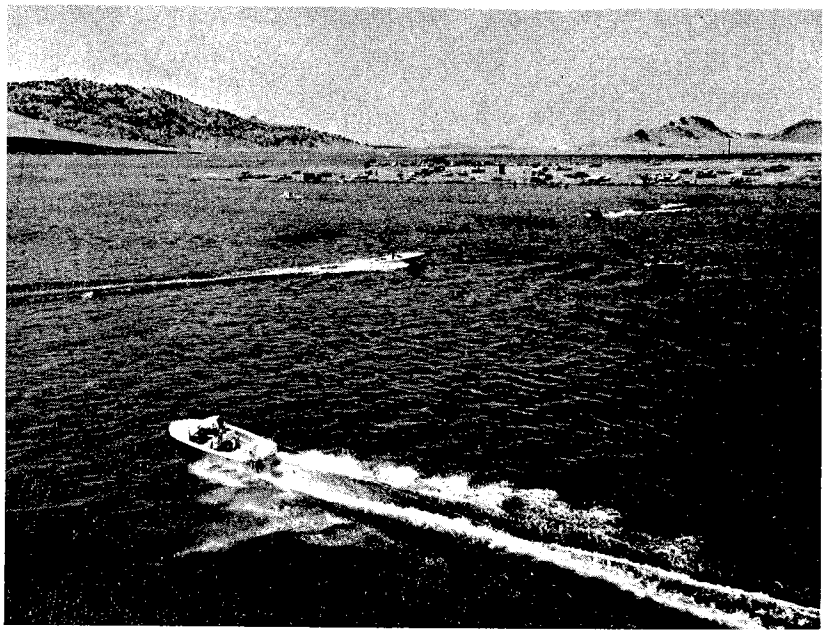
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Bravo Lake	25-50		150	Yes	No	Not Available
Lake Woolomes	25-50		300	No	Yes	150,000 (1967)
Terminus	25-50		1,945	Yes	Yes	215,410 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

SUCCESS RESERVOIR

1. Reservoir description. - The Tule River Basin is located at the western edge of the Sierra Nevada foothills in the southern portion of the central valley. Elevations in the basin range from about 550 feet at the damsite to about 10,000 feet in the higher reaches. The total land and water surface available for recreation is approximately 4,100 acres. The area is typified by sandy loam soil covered with native grass and scattered brush. Slopes in the area are considered moderate.

2. Recreational resources. - Access to the project is provided by one two-lane paved road. The general reservoir area is characterized by hot, dry summers and mild, wet winters. Normal annual rainfall in the area of the reservoir is about 10 inches of which about 90% occurs during the months of November through April. The average annual temperature is about 64° and the temperature extremes are 114° and 18°. A good warm water fishery is continuing at this reservoir. There are no motel or other campgrounds nearby. The water source is unpolluted and the water quality is good. A marina offers rental boats, boat stalls and off-shore boat mooring. The nearest population center is Porterville which is 5 miles from the project -- in 1960 the population numbered 8,000 people. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Terminus Reservoir** District: **Sacramento**

Project Location:

State or States: **California**

County or Counties: **Tulare**

River or Rivers: **Kaweah**

Major Highway Access Routes: **State 198**

Project Purposes: **Flood control & irrigation**

Year Impoundment Began: 1962

Pool Size:

Maximum:	Acre Feet	150,000
	Surface Acres	1,945
	Shoreline Miles	22
Average Recreation:	Surface Acres	570
	Shoreline Miles	8

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	0
Day Use Areas (Capacity in Recreation Days) 1/	10,000
Boat Launch Lanes:	6

Attendance (Recreation Days):	
1968	328,870
1967	215,400
1966	396,600
1965	455,370
1964	368,400

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	10.7	14.5	13.6	14.1	13.5	8.7	75.1

1/ Average weekend day of peak month of use.

TERMINUS RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

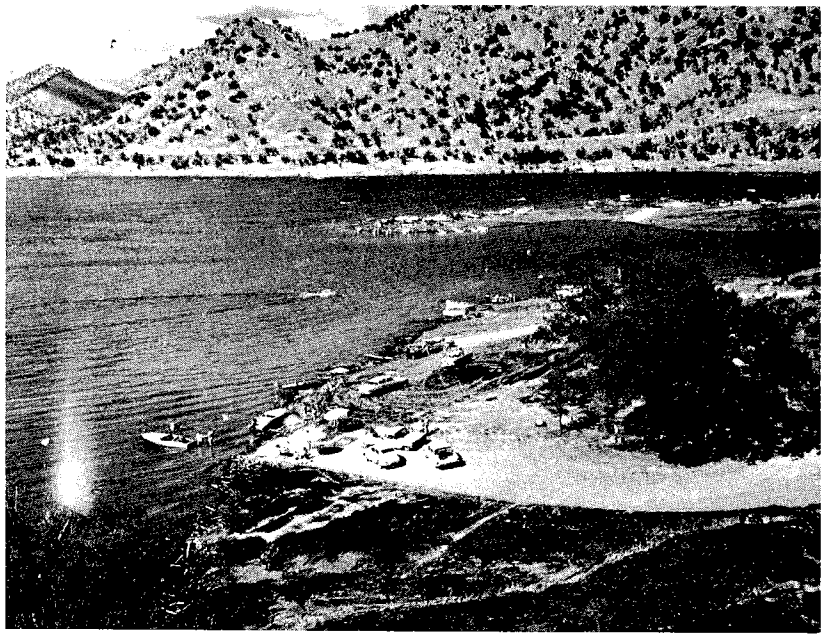
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Bravo Lake	0-25	150		Yes	No	Not Available
Peoples Weir	25-50		40	Yes	No	Not Available
Pine Flat Reservoir	25-50		6,000	Yes	Yes	592,270 (1967)
Success Reservoir	25-50		2,450	Yes	Yes	400,960 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

TERMINUS RESERVOIR

1. Reservoir description. - The Kaweah River Basin is located on the westerly slope of the Sierra Nevada Mountains. Elevations in the basin range from about 510 feet at the damsite to over 12,500 feet in the higher reaches. The total land and water surface available for recreation is approximately 2,600 acres. The area is typified by sandy loam soil covered with native grass and scattered brush. Slopes in the area are considered moderate.

2. Recreational resources. - Access to the project is provided by one two-lane paved road. The general reservoir area is characterized by hot, dry summers and cool, wet winters. Normal annual rainfall in the area of the reservoir is about 18 inches of which about 90% occurs during the months of November through April. Temperatures normally range from a winter low of about 30° to a summer high of 110°. A warm water fishery at this reservoir is rated as fair. There are several motels within 6 miles of the reservoir, however, there are no other campgrounds in the area. The water source is unpolluted and the water quality is good. A marina offers rental boats, boat stalls and off-shore boat mooring. The nearest population center is Visalia which is 20 miles from the project -- in 1960 the population numbered 15,800 people. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Clark Hill District: Savannah

Project Location:

State or States: Georgia & South Carolina

County or Counties: (Ga) Lincoln, Wilkes, McDuffie & Columbia
(SC) McCormick

River or Rivers: Savannah

Major Highway Access Routes: (Ga) U.S. 378, 221 & 78, State 150, 79, 47, 43 & 23

Project Purposes: Flood control, navigation, power & recreation

Year Impoundment Began: 1951

Pool Size:

Maximum:	Acre Feet	2,900,000
	Surface Acres	78,000
	Shoreline Miles	1,200
Average Recreation:	Surface Acres	71,533
	Shoreline Miles	1,060

Number of Access Areas: 71

Recreation Facilities:

Tent and Trailer Spaces:	502
Day Use Areas (Capacity in Recreation Days) 1/	13,137
Boat Launch Lanes:	52

Attendance (Recreation Days):

1968	3,368,200
1967	3,771,100
1966	4,696,585
1965	4,264,150
1964	3,723,425

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	11.0	11.3	15.6	19.6	13.9	9.1	80.5

1/ Average weekend day of peak month of use.

CLARK HILL RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

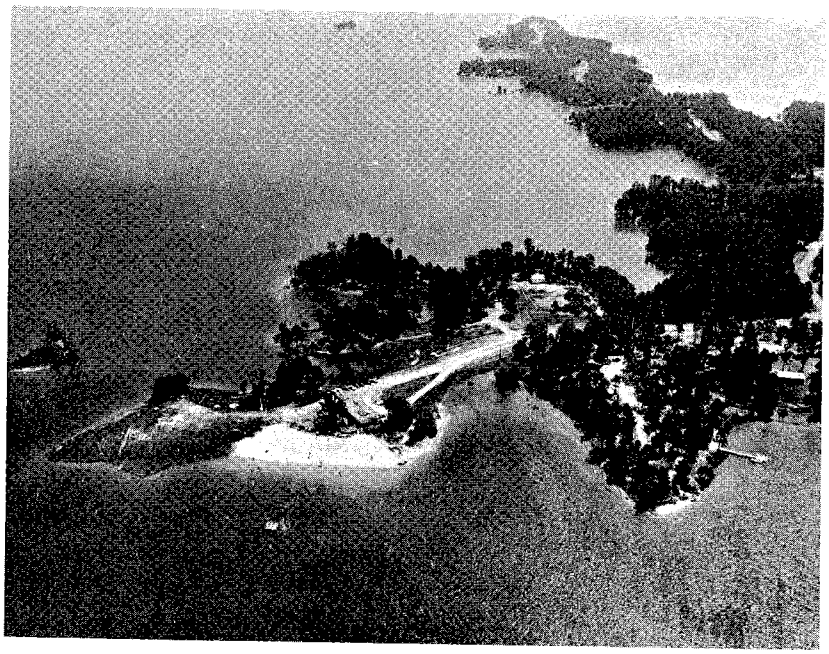
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Hartwell Project	25-50		55,950	Yes	No	3,322,600 (1967)
New Savannah Bluff Lock & Dam	25-50		1,300	Yes	No	272,900 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

CLARK HILL RESERVOIR

1. Reservoir description. - The Clark Hill Project is located on the Savannah River and lies within the boundaries of Georgia and South Carolina. The terrain surrounding the lake rises to a maximum elevation of 500 feet above sea level. The topography is typical of the Eastern Piedmont - flat-topped ridges rising between stream valleys. The majority of the reservoir land area is well stocked with second growth timber, mostly pine, with a variety of native hardwoods. Normally, the water level of the reservoir is fairly stable during the recreation season, but is subject to gradual decrease in late summer and fall. The maximum water storage occurs in May. The project area is comprised of 155,886 acres of land and water of which approximately 155,686 acres of land and water are available for some form of recreational use.

2. Recreational resources. - Access to the reservoir is provided by approximately 750 roads ending at the water's edge. The reservoir area is reached by three major U. S. routes and five major State routes. In general, the climate of the area may be described as one of short, mild winters and long, hot summers. The yearly rainfall average is 45 inches and is rather evenly distributed. The reservoir is well stocked with a variety of sport fish which attract a large number of anglers yearly. The land portion of the reservoir abounds with small upland game species and the deer and turkey population has increased to the point where managed hunts are now allowed in the Wildlife Management Areas. There are over 50 rental units located within a one-mile radius of project lands. There are numerous subdivisions located near the reservoir which consist of mostly second homes, but a few year-round residences. The nearest population center is the Augusta, Georgia, Metropolitan Area (estimated 260,000), approximately 25 miles from the reservoir. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Hartwell District: Savannah

Project Location:

State or States: Georgia & South Carolina

County or Counties: (Ga) Stephens, Franklin & Hart
(SC) Oconee & Anderson

River or Rivers: Savannah

Major Highway Access Routes: (SC) I-85, U.S. 178, 123, 76 & 29, State 28 & 24

Project Purposes: Flood control, navigation & power

Year Impoundment Began: 1961

Pool Size:

Maximum:	Acre Feet	2,843,000
	Surface Acres	63,000
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	55,950
	Shoreline Miles	962

Number of Access Areas: 68

Recreation Facilities:

Tent and Trailer Spaces:	183
Day Use Areas (Capacity in Recreation Days) 1/	11,961
Boat Launch Lanes:	58

Attendance (Recreation Days):

1968	4,227,300
1967	3,322,600
1966	4,230,700
1965	3,092,700
1964	1,550,000

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	10.1	12.1	14.5	17.2	11.4	8.1	73.4

1/ Average weekend day of peak month of use.

HARTWELL RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Clark Hill Reservoir	25-50		71,533	Yes	Yes	3,838,600 (1967)
Lake Lanier	25-50		39,944	Yes	Yes	8,803,300 (1966)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

HARTWELL RESERVOIR

1. Reservoir description. - Hartwell Reservoir is located on the Savannah River, Georgia and South Carolina, approximately 89 miles upstream from Augusta, Georgia, and approximately 30 miles above the headwaters of the Clark Hill Reservoir. The surrounding area is generally steep with slopes ranging from 5 percent to over 25 percent in the upper reaches of the reservoir. The lower portion of the reservoir lies within the Piedmont Plateau while the upper portion extends into the Blue Ridge Mountain area. The timber stands are generally pine-hardwood occurring in varying mixtures. The reservoir pool elevation fluctuates from a high of 665 to a low of 625 (m.s.l.). Maximum water storage usually occurs during the months of May and June. The project area comprises 76,780 acres of which approximately 76,580 acres are available for recreational use.

2. Recreational resources. - Access to the reservoir is good with approximately 700 of the 912 miles of shoreline accessible by roads, the majority of which are paved. The reservoir area is reached by one interstate route, four major U. S. routes, and two major State routes. The climate of the Hartwell Reservoir area can generally be described as temperate and conducive to outdoor-based recreational activities for approximately 8 months of the year. The reservoir area has an average annual rainfall of approximately 48 inches. Hartwell Reservoir supports a large sport fishery. All water-oriented recreation activities are allowed. There are almost 200 rental units located within one mile of the reservoir. There are a large number of subdivisions located on private property adjacent to Government property. The majority of homes in these subdivisions are year-round residences. The nearest population center is the Anderson Metropolitan Area (estimated 75,000), approximately 10 miles from the reservoir. A photo representative of the project is shown below.

PERTINENT DATA

Project Name: Canton District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: Blaine & Dewey

River or Rivers: North Canadian

Major Highway Access Routes: State 51, 58 & 58A

Project Purposes: Flood control, irrigation & water supply

Year Impoundment Began: 1948

Pool Size:

Maximum:	Acre Feet	386,000
	Surface Acres	15,800
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	7,800
	Shoreline Miles	45

Number of Access Areas: 6

Recreation Facilities:

Tent and Trailer Spaces:	75
Day Use Areas (Capacity in Recreation Days) 1/	10,640
Boat Launch Lanes:	10

Attendance (Recreation Days):	
1968	1,044,500
1967	872,400
1966	935,000
1965	782,900
1964	790,800

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	8.6	13.1	16.3	17.9	14.0	7.3	77.2

1/ Average weekend day of peak month of use.

CANTON RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Great Salt Plains	25-50		9,300	Yes	No	567,800 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

PERTINENT DATA

Project Name: Denison District: Tulsa

Project Location:

State or States: Oklahoma & Texas

County or Counties: (Okla) Love, Marshall, Bryan & Johnston
(Tex) Grayson & Cooke

River or Rivers: Red & Washita

Major Highway Access Routes: (Okla) U.S. 69, 70 & 75, State 199, 99, 299, 32 & 22
(Tex) U.S. 77 & 82, State 10 & 84

Project Purposes: Flood control, power, water supply & navigation

Year Impoundment Began: 1944

Pool Size:

Maximum:	Acre Feet	5,382,000
	Surface Acres	143,300
	Shoreline Miles	1,100
Average Recreation:	Surface Acres	89,000
	Shoreline Miles	580

Number of Access Areas: 52

Recreation Facilities:

Tent and Trailer Spaces:	1,430
Day Use Areas (Capacity in Recreation Days) 1/	72,200
Boat Launch Lanes:	82

Attendance (Recreation Days):

1968	8,793,600
1967	8,790,800
1966	8,287,400
1965	8,905,400
1964	8,197,400

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.7	10.0	15.2	16.7	13.5	9.7	72.8

1/ Average weekend day of peak month of use.

DENISON RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

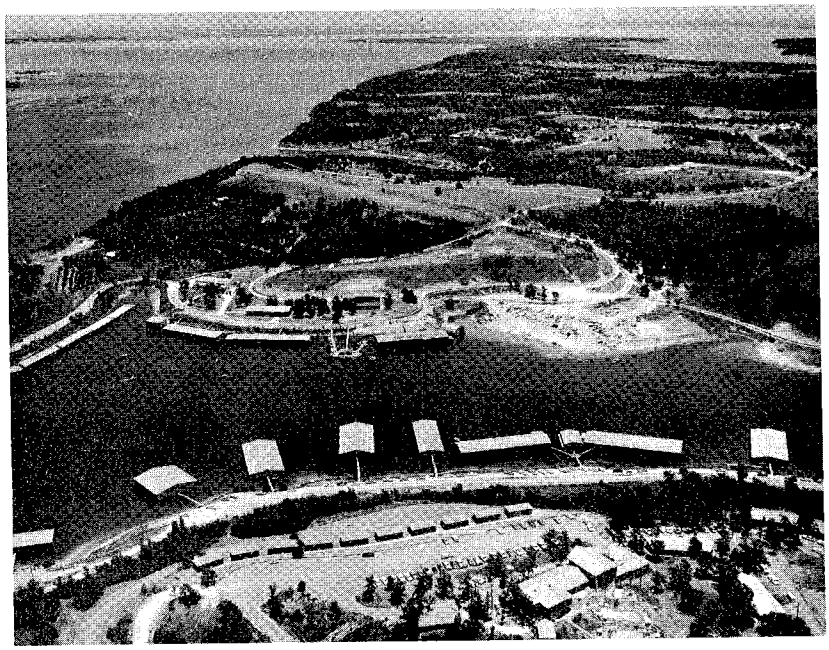
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Arbuckle Reservoir	25-50	Not Available		Not Available		Not Available
Atoka Reservoir	25-50	Not Available		Not Available		Not Available
Lake Murray	25-50	Not Available		Not Available		Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

DENISON RESERVOIR

1. Reservoir description. - The project area is located in the Red River Valley in Bryan County, Oklahoma, and Grayson County, Texas, at about 500 feet elevation. The general topography of the area surrounding the reservoir is rolling and hilly with occasional escarpments and benches. In many places, the valley slopes are steep, resulting in rugged cliffs, hills, and promontories along the shoreline. The Government-owned land area above the top of the power pool is 102,368 acres, making a total area of 195,448 acres for the reservoir.

2. Recreational resources. - Access to the project area is furnished by U. S. Highway Nos. 69, 70, 75, 77, and 82; Oklahoma State Highway Nos. 22, 32, 99, 199, and 299; and Texas State Highway Nos. 10 and 84. Numerous county roads serve the reservoir area. As evidenced by the estimated 3,900,000 pounds of fish taken during fiscal year 1967, the reservoir is one of the most important fish-producing reservoirs in the area. In addition to the fishing, the U. S. Fish and Wildlife Service manages the Hagerman and Tishomingo Wildlife Refuges for the protection of waterfowl and controlled public hunting. The Oklahoma Department of Wildlife Conservation manages 3,915 acres under license for public hunting; this area is managed primarily for deer, turkey and upland game. In addition to numerous motel and camp facilities on private property adjoining project land, there are 24 guest establishments with a total of 403 rental units on project lands. The nearest population center is the Dalles-Fort Worth area containing an estimated population of 1,490,000, approximately 80 miles from the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Eufaula District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: McIntosh, Haskell, Pittsburg & Okmulgee

River or Rivers: Canadian

Major Highway Access Routes: I-40, U.S. 62 & 69, State 113, 71, 31 & 9

Project Purposes: Flood control, power & navigation

Year Impoundment Began: 1960

Pool Size:

Maximum:	Acre Feet	3,848,000
	Surface Acres	143,000
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	102,500
	Shoreline Miles	600

Number of Access Areas: 24

Recreation Facilities:

Tent and Trailer Spaces:	555
Day Use Areas (Capacity in Recreation Days) 1/	14,350
Boat Launch Lanes:	54

Attendance (Recreation Days):

1968	2,312,900
1967	2,001,800
1966	2,157,600
1965	2,305,100
1964	167,500

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	9.3	12.0	13.3	15.0	13.8	9.4	72.8

1/ Average weekend day of peak month of use.

EUFAULA RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

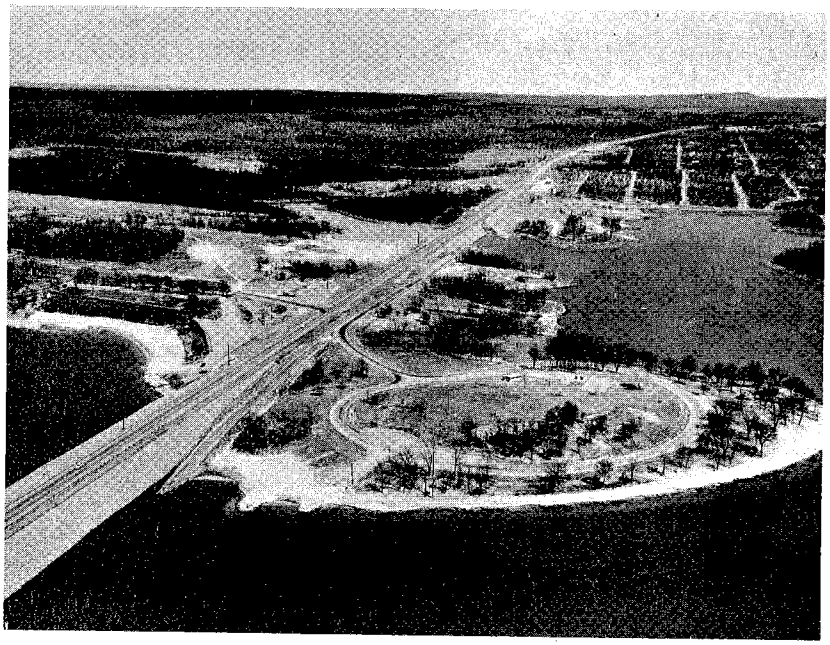
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Fort Gibson Reservoir	25-50		19,000	Yes	Yes	2,111,700 (1967)
Greenleaf State Park	0-25	930		Yes	Yes	Not Available
Lake Wister	25-50		4,000	Yes	Yes	565,700 (1967)
Robbers Cave	25-50		73	Yes	No	Not Available
Tenkiller Ferry Reservoir	25-50		12,500	Yes	Yes	1,372,600 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

EUFAULA RESERVOIR

1. Reservoir description. - The project area is located on the Canadian River in McIntosh, Haskell, Pittsburg and Okmulgee Counties, Oklahoma, about 12 miles east of Eufaula and 31 miles south of Muskogee. The topography of the reservoir area is variable -- from broad basins to more restricted valleys confined by rolling hills and steep bluffs. At the confluence of the North Canadian and South Canadian Rivers, the lake is restricted between Brooken Mountain on the south and a large promontory on the north forming a scenic feature of the reservoir area. Approximately 66,000 acres of Government-owned land border the 102,500 acre power pool which has approximately 600 miles of shoreline.

2. Recreational resources. - Access to the area is provided principally by U. S. Highway Nos. 62, 69, and 266; Oklahoma State Highway Nos. 31 and 71; and Interstate Highway I-40. Numerous county and section line roads will provide access to the reservoir. The climate of the area is characterized by mild spring weather, hot summers, and moderate autumns providing a long recreation season. The lake has proven to be an outstanding sport fishing center and the Oklahoma Department of Wildlife Conservation has carried out an extensive walleye stocking program. There has also been large concentrations of migratory waterfowl during fall hunting seasons. There are numerous motel units on private property adjoining the project and two guest establishments with a total of 430 rental units on Government-owned land. There are 95 subdivisions platted and laid out adjacent to project boundaries. The city population within a 150 mile radius of the project is estimated to be 1,162,705. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Fall River District: Tulsa

Project Location:

State or States: Kansas

County or Counties: Greenwood

River or Rivers: Fall

Major Highway Access Routes: U.S. 54, State 99 & 96

Project Purposes: Flood control & conservation

Year Impoundment Began: 1949

Pool Size:

Maximum:	Acre Feet	259,000
	Surface Acres	10,500
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	2,450
	Shoreline Miles	40

Number of Access Areas: 10

Recreation Facilities:

Tent and Trailer Spaces:	110
Day Use Areas (Capacity in Recreation Days) 1/	6,650
Boat Launch Lanes:	11

Attendance (Recreation Days):	
1968	386,225
1967	468,000
1966	406,500
1965	459,400
1964	538,400

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	10.3	12.7	13.2	16.7	14.7	11.5	79.1

1/ Average weekend day of peak month of use.

FALL RIVER RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

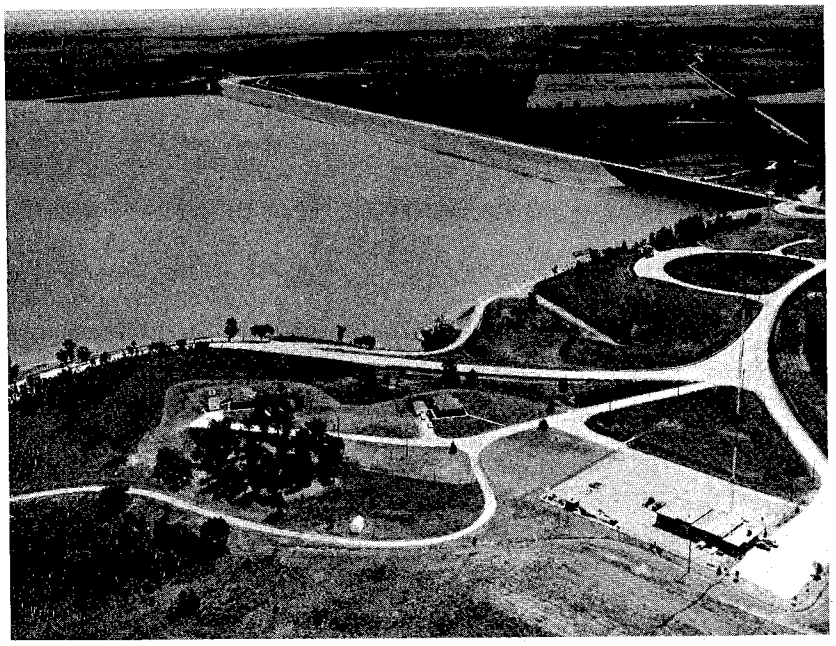
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Elk City Reservoir	25-50		3,550	Yes	Yes	378,400 (1967)
Hulah Reservoir	25-50		3,600	Yes	Yes	333,900 (1967)
John Redmond Reservoir	25-50		7,780	Yes	Yes	570,400 (1967)
Toronto Reservoir	0-25	2,800		No	Yes	346,600 (1967)
Wilson State Lake	0-25	Not Available		No	Yes	Not Available
Woodson State Lake	0-25	Not Available		No	Yes	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

FALL RIVER RESERVOIR

1. Reservoir description. - The project is located on Fall River in Greenwood County, Kansas. The damsite is about four miles northwest of the town of Fall River and 17 miles southeast of Eureka, Kansas. Bottom lands of the area are generally flat while valley slopes vary from undulating to rolling hills; near the damsite, the sides of the valley are more pronounced and rugged. The lake is generally shallow and vertical fluctuations of the pool will result in rather extensive horizontal fluctuations of the shoreline. The project area comprises 13,982 acres of land all available for recreation. Of this, 3,000 acres are leased to the Kansas State Park and Resources Authority for park purposes and the remaining 10,892 acres have been licensed to the Kansas Forestry, Fish and Game Commission for wildlife management purposes.

2. Recreational resources. - Primary access to the area is furnished by U. S. Highway 54 and Kansas State Highway Nos. 96 and 99. Practically all parts of the reservoir are accessible by county roads. The reservoir lies within a region characterized by moderate winters and comparatively long summers. The reservoir is one of the most popular and productive fisheries in the area. Due to the management program of the Kansas Forestry, Fish and Game Commission, the area has become an important hunting area, both for migratory waterfowl and upland game. There are a number of small motels in the area; also, there are several cabins and cottages adjacent to Government-owned land that are frequented throughout the entire year. The nearest metropolitan area is Wichita, Kansas, with an estimated population of 269,000, 79 miles from the project. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Fort Gibson District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: Cherokee & Wagoner

River or Rivers: Grand (Neosho)

Major Highway Access Routes: U.S. 62 & 69, State 80, 51, 33 & 16

Project Purposes: Flood control & power

Year Impoundment Began: 1953

Pool Size:

Maximum:	Acre Feet	1,284,400
	Surface Acres	51,000
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	19,000
	Shoreline Miles	225

Number of Access Areas: 25

Recreation Facilities:

Tent and Trailer Spaces:	1,009
Day Use Areas (Capacity in Recreation Days) 1/	21,660
Boat Launch Lanes:	69

Attendance (Recreation Days):

1968	2,406,500
1967	2,111,700
1966	2,427,300
1965	2,466,300
1964	2,806,400

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.5	9.5	12.5	16.4	14.0	10.4	70.3

1/ Average weekend day of peak month of use.

FORT GIBSON RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

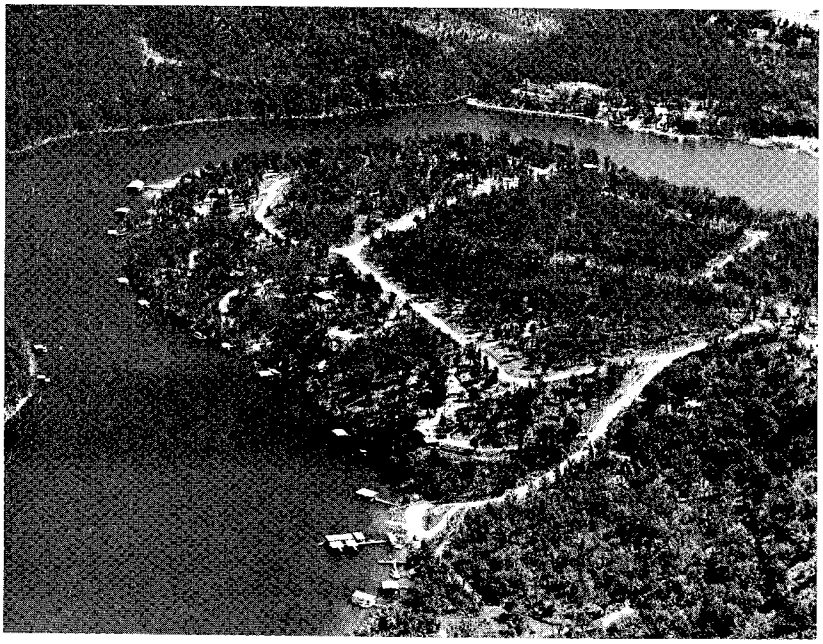
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Eufaula Reservoir	25-50		102,500	Yes	Yes	2,001,800 (1967)
Grand Lake	25-50		Not Available	Yes	Yes	Not Available
Greenleaf State Park	0-25	930		Yes	Yes	Not Available
Lower Spavinaw Lake	25-50		2,880	Yes	No	16,000 (1967)
Markham Ferry Reservoir	25-50		Not Available	Yes	Yes	Not Available
Oologah Reservoir	25-50		5,850	Yes	Yes	1,178,200 (1967)
Tenkiller Ferry Reservoir	0-25	12,500		Yes	Yes	1,372,600 (1967)
Upper Spavinaw Lake	25-50		1,637	Yes	No	35,000 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

FORT GIBSON RESERVOIR

1. Reservoir description. - The project area is located on the Grand (Neosho) River about 5 miles north of Fort Gibson, 12 miles northeast of Muskogee and 10.5 miles southeast of Wagoner, Oklahoma. The land within the reservoir area consists of level first bottom land, undulating to rolling valley land, and wooded ravines and mountainous slopes. The steep valley slopes are very stony and usually covered with a growth of timber. Operation of the project will result in a stable pool at elevation 554.0 (top of power pool) except during infrequent periods of relatively short duration. The Government-owned land covers an area of 76,389 acres, most are available for public use.

2. Recreational resources. - Numerous highways, county roads and private roads provide excellent access to the right-bank reservoir area and fair access to the left-bank reservoir area. Access to the general area is served by U. S. Highway Nos. 62 and 69 and Oklahoma State Highway Nos. 16, 80, 33 and 51. The project lies in a region characterized by moderate winters and comparatively long summers. In addition to supporting one of the most important fisheries in the area, there are approximately 21,800 acres of land licensed to the Oklahoma Department of Wildlife Conservation. There are 17,298 acres of land and water managed for public hunting and the remainder for a waterfowl refuge. The area adjacent to the Government-owned land is highly developed and there are numerous motel facilities; in addition, there are guest establishments, several cottages and the Sequoyah State Park Lodge all on project land. There are also two municipal parks, nine quasi-public groups with developed camp sites, 30 private club sites many of which have clubhouses and lodging facilities, and many cottages and homes occupied the entire year, all on project land. In cities with more than 10,000 population within a 100 mile radius of the project, there is an estimated total population of 568,000. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Fort Supply District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: Woodward

River or Rivers: Wolf Creek

Major Highway Access Routes: U.S. 270 & 183

Project Purposes: Flood control

Year Impoundment Began: 1943

Pool Size:

Maximum:	Acre Feet	101,800
	Surface Acres	5,730
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	1,880
	Shoreline Miles	26

Number of Access Areas: 3

Recreation Facilities:

Tent and Trailer Spaces:	50
Day Use Areas (Capacity in Recreation Days) 1/	2,900
Boat Launch Lanes:	8

Attendance (Recreation Days):

1968	282,300
1967	271,700
1966	317,400
1965	344,600
1964	331,200

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.7	12.5	15.9	15.3	12.0	8.5	71.9

1/ Average weekend day of peak month of use.

FORT SUPPLY

COMPETING WATER-ORIENTED RECREATION AREAS

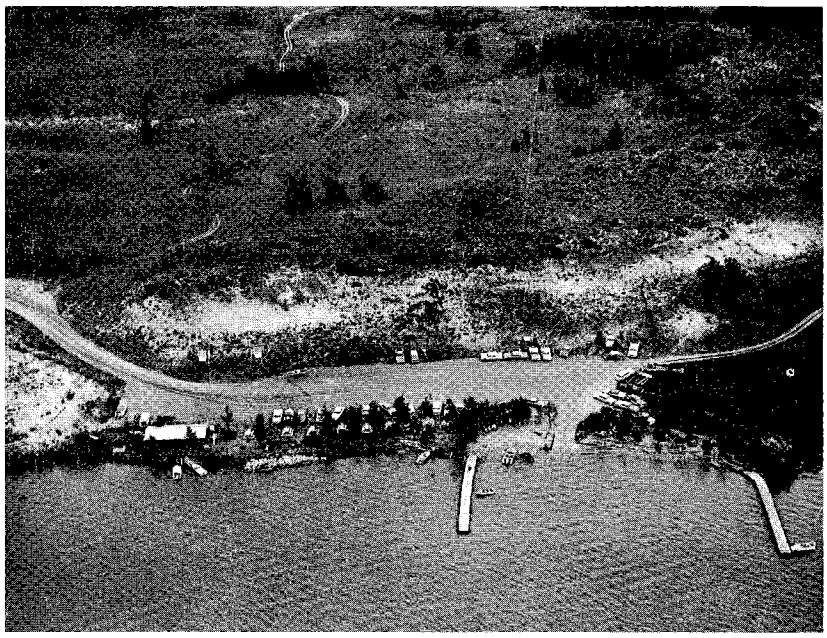
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

FORT SUPPLY RESERVOIR

1. Reservoir description. - The project is located on Wolf Creek, a tributary to the North Canadian River about 2 miles from Fort Supply, and 15 miles northwest of Woodward, Oklahoma. The watershed slopes in the western portion are steep with rough, broken hills which flatten out to a rolling prairie in the central and eastern portion of the basin. Approximately 35 percent of the watershed is covered with wind-blown sand. The project consists of approximately 9,840 acres of land and water, all of which are available for recreation.

2. Recreational resources. - Access to the area is provided by U. S. Highway Nos. 183 and 270. The Fort Supply Reservoir lies in a region lacking in outdoor recreational facilities for the public. The potential recreational resources of the reservoir are fully recognized by individuals living within a wide radius of the project. Numerous petitions by local communities, organizations and individuals requesting a development of these resources and many requests for permits to lease areas on which cottages and cabins could be constructed have been received. The Oklahoma Department of Wildlife Conservation has been granted a license of 5,550 acres of land within the reservoir area. Of this amount, 4,600 acres are reservoir perimeter lands and 950 acres lie downstream from the dam. Their lands are being managed for public hunting. There is an estimated population of 59,000 within a 50 mile radius of the project, 378,000 within 100 miles. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Great Salt Plains District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: Alfalfa

River or Rivers: Salt Fork of the Arkansas

Major Highway Access Routes: U.S. 64, State 11

Project Purposes: Flood control

Year Impoundment Began: 1941

Pool Size:

Maximum:	Acre Feet	280,200
	Surface Acres	28,240
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	8,890
	Shoreline Miles	41

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	90
Day Use Areas (Capacity in Recreation Days) 1/	5,380
Boat Launch Lanes:	5

Attendance (Recreation Days):

1968	599,200
1967	567,800
1966	634,200
1965	708,900
1964	604,600

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	8.6	16.2	17.7	19.3	12.7	6.2	80.7

1/ Average weekend day of peak month of use.

GREAT SALT PLAINS RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

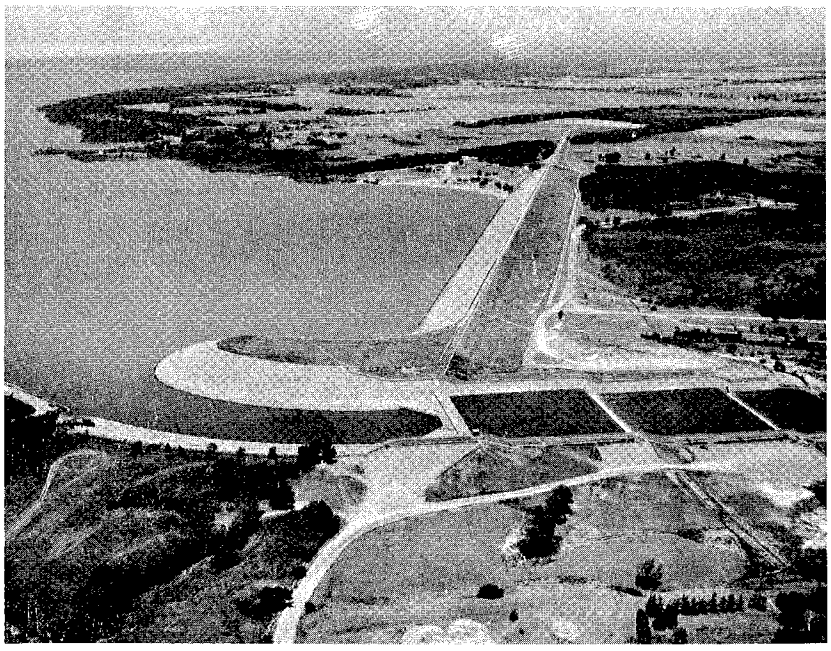
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Canton Reservoir	25-50		7,800	Yes	No	872,400 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

GREAT SALT PLAINS RESERVOIR

1. Reservoir description. - The project is on the Salt Fork of the Arkansas River at an approximate elevation of 1,100 feet. The dam is about 30 miles northwest of Enid, Oklahoma. The surrounding area is generally flat prairie land and only at the damsite are there sufficient variations of topography that favor recreation development. On the south abutment, bluffs descend abruptly to the water and afford excellent views of the project. These bluffs have several deep ravines that form coves that are popular for boating. On the left abutment is a sandy dune-like stretch of shoreline that is particularly conducive to bathing beach development. Government-controlled lands comprise approximately 31,935 acres of which the Corps of Engineers administers 860 acres and the Fish and Wildlife Service administers 31,075 acres as a national wildlife refuge.

2. Recreational resources. - Access to the area is provided by U. S. Highway 64 and Oklahoma State Highway 11. Several all-weather county roads provide access to the reservoir. The reservoir lies in a semi-arid region characterized by moderate winters and comparatively long summers. One of the unfavorable features of the project that affects the fishery resources is the saline nature of the water, however, since impoundment, conditions have favored excellent production of channel catfish and carp. The outstanding recreational feature of the project is the waterfowl hunting on lands adjacent to the Wildlife Refuge; it has proven to be one of the most popular and productive areas in the State. There is also managed public hunting for deer for an eight day season. The principal region to be served by the reservoir contains only one city of more than 10,000 and an estimated total population of 120,000. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Heyburn District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: Creek

River or Rivers: Pole Cat Creek

Major Highway Access Routes: I-44, State 33

Project Purposes: Flood control

Year Impoundment Began: 1950

Pool Size:

Maximum:	Acre Feet	57,300
	Surface Acres	3,700
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	980
	Shoreline Miles	40

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	200
Day Use Areas (Capacity in Recreation Days) 1/	5,570
Boat Launch Lanes:	6

Attendance (Recreation Days):

1968	289,000
1967	328,300
1966	343,700
1965	340,500
1964	347,600

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	5.6	9.6	17.6	17.5	13.9	10.3	74.5

1/ Average weekend day of peak month of use.

HEYBURN RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

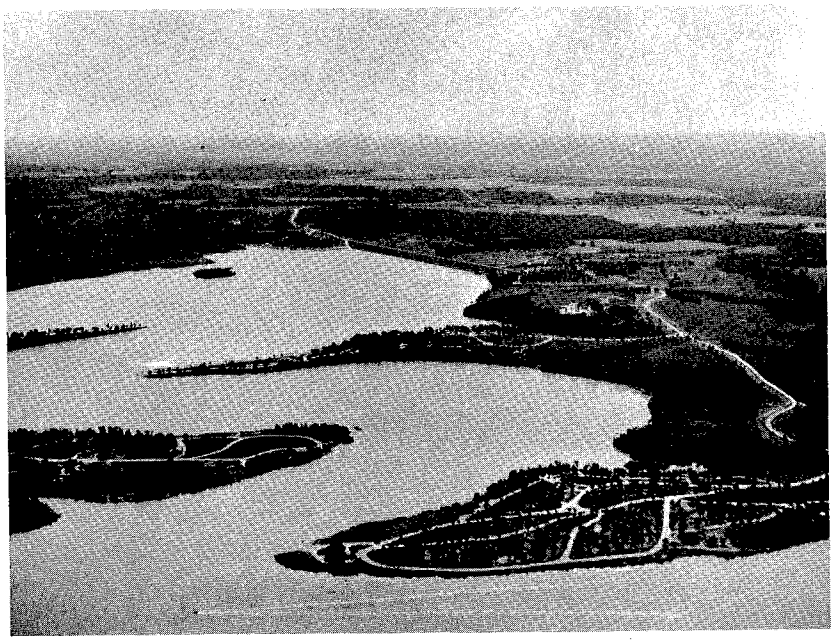
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Keystone Reservoir	0-25	26,300		Yes	Yes	1,793,600 (1967)
Oologah Reservoir	25-50		5,850	Yes	No	1,178,200 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

HEYBURN RESERVOIR

1. Reservoir description. - The project is on Polecat Creek about 9 miles northeast of Bristow and 11 miles west of Sapulpa, Oklahoma. Topography of the reservoir area varies from relatively level land in the narrow valley floor to rough, rolling heavily-timbered lands, principally in the flood control pool. There is a total of approximately 7,028 acres of Government-owned land, almost all of which is accessible and available for recreation use.

2. Recreational resources. - Access to the area is provided by Interstate Highway 44 and Oklahoma State Highway 33. There are numerous county roads providing access to the reservoir. The climate of the reservoir area is characterized by moderate winters and comparatively long summers. The project provides many recreational activities, such as boating, waterskiing, fishing, hunting, swimming, picnicking, overnight camping, hiking and other related activities. In the five neighboring counties that make up the major area served by the reservoir, there is an estimated population of 487,000. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Hulah District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: Washington

River or Rivers: Caney

Major Highway Access Routes: U.S. 75, State 99 & 10

Project Purposes: Flood control

Year Impoundment Began: 1951

Pool Size:

Maximum:	Acre Feet	292,600
	Surface Acres	13,000
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	3,600
	Shoreline Miles	62

Number of Access Areas: 8

Recreation Facilities:

Tent and Trailer Spaces:	70
Day Use Areas (Capacity in Recreation Days) 1/	3,170
Boat Launch Lanes:	10

Attendance (Recreation Days):

1968	498,700
1967	333,900
1966	390,100
1965	539,200
1964	382,000

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	9.1	12.9	14.5	15.7	12.4	8.0	72.6

1/ Average weekend day of peak month of use.

HULAH RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Elk City Reservoir (Kansas)	0-25	3,550		Yes	Yes	378,400 (1967)
Fall River Reservoir (Kansas)	25-50		2,450	Yes	Yes	468,000 (1967)
Keystone Reservoir	25-50		26,300	Yes	Yes	1,793,600 (1967)
Oologah Reservoir	25-50		5,850	Yes	No	1,178,200 (1967)
Toronto Reservoir (Kansas)	25-50		2,800	Yes	Yes	346,600 (1967)

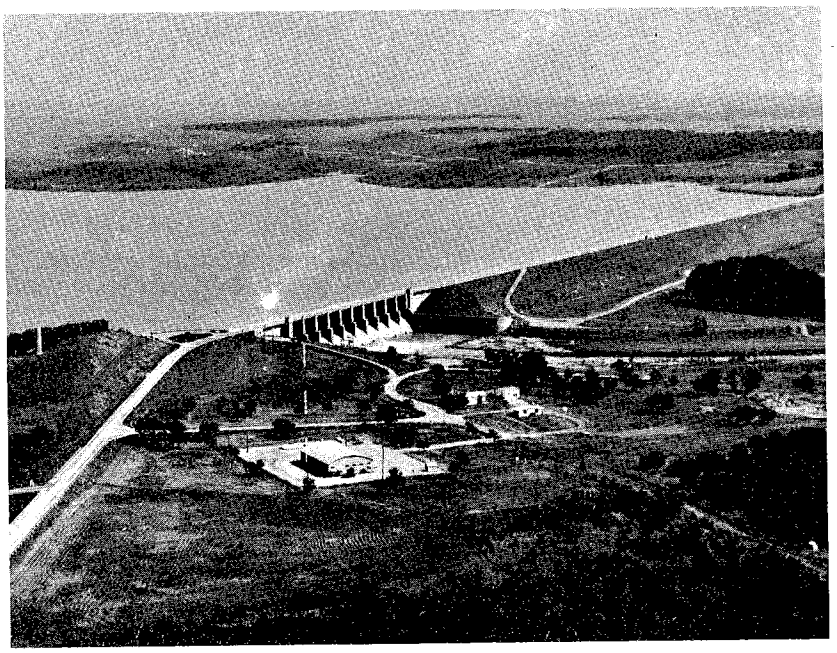
A-190

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

HULAH RESERVOIR

1. Reservoir description. - The project is located on the Caney River about 15 miles northwest of Bartlesville, Oklahoma, and 5 miles south of the Kansas-Oklahoma State line. The valley floor in the reservoir is about three-fourths mile wide and hills flanking the valley floor vary from 100 to 250 feet high. Steeper slopes of the valleys are usually covered with extensive groves of oak and hickory trees with many open grass meadows. The reservoir has a sedimentation pool with top elevation at 724.0 and a conservation pool at 731.0, resulting in a possible maximum drawdown of 7 feet. The project area comprises 21,540 acres of land, almost all of which is available for recreational activities.

2. Recreational resources. - Access to the area is provided by U. S. Highway 75 and Oklahoma State Highway Nos. 10 and 99. The major portion of the south side of the reservoir is accessible by means of secondary roads while access to the north side of the lake is very limited. The reservoir lies in a region characterized by moderate winters and comparatively long summers. All types of water-oriented recreation activities are allowed. Several commercial establishments and subdivisions have located near Government property around the main body of the lake. In addition to the fishing activities, the Oklahoma Department of Wildlife Conservation has developed and is managing 3,535 acres of project land for game management purposes and 2,000 acres for a refuge area. The only town in the area of more than 10,000 population is Bartlesville. The nearest metropolitan area is Tulsa County, having an estimated population of 346,038. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Keystone District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: Tulsa, Osage, Creek & Pawnee

River or Rivers: Arkansas

Major Highway Access Routes: U.S. 64, State 99, 48, 51 & 51A

Project Purposes: Flood control, power & navigation

Year Impoundment Began: 1964

Pool Size:

Maximum:	Acre Feet	1,879,000
	Surface Acres	55,400
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	26,300
	Shoreline Miles	330

Number of Access Areas: 15

Recreation Facilities:

Tent and Trailer Spaces:	52
Day Use Areas (Capacity in Recreation Days) 1/	20,900
Boat Launch Lanes:	27

Attendance (Recreation Days):

1968	1,737,900
1967	1,793,600
1966	2,001,100
1965	1,582,200
1964	478,600

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	8.6	12.7	14.8	16.6	13.7	8.5	74.9

1/ Average weekend day of peak month of use.

KEYSTONE RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

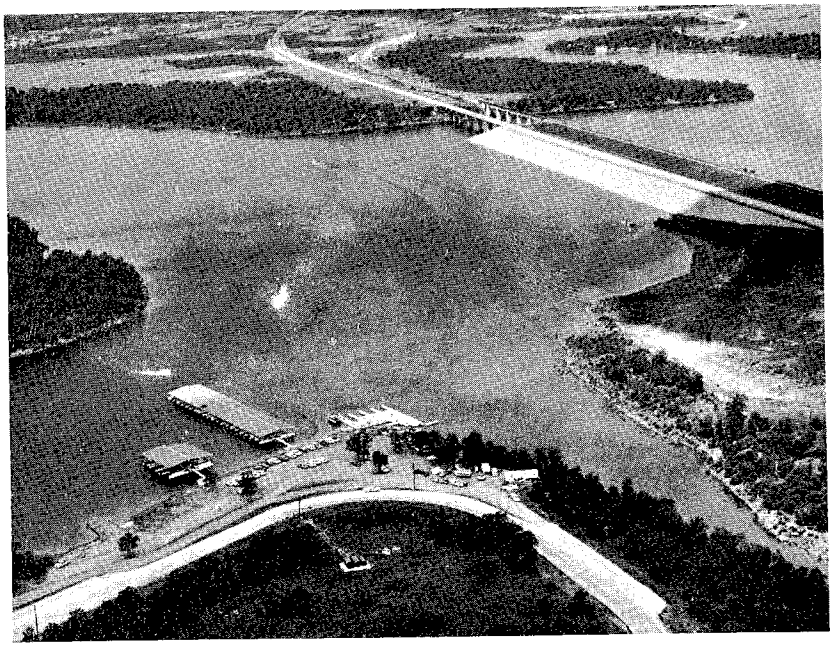
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Heyburn Reservoir	0-25	980		Yes	No	328,300 (1967)
Oologah Reservoir	25-50		5,850	Yes	No	1,178,200 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

KEYSTONE RESERVOIR

1. Reservoir description. - The Keystone Damsite is located on the Arkansas River approximately 2 miles downstream from the mouth of the Cimarron River and 14 miles west of Tulsa, Oklahoma. The lake shore varies from steep, rocky bluffs near the dam to the moderate, sandy slopes of the upper reaches of the reservoir. The major portion of the project land is forested with deciduous trees common to eastern Oklahoma. Approximately 24,000 acres of Government-owned land border the 26,300 acre power pool which has approximately 330 miles of shoreline. Most of the shoreline is available for recreational use.

2. Recreational resources. - Access to the area is provided by U. S. Highway 64 and Oklahoma State Highway Nos. 48, 51, 51A, and 99. Numerous private and secondary roads provide direct access to the reservoir from these highways. From early March to November, the temperature permits practically all types of recreation activities. The Oklahoma Department of Wildlife Conservation is carrying out an extensive striped bass and walleye stocking program. Approximately 200,000 striped bass fingerlings and 1,200,000 walleye fry were stocked during 1967. In addition to numerous quasi-public groups and private club developments on project land, there are 72 subdivisions undergoing development adjacent to the project boundaries. There are approximately 1,640,000 persons residing within the 100 mile zone of influence of the reservoir and approximately 534,000 persons within the 50 mile zone. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Oologah District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: Nowata & Rodgers

River or Rivers: Verdigris

Major Highway Access Routes: U.S. 60, 66 & 169, State 28 & 88

Project Purposes: Flood control, power & navigation

Year Impoundment Began: 1963

Pool Size:

Maximum:	Acre Feet	1,021,000
	Surface Acres	43,200
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	5,850
	Shoreline Miles	75

Number of Access Areas: 6

Recreation Facilities:

Tent and Trailer Spaces:	117
Day Use Areas (Capacity in Recreation Days) 1/	8,700
Boat Launch Lanes:	8

Attendance (Recreation Days):

1968	1,092,600
1967	1,178,200
1966	936,900
1965	1,148,400
1964	718,800

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	10.5	11.9	14.2	14.5	11.0	9.0	71.1

1/ Average weekend day of peak month of use.

OOLOGAH RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

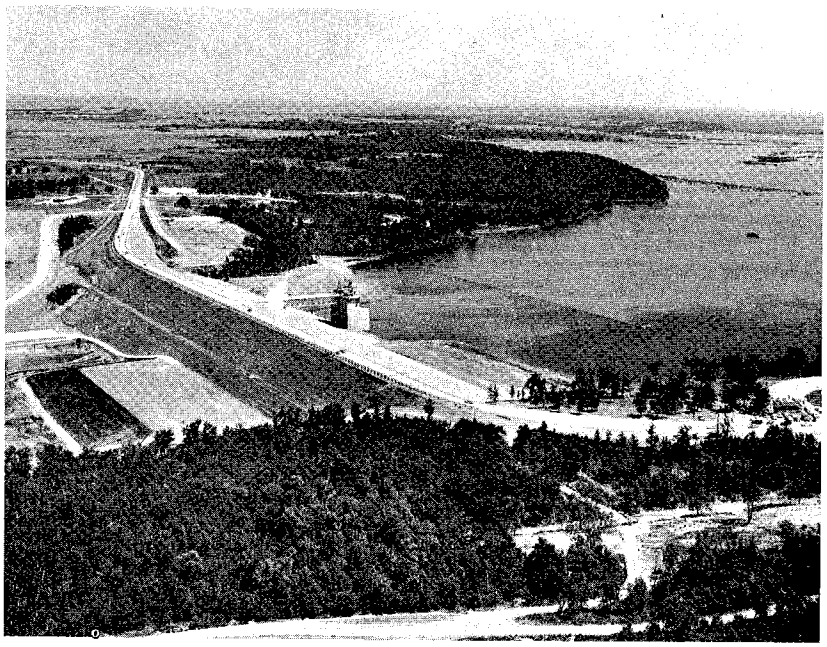
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Fort Gibson Reservoir	25-50		19,000	Yes	Yes	2,111,700 (1967)
Grand Lake	25-50		Not Available	Yes	Yes	Not Available
Heyburn Reservoir	25-50		980	Yes	Yes	328,300 (1967)
Hulah Reservoir	25-50		3,600	Yes	Yes	333,900 (1967)
Keystone Reservoir	25-50		26,300	Yes	Yes	1,793,600 (1967)
Markham Ferry	25-50		Not Available	Yes	Yes	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

OOLOGAH RESERVOIR

1. Reservoir description. - The project is located on the Verdigris River about 1.5 miles southeast of Oologah and 25 miles northeast of Tulsa, Oklahoma. The reservoir is located in an area that has limited scenic values. The valley is characterized by a pronounced bluff along the west margin from which the plain is an open grassland for many miles. Along the left bank and extending eastward for many miles, the valley has a very broad, gentle slope. The lake will have an ultimate conservation pool with a top elevation of 638.0 and a bottom of 592.0, indicating a possible drawdown of 46 feet. The project has approximately 53,900 acres of land and water, almost all of which are available for public use.

2. Recreational resources. - Access to the area is provided by U. S. Highway Nos. 60, 66, and 169 and Oklahoma Highway Nos. 28 and 88. Numerous existing county roads and relocations will provide direct access to the reservoir. The Verdigris River above the Oologah damsite lies in a region characterized by moderate winters and comparatively long summers. The large areas of shallow water and the extensive, uncleared areas will not encourage speedboating or waterskiing but it is expected that this will attract a heavy use from fishermen. The Oklahoma Department of Wildlife Conservation has licensed 33,000 acres for wildlife management purposes. The zone of visitor influence for the reservoir under the initial development is estimated to be within a 50 mile radius of the project. The visitation zone will be substantially increased to a 150 mile radius when the ultimate conservation pool is impounded. The estimated population within a 50 mile radius is 566,203. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Tenkiller District: Tulsa

Project Location:

State or States: Oklahoma

County or Counties: Sequoyah & Cherokee

River or Rivers: Illinois

Major Highway Access Routes: U.S. 62 & 64, State 100, 82 & 10A

Project Purposes: Flood control & power

Year Impoundment Began: 1952

Pool Size:

Maximum:	Acre Feet	1,230,000
	Surface Acres	20,800
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	12,500
	Shoreline Miles	130

Number of Access Areas: 18

Recreation Facilities:

Tent and Trailer Spaces:	997
Day Use Areas (Capacity in Recreation Days) 1/	13,680
Boat Launch Lanes:	39

Attendance (Recreation Days):

1968	1,465,500
1967	1,372,600
1966	1,842,100
1965	1,781,900
1964	1,636,200

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.3	10.4	14.3	16.6	15.7	9.9	74.2

1/ Average weekend day of peak month of use.

TENKILLER RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

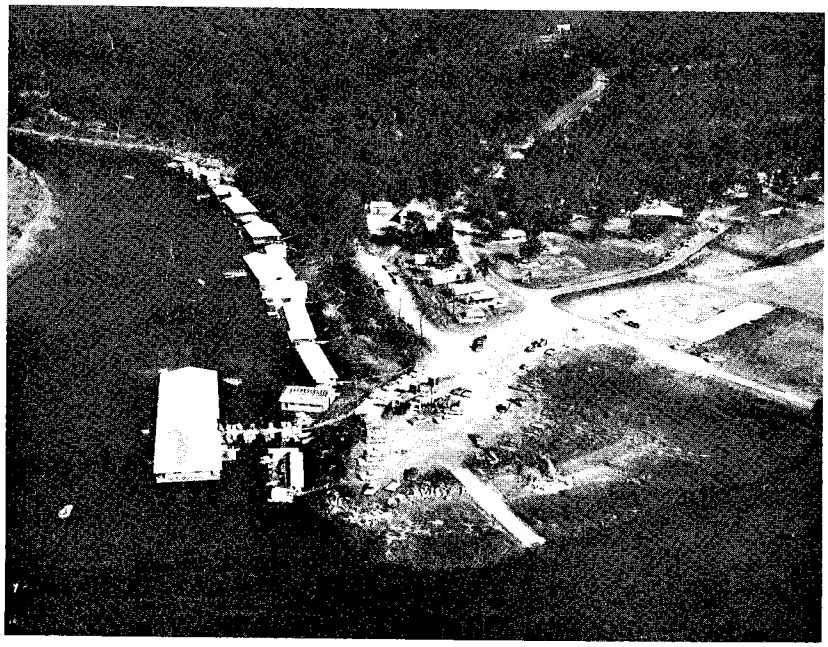
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Eufaula Reservoir	25-50		102,500	Yes	Yes	2,001,800 (1967)
Fort Gibson Reservoir	0-25	19,000		Yes	Yes	2,111,700 (1967)
Greenleaf State Park	0-25	930		Yes	Yes	Not Available
Markham Ferry Reservoir	25-50		Not Available	Yes	Yes	Not Available
Wister Reservoir	25-50		4,000	Yes	Yes	565,700 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

TENKILLER RESERVOIR

1. Reservoir description. - The project is located on the Illinois River about 5 miles northeast of Gore, Oklahoma, 22 miles southeast of Muskogee, Oklahoma, and 40 miles northwest of Ft. Smith, Arkansas. The terrain in the reservoir area is hilly to semi-mountainous, characterized by wooded ravines and at many points by steep rock bluffs. With the exception of a few upland pasture tracts, forest covers most of the area. The forest trees, while not of a commercial value, greatly enhance the scenic value of the reservoir. The Government-owned area above the 12,500 acre lake is 18,278 acres, making a total area of 30,778 acres available for recreation.

2. Recreational resources. - Access to the area is provided principally by U. S. Highway Nos. 62 and 64 and Oklahoma State Highway Nos. 82, 100, and 10A. County roads branch off at many points along the principal highways to provide excellent access into all reaches of the lake. The climate of the reservoir area is characterized by moderate winters and comparatively long summers. The reservoir supports one of the most popular and important fisheries from the standpoint of angler use in the state. In addition to the many cottage and home sites on land adjacent to the project, there are five quasi-public groups with organized camp facilities, five private clubs, and three cottage sites on project land. There are also six guest establishments with rental units on project land. The total estimated population within a 100 mile radius is 1,250,000, the largest percentage being urban. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: Toronto District: Tulsa

Project Location:

State or States: Kansas

County or Counties: Greenwood & Woodson

River or Rivers: Verdigris

Major Highway Access Routes: State 105, 96 & 99

Project Purposes: Flood control

Year Impoundment Began: 1960

Pool Size:

Maximum:	Acre Feet	195,300
	Surface Acres	10,000
	Shoreline Miles	Not Available
Average Recreation:	Surface Acres	2,800
	Shoreline Miles	51

Number of Access Areas: 5

Recreation Facilities:

Tent and Trailer Spaces:	50
Day Use Areas (Capacity in Recreation Days) 1/	3,800
Boat Launch Lanes:	6

Attendance (Recreation Days):

1968	332,000
1967	346,600
1966	280,900
1965	326,900
1964	362,100

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	7.4	10.7	14.7	20.0	12.6	12.2	77.6

1/ Average weekend day of peak month of use.

TORONTO RESERVOIR

COMPETING WATER-ORIENTED RECREATION AREAS

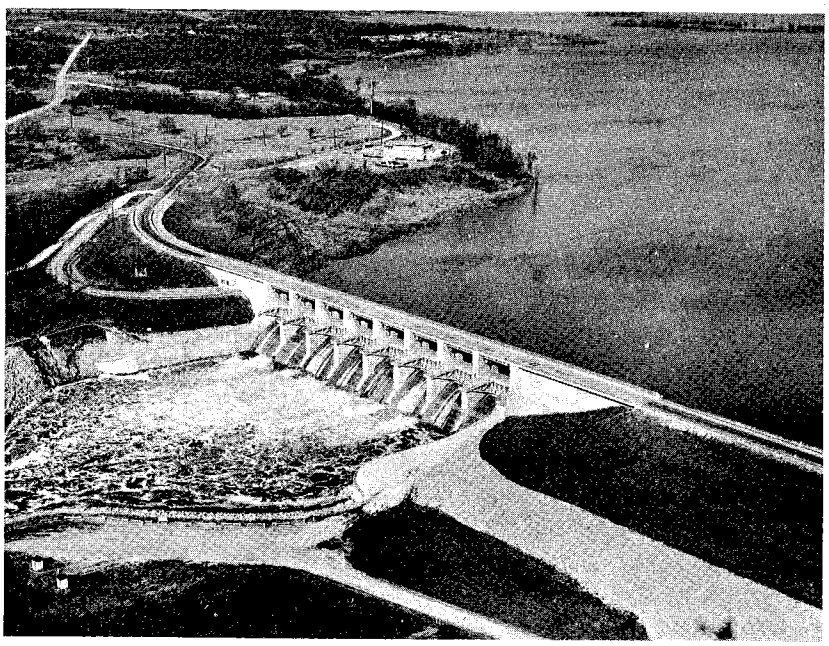
NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Elk City Reservoir	25-50		3,550	Yes	Yes	378,400
Fall River Reservoir	0-25	2,450		Yes	Yes	468,000
John Redmond Reservoir	25-50		7,780	Yes	Yes	570,400
Wilson County State Park	0-25	Not Available		Yes	No	Not Available
Woodson County State Park	0-25	Not Available		Yes	No	Not Available

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

TORONTO RESERVOIR

1. Reservoir description. - The project is located on the Verdigris River about 4 miles south of Toronto, Kansas. The Verdigris River Valley is composed of a deep cut river with flat bottom lands that are moderately wooded along the stream and its tributaries. The valley margins are gently rolling hills, except at the dam where there are distinct bluffs on the east side with exposed rock ledges. The lake has a possible fluctuation of 34.0 feet between the bottom of the conservation pool at elevation 897.0 and the top of the flood control pool at elevation 931.0. The project comprises approximately 8,623 acres of land and water, all available for recreation.

2. Recreational resources. - Access to the area is provided by Kansas State Highways 96 and 99. Direct access to the reservoir is provided by State Highway 105 and numerous county roads. The project supports one of the areas most important and popular fisheries from the standpoint of angler use. The Kansas State Park and Resources Authority has been granted a lease to 1,860 acres of land for park purposes. The Kansas Forestry, Fish and Game Commission is managing approximately 4,366 acres of land for wildlife management purposes. The management area is open for public hunting. Visitors to the project come principally from the large population centers of Wichita, Independence, Emporia, and Topeka. The smaller towns and rural population within a 25 mile radius contribute to the day use of the reservoir. A photo representative of the project is shown below.



PERTINENT DATA

Project Name: **Wister** District: **Tulsa**

Project Location:

State or States: **Oklahoma**

County or Counties: **LeFlore**

River or Rivers: **Poteau**

Major Highway Access Routes: U.S. 271, 270 & 59

Project Purposes: **Flood control**

Year Impoundment Began: 1949

Pool Size:

Maximum:	Acre Feet	430,000
	Surface Acres	23,000
	Shoreline Miles	**Not Available**
Average Recreation:	Surface Acres	4,000
	Shoreline Miles	115

Number of Access Areas: 6

Recreation Facilities:

Tent and Trailer Spaces:	90
Day Use Areas (Capacity in Recreation Days) 1/	2,850
Boat Launch Lanes:	8

Attendance (Recreation Days):

1968	687,200
1967	565,700
1966	613,100
1965	484,600
1964	490,900

Percent Annual Attendance During Peak Months of Use:

Mar	Apr	May	June	July	Aug	Sept	Total
	8.6	11.9	12.4	11.0	11.5	9.9	65.3

1/ Average weekend day of peak month of use.

COMPETING WATER-ORIENTED RECREATION AREAS

NAME	DISTANCE ZONE (miles)	SIZE OR LENGTH 1/		RECREATION FACILITIES		ESTIMATED ANNUAL ATTENDANCE
		0-25	25-50	PUBLIC	PRIVATE	
Eufaula Reservoir	25-50		102,500	Yes	Yes	2,001,800 (1967)
Greenleaf State Park	25-50		930	Yes	Yes	Not Available
Tenkiller Ferry Reservoir	25-50		12,500	Yes	Yes	1,372,600 (1967)

1/ Data shown for reservoirs represent surface area (acres) of average recreation pool -- data for rivers denotes miles of river within designated distance zone (0-25, 25-50).

WISTER RESERVOIR

1. Reservoir description. - Wister Reservoir is located on the Poteau River about 2 miles south of Wister, Oklahoma, and 47 miles southwest of Fort Smith, Arkansas. The region in which Wister Reservoir area is located is characterized by a basin that is generally mountainous with valley slopes that are steep and rocky. The lake bed varies from flat to rolling bottom lands. Top of the conservation pool is at elevation 471.6 and the top of the flood control pool is at elevation 502.5, resulting in a possible fluctuation of 30.9 feet. The project comprises an area of 39,170 acres of land and water most of which are available for recreation.

2. Recreational resources. - Access to the area is provided by U. S. Highways 59, 270, and 271. Highway 270 crosses the dam. Supplementing the main highways is a fairly complete network of county and local roads. Public use facilities developed by the Corps were turned over to the Oklahoma State Park Department, by lease agreement, for operation, maintenance, and future development. The State Park consists of 3,040 acres. The Oklahoma Department of Wildlife Conservation is developing and managing 17,996 acres of project lands and waters for game management purposes. All types of water-oriented activities are allowed. The principal region served by the reservoir is largely rural and scattered with the towns being small and usually with only a few hundred inhabitants. The estimated population within a 35 mile radius of the project is 138,000. A photo representative of the project is shown below.

TECHNICAL REPORT No. 2
OCTOBER 1969

PLAN FORMULATION AND EVALUATION STUDIES-RECREATION

estimating initial reservoir recreation use

APPENDIX B

PER CAPITA USE RATES

PER CAPITA USE RATES

List of Projects

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	San Angelo	B-25
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	Oologah	B-101
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	Toronto	B-105
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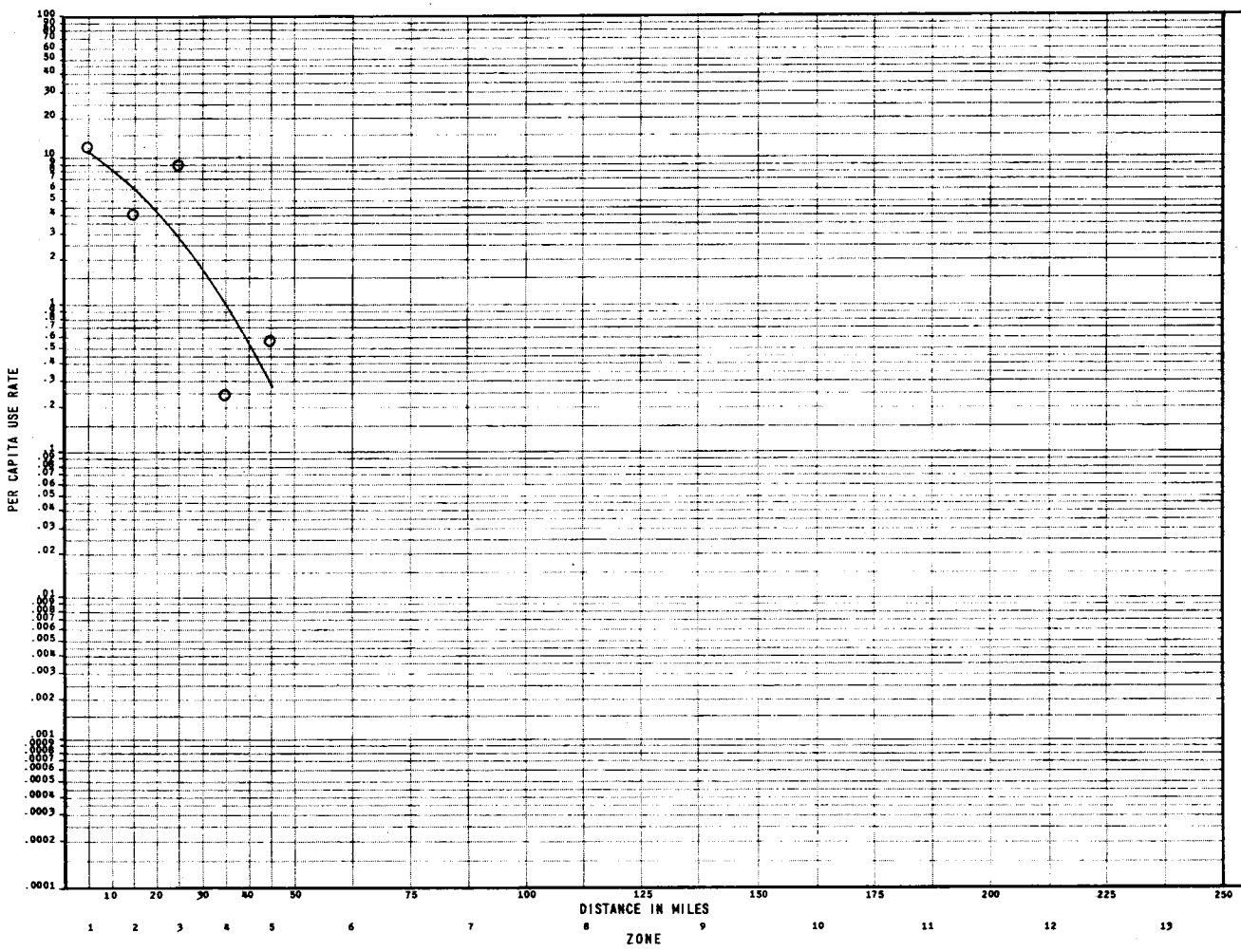

PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: BELTON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(2.534405 - .012175\ X^{1.5})$

$R^2 = .61$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	11.0042	57,700
2	6.2156	56,700
3	2.7524	52,900
4	1.0134	37,750
5	.3195	179,800
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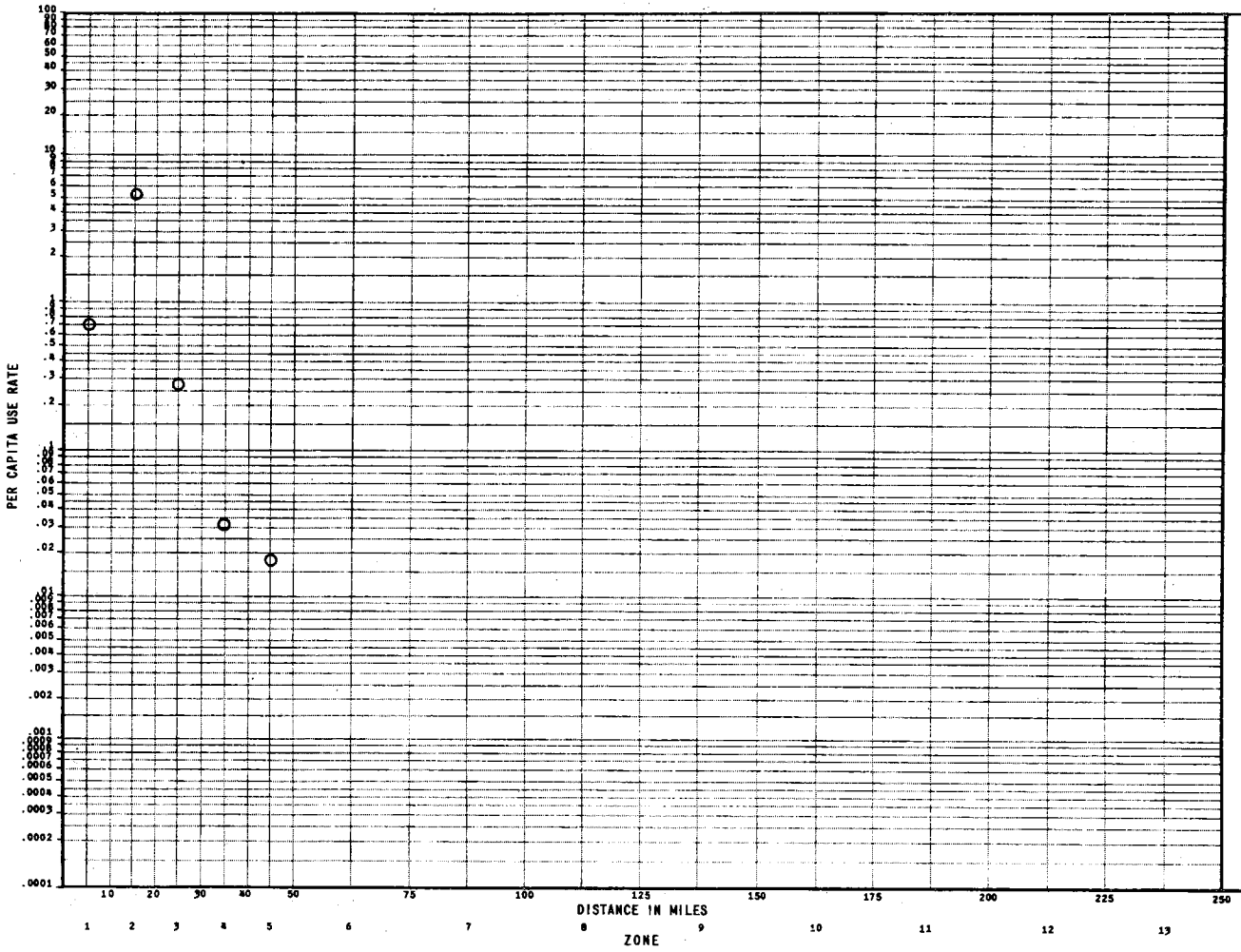
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: BENBROOK

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		75,000
2		326,500
3		149,100
4		263,500
5		439,300
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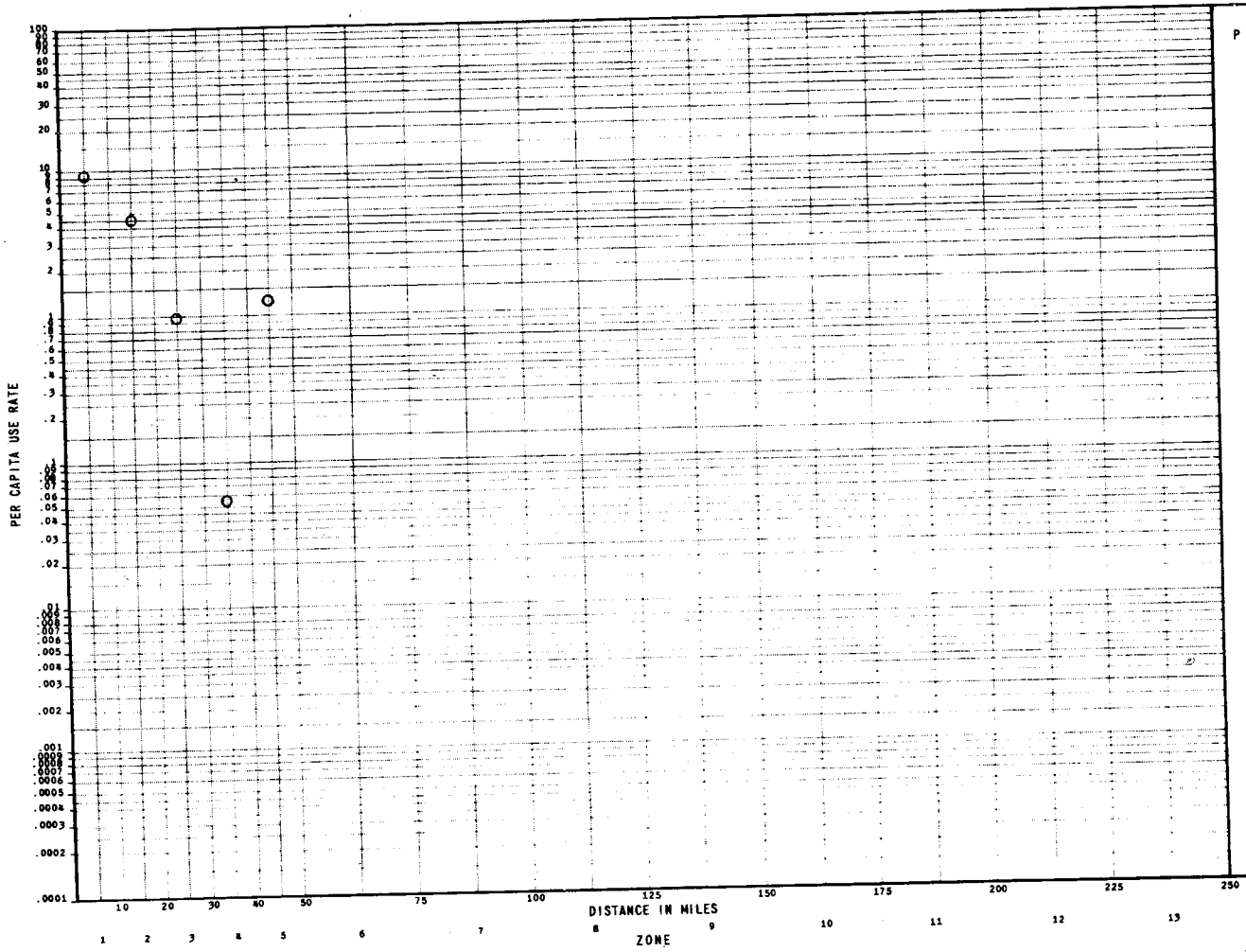
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: CANYON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		1,400
2		24,000
3		45,400
4		356,700
5		525,400
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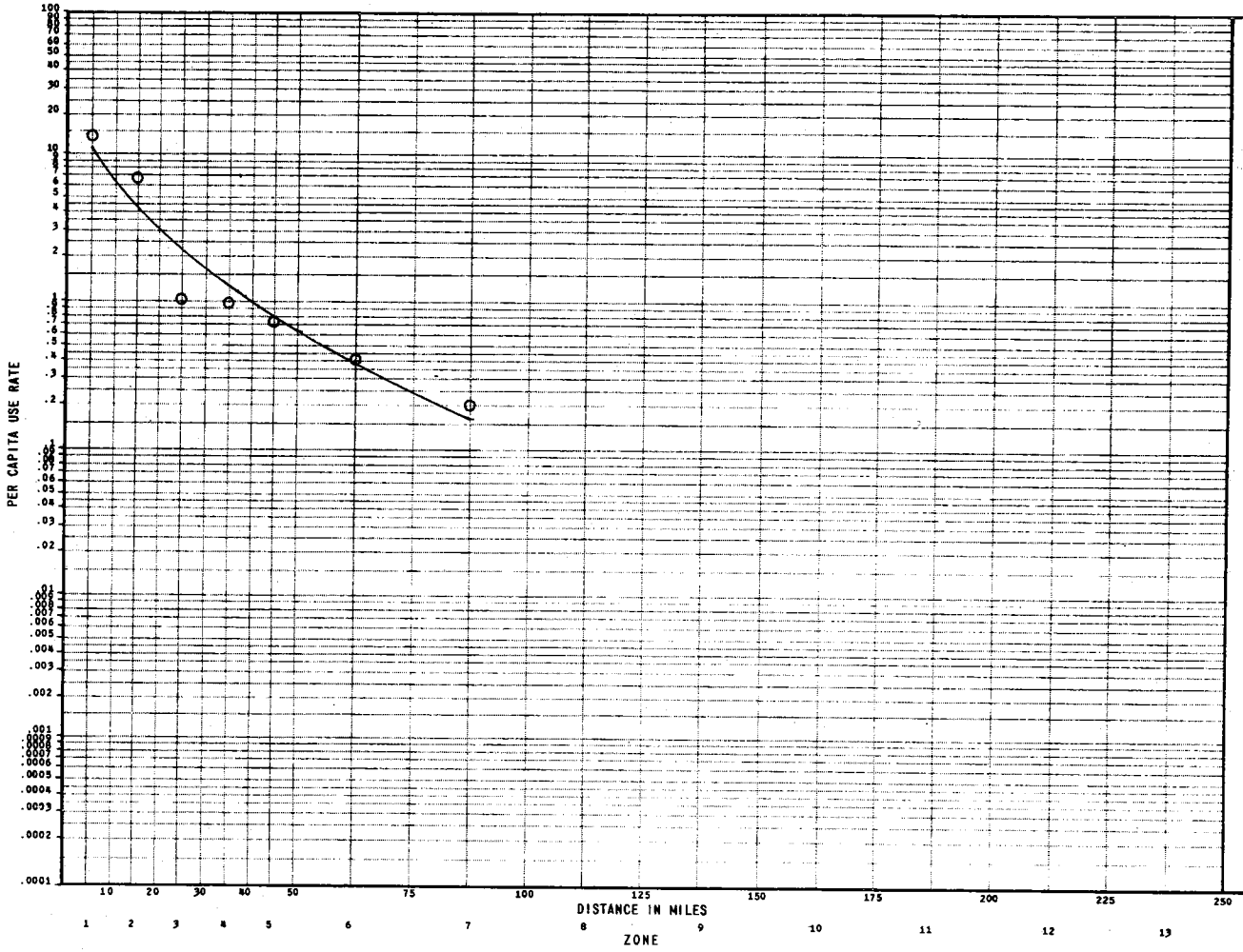
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: DAM B

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(3.792487 - .602681\ X^{.5})$

$R^2 = .92$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	11.5288	5,300
2	4.2987	17,400
3	2.1795	13,600
4	1.2548	31,800
5	.7785	21,400
6	.3783	384,900
7	.1580	302,300
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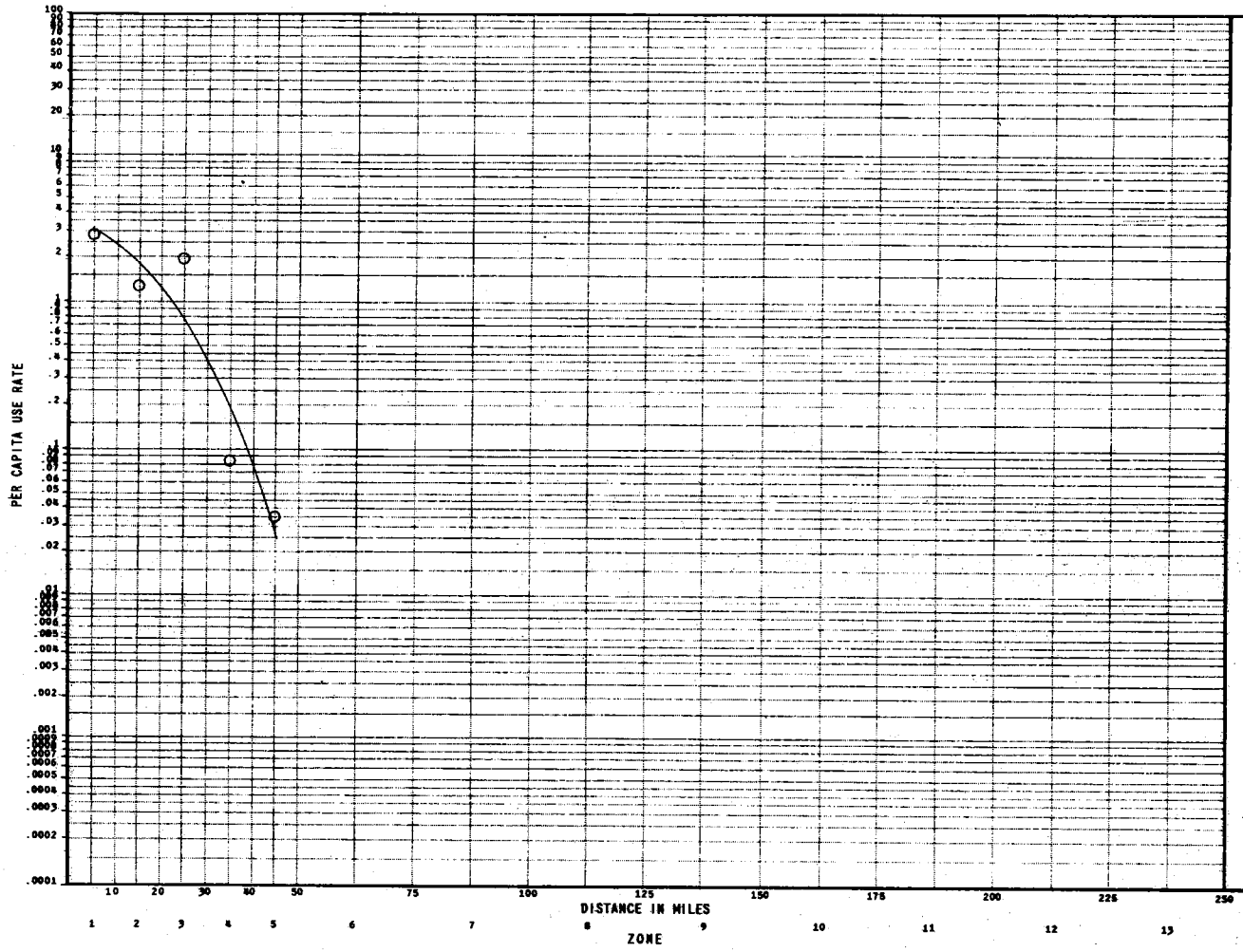
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: GARZA-LITTLE ELM

LEGEND

SURVEY ESTIMATE

REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(1.161971 - .002333\ x^2)$

$R^2 = .71$

ZONE	PER CAPITA USE RATE 1/	ZONAL POPULATION 2/
1	3.0150	82,200
2	1.8903	375,900
3	.7430	658,700
4	.1831	553,200
5	.0283	268,600
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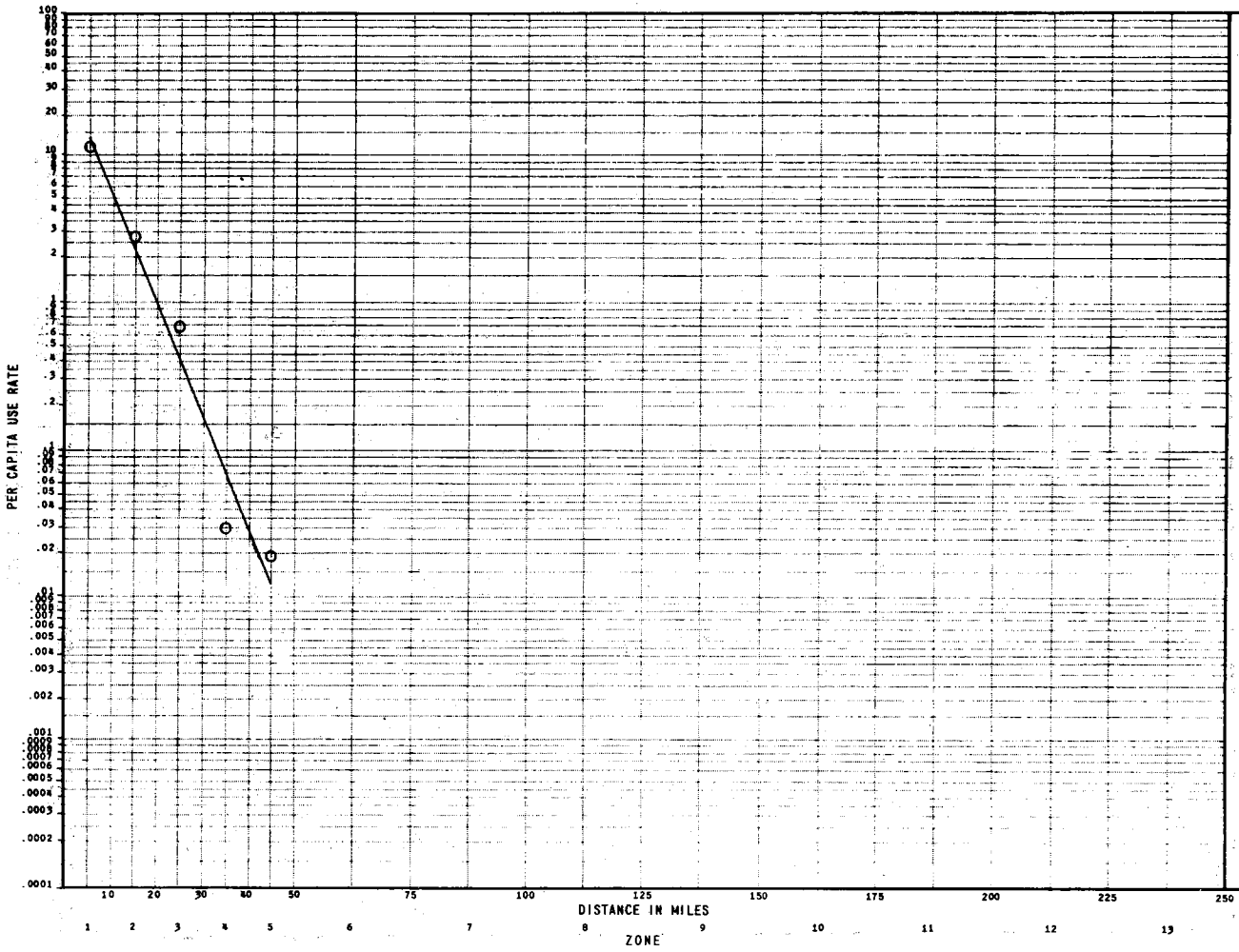
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: GRAPEVINE

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(3.474909 - .173843\ X)$

$R^2 = .97$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	13.5406	40,500
2	2.3804	323,700
3	.4185	1,091,600
4	.0736	342,100
5	.0129	99,300
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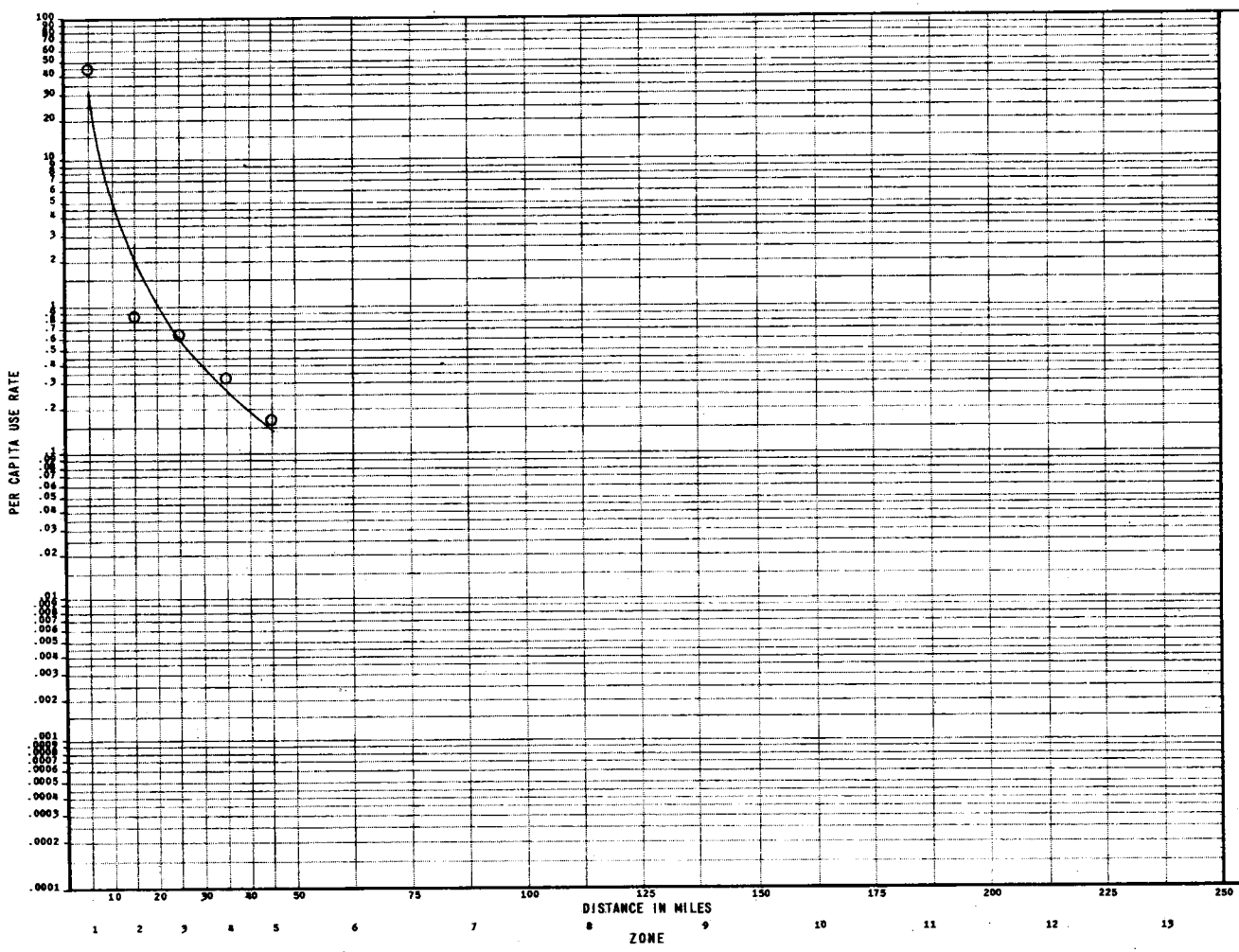
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: HORDS CREEK

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(7.365309 - 2.442579\ LNX)$

$R^2 = .86$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	31.0044	1,800
2	2.1184	8,700
3	.6083	14,000
4	.2674	13,400
5	.1447	105,100
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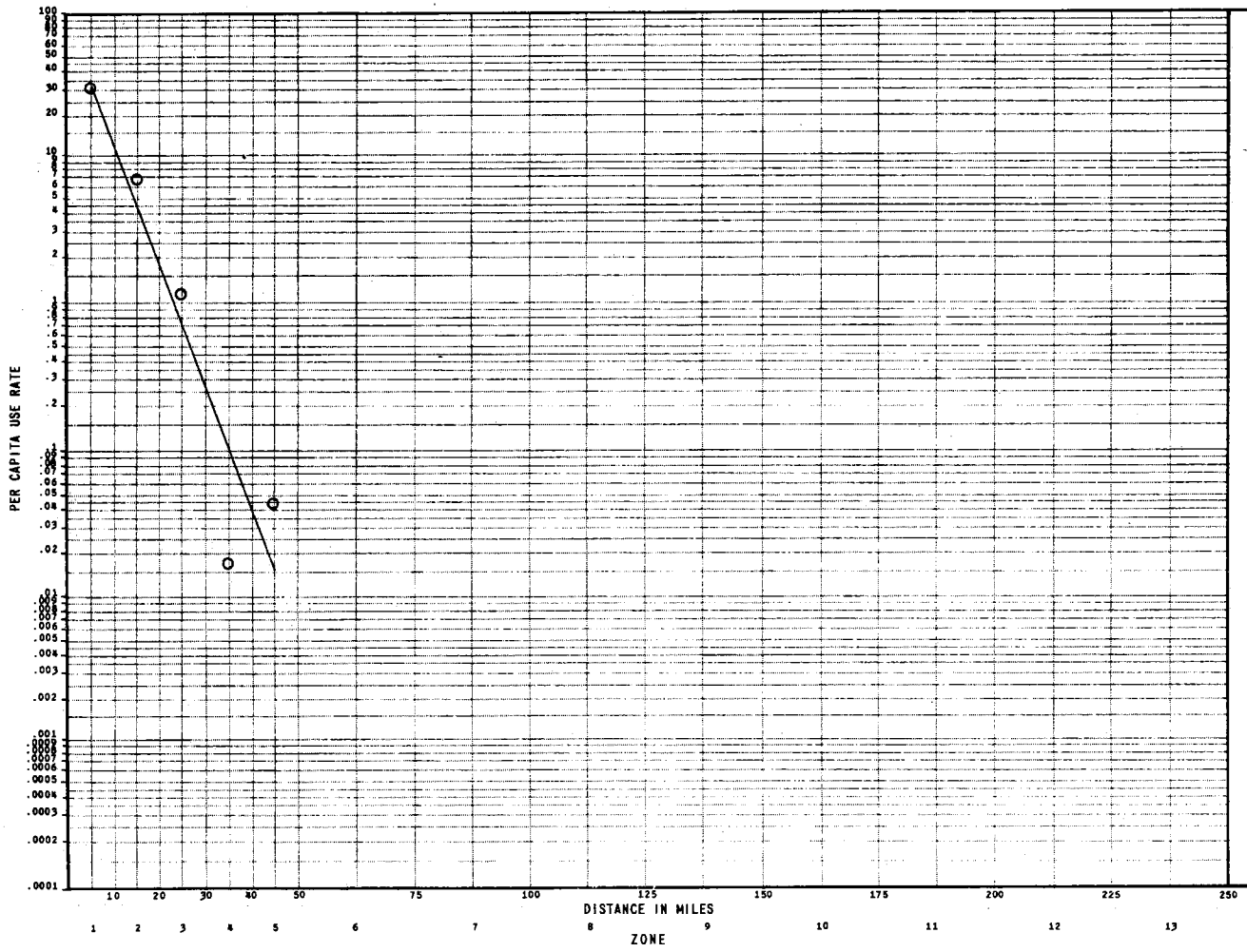
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: LAVON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(4.424576 - .190508\ X)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	32.2021	18,100
2	4.7920	195,000
3	.7131	393,100
4	.1061	555,000
5	.0158	268,700
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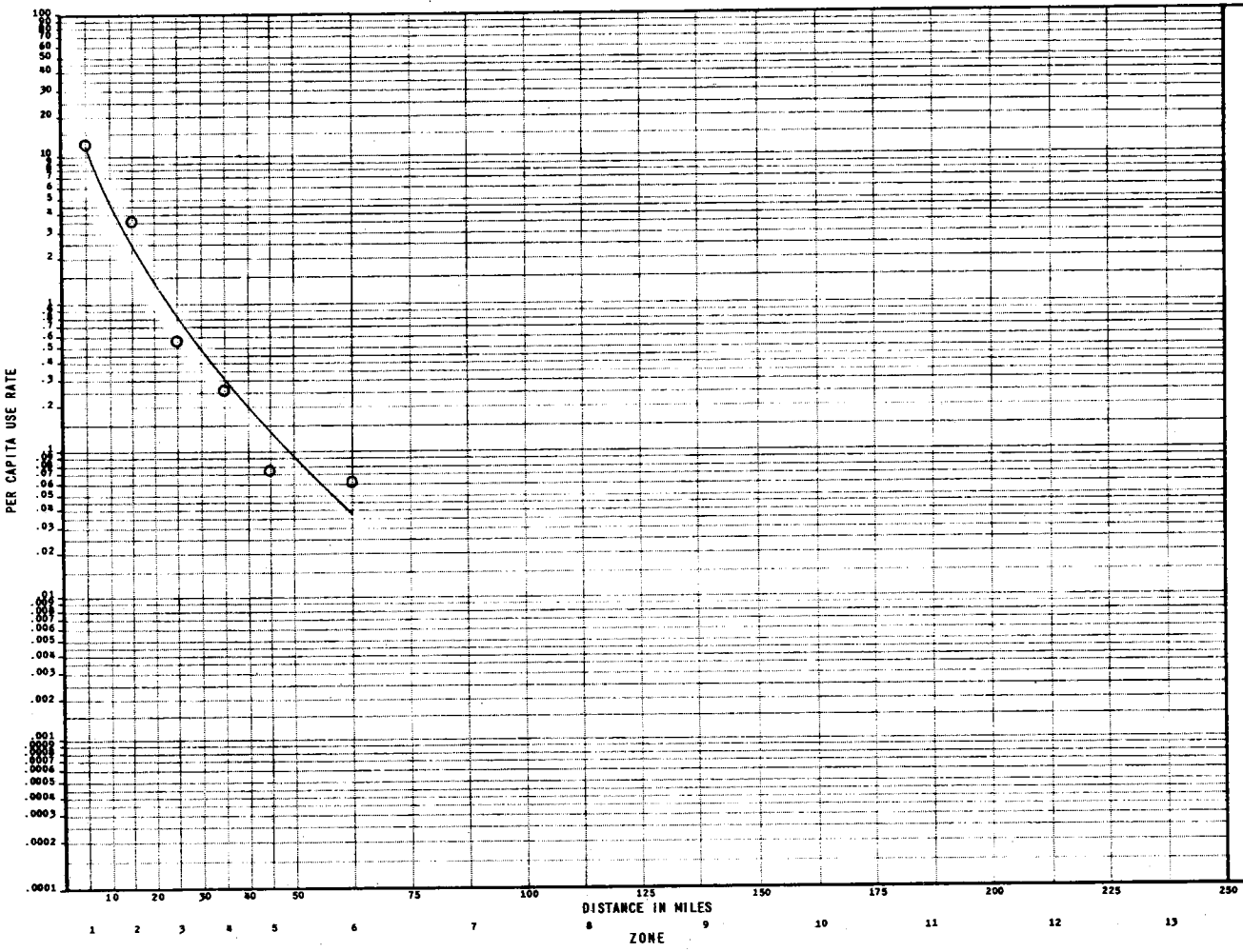
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: NAVARRO MILLS

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(4.910361 - 1.036830\ X^{.5})$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	13.3556	5,900
2	2.4467	37,800
3	.7605	33,500
4	.2942	181,700
5	.1294	51,300
6	.0374	1,008,500
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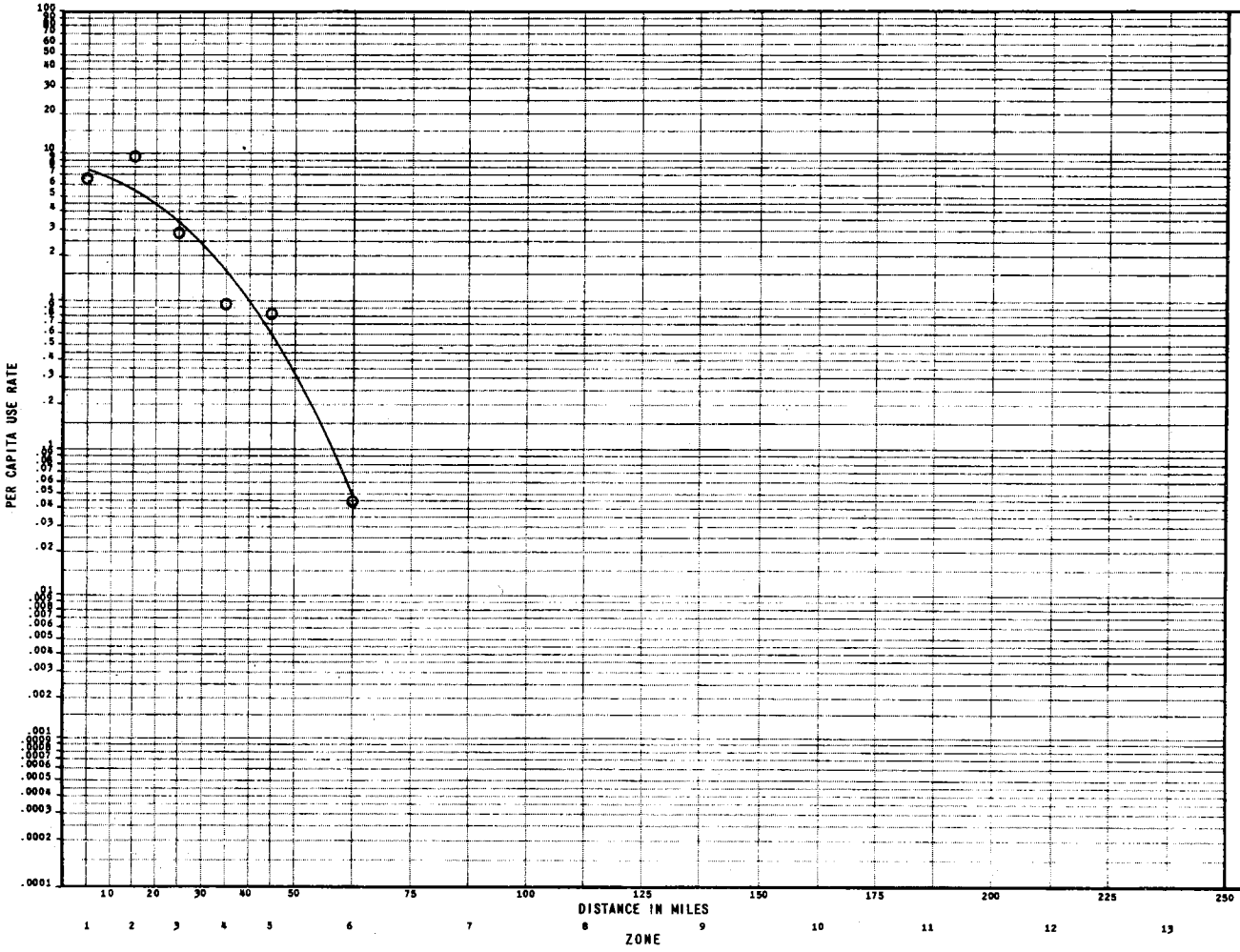
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: PROCTOR

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(2.053332 - .001287\ X^2)$

$R^2 = .78$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	7.5468	8,900
2	5.8327	9,600
3	3.4840	21,800
4	1.6084	37,800
5	.5739	22,000
6	.0509	151,400
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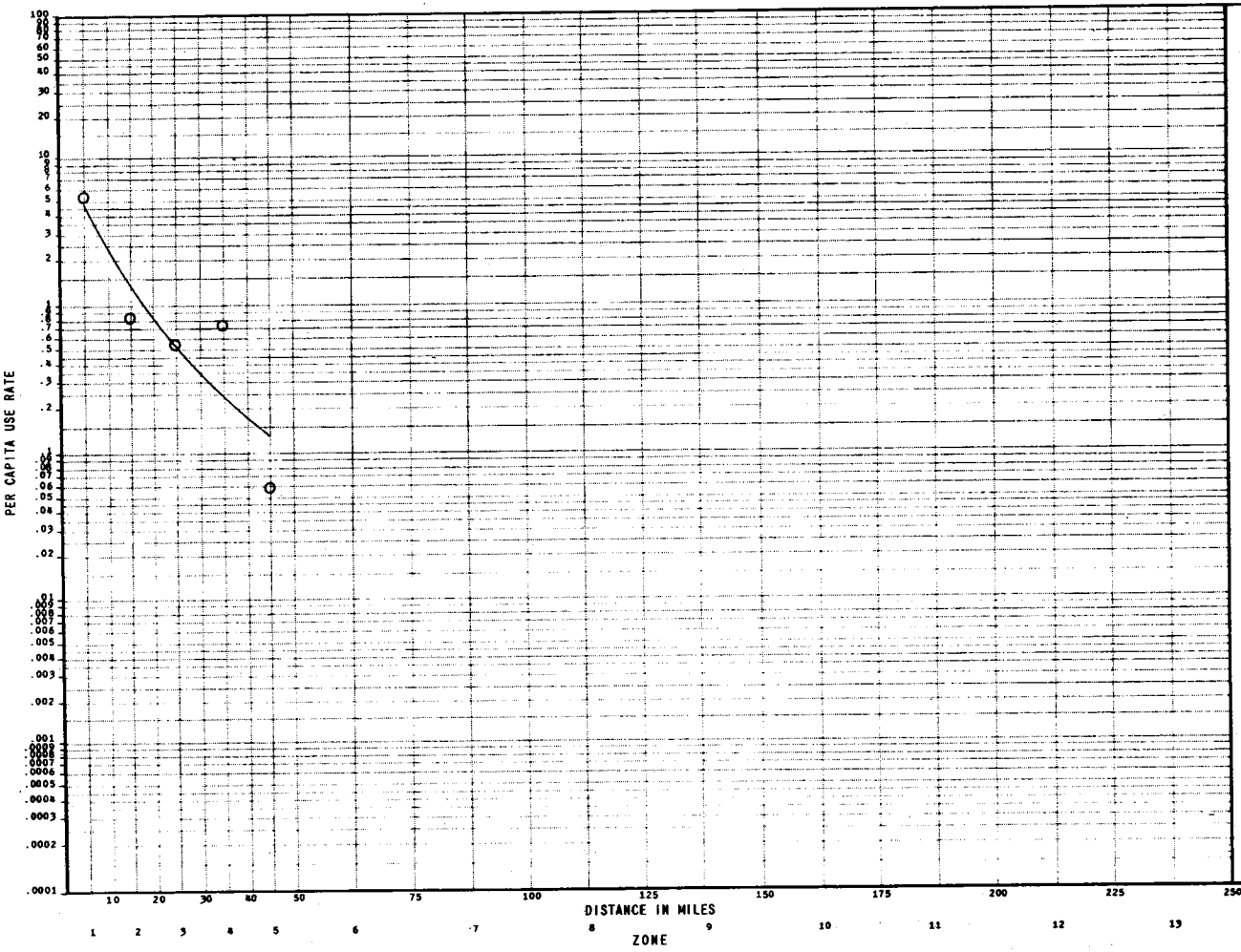
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: SAN ANGELO

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

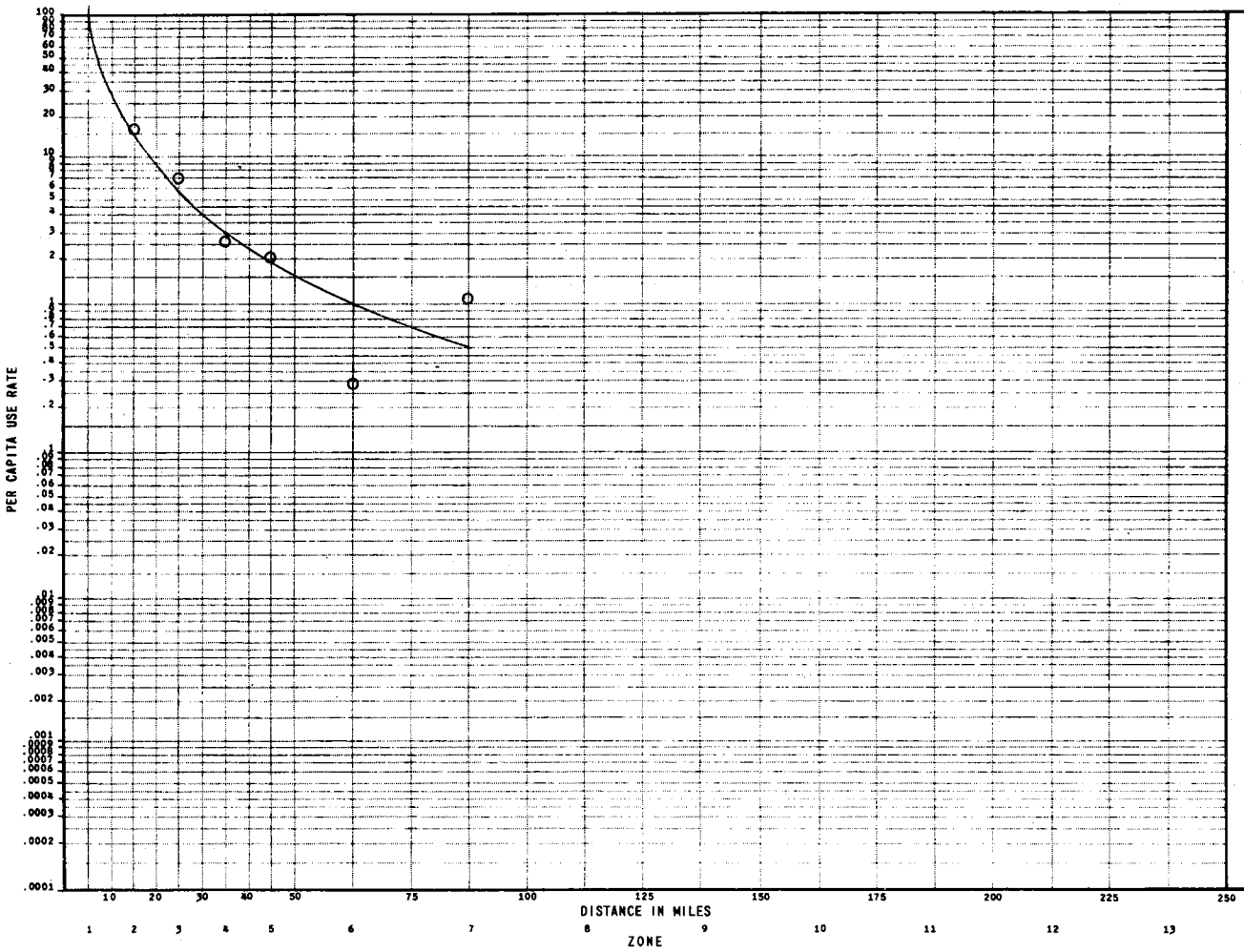
$Y = \text{Exp}(3.404686 - .832429\ X^{.5})$

$R^2 = .97$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	4.8942	65,700
2	1.2945	3,400
3	.5182	3,500
4	.2462	4,200
5	.1293	12,100
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: FORT WORTH

PROJECT: WHITNEY

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

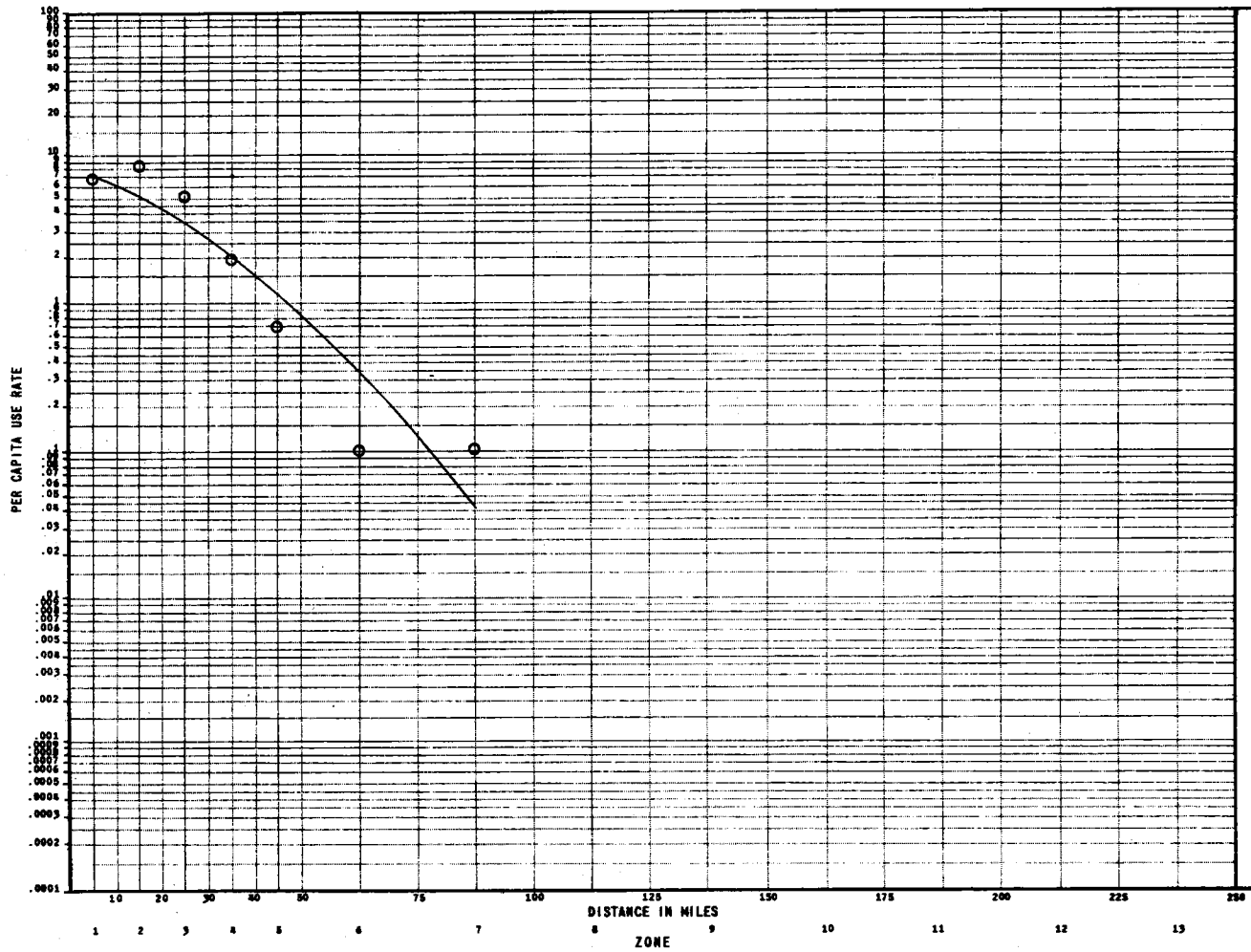
$Y = Exp(7.894216 - 1.918263\ LNX)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	122.3505	3,900
2	14.8717	27,100
3	5.5821	47,400
4	2.9274	154,700
5	1.8077	58,700
6	.9626	1,940,600
7	.5048	471,800
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: LITTLE ROCK

PROJECT: BEAVER

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

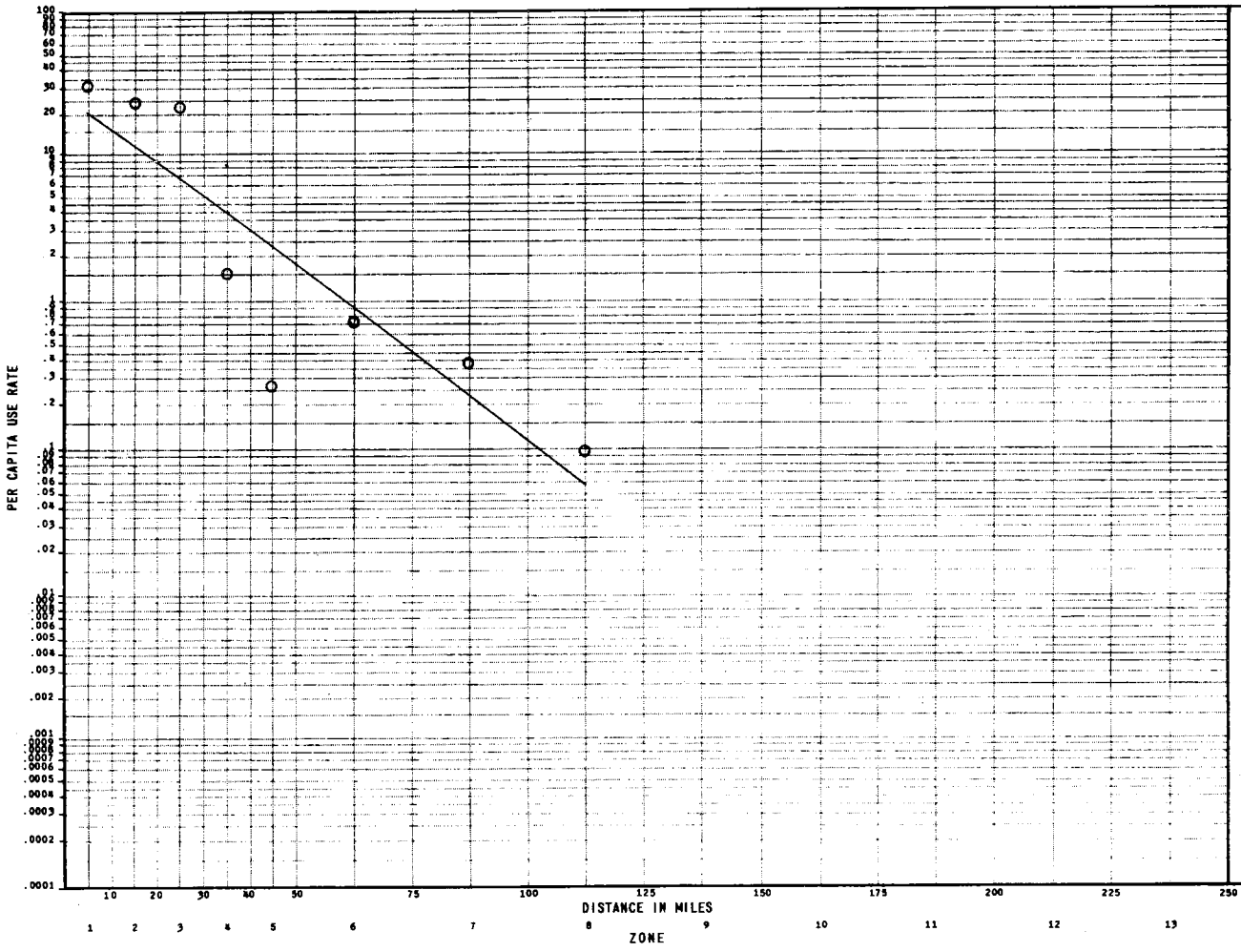
$Y = \text{Exp}(2.005586 - .006199 \times^{1.5})$

$R^2 = .79$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	6.9328	72,900
2	5.1830	43,700
3	3.4231	45,200
4	2.0580	34,800
5	1.1432	42,000
6	.3471	210,000
7	.0465	452,400
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: LITTLE ROCK

PROJECT: BULL SHOALS

LEGEND

o SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

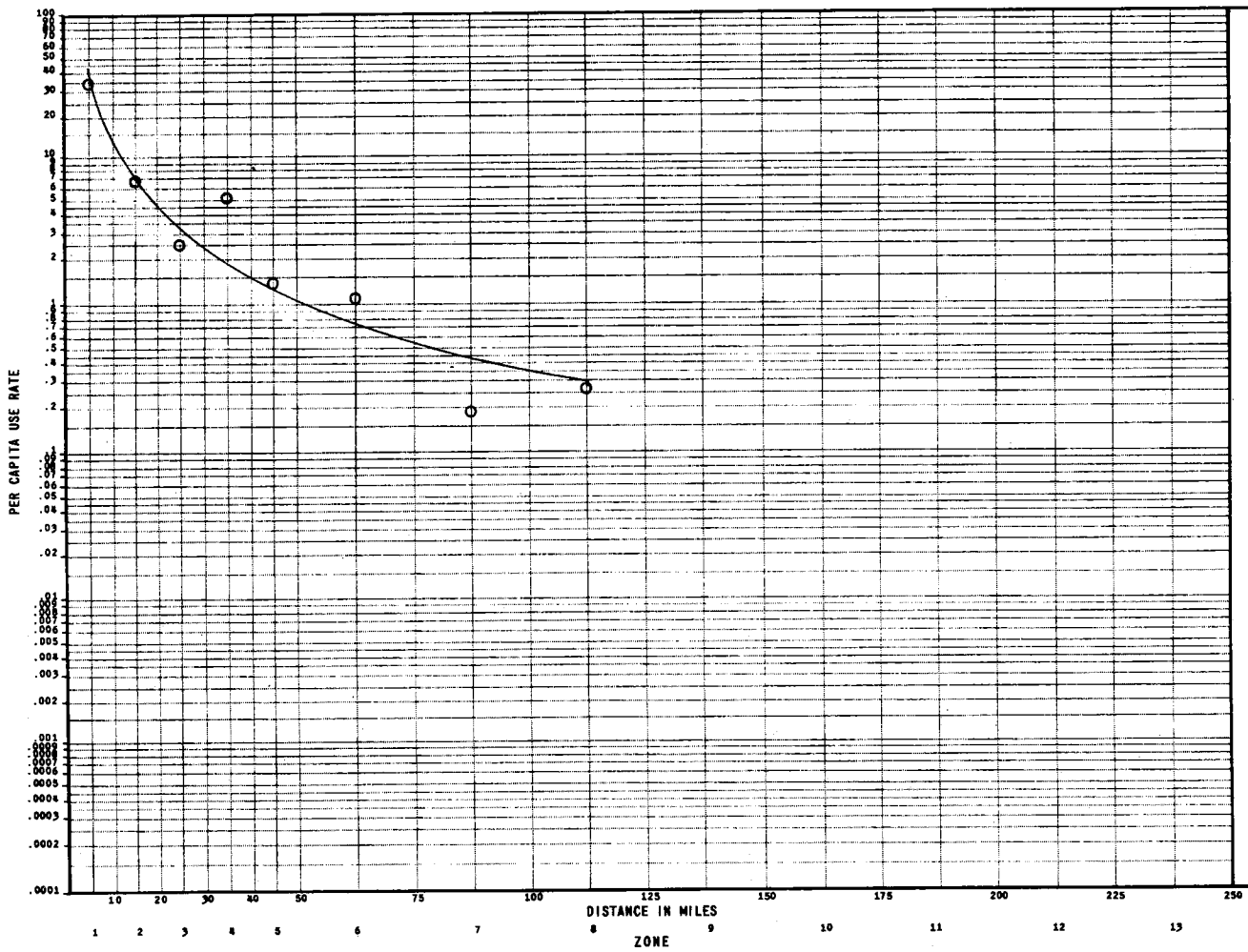
$Y = Exp(3.304790 - .054506X)$

$R^2 = .58$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	20.7439	17,500
2	12.0273	10,500
3	6.9734	19,100
4	4.0432	76,700,
5	2.3442	130,500
6	.9031	154,200
7	.2312	302,700
8	.0592	407,800
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: LITTLE ROCK

PROJECT: GREERS FERRY

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

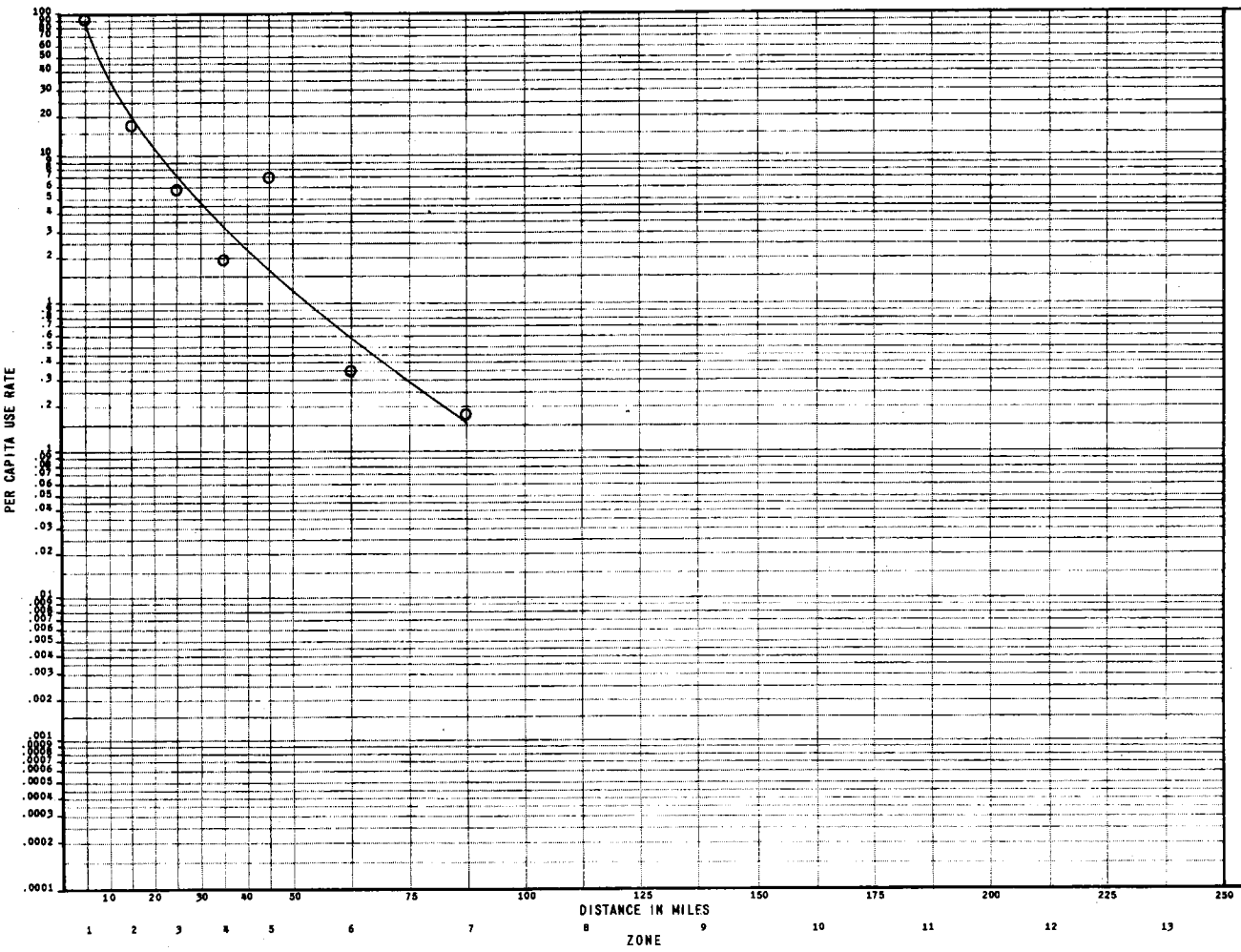
$Y = \text{Exp}(6.325834 - .1.599855\ LNX)$

$R^2 = .89$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	42.5622	7,900
2	7.3400	6,600
3	3.2417	18,500
4	1.8923	32,400
5	1.2658	48,800
6	.7484	283,900
7	.4369	338,050
8	.2922	375,900
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: LITTLE ROCK

PROJECT: NORFORK

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

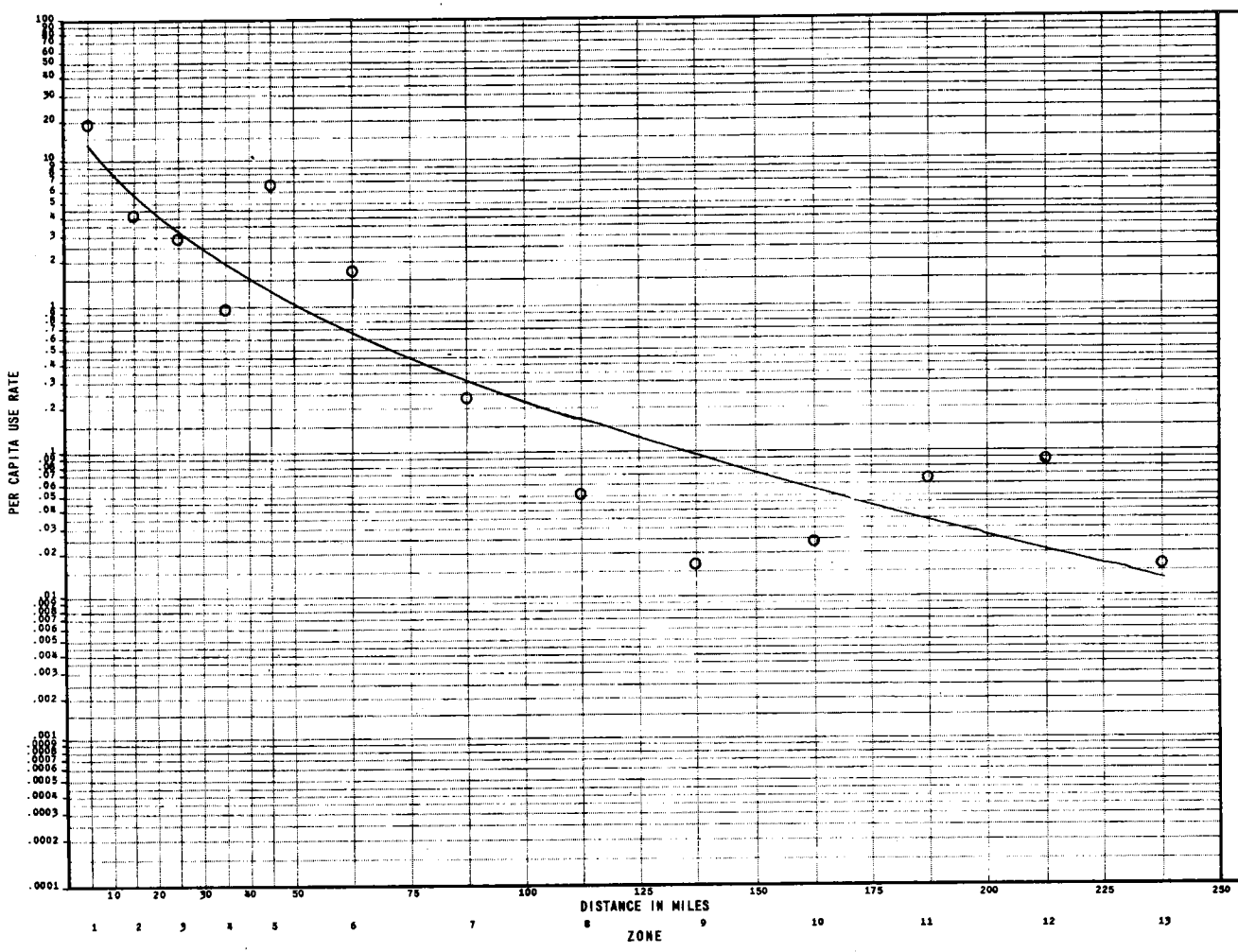
$Y = \text{Exp}(6.422489 - .886016 \times {}^{.5})$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	84.8847	7,500
2	19.9048	8,700
3	7.3331	9,400
4	3.2568	15,500
5	1.6143	17,600
6	.5587	91,500
7	.1548	144,800
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: LITTLE ROCK

PROJECT: TABLE ROCK

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

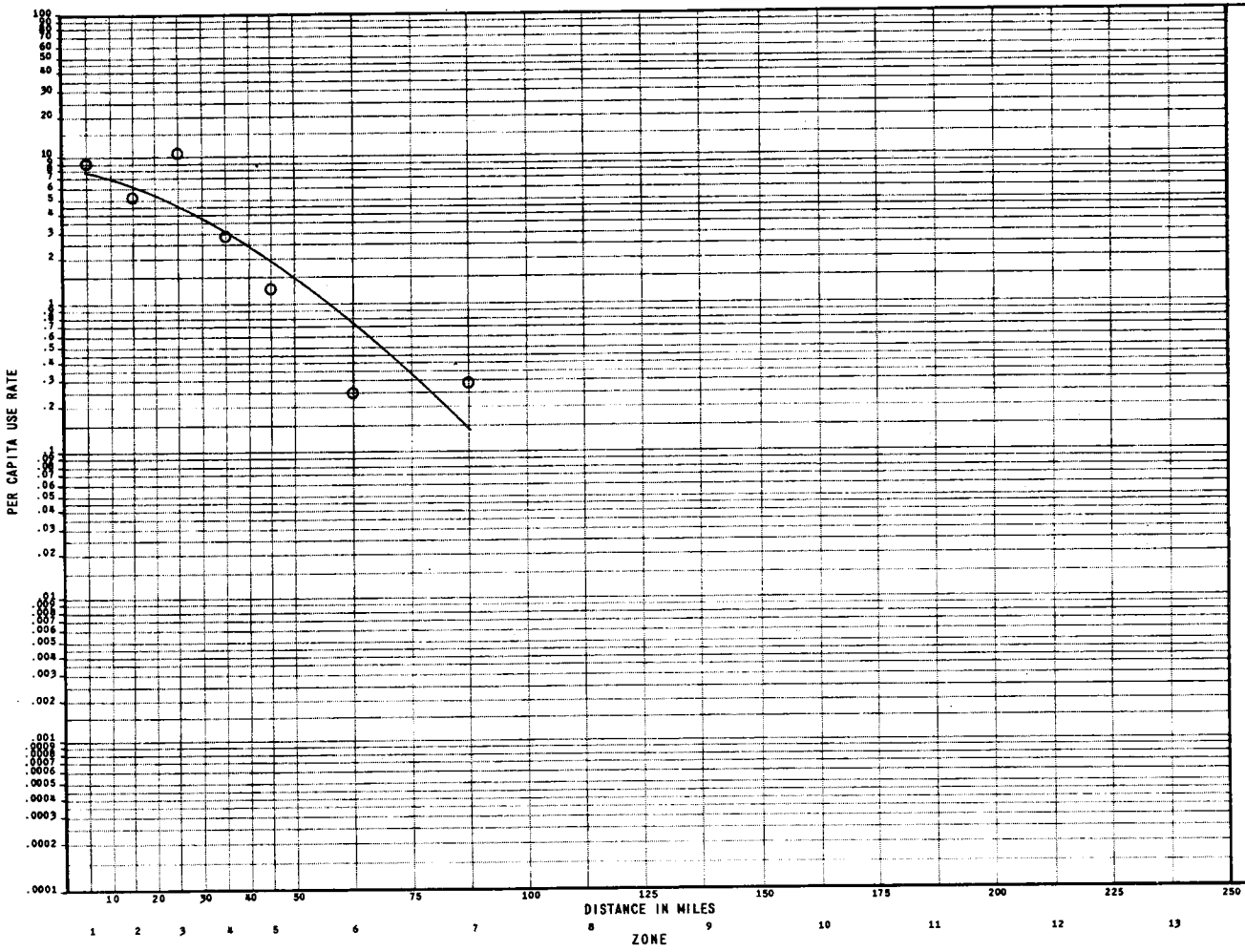
$Y = \text{Exp}(3.775787 - .523600 \times {}^{.5})$

$R^2 = .82$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	13.5310	14,900
2	5.7425	24,900
3	3.1829	57,400
4	1.9702	149,900
5	1.3013	90,000
6	.6951	268,900
7	.3256	298,300
8	.1690	411,900
9	.0940	947,900
10	.0551	745,500
11	.0336	1,025,800
12	.0211	2,396,500
13	.0137	2,767,700

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: NASHVILLE

PROJECT: CENTER HILL

LEGEND

o SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(2.129908 - .004927 \times^{1.5})$

$R^2 = .62$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	7.9631	16,690
2	6.3194	45,980
3	4.5445	46,920
4	3.0329	61,120
5	1.9009	108,960
6	.7371	887,700
7	.1490	759,070
8		
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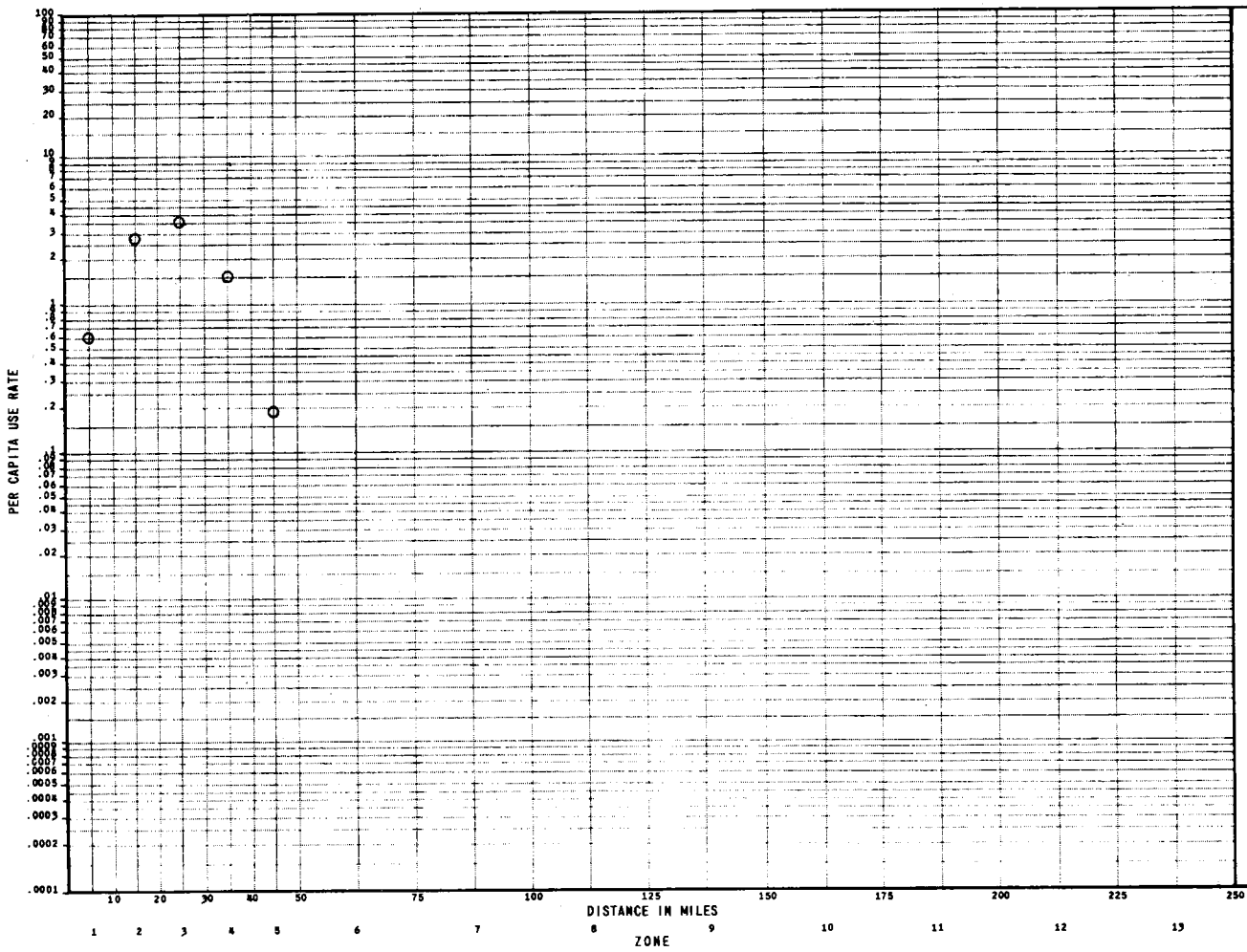
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: NASHVILLE

PROJECT: CHEATHAM

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

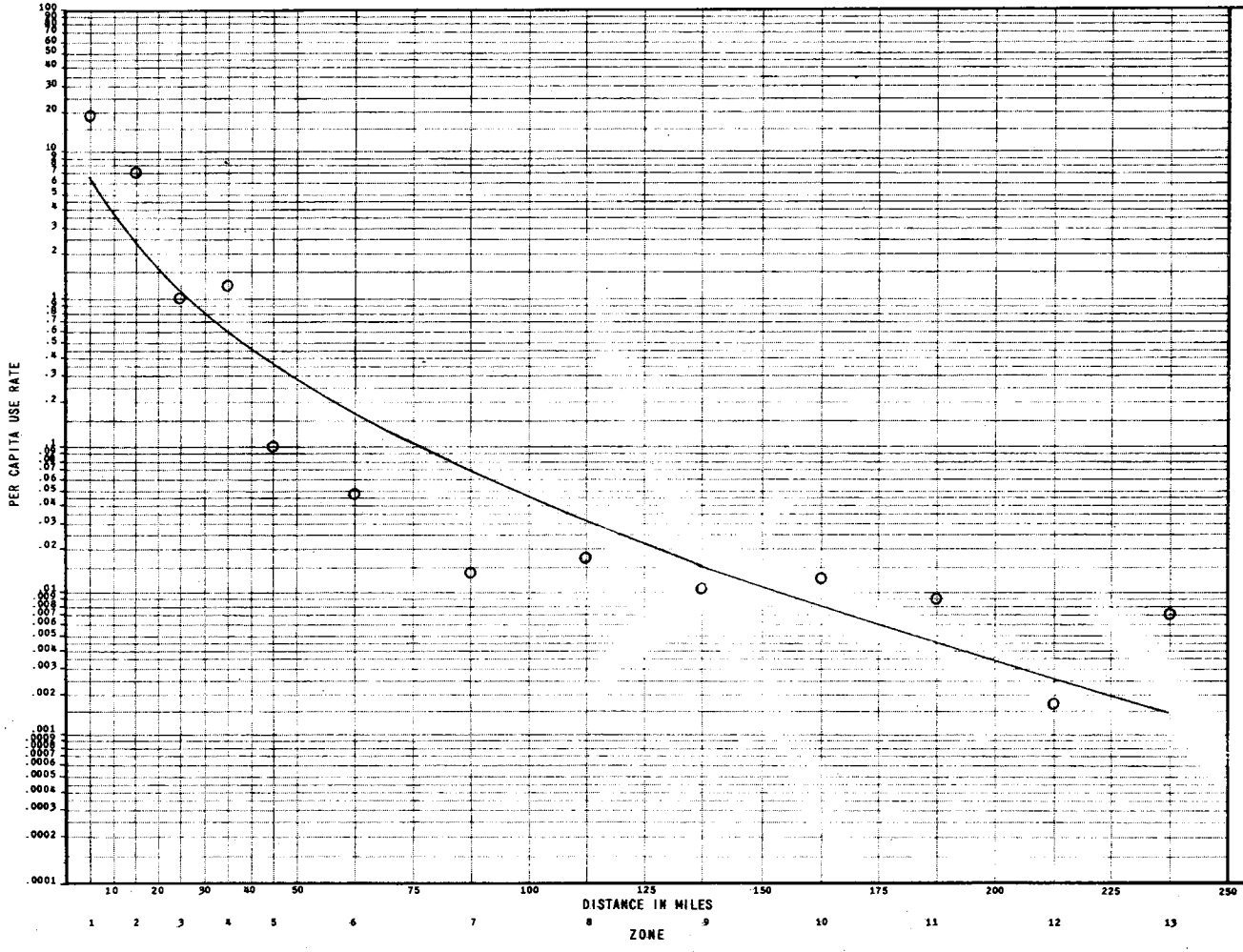
REGRESSION EQUATION:

R^2 =

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		401,480
2		63,130
3		107,360
4		105,260
5		103,230
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: NASHVILLE

PROJECT: DALE HOLLOW

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

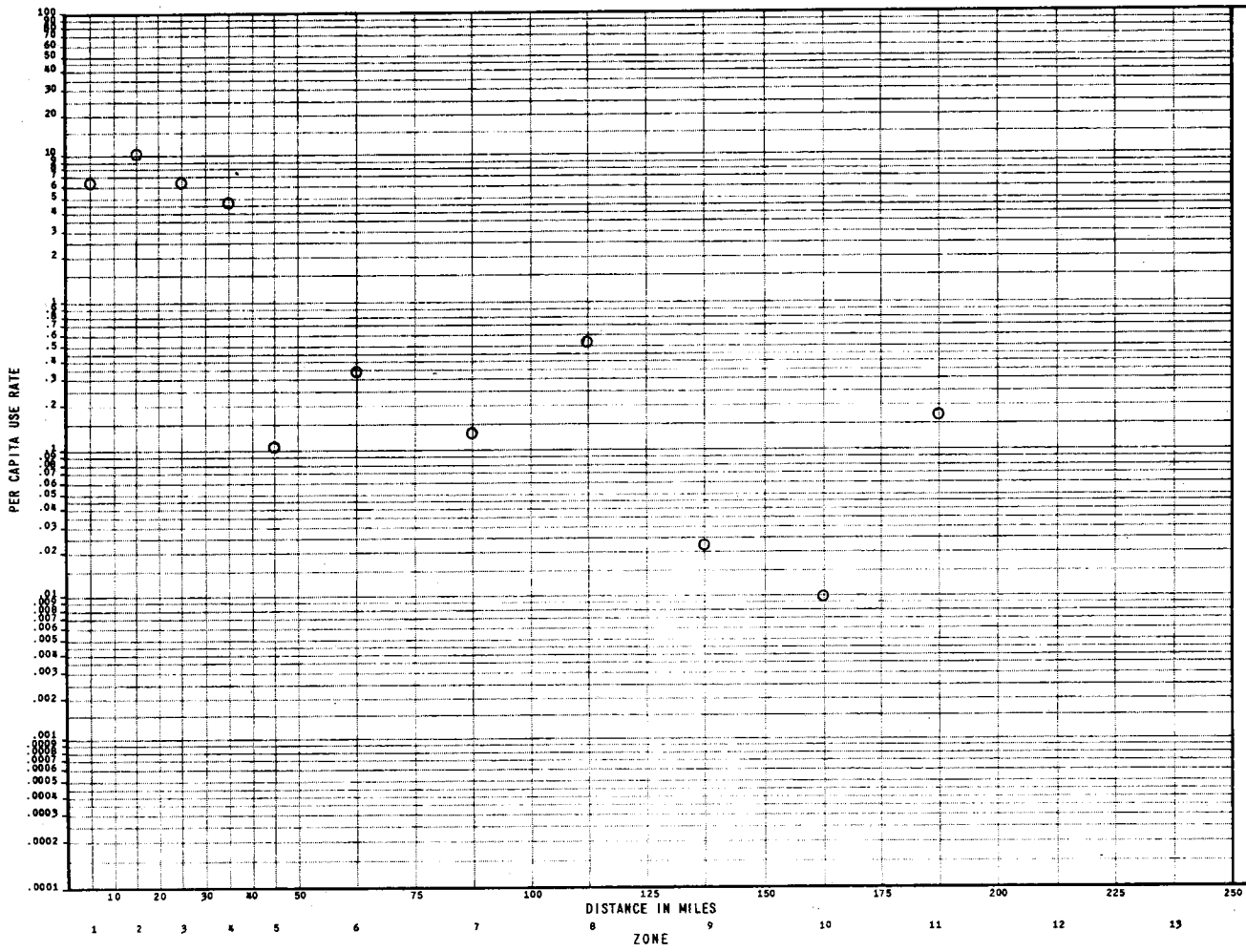
$Y = \text{Exp}(3.265626 - .633924\ X^{.5})$

$R^2 = .50$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	6.3479	22,150
2	2.2489	28,600
3	1.1008	52,880
4	.6159	49,470
5	.3727	84,080
6	.1745	345,780
7	.0697	1,062,700
8	.0315	1,232,900
9	.0155	1,513,780
10	.0081	1,122,560
11	.0045	1,819,540
12	.0025	3,330,950
13	.0015	3,071,890

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: NASHVILLE

PROJECT: LAKE CUMBERLAND

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

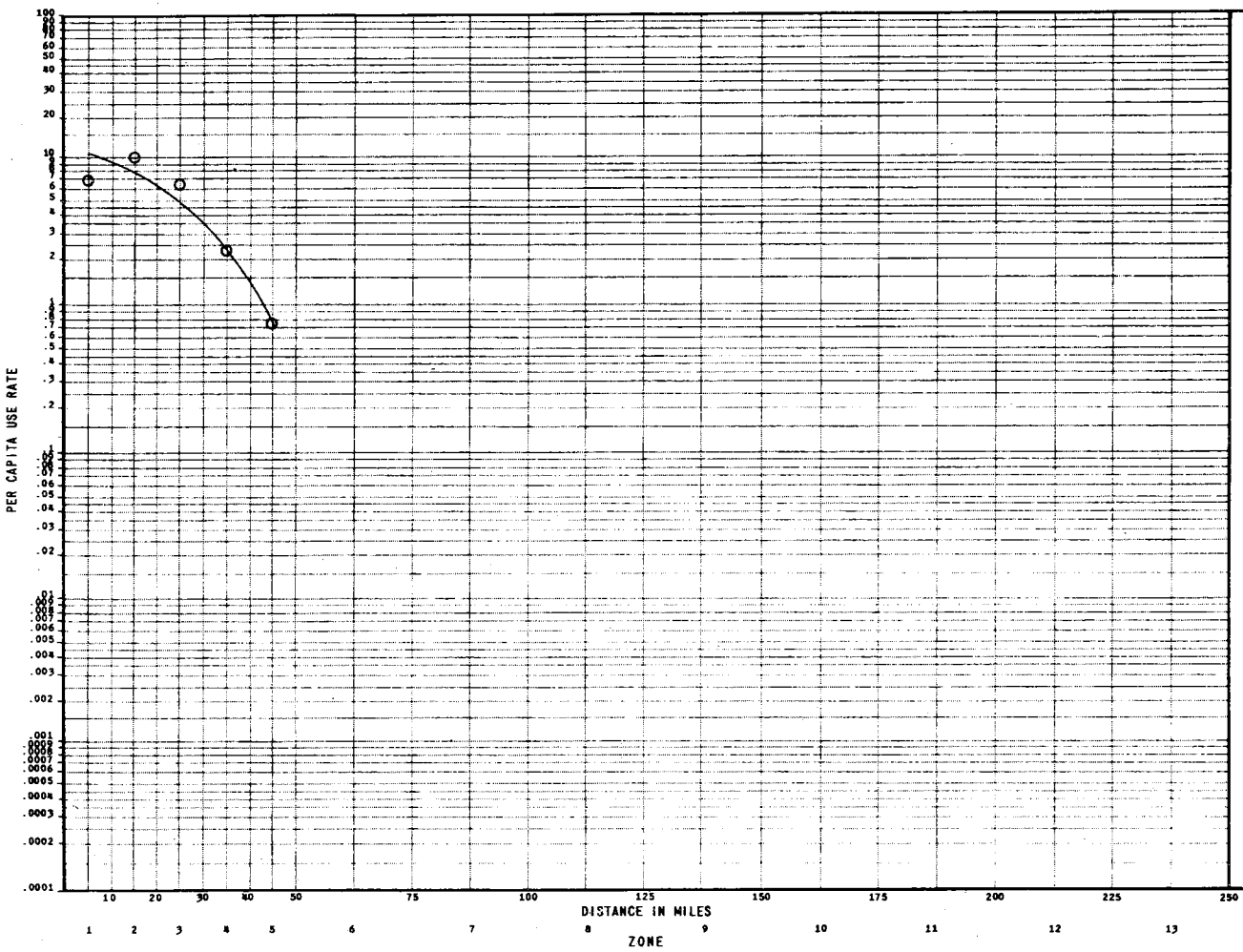
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		55,000
2		56,950
3		77,490
4		75,820
5		120,490
6		474,600
7		988,780
8		1,418,240
9		1,707,440
10		2,696,680
11		1,999,830
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: NASHVILLE

PROJECT: OLD HICKORY

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

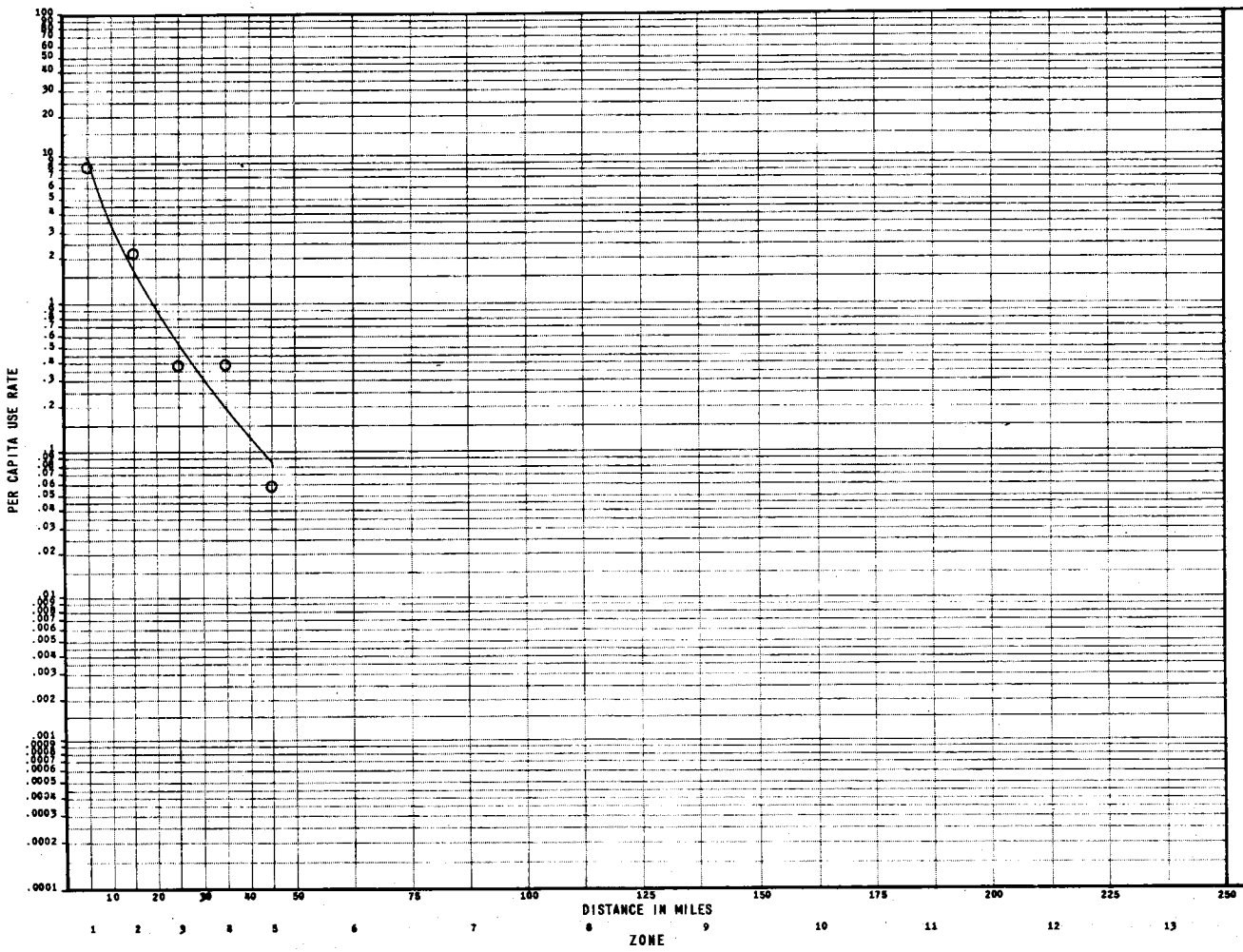
$Y = \text{Exp}(2.384751 - .001253\ X^2)$

$R^2 = .66$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	10.5213	218,700
2	8.1873	177,250
3	4.9578	178,970
4	2.3362	113,170
5	.8566	119,950
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: PORTLAND

PROJECT: COTTAGE GROVE

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

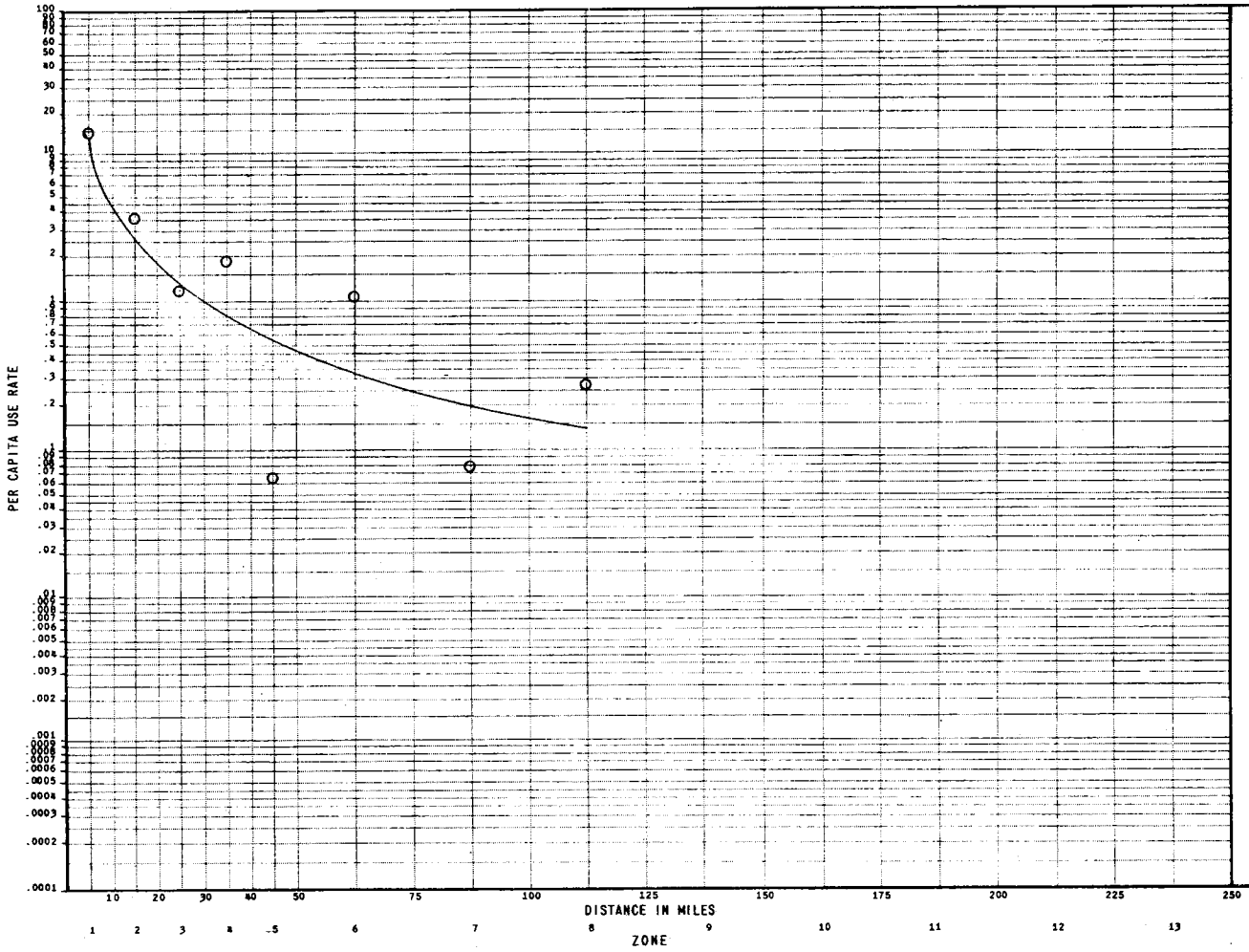
$Y = \text{Exp}(4.640080 - 1.055036 \cdot X^{.5})$

$R^2 = .97$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	9.7859	10,000
2	1.7401	8,000
3	.5299	122,000
4	.2016	13,000
5	.0674	72,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: PORTLAND

PROJECT: DETROIT

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

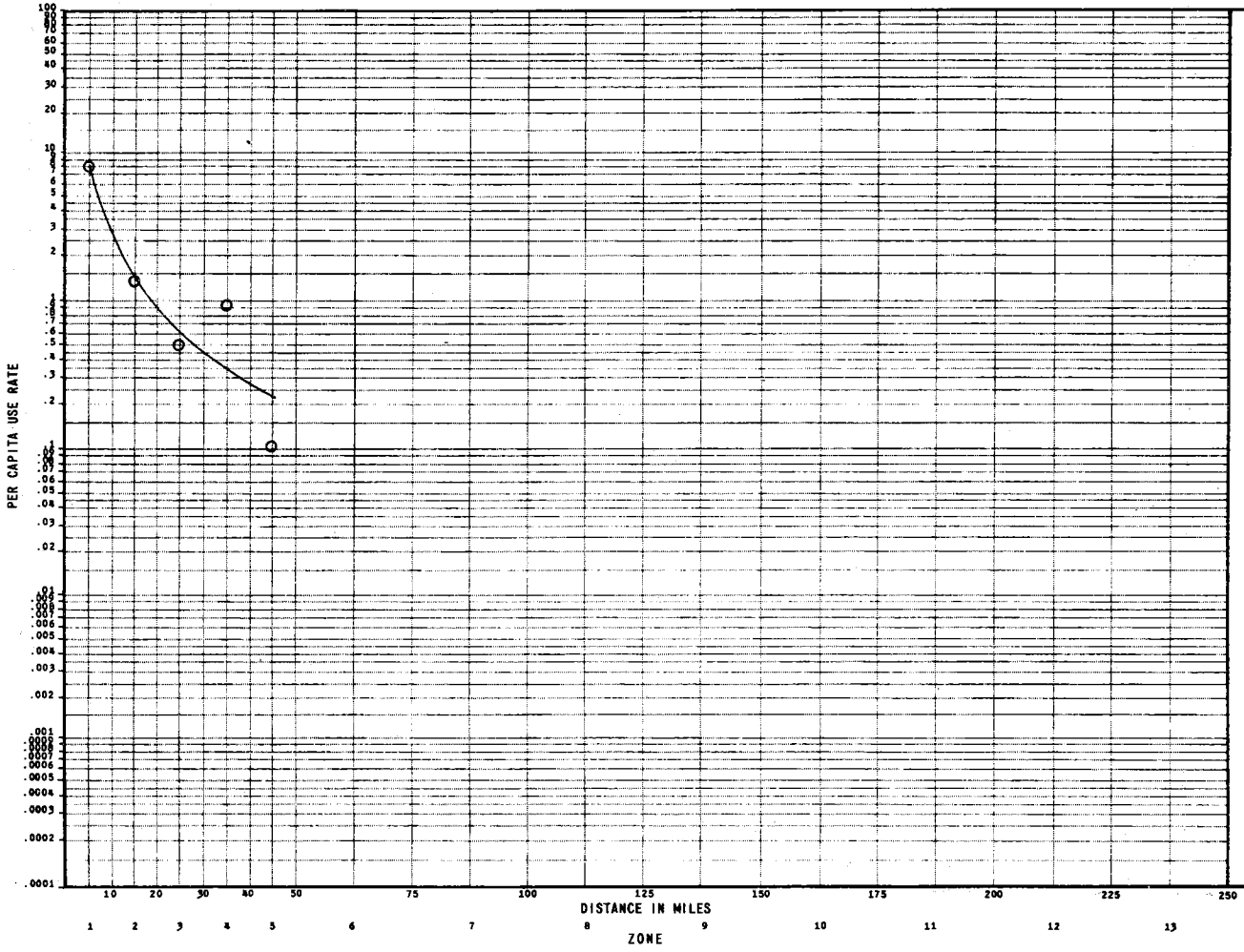
$Y = \text{Exp}(5.061414 - 1.496712 \cdot LNX)$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	14.1902	2,000
2	2.7408	6,000
3	1.2759	6,000
4	.7711	10,000
5	.5294	106,000
6	.3238	190,000
7	.1957	700,000
8	.1343	330,000
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: PORTLAND

PROJECT: DORENA

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

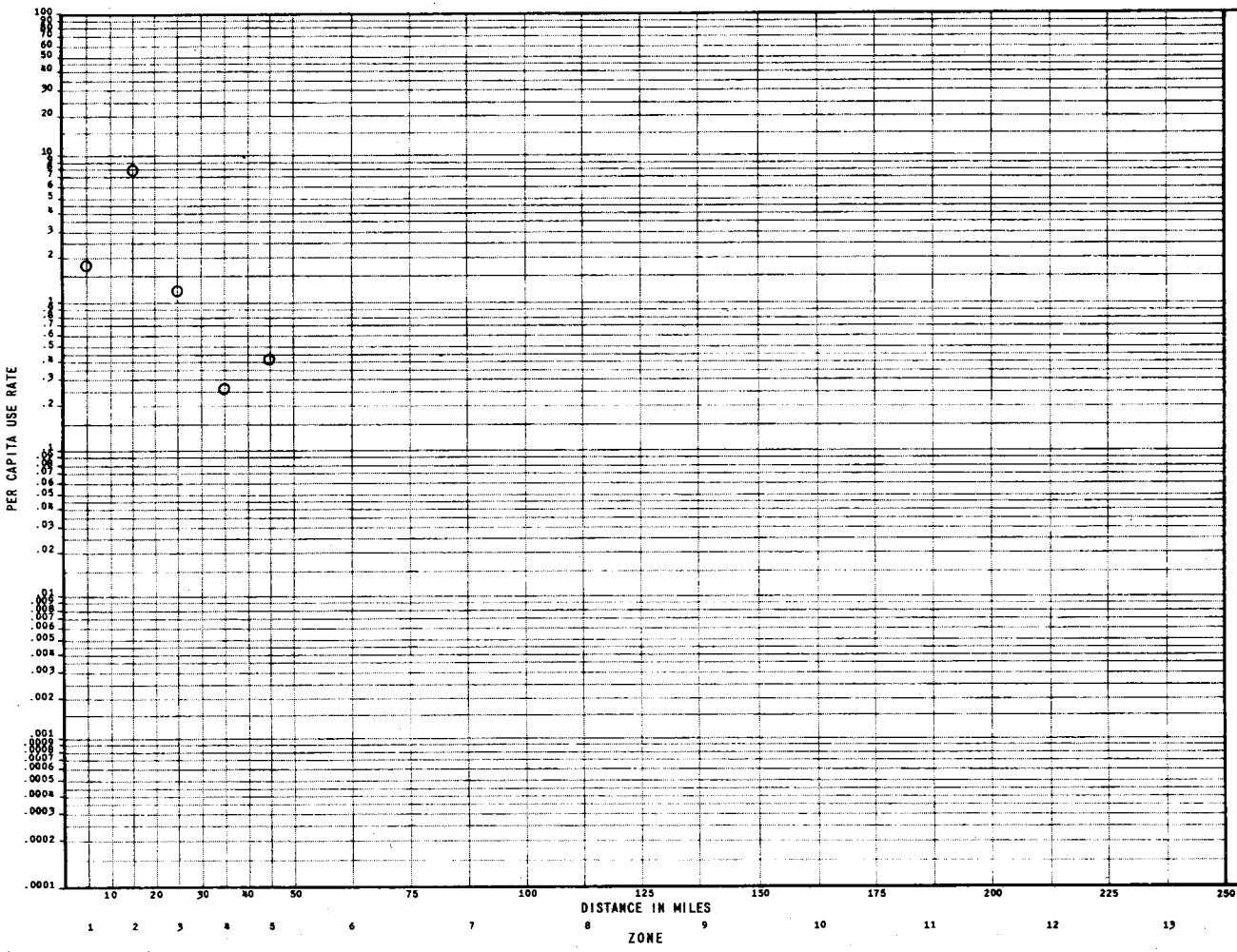
$Y = \text{Exp}(4.779422 - 1.646454\ LNX)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	8.4111	8,000
2	1.3761	9,000
3	.5943	120,000
4	.3415	8,000
5	.2258	51,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: PORTLAND

PROJECT: FERN RIDGE

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

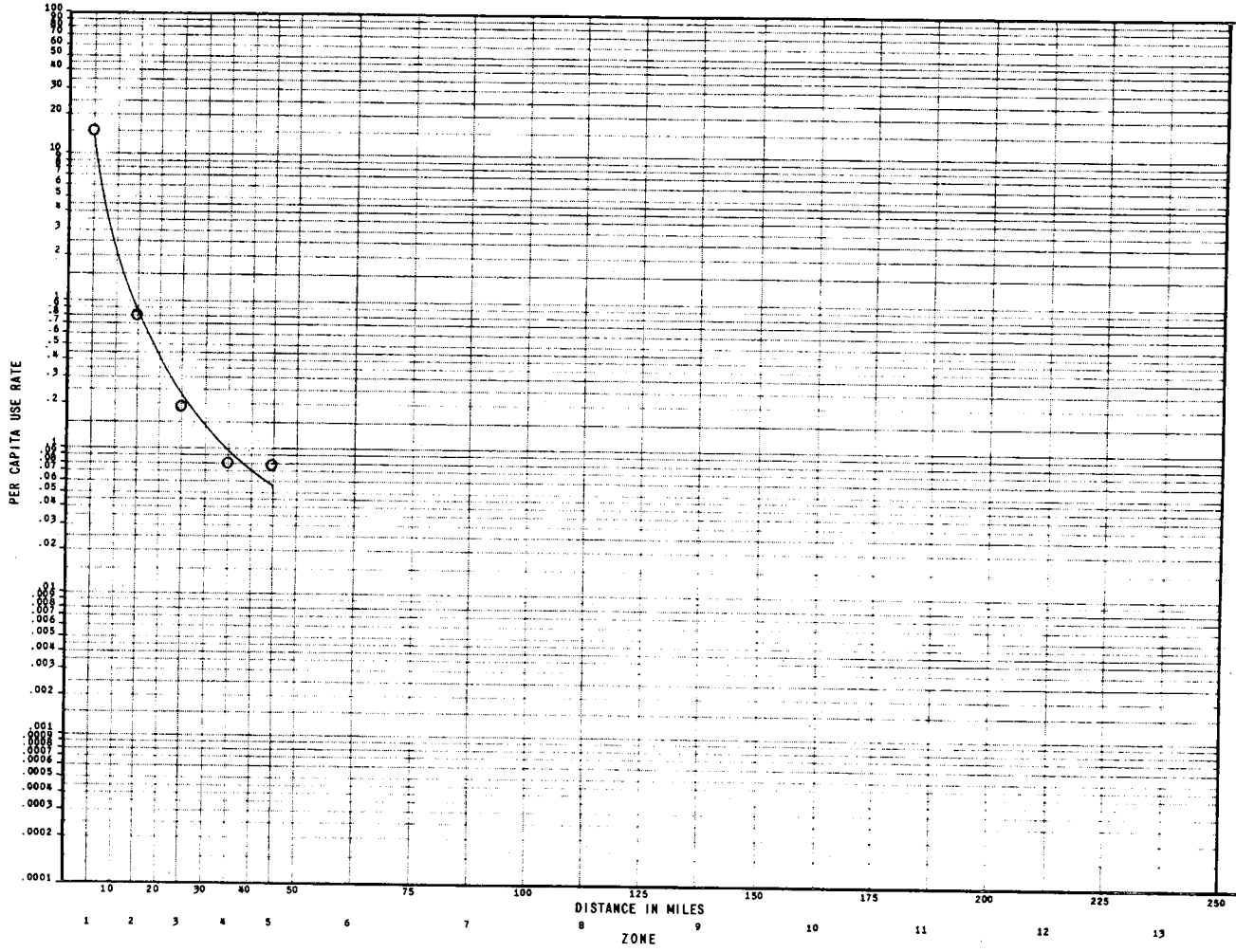
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		51,000
2		106,000
3		23,000
4		60,000
5		23,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: PORTLAND

PROJECT: HILLS CREEK

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

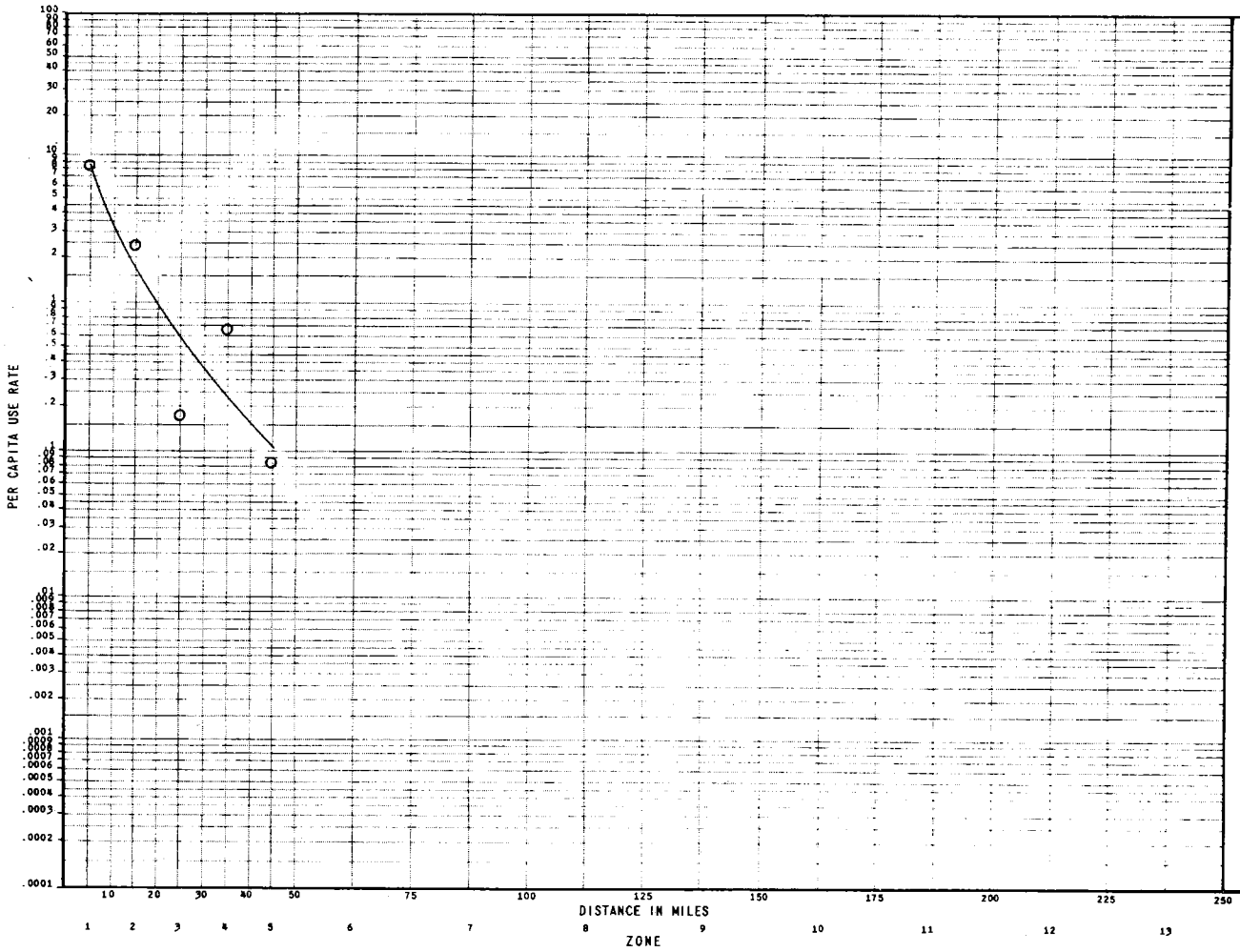
$Y = Exp(6.675490 - 2.526950\ LNX)$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	13.5789	5,000
2	.8457	4,000
3	.2326	4,000
4	.0994	7,000
5	.0527	133,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: PORTLAND

PROJECT: LOOKOUT POINT

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

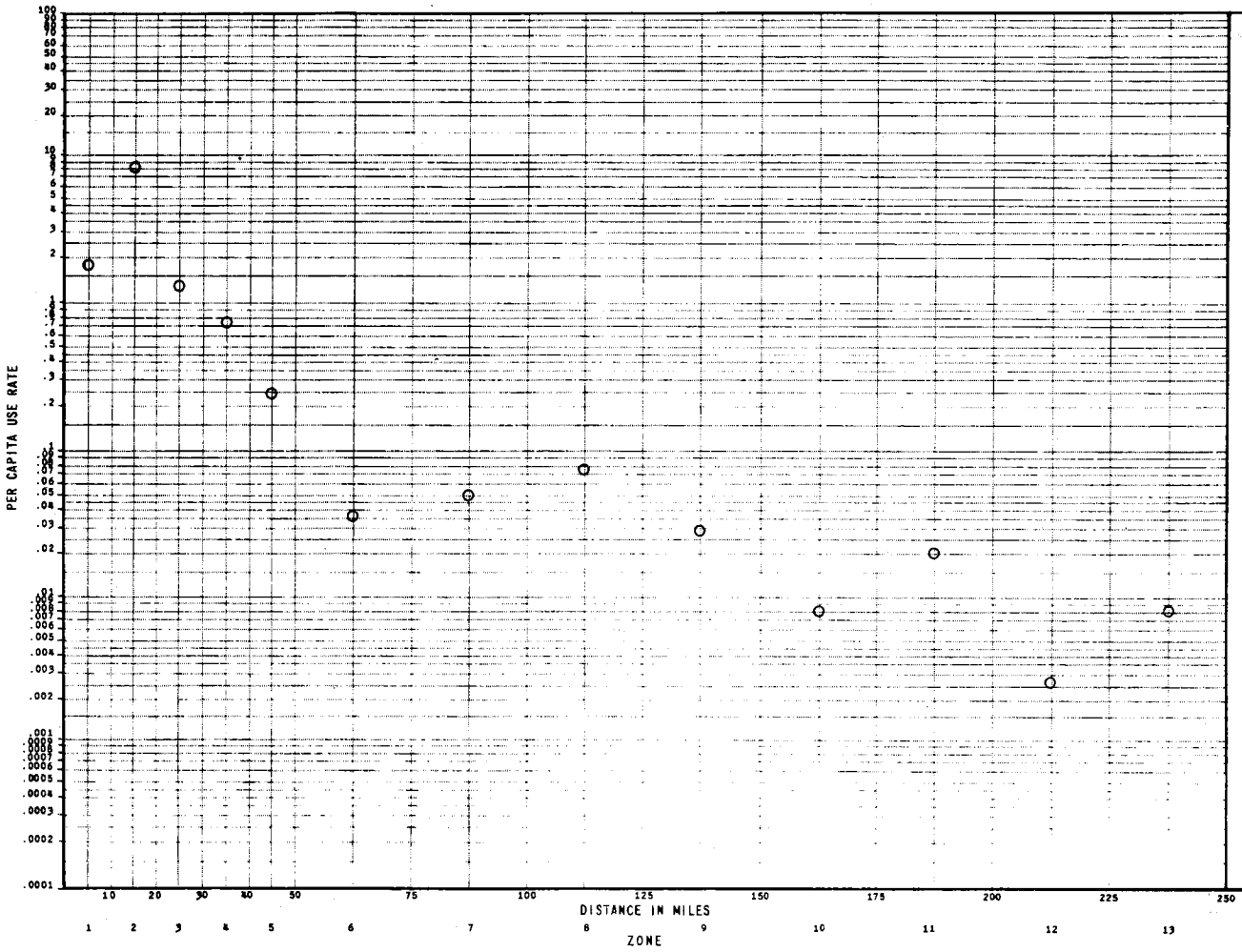
$Y = Exp(4.294827 - .974550\ X^{.5})$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	8.2951	8,000
2	1.6827	54,000
3	.5611	105,000
4	.2298	18,000
5	.1062	15,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: PORTLAND

PROJECT: DALLES

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

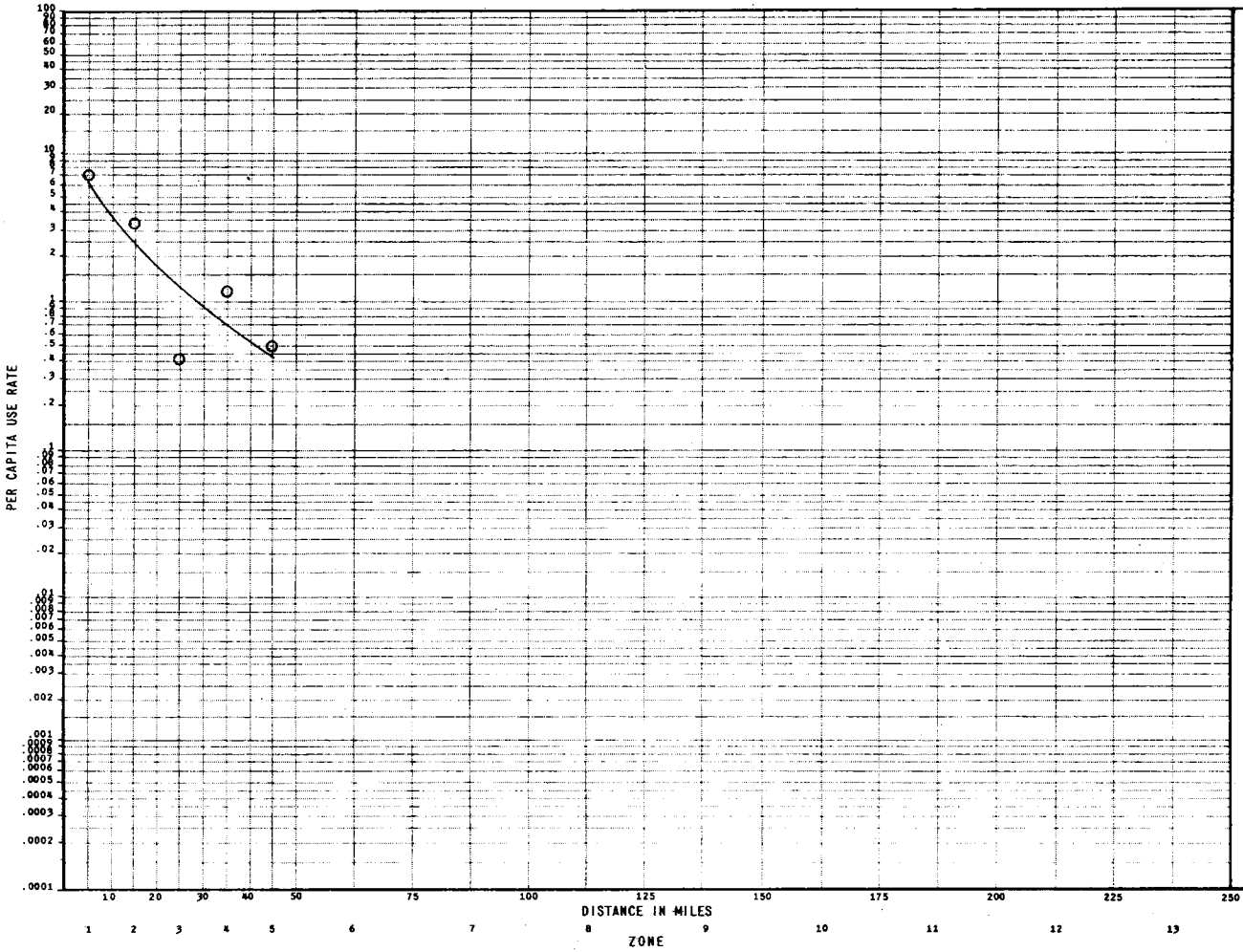
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		18,000
2		10,000
3		12,000
4		12,000
5		13,000
6		215,000
7		1,000,000
8		220,000
9		480,000
10		320,000
11		340,000
12		840,000
13		740,000

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1964 – 1968

DISTRICT: SACRAMENTO

PROJECT: BLACK BUTTE

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

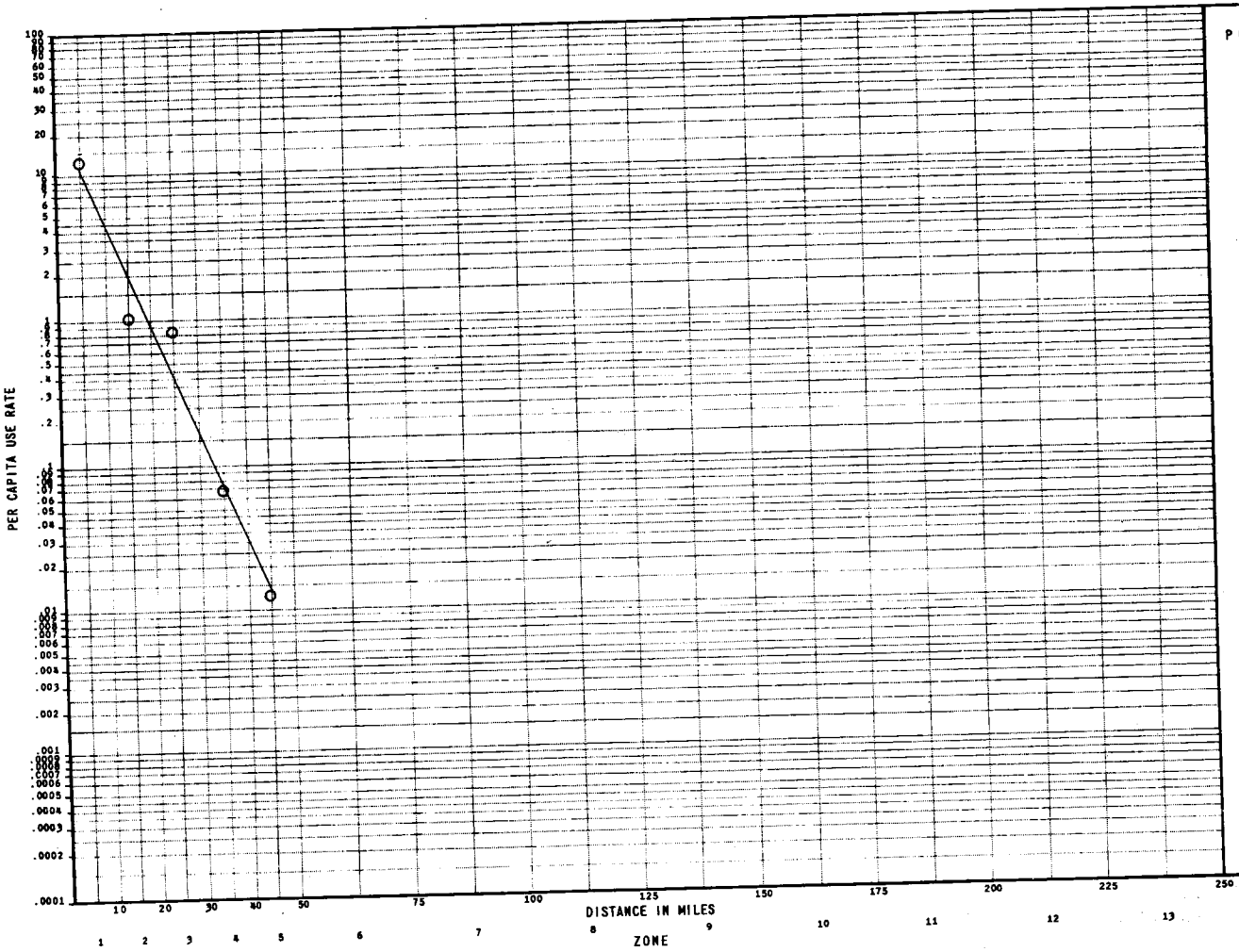
$Y = \mathrm{Exp}(3.163014 - .594158\ X^{.5})$

$R^2 = .93$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	6.2616	5,790
2	2.3675	9,150
3	1.2119	38,130
4	.7032	36,690
5	.4392	19,170
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1964 – 1968

DISTRICT: SACRAMENTO

PROJECT: ENGLEBRIGHT

LEGEND

o SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

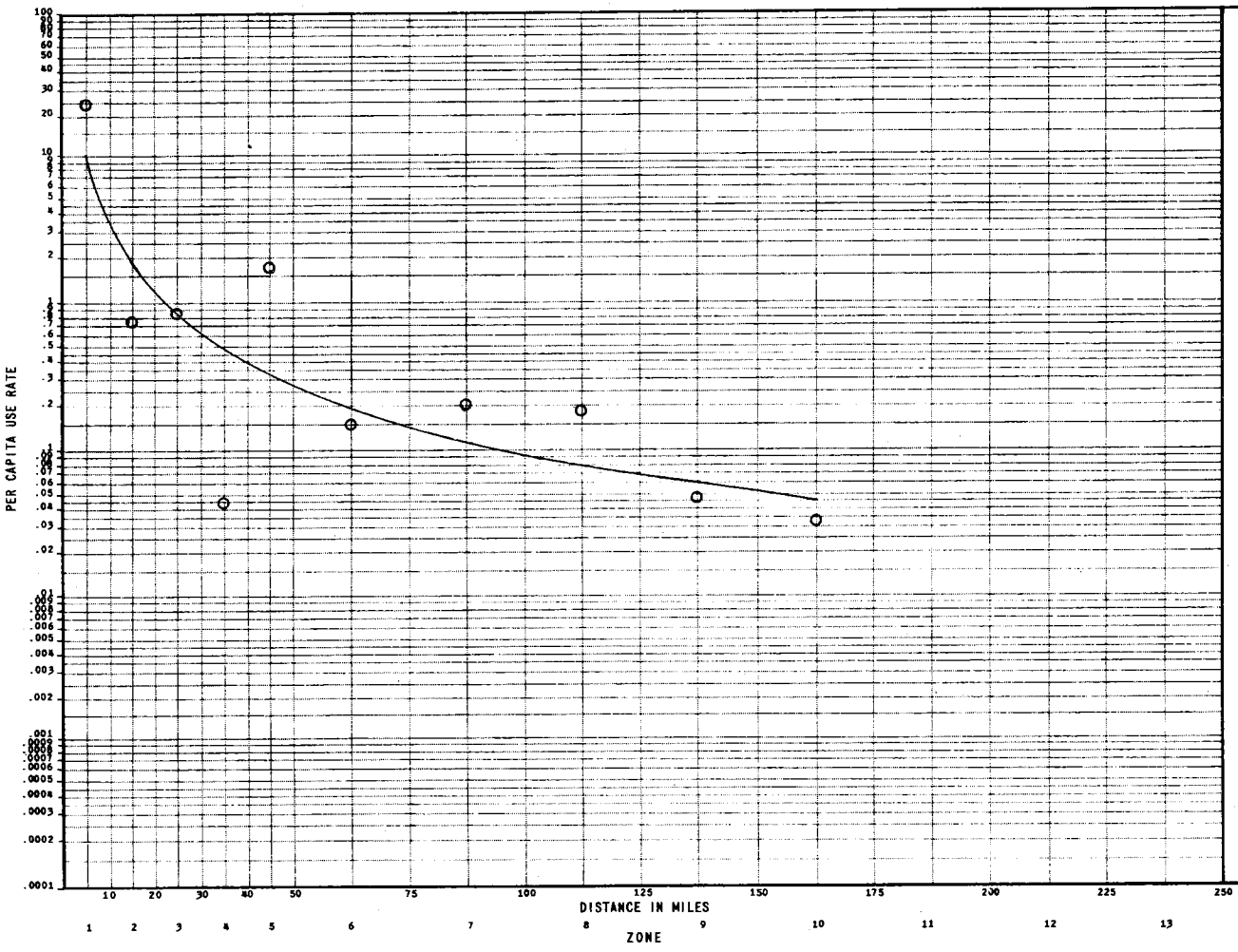
$Y = \text{Exp}(3.220384 - .165729\ \dot{X})$

$R^2 = .96$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	10.9324	1,460
2	2.0843	20,820
3	.3979	58,260
4	.0758	53,490
5	.0144	43,770
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1964 – 1968

DISTRICT: SACRAMENTO

PROJECT: ISABELLA

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

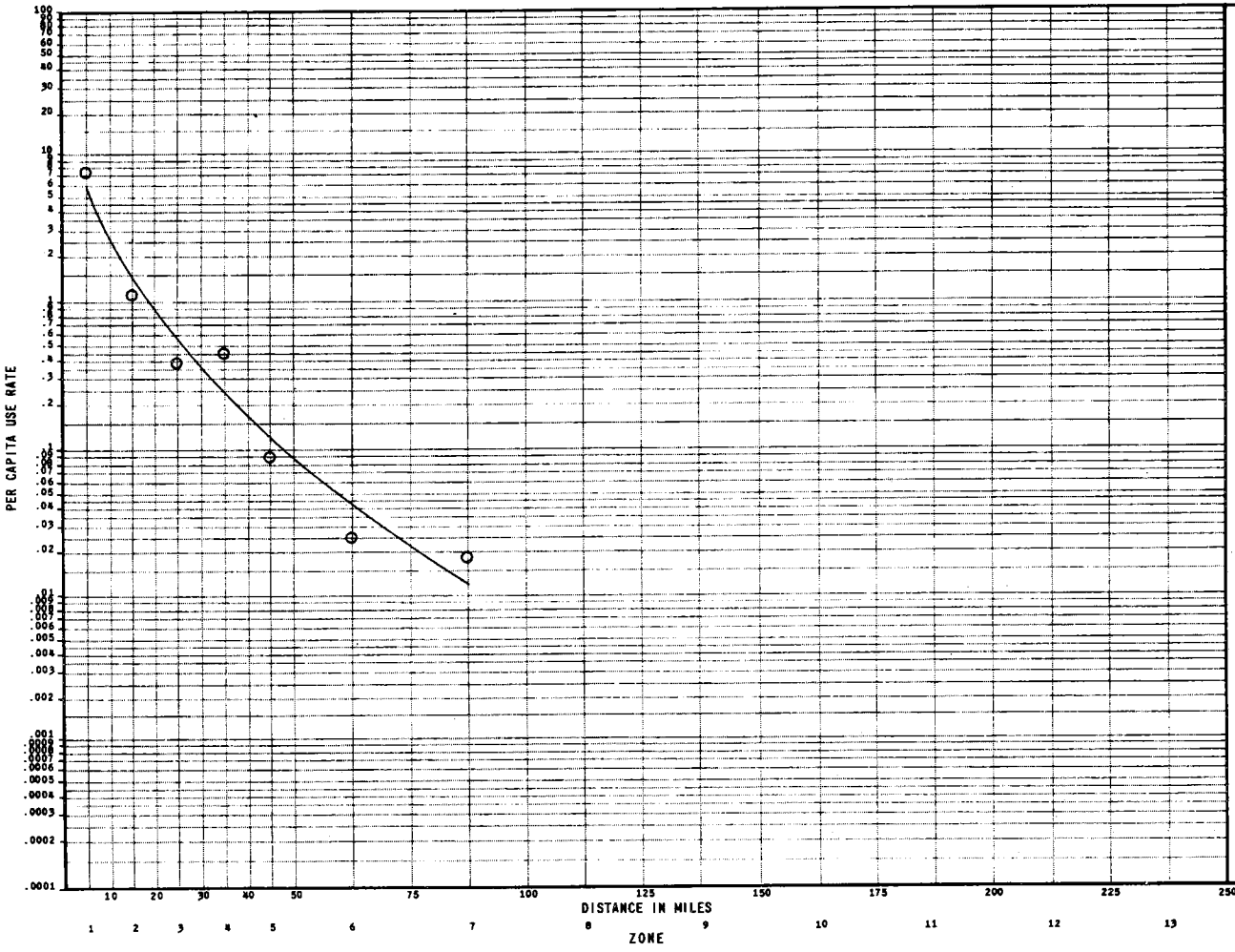
$Y = Exp(4.792274 - 1.550324\ LNX)$

$R^2 = .59$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	9.9455	1,690
2	1.8111	1,010
3	.8203	1,800
4	.4869	43,200
5	.3298	98,810
6	.1982	179,310
7	.1176	88,130
8	.0797	165,060
9	.0584	2,508,170
10	.0451	5,266,130
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1964 – 1968

DISTRICT: SACRAMENTO

PROJECT: NEW HOGAN

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(3.695811 - .866096\ X^{.5})$

$R^2 = .94$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	5.8076	1,660
2	1.4070	7,860
3	.5301	20,600
4	.2398	193,590
5	.1207	220,710
6	.0428	751,250
7	.0122	1,457,740
8		
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11		
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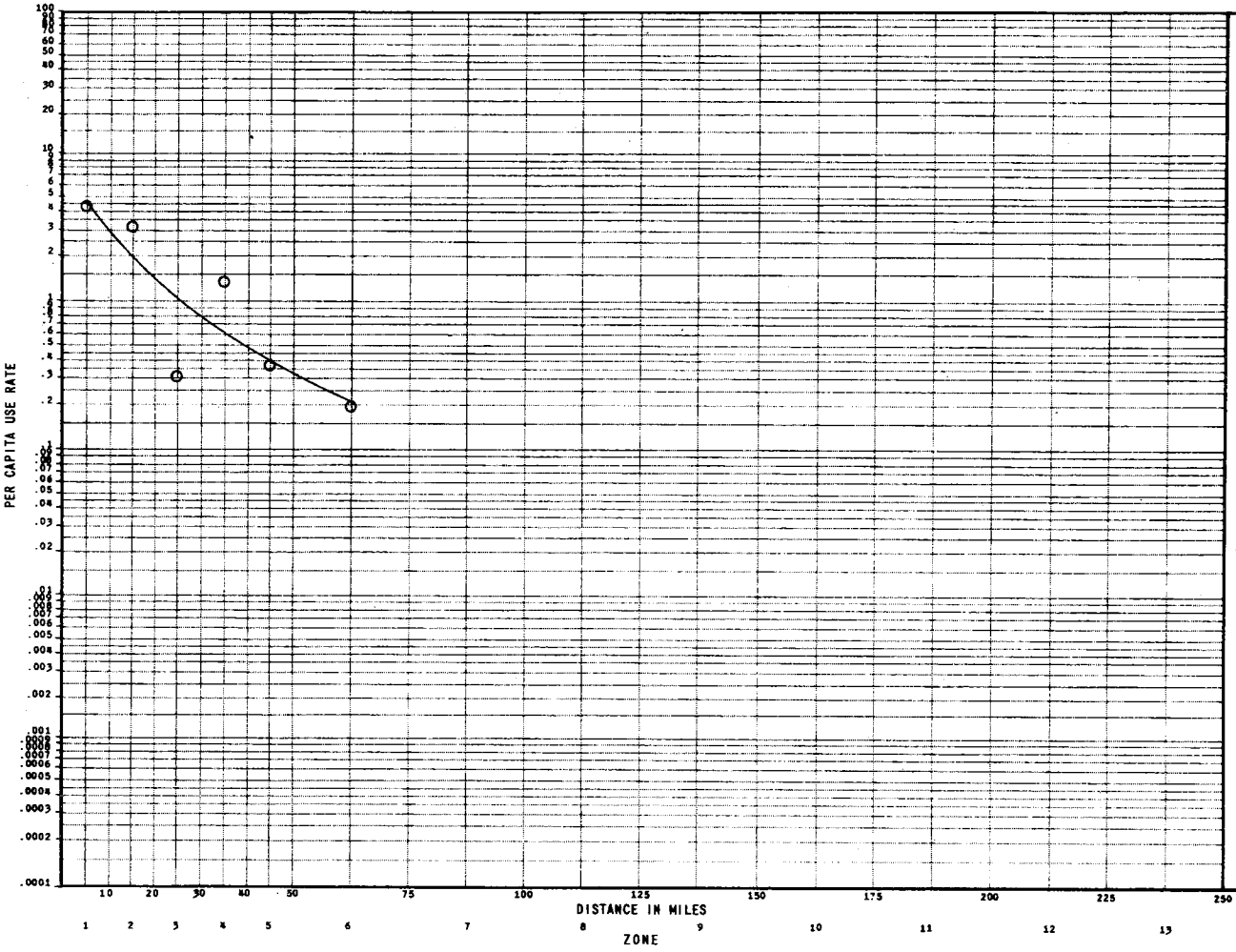
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1964 – 1968

DISTRICT: SACRAMENTO

PROJECT: PINE FLAT

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(2.731100 - .543442\ x^{.5})$

$R^2 = .81$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	4.5536	1,160
2	1.8708	15,070
3	1.0140	172,450
4	.6163	184,020
5	.4007	77,500
6	.2090	177,670
7		
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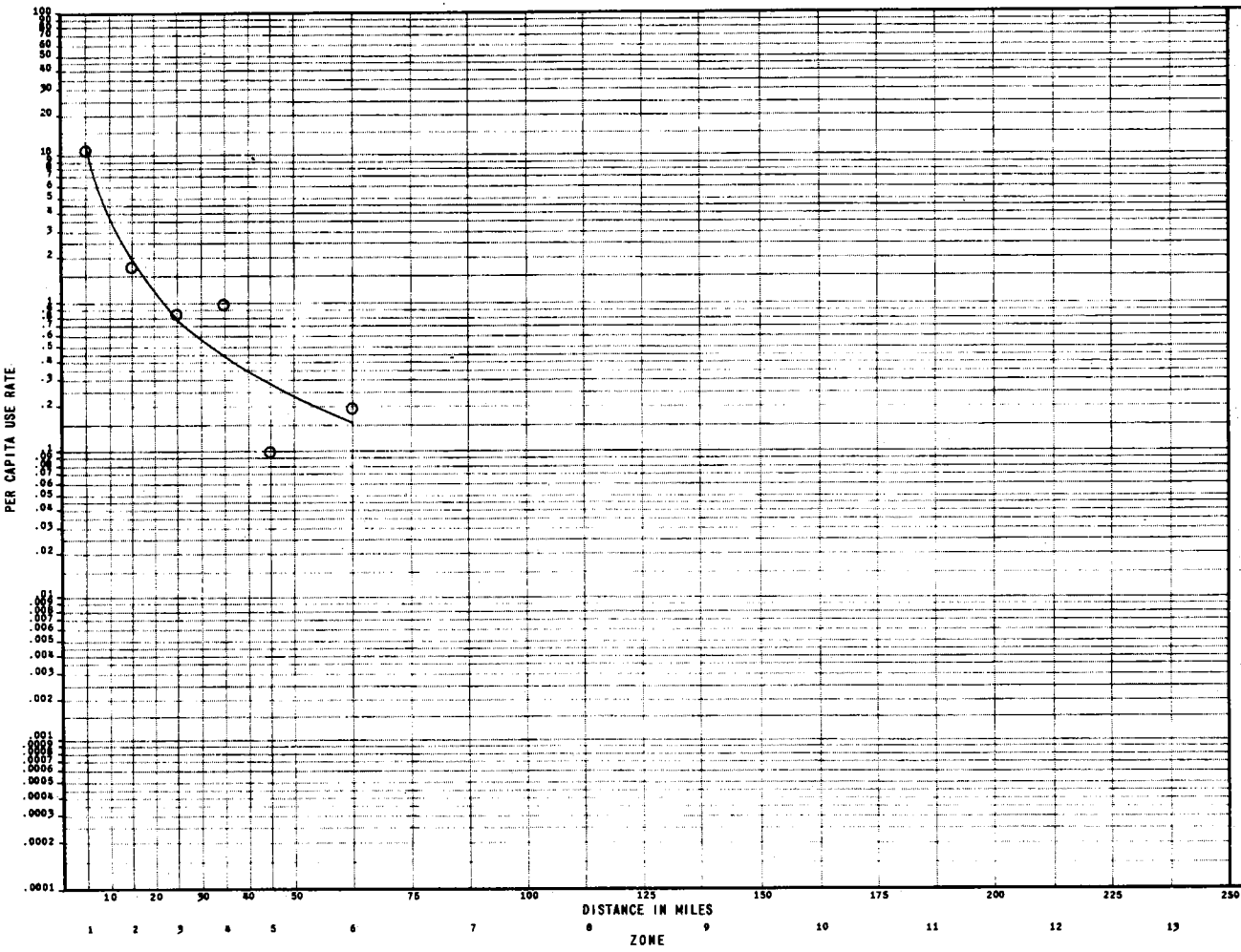
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1964 – 1968

DISTRICT: SACRAMENTO

PROJECT: SUCCESS

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = Exp(5.290013 - 1.727023\ LNX)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	12.3108	21,260
2	1.8462	28,550
3	.7641	30,200
4	.4273	60,460
5	.2769	66,330
6	.1570	35,660
7		
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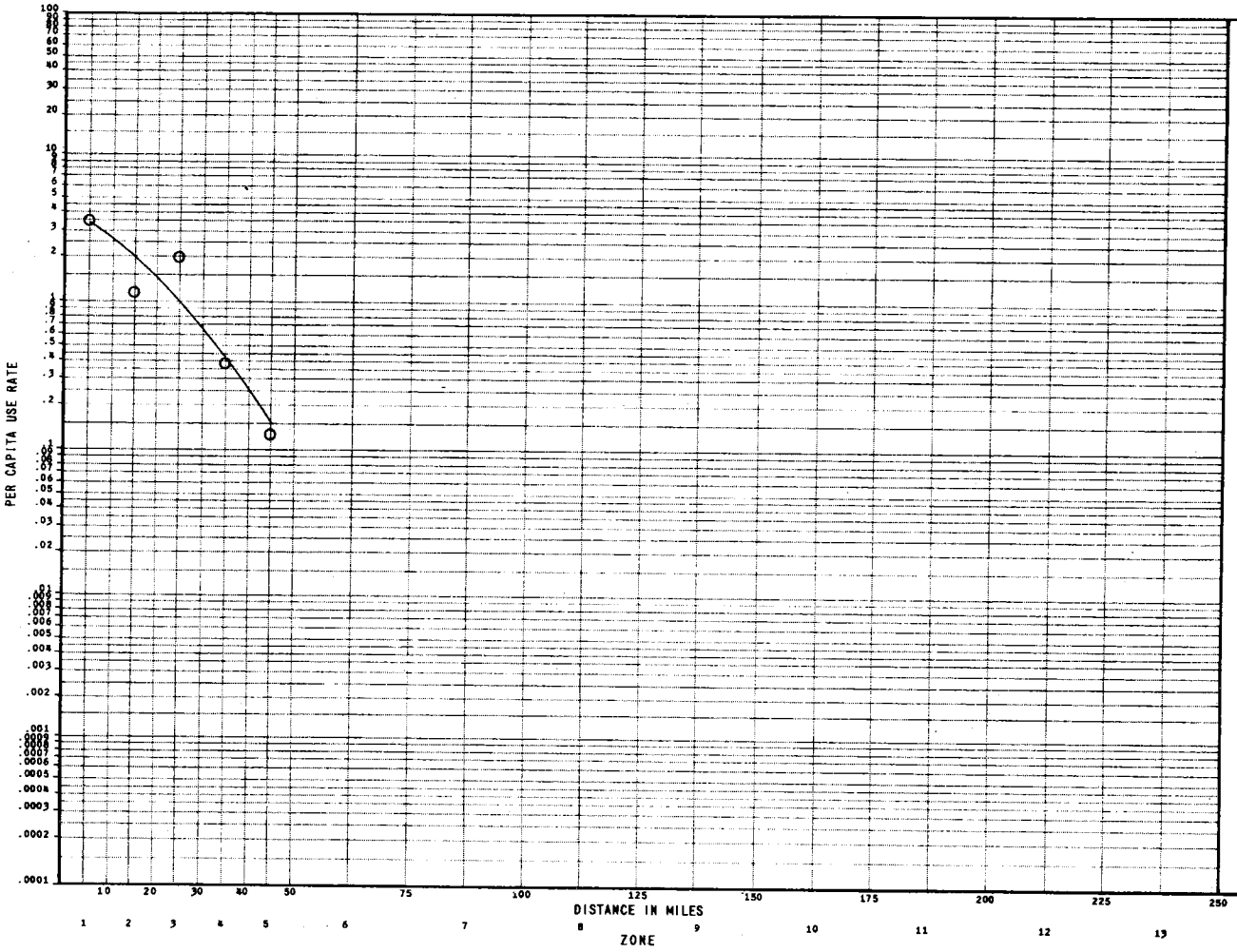
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1964 – 1968

DISTRICT: SACRAMENTO

PROJECT: TERMINUS

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(1.308923 - .010562\ X^{1.5})$

$R^2 = .77$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	3.2898	8,060
2	2.0042	51,880
3	.9886	82,840
4	.4155	53,250
5	.1526	91,870
6		
7		
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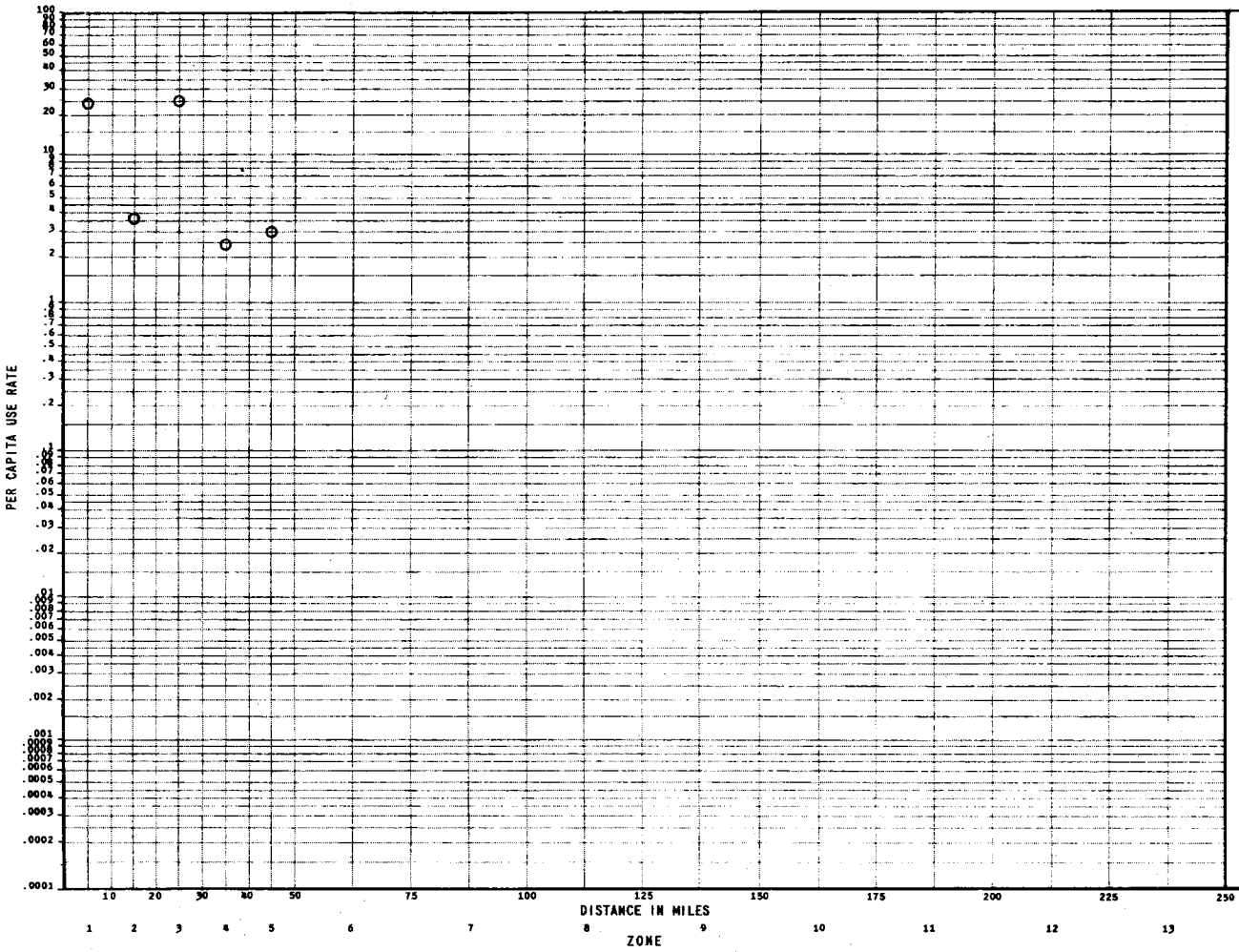
1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: SAVANNAH

PROJECT: CLARK HILL

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

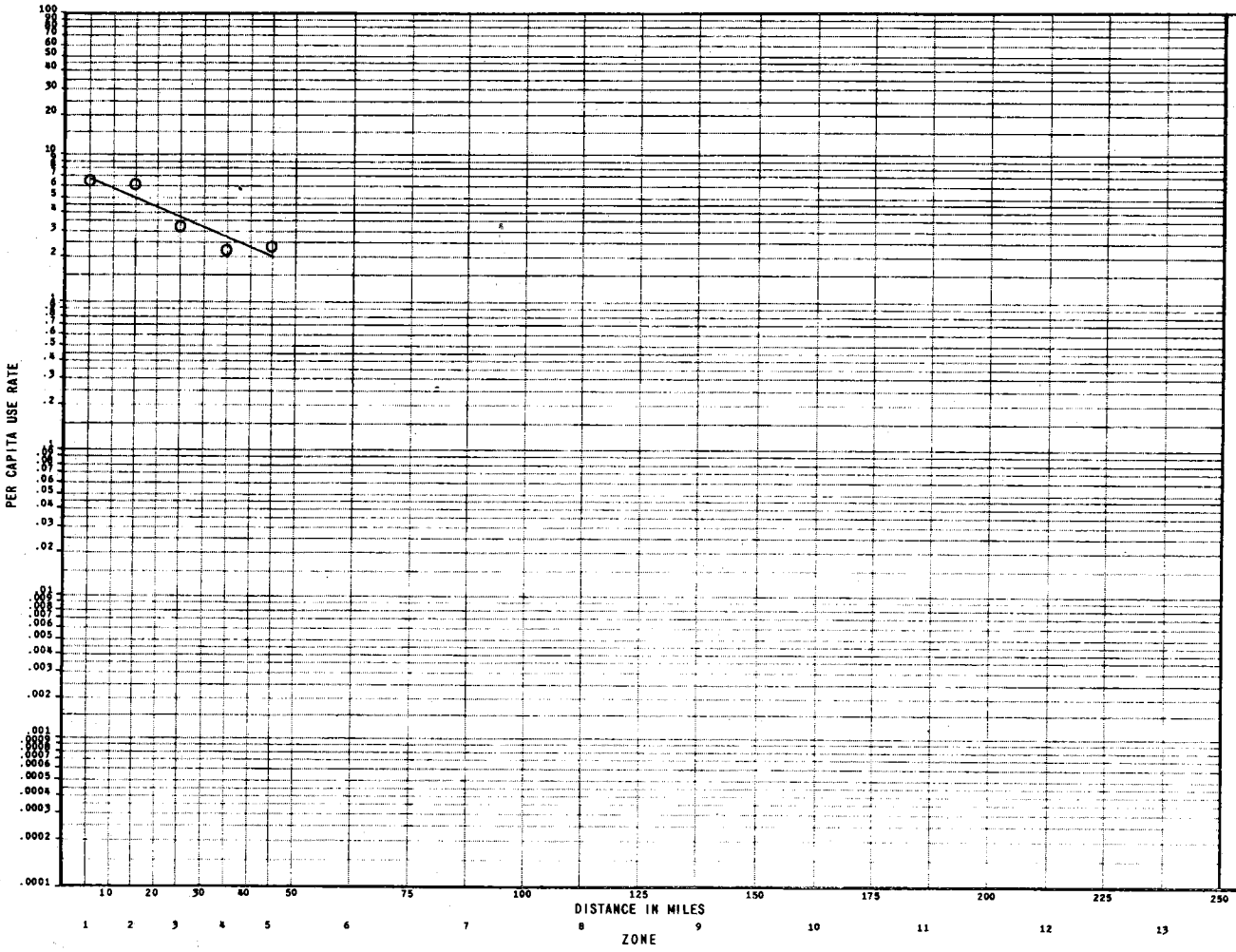
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		27,600
2		43,440
3		58,510
4		205,400
5		137,510
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: SAVANNAH

PROJECT: HARTWELL

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

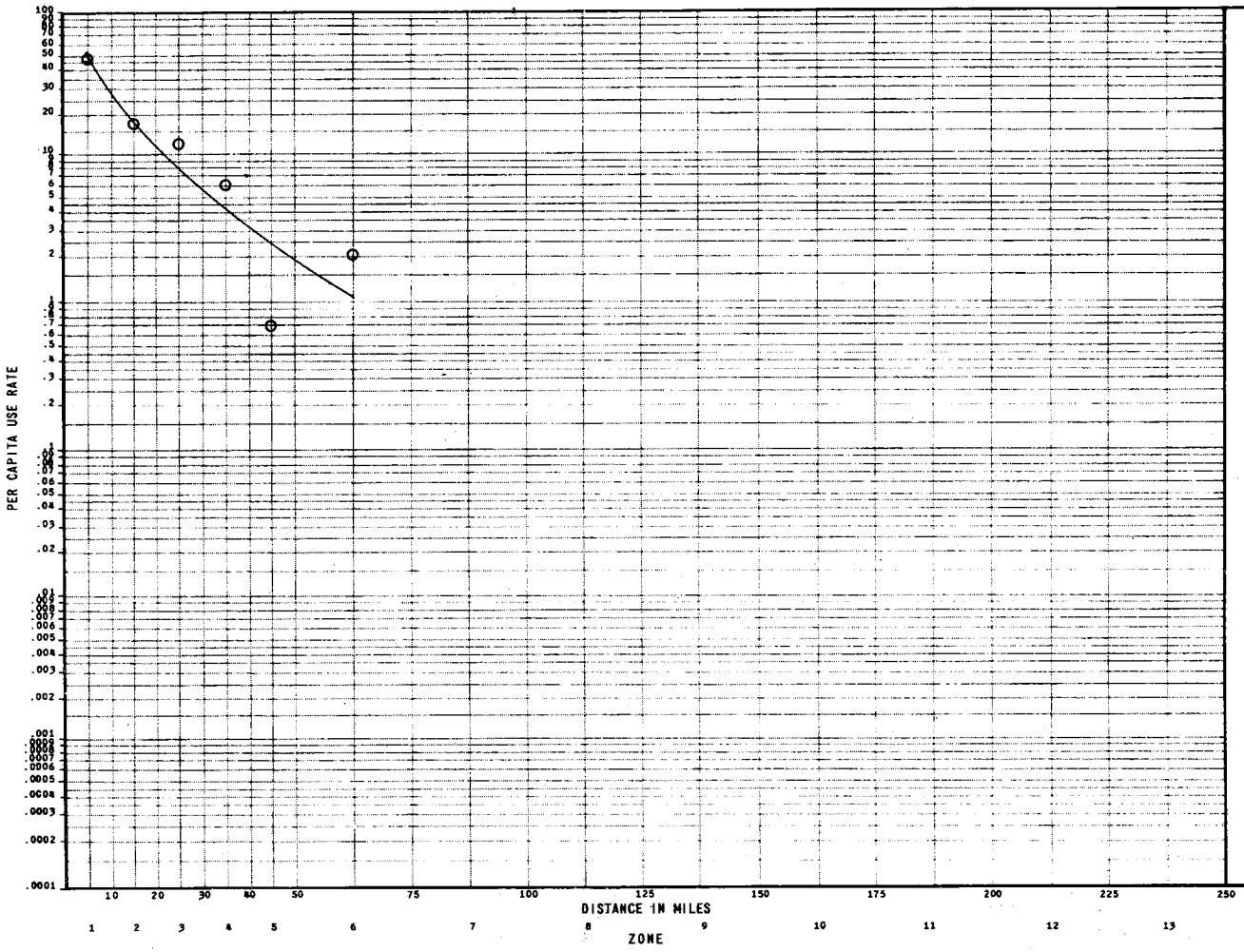
$Y = Exp(2.073548 - .030647 . X)$

$R^2 = .87$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	6.8231	144,820
2	5.0220	114,590
3	3.6963	97,740
4	2.7206	190,980
5	2.0025	253,710
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: CANTON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

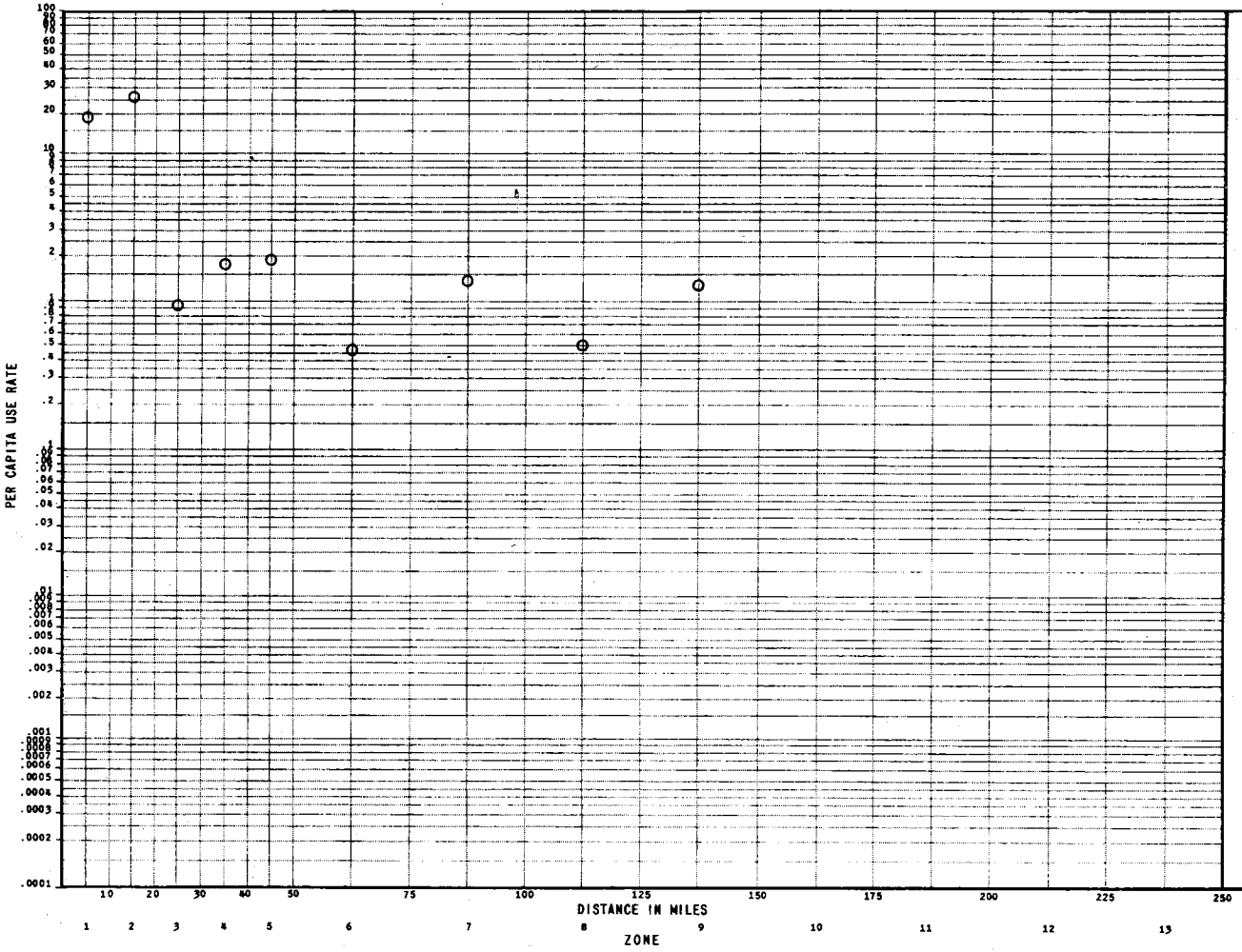
$Y = \text{Exp}(5.445523 - .671784\ X^{.5})$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	51.5920	2,970
2	17.179-	8,020
3	8.0575	8,150
4	4.3544	9,470
5	2.5576	22,230
6	1.1441	137,440
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: DENISON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

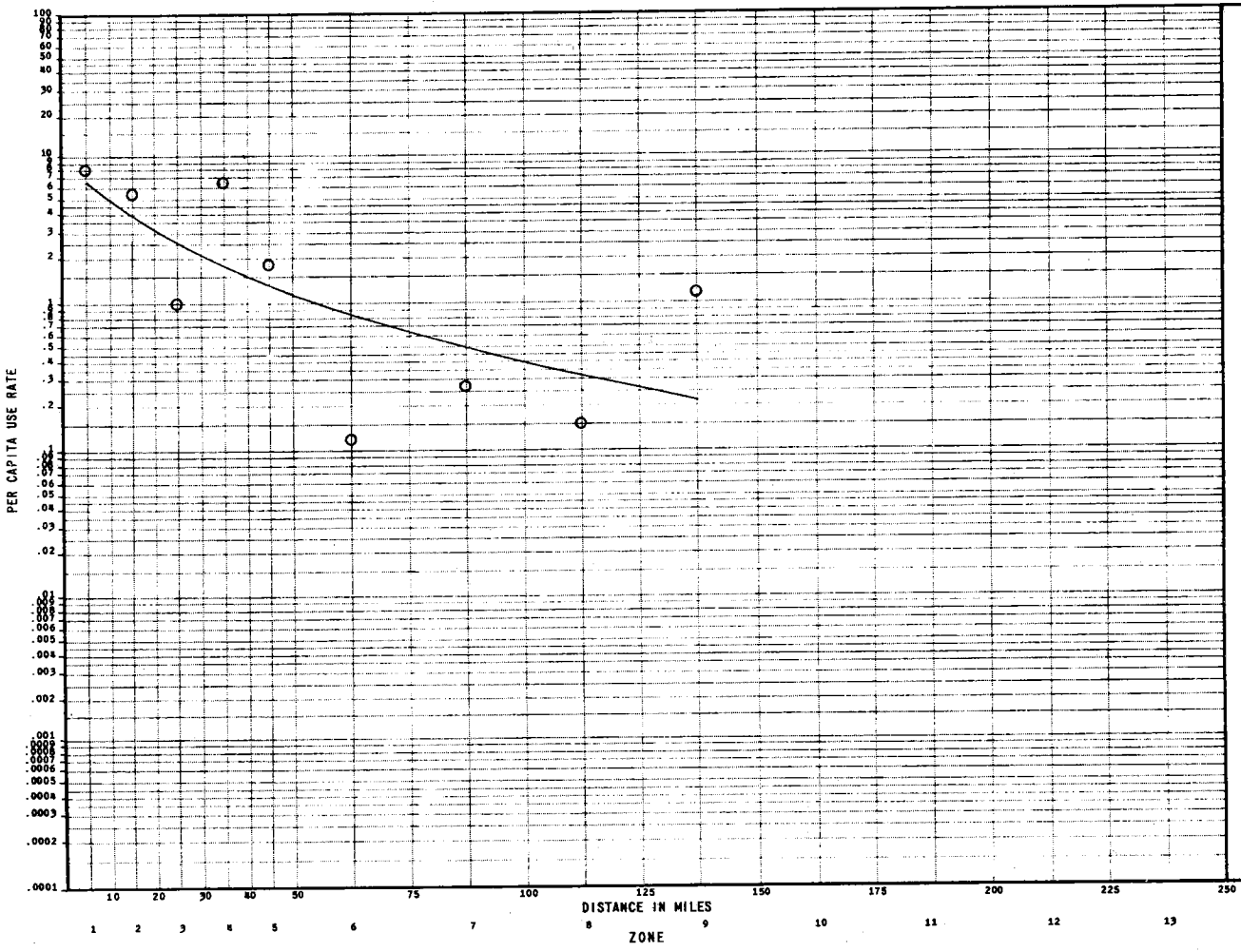
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		53,360
2		60,800
3		54,270
4		67,980
5		68,740
6		593,800
7		1,334,100
8		984,700
9		889,500
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: EUFAULA

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

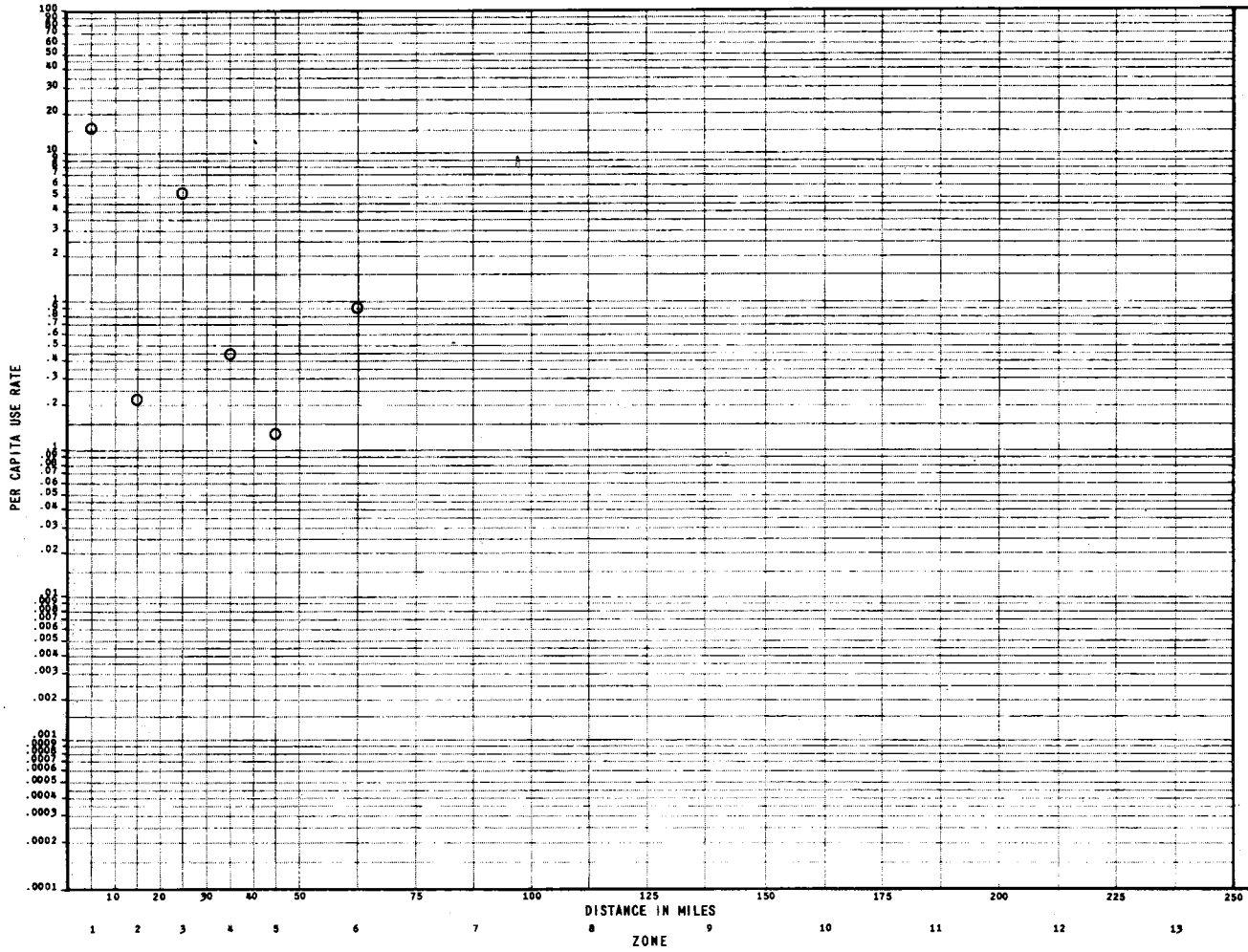
$Y = Exp(2.666516 - .359004\ X^{.5})$

$R^2 = .57$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	6.4479	31,710
2	3.5826	33,500
3	2.3905	86,700
4	1.7205	33,730
5	1.2947	67,140
6	.8423	734,960
7	.5007	792,380
8	.3194	455,480
9	.2137	556,740
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: FALL RIVER

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

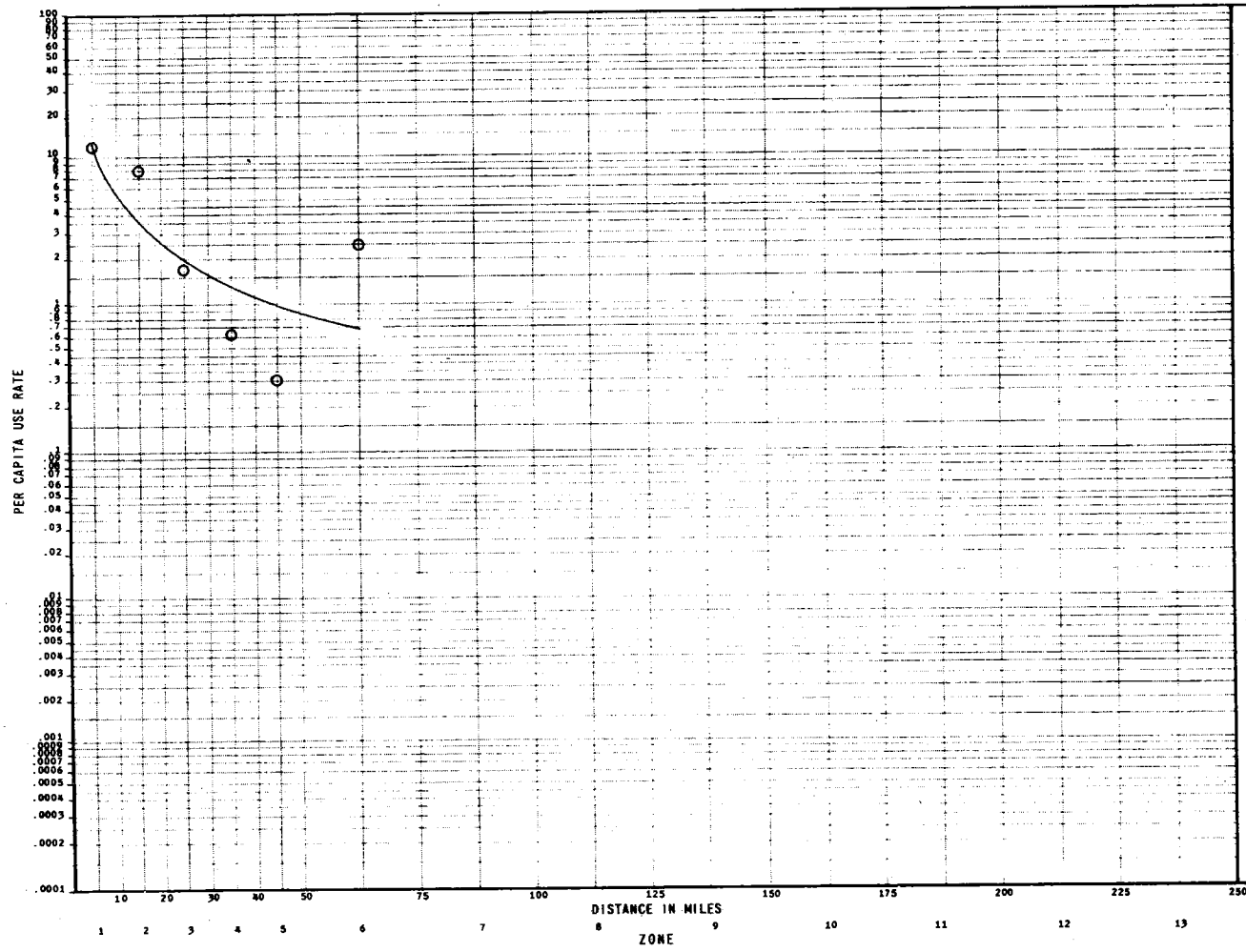
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		1,770
2		8,410
3		12,170
4		28,130
5		46,820
6		247,500
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: FORT GIBSON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = Exp(4.436310 - 1.167177\ LNX)$

$R^2 = .77$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	12.9075	20,370
2	3.5806	65,280
3	1.9725	46,640
4	1.3319	182,370
5	.9933	253,220
6	.6769	384,200
7		
8		
9		
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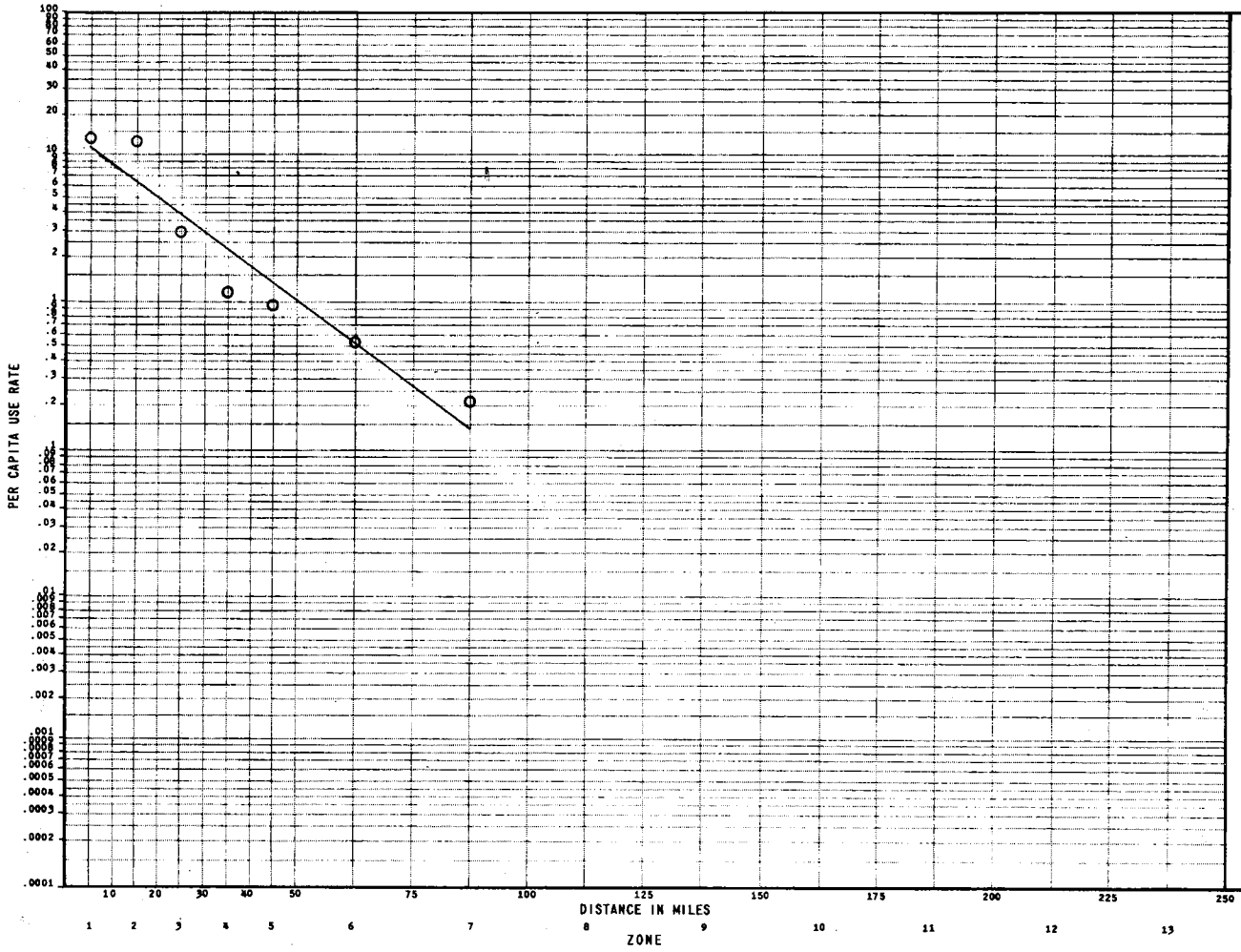
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: FORT SUPPLY

LEGEND

o SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(2.682617 - .052696\ X)$

$R^2 = .77$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	11.2361	2,430
2	6.6337	9,790
3	3.9164	9,550
4	2.3122	5,360
5	1.3651	9,210
6	.5428	25,660
7	.1454	67,940
8		
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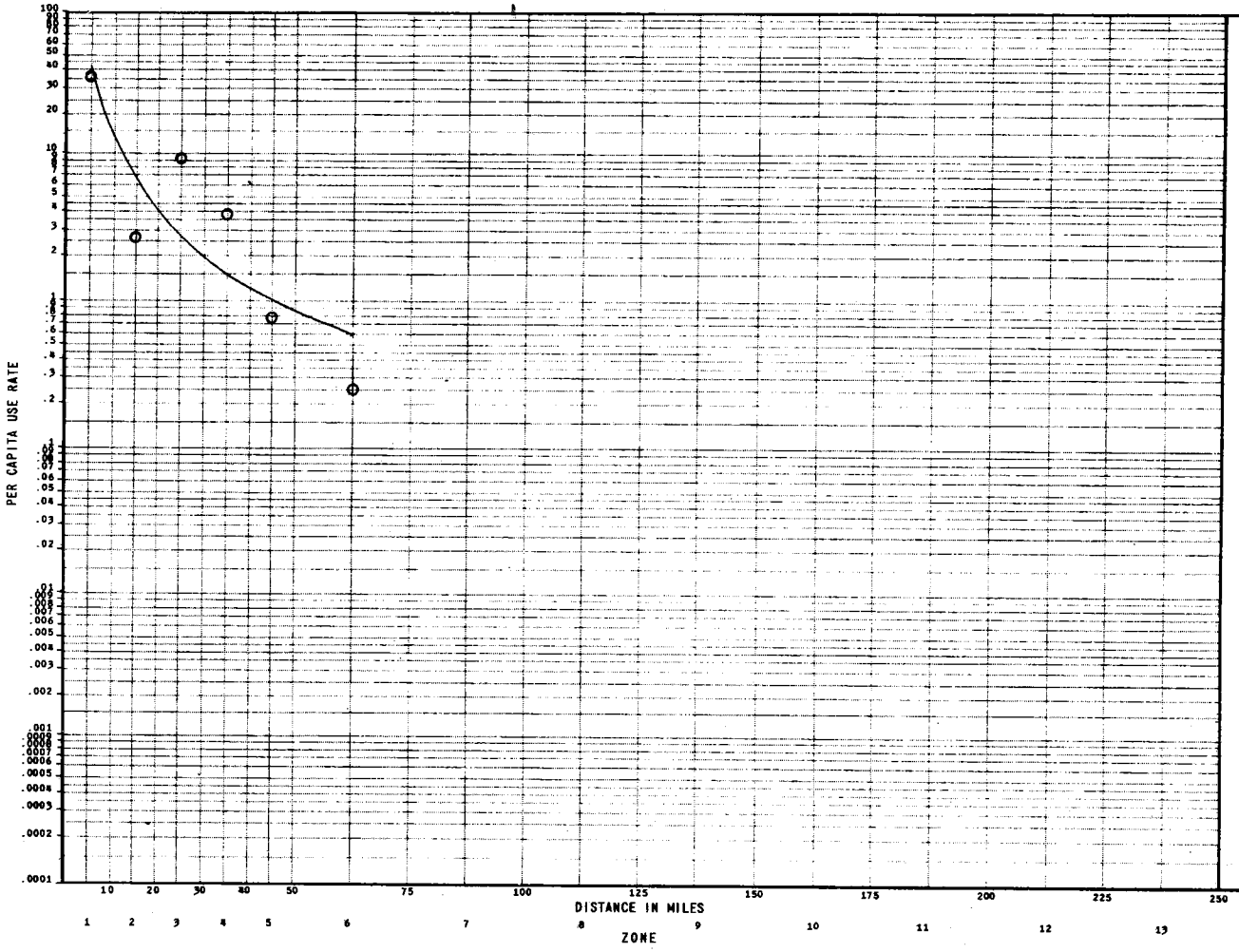
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: GREAT SALT PLAINS

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

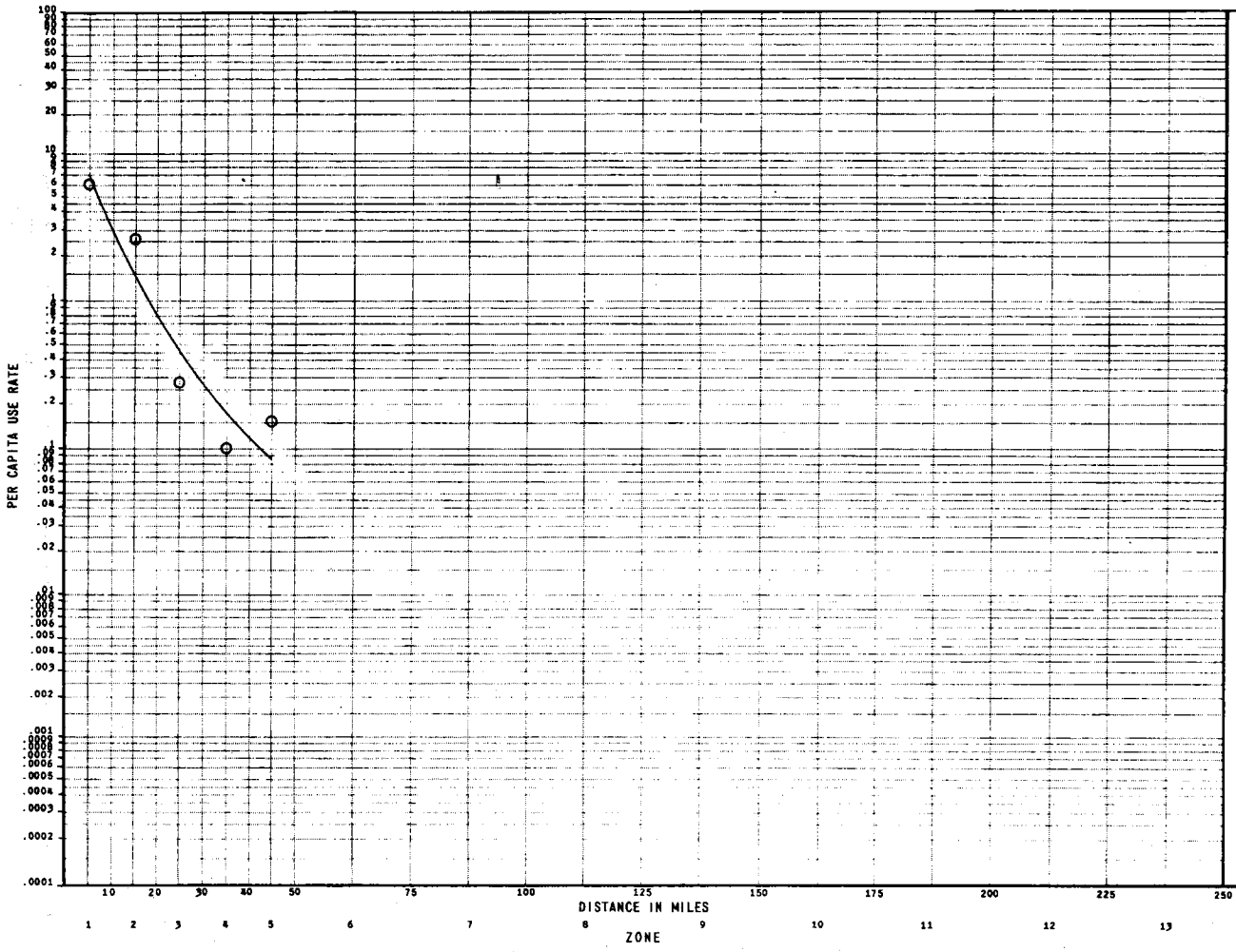
$Y = \text{Exp}(6.435009 - 1.684743\ LNX)$

$R^2 = .92$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	41.4098	1,100
2	6.5054	6,050
3	2.7512	9,500
4	1.5607	63,990
5	1.0220	18,600
6	.5876	193,970
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: HEYBURN

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = Exp(4.143568 - .980157\ X^{.5})$

$R^2 = .93$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	7.0418	4,250
2	1.4154	51,900
3	.4690	314,120
4	.1911	86,490
5	.0879	50,820
6		
7		
8		
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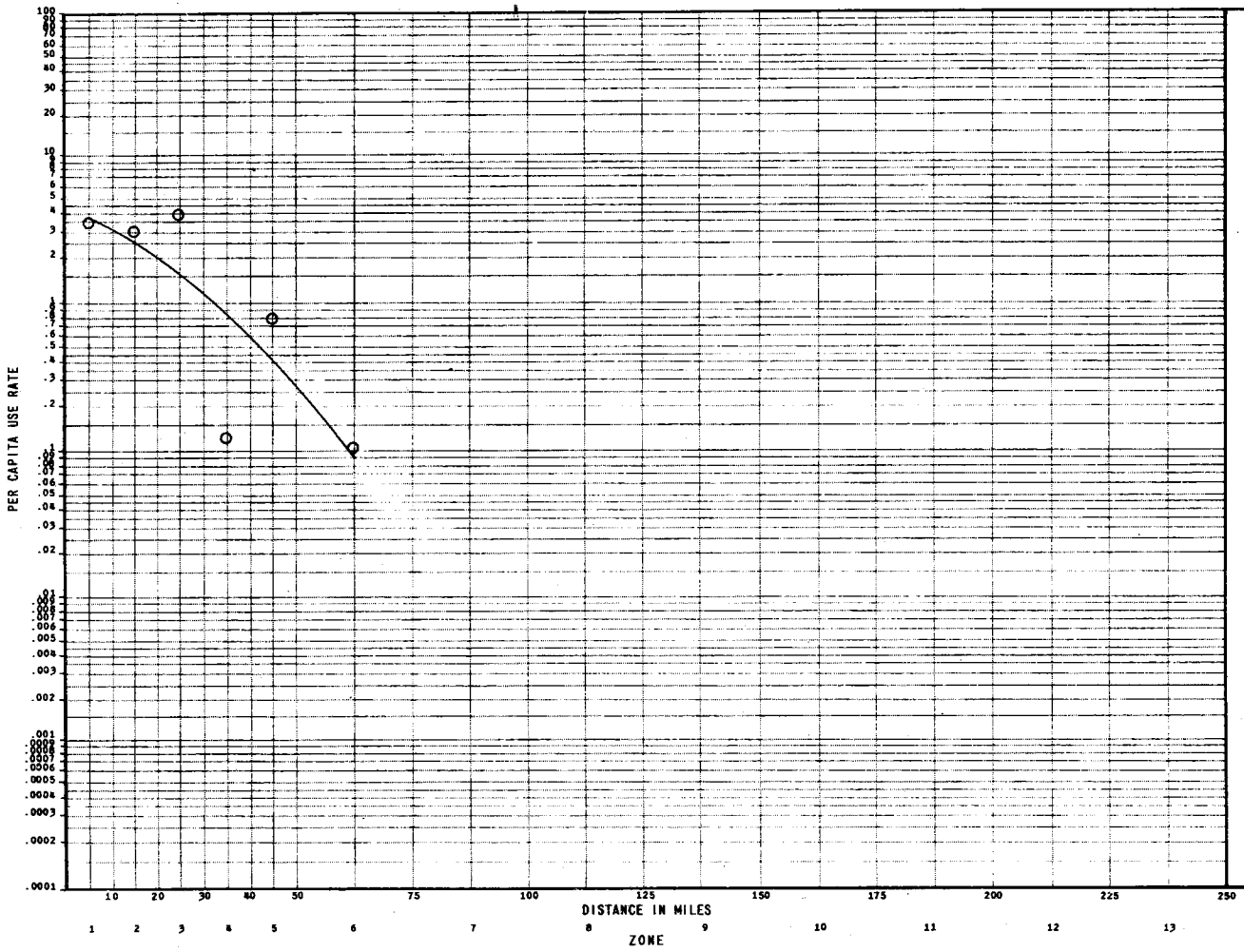
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: HULAH

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

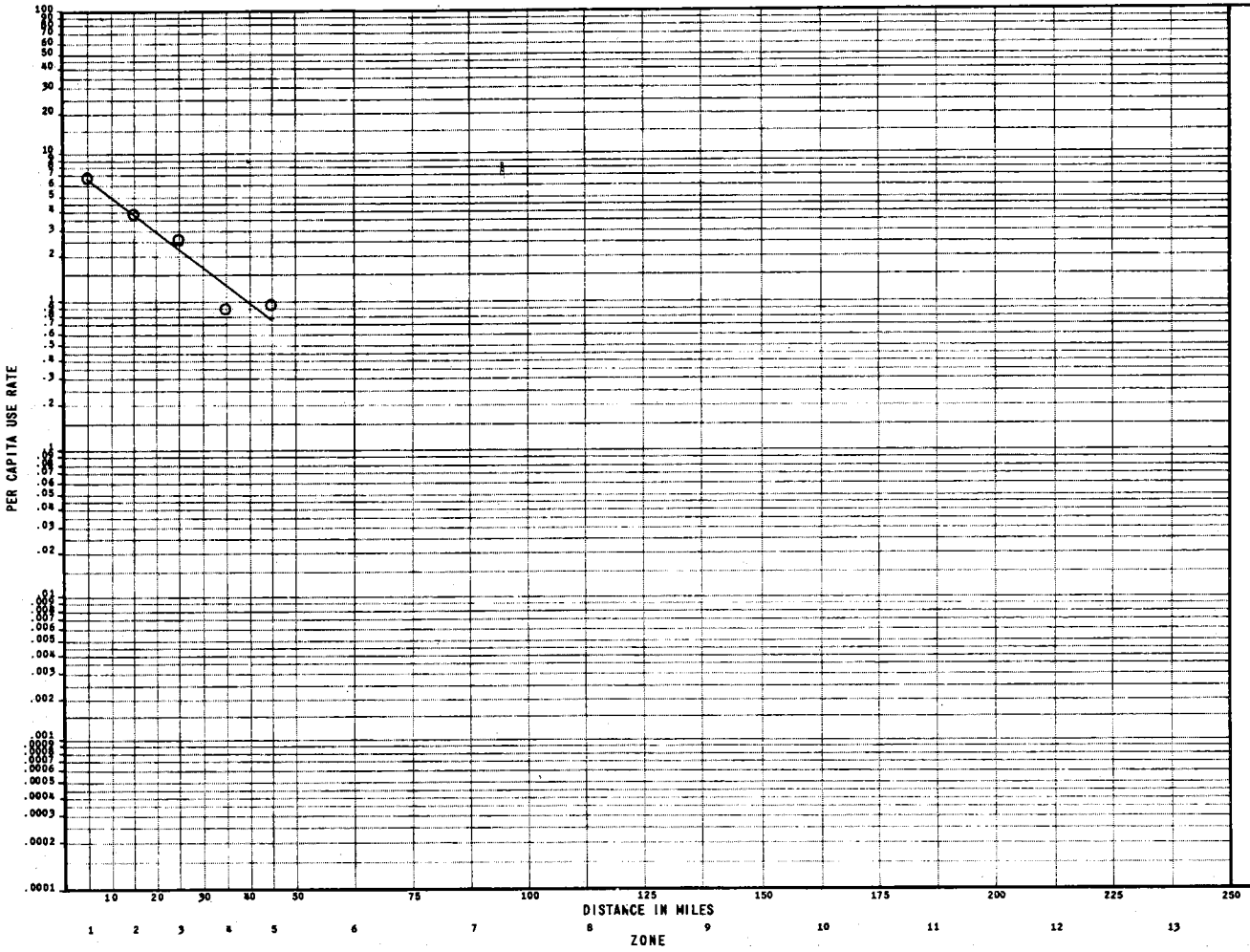
$Y = \text{Exp}(1.380609 - .007547\ X^{1.5})$

$R^2 = .56$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	3.6554	2,520
2	2.5654	19,220
3	1.5482	45,730
4	.8333	51,600
5	.4074	23,750
6	.0955	350,600
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: KEYSTONE

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

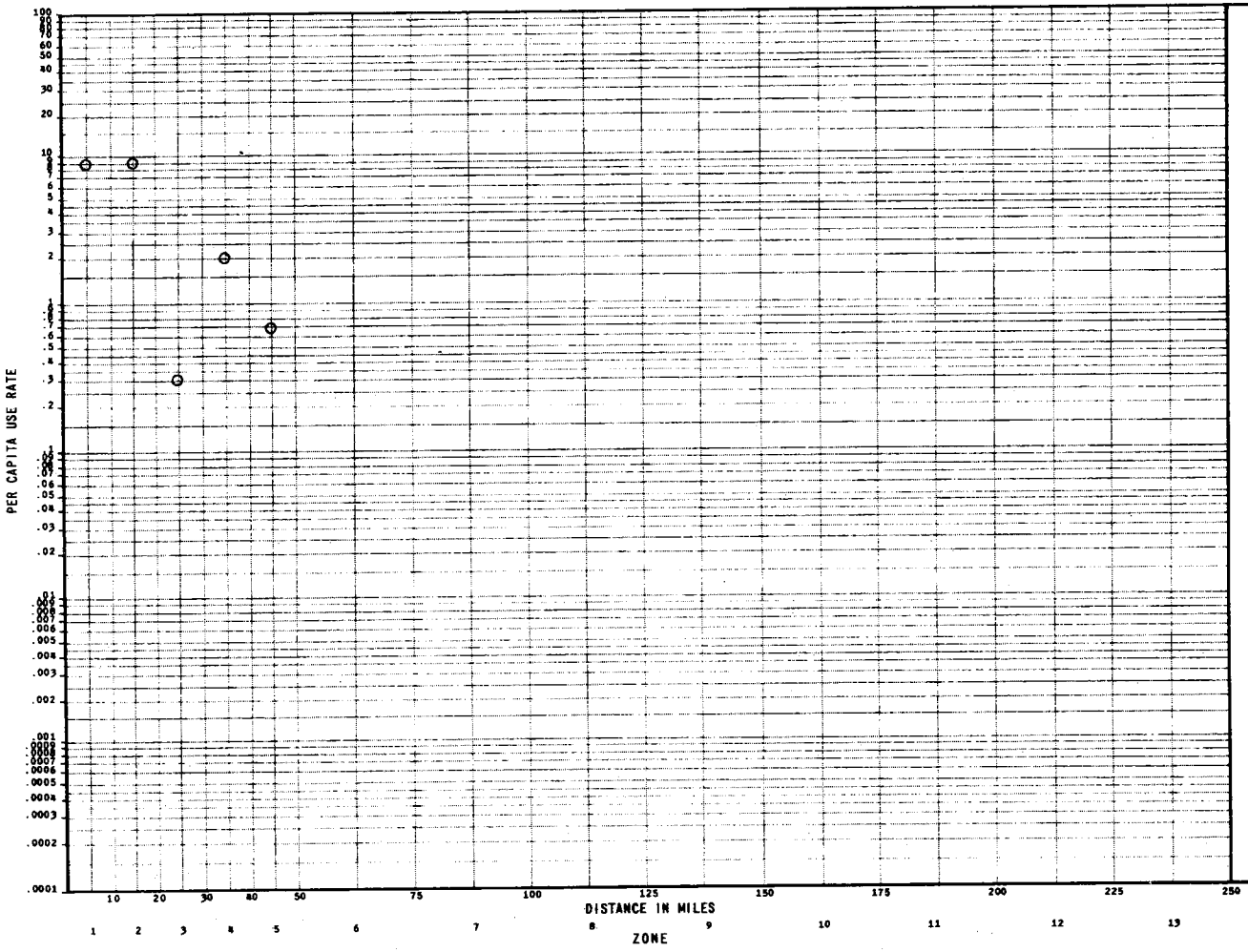
$Y = \text{Exp}(2.160956 - .053664\ X)$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	6.6368	28,950
2	3.8806	188,080
3	2.2690	187,520
4	1.3267	49,260
5	.7757	92,820
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: OOLOGAH

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

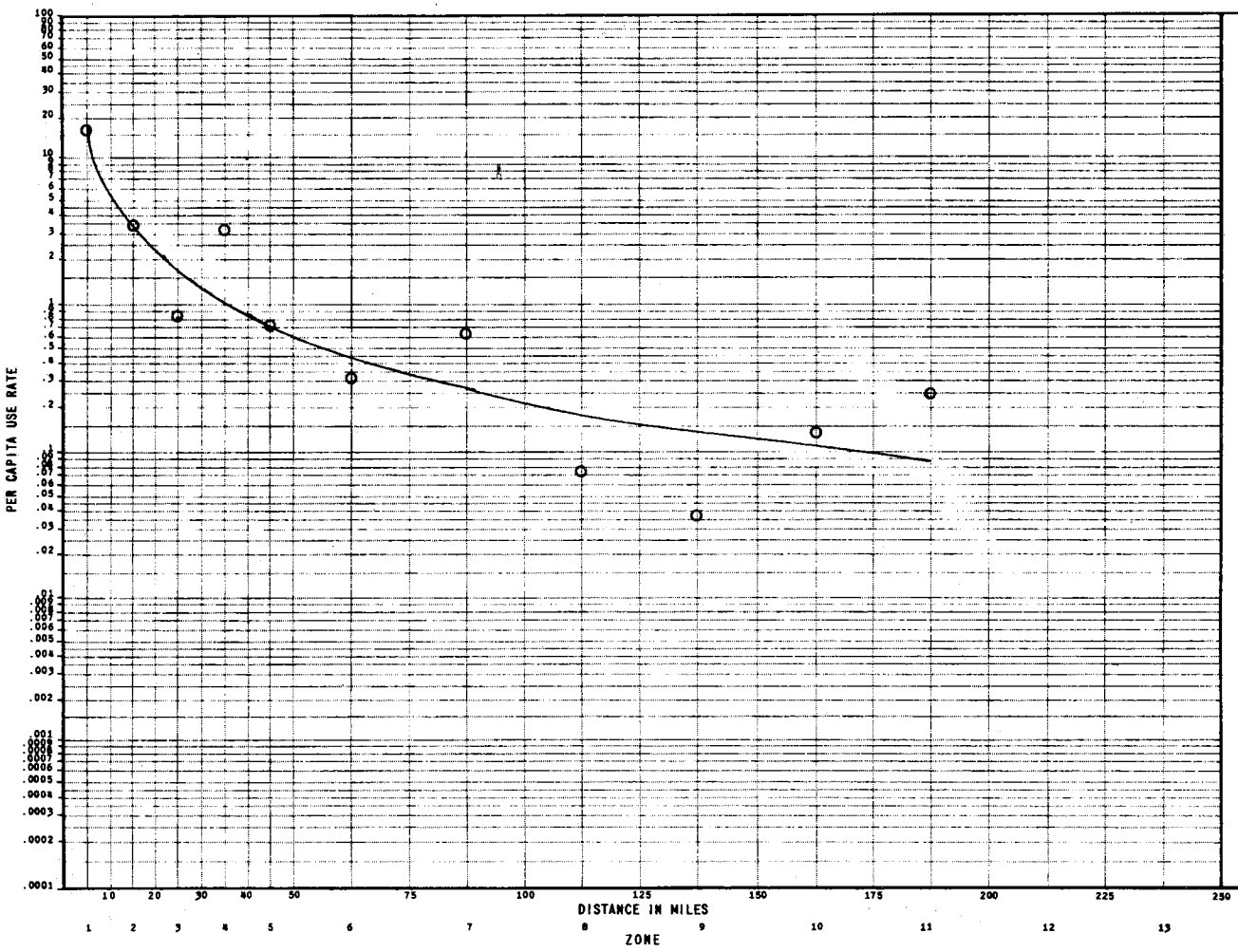
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		12,840
2		28,800
3	-	217,750
4		222,820
5		92,980
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: TENKILLER

LEGEND

o SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

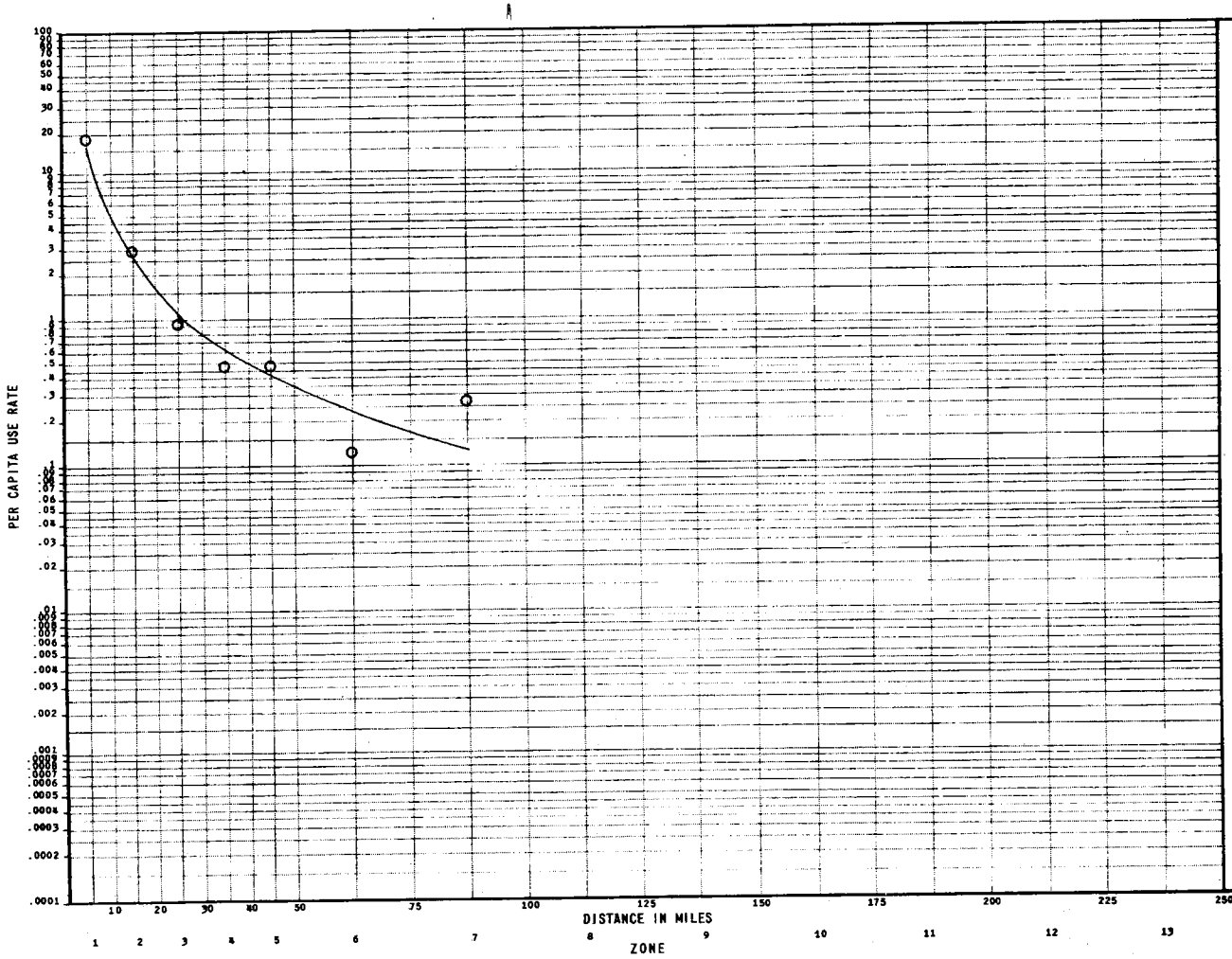
$Y = Exp(5.176455 - 1.450152\ LNX)$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	17.1590	6,580
2	3.4881	23,940
3	1.6630	61,510
4	1.0209	42,200
5	.7091	97,360
6	.4404	714,820
7	.2703	298,100
8	.1878	511,900
9	.1404	794,100
10	.1102	836,000
11	.0895	859,600
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: TORONTO

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

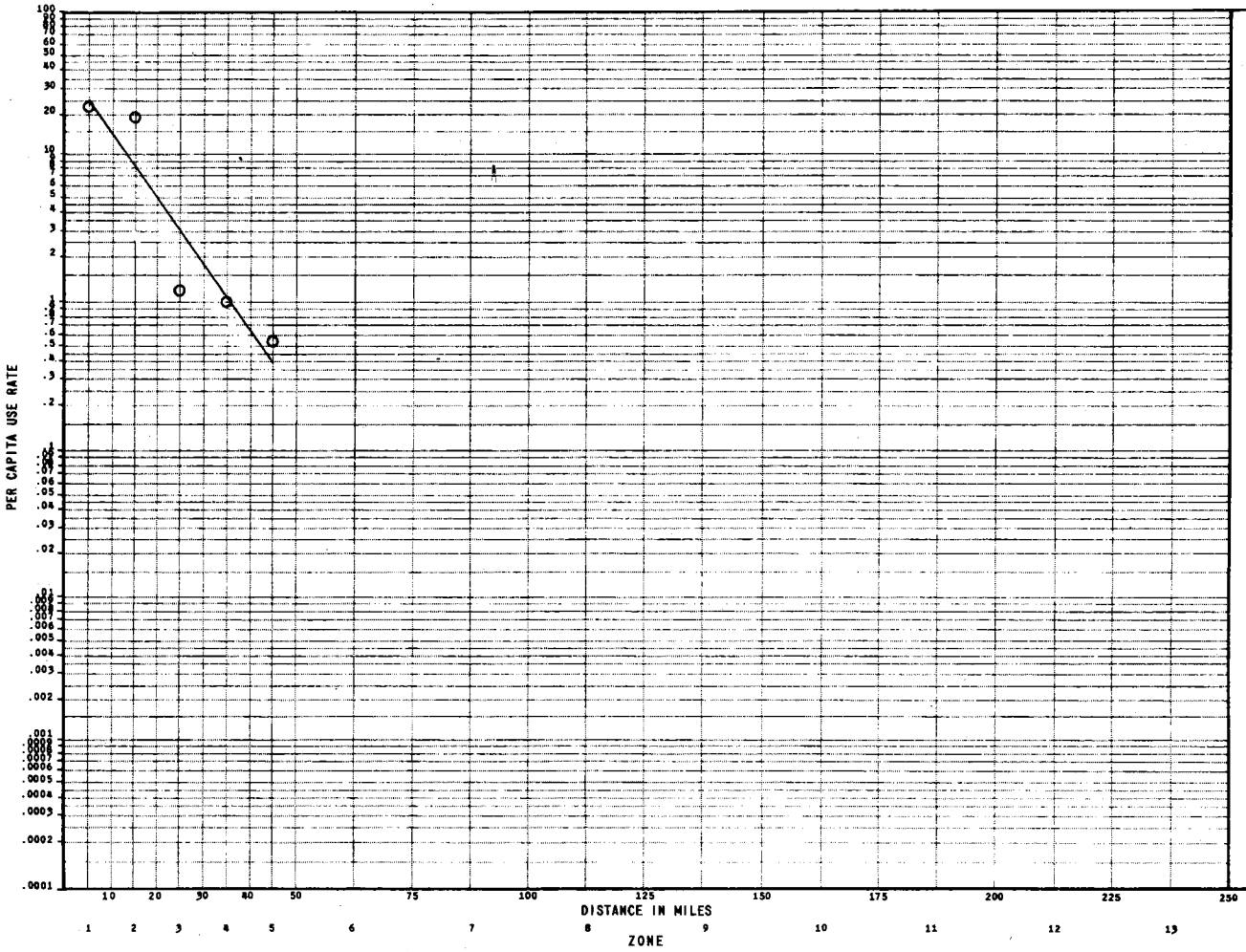
$Y = Exp(5.470132 - 1.666687\ LNX)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	16.2436	1,850
2	2.6030	14,240
3	1.1110	16,990
4	.6341	35,290
5	.4171	47,180
6	.2413	144,770
7	.1377	418,600
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1968

DISTRICT: TULSA

PROJECT: WISTER

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(3.732665 - .103347\ X)$

$R^2 = .77$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	24.9264	6,520
2	8.8680	11,520
3	3.1549	15,800
4	1.1224	30,720
5	.3993	81,930
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION

TECHNICAL REPORT No. 2
OCTOBER 1969

PLAN FORMULATION AND EVALUATION STUDIES-RECREATION

estimating
initial
reservoir
recreation
use

APPENDIX C

RECREATION-USE DATA SUMMARIES

RECREATION USE DATA SUMMARIES

List of Districts

District		Page No.	District		Page No.
Fort Worth	1966	C-5 and C-6	Sacramento	1964	C-20
	1967	C-7 and C-8		1965	C-21
	1968	C-9 and C-10		1966	C-22
				1967	C-23
Little Rock	1966	C-11		1968	C-24
	1967	C-12			
	1968	C-13	Savannah	1966	C-25
				1967	C-26
Nashville	1966	C-14		1968	C-27
	1967	C-15			
	1968	C-16	Tulsa	1966	C-28 and C-29
				1967	C-30 and C-31
Portland	1966	C-17		1968	C-32 and C-33
	1967	C-18			
	1968	C-19			

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BELTON	927	626	150	1,703	78	74	76	76	2.8	3.1	2.4	2.8	14	22	28	20	0	1	0	0	46	35	57	45
BENBROOK	1,189	1,634	751	3,574	74	64	69	69	2.3	2.8	2.1	2.4	22	28	19	24	1	0	1	1	68	35	63	54
CANYON	5,049	1,671	1,277	7,997	80	71	73	76	3.4	3.3	2.7	3.2	23	21	31	24	0	1	1	0	42	38	54	43
DAM B	899	749	258	1,906	75	56	67	67	3.2	3.4	2.4	3.1	5	5	7	5	1	1	0	1	40	47	48	44
GARZA-LITTLE ELM	1,754	1,455	408	3,617	79	65	76	73	2.8	3.0	2.2	2.8	17	41	13	26	0	1	1	1	35	22	38	30
GRAPEVINE	3,098	2,484	1,002	6,584	74	57	69	67	2.6	3.0	2.1	2.6	24	22	20	23	1	0	1	1	44	15	47	34
HORDS CREEK	334	498	105	937	73	55	59	62	2.8	3.3	2.4	2.9	18	21	25	20	2	8	5	5	43	35	68	43
LAVON	2,788	1,952	1,518	6,258	71	63	64	67	3.1	3.1	2.8	3.0	18	22	22	20	0	0	0	0	32	26	31	30
NAVARRO MILLS	1,840	850	393	3,083	79	66	77	75	3.0	2.8	2.3	2.8	21	26	27	23	2	0	1	1	53	39	46	48
PROCTOR	1,460	706	253	2,419	63	63	53	62	3.4	3.2	2.6	3.2	18	35	31	25	1	1	3	1	46	37	69	46
SAN ANGELO	837	427	321	1,585	59	57	53	57	2.6	2.4	2.0	2.4	7	8	2	6	1	0	0	0	26	30	19	25
WHITNEY	900	538	466	1,904	60	55	55	57	2.9	3.4	2.5	2.9	15	25	12	17	0	0	0	0	62	56	51	57
DISTRICT WT AVERAGE					74	62	67	67	2.9	3.0	2.4	2.8	19	24	21	21	1	1	1	1	43	30	47	39

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WTAVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BELTON	27	18	15	22	0	33	0	10	0	11	0	3	3	6	0	3	35	16	30	28	3	4	4	4
BENBROOK	14	12	6	11	1	20	0	8	0	11	0	4	2	10	1	5	18	12	25	17	1	5	6	4
CANYON	33	27	29	31	4	22	0	7	4	14	2	6	6	6	3	5	33	27	27	31	4	2	4	4
DAM B	27	9	4	16	0	11	0	4	0	1	0	0	0	2	0	1	36	32	25	33	2	6	7	4
GARZA-LITTLE ELM	23	29	8	23	0	23	0	9	2	30	1	13	11	24	13	16	31	10	32	23	6	3	7	5
GRAPEVINE	16	24	14	18	2	41	2	16	3	22	1	9	10	14	9	11	17	13	18	16	11	11	18	12
HORDS CREEK	24	42	28	33	0	36	0	17	2	15	0	8	3	6	3	4	26	4	10	13	2	1	6	2
LAVON	18	21	22	20	2	32	0	11	3	10	0	4	10	10	11	10	24	10	13	17	17	14	21	17
NAVARRO MILLS	32	15	16	25	0	17	0	5	0	8	0	2	1	4	0	2	25	31	39	29	1	0	1	1
PROCTOR	15	27	35	21	0	42	0	13	1	38	0	12	2	2	4	2	33	13	18	25	0	1	2	1
SAN ANGELO	11	7	3	8	1	31	0	9	0	9	0	3	6	1	0	3	53	37	72	53	4	8	6	6
WHITNEY	31	7	8	18	0	65	0	17	0	21	0	5	1	1	0	1	17	8	29	18	2	2	1	2
DISTRICT WT AVERAGE	23	21	16	21	2	30	0	10	2	16	0	6	6	10	5	7	27	16	26	23	6	6	10	6

DISTRICT: FORT WORTH

YEAR: 1966

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BELTON	1	7	2	3	1	3	0	1	2	10	2	4	2.0	3.8	2.5	2.7	2.0	5.7	0.0	3.4	3.2	3.9	4.3	3.7
BENBROOK	3	16	4	8	0	0	1	0	3	16	5	8	2.4	3.9	2.2	2.9	0.0	0.0	2.0	2.0	3.5	3.8	3.0	3.5
CANYON	2	19	7	6	0	1	2	1	2	20	9	7	2.4	2.5	5.3	3.0	0.0	3.7	5.3	4.5	3.7	3.6	3.8	3.7
DAM B	7	14	1	9	1	24	5	10	8	38	6	19	2.3	2.3	4.0	2.6	3.7	5.3	3.2	4.2	3.3	3.2	3.4	3.3
GARZA-LITTLE ELM	2	7	4	4	1	0	0	0	3	7	4	4	2.3	2.3	2.2	2.3	2.0	0.0	0.0	2.0	2.7	3.7	2.6	3.1
GRAPEVINE	6	10	9	8	0	0	0	0	6	10	9	8	3.6	3.2	2.0	3.2	0.0	0.0	0.0	0.0	3.1	3.1	2.8	3.0
HORDS CREEK	11	31	16	21	0	6	0	3	11	37	16	24	2.7	2.6	2.9	2.6	0.0	3.4	0.0	3.4	4.1	4.5	3.6	4.1
LAVON	11	3	7	7	0	2	0	1	11	5	7	8	2.0	2.3	2.4	2.1	2.0	3.5	0.0	2.6	3.6	4.1	4.1	3.8
NAVARRO MILLS	9	11	4	9	1	3	0	1	10	14	4	10	2.9	3.0	2.2	2.8	2.3	2.0	0.0	2.2	4.5	4.8	2.6	4.3
PROCTOR	8	25	3	12	4	2	0	3	12	27	3	15	3.4	3.5	2.2	3.3	3.1	2.0	0.0	2.7	3.5	3.6	3.9	3.6
SAN ANGELO	6	4	1	4	3	5	3	3	9	9	4	7	2.1	2.4	2.0	2.1	2.2	3.7	2.2	2.6	2.0	2.7	2.2	2.2
WHITNEY	9	50	3	18	7	1	6	5	16	51	9	23	2.6	2.8	2.8	2.7	5.9	3.0	3.2	4.4	4.0	4.1	3.7	3.9
DISTRICT WT AVERAGE	6	13	6	8	1	2	1	1	7	15	7	9	2.6	2.9	2.8	2.7	2.6	3.5	3.5	3.0	3.5	3.7	3.4	3.5

DISTRICT: FORT WORTH

YEAR: 1966

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BELTON	839	663	347	1,849	74	69	64	70	2.5	2.6	2.3	2.5	21	23	23	22	0	2	1	1	45	44	45	45
BENBROOK	2,206	1,733	1,192	5,131	72	72	63	70	2.4	2.7	2.1	2.4	26	27	23	26	1	1	1	1	63	37	58	54
CANYON	3,516	3,497	1,448	8,461	82	64	72	73	3.1	3.4	2.7	3.2	22	24	22	23	1	1	1	1	59	38	42	47
DAM B	820	597	412	1,829	78	52	53	64	2.9	2.8	2.5	2.8	7	12	9	9	3	2	3	3	56	36	53	48
GARZA-LITTLE ELM	1,382	1,570	699	3,651	80	72	76	76	2.7	3.0	2.3	2.8	23	38	28	30	0	0	1	0	50	24	48	39
GRAPEVINE	2,522	2,900	966	6,388	68	68	70	68	2.5	3.1	2.2	2.8	18	23	23	21	0	1	0	0	55	22	45	39
HORDS CREEK	372	414	126	912	74	60	50	64	3.1	3.0	2.3	3.0	22	18	29	21	8	3	6	6	61	29	69	49
LAVON	2,132	1,908	1,186	5,226	77	70	75	74	3.0	3.1	2.7	3.0	24	26	22	24	0	1	1	1	47	26	28	35
NAVARRO MILLS	1,338	1,276	970	3,584	66	69	56	64	2.9	3.2	2.7	3.0	30	29	42	33	1	2	0	1	48	31	58	45
PROCTOR	1,129	939	265	2,333	71	61	53	65	2.9	3.2	2.6	3.0	19	30	28	24	3	3	2	3	59	38	58	51
SAN ANGELO	320	374	265	959	54	55	71	59	2.4	2.4	2.2	2.4	5	3	7	5	0	2	2	1	35	33	30	33
WHITNEY	676	1,172	381	2,229	60	70	64	65	2.6	3.5	2.7	3.1	18	26	20	22	0	3	1	1	76	51	64	61
DISTRICT WT AVERAGE					73	67	67	70	2.8	3.2	2.5	2.9	21	25	24	23	1	1	1	1	55	32	47	45

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WTAVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BELTON	19	20	13	18	10	30	0	15	5	10	0	6	4	4	2	4	25	25	33	27	12	3	6	8
BENBROOK	10	18	8	12	4	13	0	6	2	12	0	4	6	9	6	7	16	13	21	16	2	1	3	2
CANYON	27	22	17	23	9	27	1	14	5	14	1	8	5	6	7	6	22	30	33	27	2	3	5	3
DAM B	13	8	8	10	4	6	0	4	3	0	0	1	1	0	0	0	26	40	36	33	7	11	3	7
GARZA-LITTLE ELM	32	26	21	28	4	17	0	8	7	19	0	10	9	29	19	19	13	5	12	9	0	1	9	2
GRAPEVINE	18	25	12	20	7	37	0	18	6	20	0	11	7	10	9	9	12	10	16	12	12	9	18	12
HORDS CREEK	24	32	31	29	7	29	0	16	9	14	0	9	0	3	3	2	9	15	16	13	5	1	2	3
LAVON	17	22	21	20	4	19	0	8	5	4	0	3	10	18	13	14	12	12	18	13	10	13	23	15
NAVARRO MILLS	28	37	16	27	6	22	0	9	4	9	0	5	2	8	1	4	18	20	25	20	9	1	0	4
PROCTOR	29	22	26	26	13	34	0	19	5	21	2	10	2	7	6	5	14	18	26	17	1	0	1	1
SAN ANGELO	7	9	8	8	3	1	0	1	0	0	0	0	1	0	0	0	55	50	50	52	0	3	9	4
WHITNEY	7	17	4	11	5	51	0	25	1	15	0	7	1	1	0	1	6	11	23	11	3	1	2	2
DISTRICT WT AVERAGE	20	23	15	20	6	25	0	12	5	13	0	7	5	10	7	8	17	18	24	19	6	5	8	6

DISTRICT: FORT WORTH

YEAR: 1967

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BELTON	6	20	6	11	0	0	0	0	6	20	6	11	2.1	2.5	2.3	2.3	2.0	0.0	0.0	2.0	3.0	3.4	2.9	3.1
BENBROOK	9	18	11	12	0	0	0	0	9	18	11	12	2.4	3.2	2.8	2.8	0.0	0.0	0.0	0.0	3.3	3.5	3.0	3.3
CANYON	22	20	10	19	1	1	0	1	23	21	10	20	2.8	3.1	2.3	2.9	3.1	3.4	0.0	3.2	4.4	3.5	3.1	3.8
DAM B	19	15	20	18	6	2	5	8	25	17	25	26	2.8	4.2	3.1	3.3	2.8	2.6	3.1	2.7	3.9	2.2	3.0	3.1
GARZA-LITTLE ELM	5	11	6	7	0	0	0	0	5	11	6	7	2.0	2.7	2.0	2.3	2.0	2.0	0.0	2.0	3.5	3.9	3.2	3.6
GRAPEVINE	5	12	6	8	0	0	0	0	5	12	6	8	2.2	4.2	2.1	3.0	2.0	0.0	0.0	2.0	3.3	3.3	2.9	3.2
HORDS CREEK	38	28	11	29	1	0	0	1	39	28	11	30	2.8	3.3	3.2	3.0	2.0	0.0	0.0	2.0	4.4	5.3	5.1	5.1
LAVON	8	9	13	9	1	0	0	0	9	9	13	9	2.0	2.2	2.2	2.1	2.6	0.0	0.0	2.6	4.6	4.2	4.4	4.4
NAVARRO MILLS	15	20	9	15	1	0	0	1	16	20	9	16	2.0	2.4	2.0	2.1	2.0	2.0	0.0	2.0	3.9	3.6	3.4	3.7
PROCTOR	28	26	16	25	3	0	4	2	31	26	20	27	3.3	4.1	3.1	3.6	2.7	0.0	3.3	2.9	3.4	3.5	3.2	3.4
SAN ANGELO	5	10	2	6	3	0	0	1	8	10	2	7	2.5	2.0	10.5	4.0	2.0	0.0	2.0	2.0	2.2	2.4	2.3	2.3
WHITNEY	23	44	20	32	11	0	2	5	34	44	22	37	4.2	3.3	2.5	3.4	2.7	0.0	2.5	2.6	5.4	3.9	3.9	4.4
DISTRICT WT AVERAGE	13	17	10	14	1	1	0	1	15	18	10	15	2.5	3.2	2.7	2.8	2.4	2.7	2.7	2.6	3.8	3.6	3.3	3.6

DISTRICT: FORT WORTH

YEAR: 1967

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BELTON	575	666	348	1,589	63	47	59	56	2.5	2.9	2.3	2.6	20	20	19	20	0	1	1	1	44	31	52	41
BENBROOK	2,376	1,941	949	5,266	72	55	60	64	2.3	2.7	2.1	2.4	26	25	17	24	1	1	1	1	71	42	61	59
CANYON	2,269	3,430	1,512	7,211	73	67	64	68	3.0	3.6	2.7	3.2	20	22	25	22	3	2	2	2	51	26	54	41
DAM B	957	739	401	2,097	66	58	63	63	2.4	3.1	2.4	2.6	19	13	12	16	4	2	2	3	62	47	48	55
GARZA-LITTLE ELM	1,592	1,955	890	4,437	79	76	65	75	2.8	3.2	2.8	3.0	28	35	23	30	2	1	8	3	59	21	44	40
GRAPEVINE	2,461	2,674	851	5,986	72	70	60	69	2.6	3.2	2.3	2.8	30	30	14	27	1	0	1	1	56	21	48	40
HORDS CREEK	419	545	137	1,101	81	64	59	70	3.0	3.5	2.1	3.1	19	19	12	18	5	5	0	4	61	26	44	43
LAVON	1,731	2,030	983	4,744	72	70	68	70	2.8	3.0	2.5	2.8	24	23	19	22	1	2	0	1	39	28	33	33
NAVARRO MILLS	1,633	1,178	493	3,304	67	65	66	66	2.5	3.0	2.3	2.6	41	34	34	38	2	2	1	2	73	49	62	63
PROCTOR	746	693	171	1,610	66	42	49	54	2.7	3.2	2.1	2.8	24	22	19	23	6	2	4	4	63	31	58	50
SAN ANGELO	343	502	237	1,082	61	59	57	59	2.3	2.4	2.0	2.3	5	6	1	4	2	1	0	1	52	32	27	37
WHITNEY	577	749	352	1,678	65	49	53	56	2.7	3.5	2.5	3.0	31	23	20	25	1	1	2	1	84	67	75	75
DISTRICT WT AVERAGE					71	64	62	66	2.6	3.1	2.4	2.8	26	25	19	24	2	1	2	2	60	32	50	47

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WTAVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BELTON	22	17	19	19	6	35	0	15	1	9	1	4	2	4	1	2	33	25	22	27	7	4	9	6
BENBROOK	7	10	7	8	2	13	0	5	1	7	0	3	4	10	1	5	11	19	27	17	4	3	8	5
CANYON	22	31	18	25	5	33	1	16	6	16	2	9	5	11	7	8	25	24	26	25	1	4	5	3
DAM B	12	10	7	10	1	6	0	2	0	1	0	0	0	1	0	0	24	35	24	27	3	4	7	4
GARZA-LITTLE ELM	20	26	23	23	1	27	0	12	3	24	2	12	21	24	2	18	9	4	32	12	0	2	0	1
GRAPEVINE	12	14	8	12	2	32	0	14	3	23	1	11	13	12	7	12	14	8	15	12	6	10	20	10
HORDS CREEK	26	25	40	28	0	38	0	17	0	13	0	6	3	2	0	2	11	18	19	16	1	1	1	1
LAVON	18	21	16	19	3	21	0	10	0	4	0	2	17	13	13	14	15	12	18	14	13	13	23	15
NAVARRO MILLS	15	24	25	20	1	21	0	7	1	11	0	4	1	1	0	1	20	17	27	20	0	1	1	0
PROCTOR	17	23	27	21	5	32	1	15	13	19	0	14	3	6	2	4	21	20	26	21	0	1	0	0
SAN ANGELO	14	19	8	15	0	1	0	0	0	0	0	0	0	1	0	0	38	45	59	46	1	8	6	5
WHITNEY	9	22	4	13	1	33	0	13	0	6	0	2	0	0	0	0	11	9	18	12	0	0	0	0
DISTRICT WT AVERAGE	15	20	15	17	2	25	0	11	2	13	1	6	7	10	4	8	17	17	25	19	4	5	9	5

DISTRICT: FORT WORTH

YEAR: 1968

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BELTON	4	9	8	7	0	5	0	2	4	14	8	9	2.1	4.3	2.0	2.9	0.0	4.8	0.0	4.8	3.4	3.0	3.3	3.2
BENBROOK	5	11	11	8	0	0	1	0	5	11	12	8	2.6	4.2	3.8	3.4	0.0	0.0	2.0	2.0	3.6	3.0	3.1	3.3
CANYON	19	19	19	19	0	0	0	0	19	19	19	19	2.4	3.1	2.9	2.8	0.0	2.0	0.0	2.0	3.4	3.5	3.5	3.5
DAM B	19	22	18	20	5	6	6	6	24	28	24	25	2.8	2.8	4.0	3.1	2.7	3.6	2.2	2.9	3.4	2.2	3.0	3.0
GARZA-LITTLE ELM	11	8	11	10	0	0	7	1	11	8	18	11	2.1	2.7	2.0	2.3	0.0	0.0	2.0	2.0	4.3	4.2	3.6	4.1
GRAPEVINE	8	11	7	9	0	0	0	0	8	11	7	9	2.1	2.6	2.0	2.3	0.0	0.0	0.0	0.0	3.1	3.0	2.0	2.9
HORDS CREEK	34	31	4	27	1	0	0	0	35	31	4	28	3.3	4.5	2.0	3.6	2.3	0.0	0.0	2.3	4.6	3.0	2.0	3.4
LAVON	9	8	10	9	1	0	0	0	10	8	10	9	3.0	2.8	2.2	2.7	3.6	3.9	0.0	3.8	4.6	4.4	2.2	4.0
NAVARRO MILLS	25	28	17	25	0	3	9	2	25	31	26	27	3.0	2.9	2.1	2.8	0.0	3.4	2.4	3.0	4.1	3.7	3.4	3.9
PROCTOR	32	25	12	26	3	4	7	4	35	29	19	30	4.1	3.7	4.3	4.0	3.5	3.8	5.4	3.9	3.6	3.3	2.9	3.4
SAN ANGELO	5	6	1	4	8	0	0	2	13	6	1	7	2.8	2.0	2.0	2.2	2.2	0.0	0.0	2.2	3.0	3.4	2.1	3.0
WHITNEY	29	40	17	30	1	9	2	4	30	49	19	34	2.6	3.9	2.7	3.1	3.1	3.8	2.0	3.1	4.7	4.5	3.9	4.4
DISTRICT WT AVERAGE	14	15	12	14	1	1	2	1	15	16	14	15	2.6	3.2	2.7	2.8	3.1	3.2	2.3	3.0	3.8	3.5	3.0	3.5

DISTRICT: FORT WORTH **YEAR: 1968**

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BEAVER	3,593	2,584	1,194	7,371	71	34	49	54	3.0	3.3	2.7	3.0	11	11	9	11	0	1	0	0	21	23	35	24
BULL SHOALS	1,287	2,528	1,035	4,850	50	45	43	46	2.5	3.1	2.5	2.8	8	8	2	7	1	1	2	1	50	27	27	34
GREERS FERRY	2,146	2,946	512	5,604	75	58	55	65	3.1	3.4	3.2	3.3	12	8	11	10	1	2	1	1	39	31	30	34
NORFORK	1,382	1,846	504	3,732	56	43	59	51	2.4	3.4	2.4	2.8	7	8	4	7	1	2	0	1	28	18	30	24
TABLE ROCK	1,971	3,938	996	6,905	54	46	50	49	2.7	3.1	2.5	2.9	22	19	18	20	2	2	1	2	63	50	57	55
DISTRICT WT AVERAGE					63	46	50	53	2.8	3.2	2.6	3.0	12	12	9	12	1	2	1	1	38	33	37	35

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BEAVER	5	8	1	5	0	42	0	14	1	8	0	3	3	8	1	4	70	25	57	52	0	0	2	0
BULL SHOALS	13	14	3	11	1	39	0	19	0	10	0	5	3	7	0	4	34	26	55	35	6	3	13	6
GREERS FERRY	21	23	10	21	10	48	1	28	6	10	0	7	7	13	2	10	27	26	47	28	0	0	0	0
NORFORK	11	9	1	9	9	48	0	24	1	10	0	5	6	17	3	10	53	28	63	44	2	0	2	1
TABLE ROCK	9	8	8	8	15	37	0	24	6	13	0	9	20	35	50	33	13	20	26	19	4	3	6	4
DISTRICT WT AVERAGE	11	12	4	10	6	42	0	21	3	10	0	6	8	18	13	13	43	24	49	35	2	1	6	2

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BEAVER	2	6	2	3	5	10	31	11	7	16	33	14	3.1	4.1	3.8	3.6	4.7	5.7	4.6	5.0	2.6	3.0	2.6	2.7
BULL SHOALS	5	13	3	8	38	28	41	34	43	41	44	42	4.2	5.6	3.6	4.7	4.7	6.7	6.1	6.0	4.0	3.4	2.0	3.2
GREERS FERRY	18	23	7	20	17	11	31	15	35	34	38	35	2.9	3.7	3.7	3.4	3.1	3.5	2.4	3.2	3.6	3.7	3.3	3.6
NORFORK	4	18	3	9	21	14	31	19	25	32	34	28	9.1	5.7	3.8	6.8	6.0	6.1	6.0	6.0	2.2	2.5	2.1	2.3
TABLE ROCK	15	22	6	17	32	29	24	29	47	51	30	46	3.2	5.4	4.7	4.6	4.3	6.2	5.0	5.4	5.5	4.3	3.9	4.6
DISTRICT WT AVERAGE	8	17	4	11	20	20	32	22	28	37	36	33	4.1	4.9	4.0	4.5	4.5	5.6	5.0	5.1	3.5	3.5	2.8	3.4

DISTRICT: LITTLE ROCK

YEAR: 1966

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BEAVER	2,381	2,341	676	5,398	69	33	41	51	2.6	3.2	2.5	2.8	15	14	3	13	1	3	0	2	50	40	24	42
BULL SHOALS	1,309	2,429	1,176	4,914	61	51	74	60	2.4	3.2	2.4	2.7	7	9	5	7	1	1	0	1	42	31	26	33
GREERS FERRY	1,050	2,696	527	4,273	75	50	72	60	2.8	3.8	3.0	3.4	9	9	6	9	1	3	3	2	46	33	25	36
NORFORK	886	2,428	604	3,918	60	51	48	53	2.4	3.4	2.4	2.9	5	8	3	6	1	1	1	1	42	13	43	27
TABLE ROCK	1,181	3,003	846	5,030	49	46	43	46	2.5	3.5	2.5	3.0	17	17	9	15	3	2	2	2	57	51	53	53
DISTRICT WT AVERAGE					63	46	57	54	2.5	3.4	2.5	2.9	11	12	5	10	1	2	1	2	48	34	34	39

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BEAVER	11	9	1	9	0	30	0	12	0	8	0	3	3	4	1	3	34	29	65	36	2	1	2	2
BULL SHOALS	11	9	5	9	0	39	0	17	0	13	0	6	5	10	4	7	41	28	56	39	9	4	10	7
GREERS FERRY	11	30	12	22	0	57	0	32	1	12	0	7	3	10	2	7	40	20	59	31	0	1	0	1
NORFORK	4	4	3	4	0	58	4	31	1	13	0	7	11	16	3	12	45	19	45	31	0	1	3	1
TABLE ROCK	5	9	2	6	0	49	0	26	0	15	0	8	7	21	3	14	31	19	40	27	2	3	1	2
DISTRICT WT AVERAGE	9	12	4	10	0	46	1	23	0	12	0	6	5	12	3	8	37	23	53	33	3	2	4	3

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BEAVER	8	23	3	13	12	18	26	16	20	41	29	30	3.9	4.6	6.9	4.6	3.4	3.9	5.0	3.8	3.7	3.1	2.0	3.2
BULL SHOALS	3	13	2	7	31	26	26	27	34	39	28	35	4.4	6.9	4.8	5.6	6.6	6.5	5.4	6.2	3.7	3.3	2.5	3.2
GREERS FERRY	20	31	15	26	22	10	16	14	42	41	31	40	2.9	4.5	2.9	3.8	3.2	4.7	3.0	4.0	4.2	4.3	3.0	4.1
NORFORK	10	30	10	21	15	14	25	16	25	44	35	37	4.9	5.9	3.5	5.2	7.4	7.2	7.2	7.3	2.6	2.9	2.7	2.8
TABLE ROCK	9	27	4	17	29	33	27	31	38	50	31	43	5.2	5.6	4.9	5.3	4.5	5.1	4.5	4.8	3.6	3.5	3.3	3.5
DISTRICT WT AVERAGE	9	25	5	16	21	21	25	21	30	43	30	37	4.2	5.5	4.7	4.9	4.8	5.5	5.1	5.2	3.6	3.4	2.7	3.3

DISTRICT: LITTLE ROCK

YEAR: 1967

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BEAVER	1,228	1,560	699	3,487	51	40	52	47	2.4	3.0	2.4	2.6	18	25	33	24	2	3	1	2	56	55	62	57
BULL SHOALS	1,914	2,620	1,318	5,852	60	46	56	54	2.5	3.2	2.3	2.7	8	11	7	9	2	3	2	2	41	29	36	35
GREERS FERRY	1,792	3,234	618	5,644	77	60	52	65	2.8	3.6	2.6	3.2	13	11	3	11	3	4	3	4	53	27	37	38
NORFORK	1,246	1,977	578	3,801	59	52	54	55	2.4	3.1	2.2	2.7	10	6	5	7	1	1	0	1	41	25	40	34
TABLE ROCK	1,822	2,915	996	5,733	54	50	55	52	2.7	3.3	2.5	2.9	18	18	12	17	1	1	1	1	61	46	49	52
DISTRICT WT AVERAGE					61	50	54	55	2.6	3.3	2.4	2.8	13	14	12	13	2	2	1	2	50	35	44	42

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BEAVER	8	9	6	8	0	23	0	9	0	3	0	1	3	8	3	5	35	21	28	28	1	0	0	0
BULL SHOALS	12	10	9	10	1	30	0	12	0	9	0	4	4	8	4	6	47	35	49	43	5	2	7	4
GREERS FERRY	13	16	5	13	6	65	0	35	2	13	0	7	7	8	6	7	28	21	53	28	0	0	0	0
NORFORK	4	6	2	5	2	41	0	19	1	10	0	5	8	9	4	8	45	32	49	40	0	1	0	0
TABLE ROCK	6	7	6	6	3	47	0	22	3	12	0	6	11	20	12	15	22	19	35	23	2	3	1	2
DISTRICT WT AVERAGE	9	10	6	9	2	43	0	20	1	10	0	5	7	11	6	9	35	25	43	32	2	1	2	2

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VIST DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BEAVER	10	27	11	17	12	9	19	12	22	36	30	29	3.1	3.5	2.3	3.1	4.4	6.7	4.6	5.3	2.9	3.3	3.9	3.3
BULL SHOALS	7	19	4	11	25	14	38	24	32	33	42	35	3.7	5.0	3.3	4.1	5.9	5.4	5.5	5.6	2.9	2.7	2.8	2.8
GREERS FERRY	25	45	13	34	13	0	27	8	38	45	40	42	2.8	4.2	2.8	3.5	3.1	4.3	3.8	3.8	4.0	3.5	3.1	3.6
NORFORK	4	21	2	11	13	11	13	12	17	32	15	23	5.2	6.0	4.6	5.4	6.2	7.4	9.6	7.4	2.9	2.8	2.4	2.8
TABLE ROCK	7	24	7	15	12	8	31	14	19	32	38	29	3.6	4.9	2.4	3.9	3.5	4.0	4.3	3.9	4.2	4.3	3.6	4.1
DISTRICT WT AVERAGE	11	28	7	18	15	8	28	14	26	36	35	32	3.6	4.7	3.1	4.0	4.6	5.3	5.5	5.1	3.4	3.4	3.1	3.3

DISTRICT: LITTLE ROCK

YEAR: 1968

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
LAKE CUMBERLAND	742	2,963	328	4,033	59	46	34	48	2.7	3.8	2.0	3.4	14	14	13	14	2	8	1	6	47	19	55	29
DALE HOLLOW	622	1,630	117	2,369	65	40	56	48	3.0	3.8	2.4	3.5	12	30	18	24	1	4	0	3	28	13	28	18
CENTER HILL	1,278	1,960	93	3,331	73	53	49	61	2.6	3.2	1.7	2.9	29	22	22	25	1	3	0	2	39	18	50	28
OLD HICKORY	2,656	2,323	306	5,285	71	57	66	65	2.8	3.6	2.2	3.1	10	15	10	12	1	2	0	1	27	12	26	21
CHEATHAM	474	786	479	1,739	60	56	57	57	2.8	3.3	3.2	3.1	31	29	22	28	0	0	0	0	57	41	38	45
DISTRICT WT AVERAGE					68	50	52	57	2.8	3.6	2.4	3.2	17	20	16	19	1	4	0	3	35	18	40	27

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
LAKE CUMBERLAND	15	8	17	11	3	30	0	21	2	5	0	4	8	21	5	16	32	19	36	24	4	7	2	6
DALE HOLLOW	15	5	0	8	2	34	0	22	2	11	0	8	2	19	0	13	56	33	49	41	0	0	0	0
CENTER HILL	22	20	9	20	4	48	0	28	4	9	0	7	6	10	8	8	37	16	33	25	0	1	0	1
OLD HICKORY	27	29	11	27	6	37	0	18	1	6	0	3	3	10	9	6	45	25	45	37	1	1	11	2
CHEATHAM	27	31	20	27	1	12	0	5	1	5	0	2	7	10	0	6	32	21	34	30	1	6	12	6
DISTRICT WT AVERAGE	23	17	14	19	4	35	0	20	2	7	0	5	5	15	4	10	41	22	39	31	1	3	7	3

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
LAKE CUMBERLAND	16	35	3	27	30	39	24	35	46	74	27	62	3.5	5.1	2.0	4.4	2.9	4.3	3.0	3.8	5.7	3.3	3.9	3.9
DALE HOLLOW	7	43	0	29	4	8	0	6	11	51	0	35	4.5	8.0	0.0	6.9	4.4	5.4	0.0	5.1	3.1	2.9	2.5	2.9
CENTER HILL	7	23	9	16	3	10	19	8	10	33	28	24	2.6	4.6	2.4	3.7	2.9	4.2	2.5	3.6	4.5	4.0	3.5	4.2
OLD HICKORY	3	8	1	5	0	0	4	0	3	8	5	5	2.8	4.6	2.0	3.4	3.1	0.0	3.7	3.2	2.5	2.9	2.2	2.6
CHEATHAM	0	5	0	2	0	2	0	1	0	7	0	3	0.0	2.0	0.0	2.0	0.0	2.9	0.0	2.9	3.6	3.8	3.0	3.5
DISTRICT WT AVERAGE	6	25	2	15	5	15	9	11	11	40	11	26	3.0	5.1	2.1	4.1	3.2	4.3	3.2	3.8	3.6	3.3	3.0	3.4

DISTRICT: NASHVILLE

YEAR: 1966

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
LAKE CUMBERLAND	764	3,085	428	4277	60	49	44	51	2.6	3.5	2.5	3.2	12	13	9	12	2	6	0	4	35	18	50	26
DALE HOLLOW	500	935	180	1,615	54	54	48	53	3.0	3.8	2.5	3.3	19	32	31	27	3	4	3	4	44	16	33	28
CENTER HILL	1,225	1,589	148	2962	70	37	70	54	2.5	3.3	2.3	2.9	31	35	43	34	1	6	5	4	44	38	68	43
OLD HICKORY	685	1,520	152	2357	61	64	61	63	2.7	3.3	2.4	3.0	9	14	16	13	3	3	1	3	25	15	17	18
CHEATHAM	799	970	325	2094	57	66	45	59	2.9	3.2	2.6	3.0	21	16	15	18	1	2	0	1	50	36	27	40
DISTRICT WT AVERAGE					62	52	50	55	2.7	3.4	2.5	3.1	20	20	19	20	2	5	1	3	40	24	40	31

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
LAKE CUMBERLAND	10	6	1	6	0	36	0	24	0	7	0	5	12	21	16	18	34	23	25	26	9	5	0	5
DALE HOLLOW	16	3	0	7	0	28	0	14	0	12	0	6	1	14	5	8	35	19	31	26	1	0	0	1
CENTER HILL	16	12	2	13	6	16	0	10	2	7	0	4	8	15	2	11	24	20	24	22	2	0	2	1
OLD HICKORY	11	27	0	20	0	32	0	19	0	11	0	7	6	8	10	7	36	24	71	32	23	9	1	13
CHEATHAM	22	29	8	23	0	7	0	3	0	2	0	1	3	9	1	5	31	31	39	32	3	2	9	4
DISTRICT WT AVERAGE	15	14	3	13	2	27	0	15	1	8	0	5	7	15	8	11	31	23	35	27	7	4	3	5

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
LAKE CUMBERLAND	11	31	5	24	24	26	20	25	35	57	25	49	4.1	4.9	3.9	4.6	3.1	4.0	3.4	3.7	3.2	3.1	3.0	3.1
DALE HOLLOW	13	41	5	26	10	19	7	14	23	60	12	40	5.5	7.7	6.1	6.7	4.3	6.3	2.6	5.1	3.4	3.5	2.9	3.4
CENTER HILL	13	33	18	23	8	8	13	8	21	41	31	31	3.2	4.6	3.9	3.9	3.3	3.7	3.1	3.5	4.6	4.6	5.6	4.7
OLD HICKORY	12	21	1	17	1	1	0	1	13	22	1	18	3.5	5.3	3.0	4.5	2.0	2.0	0.0	2.0	2.1	2.9	1.6	2.5
CHEATHAM	6	9	0	6	2	0	1	1	8	9	1	7	4.9	2.6	0.0	3.7	3.4	3.0	2.0	3.0	3.1	3.4	2.7	3.2
DISTRICT WT AVERAGE	11	28	5	20	9	14	10	12	20	42	15	32	4.0	4.9	4.2	4.5	3.2	3.7	2.4	3.4	3.5	3.5	3.1	3.4

DISTRICT: NASHVILLE

YEAR: 1967

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
LAKE CUMBERLAND	2,665	2,196	1,125	5,986	55	49	52	52	3.2	3.6	3.1	3.3	16	16	19	17	0	4	1	2	28	23	36	28
DALE HOLLOW	575	1,108	396	2,079	51	46	60	51	2.6	3.9	3.0	3.3	26	48	34	38	5	11	2	7	42	25	34	33
CENTER HILL	1,326	2,394	1,003	4,723	62	63	68	64	2.6	3.7	2.6	3.1	36	27	40	33	2	5	4	4	50	22	57	40
OLD HICKORY	963	1,699	344	3,006	71	53	71	62	2.7	3.4	2.5	3.0	16	15	22	16	4	5	6	5	22	8	43	17
CHEATHAM	1,521	750	396	2,667	68	62	71	67	3.1	3.2	3.0	3.1	21	17	21	20	0	3	2	1	28	37	55	35
DISTRICT WT AVERAGE					61	55	63	59	2.9	3.6	2.8	3.2	22	23	28	24	1	5	3	3	33	21	46	31

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
LAKE CUMBERLAND	19	19	18	19	5	39	0	16	4	10	1	5	13	25	22	19	41	18	35	32	1	1	1	1
DALE HOLLOW	5	3	1	3	1	22	0	10	1	12	0	6	9	21	11	15	41	15	47	30	0	0	7	1
CENTER HILL	13	28	24	22	15	36	0	20	2	9	1	5	10	20	6	13	19	14	25	18	1	0	0	0
OLD HICKORY	5	20	1	12	8	37	0	22	3	11	0	7	17	12	8	13	44	22	44	33	3	1	3	2
CHEATHAM	28	22	12	24	2	4	0	2	8	6	0	6	6	6	1	5	31	30	32	31	4	1	11	4
DISTRICT WT AVERAGE	16	20	15	17	7	32	0	16	4	10	1	6	11	18	11	14	35	19	34	29	2	1	3	2

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
LAKE CUMBERLAND	13	33	6	19	14	32	25	23	27	65	31	41	3.6	4.9	2.7	3.9	3.0	5.4	3.6	4.0	3.0	3.0	3.4	3.0
DALE HOLLOW	15	59	17	36	6	11	4	8	21	70	21	44	4.8	7.6	3.0	5.7	4.7	7.2	3.9	5.7	2.5	3.0	2.6	2.8
CENTER HILL	15	19	12	16	3	3	5	3	18	22	17	19	4.9	4.8	4.1	4.7	4.0	7.0	2.4	4.9	5.4	5.4	5.0	5.3
OLD HICKORY	12	16	18	15	0	0	0	0	12	16	18	15	2.4	4.5	2.1	3.5	0.0	0.0	0.0	0.0	2.1	3.0	1.9	2.5
CHEATHAM	8	12	12	10	1	2	1	1	9	14	13	11	2.4	2.7	2.0	2.4	2.5	2.8	3.0	2.7	2.9	3.0	3.3	3.0
DISTRICT WT AVERAGE	12	27	11	18	6	11	10	9	19	38	22	27	3.6	4.9	3.0	4.0	3.3	5.9	3.1	4.3	3.3	3.7	3.6	3.5

DISTRICT: NASHVILLE

YEAR: 1968

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
COTTAGE GROVE	714	856	89	1,659	39	74	57	57	3.4	3.4	2.6	3.3	33	28	2	28	0	0	0	0	20	7	34	15
DETROIT	993	1,692	732	3,417	47	54	53	51	2.5	3.7	3.2	3.2	31	32	29	31	3	4	4	4	70	46	59	57
DORENA	626	860	167	1,653	60	65	43	60	2.9	3.5	2.3	3.1	18	24	16	20	0	4	1	2	49	28	49	40
FERN RIDGE	2,411	5,410	794	8,615	63	47	66	53	2.8	3.4	2.5	3.1	14	10	6	11	0	0	0	0	7	1	2	3
HILLS CREEK	263	799	100	1,162	84	81	67	80	2.9	3.2	2.4	3.0	17	11	0	11	2	4	13	5	46	24	10	27
LOOKOUT POINT	693	2,572	243	3,508	77	58	50	62	2.8	3.4	2.6	3.2	15	15	6	14	4	1	0	2	11	3	3	5
THE DALLES	744	2,084	474	3,302	51	52	54	52	3.0	3.5	2.6	3.2	5	6	2	5	3	2	5	3	33	10	5	15
DISTRICT WT AVERAGE					58	55	57	56	2.9	3.4	2.7	3.2	19	15	18	16	1	1	2	2	29	11	23	18

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
COTTAGE GROVE	8	46	31	28	13	12	0	11	23	29	0	24	10	8	0	8	19	18	34	20	18	8	22	14
DETROIT	14	43	42	33	0	20	16	12	0	14	11	8	2	5	4	4	13	23	17	18	0	0	0	0
DORENA	30	22	10	24	0	10	0	4	1	7	1	4	3	17	7	10	15	23	24	20	13	10	15	12
FERN RIDGE	21	36	14	30	8	26	0	18	10	13	4	11	21	11	27	15	17	12	41	16	23	18	11	19
HILLS CREEK	20	59	0	43	3	28	0	19	0	11	0	7	4	1	0	2	5	11	4	9	27	10	35	17
LOOKOUT POINT	20	41	4	33	3	29	0	20	7	15	0	12	18	8	10	11	24	19	49	23	22	8	12	12
THE DALLES	21	41	22	33	0	26	0	15	0	1	0	1	2	4	1	3	42	21	65	34	3	1	0	1
DISTRICT WT AVERAGE	19	39	21	31	5	24	4	15	7	13	4	10	11	9	11	10	19	17	36	20	15	11	9	12

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
COTTAGE GROVE	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1	3.1	1.5	3.0
DETROIT	13	17	22	17	6	13	5	9	19	30	27	26	3.0	4.5	3.5	3.8	8.6	3.9	2.0	5.1	4.4	3.8	4.5	4.2
DORENA	3	19	1	10	0	0	0	0	3	19	1	10	2.1	3.8	2.0	2.9	0.0	0.0	0.0	0.0	2.9	2.7	2.9	2.8
FERN RIDGE	2	0	0	1	0	0	0	0	2	0	0	1	2.0	0.0	2.0	2.0	0.0	3.3	0.0	3.3	2.3	2.8	2.3	2.6
HILLS CREEK	17	20	50	23	0	1	0	1	17	21	50	24	2.0	3.1	3.7	2.9	0.0	2.0	0.0	2.0	7.7	2.8	2.1	3.8
LOOKOUT POINT	4	7	7	6	1	0	0	0	5	7	7	6	3.5	2.7	2.0	2.8	2.0	0.0	0.0	2.0	2.3	2.5	1.2	2.3
THE DALLES	2	3	0	2	0	0	0	0	2	3	0	2	2.7	2.0	0.0	2.2	2.0	0.0	0.0	2.0	2.3	2.8	1.5	2.4
DISTRICT WT AVERAGE	5	6	8	6	1	1	1	1	6	7	9	7	2.5	3.1	2.6	2.6	4.9	3.3	2.0	3.1	3.0	2.9	2.6	2.9

DISTRICT: PORTLAND

YEAR: 1966

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
COTTAGE GROVE	1,087	2,380		3,467	40	54		49	3.3	3.9		3.7	14	20		18	1	2		2	4	3		3
DETROIT	3,629	1,112		4,741	61	58		60	4.1	3.6		4.0	33	22		30	4	1		3	35	9		28
DORENA	919			919	54			54	3.0			3.0	19			19	1			1	28			28
FERN RIDGE	6,655	7,487		14,142	64	43		53	3.4	3.6		3.5	10	10		10	1	1		1	4	1		2
HILLS CREEK	561	1,084		1,645	32	51		44	3.6	4.0		3.9	19	12		15	3	2		2	18	5		10
LOOKOUT POINT	2,184	2,478		4,662	56	55		55	3.0	3.6		3.3	13	15		14	3	5		4	8	4		6
THE DALLES	2,246	2,037		4,283	55	45		50	3.6	3.5		3.6	6	4		5	6	12		9	9	2		6
DISTRICT WT AVERAGE					58	48		53	3.5	3.7		3.6	15	12		14	3	3		3	13	3		8

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
COTTAGE GROVE	31	52		45	46	64		58	15	32		26	16	8		11	21	6		11	4	2		3
DETROIT	60	44		56	50	39		47	25	28		26	4	21		8	16	8		14	2	6		3
DORENA	42			42	15			15	5			5	7			7	15			15	10			10
FERN RIDGE	43	34		38	55	71		63	14	15		15	11	6		8	11	10		10	4	3		3
HILLS CREEK	31	46		40	55	87		75	4	16		12	9	5		6	4	5		5	10	2		5
LOOKOUT POINT	35	36		35	26	45		35	11	24		17	12	12		12	22	13		17	12	6		9
THE DALLES	39	35		37	25	11		18	2	2		2	4	4		4	41	52		46	1	1		1
DISTRICT WT AVERAGE	44	38		41	44	57		51	14	18		16	9	8		8	18	15		17	5	3		4

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
COTTAGE GROVE	2	6		5	0	0		0	2	6		5	7.0	3.1		4.5	0.0	0.0		0.0	2.8	3.4		3.2
DETROIT	12	12		12	1	1		1	13	13		13	5.0	3.4		4.6	3.4	8.0		4.6	4.9	3.7		4.6
DORENA	6			6	1			1	7			7	8.3			8.3	4.0			4.0	3.2			3.2
FERN RIDGE	0	0		0	0	0		0	0	0		0	0.0	0.0		0.0	0.0	0.0		0.0	3.0	2.7		2.8
HILLS CREEK	8	6		7	0	0		0	8	6		7	3.3	3.5		3.4	0.0	0.0		0.0	2.8	3.6		3.3
LOOKOUT POINT	7	7		7	0	0		0	7	7		7	2.9	4.5		3.7	0.0	0.0		0.0	2.3	3.1		2.7
THE DALLES	3	3		3	0	0		0	3	3		3	2.3	2.6		2.4	0.0	0.0		0.0	2.5	1.9		2.2
DISTRICT WT AVERAGE	5	4		4	0	0		0	5	4		4	4.5	3.5		4.0	3.5	8.0		4.5	3.2	2.9		3.0

DISTRICT: PORTLAND

YEAR: 1967

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
COTTAGE GROVE	1,236	1,442		2,678	61	55		58	3.5	3.5		3.5	13	21		17	1	1		1	3	4		4
DETROIT	2,894			2,894	61			61	4.2			4.2	20			20	7			7	33			33
DORENA	749	1,154		1,903	70	60		64	3.6	3.4		3.5	24	20		22	2	7		5	30	15		21
FERN RIDGE	9,175	8,758		17,933	74	58		66	3.5	3.7		3.6	8	9		8	1	1		1	1	1		1
HILLS CREEK	404	1,010		1,414	74	55		60	3.6	3.4		3.5	17	13		14	3	4		4	30	11		16
LOOKOUT POINT	1,632	3,337		4,969	67	56		60	3.3	3.6		3.5	16	13		14	3	4		4	3	5		4
THE DALLES	2,124	1,405		3,529	37	43		40	3.8	2.9		3.4	5	7		6	6	9		7	6	5		6
DISTRICT WT AVERAGE					66	56		61	3.6	3.6		3.6	11	12		11	3	3		3	8	4		6

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
COTTAGE GROVE	41	71		57	62	49		55	24	33		29	10	19		15	8	12		10	4	2		3
DETROIT	48			48	50			50	17			17	10			10	18			18	2			2
DORENA	40	49		45	32	30		31	7	17		13	21	14		17	8	10		9	7	8		8
FERN RIDGE	41	42		41	56	66		61	12	11		12	10	9		10	15	12		14	4	5		4
HILLS CREEK	36	57		51	46	45		45	4	9		6	9	4		5	4	8		7	9	2		4
LOOKOUT POINT	42	44		43	47	51		50	14	16		15	13	7		9	12	9		10	5	6		6
THE DALLES	24	33		28	14	5		10	1	2		1	3	4		3	52	48		50	1	1		1
DISTRICT WT AVERAGE	40	45		42	49	52		50	12	13		12	10	9		10	18	15		17	4	5		4

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
COTTAGE GROVE	1	1		1	1	1		1	2	2		2	0.0	14.0		7.4	7.0	0.0		3.3	3.2	3.4		3.3
DETROIT	21			21	7			7	28			28	4.5			4.5	6.1			6.1	5.0			5.0
DORENA	4	20		14	1	1		1	5	21		15	2.6	2.9		2.8	0.0	7.0		4.3	3.2	3.4		3.3
FERN RIDGE	1	1		1	1	1		1	2	2		2	0.0	0.0		0.0	2.6	0.0		1.4	3.3	3.1		3.2
HILLS CREEK	11	15		14	1	1		1	12	16		15	3.7	3.9		3.8	2.0	0.0		0.5	4.0	3.3		3.5
LOOKOUT POINT	2	9		7	1	1		1	3	10		8	2.8	3.3		3.1	7.0	2.0		3.7	2.5	3.1		2.9
THE DALLES	1	1		1	1	1		1	2	2		2	2.1	2.0		2.1	2.0	0.0		1.1	2.2	2.0		2.1
DISTRICT WT AVERAGE	4	5		4	2	1		2	6	6		6	1.3	2.4		1.8	3.7	0.9		2.3	3.3	3.0		3.2

DISTRICT: PORTLAND

YEAR: 1968

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE		1,355	262	1,617		64	64	64		3.5	2.5	3.3		25	2	21		0	1	0		3	24	7
ENGLEBRIGHT	989	1,655	123	2,767	68	56	48	65	3.0	3.3	2.8	3.2	21	31	8	27	0	0	6	1	20	11	11	13
ISABELLA	3,509	4,137	1,899	9,545	78	58	72	66	2.9	3.4	2.6	3.2	32	27	19	28	4	6	6	5	80	69	81	74
NEW HOGAN	1,034	1,017	247	2,298	89	68	62	76	3.5	3.9	3.0	3.5	12	26	0	16	1	2	1	1	4	1	10	4
NORTH FORK	425	651	14	1,090	74	71	57	70	3.5	3.7	1.6	3.4	5	18	0	13	0	0	0	0	4	3	27	6
PINE FLAT	3,960	3,271	1,324	8,555	72	65	63	67	3.2	3.4	2.7	3.2	17	18	16	17	0	2	0	1	35	35	46	37
SUCCESS	4,642	4,651	1,730	11,023	67	50	58	58	3.0	3.4	2.5	3.2	10	16	6	12	1	1	0	1	44	31	50	38
TERMINUS	2,968	2,873	1,195	7,036	76	62	75	68	3.0	3.5	3.0	3.3	12	18	17	16	1	3	0	2	38	43	38	41
DISTRICT WT AVERAGE					73	59	66	65	3.0	3.4	2.6	3.2	21	22	11	20	2	3	3	3	53	45	56	49

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE		53	9	44		71	0	57		39	3	32		16	4	14		15	64	24				
ENGLEBRIGHT	33	61	8	51	10	56	0	42	28	51	2	42	37	68	13	57	28	12	53	19				
ISABELLA	17	48	25	35	1	34	0	20	1	17	2	11	3	5	1	4	10	5	8	7				
NEW HOGAN	34	57	19	41	6	46	0	22	12	41	0	22	23	19	0	17	50	19	78	42				
NORTH FORK	39	62	43	54	6	43	0	29	2	36	0	23	16	6	0	8	53	32	40	38				
PINE FLAT	21	32	11	21	1	7	0	4	3	25	1	14	9	6	6	7	38	22	33	29				
SUCCESS	26	36	26	31	0	10	0	5	2	15	0	8	3	6	1	4	35	23	36	29				
TERMINUS	19	20	18	19	2	9	1	6	3	17	3	11	7	9	4	8	38	18	39	27				
DISTRICT WT AVERAGE	21	40	20	31	1	24	0	14	3	21	1	13	7	19	3	8	27	15	29	20				

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE		3	1	3		2	0	2		5	1	5		3.1	2.0	2.9		3.3	0.0	3.3		3.6	1.8	3.2
ENGLEBRIGHT	0	4	0	3	0	0	0	0	0	4	0	3	0.0	3.8	0.0	3.8	0.0	0.0	0.0	0.0	3.8	5.8	2.5	4.8
ISABELLA	33	59	42	49	18	17	25	18	51	76	67	67	4.0	4.9	5.3	4.7	2.6	5.7	4.0	4.5	2.9	9.5	8.3	6.9
NEW HOGAN	1	4	1	2	1	0	0	0	2	4	1	2	3.8	2.8	2.0	3.1	2.6	0.0	0.0	2.6	2.8	3.9	1.4	3.1
NORTH FORK	0	5	0	3	3	0	0	1	3	5	0	4	0.0	3.3	0.0	3.3	3.3	0.0	0.0	3.3	2.1	4.0	1.5	3.1
PINE FLAT	1	7	4	4	0	10	1	5	1	17	5	9	8.2	4.5	3.5	5.9	2.4	7.2	18.4	7.3	3.1	4.3	3.2	3.6
SUCCESS	1	3	2	2	1	0	0	0	2	3	2	2	2.0	3.2	2.0	2.0	2.8	9.0	0.0	4.9	3.2	3.5	2.9	3.3
TERMINUS	1	12	9	8	1	1	0	1	2	13	9	9	3.5	3.9	2.3	3.5	1.5	4.2	0.0	2.8	3.2	3.4	3.0	3.3
DISTRICT WT AVERAGE	14	26	18	21	8	9	10	8	22	35	28	29	4.2	4.2	3.5	4.1	2.4	6.0	5.2	4.7	3.0	6.1	5.0	4.8

DISTRICT: SACRAMENTO

YEAR: 1964

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	1,309	1,844	501	3,654	89	65	78	74	2.9	3.7	3.0	3.2	2	28	14	17	0	1	0	1	7	16	43	17
ENGLEBRIGHT	760	1,285	512	2,557	71	52	54	58	3.1	3.9	3.4	3.6	20	25	20	26	0	0	0	0	29	20	15	22
ISABELLA	4,907	4,264	2,025	11,196	74	55	63	62	2.8	3.6	2.6	3.2	27	19	18	22	7	8	7	7	83	74	81	78
NEW HOGAN	2,288	2,173	877	5,338	69	67	64	67	3.1	3.7	3.0	3.3	8	22	12	16	0	1	2	1	21	15	39	20
PINE FLAT	2,080	1,517	760	4,357	66	62	72	64	3.1	3.3	2.6	3.1	13	35	12	20	0	2	0	1	32	42	48	40
SUCCESS	4,374	3,125	1,789	9,288	66	56	63	60	2.6	3.2	2.5	2.9	6	21	10	14	0	0	1	0	43	40	49	42
TERMINUS	4,513	2,768	1,055	8,336	75	60	67	65	3.0	3.3	2.6	3.1	11	17	14	14	0	0	0	0	37	36	58	39
DISTRICT WT AVERAGE					71	57	65	62	2.8	3.4	2.6	3.1	16	22	15	18	3	3	3	3	52	49	60	51

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	11	55	34	39	0	42	3	24	0	40	9	24	3	3	2	3	84	11	32	36	0	2	0	2
ENGLEBRIGHT	55	67	53	62	1	35	0	20	6	43	7	27	38	13	33	23	36	11	30	21	0	0	0	0
ISABELLA	29	14	19	19	0	34	0	19	1	17	1	10	2	0	1	1	6	3	7	4	0	0	0	0
NEW HOGAN	43	53	30	47	3	28	1	17	4	30	2	25	10	4	5	6	47	19	39	30	0	1	0	1
PINE FLAT	21	32	15	26	0	18	0	10	0	43	2	25	2	4	7	4	58	9	27	26	0	0	0	0
SUCCESS	12	25	25	21	0	13	2	8	0	22	2	13	1	3	1	2	55	26	42	37	0	0	0	0
TERMINUS	28	30	28	29	1	14	0	8	4	21	1	13	5	4	2	4	40	27	31	31	0	0	1	0
DISTRICT WT AVERAGE	27	23	26	26	0	25	0	14	1	25	2	15	4	3	3	3	34	13	23	20	0	0	0	0

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	0	3	1	2	2	2	0	2	2	5	1	4	0.0	3.5	2.0	2.0	2.0	3.3	0.0	2.3	1.4	4.1	3.5	3.1
ENGLEBRIGHT	7	9	0	7	0	0	0	0	7	9	0	7	2.5	6.8	0.0	4.3	0.0	0.0	0.0	0.0	4.1	5.3	3.7	4.6
ISABELLA	47	60	43	54	16	22	28	21	63	82	71	75	3.6	5.6	4.3	4.7	5.2	6.8	4.8	6.1	5.6	4.6	4.8	5.0
NEW HOGAN	0	12	5	7	0	0	0	0	0	12	5	7	2.7	6.6	4.6	4.9	0.0	3.0	0.0	3.0	2.5	4.4	3.3	3.6
PINE FLAT	2	27	3	16	0	17	1	10	2	44	4	26	3.6	4.1	2.2	3.6	3.0	4.2	2.8	3.6	2.7	5.3	3.3	4.1
SUCCESS	0	4	1	2	0	1	0	0	0	5	1	3	7.0	4.5	2.0	5.0	0.0	6.7	8.0	4.5	2.5	3.9	2.9	3.3
TERMINUS	2	6	1	4	1	2	0	1	3	8	1	6	2.1	4.1	2.9	3.2	2.4	5.1	2.0	3.7	2.9	3.4	3.2	3.2
DISTRICT WT AVERAGE	19	30	18	25	6	11	11	10	25	41	29	35	3.7	5.0	3.1	4.2	2.8	5.4	3.8	4.5	3.7	4.5	3.8	4.1

DISTRICT: SACRAMENTO

YEAR: 1965

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	2,665	1,680	346	4,691	85	56	53	72	3.3	3.7	2.6	3.4	14	33	6	20	0	1	2	1	36	14	42	29
ENGLEBRIGHT	1,224	1,350	415	2,989	68	40	58	54	3.1	3.8	3.4	3.4	17	29	19	23	0	0	0	0	17	7	30	15
ISABELLA	4,554	4,173	2,206	10,933	77	70	64	72	2.9	3.3	2.5	2.9	23	26	18	23	11	10	12	11	88	78	88	85
NEW HOGAN	3,361	2,788	447	6,596	82	56	67	70	3.4	3.7	2.4	3.4	18	30	5	22	4	2	4	3	28	34	50	32
PINE FLAT	2,599	2,029	715	5,343	79	67	72	74	3.0	3.7	2.7	3.2	22	30	12	23	0	0	0	0	43	19	43	35
SUCCESS	3,686	2,686	1,042	7,414	72	62	57	66	3.0	3.0	2.4	2.9	8	13	5	9	0	1	1	1	44	46	51	46
TERMINUS	3,256	2,268	1,170	6,694	76	52	65	66	3.1	3.4	2.7	3.1	16	22	10	17	0	1	1	1	43	34	53	42
DISTRICT WT AVERAGE					77	65	62	69	3.1	3.4	2.6	3.1	17	25	10	19	3	3	4	3	49	41	56	47

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	56	47	28	50	20	48	0	28	17	39	2	23	7	7	6	7	19	17	49	21	0	2	1	1
ENGLEBRIGHT	57	67	56	61	21	61	3	36	16	59	2	33	23	7	10	14	31	9	31	21	0	0	0	0
ISABELLA	20	14	16	17	3	35	0	13	3	20	0	8	0	1	0	0	4	2	4	3	0	0	0	0
NEW HOGAN	27	34	16	29	20	40	0	26	19	39	0	25	5	6	2	5	21	12	35	19	1	1	2	1
PINE FLAT	30	26	17	27	7	19	1	10	13	53	4	25	8	10	8	9	21	10	35	19	0	0	2	0
SUCCESS	18	16	19	17	4	12	0	6	11	15	1	11	4	4	1	3	33	26	40	32	0	0	0	0
TERMINUS	33	22	18	27	4	17	1	8	14	23	1	14	5	4	3	4	22	21	35	24	0	0	0	0
DISTRICT WT AVERAGE	30	27	20	27	9	31	0	16	12	31	1	17	5	5	3	4	20	13	25	18	0	0	0	0

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	1	3	4	2	0	0	0	0	1	3	4	2	2.9	4.2	2.0	3.3	2.0	2.0	0.0	2.0	3.8	3.8	2.7	3.7
ENGLEBRIGHT	0	6	6	3	0	0	0	0	0	6	6	3	3.0	4.1	3.0	3.5	0.0	0.0	0.0	0.0	4.1	5.2	3.8	4.5
ISABELLA	52	62	43	53	20	19	24	21	72	81	67	74	4.1	5.2	5.0	4.7	4.5	5.5	6.0	5.2	5.2	4.7	4.7	4.9
NEW HOGAN	10	29	18	18	1	1	2	1	11	30	20	19	3.5	4.9	3.0	4.0	9.4	3.9	4.0	6.7	4.2	4.3	3.0	4.1
PINE FLAT	3	25	3	10	0	14	3	5	3	39	6	16	2.4	6.8	2.2	3.9	2.7	5.3	2.4	3.5	4.3	5.3	3.3	4.5
SUCCESS	3	5	4	4	2	4	0	2	5	9	4	6	3.1	3.2	8.1	4.0	4.5	3.6	0.0	4.1	3.2	3.2	3.2	3.2
TERMINUS	2	4	3	3	0	6	3	2	2	10	6	5	2.1	2.7	3.0	2.5	3.0	4.2	2.9	3.4	3.6	3.6	3.0	3.5
DISTRICT WT AVERAGE	15	25	19	19	5	8	10	7	20	33	29	26	3.1	4.5	4.5	3.9	4.4	4.3	4.9	4.4	4.1	4.3	3.7	4.1

DISTRICT: SACRAMENTO

YEAR: 1966

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	1,506	692	260	2,458	82	44	55	69	2.8	3.7	2.7	3.0	7	31	4	13	0	6	1	2	33	22	50	32
ENGLEBRIGHT	324	1,304	335	1,963	41	55	37	49	3.1	3.5	3.0	3.3	31	25	0	22	0	0	0	0	39	8	1	12
ISABELLA	4,000	3,578	1,817	9,395	69	53	69	64	2.7	3.2	2.5	2.8	20	29	22	24	12	11	9	11	93	89	85	90
NEW HOGAN	1,908	2,164	793	4,865	70	61	67	66	2.7	3.6	2.9	3.1	15	28	12	20	6	2	3	4	65	39	34	50
PINE FLAT	724	1,354	937	3,015	69	49	75	63	2.5	3.6	2.9	3.1	21	30	22	25	1	1	0	1	53	20	45	38
SUCCESS	1,857	2,082	1,256	5,195	70	51	52	58	2.8	3.3	2.4	2.9	11	26	9	16	0	0	0	0	43	28	53	40
TERMINUS	2,127	1,829	1,276	5,232	61	54	59	58	2.7	3.2	2.5	2.8	8	25	18	16	0	0	0	0	37	25	54	38
DISTRICT WT AVERAGE					69	53	62	62	2.7	3.4	2.6	2.9	15	28	16	20	5	4	3	4	61	44	57	54

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	27	56	28	34	0	51	0	13	0	33	1	8	4	5	2	4	52	9	40	40	0	1	0	0
ENGLEBRIGHT	30	57	11	44	0	66	0	43	9	42	0	29	11	16	1	13	44	16	88	33	1	0	0	0
ISABELLA	21	25	34	25	1	42	0	15	1	13	0	5	0	1	1	1	4	3	6	4	0	0	0	0
NEW HOGAN	16	34	24	24	0	54	3	21	0	43	3	17	1	6	2	3	24	7	53	22	1	0	2	1
PINE FLAT	26	24	28	26	0	20	1	8	1	51	15	25	4	8	7	7	39	11	30	25	0	2	1	1
SUCCESS	21	30	22	25	0	12	0	4	0	25	0	9	4	9	0	5	50	27	45	40	1	0	0	0
TERMINUS	18	34	36	28	0	6	1	2	2	30	4	12	4	6	2	4	52	34	30	40	1	1	4	2
DISTRICT WT AVERAGE	21	33	29	27	0	34	1	13	1	30	3	12	2	6	2	4	30	14	31	25	0	0	1	1

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	0	13	1	3	2	0	0	1	2	13	1	4	2.0	5.4	3.0	3.0	2.0	0.0	0.0	2.0	2.2	4.1	2.3	2.7
ENGLEBRIGHT	0	3	0	2	0	0	0	0	0	3	0	2	0.0	4.6	0.0	4.6	0.0	3.0	0.0	3.0	2.8	4.6	1.2	3.7
ISABELLA	53	58	39	52	14	16	21	16	67	74	60	68	4.3	5.4	4.4	4.7	5.1	5.4	4.5	5.1	4.6	5.1	4.8	4.8
NEW HOGAN	22	36	12	26	0	1	2	1	22	37	14	27	3.8	4.3	2.8	3.8	2.0	2.9	2.9	2.5	4.7	5.5	3.0	4.7
PINE FLAT	3	24	8	13	1	28	4	12	4	52	12	25	2.1	5.1	2.3	3.3	4.0	5.0	2.1	3.8	3.6	5.8	3.8	4.5
SUCCESS	1	3	1	2	0	0	0	0	1	3	1	2	3.9	2.6	2.0	2.9	0.0	2.8	5.0	3.7	2.7	3.5	3.0	3.1
TERMINUS	0	0	1	0	2	3	2	2	2	3	3	2	0.0	0.0	2.8	2.8	11.8	2.0	6.9	7.3	2.2	3.3	3.2	2.8
DISTRICT WT AVERAGE	21	26	14	22	5	8	7	7	26	34	21	29	3.6	4.5	3.1	3.8	5.3	3.7	4.6	4.5	3.6	4.6	3.8	3.9

DISTRICT: SACRAMENTO

YEAR: 1967

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	1,404	800	303	2,507	65	55	70	63	3.3	3.1	2.7	3.2	20	22	6	19	2	0	1	1	37	21	36	32
ENGLEBRIGHT	867	828	71	1,766	58	58	57	58	3.2	3.4	2.4	3.3	18	23	2	19	0	0	0	0	13	24	31	19
ISABELLA	1,722	1,819	416	3,957	58	57	64	58	2.9	3.3	2.4	3.0	27	17	12	21	9	6	5	7	93	84	66	86
NEW HOGAN	2,084	2,141	290	4,515	71	55	69	64	3.4	3.7	3.0	3.5	32	29	24	30	4	4	5	4	28	31	35	30
PINE FLAT	2,182	2,494	172	4,848	66	60	58	63	3.1	3.5	2.5	3.3	13	17	16	15	1	2	1	1	36	25	34	31
SUCCESS	3,418	2,643	1,710	7,771	63	54	74	62	3.1	2.9	2.6	2.9	15	14	18	15	0	0	0	0	38	52	42	44
TERMINUS	2,714	1,675	767	5,156	54	57	61	56	3.3	3.4	2.7	3.2	6	12	13	9	0	1	0	0	28	26	55	32
DISTRICT WT AVERAGE					62	56	68	61	3.2	3.3	2.6	3.1	18	18	15	17	2	2	1	2	40	41	46	41

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	56	37	23	45	29	42	0	29	22	25	0	20	3	5	3	4	14	23	37	20	1	0	4	1
ENGLEBRIGHT	59	65	40	61	56	68	0	59	28	53	0	38	34	20	12	27	23	20	14	21	0	0	14	1
ISABELLA	33	14	12	22	11	44	0	24	9	11	0	9	0	2	1	1	3	3	24	6	0	0	4	0
NEW HOGAN	46	33	31	39	30	31	13	29	40	43	15	40	2	3	2	2	15	15	26	16	0	0	4	0
PINE FLAT	22	29	2	24	5	5	0	5	19	33	0	25	6	4	9	5	23	21	55	24	1	0	3	1
SUCCESS	13	19	21	17	16	7	0	9	15	8	0	9	5	2	3	3	26	29	53	34	0	1	0	0
TERMINUS	32	37	43	36	38	38	15	34	10	9	0	8	2	1	2	2	21	20	20	20	0	0	1	0
DISTRICT WT AVERAGE	32	29	25	30	23	26	4	22	19	23	1	18	5	4	3	4	19	19	39	22	0	0	2	0

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
BLACK BUTTE	6	7	5	6	0	0	0	0	6	7	5	6	4.1	3.7	1.6	3.6	0.0	0.0	0.0	0.0	3.6	3.6	2.0	3.4
ENGLEBRIGHT	2	20	0	10	0	0	0	0	2	20	0	10	5.0	4.3	0.0	4.4	0.0	0.0	0.0	0.0	4.4	3.9	3.0	4.1
ISABELLA	38	50	15	40	25	21	25	23	63	71	40	63	3.3	4.5	3.0	3.8	4.4	5.2	3.5	4.6	4.5	4.4	4.2	4.4
NEW HOGAN	24	38	33	31	2	1	4	2	26	39	37	33	2.8	4.2	2.2	3.4	6.0	6.2	10.0	6.4	5.6	4.8	3.6	5.1
PINE FLAT	16	14	0	14	12	27	5	19	28	41	5	33	5.0	4.2	0.0	4.4	3.0	4.9	2.8	3.9	4.4	5.5	3.0	4.9
SUCCESS	2	0	0	1	0	0	0	0	2	0	0	1	2.4	2.0	2.0	2.2	3.6	0.0	0.0	1.5	3.5	3.6	2.5	3.3
TERMINUS	3	9	6	5	4	4	0	3	7	13	6	9	2.0	2.7	2.8	2.4	6.7	5.1	2.0	5.3	3.0	3.0	3.5	3.1
DISTRICT WT AVERAGE	13	19	6	14	6	9	3	7	19	28	9	21	3.2	3.5	2.1	3.2	3.9	3.4	1.6	3.3	4.0	4.2	3.0	3.9

DISTRICT: SACRAMENTO

YEAR: 1968

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CLARK HILL	4,934		882	5,816	83		80	82	3.3		2.7	3.2	17		13	16	1		1	1	24		20	23
HARTWELL	1,439	851	326	2,616	67	39	56	57	2.5	3.1	2.1	2.6	40	20	23	32	0	0	1	0	71	25	40	53
DISTRICT WT AVERAGE					79	39	74	74	3.1	3.1	2.5	3.0	22	20	16	21	1	0	1	1	35	25	25	32

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CLARK HILL	26		21	25	11		0	9	4		0	3	6		2	5	30		52	34	5		1	4
HARTWELL	17	19	3	15	2	34	0	11	1	14	0	5	8	25	15	14	23	24	47	27	0	1	2	1
DISTRICT WT AVERAGE	24	19	16	22	9	34	0	10	3	14	0	4	6	25	5	8	28	24	51	31	4	1	1	3

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CLARK HILL	8		6	8	4		1	3	12		7	11	3.3		2.1	3.1	2.5		2.2	2.4	3.2		2.3	3.0
HARTWELL	6	8	1	6	0	0	0	0	6	8	1	6	2.6	2.6	2.0	2.5	0.0	4.0	0.0	4.0	3.9	3.1	2.9	3.5
DISTRICT WT AVERAGE	8	8	5	7	3	0	1	2	11	8	6	10	3.1	2.6	2.1	2.9	2.5	4.0	2.2	2.8	3.4	3.1	2.5	3.2

DISTRICT: SAVANNAH

YEAR: 1966

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CLARK HILL	5,024		854	5,878	78		80	78	3.1		2.8	3.1	19		16	19	0		1	0	19		17	19
HARTWELL	1,206		307	1,513	65		62	64	2.5		2.1	2.4	34		13	30	0		0	0	48		24	43
DISTRICT WT AVERAGE					75		75	75	3.0		2.6	2.9	22		15	21	0		1	0	26		19	25

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CLARK HILL	31		20	29	13		0	11	5		0	4	6		3	6	33		52	36	4		11	5
HARTWELL	16		6	14	4		0	3	1		0	1	14		3	12	35		72	43	0		0	0
DISTRICT WT AVERAGE	28		16	26	11		0	9	4		0	3	8		3	7	33		58	37	3		8	4

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CLARK HILL	5		3	5	4		2	4	9		5	8	3.5		4.4	3.6	3.0		3.4	3.1	3.1		2.5	3.0
HARTWELL	7		1	6	1		1	1	8		2	7	2.6		2.0	2.5	2.0		4.0	2.4	3.7		2.1	3.4
DISTRICT WT AVERAGE	5		2	4	3		2	3	9		4	8	3.3		3.7	3.4	2.8		3.6	2.9	3.2		2.4	3.1

DISTRICT: SAVANNAH

YEAR: 1967

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CLARK HILL	6,678		1,175	7,853	79		66	77	3.2		2.6	3.1	18		16	18	1		5	2	21		24	22
HARTWELL	1,090		254	1,344	69		67	69	2.5		2.2	2.4	45		35	43	3		0	2	51		53	51
DISTRICT WT AVERAGE					77		67	75	3.1		2.5	3.0	23		20	22	1		4	2	26		30	27

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CLARK HILL	34		13	30	11		0	9	3		0	2	4		1	3	31		46	34	4		8	5
HARTWELL	22		23	22	1		0	1	1		0	1	9		14	10	28		39	30	1		0	1
DISTRICT WT AVERAGE	32		15	29	9		0	7	3		0	2	5		4	5	30		44	33	3		6	4

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CLARK HILL	8		13	9	0		0	0	8		13	9	3.6		3.6	3.6	5.9		2.0	5.2	3.2		2.9	3.1
HARTWELL	14		2	11	0		0	0	14		2	11	2.2		2.3	2.2	0.0		0.0	0.0	4.4		3.3	4.2
DISTRICT WT AVERAGE	9		11	9	0		0	0	9		11	9	3.3		3.3	3.3	5.9		2.0	5.2	3.4		3.0	3.3

DISTRICT: SAVANNAH

YEAR: 1968

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CANTON	2,810	4,346	2,098	9,254	66	64	52	61	3.3	3.3	2.9	3.2	5	13	8	10	1	1	2	1	43	32	52	40
DENISON	1,064	2,058	526	3,648	70	57	57	61	2.7	3.5	2.9	3.1	8	20	25	17	0	1	0	1	71	48	76	60
EUFAULA	1,394	2,896	666	4,956	67	56	57	59	2.8	3.5	2.7	3.2	7	18	18	15	0	2	0	1	34	36	45	37
FALL RIVER	630	488	398	1,516	73	67	63	69	2.8	3.3	2.9	3.0	3	18	5	8	1	2	0	1	46	37	40	42
FORT GIBSON	466	1,193	286	1,945	57	66	52	60	2.2	3.9	2.2	3.0	9	13	19	13	0	2	1	1	54	27	70	45
FORT SUPPLY	1,129	2,065	638	3,832	70	55	47	59	2.7	3.4	2.7	3.0	1	7	0	4	0	1	0	0	16	23	20	20
GREAT SALT PLAINS	1,490	1,537	677	3,704	86	82	62	79	3.6	3.5	2.9	3.4	0	7	1	3	0	1	0	0	19	9	41	20
HEYBURN	387	1,564	264	2,215	40	53	60	51	2.9	4.0	3.1	3.6	2	9	3	7	0	4	0	3	35	7	42	18
HULAH	371	652	206	1,229	76	75	69	74	2.5	3.2	2.6	2.8	6	17	6	11	1	2	0	1	82	30	36	49
KEYSTONE	2,206	3,419	1,204	6,829	64	78	69	71	2.8	3.7	2.9	3.2	6	19	13	13	0	0	1	0	47	9	27	26
OOLOGAH	4,139	4,661	1,678	10,478	63	62	59	62	4.1	4.3	3.9	4.2	1	5	4	3	0	1	0	0	46	33	34	38
TENKILLER	609	1,606	364	2,579	46	55	62	54	3.0	3.8	2.8	3.4	6	27	24	21	0	1	1	1	60	48	73	55
TORONTO	510	771	299	1,580	81	71	69	74	3.6	3.7	3.1	3.5	5	23	8	14	1	5	1	3	31	25	27	27
WISTER	602	1,096	405	2,103	37	49	53	46	2.5	2.9	2.2	2.6	5	2	0	2	0	2	2	1	45	32	38	37
DISTRICT WT AVERAGE					65	62	58	62	3.2	3.6	2.9	3.2	4	13	9	9	0	1	1	1	43	28	43	36

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CANTON	9	20	4	13	1	24	0	11	0	10	0	5	1	1	1	1	50	30	42	39	0	0	0	0
DENISON	5	6	1	5	9	52	1	29	6	10	0	7	7	4	5	5	11	5	10	13	2	2	9	3
EUFAULA	10	10	17	11	0	55	0	31	0	9	0	5	4	5	1	4	54	18	45	33	0	0	2	0
FALL RIVER	8	13	5	9	0	11	0	3	0	20	0	6	1	0	1	1	46	44	55	48	1	0	0	0
FORT GIBSON	7	30	11	18	0	55	0	26	0	9	0	4	2	4	0	3	31	9	20	19	4	2	4	3
FORT SUPPLY	13	23	8	17	0	32	0	15	1	10	0	5	4	2	0	2	73	34	73	55	0	0	1	0
GREAT SALT PLAINS	17	21	9	17	33	37	0	27	1	3	0	2	1	6	0	4	38	35	51	39	0	0	1	0
HEYBURN	5	16	23	15	0	62	0	40	0	5	0	3	4	2	5	3	56	6	21	22	0	0	0	0
HULAH	8	15	11	12	0	57	0	27	0	24	0	11	1	3	0	2	11	17	27	17	0	3	15	4
KEYSTONE	7	18	14	13	0	28	0	13	0	9	1	4	5	12	3	8	40	16	54	32	4	2	0	2
OOLOGAH	13	24	19	19	0	13	0	6	0	3	1	1	0	0	0	0	44	38	51	43	0	0	0	0
TENKILLER	33	24	6	23	2	69	4	40	1	31	0	18	2	0	0	1	22	11	22	16	1	0	5	1
TORONTO	6	18	6	12	0	30	0	14	0	14	0	7	5	12	6	9	55	29	62	44	0	0	0	0
WISTER	1	13	6	8	0	17	0	8	0	4	0	2	0	0	1	0	50	34	55	44	0	0	0	0
DISTRICT WT AVERAGE	10	18	10	14	3	36	0	18	1	10	0	5	2	4	1	3	43	24	45	35	1	1	1	1

DISTRICT: TULSA

YEAR: 1966

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CANTON	5	7	3	5	4	2	2	3	9	9	5	8	3.6	3.6	4.1	3.7	3.1	3.3	3.3	3.2	3.8	4.1	3.6	3.9
DENISON	6	18	3	12	29	46	41	39	35	64	44	51	2.6	4.6	5.4	4.0	3.2	4.8	3.3	4.0	5.8	4.5	4.5	4.9
EUFAULA	8	33	10	22	4	7	17	8	12	40	27	30	3.8	3.5	2.4	3.4	3.5	4.8	4.2	4.3	2.4	3.0	2.4	2.7
FALL RIVER	9	7	0	6	6	7	0	5	15	14	0	11	2.2	2.1	2.0	2.1	2.1	2.0	2.0	2.0	4.1	4.2	3.0	3.8
FORT GIBSON	3	9	2	6	0	14	3	7	3	23	5	13	3.9	2.2	2.0	2.7	14.0	3.3	2.0	6.6	2.9	3.9	4.2	3.6
FORT SUPPLY	0	4	1	2	0	0	0	0	0	4	1	2	2.0	4.5	3.0	3.4	0.0	2.0	0.0	2.0	2.2	3.1	1.9	2.6
GREAT SALT PLAINS	4	2	1	3	0	0	0	0	4	2	1	3	2.3	3.0	5.0	3.1	2.0	12.0	0.0	7.1	2.5	3.4	2.8	2.9
HEYBURN	0	4	0	3	0	8	0	5	0	12	0	8	2.0	3.0	0.0	2.8	0.0	2.0	0.0	2.0	2.3	4.0	2.7	3.4
HULAH	10	27	14	19	4	6	8	5	14	33	22	24	6.5	2.8	2.0	3.9	2.9	2.1	2.1	2.4	5.7	3.1	3.6	4.1
KEYSTONE	1	19	1	9	0	0	0	0	1	19	1	9	4.3	3.6	3.0	3.7	0.0	3.5	0.0	3.5	2.3	3.4	2.0	2.7
OOLOGAH	0	1	1	1	0	0	0	0	0	1	1	1	2.0	3.2	2.0	2.5	0.0	0.0	0.0	0.0	3.7	2.8	2.5	3.1
TENKILLER	5	40	14	26	28	30	20	28	33	70	34	54	7.8	5.0	3.1	5.4	3.3	6.5	3.5	5.2	4.0	4.2	3.6	4.0
TORONTO	10	16	7	12	0	11	0	5	10	27	7	17	2.3	2.9	2.0	2.5	0.0	2.0	0.0	2.0	3.2	4.6	3.0	3.8
WISTER	5	16	11	11	2	4	2	3	7	20	13	14	8.9	2.4	3.3	4.7	2.1	5.2	2.0	3.5	2.6	2.8	2.6	2.7
DISTRICT WT AVERAGE	4	14	4	8	5	8	5	6	8	22	9	14	3.5	3.5	3.2	3.4	3.6	4.2	3.0	3.7	3.3	3.6	3.0	3.4

DISTRICT: TULSA

YEAR: 1966

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CANTON	8,325	3,783	1,260	8,368	79	63	66	70	3.1	3.1	2.6	3.0	7	11	10	9	1	1	1	1	44	32	37	38
DENISON	1,017	1,859	553	3,429	66	64	63	64	3.0	3.4	2.7	3.1	20	21	21	21	0	1	1	1	68	42	51	52
EUFAULA	1,522	3,525	562	5,609	72	66	53	66	2.9	3.6	2.4	3.2	21	16	14	17	1	1	2	1	41	33	42	37
FALL RIVER	474	1,178	226	1,878	72	83	63	77	3.1	3.5	2.5	3.2	8	17	5	13	7	8	6	7	52	37	50	43
FORT GIBSON	965	1,215	249	2,429	85	59	67	72	2.7	3.4	2.3	2.9	17	13	8	14	1	0	0	0	68	34	58	52
FORT SUPPLY	1,158	2,014	539	3,711	64	70	67	67	2.8	3.3	2.7	3.0	2	13	2	8	0	1	2	1	22	20	19	21
GREAT SALT PLAINS	758	1,362	560	2,680	88	68	80	77	3.1	3.2	2.8	3.1	3	7	0	4	0	1	2	1	33	23	32	28
HEYBURN	782	1,450	284	2,516	62	63	55	61	3.1	3.8	2.5	3.4	6	9	2	7	0	5	0	3	29	7	18	16
HULAH	345	452	275	1,072	84	55	43	62	2.6	3.1	2.8	2.8	4	12	2	7	1	8	1	4	59	37	42	46
KEYSTONE	2,088	2,096	702	4,886	81	52	72	68	3.0	3.3	2.5	3.0	11	12	24	14	1	1	1	1	32	16	23	24
OOLOGAH	3,904	3,955	1,746	9,605	66	57	57	61	4.1	3.9	3.8	4.0	7	3	6	5	0	1	2	1	45	49	42	46
TENKILLER	990	1,476	486	2,952	76	67	64	69	3.0	3.3	2.5	3.0	13	22	8	16	1	1	2	1	39	38	37	38
TORONTO	468	873	291	1,632	77	65	68	69	4.0	3.9	3.5	3.8	13	23	6	17	5	6	5	6	45	33	36	37
WISTER	337	637	252	1,226	60	64	46	58	2.5	3.0	2.1	2.6	12	6	3	7	1	1	2	1	55	16	25	29
DISTRICT WT AVERAGE					74	63	63	67	3.2	3.4	2.8	3.2	10	13	9	11	1	2	2	2	43	31	36	37

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WTAVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CANTON	18	13	12	15	5	14	0	8	1	6	0	3	2	2	4	2	38	33	48	38	0	0	0	0
DENISON	2	8	2	5	1	44	0	23	2	10	1	6	7	8	5	7	17	8	31	15	7	2	10	5
EUFAULA	23	8	1	11	1	44	0	25	1	14	1	8	5	11	1	8	42	19	55	31	3	1	0	1
FALL RIVER	12	8	0	8	0	18	0	11	0	10	0	6	4	5	0	4	39	40	44	40	0	0	0	0
FORT GIBSON	24	31	3	24	0	62	0	27	0	12	0	5	4	5	7	5	16	11	33	16	1	2	2	2
FORT SUPPLY	16	25	9	19	4	24	1	14	0	9	1	5	1	4	2	3	58	38	72	50	0	0	1	0
GREAT SALT PLAINS	12	11	4	10	12	14	0	10	1	1	0	1	2	7	0	4	41	47	65	49	0	0	0	0
HEYBURN	14	28	9	20	3	36	0	19	1	3	1	2	3	5	3	4	43	9	58	28	8	0	3	3
HULAH	14	12	7	11	6	48	1	21	1	12	0	5	2	0	0	1	26	20	28	24	2	2	1	2
KEYSTONE	15	12	9	13	5	17	3	10	1	1	0	1	5	4	3	4	41	38	56	42	1	1	2	1
OOLOGAH	12	17	7	13	0	3	0	1	0	1	0	0	0	0	0	0	48	40	50	45	0	0	1	0
TENKILLER	12	17	4	13	1	48	1	23	1	25	3	13	3	3	1	3	49	28	54	40	2	2	5	3
TORONTO	6	11	1	8	0	7	0	4	0	5	0	3	4	9	3	6	47	47	54	48	0	0	0	0
WISTER	5	8	3	6	0	33	0	15	1	5	0	3	1	2	1	1	35	39	62	44	3	0	5	2
DISTRICT WT AVERAGE	15	15	6	13	3	28	0	14	1	7	1	4	3	5	2	4	40	29	52	37	2	1	2	1

DISTRICT: TULSA

YEAR: 1967

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CANTON	5	9	5	7	1	1	1	1	6	10	6	8	2.3	3.8	4.0	3.2	2.3	4.4	2.3	3.2	4.1	3.8	3.0	3.8
DENISON	11	17	3	12	29	37	24	32	40	54	27	44	3.2	4.1	3.0	3.6	3.4	3.9	3.6	3.7	4.0	4.1	4.0	4.1
EUFAULA	11	44	7	29	7	8	6	7	18	52	13	36	2.7	4.3	2.6	3.6	3.1	4.4	4.9	4.1	3.5	3.4	2.9	3.4
FALL RIVER	10	29	12	21	6	2	13	5	16	31	25	26	2.4	2.8	2.0	2.6	3.6	2.2	2.0	2.5	4.2	3.5	4.0	3.8
FORT GIBSON	16	19	0	15	1	1	0	1	17	20	0	16	2.3	3.6	0.0	2.9	2.0	4.3	0.0	3.1	3.9	4.2	2.4	3.8
FORT SUPPLY	1	2	2	2	0	1	0	1	1	3	2	3	2.3	3.1	2.7	2.8	0.0	2.0	0.0	2.0	2.5	3.1	2.4	2.8
GREAT SALT PLAINS	1	3	3	2	0	0	1	0	1	3	4	2	2.6	2.6	3.2	2.7	0.0	4.0	2.0	3.4	3.5	2.6	2.3	2.8
HEYBURN	0	12	7	7	0	0	0	0	0	12	7	7	2.0	2.5	2.0	2.3	0.0	0.0	0.0	0.0	2.1	3.1	1.9	2.6
HULAH	19	31	4	20	6	7	3	6	25	38	7	26	2.2	3.4	2.0	2.6	2.1	3.4	2.0	2.6	3.2	3.0	2.9	3.0
KEYSTONE	1	10	4	5	0	0	0	0	1	10	4	5	2.3	3.3	2.2	2.7	2.4	3.6	0.0	3.0	2.3	2.4	1.9	2.3
OOLOGAH	0	2	0	1	0	0	0	0	0	2	0	1	2.3	2.3	2.0	2.2	0.0	0.0	0.0	0.0	3.1	3.4	3.0	3.2
TENKILLER	4	28	5	16	8	19	21	16	12	47	26	32	4.1	4.5	3.3	4.1	3.0	4.4	2.2	3.5	2.5	3.5	3.0	3.1
TORONTO	12	24	11	18	9	2	2	4	21	26	13	22	3.2	2.8	2.1	2.8	2.0	3.1	2.0	2.6	3.9	3.3	3.6	3.5
WISTER	19	20	9	17	6	2	2	3	25	22	11	20	4.4	3.0	3.0	3.4	2.3	3.7	2.0	2.9	3.2	2.1	2.1	2.4
DISTRICT WT AVERAGE	6	18	4	11	4	5	5	5	10	23	9	16	2.6	3.4	2.7	3.0	2.6	3.8	2.7	3.2	3.3	3.3	2.8	3.2

DISTRICT: TULSA

YEAR: 1967

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CANTON	3,833	6,347	1,974	12,154	82	62	75	70	3.0	3.2	3.0	3.1	9	12	5	10	1	1	1	1	42	30	27	33
DENISON	1,006	2,032	679	3,717	74	65	66	68	2.5	3.2	2.9	2.9	29	27	28	28	0	2	0	1	73	54	67	62
EUFAULA	1,528	3,412	775	5,715	62	57	50	57	2.6	3.2	2.3	2.9	19	13	20	16	1	1	1	1	47	26	49	36
FALL RIVER	824	1,094	453	2,371	80	70	79	75	3.1	3.5	3.1	3.3	9	12	8	10	4	5	4	4	55	35	44	44
FORT GIBSON	1,082	1,540	553	3,175	63	76	72	70	2.5	3.4	2.4	2.9	19	23	20	21	3	3	2	3	73	37	72	58
FORT SUPPLY	946	1,785	547	3,278	69	65	71	67	2.7	3.3	2.6	3.0	5	17	3	10	1	0	0	0	26	18	22	21
GREAT SALT PLAINS	814	1,096	720	2,630	80	63	72	71	2.8	3.0	2.5	2.8	1	6	0	3	0	1	2	1	34	24	36	31
HEYBURN	538	1,837	320	2,695	83	56	62	63	2.9	4.0	2.6	3.5	6	6	2	5	1	1	0	1	25	4	29	13
HULAH	451	624	308	1,383	60	47	77	59	2.8	3.7	2.7	3.1	9	15	4	10	3	2	1	2	52	38	40	43
KEYSTONE	1,655	2,976	1,083	5,714	77	53	71	65	2.6	3.5	2.8	3.1	31	15	13	20	1	1	0	1	52	12	27	29
OOLOGAN	3,237	4,029	2,800	10,066	59	61	70	63	3.6	3.5	3.5	3.5	3	4	3	3	0	0	0	0	42	37	34	38
TORONTO	399	785	323	1,507	68	68	68	68	3.8	3.8	3.6	3.8	16	18	9	15	5	6	7	6	48	21	32	31
TENKILLER	634	2,082	343	3,059	70	68	65	68	2.6	3.5	2.7	3.2	11	22	17	19	0	2	4	2	36	29	52	34
WISTER	923	1,101	279	2,303	52	59	64	56	2.1	2.6	2.6	2.4	9	10	4	9	2	5	8	4	62	42	21	49
DISTRICT WT AVERAGE					70	62	69	66	2.8	3.3	2.9	3.1	13	13	9	12	1	1	1	1	48	29	38	37

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WTAVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CANTON	10	14	6	11	0	31	0	15	0	4	0	2	2	5	2	3	48	23	65	38	2	0	1	1
DENISON	7	4	1	4	1	38	0	19	0	7	0	3	10	7	11	9	10	5	15	8	2	3	7	3
EUFAULA	6	7	2	6	0	32	0	18	1	6	0	4	6	7	3	6	39	25	43	32	2	1	3	2
FALL RIVER	7	10	9	9	0	11	0	5	1	4	0	2	2	7	3	4	38	41	48	41	0	0	0	0
FORT GIBSON	15	24	11	18	0	76	0	32	1	25	0	11	10	1	3	5	17	7	19	13	1	2	1	1
FORT SUPPLY	11	24	6	16	0	33	1	16	1	10	0	5	4	10	1	6	59	28	69	46	0	2	0	1
GREAT SALT PLAINS	7	12	7	9	4	28	0	12	0	1	0	0	1	5	0	2	57	35	58	49	0	0	0	0
HEYBURN	14	17	24	17	3	55	0	35	1	5	0	3	7	3	2	4	47	13	42	25	6	1	0	2
HULAH	7	8	3	6	0	43	0	18	0	11	0	5	3	7	1	4	33	15	34	26	3	4	9	5
KEYSTONE	12	13	16	13	3	41	1	20	1	4	0	2	6	6	5	6	20	17	49	24	0	0	1	0
OOLOGAN	7	21	13	14	0	7	0	3	0	2	0	1	0	1	1	1	54	42	54	49	0	0	0	0
TORONTO	10	11	5	9	0	36	0	18	0	6	1	3	6	11	4	8	47	37	52	43	0	0	0	0
TENKILLER	10	18	1	14	0	58	1	37	0	27	1	17	3	1	4	2	56	22	41	33	2	4	0	3
WISTER	7	12	5	9	0	13	0	6	0	2	0	1	2	2	0	2	28	32	67	34	0	0	1	0
DISTRICT WT AVERAGE	9	14	9	11	1	33	0	16	0	7	0	3	4	5	3	4	40	24	50	34	1	1	1	1

DISTRICT: TULSA

YEAR: 1968

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
CANTON	8	10	6	9	2	1	1	1	10	11	7	10	3.2	3.2	3.9	3.3	3.0	4.8	7.2	4.6	3.3	4.6	3.0	3.9
DENISON	5	18	6	12	34	2	31	17	39	20	37	29	4.1	3.9	6.3	4.4	2.9	2.4	3.6	2.8	4.8	4.3	4.3	4.5
EUFAULA	18	27	9	22	8	5	7	6	26	32	16	28	2.6	3.7	6.1	3.8	3.3	2.9	2.4	2.9	3.0	3.2	3.2	3.1
FALL RIVER	20	19	15	18	0	0	3	1	20	19	18	19	2.5	2.6	2.4	2.5	0.0	0.0	2.0	2.0	4.2	3.7	3.5	3.8
FORT GIBSON	14	27	8	18	3	0	2	2	17	27	10	20	2.3	2.7	2.2	2.4	2.0	0.0	3.3	2.5	4.8	4.6	4.6	4.7
FORT SUPPLY	1	3	0	2	0	0	0	0	1	3	0	2	2.0	3.2	0.0	2.7	0.0	0.0	0.0	0.0	2.6	3.6	2.2	3.0
GREAT SALT PLAINS	1	4	5	3	0	0	0	0	1	4	5	3	2.0	2.2	3.8	2.6	0.0	0.0	0.0	0.0	2.3	2.6	2.1	2.4
HEYBURN	2	9	0	6	0	0	0	0	2	9	0	6	2.1	2.7	0.0	2.5	0.0	2.0	0.0	2.0	2.0	2.1	2.5	2.1
HULAH	9	27	4	15	5	0	4	3	14	27	8	18	2.5	3.0	2.0	2.6	2.6	2.0	2.0	2.2	3.1	3.5	2.6	3.1
KEYSTONE	8	8	0	6	0	0	0	0	8	8	0	6	2.4	3.3	4.0	3.1	0.0	0.0	0.0	0.0	3.8	2.9	2.4	3.1
OOLOGAN	1	1	0	1	0	0	0	0	1	1	0	1	2.7	2.4	2.5	2.5	0.0	0.0	0.0	0.0	2.9	3.0	2.6	2.9
TORONTO	12	23	16	19	1	0	0	0	13	23	16	19	2.0	3.1	2.1	2.6	2.6	0.0	0.0	2.6	4.1	3.8	3.2	3.7
TENKILLER	4	35	12	25	25	0	18	8	29	35	30	33	2.4	4.2	2.3	3.5	2.8	14.0	2.9	9.9	2.6	3.1	3.7	3.1
WISTER	10	13	20	12	0	0	5	1	10	13	25	13	2.4	2.6	2.8	2.5	2.0	0.0	5.1	2.6	3.7	3.3	1.8	3.3
DISTRICT WT AVERAGE	8	14	5	10	4	1	4	3	12	15	9	13	2.7	3.1	3.5	3.0	2.8	4.8	4.4	4.0	3.4	3.6	2.9	3.4

DISTRICT: TULSA

YEAR: 1968

PLAN FORMULATION AND EVALUATION STUDIES
RECREATION

SUPPLEMENT NO. 1
SUPPLEMENTAL RESERVOIR RECREATION USE DATA - 1969

TO
TECHNICAL REPORT NO. 2
ESTIMATING INITIAL RESERVOIR RECREATION USE

APPENDIX A

PROJECT DATA

FEBRUARY 1971

Introduction

1. Recreation-use surveys to obtain information for reporting public attendance were instituted Corps-wide by the Office of the Chief of Engineers (OCE) in December 1962. An important purpose of the surveys was to assemble a body of data describing recreation use to provide a factual basis for estimating recreation use at reservoirs included in the Corps' civil works program. The original surveys provided limited information for recreation planning purposes and resulted in a proposal by the Sacramento District for a refined survey with a more rigid, statistical approach, which was adopted by OCE in 1966 on a test basis. Fifty-two reservoirs in seven districts were selected for the test program. The modified survey was conducted for three years: 1966, 1967, and 1968. During this period, approximately 735,000 people in over 238,000 vehicles were surveyed. A methodology based on this data was developed for estimating the recreation attendance that would occur at proposed Corps of Engineers' projects. This methodology was published as Technical Report No. 2, "Estimating Initial Reservoir Recreation Use". The data utilized in employing the methodology was included in the appendices to the report.

Purpose and Scope

2. This supplemental report has been prepared to update the data contained in Technical Report No. 2, "Estimating Initial Reservoir Recreation Use", through CY 1969. Contained herein are the 1969 recreation attendance for the participating reservoirs and the 1966-1969 average percentages of annual attendance during the peak months of use (Appendix A), the 1966-1969 average per capita use rates for the participating reservoirs (Appendix B), and the 1969 recreation-use data summaries for the participating reservoirs compiled from the recreation-use surveys (Appendix C).

PROJECT DATA

1969 Recreation Use

District	Page
Fort Worth	A-3
Little Rock	A-3
Nashville	A-3
Portland	A-3
Sacramento	A-3
Savannah	A-4
Tulsa	A-4

1966-1969 Monthly Use Percentages

District	Page
Fort Worth	A-5
Little Rock	A-5
Nashville	A-5
Portland	A-5
Sacramento	A-6
Savannah	A-6
Tulsa	A-6

1969 ATTENDANCE
(Recreation Days)

District	Project	Attendance
Fort Worth	Belton	1,894,600
	Benbrook	2,425,400
	Canyon	992,900
	Dam B	625,600
	Garza-Little Elm	2,401,200
	Grapevine	2,266,700
	Hords Creek	149,500
	Lavon	3,171,800
	Navarro Mills	591,200
	Proctor	414,400
	San Angelo	427,900
	Whitney	3,276,200
Little Rock	Beaver	2,040,900
	Bull Shoals	3,156,800
	Greers Ferry	2,207,000
	Norfork	2,099,500
	Table Rock	4,876,800
Nashville	Center Hill	2,289,600
	Cheatham	1,198,800
	Dale Hollow	1,650,300
	Lake Cumberland	5,139,600
	Old Hickory	5,002,300
Portland	Cottage Grove	319,600
	Detroit	498,600
	Dorena	169,500
	Fern Ridge	1,425,100
	Hills Creek	136,700
	Lookout Point	348,200
	The Dalles	438,400
Sacramento	Black Butte	136,900
	Englebright	114,200
	Isabella	1,381,100
	New Hogan	294,200
	Pine Flat	565,700
	Success	533,300
	Terminus	300,600

District	Project	Attendance
Savannah	Clark Hill	3,722,400
	Hartwell	4,826,400
Tulsa	Canton	1,141,500
	Denison	9,073,300
	Eufaula	2,766,400
	Fall River	402,000
	Fort Gibson	2,671,900
	Fort Supply	253,500
	Great Salt Plains	490,100
	Heyburn	416,000
	Hulah	489,700
	Keystone	2,152,200
	Oologah	1,056,800
	Tenkiller	1,804,100
	Toronto	338,200
	Wister	758,900

1966-1969 AVERAGE PERCENTAGES OF ANNUAL ATTENDANCE
DURING PEAK MONTHS OF USE

District	Project	Apr	May	Jun	Jul	Aug	Sep	Total
Ft. Worth	Belton	8.9	12.3	14.7	14.7	13.1	7.3	71.0
	Benbrook	10.6	13.1	14.4	17.7	11.1	6.5	73.4
	Canyon	12.4	10.2	12.2	16.4	12.1	7.6	70.9
	Dam B	11.6	10.8	16.9	17.0	13.3	7.4	77.0
	Garza-Little Elm	9.4	11.5	14.4	14.1	14.0	9.9	73.3
	Grapevine	8.9	13.5	16.1	19.2	13.7	7.0	78.4
	Hords Creek	7.1	11.8	17.4	21.1	17.6	8.9	83.9
	Lavon	10.5	10.8	12.5	14.2	10.1	7.6	65.7
	Navarro Mills	9.2	11.1	13.3	15.0	12.4	10.0	71.0
	Proctor	12.8	14.3	13.9	16.7	13.2	7.4	78.3
	San Angelo	10.7	12.4	10.2	10.4	9.0	7.9	60.6
	Whitney	8.7	9.9	15.5	13.5	11.9	8.6	68.1
Little Rock	Beaver	9.4	11.5	14.1	15.1	14.2	10.5	74.8
	Bull Shoals	10.3	10.4	13.7	16.7	14.9	9.1	75.1
	Greers Ferry	9.3	12.5	17.3	20.8	16.5	7.4	83.8
	Norfork	7.7	10.2	15.9	18.9	15.0	9.3	77.0
	Table Rock	7.8	10.0	16.1	18.6	17.1	9.0	78.6
Nashville	Center Hill	8.5	12.6	16.1	17.6	13.3	7.2	75.3
	Cheatham	9.9	12.4	12.2	12.8	11.2	7.9	66.4
	Dale Hollow	7.6	11.5	16.8	22.1	14.2	9.2	81.4
	Lake Cumberland	8.7	12.5	16.3	21.9	14.6	9.6	83.6
	Old Hickory	8.1	13.9	18.8	17.9	14.4	8.4	81.5
Portland	Cottage Grove	4.9	10.8	18.7	30.9	21.4	5.2	91.9
	Detroit	7.1	11.1	17.1	22.4	22.5	10.2	90.4
	Dorena	8.3	11.3	14.0	21.1	14.7	6.9	76.3
	Fern Ridge	6.7	12.0	18.2	24.0	17.7	7.0	85.6
	Hills Creek	5.5	12.5	13.5	21.7	20.1	12.0	85.3
	Lookout Point	6.2	7.9	17.7	22.9	17.2	10.2	82.1
	The Dalles	8.8	10.4	15.3	19.4	18.4	10.5	82.8

District	Project	Apr	May	Jun	Jul	Aug	Sep	Total
Sacramento	Black Butte	16.7	13.8	13.8	15.8	10.3	6.1	76.5
	Englebright	7.9	11.7	16.1	20.2	15.1	8.1	79.1
	Isabella	8.7	17.3	13.2	17.8	14.5	10.3	81.8
	New Hogan	11.2	15.7	14.4	15.5	12.3	7.2	76.3
	Pine Flat	10.1	14.3	12.0	15.7	14.4	7.9	74.4
	Success	11.9	13.6	13.6	12.7	11.1	8.4	71.3
	Terminus	10.5	15.9	12.9	12.4	14.1	8.5	74.3
Savannah	Clark Hill	11.2	12.1	16.2	18.7	13.2	8.8	80.2
	Hartwell	10.4	12.5	14.9	16.8	11.0	7.7	73.3
Tulsa	Canton	8.8	15.1	15.5	17.7	14.6	7.0	78.7
	Denison	7.9	10.5	14.7	16.6	13.6	9.5	72.8
	Eufaula	8.8	12.0	12.7	16.0	14.2	9.8	73.5
	Fall River	11.0	12.6	13.5	16.9	14.5	11.2	79.7
	Fort Gibson	8.1	9.8	13.0	16.7	13.7	9.8	71.1
	Fort Supply	8.0	15.1	14.6	15.7	13.2	7.8	74.4
	Great Salt Plains	9.7	16.0	16.4	18.8	13.7	6.4	81.0
	Heyburn	5.5	9.5	16.2	18.5	15.2	11.3	76.2
	Hulah	8.9	13.2	14.0	16.2	13.6	7.6	73.5
	Keystone	8.3	13.6	14.8	17.0	13.5	8.8	76.0
	Oologah	10.0	12.1	13.7	15.2	11.7	8.8	71.5
	Tenkiller	7.3	10.0	14.0	17.6	16.2	9.8	74.9
	Toronto	7.8	10.9	16.4	18.8	12.3	11.6	77.8
	Wister	9.4	12.8	13.0	10.8	10.7	8.9	65.6

PLAN FORMULATION AND EVALUATION STUDIES
RECREATION

SUPPLEMENT NO. 1
SUPPLEMENTAL RESERVOIR RECREATION USE DATA - 1969

TO
TECHNICAL REPORT NO. 2
ESTIMATING INITIAL RESERVOIR RECREATION USE

APPENDIX B

PER CAPITA USE RATES

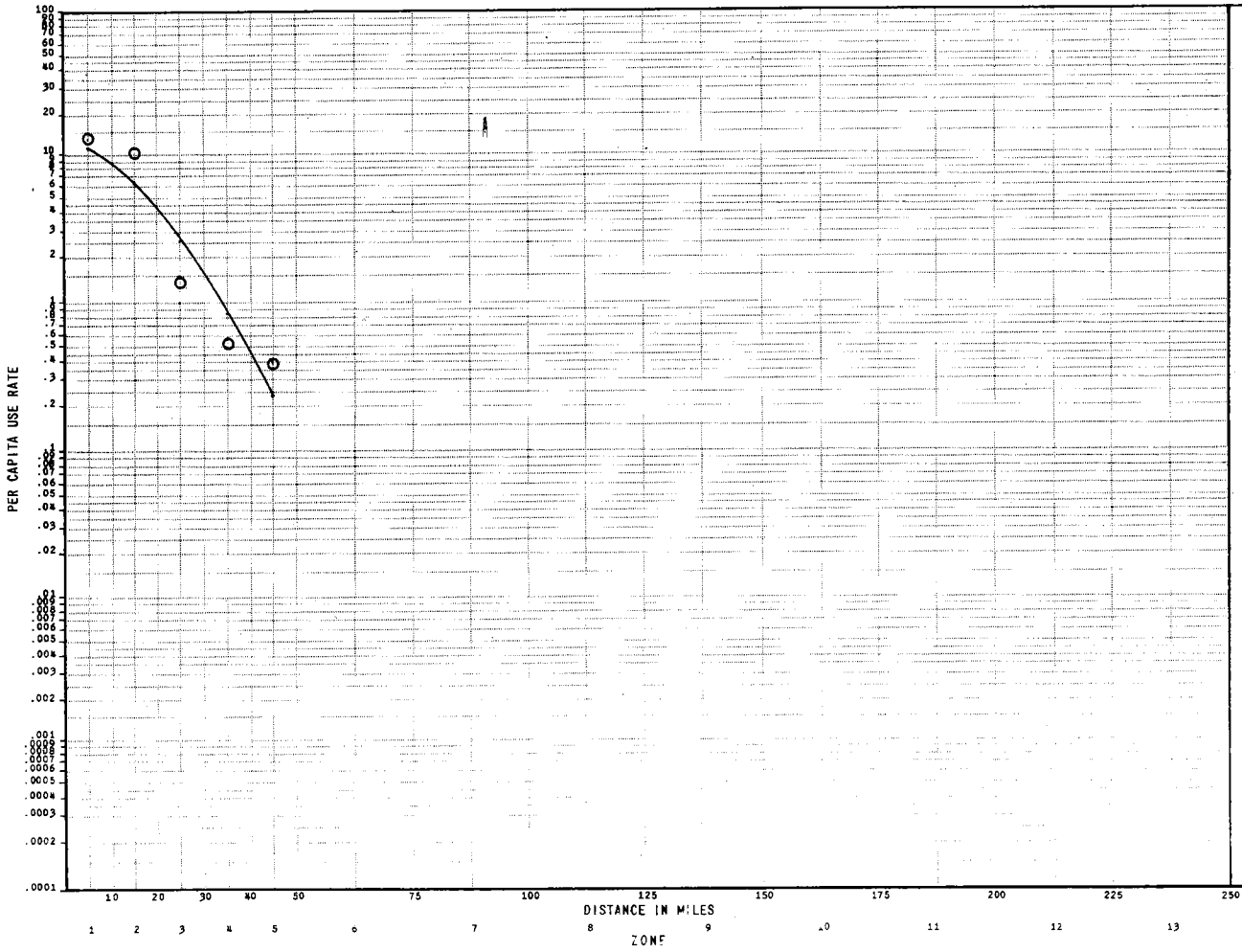
FEBRUARY 1971

PER CAPITA USE RATES

List of Projects

District	Project	Page No.
Fort Worth	Belton	B-4
	Benbrook	B-5
	Canyon	B-6
	Dam B	B-7
	Garza-Little Elm	B-8
	Grapevine	B-9
	Hords Creek	B-10
	Lavon	B-11
	Navarro Mills	B-12
	Proctor	B-13
	San Angelo	B-14
	Whitney	B-15
Little Rock	Beaver	B-16
	Bull Shoals	B-17
	Greers Ferry	B-18
	Norfork	B-19
	Table Rock	B-20
Nashville	Center Hill	B-21
	Cheatham	B-22
	Dale Hollow	B-23
	Lake Cumberland	B-24
	Old Hickory	B-25
Portland	Cottage Grove	B-26
	Detroit	B-27
	Dorena	B-28
	Fern Ridge	B-29
	Hills Creek	B-30
	Lookout Point	B-31
	The Dalles	B-32
Sacramento	Black Butte	B-33
	Englebright	B-34
	Isabella	B-35
	New Hogan	B-36
	Pine Flat	B-37
	Success	B-38
	Terminus	B-39

District	Project	Page No.
Savannah	Clark Hill	B-40
	Hartwell	B-41
Tulsa	Canton	B-42
	Denison	B-43
	Eufaula	B-44
	Fall River	B-45
	Fort Gibson	B-46
	Fort Supply	B-47
	Great Salt Plains	B-48
	Heyburn	B-49
	Hulah	B-50
	Keystone	B-51
	Oologah	B-52
	Tenkiller	B-53
	Toronto	B-54
	Wister	B-55



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: BELTON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(2.606637 - .013433\ X^{1.5})$

$R^2 = .87$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	11.6632	57,700
2	6.2100	56,700
3	2.5277	52,900
4	.8393	37,750
5	.2348	179,800
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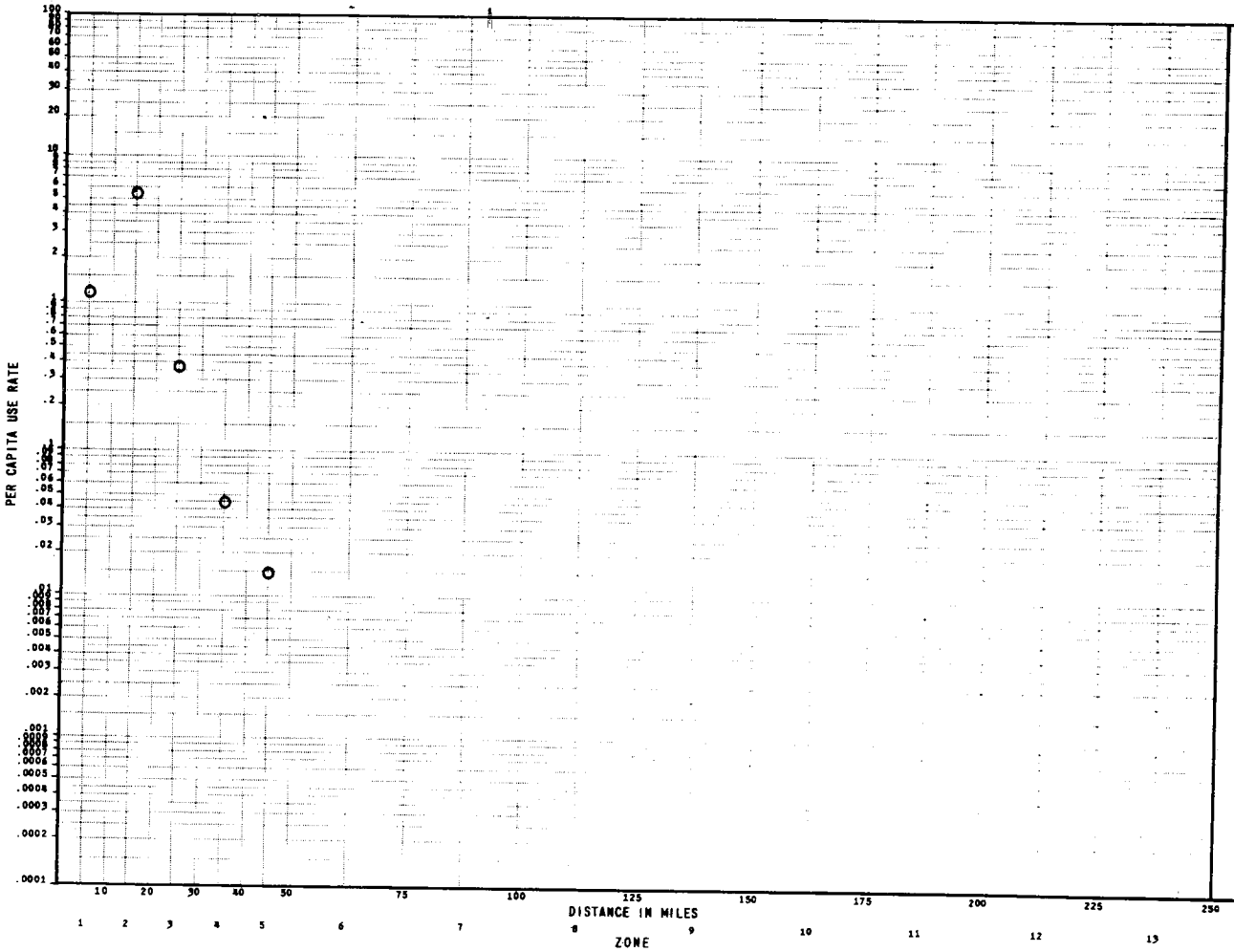
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: BENBROOK

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		75,000
2		326,500
3		149,100
4		263,500
5		439,300
6		
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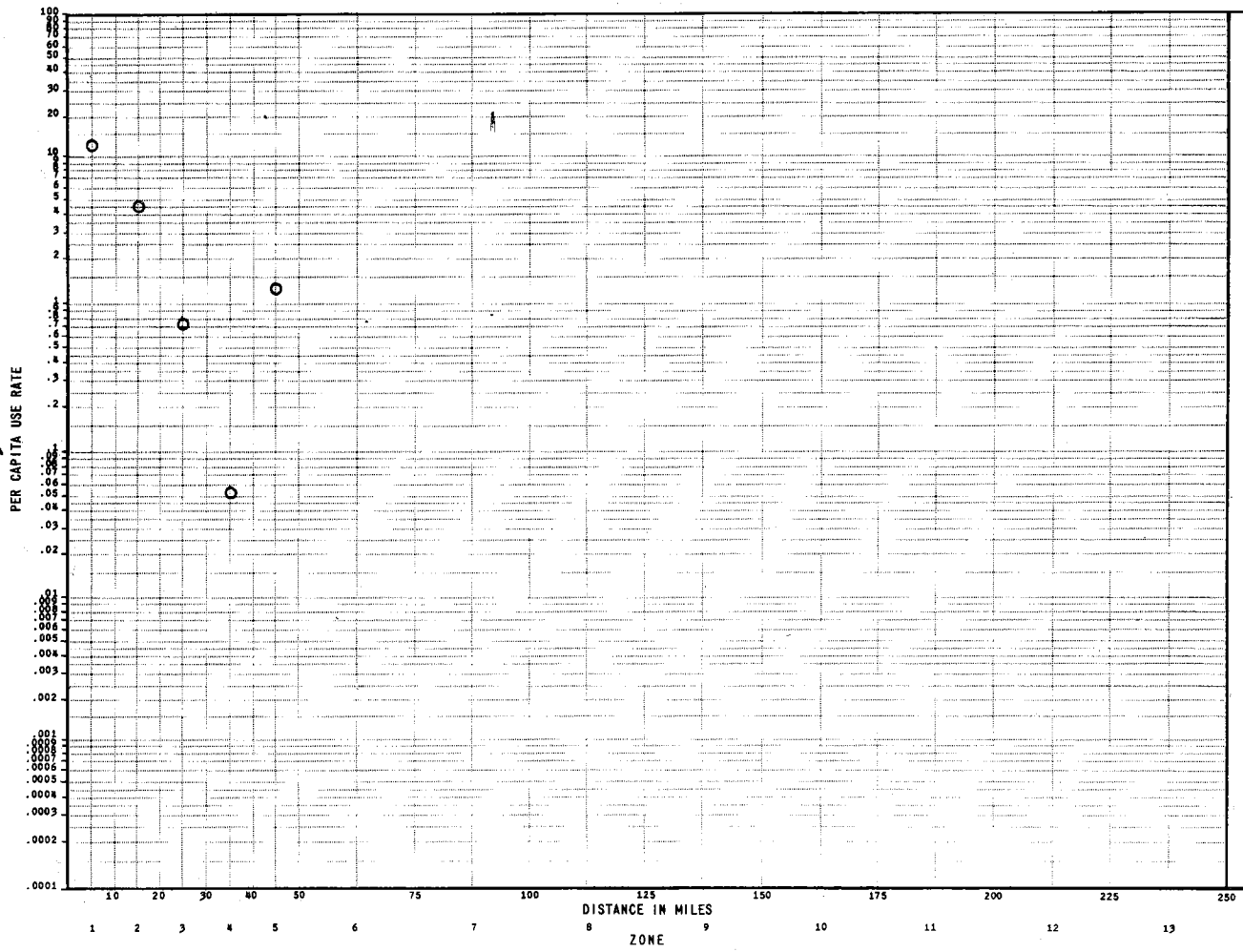
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: CANYON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		1,400
2		24,000
3		45,400
4		356,700
5		525,400
6		
7		
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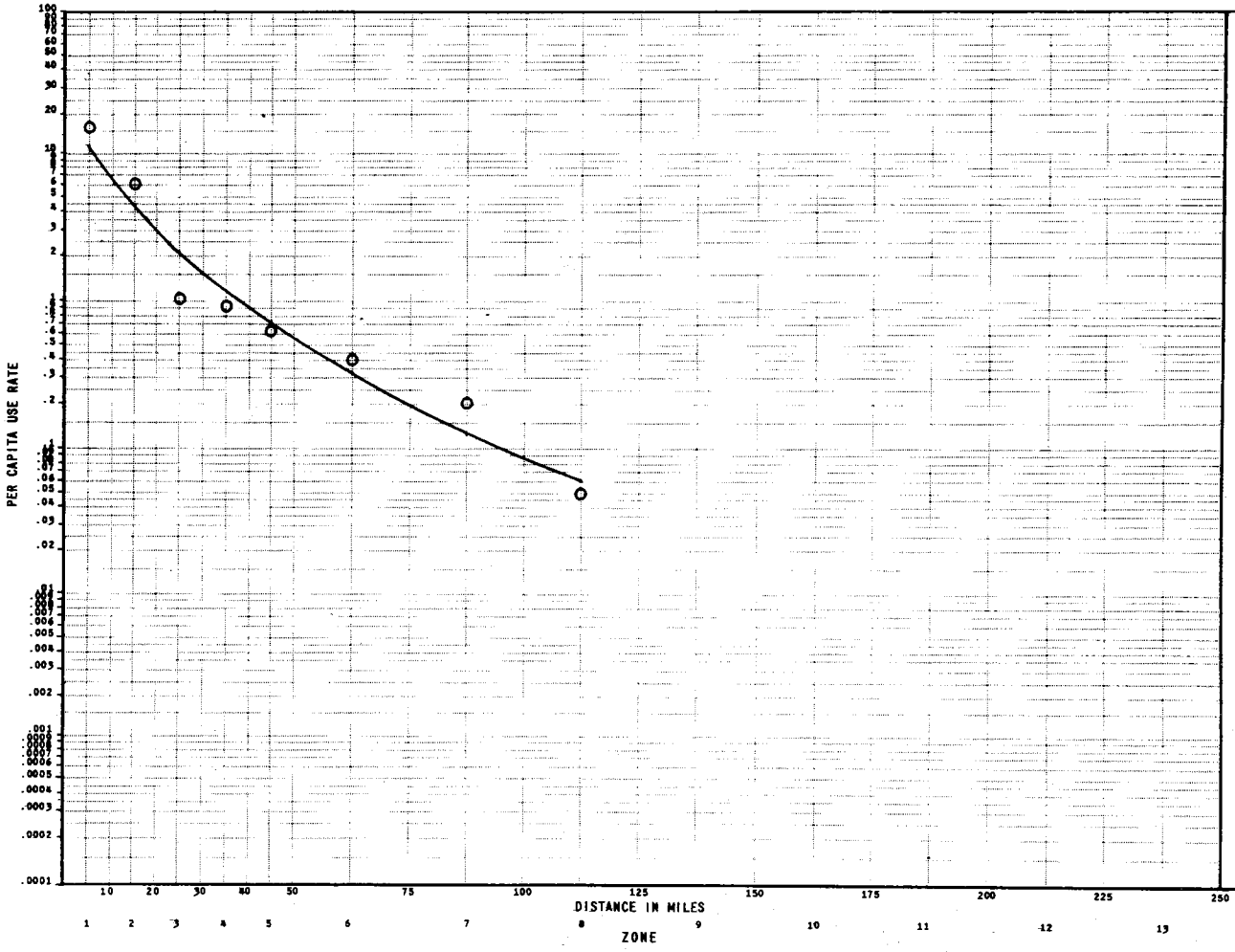
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: DAM B

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(3.938865 - .636811\ X^{.5})$

$R^2 = .90$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	12.3655	5,300
2	4.3601	17,400
3	2.1272	13,600
4	1.1870	31,800
5	.7168	57,400
6	.3343	384,900
7	.1329	302,300
8	.0599	1,009,400
9		
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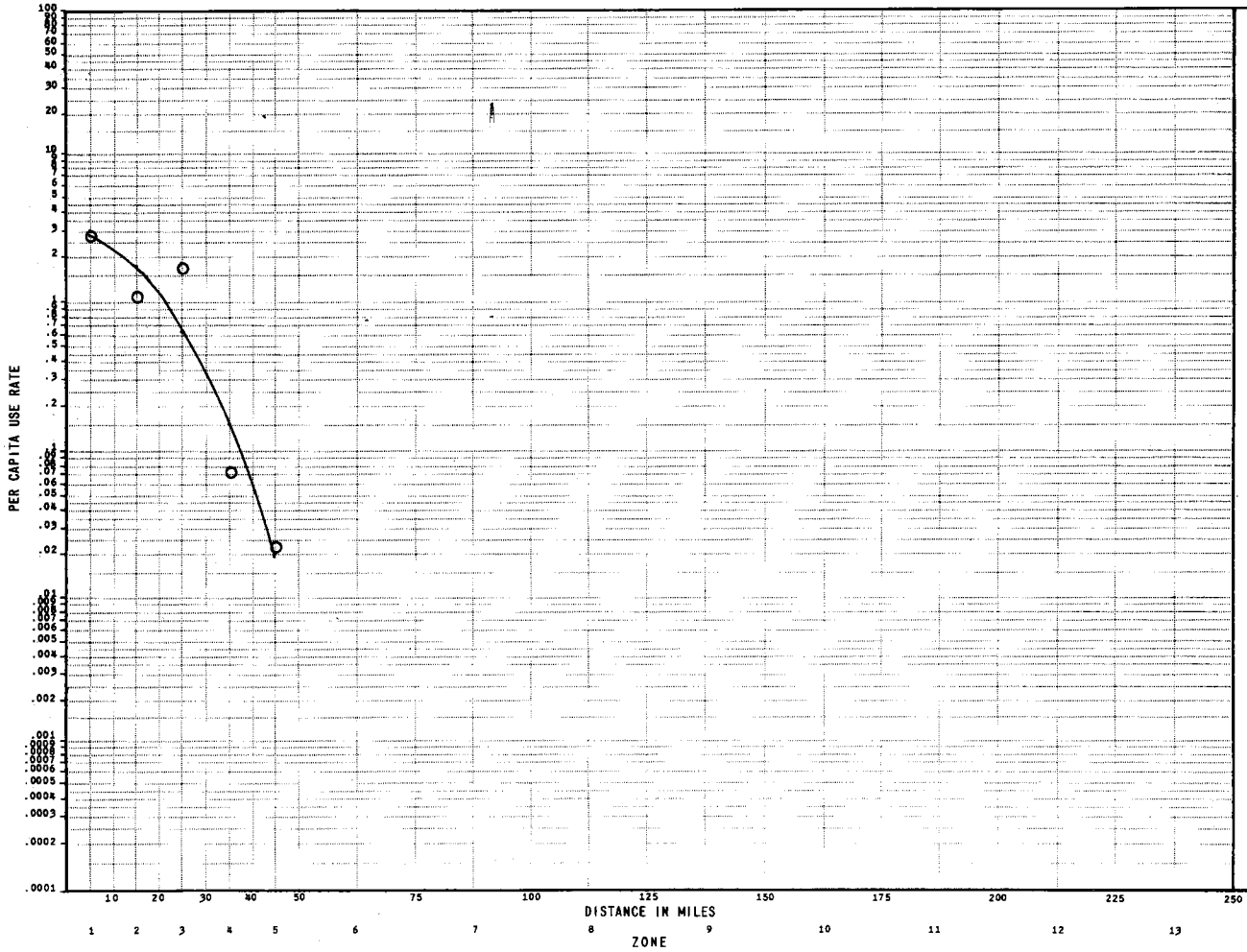
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: GARZA-LITTLE ELM

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(1.123474 - .002488\ X^2)$

$R^2 = .72$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	2.8900	82,200
2	1.7567	375,900
3	.6491	658,700
4	.1458	553,200
5	.0199	268,600
6		
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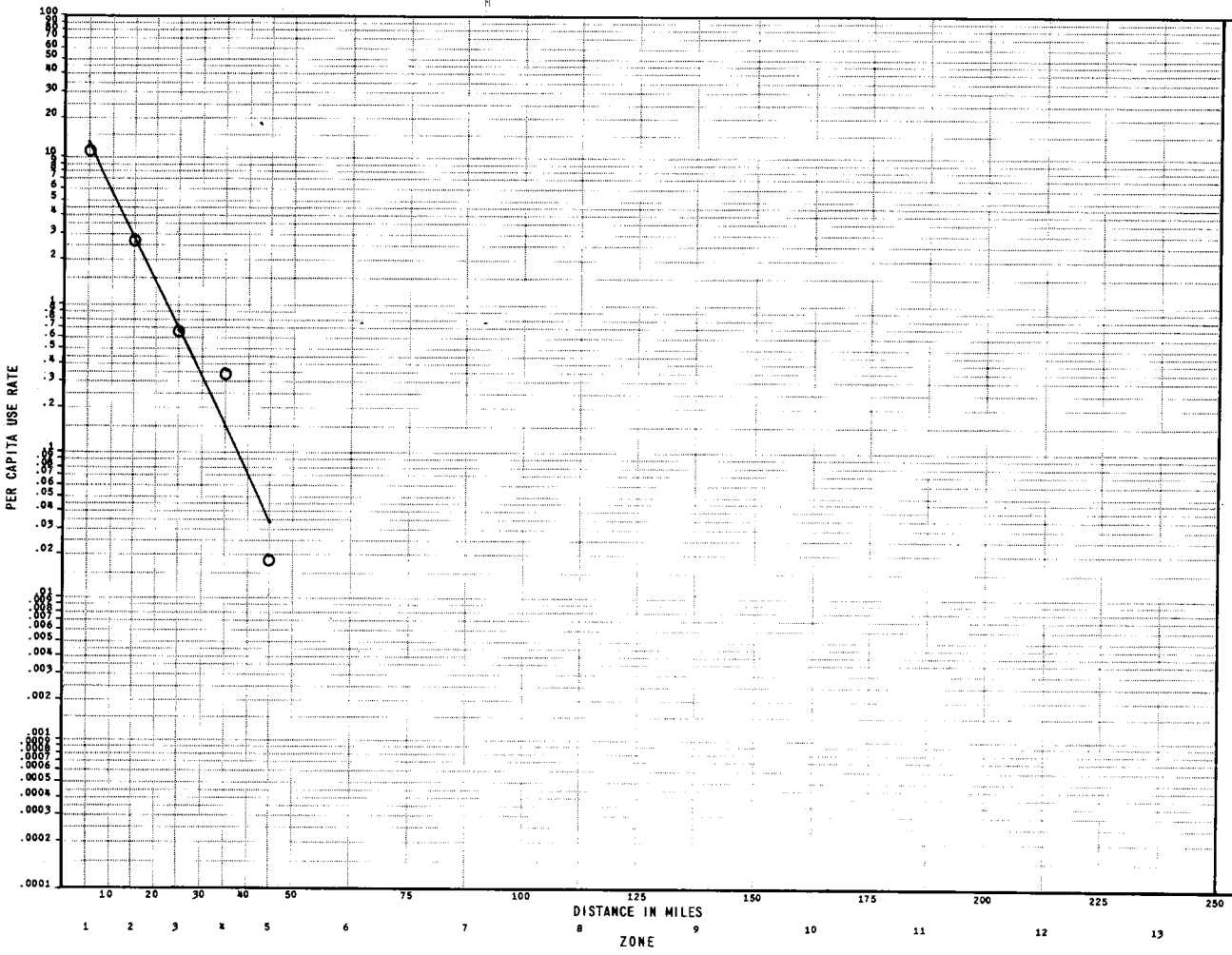
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: GRAPEVINE

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(3.321335 - .149200\ X)$

$R^2 = .96$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	13.1356	40,500
2	2.9545	323,700
3	.6645	1,091,600
4	.1495	342,100
5	.0336	99,300
6		
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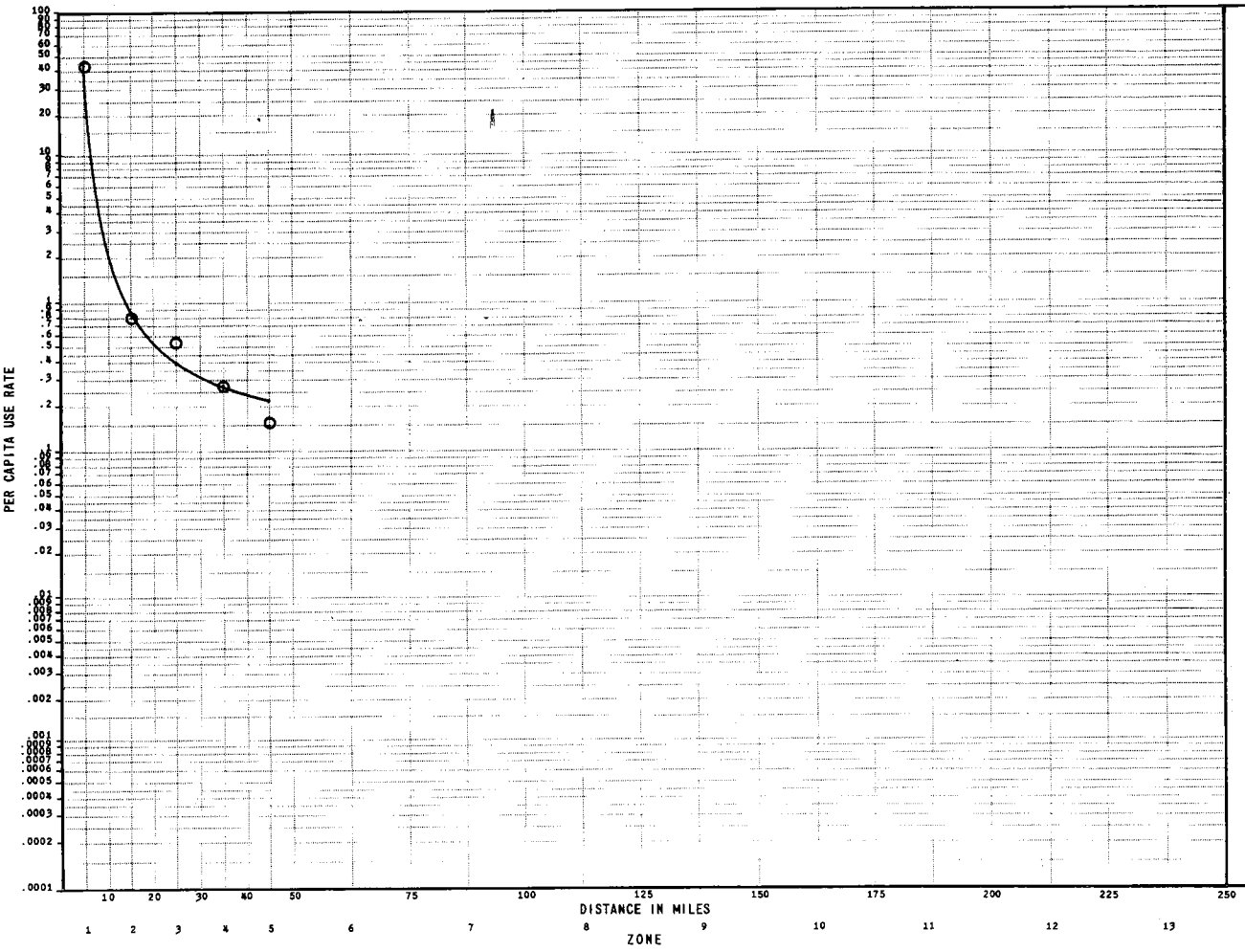
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: HORDS CREEK

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(-2.142315 + 29.692836\ X^{-1})$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	44.5339	1,800
2	.8498	8,700
3	.3850	14,000
4	.2742	13,400
5	.2271	105,100
6		
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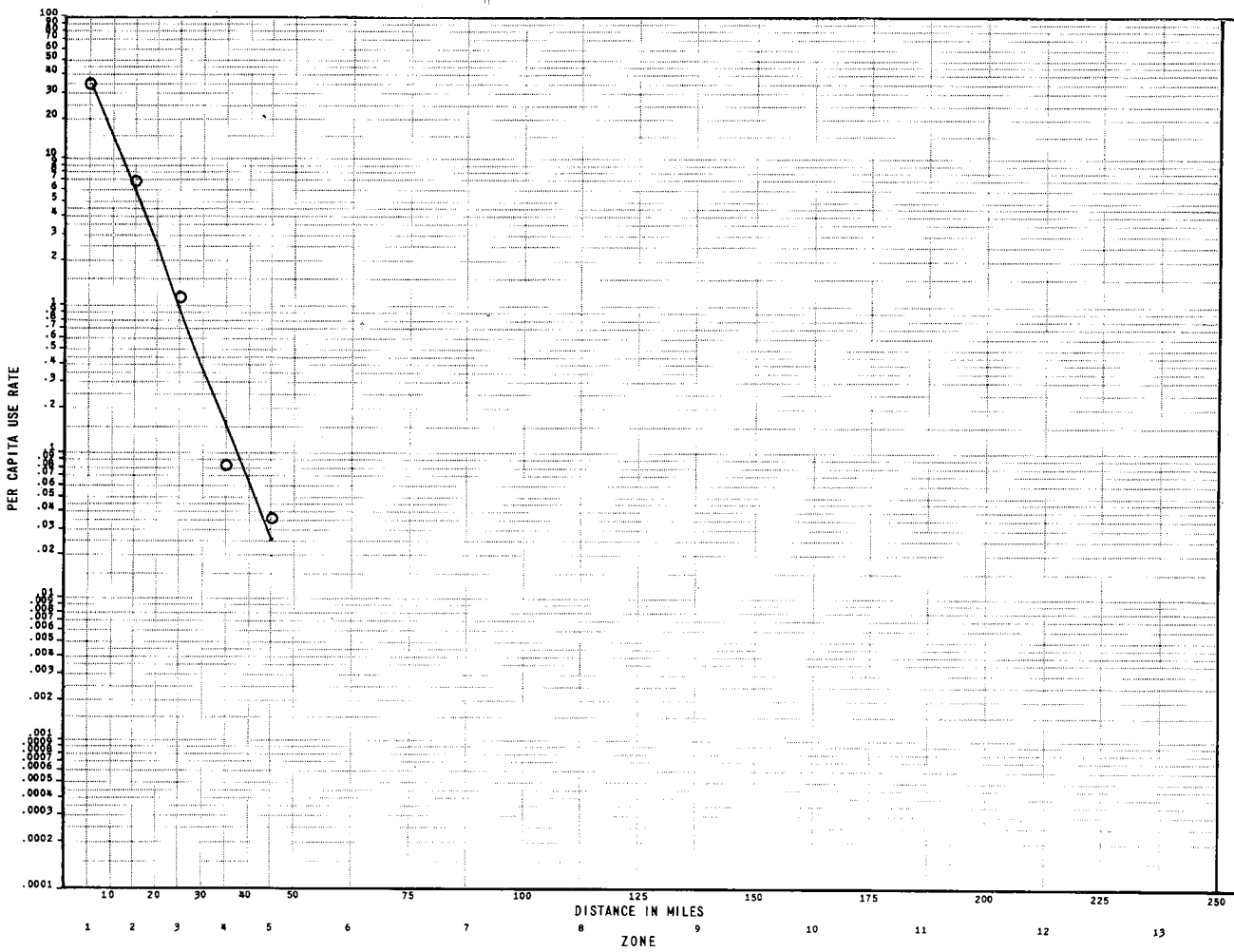
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: LAVON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = Exp(4.503585 - .180650\ X)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	36.6103	18,100
2	6.0124	195,000
3	.9874	393,100
4	.1622	555,000
5	.0266	268,700
6		
7		
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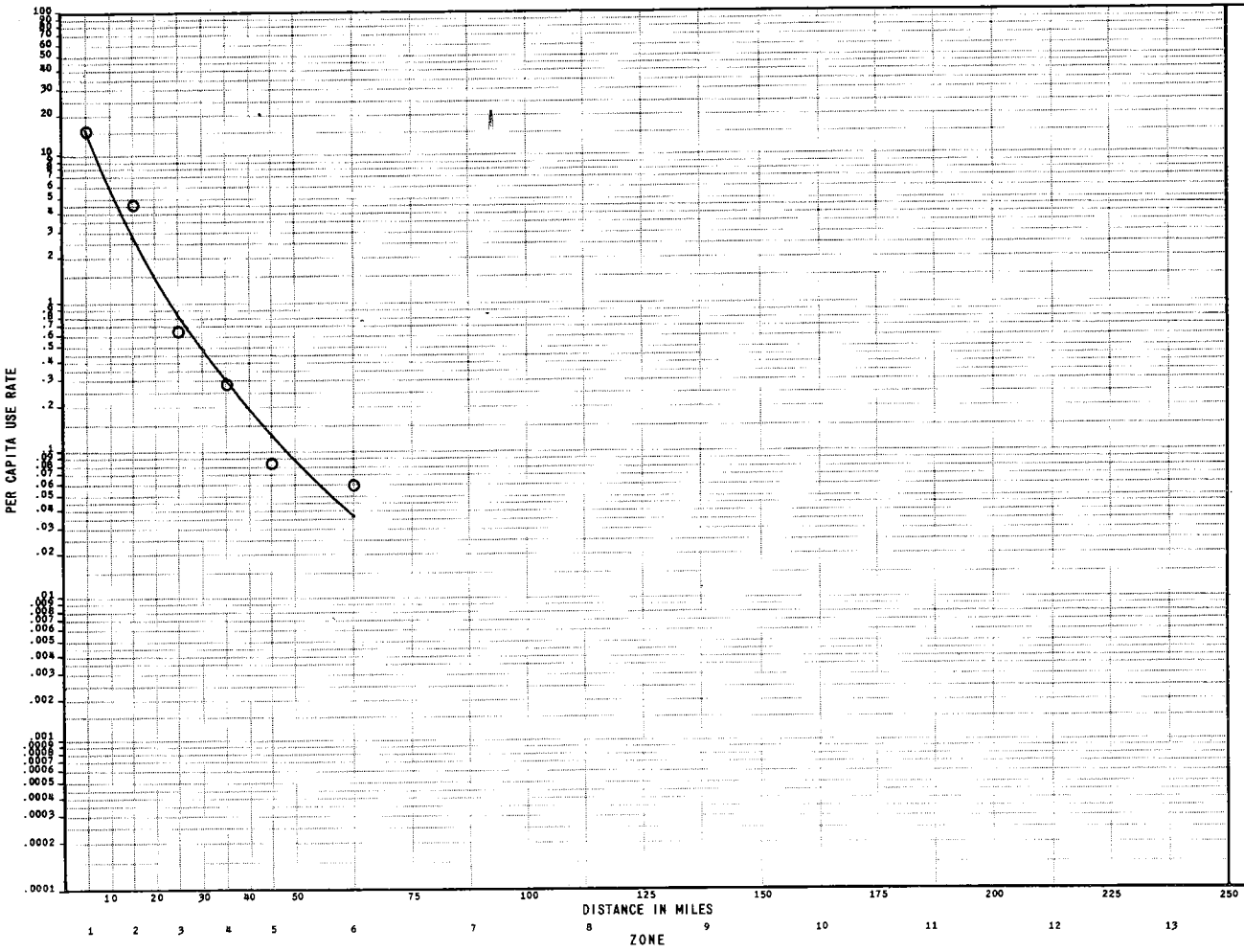
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: NAVARRO MILLS

LEGEND

O SURVEY ESTIMATE

——— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \mathrm{Exp}[5.163338 - 1.071805\ X^{.5}]$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	15.9062	5,900
2	2.7518	37,800
3	.8223	33,500
4	.3080	181,700
5	.1318	51,300
6	.0365	1,008,500
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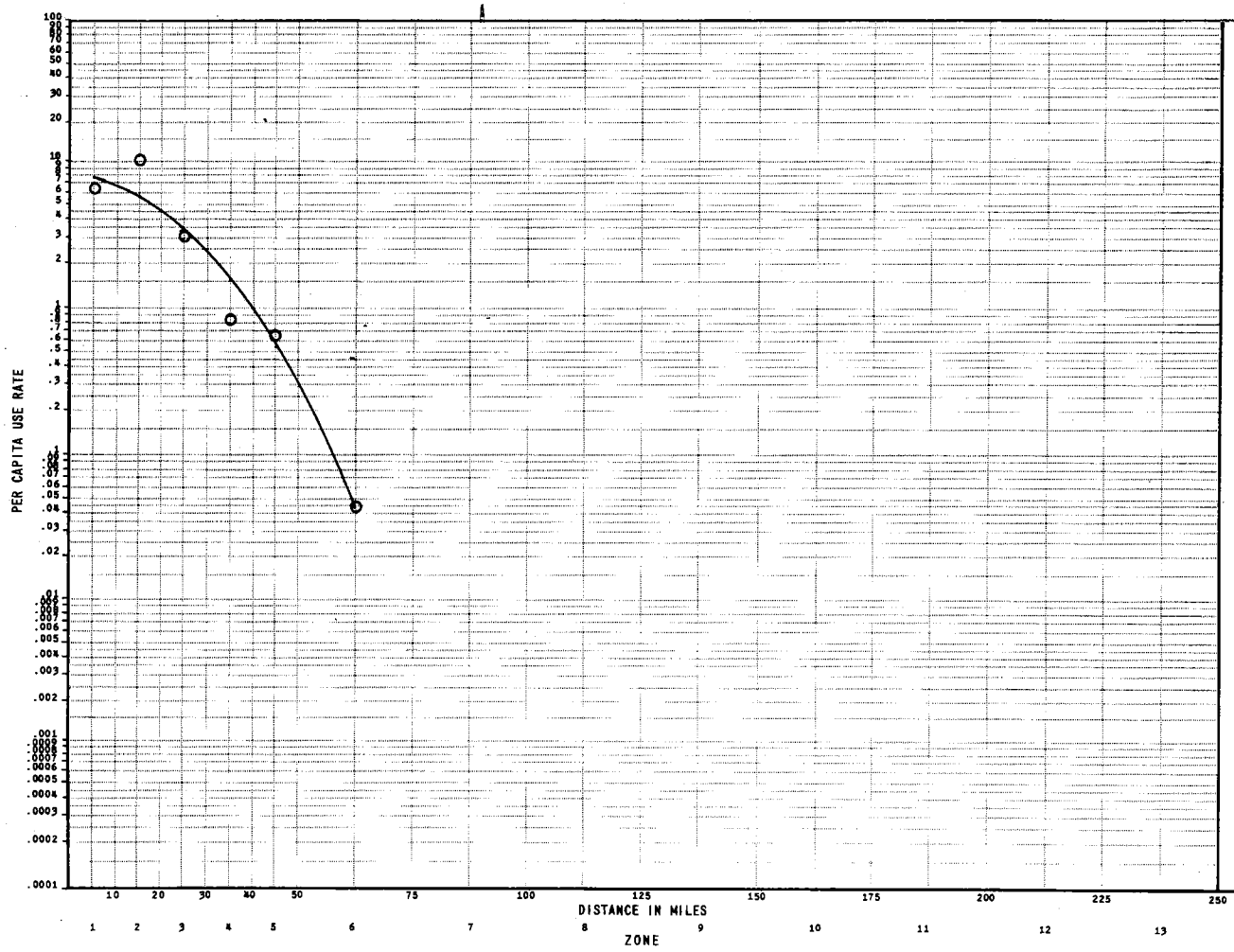
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: PROCTOR

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

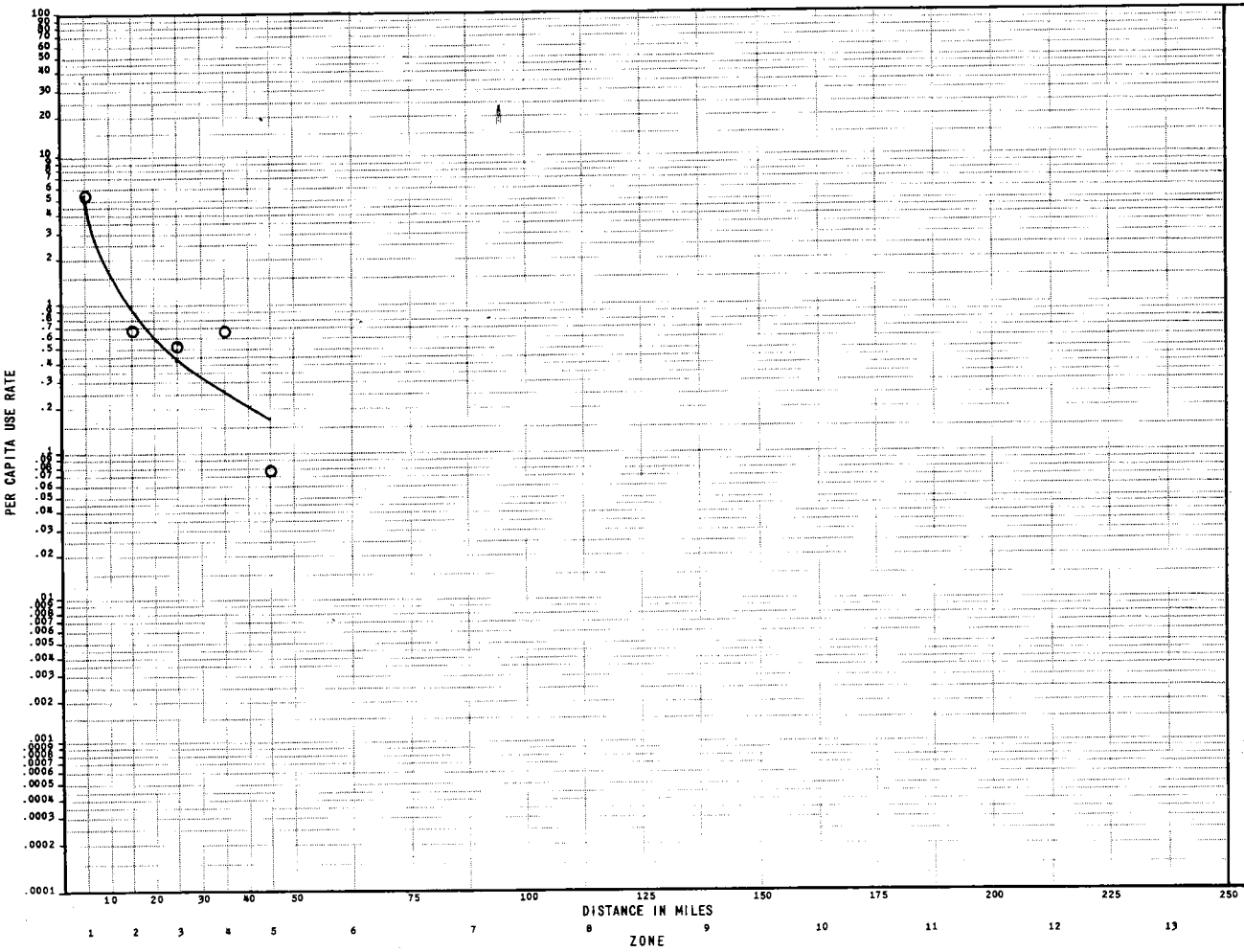
$Y = \text{Exp}(2.066484 - .001334\ X^2)$

$R^2 = .75$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	7.6378	8,900
2	5.8479	9,600
3	3.4282	2,800
4	1.5388	37,800
5	.5288	22,000
6	.0429	151,400
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: SAN ANGELO

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

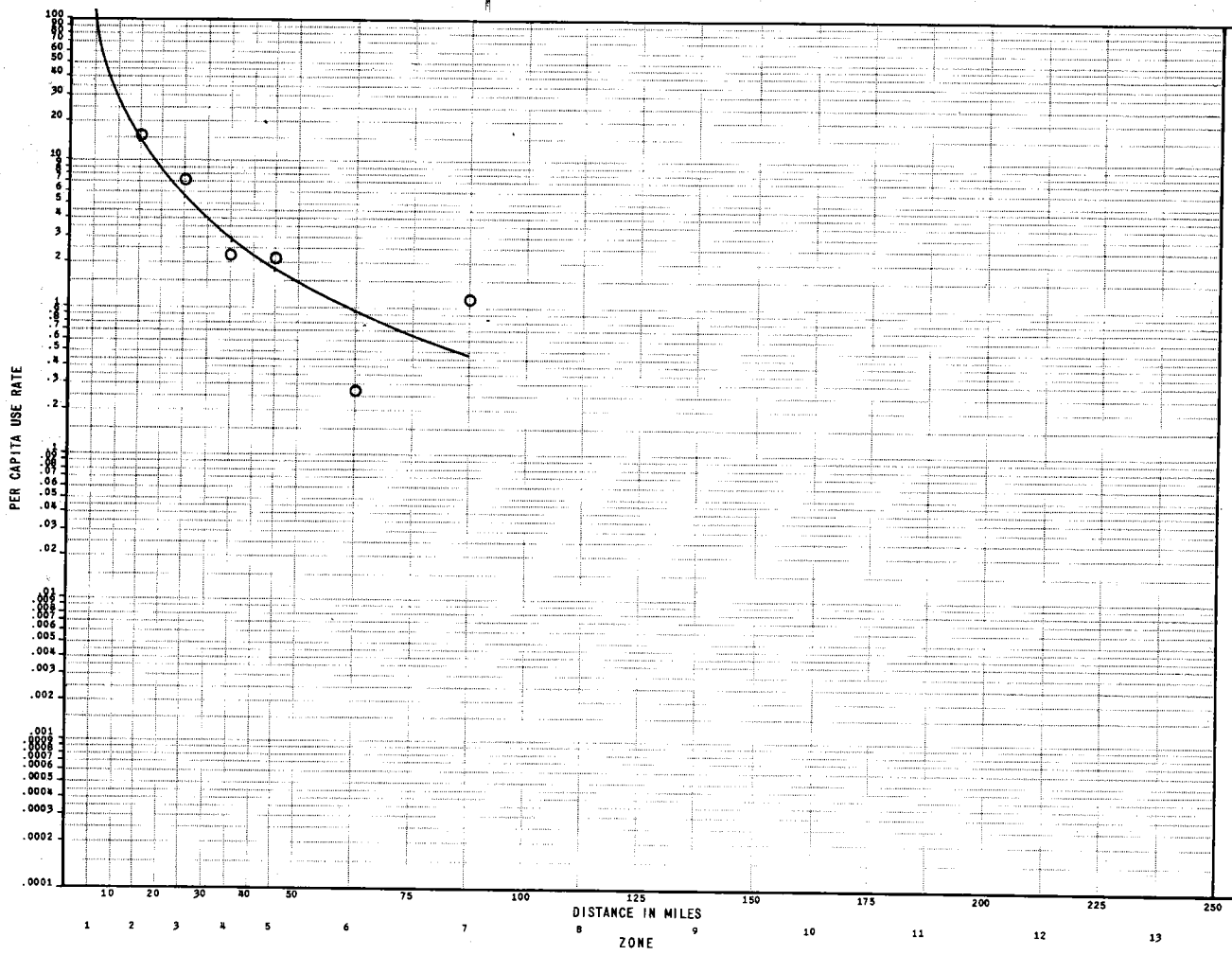
$Y = Exp(4.171426 - 1.555152\ LNX)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	5.3042	65,700
2	.9608	3,400
3	.4341	3,500
4	.2573	4,200
5	.1740	12,100
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: FORT WORTH

PROJECT: WHITNEY

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

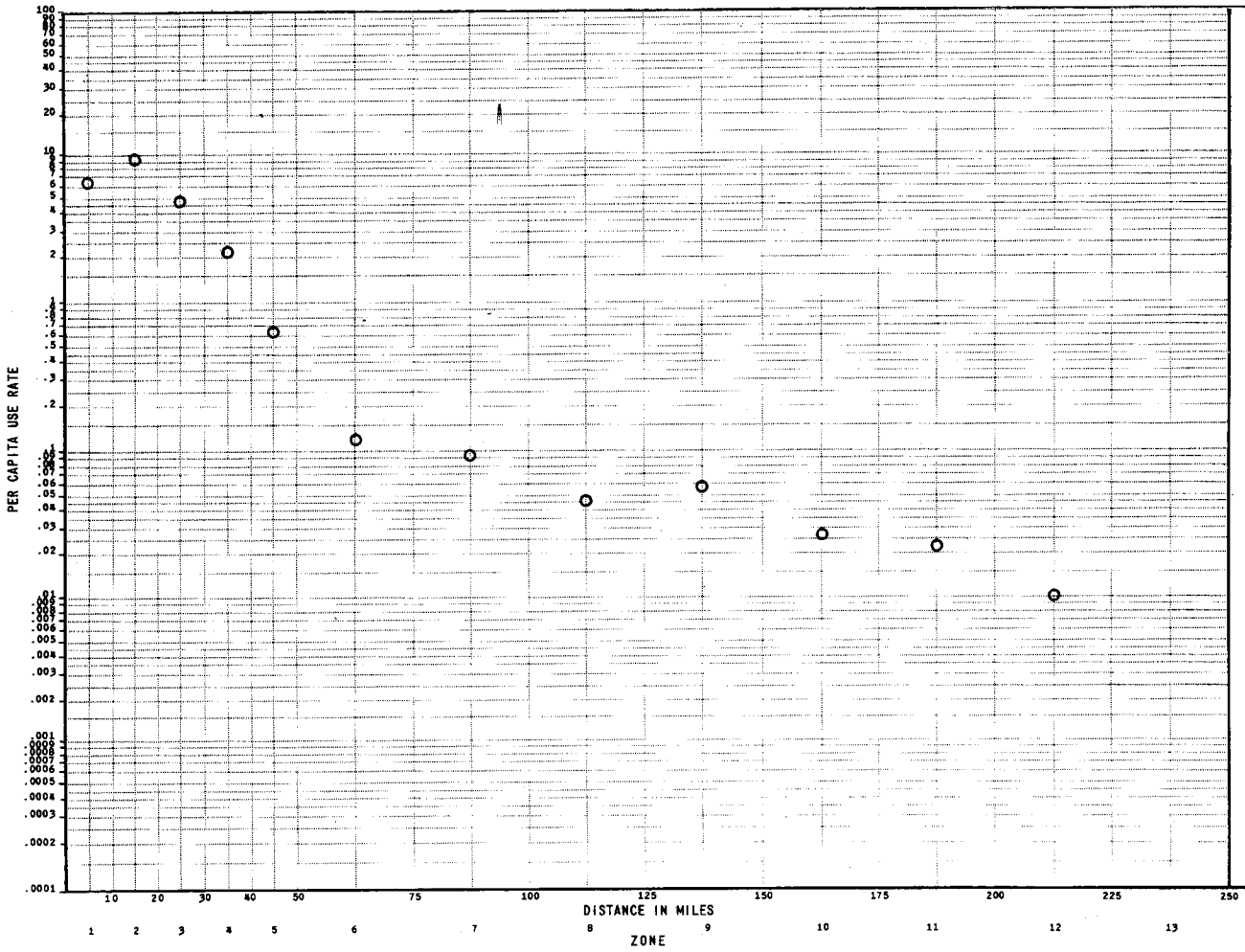
$Y = Exp(7.899451 - 1.929206\ LNX)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	120.8455	3,900
2	14.5133	27,100
3	5.4172	47,400
4	2.8305	154,700
5	1.7430	58,700
6	.9248	1,940,600
7	.4832	471,800
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: LITTLE ROCK

PROJECT: BEAVER

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

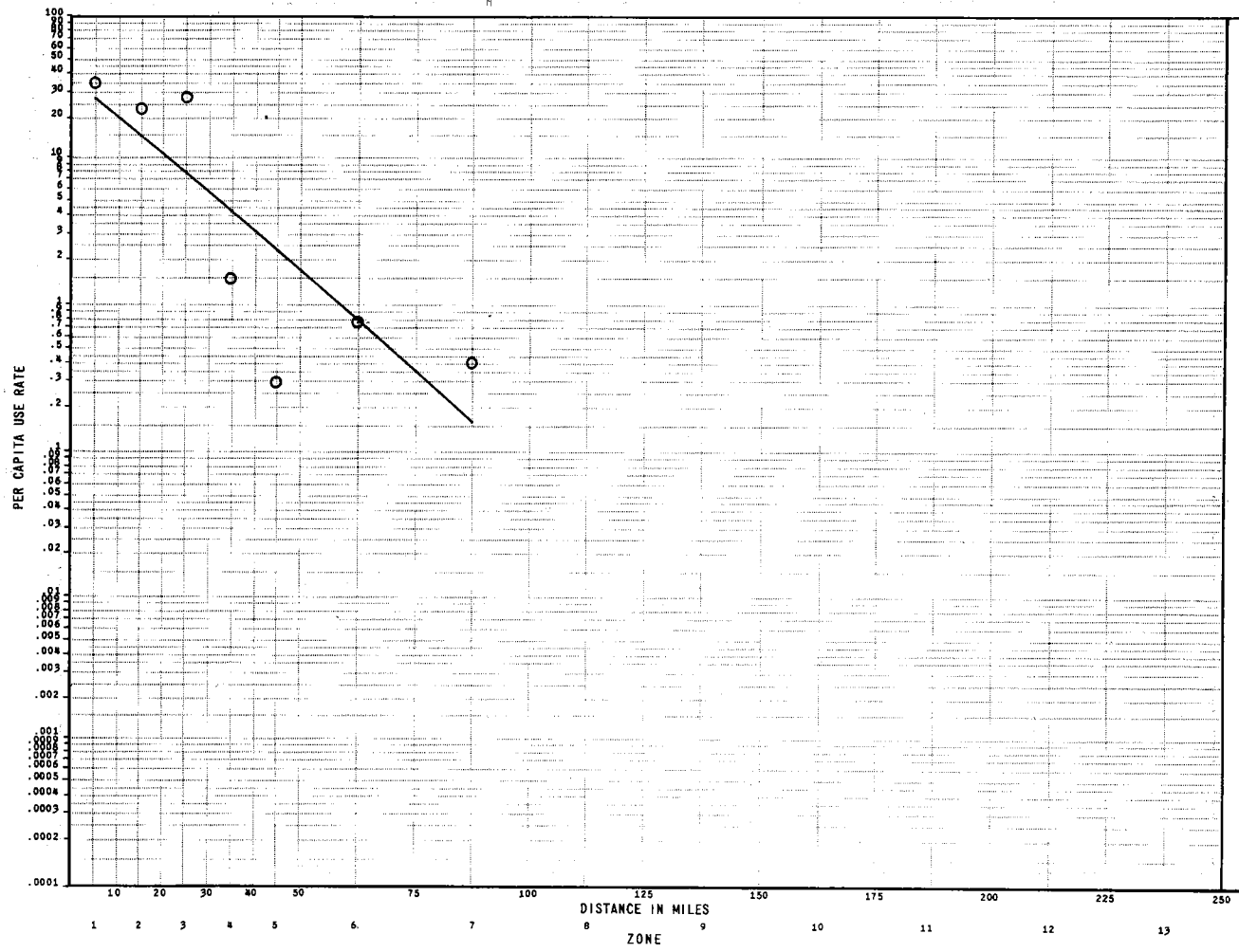
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		72,900
2		43,700
3		45,200
4		34,800
5		42,000
6		210,000
7		452,400
8		447,900
9		534,100
10		405,900
11		540,700
12		1,445,600
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: LITTLE ROCK

PROJECT: BULL SHOALS

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

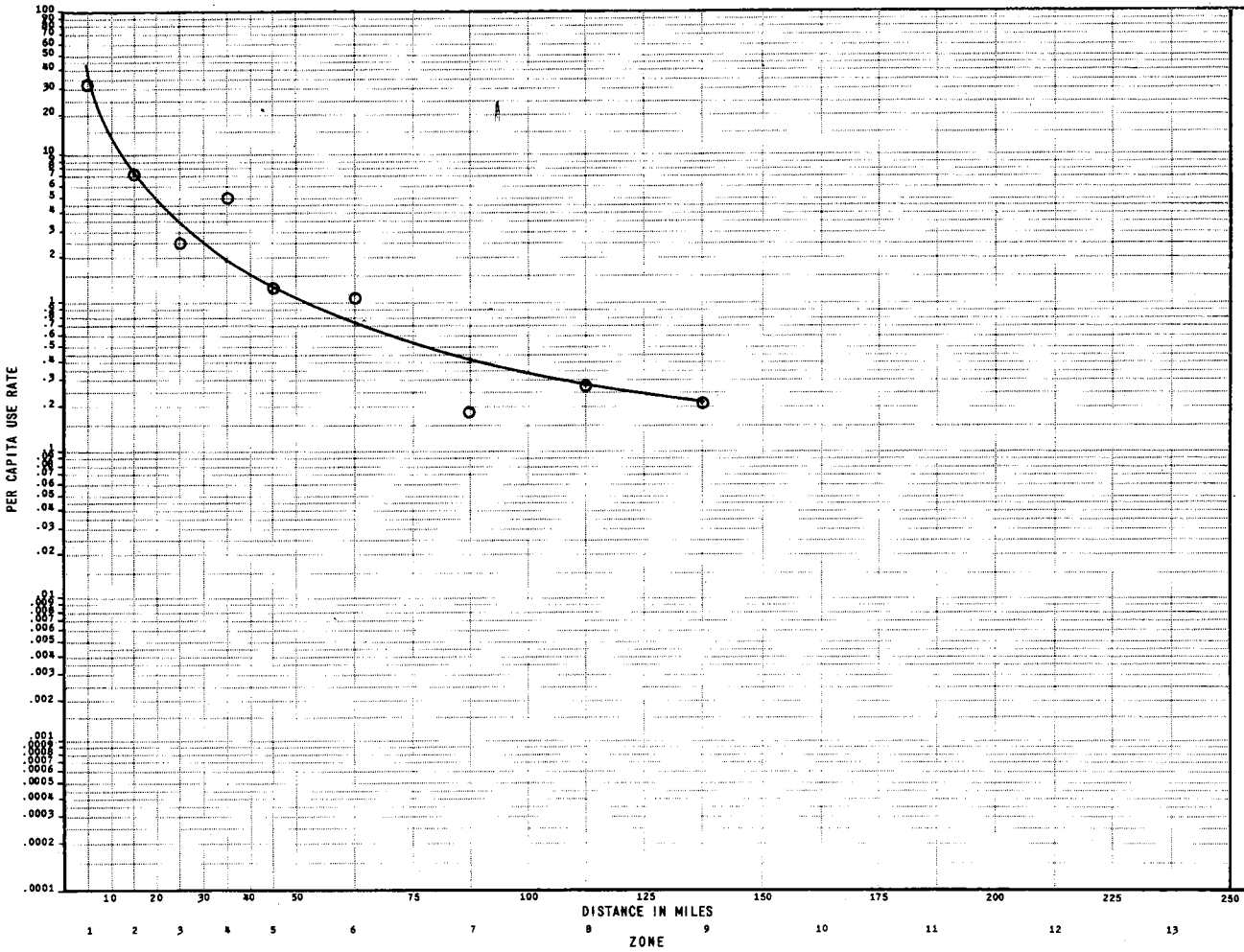
$Y = \text{Exp}(3.626955 - .062347\ X)$

$R^2 = .60$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	27.5284	17,500
2	14.7573	10,500
3	7.9111	19,100
4	4.2410	76,700
5	2.2735	130,500
6	.7636	154,200
7	.1607	302,700
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: LITTLE ROCK

PROJECT: GREERS FERRY

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

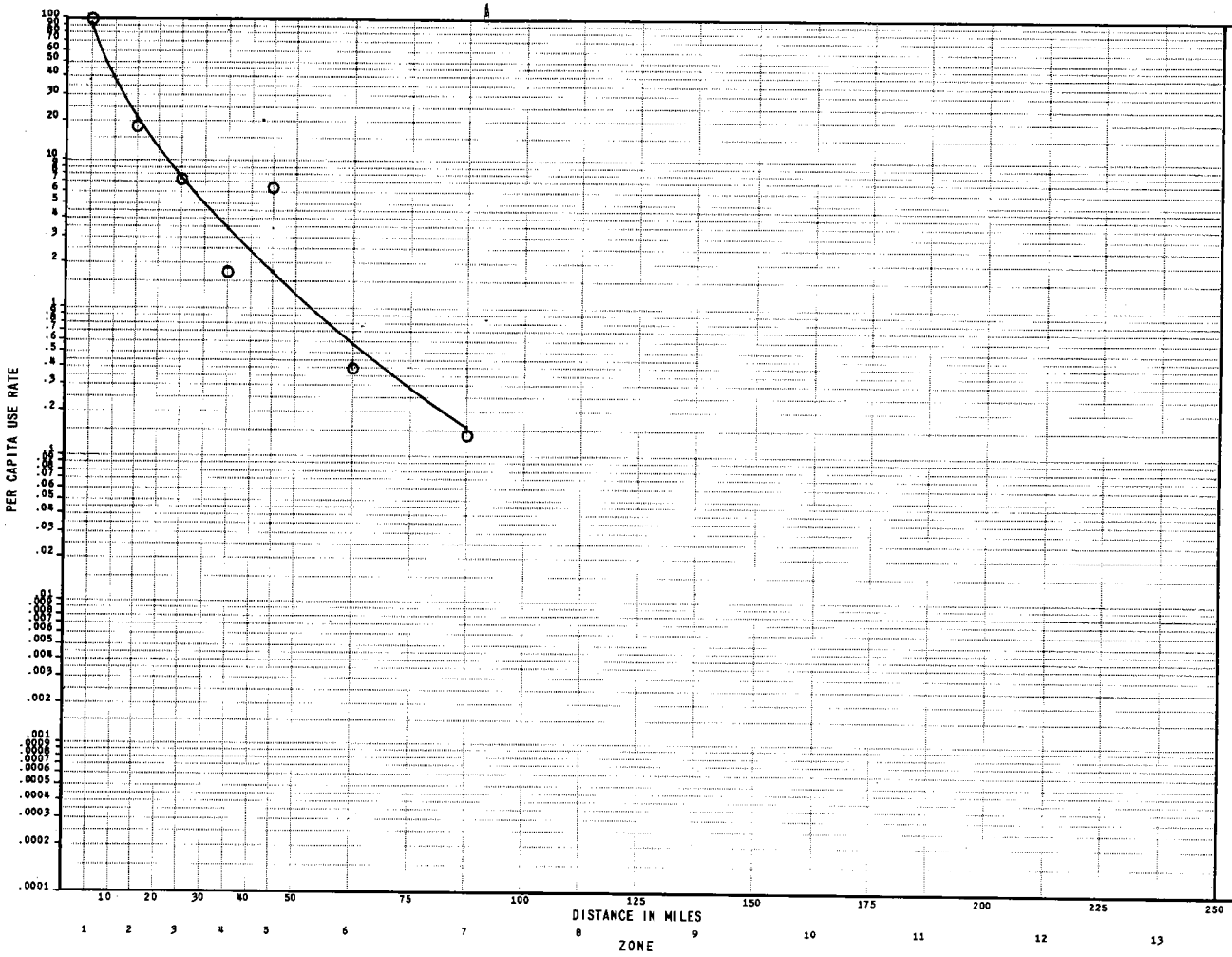
$Y = Exp(6.413047 - 1.621003\ LNX)$

$R^2 = .88$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	44.8868	7,900
2	7.5632	6,600
3	3.3044	18,500
4	1.9152	32,400
5	1.2744	48,800
6	.7483	283,900
7	.4337	338,050
8	.2886	375,900
9	.2085	629,900
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: LITTLE ROCK

PROJECT: NORFORK

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

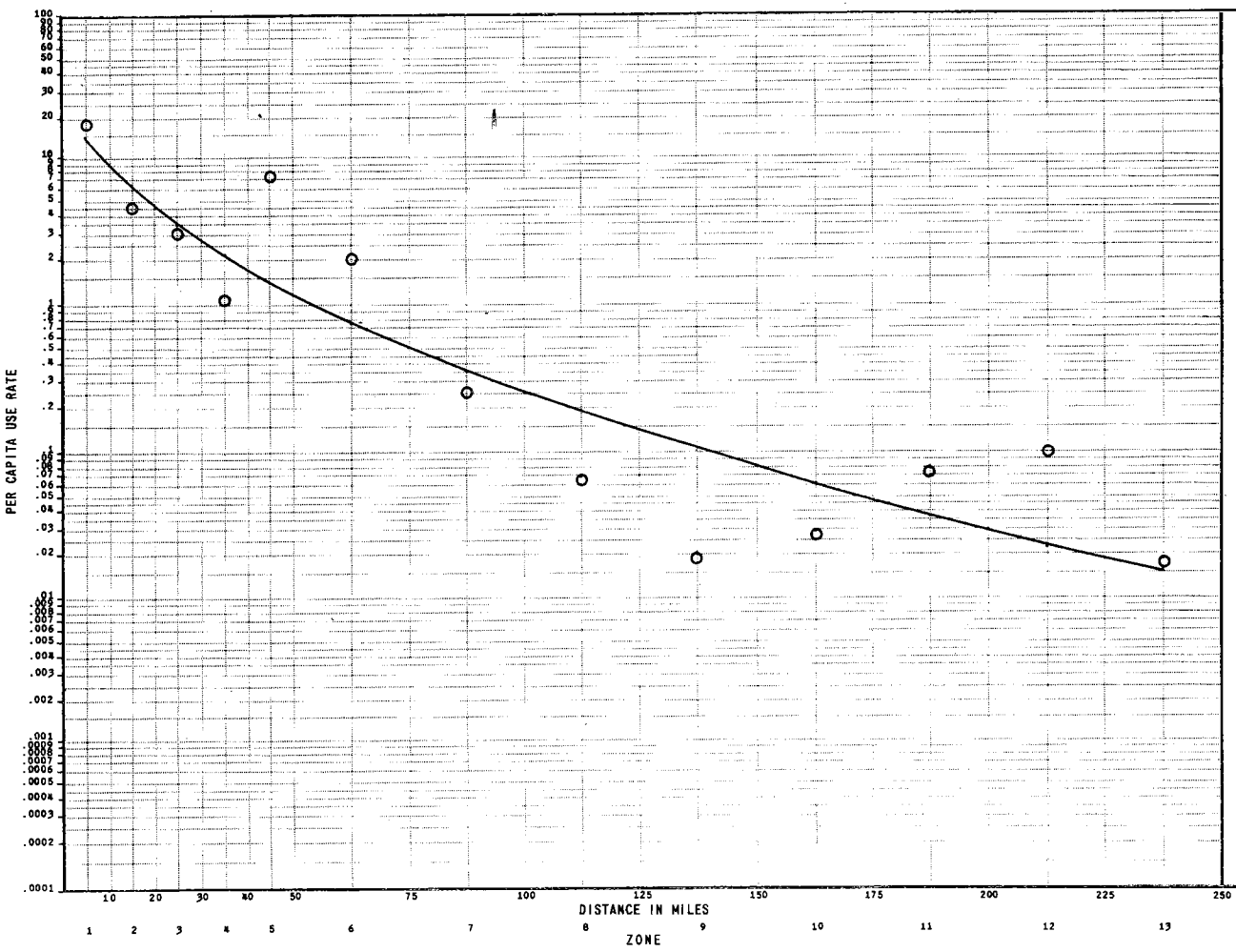
$Y = \text{Exp}(6.517155 - .890364\ X^{.5})$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	92.4105	7,500
2	21.5159	8,700
3	7.8880	9,400
4	3.4893	15,500
5	1.7236	17,600
6	.5935	91,500
7	.1635	144,800
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: LITTLE ROCK

PROJECT: TABLE ROCK

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

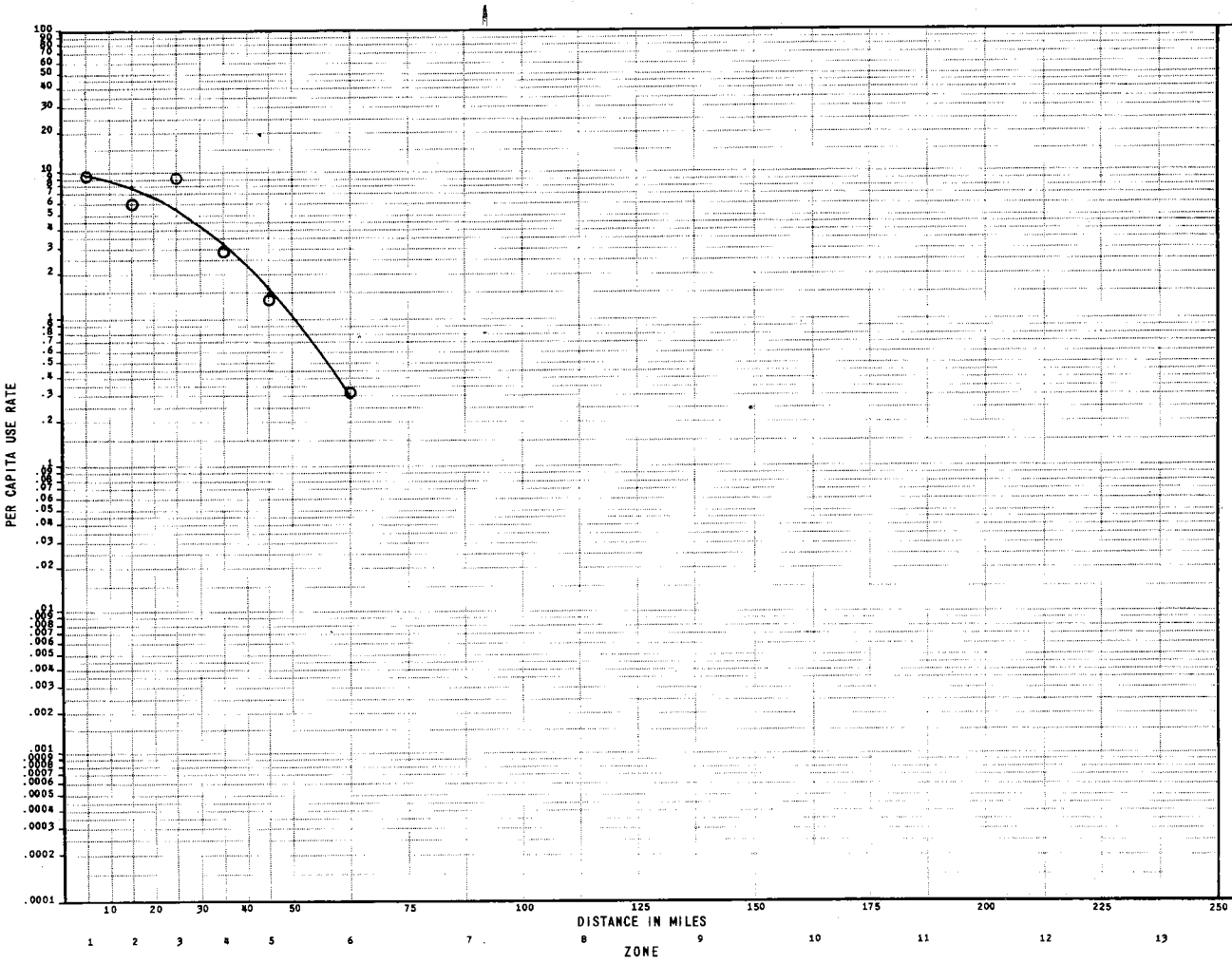
$Y = \text{Exp}(3.868056 - .521759\ X^{.5})$

$R^2 = .83$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	14.9001	14,900
2	6.3427	24,900
3	3.5229	57,400
4	2.1843	149,900
5	1.4449	90,000
6	.7736	268,900
7	.3633	298,300
8	.1890	411,900
9	.1054	947,900
10	.0619	745,500
11	.0378	1,025,800
12	.0239	2,396,500
13	.0155	2,767,700

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: NASHVILLE

PROJECT: CENTER HILL

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

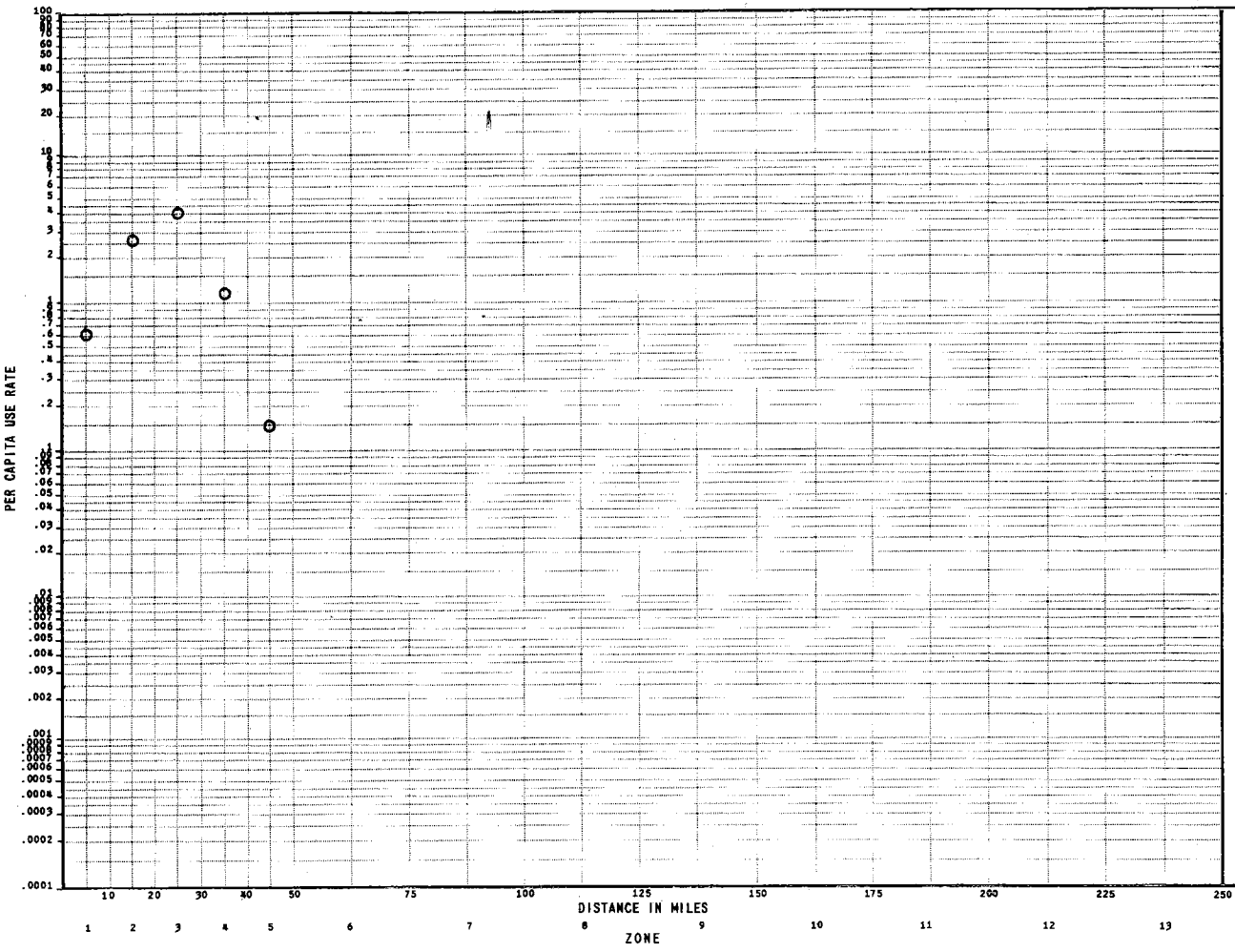
$Y = Exp(2.283256 - .000894\ X^2)$

$R^2 = .78$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	9.5917	16,690
2	8.0207	45,980
3	5.6085	46,920
4	3.2795	61,120
5	1.6035	108,960
6	.2982	887,700
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: NASHVILLE

PROJECT: CHEATHAM

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

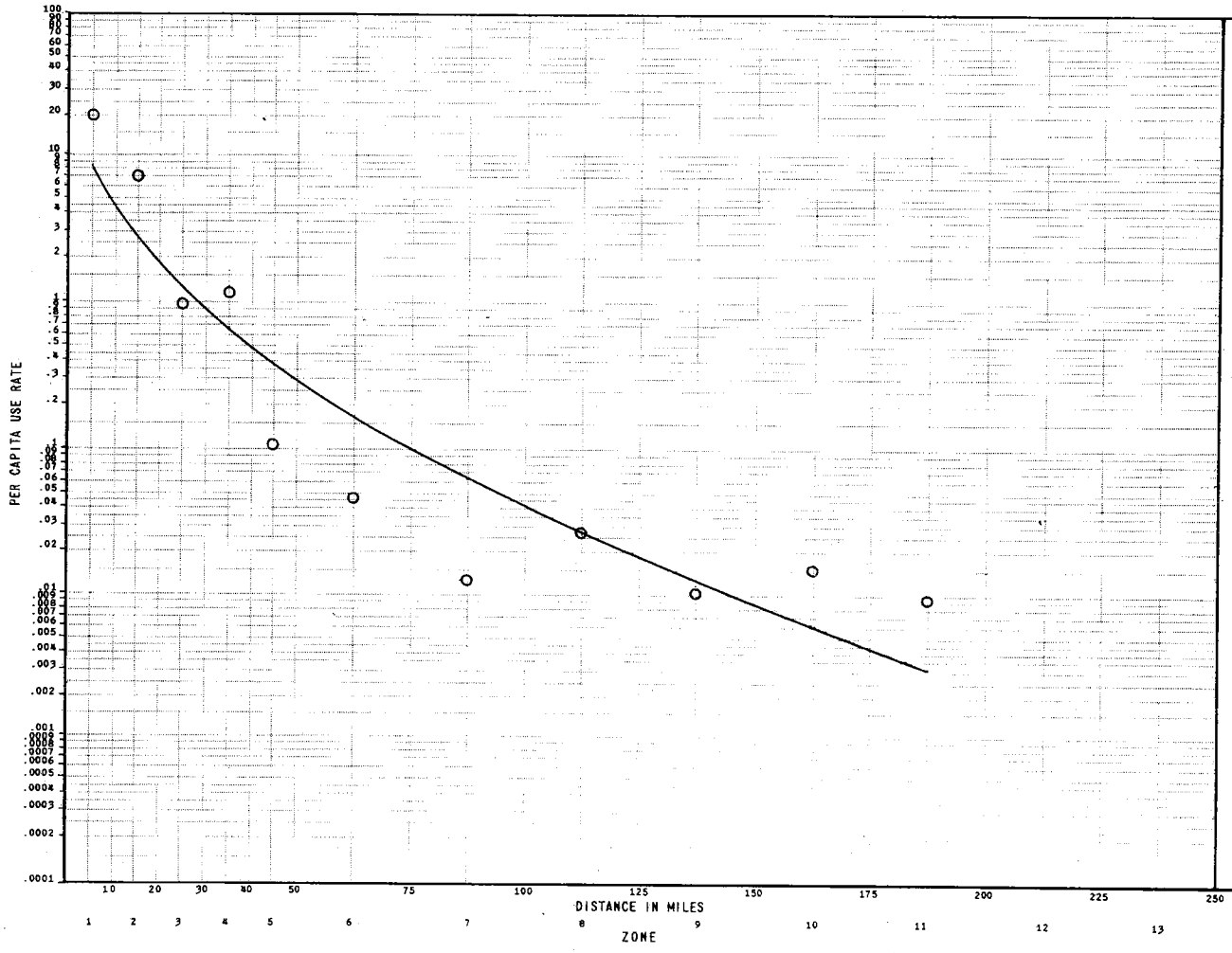
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		401,480
2		63,130
3		107,360
4		105,260
5		103,230
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: NASHVILLE

PROJECT: DALE HOLLOW

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

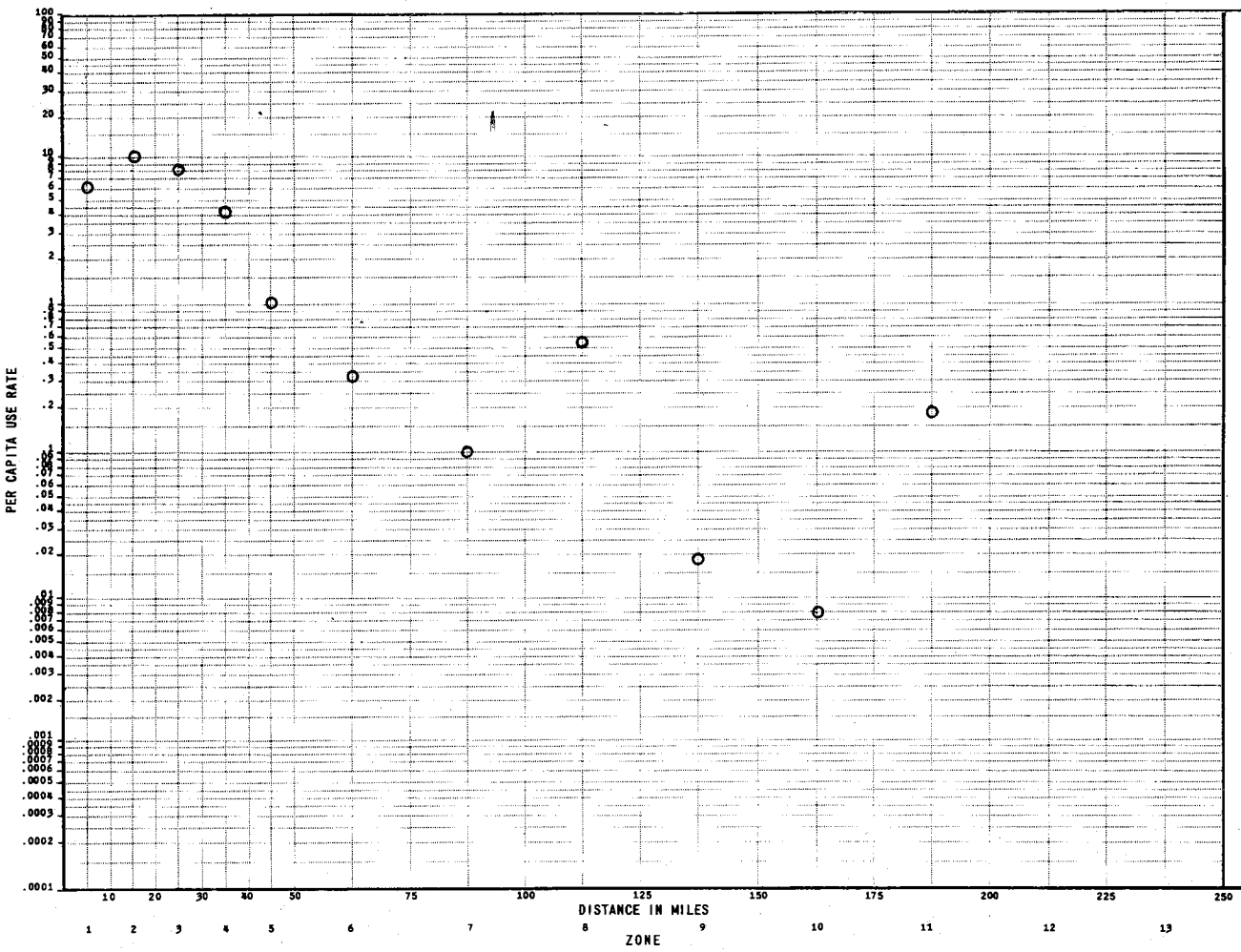
$Y = \text{Exp}(3.656742 - .688321\ X^{.5})$

$R^2 = .57$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	8.3113	22,150
2	2.6937	28,600
3	1.2401	52,880
4	.6601	49,470
5	.3827	84,080
6	.1679	345,780
7	.0620	1,062,700
8	.0262	1,232,900
9	.0122	1,513,780
10	.0060	1,122,560
11	.0032	1,819,540
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: NASHVILLE

PROJECT: LAKE CUMBERLAND

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

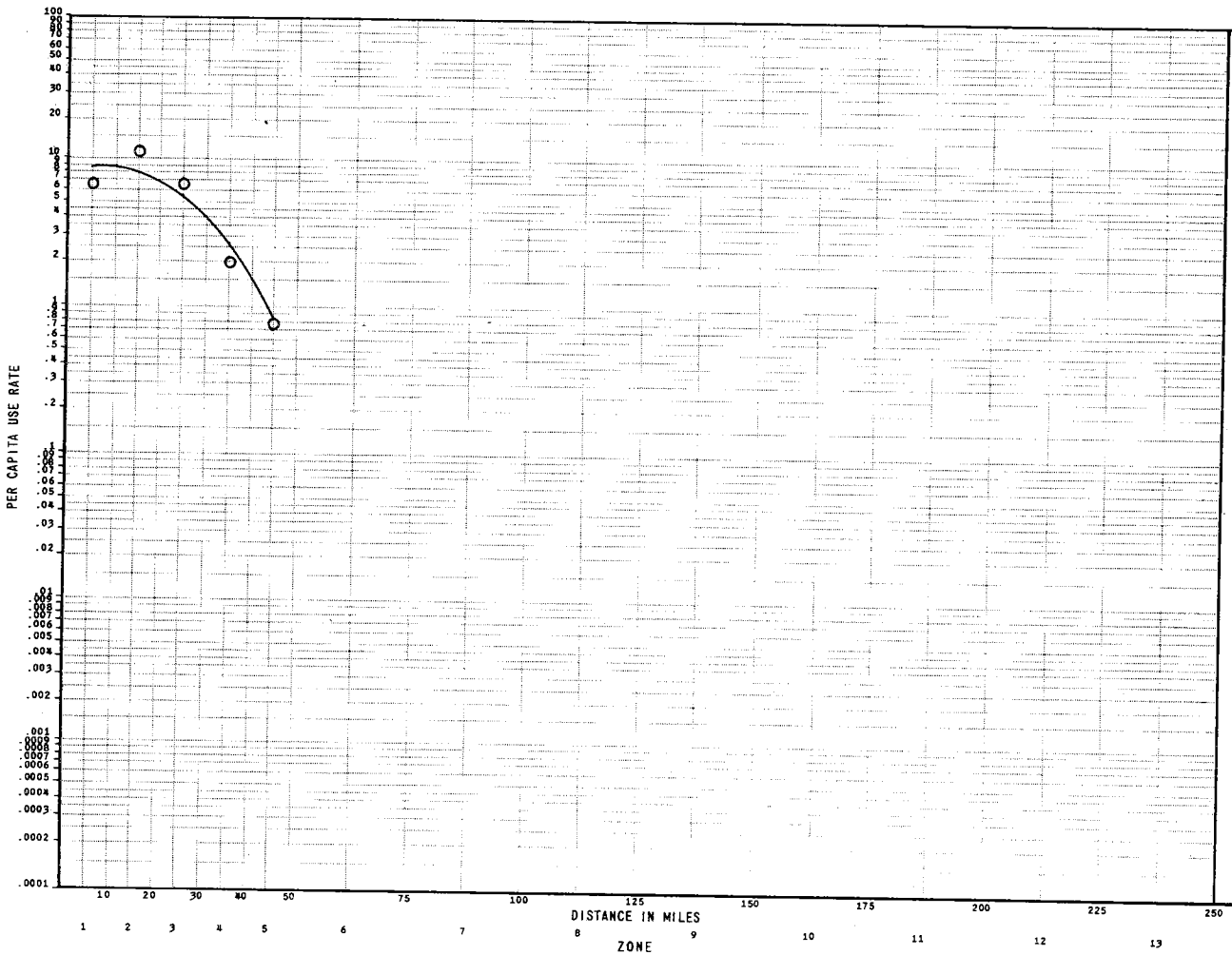
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		55,000
2		56,950
3		77,490
4		75,820
5		120,490
6		474,600
7		988,780
8		1,418,240
9		1,707,440
10		2,696,680
11		1,999,830
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: NASHVILLE

PROJECT: OLD HICKORY

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

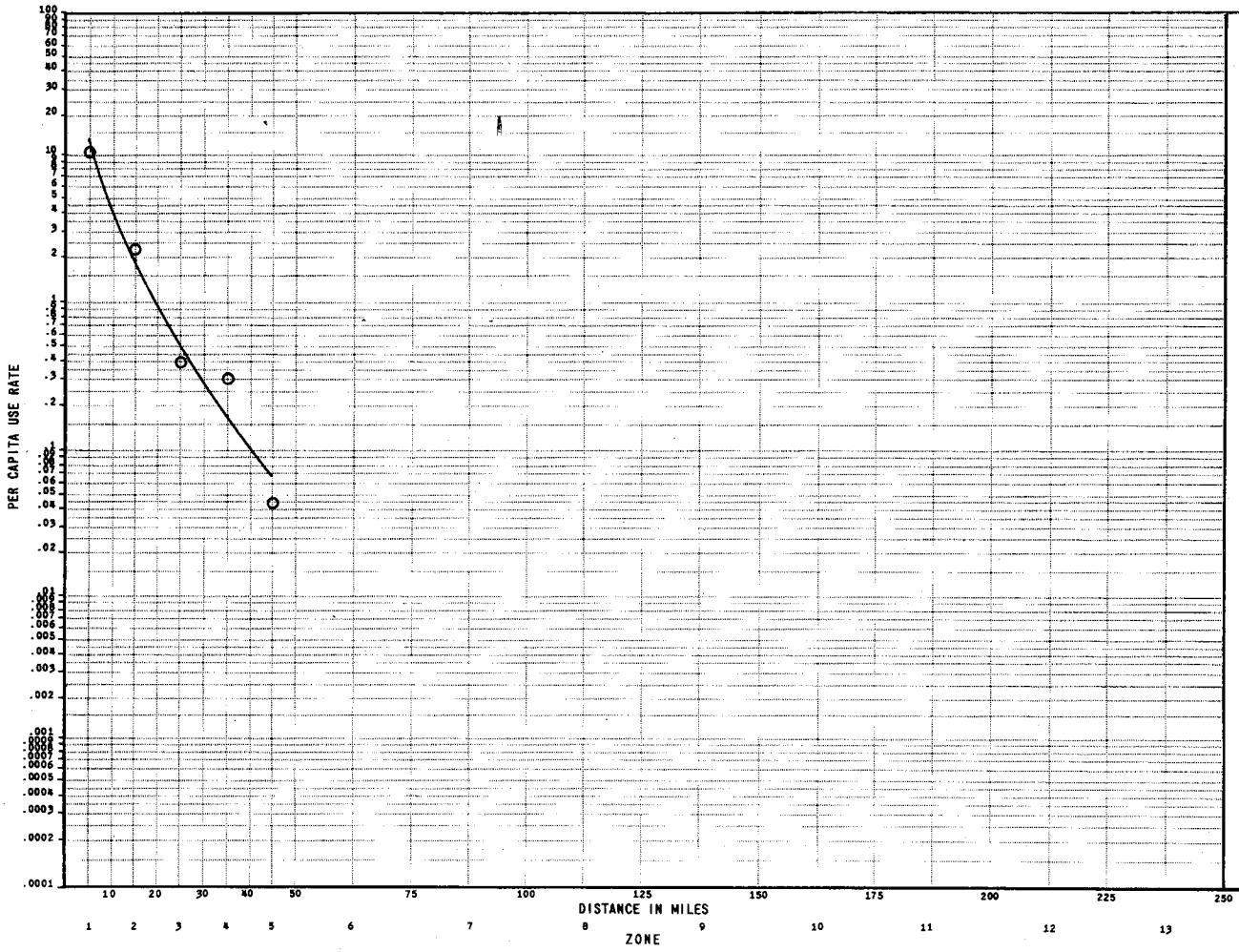
$Y = \text{Exp}(2.158265 - .000027\ X^3)$

$R^2 = .81$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	8.6264	218,700
2	7.8890	177,250
3	5.6329	178,970
4	2.6626	113,170
5	.7065	119,950
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: PORTLAND

PROJECT: COTTAGE GROVE

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

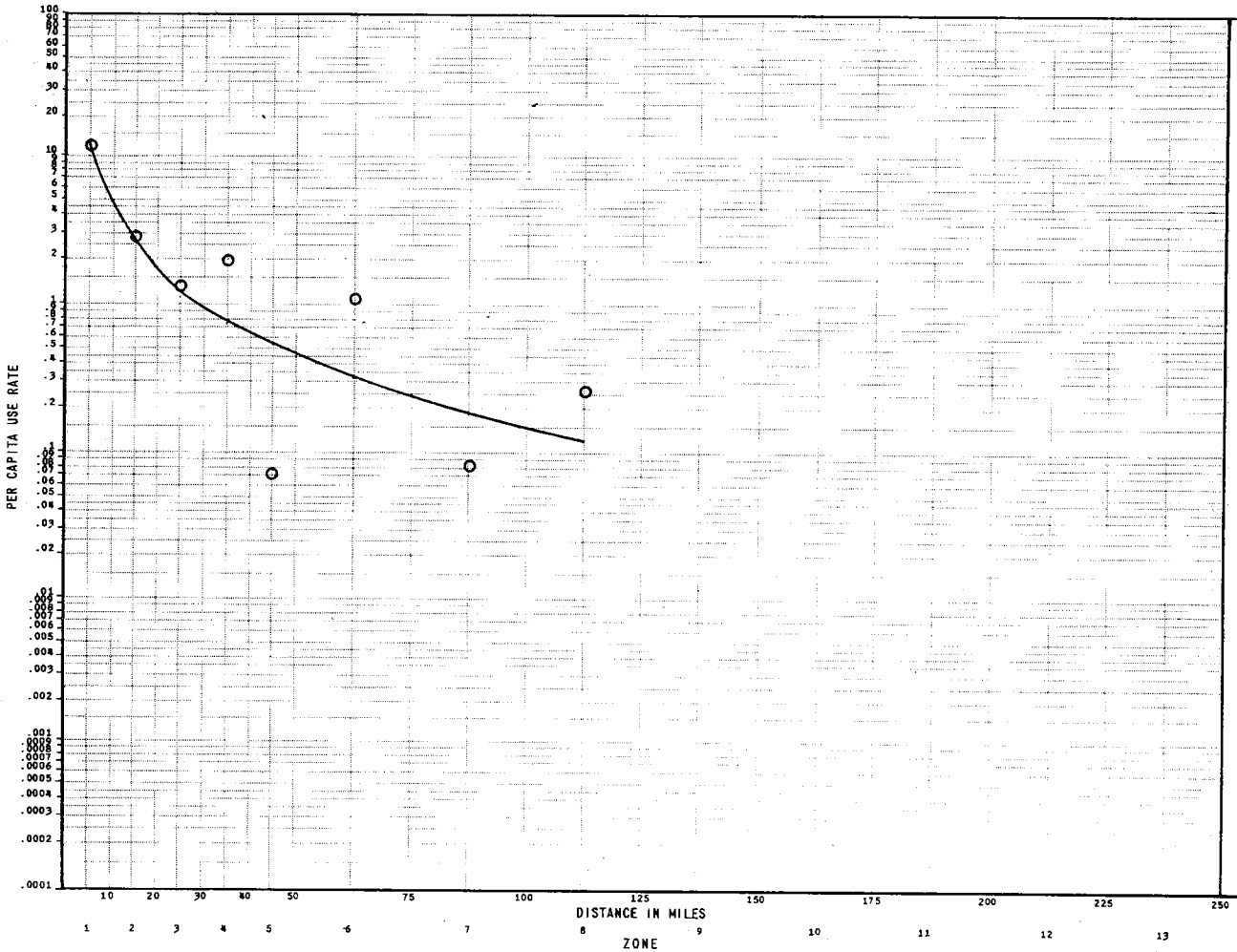
$Y = \text{Exp}(5.187392 - 1.173383\ X^{.5})$

$R^2 = .97$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	12.9828	10,000
2	1.9020	8,000
3	.5069	122,000
4	.1731	13,000
5	.0683	72,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: PORTLAND

PROJECT: DETROIT

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

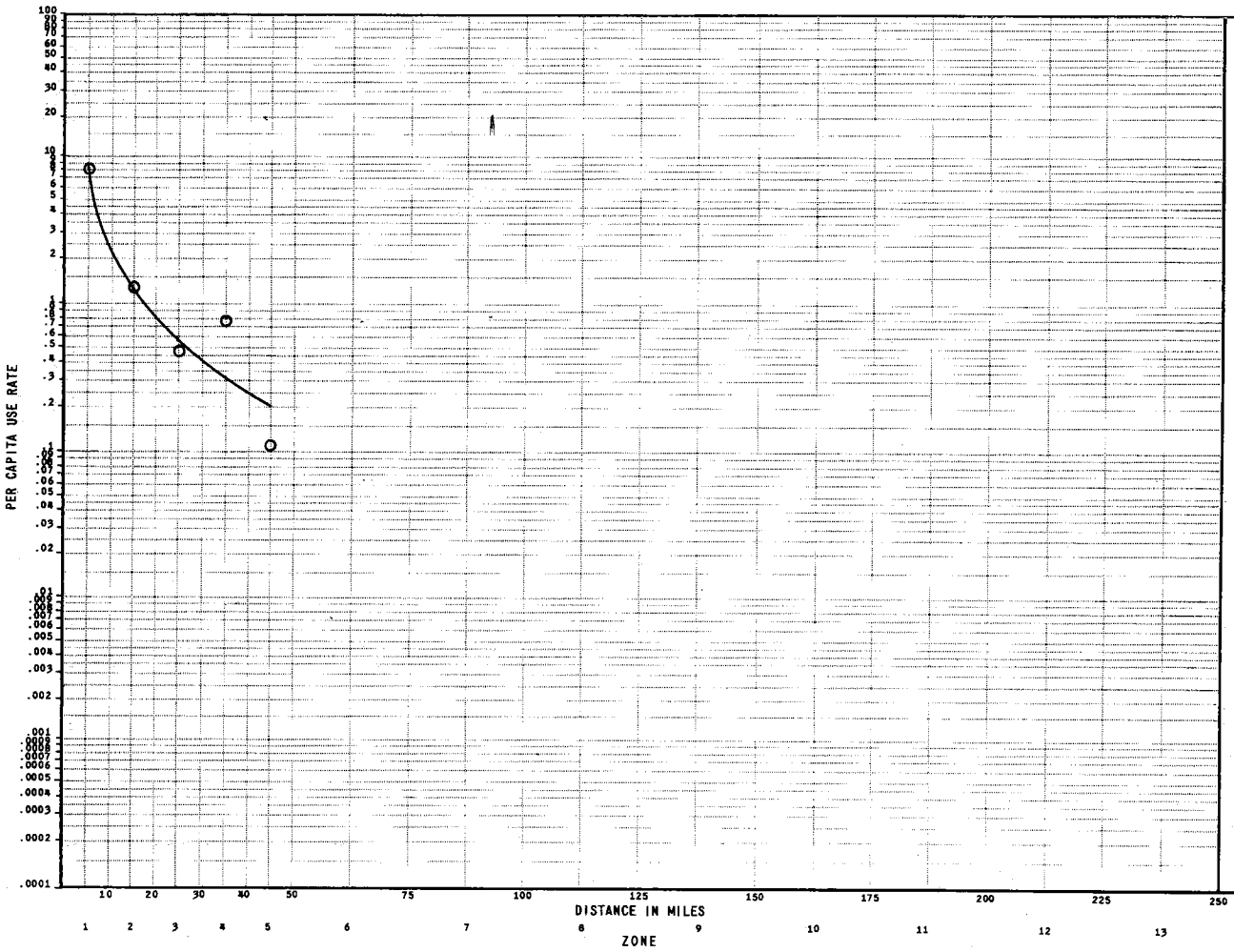
$Y = \text{Exp}(4.937934 - 1.471145\ LNX)$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	13.0687	2,000
2	2.5961	6,000
3	1.2245	6,000
4	.7464	10,000
5	.5158	106,000
6	.3181	190,000
7	.1939	700,000
8	.1340	330,000
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: PORTLAND

PROJECT: DORENA

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

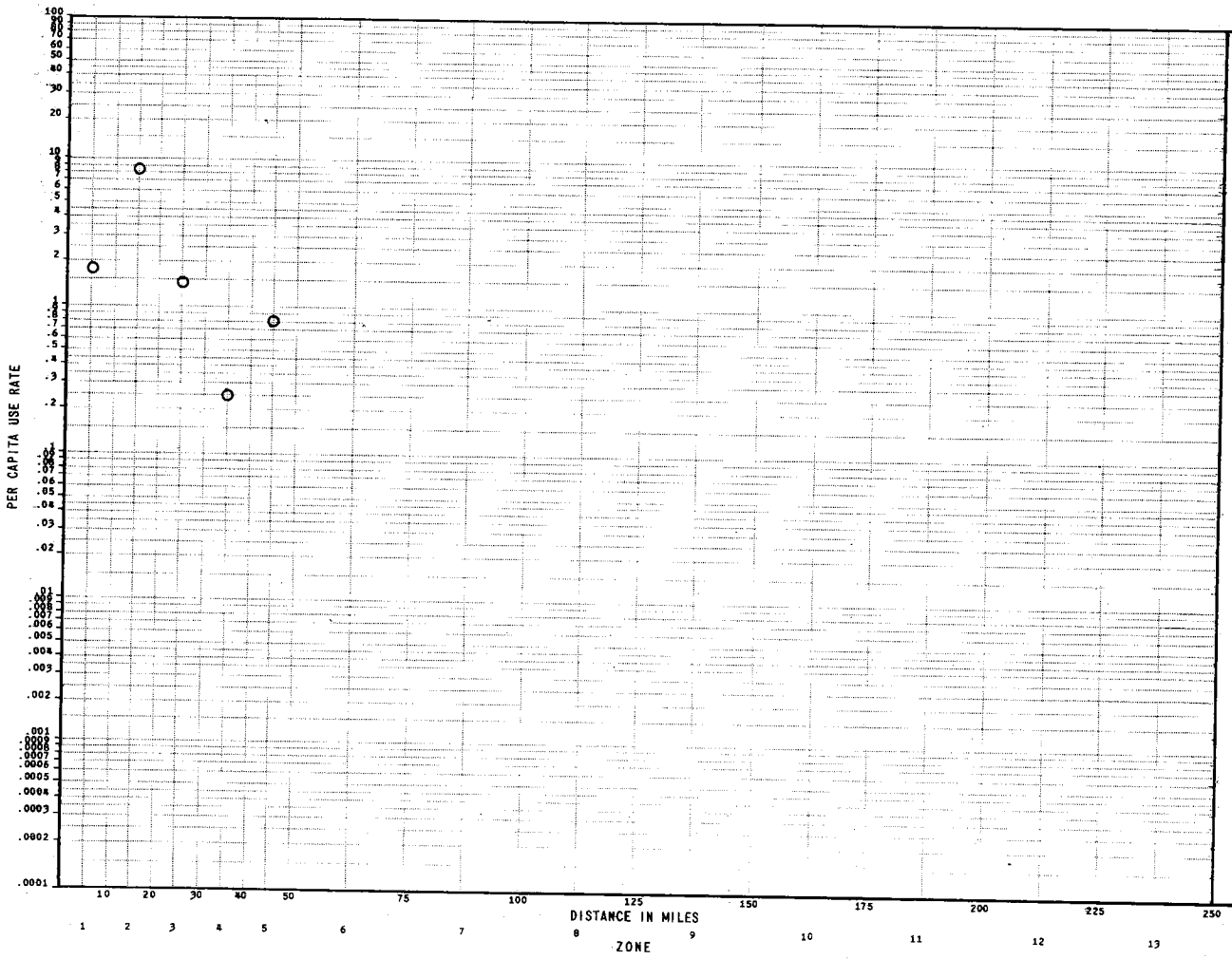
$Y = Exp(4.888707 - 1.699472\ LNX)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	8.6151	8,000
2	1.3317	9,000
3	.5590	120,000
4	.3156	8,000
5	.2059	51,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: PORTLAND

PROJECT: FERN RIDGE

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

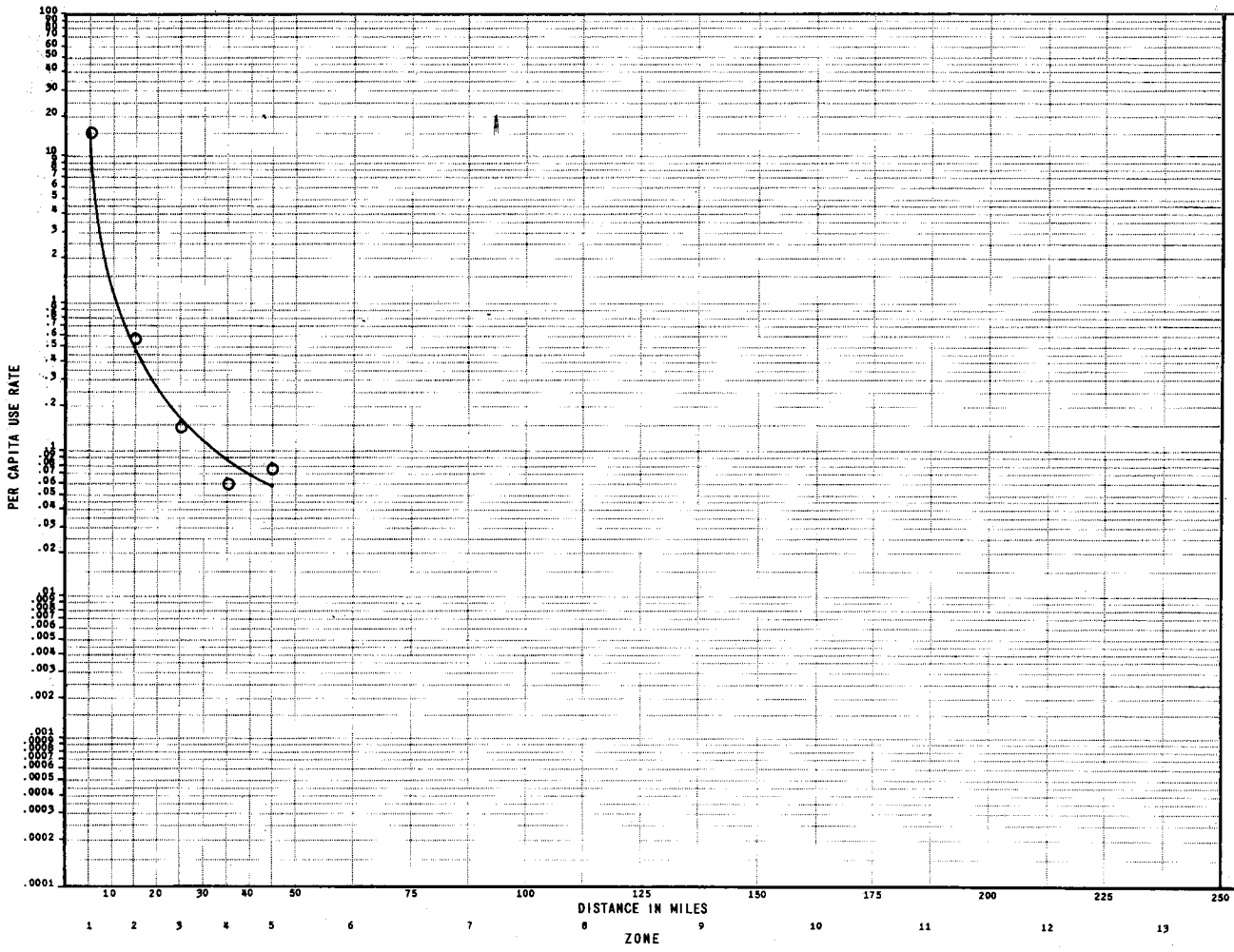
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		51,000
2		106,000
3		23,000
4		60,000
5		23,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: PORTLAND

PROJECT: HILLS CREEK

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

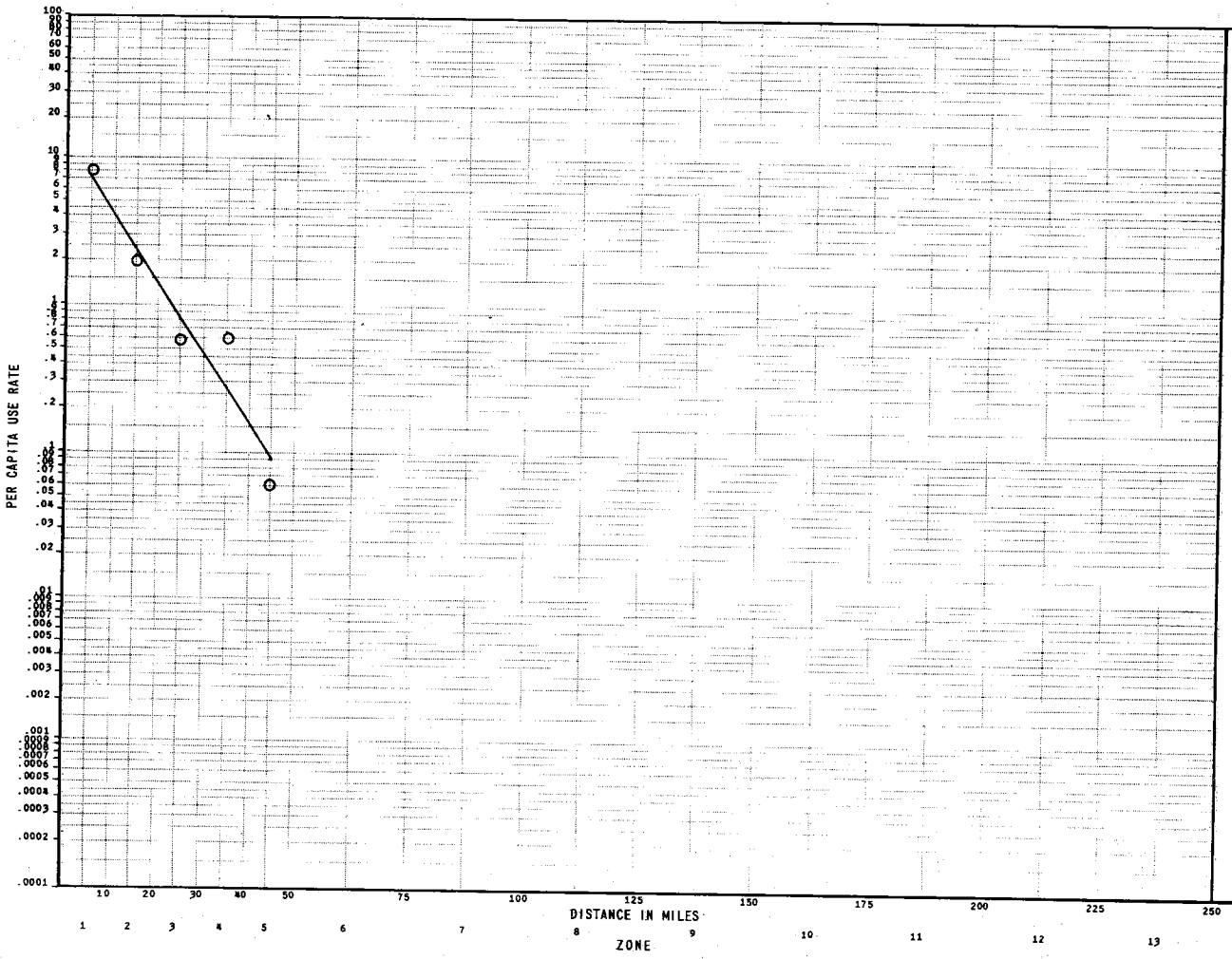
$Y = \text{Exp}(-5.638874 + 18.939537\ X^{-.5})$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	16.9649	5,000
2	.4730	4,000
3	.1571	4,000
4	.0874	7,000
5	.0599	133,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: PORTLAND

PROJECT: LOOKOUT POINT

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

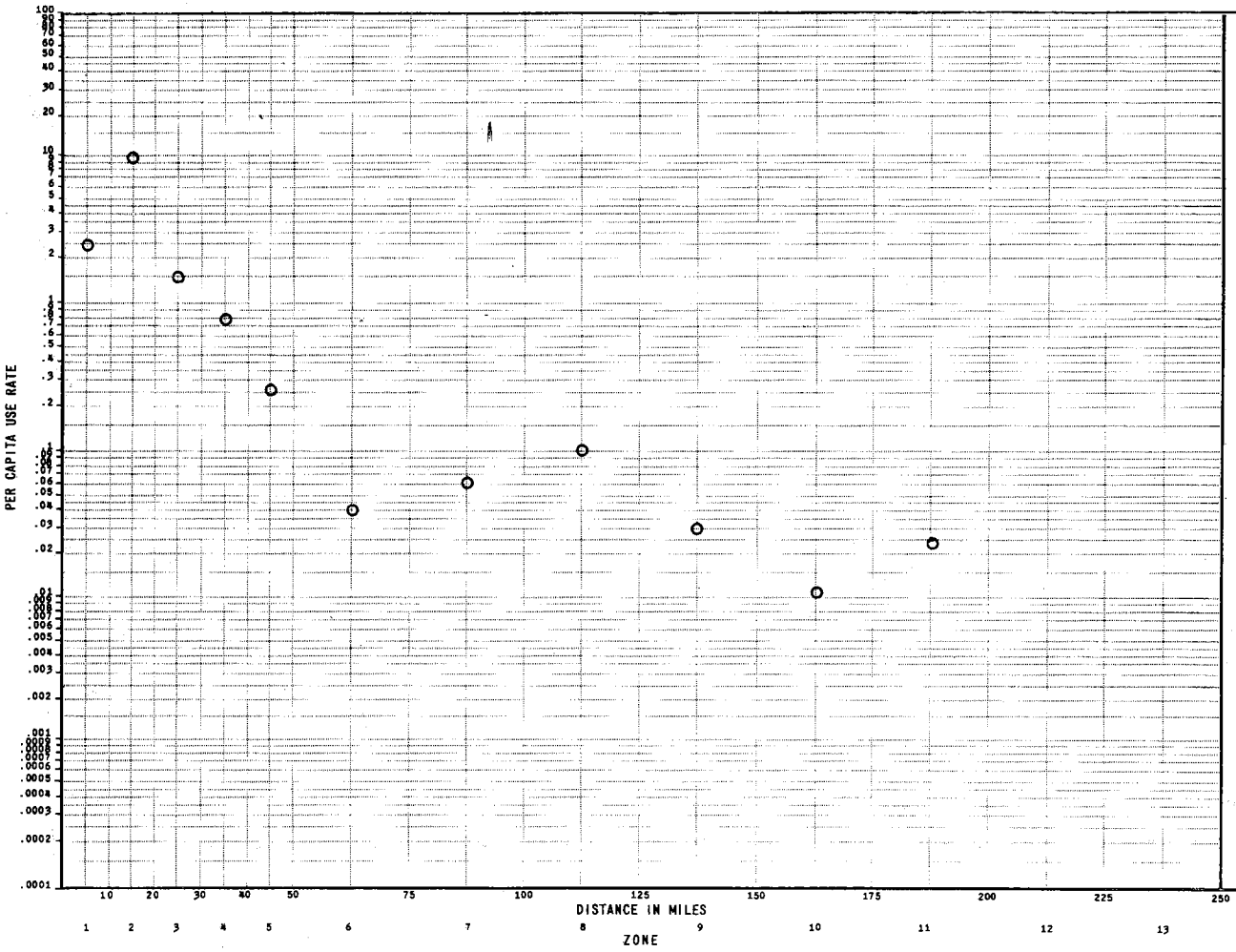
$Y = \text{Exp}(2.538132 - .109816\ X)$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	7.3086	8,000
2	2.4373	54,000
3	.8128	105,000
4	.2711	18,000
5	.0904	15,000
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: PORTLAND

PROJECT: THE DALLES

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

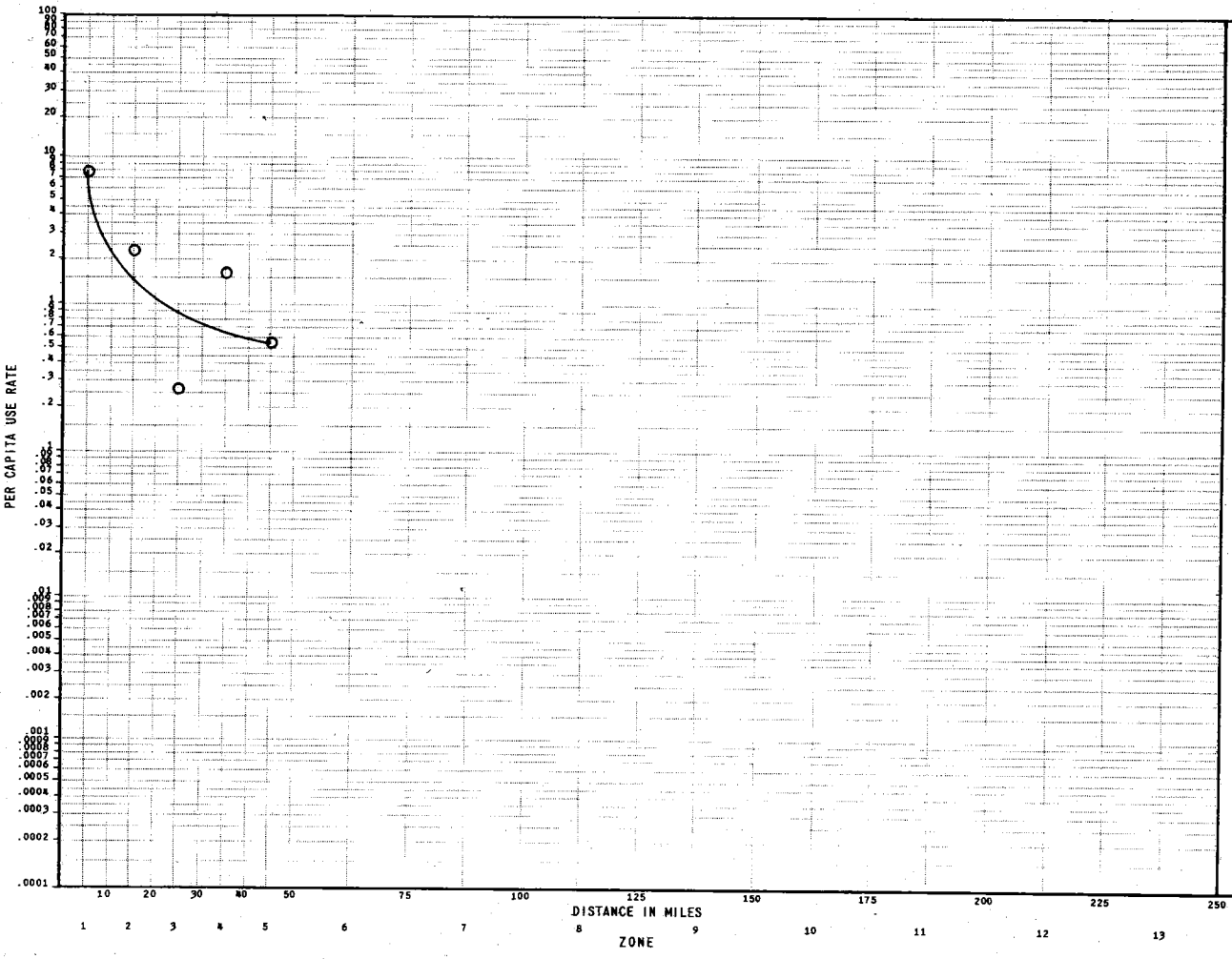
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		18,000
2		10,000
3		12,000
4		12,000
5		13,000
6		215,000
7		1,000,000
8		220,000
9		480,000
10		320,000
11		340,000
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: SACRAMENTO

PROJECT: BLACK BUTTE

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

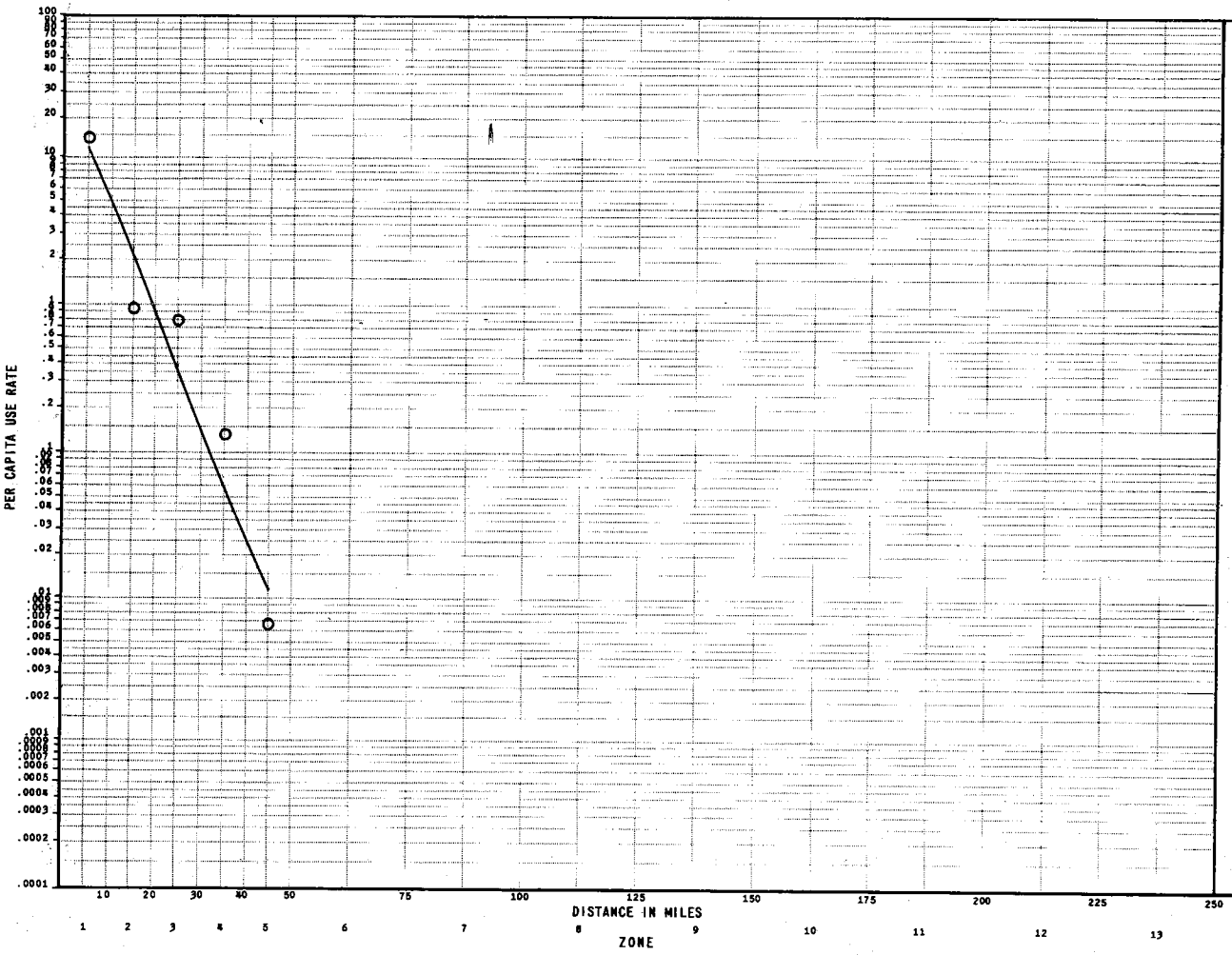
$Y = \text{Exp}(-1.850206 + 8.623624\ X^{-0.5})$

$R^2 = .95$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	7.4365	5,790
2	1.4570	9,150
3	.8821	38,130
4	.6753	36,690
5	.5685	19,170
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: SACRAMENTO

PROJECT: ENGLEBRIGHT

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

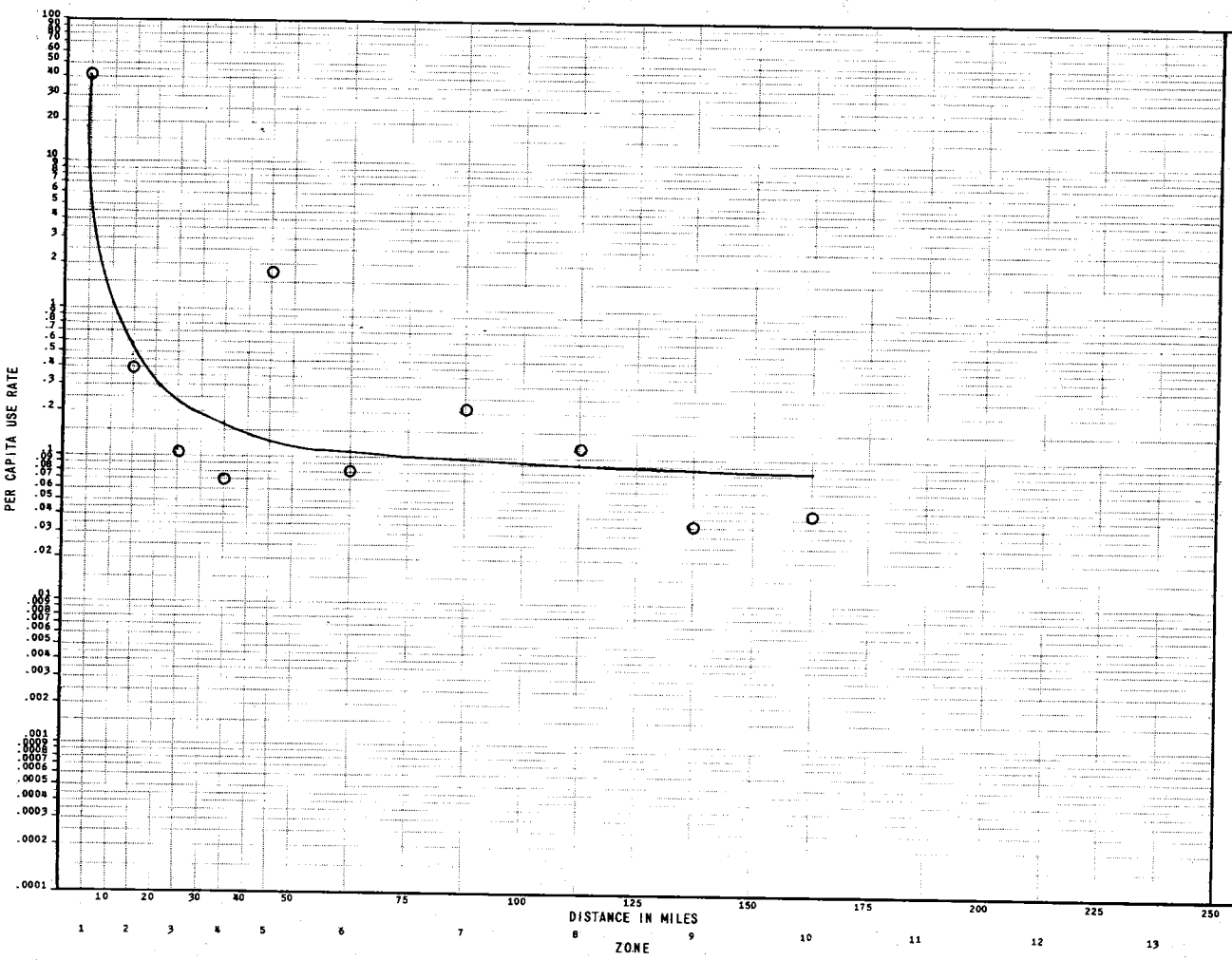
$Y = \text{Exp}(3.40594 - .173997\ X)$

$R^2 = .97$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	12.6285	1,460
2	2.2166	20,820
3	.3891	58,260
4	.0683	53,490
5	.0120	43,770
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: SACRAMENTO

PROJECT: ISABELLA

LEGEND

o SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

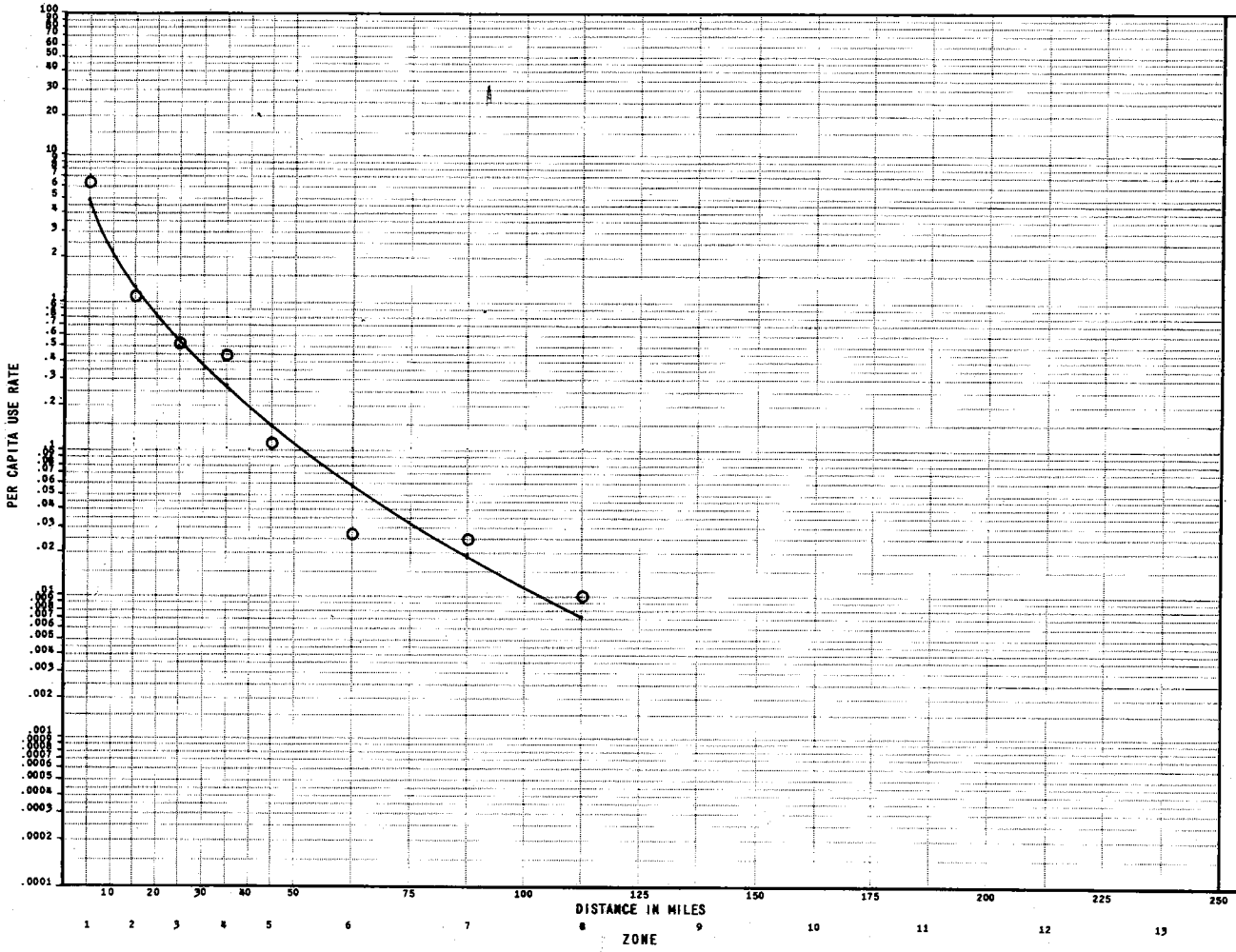
$Y = \text{Exp}(-2.673584 + 31.654021\ x^{-1})$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	38.7534	1,690
2	.5693	1,010
3	.2448	1,800
4	.1705	43,200
5	.1394	98,810
6	.1145	179,310
7	.0991	88,130
8	.0914	165,060
9	.0869	2,508,170
10	.0838	5,266,130
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: SACRAMENTO

PROJECT: NEW HOGAN

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

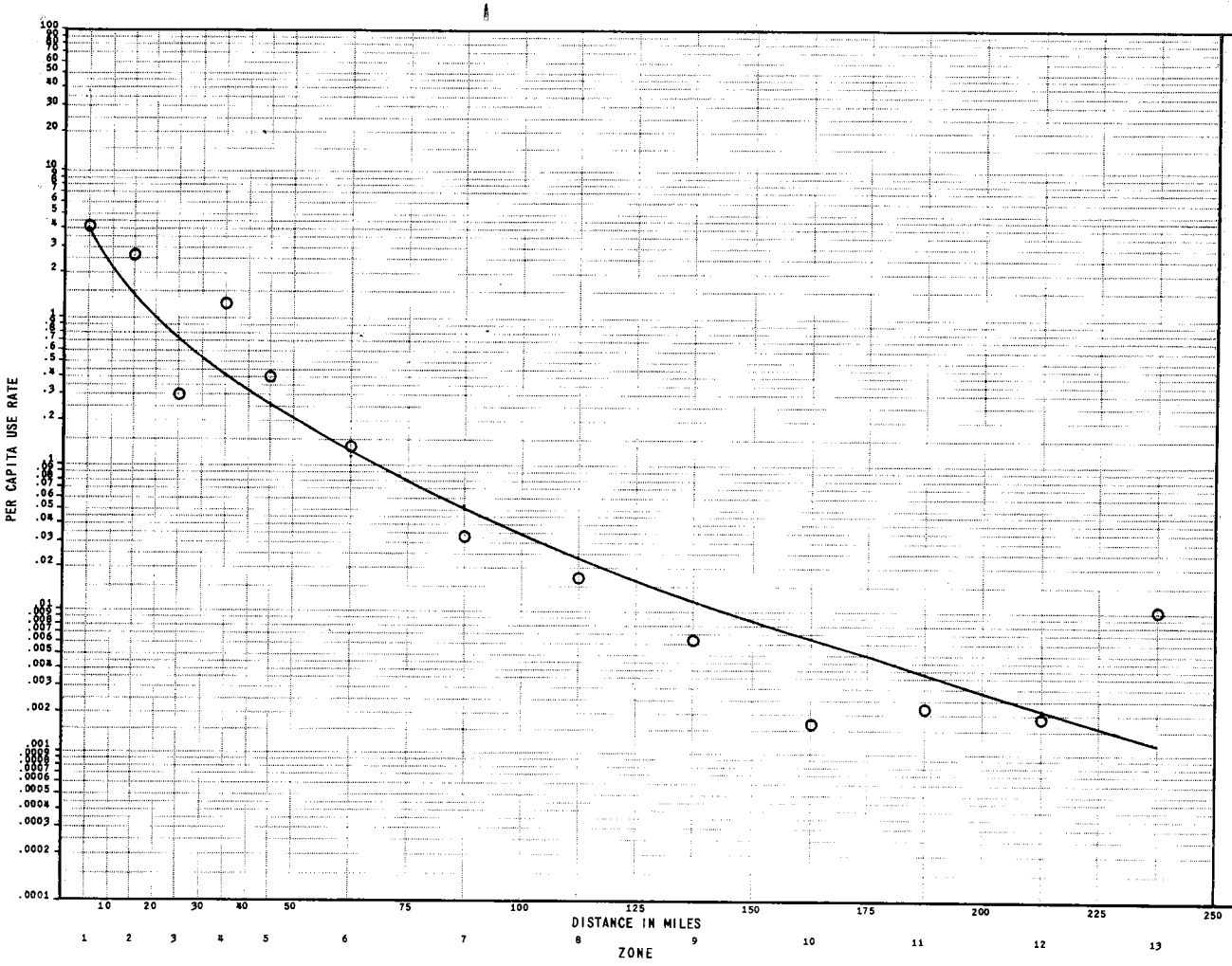
$Y = \text{Exp}(3.301201 - .776433\ x^{.5})$

$R^2 = .92$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	4.7829	1,660
2	1.3419	7,860
3	.5594	20,600
4	.2747	193,590
5	.1485	220,710
6	.0586	751,250
7	.0190	1,457,740
8	.0072	3,080,800
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: SACRAMENTO

PROJECT: PINE FLAT

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

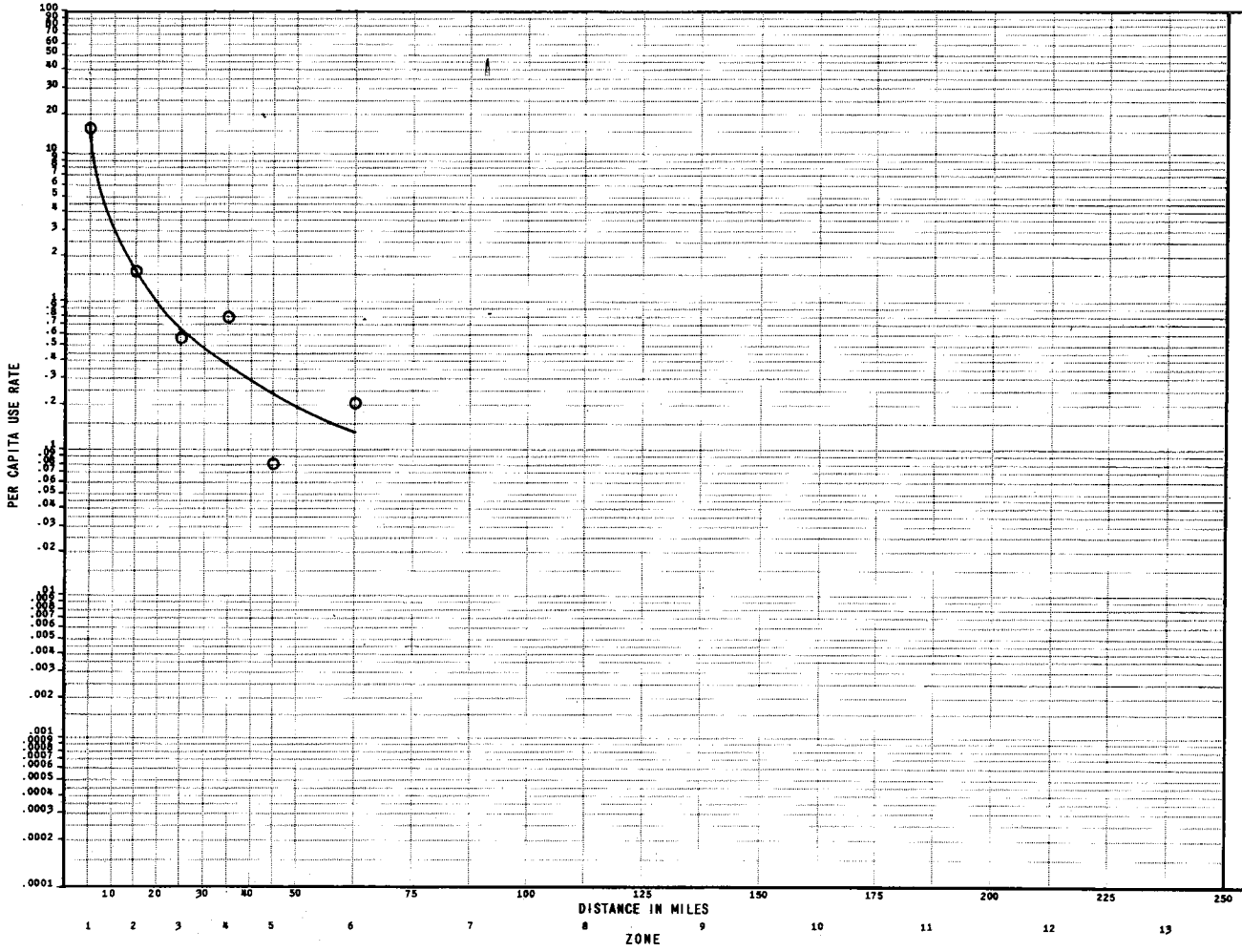
$Y = \text{Exp}(2.753375 - .609749^{*5})$

$R^2 = .88$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	4.0146	1,160
2	1.4797	15,070
3	.7443	172,450
4	.4257	184,020
5	.2626	77,500
6	.1265	177,670
7	.0523	183,000
8	.0244	329,700
9	.0123	298,400
10	.0066	854,600
11	.0037	2,225,500
12	.0022	4,395,200
13	.0013	4,537,000

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: SACRAMENTO

PROJECT: SUCCESS

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

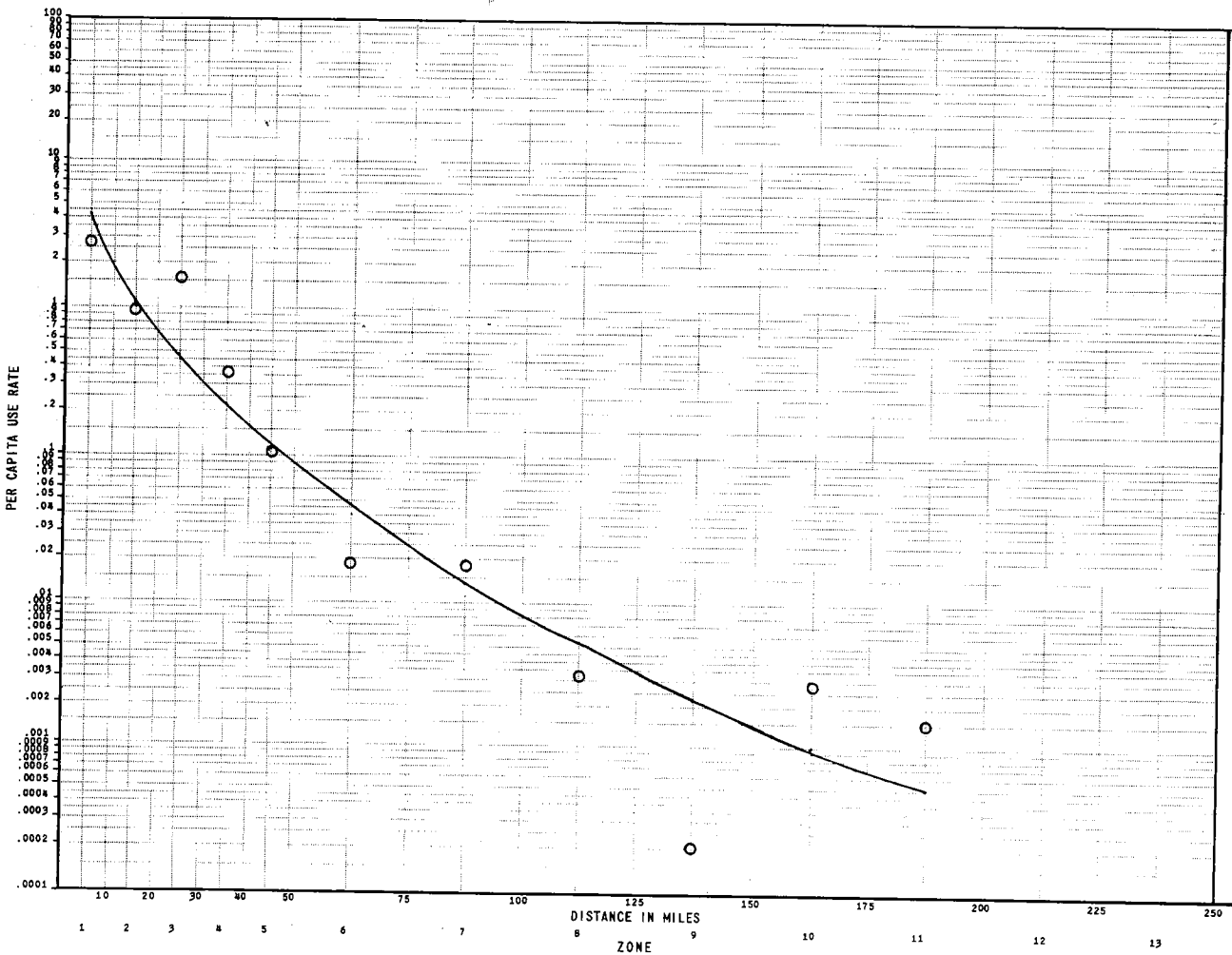
$Y = Exp(5.121471 - 1.717239\ LNX)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	10.5664	21,260
2	1.6018	28,550
3	.6662	30,200
4	.3738	60,460
5	.2428	66,330
6	.1381	367,300
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: SACRAMENTO

PROJECT: TERMINUS

LEGEND

● SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

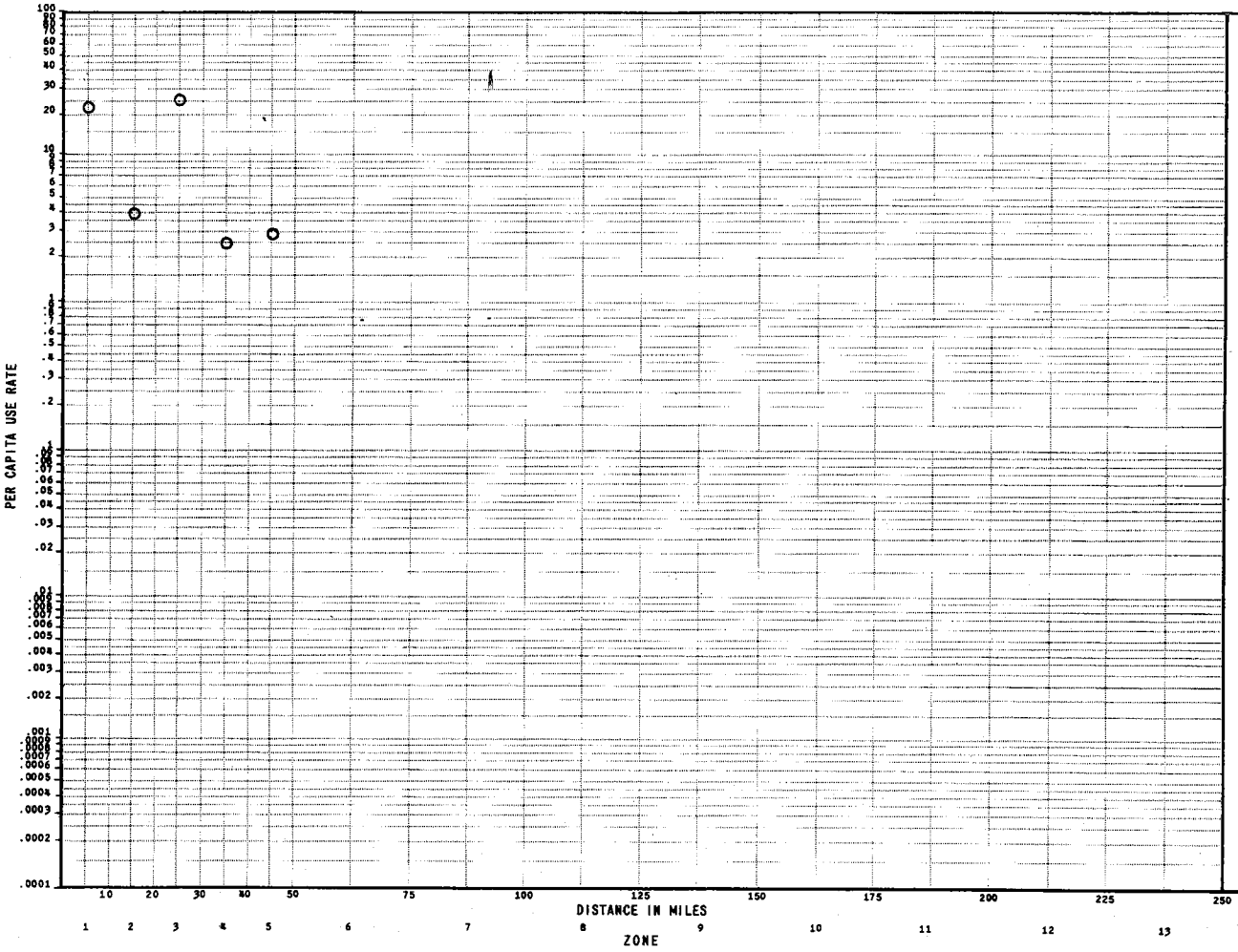
$Y = \text{Exp}(3.188035 - .792697\ X^{.5})$

$R^2 = .59$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	4.1186	8,060
2	1.1252	51,880
3	.4605	82,840
4	.2228	53,250
5	.1189	91,870
6	.0460	359,300
7	.0146	322,600
8	.0054	123,900
9	.0022	178,400
10	.0010	585,000
11	.0005	3,982,400
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: SAVANNAH

PROJECT: CLARK HILL

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

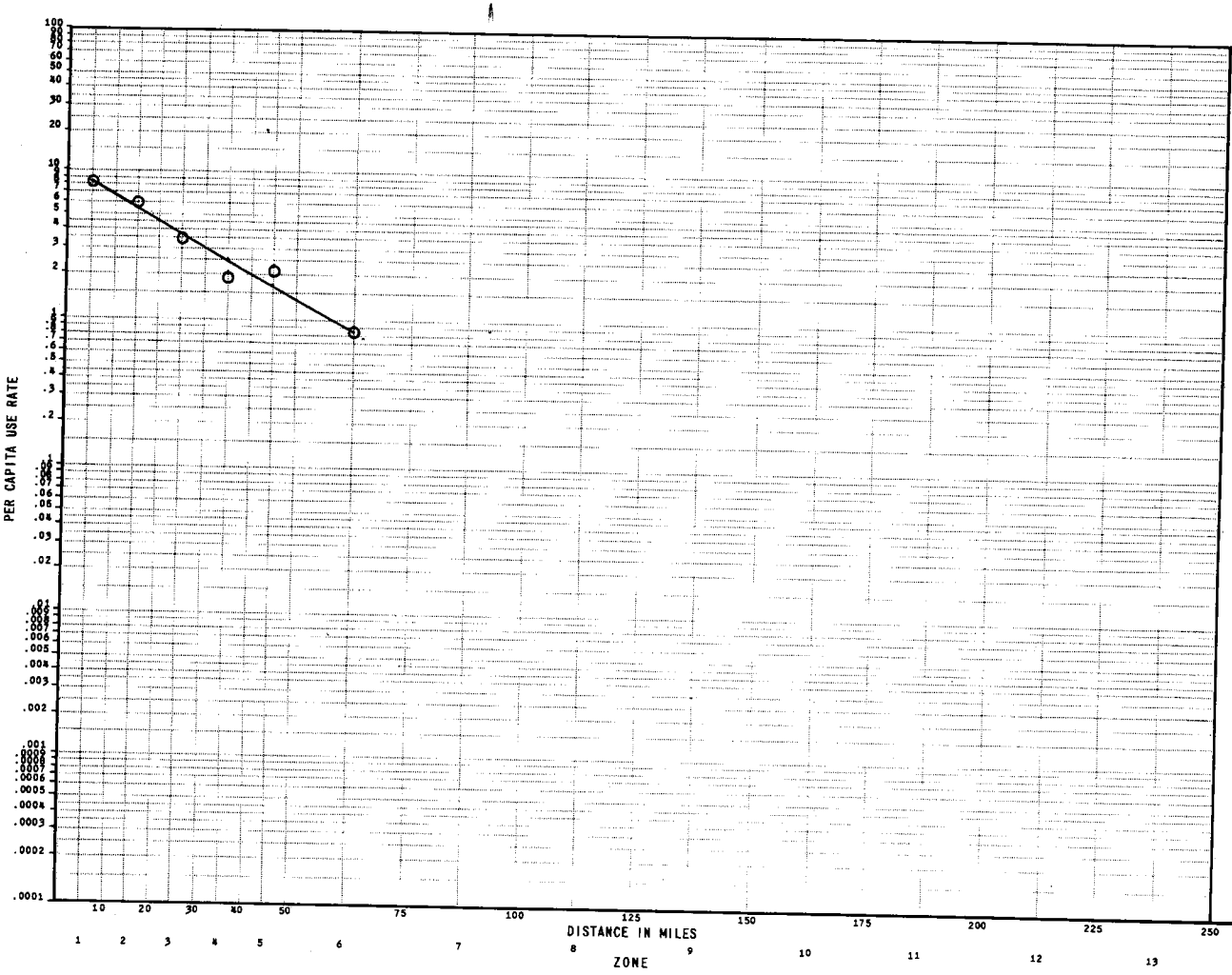
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		27,600
2		43,440
3		58,510
4		205,400
5		137,510
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: SAVANNAH

PROJECT: HARTWELL

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

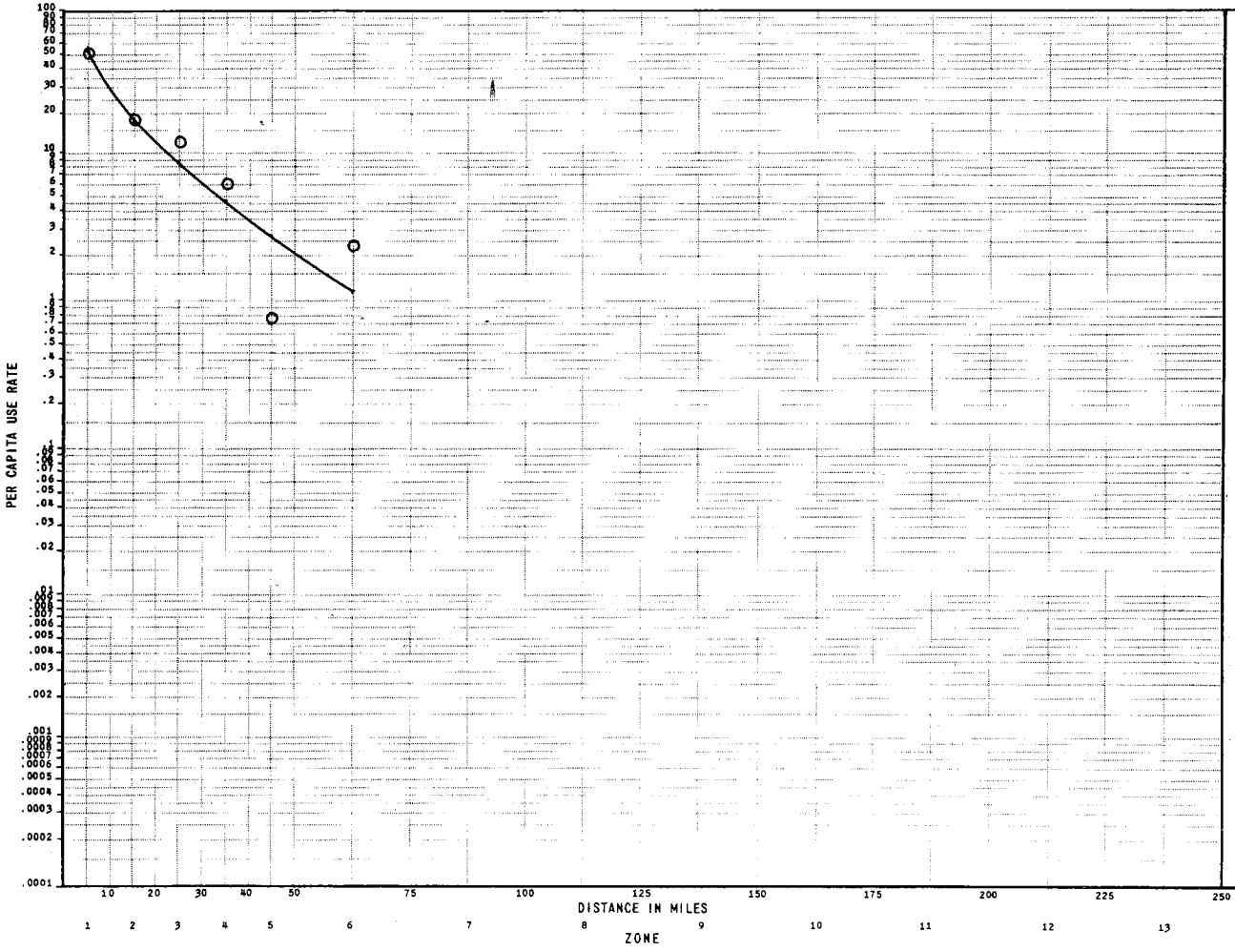
$Y = \text{Exp}(2.300489 - .039514\ X)$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	8.1900	144,820
2	5.5167	114,590
3	3.7159	97,740
4	2.5030	190,980
5	1.6860	253,710
6	.8444	405,700
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: CANTON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

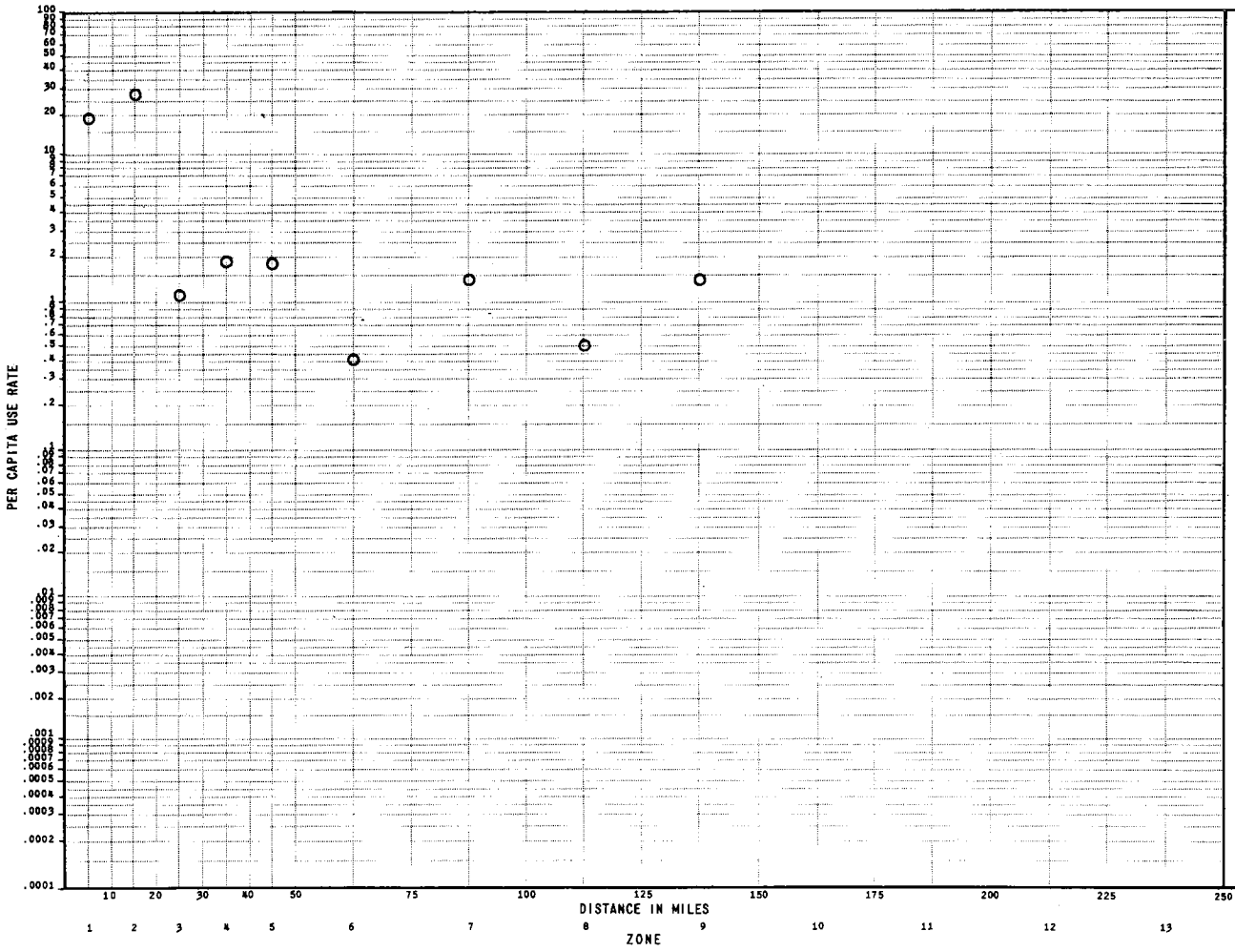
$Y = \text{Exp}(5.480215 - .669378\ X^{.5})$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	53.7014	2,970
2	17.9524	8,026
3	8.4429	8,150
4	4.5728	9,470
5	2.6910	22,230
6	1.2073	137,440
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: DENISON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

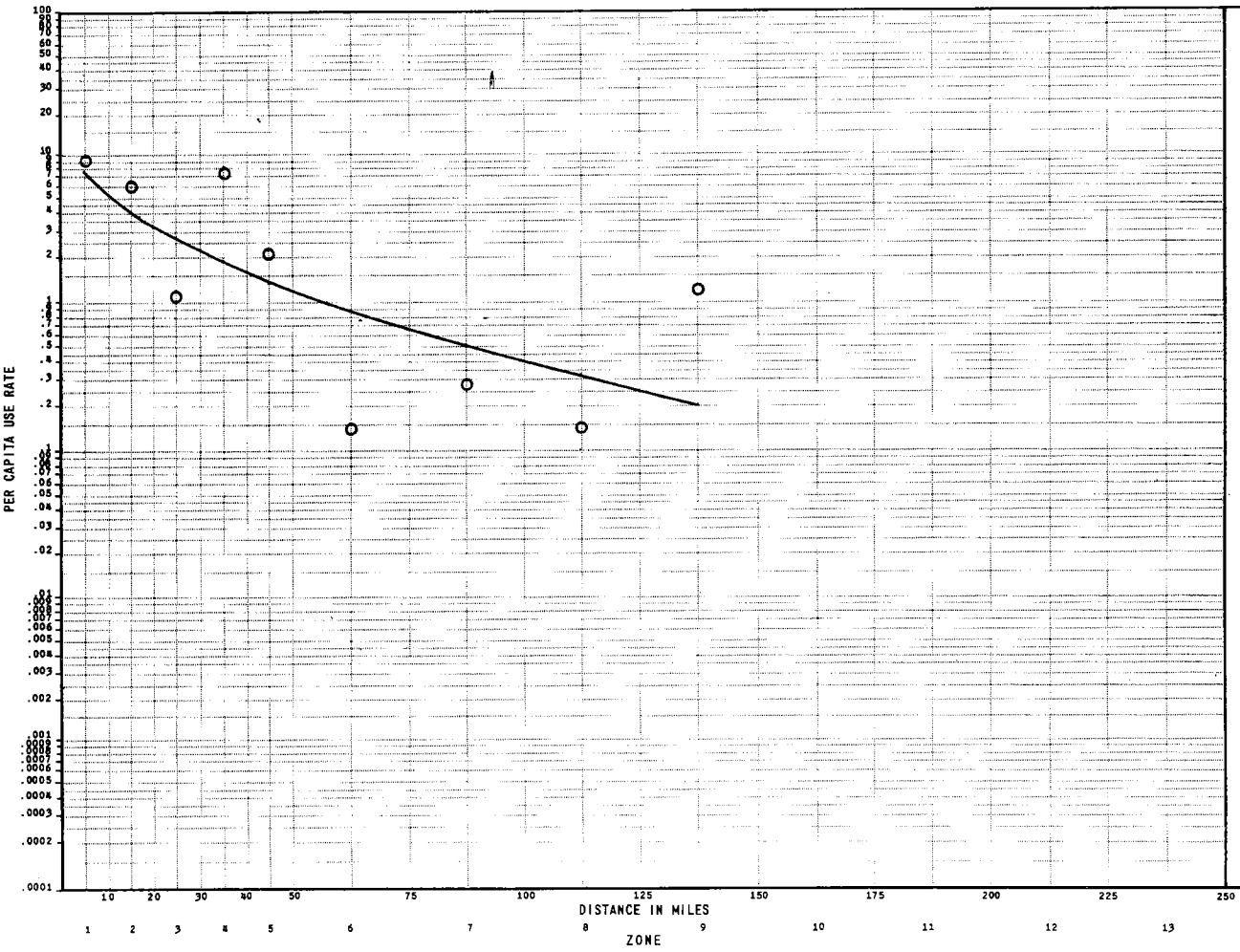
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		53,360
2		60,800
3		54,270
4		67,980
5		68,740
6		593,800
7		1,334,100
8		984,700
9		889,500
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: EUFAULA

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

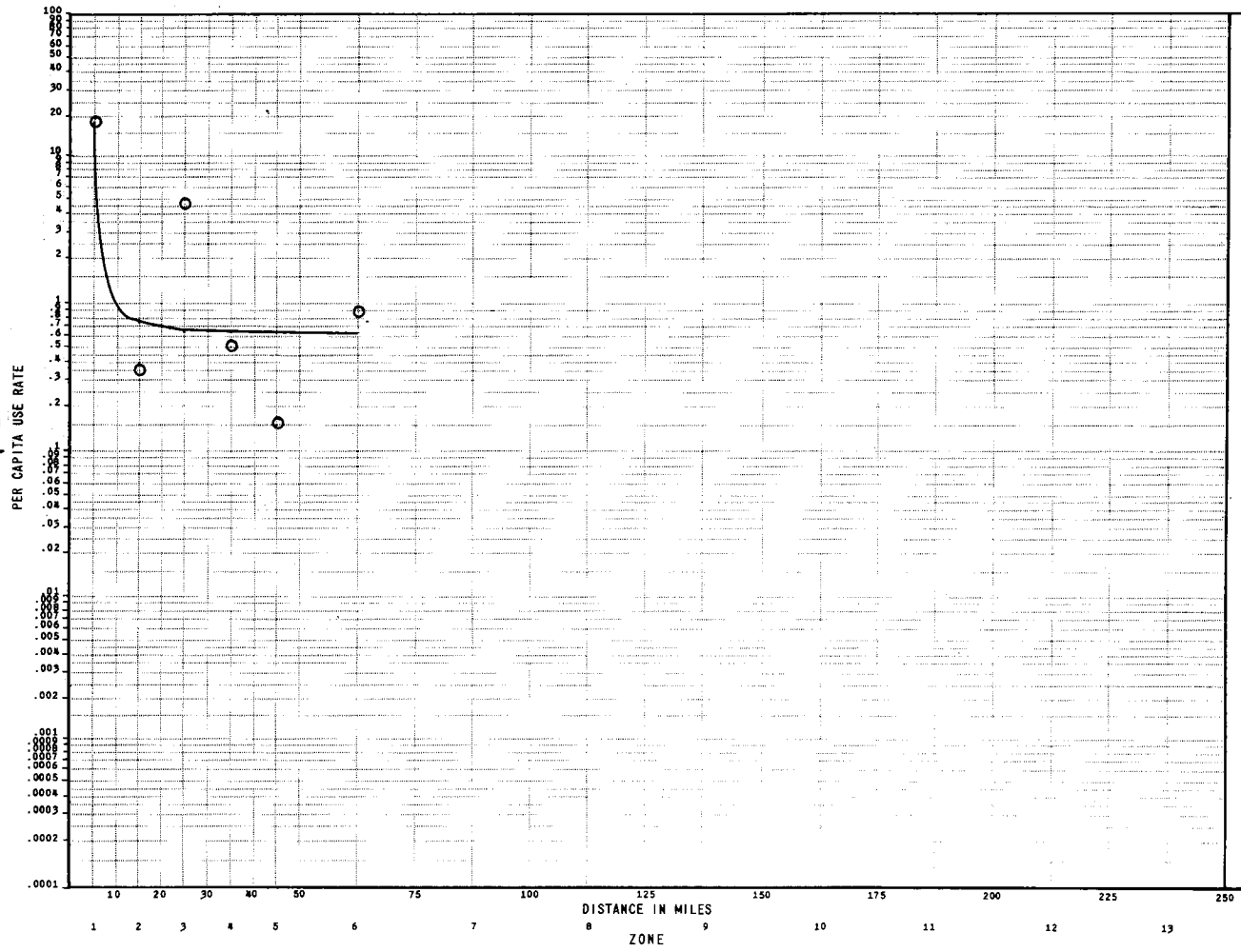
$Y = \text{Exp}(2.877708 - .378753\ X^{.5})$

$R^2 = .57$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	7.6201	31,710
2	4.0993	33,500
3	2.6750	86,700
4	1.8908	33,730
5	1.4007	67,140
6	.8900	734,960
7	.5142	792,380
8	.3200	455,480
9	.2094	556,740
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: FALL RIVER

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(-.456937 + 417.808552\ X^{-3})$

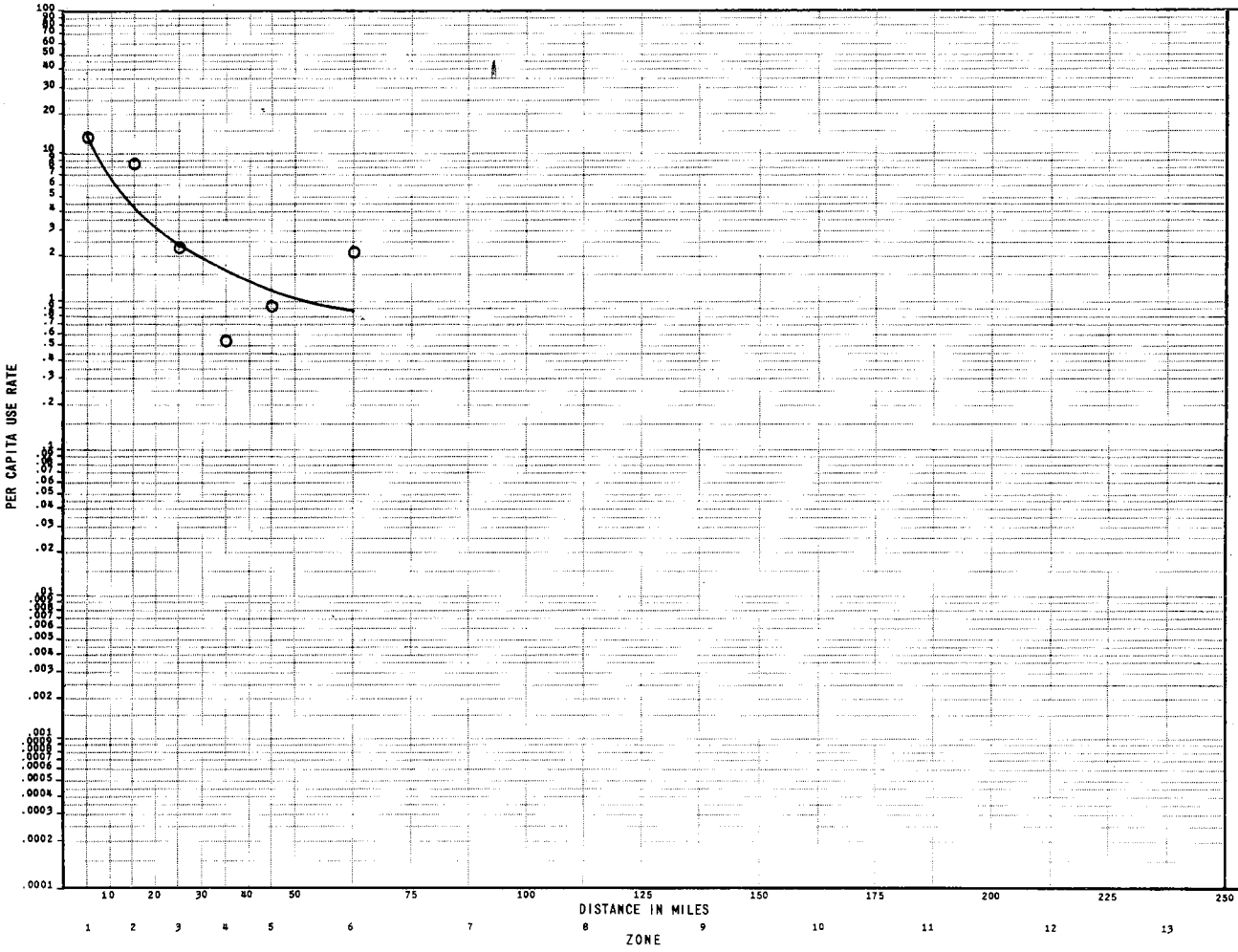
$R^2 = .94$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	17.9131	1,770
2	.7167	8,410
3	.6333	12,170
4	.6333	28,130
5	.6333	46,820
6	.6344	247,500
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION

B-45



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: FORT GIBSON

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

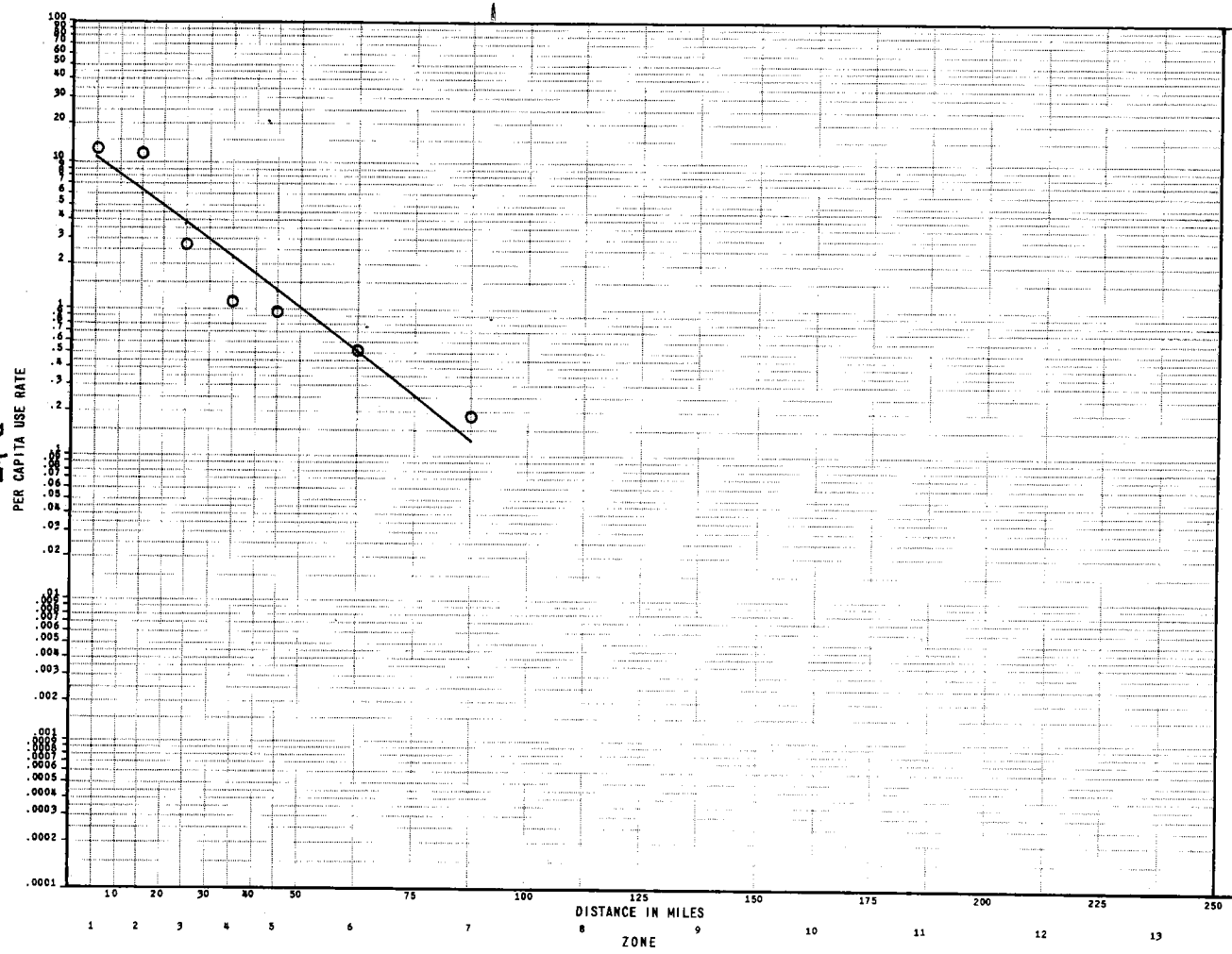
$Y = \text{Exp}(4.444566 - 1.104550\ LNX)$

$R^2 = .82$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	14.3948	20,370
2	4.2776	65,280
3	2.4331	46,640
4	1.6779	182,370
5	1.2712	253,220
6	.8844	384,200
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: FORT SUPPLY

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

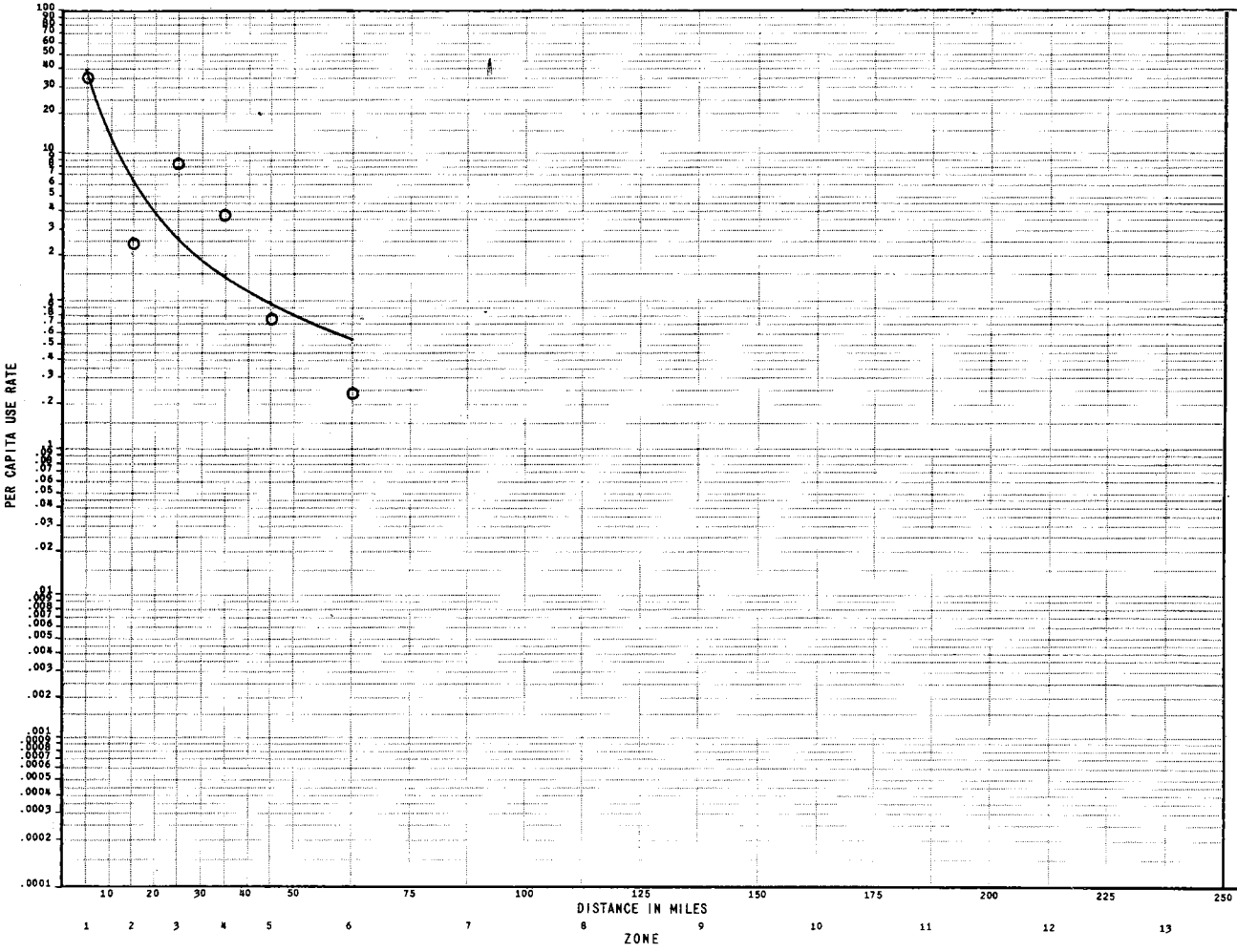
$Y = \text{Exp}(2.661436 - .053322\ X)$

$R^2 = .78$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	10.9663	2,430
2	6.4340	9,790
3	3.7749	9,550
4	2.2148	5,360
5	1.2995	9,210
6	.5111	25,660
7	.1348	67,940
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: GREAT SALT PLAINS

LEGEND

O SURVEY ESTIMATE

——— REGRESSION ESTIMATE

REGRESSION EQUATION:

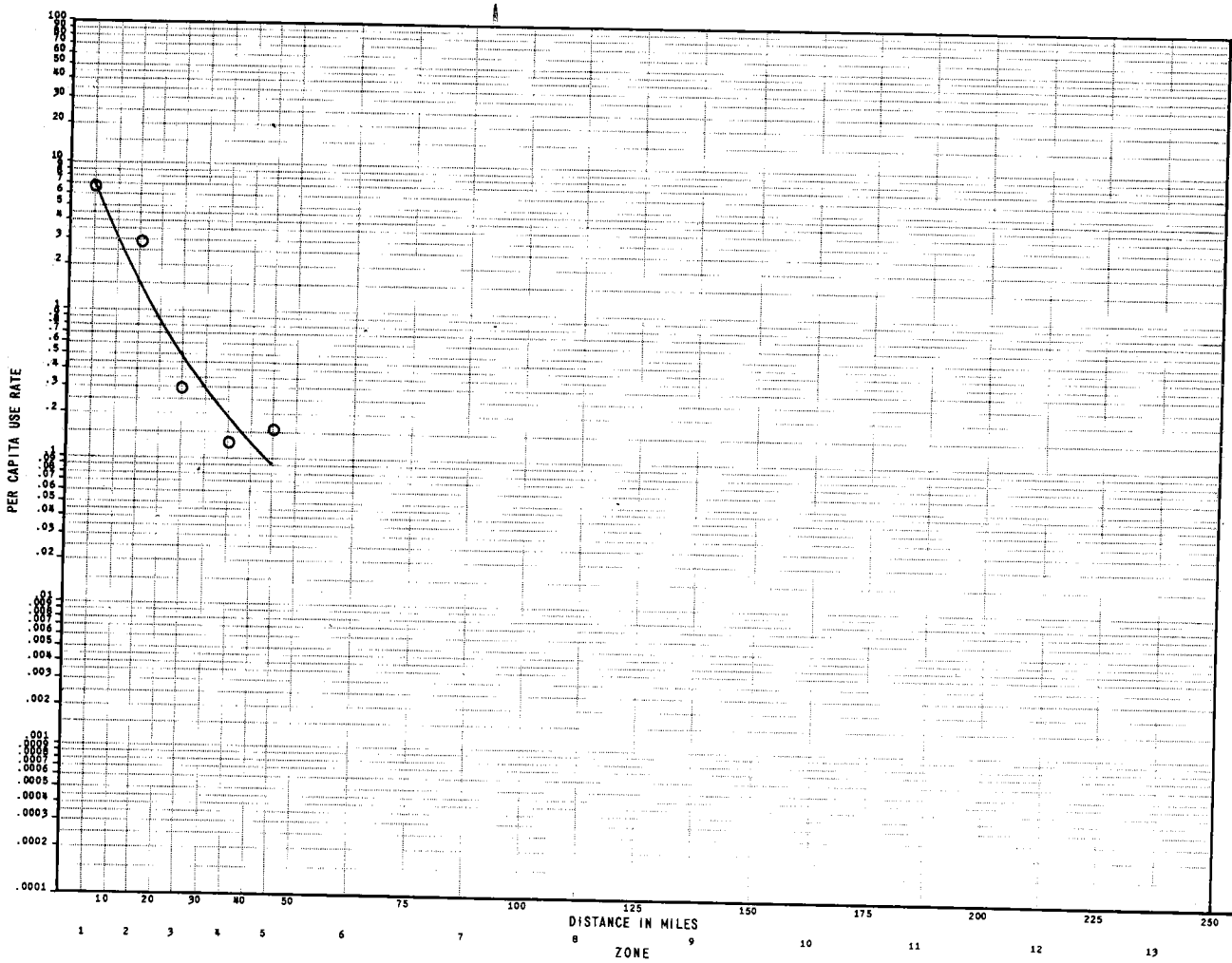
$Y = Exp(6.365929 - 1.677949\ LNX)$

$R^2 = .92$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	39.0708	1,100
2	6.1840	6,050
3	2.6244	9,500
4	1.4922	63,990
5	.9788	18,600
6	.5641	193,970
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: HEYBURN

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

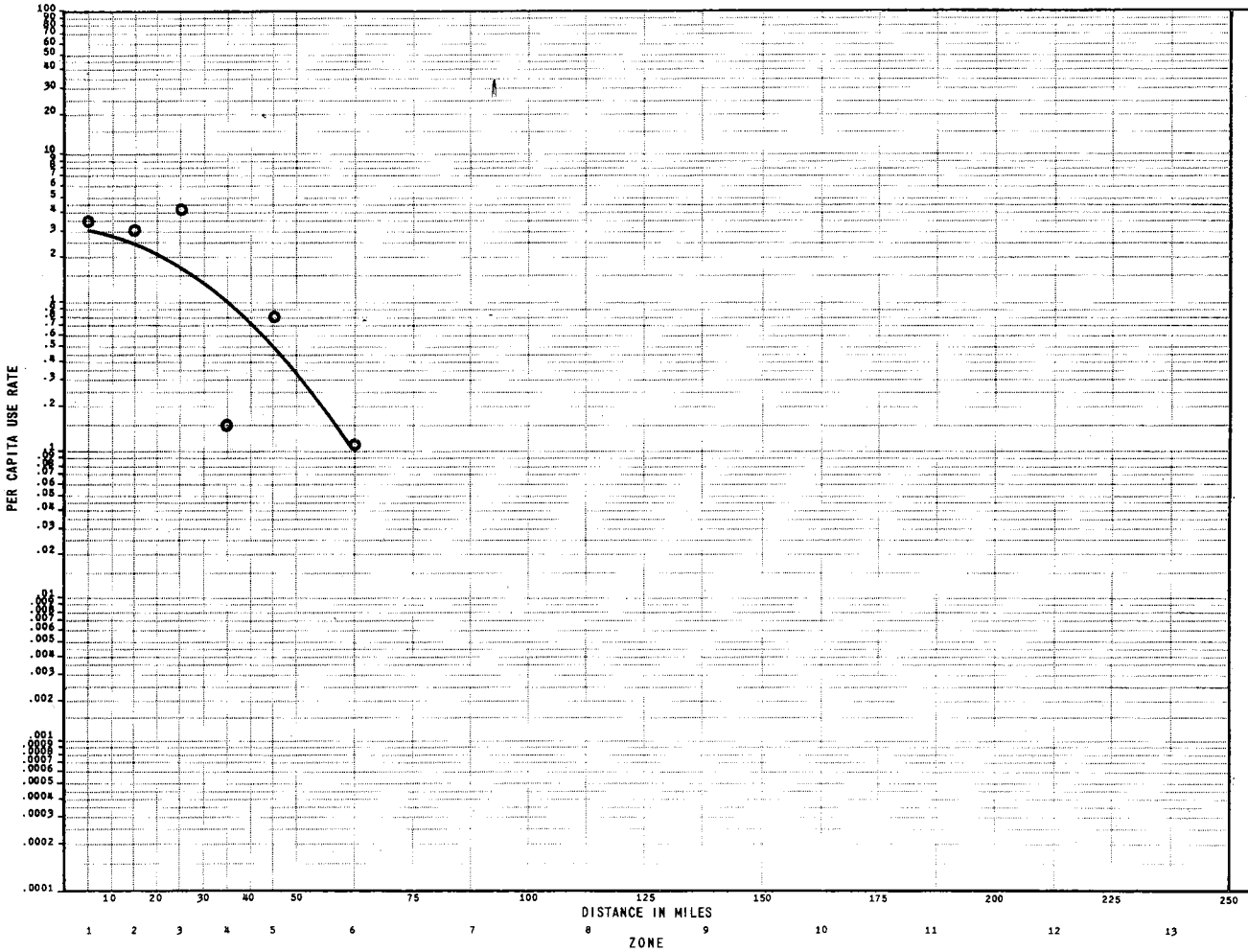
$Y = \text{Exp}(4.256897 - .980675\ X^{.5})$

$R^2 = .92$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	7.8778	4,250
2	1.5822	51,900
3	.5239	314,120
4	.2134	86,490
5	.0982	50,820
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: HULAH

LEGEND

SURVEY ESTIMATE

REGRESSION ESTIMATE

REGRESSION EQUATION:

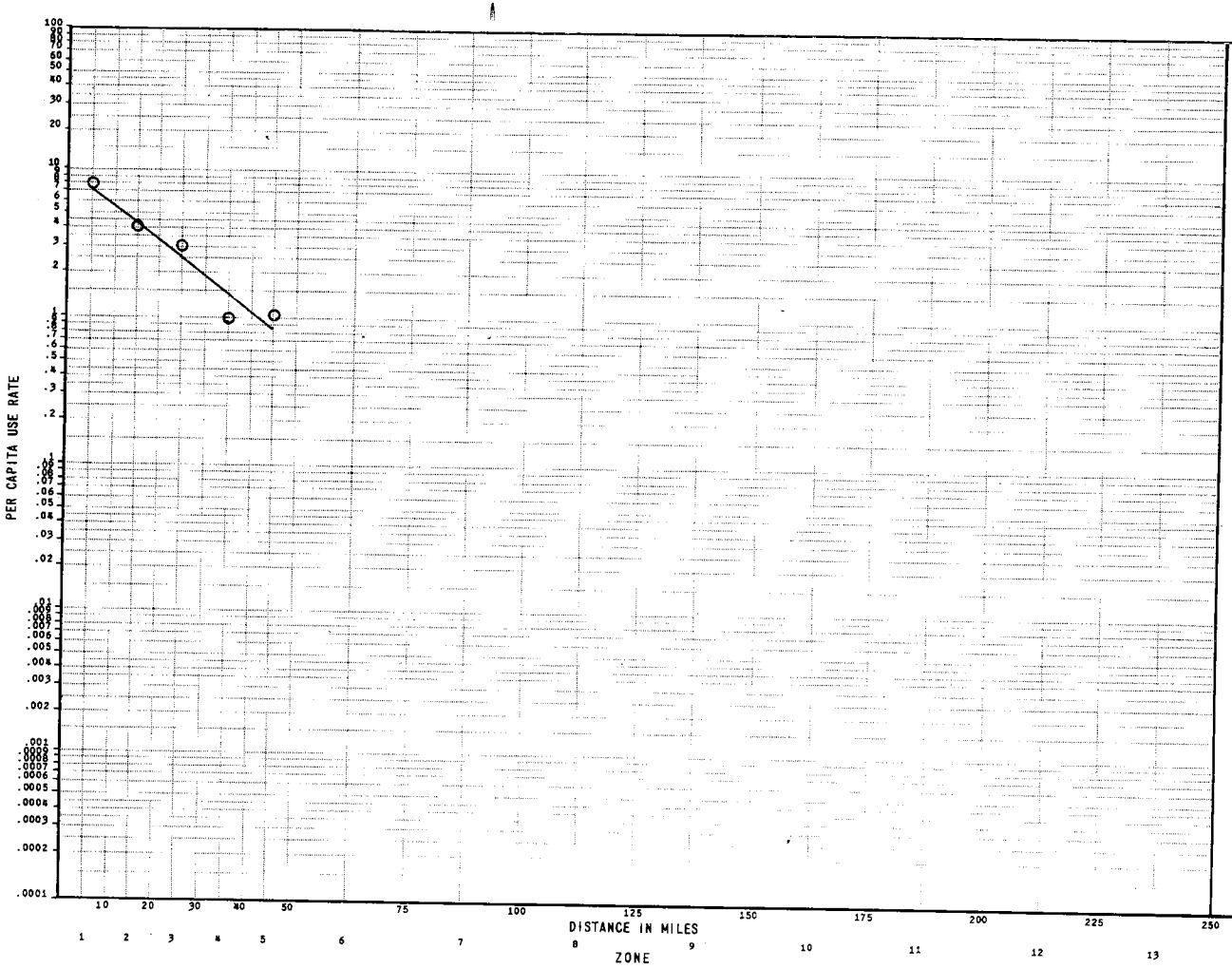
$Y = \text{Exp}(1.130415 - .000892\ X^2)$

$R^2 = .55$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	3.0286	2,520
2	2.5335	19,220
3	1.7728	45,730
4	1.0377	51,600
5	.5082	23,750
6	.0948	350,600
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: KEYSTONE

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

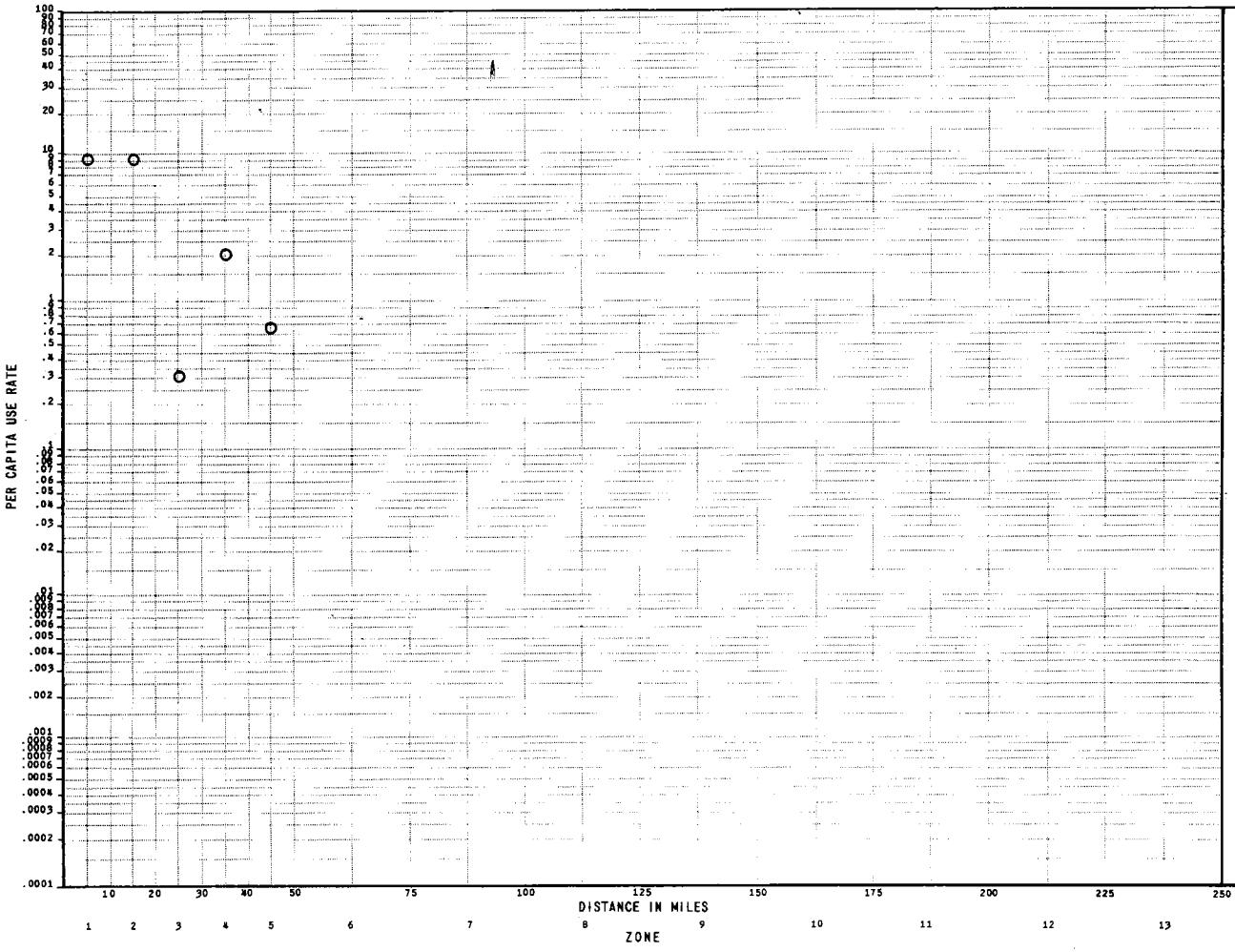
$Y = Exp(2.211905 - .053463\ X)$

$R^2 = .98$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	6.9908	28,950
2	4.0958	188,080
3	2.3997	187,520
4	1.4059	49,260
5	.8237	92,820
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: OOLOGAH

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

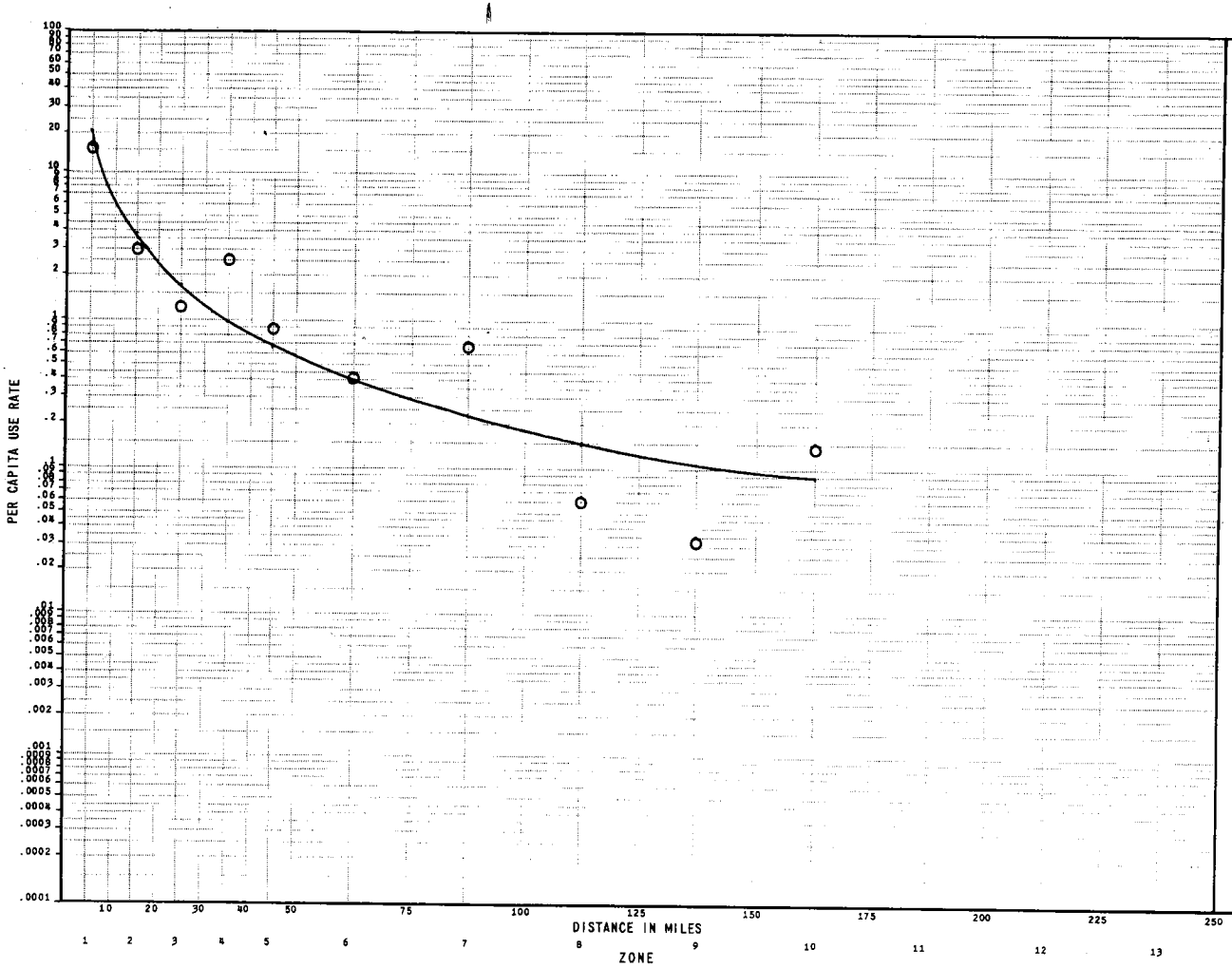
REGRESSION EQUATION:

R^2 = .

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1		12,840
2		28,800
3		217,750
4		222,820
5		92,980
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: TENKILLER

LEGEND

○ SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

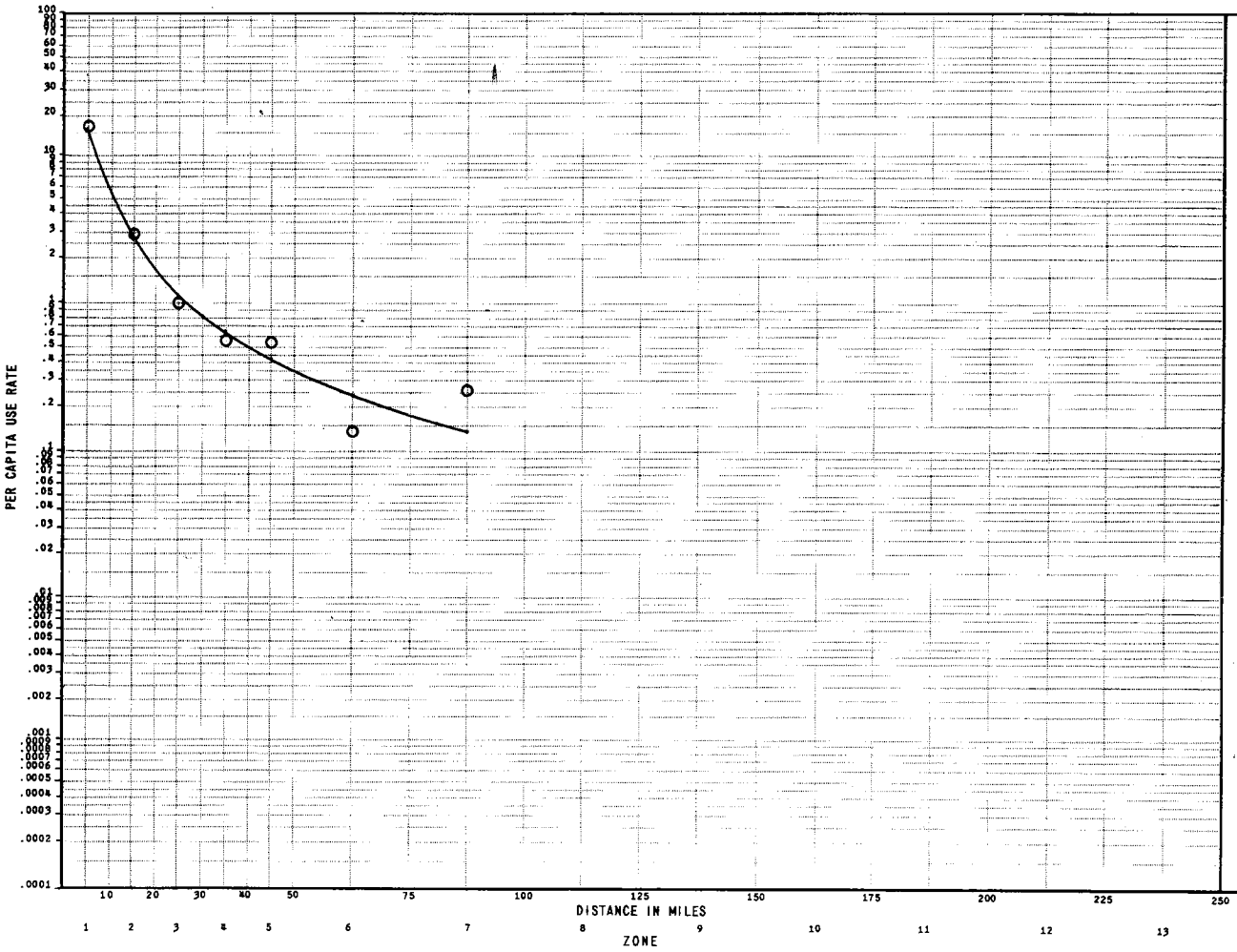
$Y = \text{Exp}(5.572918 - 1.576064\ LNX)$

$R^2 = .81$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	20.8289	6,580
2	3.6872	23,940
3	1.6484	61,510
4	.9700	42,200
5	.6528	97,360
6	.3890	714,820
7	.2289	298,100
8	.1541	511,900
9	.1123	794,100
10	.0863	836,000
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: TORONTO

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

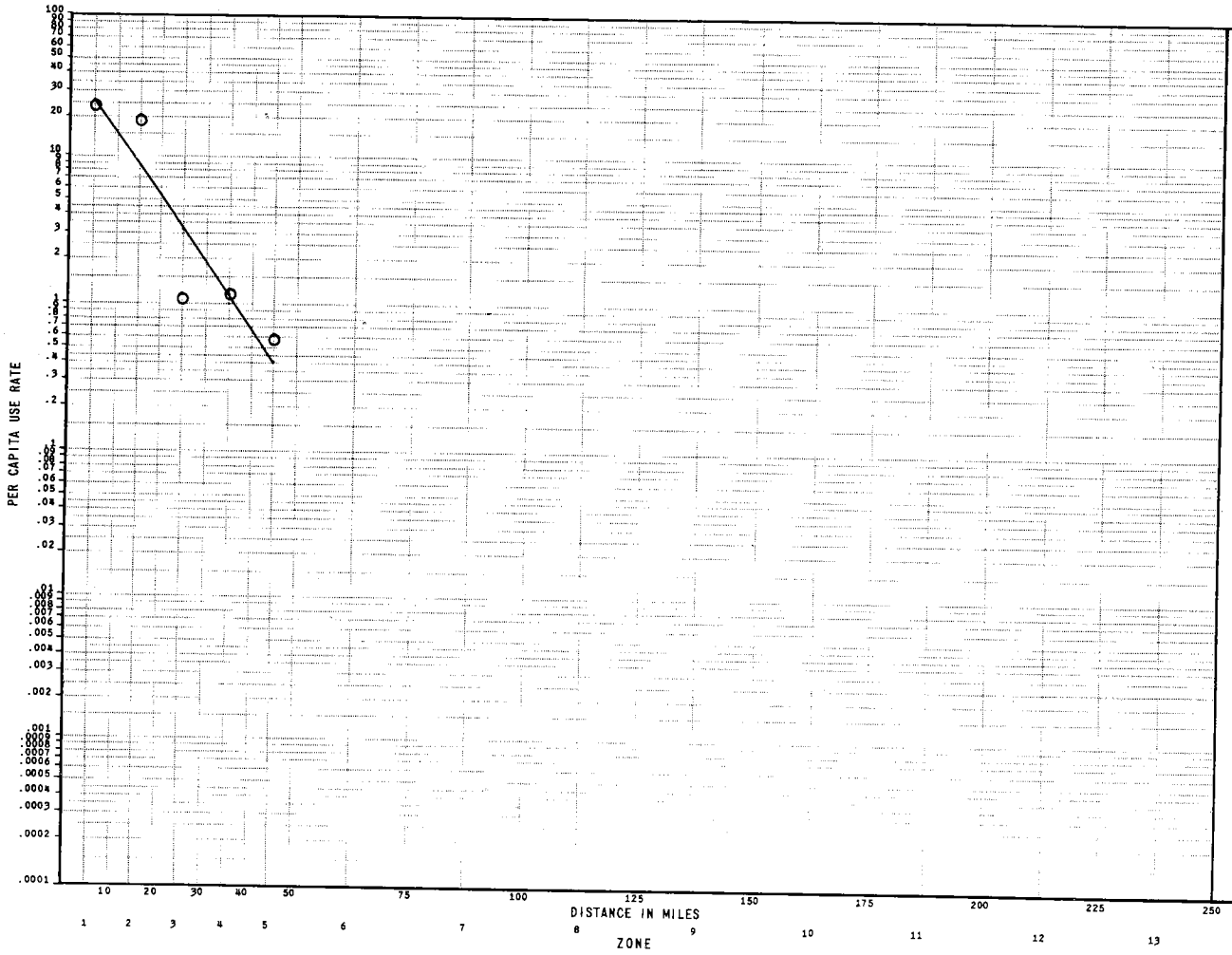
$Y = \text{Exp}(5.453512 - 1.654187\ LNX)$

$R^2 = .99$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	16.3006	1,850
2	2.6483	14,240
3	1.1376	16,990
4	.6521	35,290
5	.4303	47,180
6	.2499	144,770
7	.1433	418,600
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION



PLAN FORMULATION STUDIES - RECREATION

ESTIMATING INITIAL PROJECT RECREATION USE

PER CAPITA USE RATES 1966 – 1969

DISTRICT: TULSA

PROJECT: WISTER

LEGEND

O SURVEY ESTIMATE

—— REGRESSION ESTIMATE

REGRESSION EQUATION:

$Y = \text{Exp}(3.744446 - .102871\ X)$

$R^2 = .79$

ZONE	PER CAPITA 1/ USE RATE	ZONAL 2/ POPULATION
1	25.2820	6,520
2	9.0375	11,520
3	3.2307	15,800
4	1.1549	30,720
5	.4129	81,930
6		
7		
8		
9		
10		
11		
12		
13		

1/ REGRESSION ESTIMATE

2/ ESTIMATED 1965 POPULATION

PLAN FORMULATION AND EVALUATION STUDIES
RECREATION

SUPPLEMENT NO. 1
SUPPLEMENTAL RESERVOIR RECREATION USE DATA - 1969

TO
TECHNICAL REPORT NO. 2
ESTIMATING INITIAL RESERVOIR RECREATION USE

APPENDIX C

RECREATION USE DATA SUMMARIES

FEBRUARY 1971

RECREATION USE DATA SUMMARIES

District	Page No.
Fort Worth	C-3 and C-4
Little Rock	C-5
Nashville	C-6
Portland	C-7
Sacramento	C-8
Savannah	C-9
Tulsa	C-10 and C-11

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. BELTON	829	767	507	2,103	47	69	74	62	2.5	2.6	2.5	2.5	26	19	15	21	0	0	1	0	59	32	49	47
2. BENBROOK	2,979	1,991	1,227	6,197	66	53	69	62	2.8	2.7	2.2	2.6	31	19	15	24	2	1	2	2	53	27	51	44
3. CANYON	3,031	3,051	1,843	7,925	82	50	72	68	2.9	3.5	2.8	3.1	24	19	24	22	3	6	3	4	54	26	50	43
4. DAM B	700	595	578	1,873	71	63	68	68	2.6	3.1	2.6	2.7	24	21	2	16	4	7	1	4	72	47	45	56
5. GARZA-LITTLE ELM	1,968	2,025	825	4,818	76	72	80	75	2.7	2.9	2.4	2.7	26	34	19	28	5	2	6	4	44	19	43	34
6. GRAPEVINE	2,789	2,958	777	6,524	77	65	68	71	2.6	2.8	2.2	2.6	22	22	13	21	1	0	0	0	49	21	39	36
7. HORDS CREEK	331	535	154	1,020	73	64	69	68	2.8	3.3	2.4	3.0	20	12	14	15	3	7	13	7	58	26	47	40
8. LAVON	1,991	1,763	248	4,002	72	72	71	72	2.8	3.0	2.4	2.7	26	24	16	22	0	2	0	1	42	24	39	35
9. NAVARRO MILLS	1,532	1,750	905	4,187	76	60	55	65	3.0	3.2	2.9	3.1	50	46	52	49	3	2	1	2	82	60	81	73
10. PROCTOR	725	1,167	231	2,123	77	56	52	63	2.6	3.3	2.4	2.9	17	21	9	18	2	2	1	2	58	25	31	38
11. SAN ANGELO	415	238	270	923	65	56	60	61	2.5	2.7	2.1	2.4	2	1	0	1	0	5	2	2	40	35	0	26
12. WHITNEY	804	698	517	2,019	67	55	64	63	2.8	3.6	2.7	3.0	28	43	22	31	2	2	3	2	75	68	64	70
DISTRICT WT AVERAGE					73	61	69	68	2.7	3.0	2.5	2.8	27	25	19	24	2	2	2	2	55	28	47	43

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WTAVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. BELTON	21	23	30	24	2	37	0	14	0	6	0	2	1	2	1	1	28	22	33	27	1	0	0	0
2. BENBROOK	23	27	7	21	3	49	0	17	3	16	0	6	4	5	2	4	18	11	35	20	2	4	3	3
3. CANYON	38	19	28	29	10	37	5	18	7	17	3	9	5	6	5	5	18	27	28	24	2	5	3	3
4. DAM B	12	9	10	10	2	6	0	3	1	0	0	0	0	0	0	0	14	38	29	26	1	3	4	3
5. GARZA-LITTLE ELM	22	18	10	18	3	38	0	16	6	22	0	11	23	24	29	25	11	9	13	11	2	5	6	4
6. GRAPEVINE	16	13	5	13	5	42	0	20	6	23	0	12	10	11	4	10	12	7	24	12	13	12	30	15
7. HORDS CREEK	31	24	10	24	3	43	0	22	2	16	0	8	1	0	0	0	17	12	31	17	0	4	4	3
8. LAVON	21	18	15	18	0	29	0	9	2	9	0	4	12	9	4	9	18	12	13	15	18	17	32	22
9. NAVARRO MILLS	17	31	36	27	1	30	0	12	3	14	0	7	1	0	1	1	11	11	11	11	0	1	2	1
10. PROCTOR	26	17	17	20	2	53	0	27	2	20	1	11	4	0	2	2	24	23	44	26	2	1	2	1
11. SAN ANGELO	10	7	3	7	5	10	0	4	0	0	0	0	0	0	0	0	48	50	71	56	3	3	22	9
12. WHITNEY	12	15	3	10	1	16	0	5	1	8	0	3	0	0	0	0	3	1	19	7	1	2	1	1
DISTRICT WT AVERAGE	22	19	16	20	4	37	1	15	4	16	1	8	7	7	5	7	16	15	25	18	5	6	11	7

DISTRICT: FORT WORTH

YEAR: 1969

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. BELTON	4	3	4	4	0	0	0	0	4	3	4	4	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	2.9	2.9	2.7	2.8
2. BENBROOK	10	10	13	11	0	0	0	0	10	10	13	11	3.7	3.7	2.1	3.3	0.0	0.0	0.0	0.0	4.0	3.1	2.7	3.4
3. CANYON	19	23	20	21	0	0	0	0	19	23	20	21	2.3	4.5	2.5	3.1	0.0	2.7	0.0	2.7	4.6	3.5	3.6	4.0
4. DAM B	34	21	8	22	0	0	1	0	34	21	9	22	3.4	3.8	2.4	3.2	0.0	0.0	7.0	7.0	3.4	2.4	2.7	2.9
5. GARZA-LITTLE ELM	17	11	13	14	0	0	0	0	17	11	13	14	2.4	2.5	2.0	2.4	0.0	0.0	0.0	0.0	3.7	4.0	3.7	3.8
6. GRAPEVINE	10	9	1	8	0	0	0	0	10	9	1	8	2.0	2.1	2.4	2.1	2.0	0.0	0.0	2.0	3.2	3.1	2.1	3.0
7. HORDS CREEK	19	34	26	27	0	0	0	0	19	34	26	27	2.8	4.2	3.1	3.5	0.0	0.0	0.0	0.0	3.9	4.0	2.8	3.7
8. LAVON	11	13	4	10	0	0	0	0	11	13	4	10	2.4	2.5	2.0	2.3	0.0	0.0	0.0	0.0	4.6	4.3	3.1	4.0
9. NAVARRO MILLS	35	31	21	30	0	0	1	0	35	31	22	30	2.4	2.7	2.9	2.6	0.0	0.0	2.9	2.9	4.6	4.0	4.1	4.2
10. PROCTOR	19	17	21	18	0	0	0	0	19	17	21	18	3.1	3.6	4.1	3.5	0.0	0.0	0.0	0.0	3.6	3.2	2.1	3.2
11. SAN ANGELO	4	8	3	5	0	0	0	0	4	8	3	5	2.0	3.1	2.0	2.3	0.0	0.0	0.0	0.0	2.5	2.0	1.7	2.1
12. WHITNEY	44	56	26	42	0	0	0	0	44	56	26	42	2.5	3.0	2.6	2.7	0.0	0.0	0.0	0.0	5.4	4.7	3.9	4.8
DISTRICT WT AVERAGE	17	17	12	16	0	0	0	0	17	17	12	16	2.6	3.1	2.3	2.7	2.0	2.7	4.6	2.8	4.0	3.5	3.1	3.6

DISTRICT: FORT WORTH

YEAR: 1969

PLAN FORMULATION STUDIES - RECREATION — RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. BEAVER	1,157	1,452	668	3,277	49	45	48	47	2.4	2.9	2.3	2.6	33	22	24	26	2	6	3	4	66	52	55	58
2. BULL SHOALS	971	2,998	1,377	5,346	52	47	57	51	2.3	3.1	2.3	2.6	10	12	8	10	2	4	1	3	62	25	35	40
3. GREERS FERRY	1,903	3,313	591	5,807	70	62	68	66	2.8	3.4	2.4	3.1	12	11	17	12	3	7	1	5	48	27	38	36
4. NORFORK	1,615	3,028	901	5,544	55	45	48	49	2.5	3.3	2.3	2.8	12	7	9	9	1	1	1	1	55	22	37	36
5. TABLE ROCK	1,953	3,427	1,195	6,575	46	48	51	48	2.6	3.5	2.4	3.0	24	19	17	20	1	8	4	5	71	43	52	54
DISTRICT WT AVERAGE					54	50	54	52	2.5	3.3	2.3	2.8	17	13	14	14	2	5	2	3	60	32	43	44

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. BEAVER	10	9	10	10	0	23	0	9	0	4	0	2	0	6	3	3	24	25	33	26	4	1	3	3
2. BULL SHOALS	9	9	5	8	0	40	0	17	1	9	0	4	2	7	2	4	22	29	58	34	9	1	3	4
3. GREERS FERRY	12	12	0	10	3	53	0	28	2	16	1	9	9	7	5	7	33	27	59	33	0	0	0	0
4. NORFORK	6	5	2	5	4	60	0	30	0	12	0	6	2	11	6	7	35	21	55	32	0	0	0	0
5. TABLE ROCK	32	16	21	22	0	43	0	19	0	13	0	6	6	9	8	8	15	14	29	18	5	7	14	8
DISTRICT WT AVERAGE	14	10	8	11	1	44	0	20	1	12	0	6	4	8	5	6	25	23	47	29	4	2	5	3

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. BEAVER	6	28	9	15	12	22	20	18	18	50	29	33	4.4	4.6	3.0	4.2	4.8	5.1	3.8	4.7	3.5	3.1	3.4	3.3
2. BULL SHOALS	16	20	4	15	28	19	18	22	44	39	22	36	5.0	5.6	3.5	4.9	5.3	6.3	4.9	5.6	4.3	2.8	2.5	3.2
3. GREERS FERRY	29	41	8	32	3	2	18	4	32	43	26	37	3.9	3.5	3.4	3.6	2.4	2.6	3.0	2.6	3.8	2.9	2.8	3.2
4. NORFORK	9	26	4	16	12	17	25	17	21	43	29	33	4.5	6.2	4.9	5.4	7.8	7.8	8.6	8.0	3.5	3.1	2.6	3.1
5. TABLE ROCK	9	30	13	19	10	15	41	19	19	45	54	38	4.7	5.9	3.2	4.9	3.8	5.8	4.4	4.8	5.5	4.9	4.0	4.9
DISTRICT WT AVERAGE	14	29	7	19	14	14	25	16	28	43	32	36	4.5	5.2	3.6	4.6	4.8	5.5	5.1	5.2	4.2	3.4	3.0	3.6

DISTRICT: LITTLE ROCK

YEAR: 1969

SPK Form 352(OT)
17 Feb 70

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. LAKE CUMBERLAND	1,379	1,992	544	3,915	57	54	51	54	3.1	3.7	2.5	3.3	26	25	20	24	2	7	3	4	46	24	45	36
2. DALE HOLLOW	1,102	993	305	2,400	58	46	48	52	3.1	3.6	2.9	3.3	35	34	29	34	1	9	3	4	31	16	37	26
3. CENTER HILL	1,605	1,214	487	3,306	58	54	63	57	2.9	3.3	2.7	3.0	52	38	47	46	3	2	2	3	57	31	68	50
4. OLD HICKORY	748	964	210	1,922	62	64	61	63	2.4	2.9	2.1	2.6	41	21	28	30	2	10	1	5	62	31	53	47
5. CHEATHAM	512	400	179	1,091	59	51	54	55	3.1	2.9	2.8	3.0	20	23	8	19	0	0	0	0	56	47	42	50
DISTRICT WT AVERAGE					58	54	55	56	2.9	3.4	2.6	3.1	38	28	29	32	2	6	2	4	50	27	51	41

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. LAKE CUMBERLAND	19	11	7	13	16	42	0	25	2	12	0	6	20	29	14	23	19	12	34	18	0	0	1	0
2. DALE HOLLOW	5	4	2	4	10	28	0	15	4	15	0	8	12	19	2	13	38	20	52	33	0	0	0	0
3. CENTER HILL	9	13	0	9	12	21	0	13	2	5	0	3	12	26	9	16	13	10	13	12	0	0	1	0
4. OLD HICKORY	12	13	4	11	4	28	0	14	0	9	0	4	9	14	7	11	16	12	36	17	1	0	0	0
5. CHEATHAM	29	24	0	22	1	10	0	4	4	8	0	5	6	11	3	7	21	15	31	20	2	2	0	2
DISTRICT WT AVERAGE	13	12	3	11	10	29	0	16	2	10	0	5	13	22	8	16	20	13	31	19	0	0	1	0

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. LAKE CUMBERLAND	18	35	10	24	26	27	32	27	44	62	42	52	4.1	4.3	2.0	3.8	3.4	3.7	2.8	3.4	4.2	4.0	3.5	4.0
2. DALE HOLLOW	20	42	8	26	10	12	6	10	30	54	14	37	5.8	7.4	3.9	6.1	4.1	6.7	5.1	5.2	2.5	3.6	2.6	2.9
3. CENTER HILL	18	17	4	15	2	2	9	3	20	19	13	18	2.5	4.0	3.5	3.2	3.9	4.0	2.6	3.7	7.0	6.6	7.3	6.9
4. OLD HICKORY	13	33	9	22	0	0	0	0	13	33	9	22	2.4	4.8	2.7	3.5	0.0	0.0	0.0	0.0	3.4	3.2	2.9	3.2
5. CHEATHAM	7	2	0	4	2	6	7	4	9	8	7	8	2.2	2.0	0.0	2.1	2.0	2.7	3.4	2.5	3.4	3.8	2.8	3.4
DISTRICT WT AVERAGE	16	29	7	20	9	12	14	11	26	41	21	31	3.5	4.6	2.9	3.9	3.6	4.3	3.2	3.8	4.5	4.3	4.2	4.4

DISTRICT: NASHVILLE

YEAR: 1969

SPK Form 352(OT)
17 Feb 70

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. COTTAGE GROVE	1,971	1,297		3,268	34	56		42	3.4	3.6		3.5	17	23		19	0	0		0	2	0		1
2. DETROIT	3,205	3,238		6,443	66	55		61	3.8	4.2		4.0	28	20		24	4	4		4	38	34		36
3. DORENA	565	496		1,061	42	51		46	3.0	3.3		3.1	23	23		23	2	0		1	25	13		20
4. FERN RIDGE	2,735	5,036		7,771	62	57		59	3.1	3.3		3.2	11	10		10	0	0		0	1	1		1
5. HILLS CREEK	762			762	41			41	3.6			3.6	19			19	6			6	15			15
6. LOOKOUT POINT	641	1,180		1,821	35	49		44	3.3	3.4		3.4	16	17		17	2	0		1	7	2		4
7. THE DALLES	1,733	2,195		3,928	40	51		46	3.4	3.4		3.4	2	4		3	8	8		8	7	6		6
DISTRICT WT AVERAGE					51	54		53	3.4	3.5		3.5	16	13		14	3	2		2	14	9		11

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. COTTAGE GROVE	27	37		31	63	36		53	19	29		23	4	12		7	7	11		8	3	7		4
2. DETROIT	46	66		56	48	59		53	23	30		26	7	2		5	14	14		14	0	1		0
3. DORENA	33	13		24	27	18		23	12	31		21	13	7		10	9	16		12	6	13		9
4. FERN RIDGE	24	29		27	29	46		40	6	13		10	19	8		12	16	13		14	13	11		12
5. HILLS CREEK	20			20	51			51	6			6	9			9	10			10	4			4
6. LOOKOUT POINT	30	39		36	35	39		38	16	20		19	19	24		22	6	7		7	27	5		13
7. THE DALLES	36	44		40	23	21		22	0	1		1	1	1		1	45	38		41	0	0		0
DISTRICT WT AVERAGE	32	40		36	40	42		41	12	17		15	10	7		8	17	17		17	6	6		6

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. COTTAGE GROVE	0	0		0	0	0		0	0	0		0	0.0	0.0		0.0	15.0	0.0		15.0	2.8	3.4		3.0
2. DETROIT	11	15		13	0	0		0	11	15		13	4.0	4.5		4.2	4.9	0.0		4.9	4.9	5.1		5.0
3. DORENA	9	7		8	0	0		0	9	7		8	3.3	9.9		6.3	0.0	0.0		0.0	3.0	3.0		3.0
4. FERN RIDGE	0	0		0	0	0		0	0	0		0	0.0	0.0		0.0	0.0	3.0		3.0	2.0	2.6		2.4
5. HILLS CREEK	24			24	0			0	24			24	3.5			3.5	0.0			0.0	3.0			3.0
6. LOOKOUT POINT	0	0		0	0	0		0	0	0		0	0.0	4.0		4.0	0.0	0.0		0.0	2.0	2.8		2.5
7. THE DALLES	4	5		5	0	0		0	4	5		5	2.0	2.3		2.2	0.0	0.0		0.0	2.2	2.0		2.1
DISTRICT WT AVERAGE	5	4		4	0	0		0	5	4		4	3.1	4.1		3.6	9.1	3.0		6.0	3.0	3.1		3.1

DISTRICT: PORTLAND

YEAR: 1969

SPK Form 352(OT)

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. BLACK BUTTE		1,191	62	1,253		56	42	55		3.2	2.0	3.1		24	0	22		4	0	4		34	42	35
2. ENGLEBRIGHT		809	224	1,033		68	48	63		3.1	3.1	3.1		30	16	27		0	0	0		33	24	31
3. ISABELLA		4,258	562	4,820		64	57	63		3.5	2.3	3.3		24	10	22		7	6	7		74	93	77
4. NEW HOGAN		2,008	117	2,125		66	35	64		3.3	2.4	3.2		29	16	28		2	14	3		28	57	30
5. PINE FLAT		2,186	28	2,214		68	65	68		3.1	1.9	3.1		9	10	9		0	0	0		36	48	36
6. SUCCESS		1,895	911	2,806		71	64	68		3.0	2.5	2.8		21	1	14		1	0	1		32	59	41
7. TERMINUS		367	675	1,042		62	62	62		2.8	2.6	2.7		40	15	23		0	0	0		41	42	42
DISTRICT WT AVERAGE						66	58	64		3.2	2.5	3.0		22	9	19		3	2	3		46	60	49

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. BLACK BUTTE		35	7	33		30	0	28		31	0	29		4	0	4		20	52	24		2	0	2
2. ENGLEBRIGHT		31	53	36		23	0	18		32	0	25		21	11	19		21	23	21		1	0	1
3. ISABELLA		13	16	13		46	1	39		15	3	13		1	0	1		10	4	9		0	0	0
4. NEW HOGAN		40	23	39		55	0	51		33	0	31		8	0	7		17	35	18		1	0	1
5. PINE FLAT		24	0	24		8	0	8		11	0	11		2	0	2		29	23	29		1	29	2
6. SUCCESS		27	12	22		3	0	2		13	0	8		5	0	3		37	40	38		1	0	1
7. TERMINUS		42	31	35		3	0	1		43	10	21		2	8	6		13	38	29		0	0	0
DISTRICT WT AVERAGE		25	21	24		29	0	23		20	3	17		4	3	4		21	29	23		1	0	1

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. BLACK BUTTE		25	0	23		0	0	0		25	0	23		3.7	0.0	3.7		7.0	0.0	7.0		3.4	1.8	3.3
2. ENGLEBRIGHT		11	0	8		5	0	4		16	0	12		2.6	0.0	2.6		3.8	0.0	3.8		4.3	3.4	4.1
3. ISABELLA		50	46	49		20	17	19		70	63	69		4.7	4.1	4.6		4.7	5.4	4.8		4.0	3.5	3.9
4. NEW HOGAN		29	30	29		1	8	1		30	38	31		2.6	2.4	2.6		2.9	10.0	3.4		4.3	2.9	4.2
5. PINE FLAT		12	8	12		10	0	10		22	8	22		3.0	2.0	3.0		4.1	0.0	4.1		3.3	3.1	3.3
6. SUCCESS		5	0	3		0	4	1		5	4	5		2.7	0.0	2.7		2.0	4.0	2.7		3.2	2.8	3.1
7. TERMINUS		5	6	6		11	15	14		16	21	19		2.1	2.0	2.0		3.7	2.7	3.0		3.9	3.2	3.4
DISTRICT WT AVERAGE		26	14	24		9	10	9		35	24	33		3.4	3.0	3.3		4.0	3.7	4.0		3.7	3.1	3.6

DISTRICT: SACRAMENTO

YEAR: 1969

SPK Form 352(OT)
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PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. HARTWELL	2,648		512	3,160	62		54	60	2.8		2.3	2.7	23		17	22	2		0	2	28		33	29
2. CLARK HILL	5,808		1,244	7,052	75		70	74	2.9		2.8	2.9	16		20	17	1		2	1	20		20	20
DISTRICT WT AVERAGE					71		64	69	2.9		2.6	2.8	18		19	18	1		1	1	23		24	23

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. HARTWELL	16		16	16	13		0	10	6		0	5	16		13	15	30		49	34	2		2	2
2. CLARK HILL	31		29	31	9		1	7	2		0	2	5		1	4	30		37	31	5		17	7
DISTRICT WT AVERAGE	26		25	26	10		1	8	3		0	2	9		5	8	30		41	32	4		12	5

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. HARTWELL	12		12	12	1		0	1	13		12	13	5.3		3.0	4.8	2.2		0.0	2.2	3.0		2.7	2.9
2. CLARK HILL	9		10	9	4		4	4	13		14	13	3.8		3.7	3.8	3.1		6.0	3.6	3.0		3.2	3.0
DISTRICT WT AVERAGE	10		11	10	3		3	3	13		13	13	4.3		3.5	4.1	2.8		6.0	3.2	3.0		3.0	3.0

DISTRICT: SAVANNAH

YEAR: 1969

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PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	NO. OF PERSONS SURVEYED				% OF VISITORS ON WEEKEND				NO. OF PERSONS PER VEHICLE				% OF VEHICLES WITH BOAT-TRAILER				% OF VEHICLES WITH HOUSE-TRAILER				FISHING (%)			
	SP	SUM	FALL	TOTAL	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. CANTON	4,809	6,261	1,338	12,408	77	64	67	69	3.3	3.4	2.9	3.3	12	12	10	12	3	0	2	1	46	17	41	31
2. DENISON		1,461	609	2,070		61	65	62		3.4	2.7	3.2		21	29	24		1	1	1		29	69	43
3. EUFAULA	1,737	3,217	903	5,857	67	57	64	61	2.7	3.4	2.6	3.0	10	12	17	12	0	1	2	1	31	21	45	28
4. FALL RIVER	486	587	251	1,324	69	78	61	71	2.9	3.1	2.8	3.0	8	13	3	9	9	5	11	8	51	37	44	44
5. FORT GIBSON	1,197	1,532	436	3,165	65	59	57	61	2.9	3.3	2.4	3.0	22	12	16	17	1	1	0	1	63	21	63	45
6. FORT SUPPLY	1,741	1,580	299	3,620	63	57	45	59	2.9	3.1	2.3	2.9	8	14	0	10	1	1	0	1	40	10	17	26
7. GREAT SALT PLAINS	1,217	1,029	566	2,812	79	67	74	74	3.1	3.2	2.6	3.0	2	12	2	6	2	0	3	2	33	18	36	28
8. HEYBURN	1,092	1,420	374	2,886	63	56	50	58	3.5	4.0	3.4	3.7	12	13	9	12	0	1	2	1	19	5	34	15
9. HULAH	497	544	182	1,223	65	62	45	60	2.9	3.5	2.3	3.0	11	19	13	15	9	8	2	7	60	19	50	42
10. KEYSTONE	2,898	3,681	725	7,304	77	62	57	68	3.0	3.4	2.4	3.1	18	9	19	14	0	0	0	0	21	4	30	14
11. OOLOGAH	4,207	3,942	1,323	9,472	64	65	44	61	3.7	3.5	3.4	3.6	4	5	2	4	0	0	3	0	39	39	42	39
12. TORONTO	470	529	283	1,282	72	64	70	69	3.2	4.0	3.3	3.5	21	29	9	21	6	7	11	8	34	21	24	27
13. TENKILLER	828	1,771	280	2,879	73	55	37	58	3.0	3.5	2.5	3.2	15	32	11	24	3	1	0	1	30	31	54	34
14. WISTER	644	735	342	1,721	46	59	49	52	2.3	2.8	2.2	2.5	7	4	3	5	1	2	5	2	50	27	51	41
DISTRICT WT AVERAGE					69	59	58	63	3.1	3.4	2.7	3.2	11	13	11	12	2	1	2	2	38	20	43	31

PROJECT	PICNICKING (%)				SWIMMING (%)				WATER SKIING (%)				PLEASURE BOATING (%)				SIGHTSEEING (%)				OTHERS (%)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. CANTON	17	11	3	12	1	48	0	24	1	6	0	3	4	4	1	4	36	21	56	31	0	0	0	0
2. DENISON		6	2	5		47	0	30		7	0	5		9	6	8		11	24	15		2	1	2
3. EUFAULA	4	6	5	5	1	52	5	27	2	15	1	8	2	4	1	3	57	16	38	33	5	1	4	3
4. FALL RIVER	2	8	4	5	0	10	0	4	0	14	0	6	4	1	0	2	38	42	44	41	0	0	0	0
5. FORT GIBSON	22	41	20	30	0	77	1	38	0	14	0	6	4	1	3	3	21	10	20	16	3	2	6	3
6. FORT SUPPLY	26	24	3	23	3	49	0	21	2	10	0	5	4	6	0	4	37	29	77	38	0	1	3	1
7. GREAT SALT PLAINS	18	19	1	14	15	27	1	16	0	2	0	1	1	10	1	4	38	32	60	41	0	0	1	0
8. HEYBURN	22	14	39	21	36	58	3	41	4	11	0	7	4	5	6	5	14	5	15	10	0	0	0	0
9. HULAH	15	30	0	18	7	71	0	31	3	24	0	11	4	6	0	4	18	12	35	19	2	0	5	2
10. KEYSTONE	20	10	6	14	25	52	6	35	5	4	2	4	7	5	4	6	21	16	45	22	0	0	5	1
11. OOLOGAH	16	20	5	16	5	15	0	9	2	3	0	2	1	2	0	1	42	33	53	40	0	0	0	0
12. TORONTO	9	12	3	9	0	29	0	10	1	11	2	5	10	13	5	10	48	29	55	43	0	1	0	0
13. TENKILLER	20	18	16	18	5	71	0	43	4	40	0	24	17	2	1	6	42	12	40	24	3	3	1	3
14. WISTER	10	20	5	13	0	20	0	8	0	1	0	0	1	0	1	1	38	34	43	38	0	0	0	0
DISTRICT WT AVERAGE	17	15	7	14	8	45	1	24	2	10	0	5	4	4	2	4	35	21	45	30	1	1	4	1

DISTRICT: TULSA

YEAR: 1969

SPK Form 352a(OT) 17 Feb 70

PLAN FORMULATION STUDIES - RECREATION

RECREATION USE DATA SUMMARY

PROJECT	CAMPING ON PROJECT (%)				STAYING IN AREA (%)				CAMPING ON PROJ. AND STAYING IN AREA (%)				AVG. DURATION OF VISIT CAMPING ON PROJ (Days)				AVG. DURATION OF VISIT STAYING IN AREA (Days)				AVG. DURATION OF VISIT DAY USE (Hours)			
	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG	SP	SUM	FALL	WT AVG
1. CANTON	7	9	7	8	1	0	1	1	8	9	8	8	3.9	3.6	4.9	3.7	4.9	4.5	3.2	4.5	4.2	4.2	3.4	4.1
2. DENISON		17	8	14		23	22	23		40	30	37		4.7	4.7	4.7		4.3	4.1	4.2		3.8	4.4	4.0
3. EUFAULA	5	34	15	21	7	10	7	8	12	44	22	30	3.3	4.1	2.4	3.5	4.0	3.7	2.8	3.6	2.6	3.4	3.0	3.1
4. FALL RIVER	18	23	16	20	0	0	0	0	18	23	16	20	2.2	2.3	2.0	2.2	0.0	0.0	0.0	0.0	3.9	3.3	3.3	3.5
5. FORT GIBSON	13	9	5	10	1	3	3	2	14	12	8	12	3.1	3.0	2.1	2.9	5.9	2.6	3.7	4.1	4.3	3.7	3.5	3.9
6. FORT SUPPLY	1	4	0	2	0	0	0	0	1	4	0	2	2.3	4.0	0.0	3.1	0.0	0.0	2.0	2.0	3.3	3.3	1.9	3.1
7. GREAT SALT PLAINS	2	4	8	4	0	1	0	0	2	5	8	4	2.5	2.7	3.1	2.7	2.0	14.0	2.0	6.2	2.4	2.9	2.5	2.6
8. HEYBURN	0	2	2	1	0	0	0	0	0	2	2	1	0.0	2.7	3.5	2.9	0.0	0.0	0.0	0.0	3.1	3.8	3.3	3.4
9. HULAH	26	34	11	26	3	12	5	7	29	46	16	33	2.7	4.5	2.9	3.4	2.8	2.0	2.0	2.3	3.6	4.1	2.4	3.6
10. KEYSTONE	3	9	3	6	0	0	0	0	3	9	3	6	4.5	5.1	2.6	3.2	0.0	2.0	0.0	2.0	3.2	3.0	2.4	3.0
11. OOLOGAH	2	4	5	3	0	0	0	0	2	4	5	3	2.9	3.0	2.8	2.9	0.0	0.0	0.0	0.0	3.0	3.3	2.9	3.1
12. TORONTO	20	25	24	23	0	0	0	0	20	25	24	23	3.3	3.1	2.5	3.0	0.0	0.0	0.0	0.0	3.4	4.0	2.8	3.5
13. TENKILLER	12	34	13	25	13	10	9	11	25	44	22	36	3.7	5.4	5.4	4.9	2.9	3.3	3.9	3.3	2.6	4.0	3.2	3.5
14. WISTER	12	18	31	18	10	10	1	8	22	28	32	27	2.7	2.4	2.5	2.5	10.0	3.8	4.4	6.4	2.9	3.0	2.1	2.8
DISTRICT WT AVERAGE	6	14	9	10	2	4	3	3	8	17	13	13	3.3	3.8	3.3	3.5	4.7	4.0	3.2	4.1	3.3	3.6	3.0	3.4

DISTRICT: TULSA

YEAR: 1969

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER IWR Research Report 74-R1	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE *(and Subtitle)* Plan Formulation and Evaluation Studies - Recreation "Volume II of V - Estimating Initial Reservoir Recreation Use"		5. TYPE OF REPORT & PERIOD COVERED Technical Report No. 2 Oct 69 - Jun 71 6. PERFORMING ORG. REPORT NUMBER
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18. SUPPLEMENTARY NOTES

19. KEY WORDS *(Continue on reverse side if necessary and identify by block number)*

Estimating Recreation Uses; Multiple Regression Analyses - Recreation; Recreation Use Predictions; Reservoir Recreation

20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

This report presents methodology for estimating initial recreation use at prospective Corps of Engineers reservoirs. It is the outgrowth of recreation-use studies instituted by the Office of the Chief of Engineers, Wash., D. C.

The procedure described utilizes the "most similar project" concept; i.e., an existing reservoir that is most comparable in size, operation, and anticipated recreation-use characteristics. Relating recreation-use

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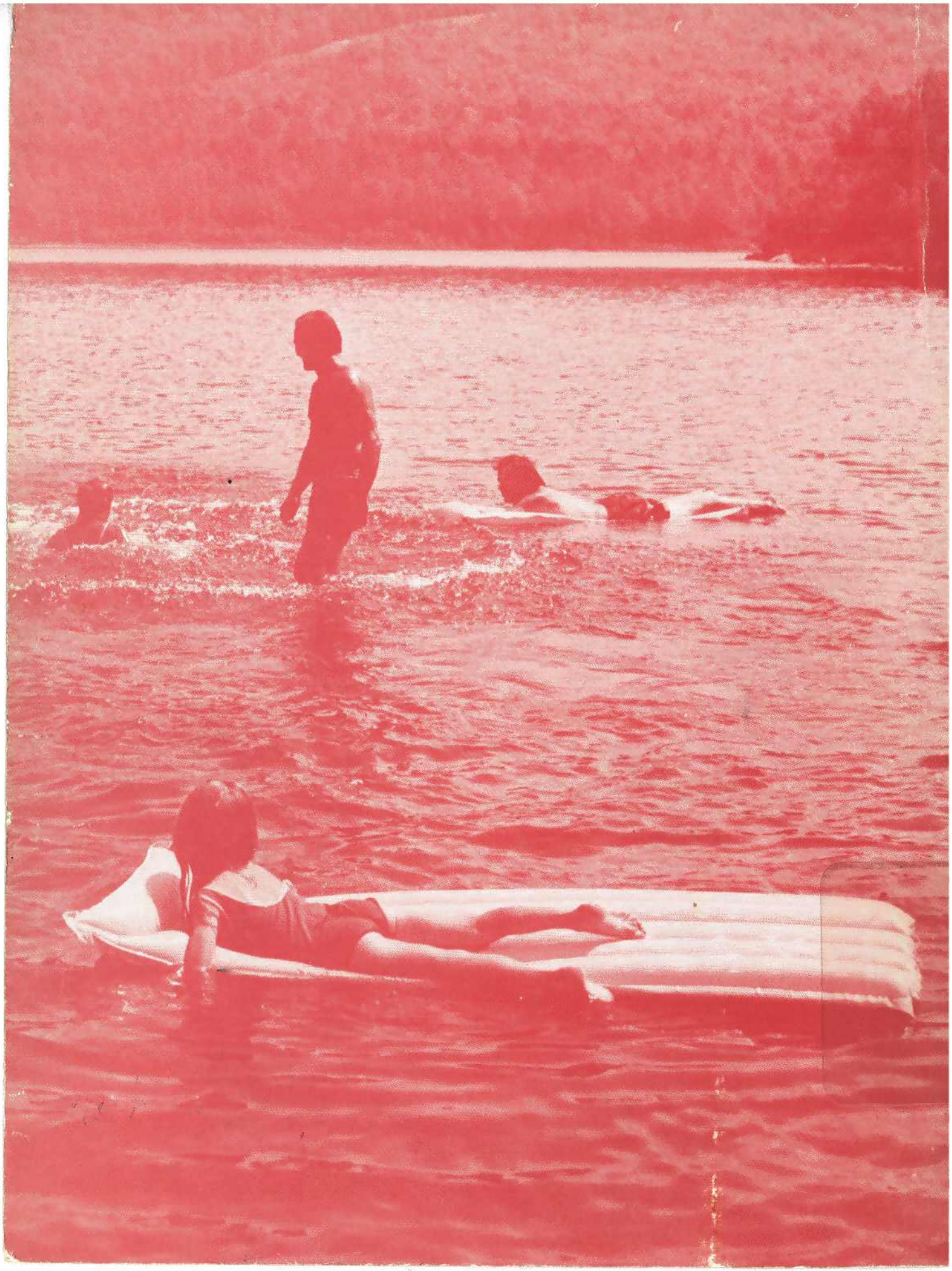
information from an existing reservoir to a reservoir under study provides the basis for the use estimating technique.

The report provides general descriptions, pertinent project information, and recreation-use data for 52 existing Corps reservoirs. It includes detailed discussion and evaluation of a prospective reservoir project and general criteria for selecting a similar project from among those reservoirs included. For illustrative purposes, an example detailing the application of the methodology is furnished. While the methodology eliminates much of the "guess work" previously associated with estimating the recreation use and benefits for Corps reservoir projects, it is emphasized that it is by no means the "last word" or final solution. There are inherent deficiencies in the method. However, as more recreation-use data are collected and analyzed, it is planned that the technique will be revised and improved.