COUNTY PARK SYSTEMS IN MICHIGAN: AN ANALYSIS OF SPATIAL, LOCATIONAL, AND ADMINISTRATIVE STANDARDS

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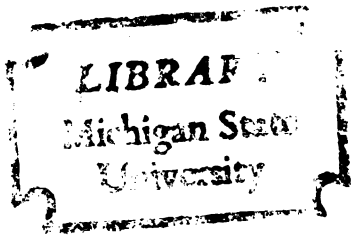

ABSTRACT

COUNTY PARK SYSTEMS IN MICHIGAN: AN ANALYSIS OF SPATIAL, LOCATIONAL, AND ADMINISTRATIVE STANDARDS

By

David McCreery

This study was concerned with an evaluation of size, acreage, location, and administration for county park systems in Michigan. Evaluation, in turn, necessitated a knowledge of the roles county parks played in the provision of outdoor recreation services for the residents of Michigan. Once the roles were determined, a means of evaluating the counties' performance was necessary. Performance was measured by comparing existing characteristics with related standards. The results of the comparison indicated an evaluation of county park systems.

Prior to the actual evaluative process it was necessary to substantiate the concept that recreation was a valid function of county government. To accomplish that objective it was necessary to trace significant developments and philosophies in recreation.

Recreation was shown to have been an integral component in the lives of all people. The values attributed to recreation have been largely determined by social, economic, and political institutions in power. In the Greek and Roman periods recreation was considered a natural expression of life. During the Middle Ages the Catholic Church altered the concept of recreation. Recreation was then considered a re-creative function enabling man to prepare for the succeeding day's labors.

England was credited with several significant trends. First, William the Conqueror established the county as the primary unit of local government. Second, the use of parks became the privilege of all citizens. Finally, the informal concept of park design replaced the more formal parks established in France and Italy.

As a colony of Great Britain, the United States inherited the three trends previously indicated. A strictly American influence on recreation was the Puritan Ethic, i.e., recreational activities were sinful and therefore not accepted by society. The Puritan Ethic has continued to influence Americans' concept of recreation, though the degree of influence has diminished significantly.

Though it was difficult to analyze philosophies of recreation in the current society, the trend appeared to have been in the direction of considering recreation as a socially constructive product.

Recreation was thought to have been one of several factors creating a mentally and physically stable society. Because recreation personified social values it, like education, was considered a valid governmental responsibility.

Given the various levels of government, the problem often encountered was that of allocating responsibilities between the governing agencies. The county has been considered an intermediary agency working between the city and State. The nature of county services encompassed a wide variety of recreational functions, depending on the local requirements. However, the county was generally thought to have been primarily responsible for day-use recreation services.[1]

In an attempt to evaluate the four criteria previously indicated the following standards were adopted:

1. Each county park system should have a separate county park and recreation commission as a policy-making body.
2. Some county parks and recreation facilities should be within at least fifteen miles of each county resident's home.

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[1]Day-users were those persons spending an entire day, or part of a day, at a park.

3. County parks, excluding roadside parks, should be between 100 and 400 acres in size.
4. Total county park acreage should meet or exceed that amount prescribed by the supply-demand standard indicated in Chapter Four for any given county.

Each county in Michigan was numerically evaluated according to the four standards. The scores were then totaled. The total score indicated either compliance or degrees of non-compliance with suggested standards.

The results of the evaluative technique indicated that there were three distinct groups of counties in the State. Group One either satisfied the four requirements or was relatively close to satisfying them. Group Two was composed of counties having somewhat greater degrees of non-compliance with the four standards. Group Three counties were those with the least compliance with the standards.

Only one county, Genesee County, met all four suggested standards. The remaining 82 counties proved the second hypothesis (county park systems in Michigan are inadequate) correct.

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CHAPTER I

AN INTRODUCTION TO COUNTY PARK ANALYSIS

Introduction

In the past, county government has been a relatively insignificant supplier of park and recreation services. As the general demand for such services increased, counties have been gradually forced into a greater responsibility. The reason for county involvement has generally been credited to two factors. These factors, H. S. Duncombe stated, were:

> First, no other unit of government was providing these services for densely populated but unincorporated areas. Secondly, there are certain types of parks and recreational services that are better provided by a unit of government having a larger area than a city.[1]

In order to satisfy residents' demand for these recreational services, as well as that demand created by nonresidents, some knowledge about county government was needed.

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[1]H. S. Duncombe, County Government in America (Washington, D.C.: National Association of Counties, 1966), pp. 90-91.

The need for adequate "standards"[1] was apparent for three reasons. First, people demand a wide variety of recreational services of which, as Duncombe stated, the county provides only certain types. Therefore, standards that distinguish areas of emphasis for county government appear to have been a necessary requirement. Second, funding for any public endeavor was generally limited. Therefore, a basis for distributing scarce government funds was needed. Finally, federal, state, and local governments have been involved in the provision of recreation services for many years. The counties have not generally had the advantage of such long, practical experience. Therefore, in order to "supplement" the limited amount of knowledge available to county governments, it was felt that a set of standards was necessary. These standards would then be used as a guide in the development of county park and recreation systems.

There has been considerable skepticism concerning the value of standards. Charles Doell attempts to resolve the argument by stating:

> . . . Concerning park classifications and corresponding standards that however inexact they may be, how general the need is for modifications in applying them, how subject they may be

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[1]When used in conjunction with recreation, standards generally refer to a minimum acceptable level of some recreation service or product.

> to criticism because of the unscientific way in which they have been compiled and the empherical experiences on which most reliance is placed, there is enough inherent merit in them to justify a high place in the list of tools which are used in evaluating and planning a park and recreational system.[1]

Standards critics suggest that the current level of competency of standards research may cause errors in analysis and subsequent decisions based on the incorrect analysis. However, until improved standards are developed, recreation practitioners will be forced to make decisions on unreliable standards. Assuming standards are a vital tool in recreation planning, the problem then becomes one of continually improving and re-evaluating standards. The standards developed in this study were an evaluation of, and suggested alternative to, the previously used county park standards for acreage requirements, location, size, and administration.

Statement of the Problem

The problem was one of determining whether or not Michigan's county park systems were fulfilling their responsibilities at an adequate level. In order to determine an answer to that problem, three areas had to be examined:

1. A measure of demand for county park services had to be determined.

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[1]Charles E. Doell, Elements of Park and Recreation Administration (Minneapolis: Burgess Publishing Company, 1964), p. 27.

2. A knowledge of the current supply of county park facilities was required.

3. A knowledge of other interrelated factors affecting the development and use of parks had to be known.

Given the information necessary to solve those problems, could a logical answer be derived?

Significance of the Problem

It is generally accepted that man needs recreation. As S. R. Slavson stated:

> Everyone feels the need within himself for some satisfying occupations and diversions that will remove him, psychologically at least, from the activities of everyday living. This craving for difference and diversion is primary and basic to man as a biological, psychological, and social entity. Denying or starving it frequently leads to more or less serious personality difficulties, and a community that fails to supply recreational outlets may in the long run pay dearly for it, both financially and through a loss of human resources.[1]

In Michigan, an increased concern has been expressed about the need for counties taking a more active role as suppliers of recreational services. That concern probably emanated from an increased demand by the people for "county orientated" services, while increases in supply remained relatively slight. In Oakland County the need for county recreation has been outlined as follows:

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[1]S. R. Slavson, Recreation and the Total Personality (New York: Association Press, 1948), p. v.

> Every study shows a great deficiency in recreational facilities in the Counties' area of responsibility. We are beginning to see what should have seemed obvious before, that recreation for an urban population is also an essential and vital service, not just some kind of luxury. [1]

It has been generally assumed that every county in Michigan required "more" county park and recreation space. However, relatively few attempts have been made that actually relate demand for county parks with the current supply. Therefore, determining the need for additional county parks has been primarily based on assumptions. The lack of a more scientific basis for measuring park requirements was particularly significant when counties tried to justify additional federal, state, and local funds for county parks.

The actual determination of total "required" park acreage to serve the optimum recreational requirements of county residents has been one of the most significant problems encountered by most county park and recreation staff. Once an accurate measure of required acreage has been determined, the acreage should be distributed throughout the county in a system of parks. Distribution, in turn, necessitated a knowledge of at least two additional factors. First, the county had to know what size each park should be to best serve its intended purpose. Second, the county had to ascertain the

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[1] Gerald C. Lacey, The Creation of Recreation (Oakland County: Oakland County Parks and Recreation Commission, 1968), p. 3.

optimal location of new park areas in order to best serve the requirements of the county residents.

The factors of preferable location and size have been termed significant factors in the use of county parks. For example, in an attempt to answer a question of "how much recreation area was required," Marion Clawson suggested: "The location of an area, its physical characteristics, its design, its administration, and other factors are often as important as the actual areal extent."[1]

One further area of significance mentioned by Clawson concerned the type of governing body administering the county park and recreation system. The need for competent county leadership was aptly stated as follows: "Imaginative leadership in County government is essential. The future of all people, now and forever, depends on this leadership and action."[2]

In Michigan, most county park departments were initially developed as part of the county road departments. However, recent State legislation enabled the County Board of Supervisors to establish a separate county recreation commission.[3] The nature of the policy

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[1]Marion Clawson, Economics of Outdoor Recreation (Baltimore: Johns Hopkins Press, 1966), p. 147.

[2]Lacey, op. cit.

[3]L. F. Twardzik, Summary of Laws Relating to Local Parks and Recreation (East Lansing: Michigan State University, 1965), pp. 14-18.

making body has significant influence on county park and recreation systems. That influence undoubtedly prompted the Michigan Outdoor Recreation Institute[1] to encourage the establishment of park and recreation commissions in every county in Michigan.

The significance of total acreage requirements, size of each park, park locations in relationship to home locations, and nature of the governing board are considered to be essential ingredients of a county park system. Knowledge of acceptable standards for each, so far as they can be developed, is essential in determining the quality of any county park and recreation system.

Limitations of the Study

The following are limitations of this study:

1. The study will examine only the following four characteristics of county park systems in Michigan: Required park acreage, size, location, and administration.
2. The study will utilize information on "supply" derived primarily from the 1969 County Park and Recreation Survey, Michigan State Association of Supervisors. Supplemental data will be used when available.

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[1]The institute was jointly sponsored by the National Association of Counties and the Michigan State Association of Supervisors. It was held at the Sheriton Hotel, Detroit, in April, 1969.

3. The study will utilize only those county characteristics derived from the 1960 United States Census of Population.
4. The study will analyze each county separately. Multi-county characteristics will be analyzed only where deemed necessary.

Assumptions

The following assumptions are made in this study:

1. The information derived from the Michigan State Association of Supervisors' questionnaire, and other sources, is assumed to be correct.
2. Data collected from the 1960 U. S. Census of Population is assumed to be accurate.
3. Measured social and economic influences on recreation demand data derived from several sources is assumed to be accurate.

Hypothesis

It is hypothesized that recreation is a valid responsibility for county government. It is further hypothesized that county park systems are generally inadequate. This inadequacy will be measured by the following set of subhypotheses:

1. Each county system should have a separate county park and recreation commission as a policy-making body.
2. Some county parks and recreation facilities should be within at least fifteen miles of each county resident's home.
3. County parks, excluding roadside parks, should be between 100 and 400 acres in size.
4. Total county park acreage should meet or exceed that amount prescribed by the supply-demand standard indicated later in Chapter IV for any given county.

Definitions

The following are definitions of terms used in this study:

1. Standards: A general numerical basis for comparison or a criterion for measure employed by county park systems.
2. Leisure: There are numerous definitions of leisure varying in interpretation with dates of origin. In this study the formal interpretation equating leisure with free-time will be used.
3. Recreation: The refreshment of the mind and body through some means which in itself is pleasureful.
4. Play: Similar to recreation, though generally associated with children.

5. County Park Supply: The number and size of park areas of facilities currently being provided by the county.
6. County Recreation Demand: Like recreation and leisure, demand has several meanings. In the context of this study, demand means the total number of acres required to satisfy a given level of anticipated park use on a given date.
7. Day-Use: Recreation experience lasting a single day, or a portion of that day.
8. Regional Park: A recreation resource serving a large percentage of residents from more than one county.
9. County Park: A recreation resource primarily serving residents of only one county.

CHAPTER II

A REVIEW OF TRENDS AND DEVELOPMENTS INFLUENCING COUNTY PARKS

The belief that recreation is a valid service of county government has been widely accepted. There exist, however, some people who suggest that recreation is not a governmental responsibility; rather, recreation is a personal value. Certainly the choice of participating in any given activity is, or should be, left to the individual. In Chapter II, however, it will be shown that the desire for recreation is inherent in society. Certain forms of recreation that cannot be met on an individual basis then become a responsibility of government.

Recreation in the Early Stages

Archaeological evidence from primitive societies indicated that man's time was consumed almost exclusively with such activities as food gathering and defense. Cave dwellers, for example, graphically depicted hunting and fishing exploits on the walls of their homes. Today we generally consider these activities to be recreative

in nature. Whether these elements were construed as embodying recreative connotations for primitive man was difficult to substantiate, since we lack knowledge of the values early man attributed to each. However, it has been stated that primitive man did play. In fact, according to Johan Huizinga, play occurred prior to culture.[1] That belief stemmed from viewing inferior animals engaged in play activities.

It was likely that man's early play activities had motivations attached to them other than the enjoyment of the activity itself. Woody reported that physical activities of primitive man logically fell into two major categories:

> (1) An informal apprenticeship by which he prepared for the various physical occupations essential to life; and (2) play activities which may have served a utilitarian end ultimately, but were recreational and were engaged in primarily because they were fundamentally satisfying.[2]

According to Leo Frobenius, archaic man "plays the order of nature as imprinted on his conscious."[3] This "playing at nature," Frobenius explained, was the starting point of all social order and

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[1]Johan Huizinga, Homo Ludens (Boston: Beacon Press, 1950), p. 1.

[2]Thomas Woody, Life and Education in Early Societies (New York: MacMillan Company, 1949), p. 20.

[3]Huizinga, op. cit., pp. 15-17.

thus social institutions. Through ritual play savage society gained its rudimentary governmental forms.[1]

Through time, recreational activities such as hunting and fishing remained as popular pastimes. One can, in fact, allude to examples of similar behavior in our present society. However, during the same period marked transformations in the social institutions occurred, reflecting Frobenius' theory of play at nature. These transformations were due in part to a specialization in occupations. As a result, a few men were free to exercise much or all their time in pursuits other than food gathering. One such specialization marked the beginning of organized religion, in which a few men dedicated themselves to interpreting nature for others. Specialization, in turn, resulted in institutions and social class differences composed in one, the ruling and religious portions, and the other, common man.

In time, class differences came to be even more pronounced. Higher ranking class orders established a mode of living far superior to that of the "commoner." Here were found the foundations for "cultural" recreation pursuits experienced by the Sumarian, Egyptian, and later Greek and Roman empires. Music, art, drama, literature, and sport emerged in a quality and quantity not experienced for hundreds of years thereafter.

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[1] Ibid.

An aspect of early recreational pursuits included the origin of the first parks. The first parks, established around 2340 B.C., were credited to Sumarian Kings.[1] Later populations of Egypt, Greece, and Rome developed parks emulating the cultural emphasis of the periods. Early Sumarian and Egyptian parks were places of great beauty in which nobles would often fish and hunt to the exclusion of the general populace. The point that these parks were not available to the general masses had great relevance. Later in history, particularly during the British Empire's rule, all men assumed greater privileges for the use of parks. It may generally be assumed that these rights led to governmental involvement in parks and recreation as a "social necessity."

We have alluded to the fact that as man progressed, changes in class structure occurred. These changes in turn resulted in the formation of greater specialization in role formations. The economist Thorstein Veblan's book, The Theory of the Leisure Class, explained the phenomenon that developed into our first distinction between leisure classes and common man. Veblan stated that "those of leisure" were the nobles, warriors, and priests.[2]

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[1] C. E. Doell and G. B. Fitzgerald, A Brief History of Parks and Recreation in the United States (Chicago: Athletic Institute, 1954), p. 12.

[2] Thorstein Veblan, The Theory of the Leisure Class (New York: Mentor Book, 1899), pp. 21-22.

Nobles possessed the divine right of rule conferred upon them by the gods. To please the gods, commoners, poor men, and slaves were expected to devote their lives to the nobles' service. At least this was the myth perpetuated by those of power. Interpreting Veblan, free time was said to have been instituted in property, justified by religion, and enforced by power.

Because of the inequitable nature of the class structure, the average man's life was very miserable. Despite hardships, and partially because of them, man had more free time than ever before or since. Human effort was entirely based on the "pleasure of the gods." It may be assumed that the ruling classes interpreted the gods' pleasure as a means toward their own ends. The working classes required rest from their arduous labors if they were to remain productive. Consequently, the rulers had to permit numerous days of rest. As Burns indicated:

> In ancient Egypt, it seems, holidays amounted to one-fifth of the year; in ancient Athens there were fifty to sixty days of festival in the year; and in Torentum in the days of its prosperity there were more holidays than working days. In ancient Rome about one-third of the days of the year were nefasti, unlucky for work; and in the later Empire, the "games" and other festivals were largely extended.[1]

The distribution of free time for recreation was not of an equal proportion between classes. Aristotle, for example, was

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[1]C. Delisle Burns, Leisure in the Modern World (New York: Century Company, 1932), p. 260.

believed to have said there was no leisure for slaves.[1] This was generally assumed to have meant that peasants were to support the lives of others more fortunate. In addition, peasants lacked the education and other requirements Aristotle thought necessary for the realization of leisure's values. This was a fact instigated and perpetuated by economic and social institutions.

As civilization and urbanization progressed, fear of the gods subsided. In place of the holy day a new form of rest appeared, later known as the holiday. Holidays were days filled with recreation and play. Probably the most significant examples of the new trend were found in the Greek feasts and Roman circuses in which all forms of orgiastic and brutal entertainment occurred. It was this period during which the formal transition from "holy day" to "holiday" became complete.[2]

Greece

During the height of Greek culture two city-states came to the fore, Sparta and Athens. These city-states represented a striking contrast in philosophies of life and leisure. Sparta, as an

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[1] N. P. Miller and D. M. Robinson, The Leisure Age (Belmont, Calif.: Wadsworth Publishing Co., 1967), p. 40.

[2] Robert Lee, Religion and Leisure in America (New York: Abington Press, 1964), pp. 132-133.

example of the Stoic philosophy, stressed the belief that bodily pleasures were to be foregone. In every aspect of life citizens were trained for war. Riding, hunting, gymnastics, and even singing and dancing were structured toward that end.

Spartan girls began physical training at home around seven years of age and continued until they were either married or reached their twentieth birthday. The sole emphasis in their training was the development of strong bodies in order to foster strong children.

Like the girls, Spartan boys began training when they were seven years of age. Their training was sponsored by the public in compulsory schools called "agoges." Each "agoge" was composed of several "herds," each with a "herd" leader. Spartan training emphasized total physical involvement. Specialization in any particular activity was discouraged. After the eighth century, considered to have been the greatest period of Sparta, specialization in the form of gladiators marked the beginning of the end of Spartan emphasis on personal strength.

It has been said that Sparta prospered while at war, and that peace was the most difficult time. Spartan men trained in rigorous discipline were able to occupy themselves during peaceful periods by practicing war; but the women, free from labors done by slaves, were unable to find proper outlets for their leisure time.

As De Grazia explained, the women abandoned themselves to license and luxury.[1]

Women alone were not the sole cause of Sparta's decline, for they received a comparable, though less intensive, training than that of their male counterpart. Probably the most significant overall reason for decline was the restriction of human development. As Miller and Robinson said:

> One is tempted to agree that the perversion of the needs of man for play, relaxation, fun and amusement into the stern discipline of warmaking and militarization of all phases of life might lead to internal contradictions, despair of many, and the progressive brutalization of many, accompanied by cultural decline and decline of the very strength the policy is supposed to guarantee. Of interest is the philosophy this system spawned, characterized by the Stoicism of the philosopher Zeno and others, that virtue lies in service, loyalty, and duty to the state, the foregoing of bodily pleasures and the practicing of moderation and simplicity of life.[2]

Similarly, De Grazia stated: "A citizenry unprepared for leisure will degenerate in prosperous times."[3] Apparently this was exactly what happened to Sparta. Despite their emphasis on a rigorous life and government, Sparta declined by constantly warring with others. When changes were needed, they were not made because the stern military discipline prohibited it.

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[1]Sebastian De Grazia, Of Time, Work, and Leisure (Garden City, N.Y.: Anchor Books, 1962), p. 9.

[2]Miller and Robinson, op. cit., p. 36.

[3]De Grazia, op. cit., p. 10.

In contrast to Sparta, Athens stressed a balance between mental and physical life. Athenian education encompassed conduct, letters, literature, music, gymnastics, exercise and games. Life in Athens was not based on war, but rather on peace. Peace, as Aristotle said, was the ultimate end after war. Based on constructive usage of leisure, Athens developed one of the greatest cultural periods in world history.

The Greek period, as was shown, resulted in two divergent philosophies concerning recreation. Inherent within the Athenian interpretation were the works of Plato and Aristotle. Their philosophy of recreation had a significant influence on succeeding generations' attitudes.

Plato's book, Laws, based on a Utopian state, discussed the values he attributed to recreation or play. In it he stated:

> That which has neither utility nor truth nor likeness, nor yet, in its effects is harmful, can best be judged by the criterion of the charm that is in it, and by the pleasure it affords. Such pleasure, entailing as it does no appreciable good or ill, is play.[1]

It was interesting to note that Plato stated that man should seek higher things in play than the mere element of play for "play's own sake." Rather, man should continue towards a higher goal.[2]

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[1] Huizinga, op. cit., p. 160.

[2] Ibid.

That goal was interpreted to have been that of the Greek theory of leisure. De Grazia's interpretation of Aristotle stated that only two broad categories constituted leisure; these were contemplation and music.[1] Aristotle did not consider play a valid form of leisure since play was an activity of the very young. Leisure was thought to have been accessible to only those people with the capacity to utilize it, i.e., one must be educated in order to realize the maximum benefits of leisure. In De Grazia's reference to education, he stated:

> The legislator is to blame if he does not educate citizens to those other virtues needed for the proper use of leisure. . . . The greater the abundance of blessings that fall to man, the greater will be their need for wisdom, and wisdom is the virtue that cannot appear except in leisure.[2]

During Aristotle's life the Greeks held leisure's values as the principal objective of the universe. All work was directed towards ultimate leisure for the selected few. And yet, it was noted that the basis for the availability of leisure was servitude of others. A few were free to pursue leisure because the majority had none. For that reason Miller and Robinson suggested Greece was eventually led to decline.[3]

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[1]De Grazia, op. cit., p. 14.

[2]Ibid., p. 10.

[3]Miller and Robinson, op. cit., p. 42.

Miller and Robinson were undoubtedly close to the underlying reason for Athens' decline. However, the more outward explanation was Athens' inability to find peace with Sparta and the other city-states weakening the Greek war efforts abroad. Soon it became necessary to alter one of the primary institutions in Athenian life, that of the citizen-soldier.

New methods of warfare and increased external strength forced the creation of state-sponsored "ephebic" training, comparable to our present enforced military training.[1] Even that move towards professionalism appeared too late. With the realization that Greeks were not invincible, a decline in interest towards personal fitness and one's contribution to the state took place within the citizenry. Thus government was increasingly forced to assume a role it was unprepared to fill, while the citizens continued to degenerate both physically and mentally.

Rome

The Roman Empire developed slowly over time, reaching its peak around the first century A.D. During the formative years Rome borrowed heavily from the declining Greek culture, though an emphasis on rural life pervaded. Greek teachers and philosophers were utilized as teachers for children of wealthy Romans.

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[1]Woody, op. cit., p. 323.

It was further shown that play in the early days of Rome emulated much of the same character of Grecian play. Yet there was an inherent difference between the philosophies of leisure in Greece and Rome. The Greek did not regard the play activity as the end product in itself. There was always a further motive such as citizenship, military strength, and physical beauty expressed in the play activity.

In Rome games were enjoyed for their own sake, not for some higher motive. Seneca explained that leisure or "otium" was for the sake of work, or "negotium."[1] Neumeyer and Neumeyer explained the Roman philosophy of play as "a natural expression of life energies which should be gratified without restraint."[2] Certainly the concept of lack of restraint was easily documented. However, Neumeyer and Neumeyer were undoubtedly concerned with the latter periods of the Roman Empire. It was generally assumed that in the formative years Rome adhered to Seneca's work-play philosophy.

To the Romans, Greek athletic excesses were highly criticized, partially because of the predominating Stoic philosophy and partially because the prescribed status of citizens prohibited

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[1]De Grazia, op. cit., p. 19.

[2]M. H. Neumeyer and E. S. Neumeyer, Leisure and Recreation (New York: Ronald Press, 1958), p. 55.

athletics. As Gibbons explained: "The most eminent of the Greeks were actors, the Romans were mere spectators."[1] Yet despite criticism, Greek athletic exercises grew in popularity, particularly amongst the poor.[2]

Huizinga claimed the play-element in Roman society was best exemplified in the desire for games. Roman games were termed holy and considered the holy right of all citizens to attend; though it was questionable whether the spectators felt any religious qualities while viewing them. These games, Huizinga continued, were a survival of the archaic play-factor in depotentialized form.[3]

Like the Greeks before them, the Romans eventually grew lazy and disinterested in matters of state. Men of power accumulated monetary and military strength at the expense of others. Once in power, the leaders extravagantly wasted fortunes on items of conspicuous consumption, causing near-bankruptcy of the Roman Empire. So it was that a nation begun with a sound philosophy of recreation and citizenship grew weak through excess and corrupt ideals.

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[1]E. Gibbon, The History of the Decline and Fall of the Roman Empire (Philadelphia: Coats and Porter, vol. 3, 1856), p. 422.

[2]Woody, op. cit., p. 654.

[3]Huizinga, op. cit., p. 177.

Within the Empire, Christianity grew stronger and attacked pagan amusements. From the outside, Attila and the Huns provided a final blow that brought the great Roman Empire to an end. Out of the rubble emerged two new institutions: The Catholic church and feudalism.[1]

The Middle Ages--A Change in Play Concept

Following the demise of the Roman Empire no dominant leadership appeared for some time in Europe. To a large extent that vacuum was eventually filled by the Catholic church because it possessed the only well-structured power system of that period. Closely allied with the church, though less powerful, were the feudal lords who appeared to have usurped power on a smaller scale.

One of the most significant movements in the history of recreation received its impetus from the Catholic church and later religious denominations. During the Middle Ages there was a movement away from "play as a natural expression of life." Play, now more than in any other period, became a re-creative function of work. It was only after work that man could have play. Play was considered a restorative function which enabled man to prepare for the hardships of work.

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[1]Miller and Robinson, op. cit., p. 47.

The church gained a strong following amongst the lower class peoples of the Middle Ages. At first resistance to change was great, but gradually the poor laborers and slaves were able to witness the advantages of the Catholic work concept.

For the monks themselves the most important aspect of their existence remained the celebration of religious functions. De Grazia stated that these religious duties took about four or five hours each day. The rest of the day was devoted to manual labors.[1] By observing the monks at labor the peasants found new ways to improve their own agricultural production. That, coupled with the fact the monks actually worked with their hands, undoubtedly had a significant influence on the labor classes.

The church policy that all forms of amusement were sinful because they turned men's minds away from God did not affect the life of the upper classes.[2] Nobles and church officials enjoyed play activities comparable to their predecessors. The exploits of adventurous knights were actually continuations of the gladiator contests seen in Rome. The element of "play at war" and war itself continued as a popular pastime throughout the Middle Ages.

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[1]De Grazia, op. cit., p. 37.

[2]Miller and Robinson, op. cit., p. 47.

During the early Middle Ages the noble class realized the advantages of cooperating with the religious concepts of industry and sobriety. Through cooperation, nobles were able to maintain a productive lower class. Consequently, both the church and lords began working together against the play element of their subjects. Despite resistance, play continued as a necessary element in the lives of all people.

The Middle Ages were gradually replaced by the Renaissance Period. Commonly associated with that period was the rebirth of culture. Music, art, architecture, philosophy, and literature, traditionally associated with the church alone, began to enjoy renewed popularity amongst the populace. It appears that the renaissance reflected a reaffirmation of man's desire and need for plan and culture in his everyday existence.

Three significant events hindered the influence that feudal lords maintained over their constituents. The rise of science and learning weakened the bonds between serf and master. Economic production, resulting in part from science and in part from city development, gave rise to a third element, that of a growing middle class.[1] Together, the three forces wrested power away from feudal

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[1] Ibid., p. 59.

lords and placed it in the hands of those actually involved in economic production.

Eventually the kings and other powerful nobles realized the feudal system was destined to decline. Consequently, the most powerful lords joined forces with the financially rich middle class. Together the middle class and lords developed a system that was commonly associated with the present system of nation-states.

Early European Trends

In Italy private parks were elaborately designed and maintained. Park design assumed a formal style. Emphasis on squares and rectangles was the dominant geometric pattern. The use of water in the form of canals and ornate ponds in parks grew in popularity. Formal sculpture appeared in the parks. Plant materials also assumed an ornate, sculptured appearance.

The formal park concept was adapted in other parts of Europe, including England. However, in England formal parks were soon supplemented by parks of informal design. "Informal" parks stressed the natural landscape rather than man's construction. Gone were the formal ponds, sculpture, plants, and rigid shapes; in their place appeared the gentle curving line accented by natural contours, open spaces, and native plant materials. It was that informal influence that found its way across the ocean to North America.

England was credited with a second significant development in park history, that of the first public parks. While it was true that parks in France were open to the people, they were, nevertheless, still the property of a particular individual, and as such, were often closed to the public.

In 1824 Germany followed the pattern established in England when the small town of Magdeburg established a public park. In the words of the designer Lenne:

> It is nothing new to me that princes and wealthy private persons should spend large sums on the beautiful art of the Garden. But an undertaking of this kind, which from a rough computation will cost, exclusive of buildings, no less than $18,000, undertaken by the town authorities, is the first example I have ever encountered in my whole life as an artist.[1]

Concurrent with the development of informal parks in England was the development of the county as a unit of government. The first counties were actually developed by William the Conqueror to provide for greater means of central control. Over time the county grew in importance. It was, in fact, the main unit of local government at the time the first British colonists landed in Virginia.[2]

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[1] Ibid.

[2] H. S. Duncombe, County Government in America (Washington, D.C.: National Association of Counties, 1966), pp. 18-19.

American Movement

The development of parks and recreation in the United States was composed of several concurrent, though separate movements. One of the earliest influences on recreation in North America was attributed to the Puritans.

The first Puritan settlers in the United States opposed any form of apparent joy and merry-making. Their reasoning held a twofold approach: First, life was too hard in the new frontier land not to be occupied by constant toil. Second, the Puritans rejected the "sinful" ways of their English brothers for religious reasons. Recreation and idleness were not tolerated. Often, severe punishment was meted out to those caught in activities which we now consider to be play.

In contrast to New England life, life in the southern United States was easier due to a milder climate and the early introduction of slave labor. Southern plantation owners developed a high level of cultural attainment very early in history. It has been assumed that one of the untold reasons for the Civil War was attributed to the jealousy northerners had for their southern counterparts.

As Americans pushed westward the Puritan influence lost much of its hold on the people. New recreational activities centered around group cooperation. The now-famous "husking bees" and

"barn-raisings" were legendary examples of neighbors from throughout an area gathered to help build a home or barn. Following the day's labor, a dance complete with fiddler and sumptuous repast generally ensued. Activities such as hunting and fishing were popular recreational pursuits in addition to being valuable utilitarian activities. Gay and boisterous dancing in combination with other activities further hastened the weakening of religion's Puritanical influence.

As the nation grew, the cities grew with it. Soon the people clamored for open space and play areas, the provision of which necessarily became a duty of democratic governments. That was the situation when, in 1858, the city of New York held an open competition for the design of Central Park. Permitted a brief excursus concerning the development of Central Park, we may gain a valuable insight into original county park planning.

Over time, Central Park has been completely surrounded by the city of New York. However, in 1858 Central Park was a large tract of open space situated on the edge of New York City. At its origin Central Park possessed several of the characteristics now associated with county parks. The "Olmstedian" principles followed in Central Park included:

1. Preserve the natural scenery and if necessary restore and emphasize it.
2. Avoid all formal design except in very limited areas without buildings.
3. Keep open lawns and meadows in large central areas.
4. Use native trees and shrubs, especially in heavy border plantings.
5. Provide circulation by means of paths and roads laid in widesweeping curves.
6. Place the principal road so that it will approximately circumscribe the whole area.[1]

Olmsted saw Central Park as an attempt to provide a country setting for harried city dwellers. The park's design emphasized the natural qualities of the quiet countryside following the general criteria established years before in England. In a sentence, Olmsted summarized the philosophy behind early American park design:

> . . . The kind of recreation that these large parks supply, and that nothing but these large parks supply, near a city, is that which a man insensibly obtains when he puts the city behind him and out of his sight and goes where he will be under the undisturbed influence of pleasing, natural scenery.[2]

In that single sentence, Olmsted clearly depicts a philosophy for most county parks. Whether the statement should be further construed, as Doell and Fitzgerald contend, to represent all American parks was questionable.[3] They negate the value of smaller city

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[1] Doell and Fitzgerald, op. cit., p. 33.

[2] Ibid., p. 32

[3] Ibid., p. 33.

parks which, due to limitations of size and location, contribute a different, though equally valuable, recreational experience.

Active playground recreation actually occurred after what may be termed the horticultural phase of park development. From the beginnings in Brookline and Boston, 1872 and 1885 respectively, emphasis on active recreation was held in direct conflict with passive recreation. That factor in recreational history created a conflict for both groups that has continued to a certain extent even up to the present day.

Historically, the origin of county parks appeared to have been the lawns of the county courthouses. During the 1800's the beautiful gardens around the courthouse were the only source of maintained public areas available for the people. Somewhat later, the advent of county fairs caused county government to take a greater involvement in parks and recreation.

Both the courthouse and the fairground were of relatively limited value as recreation areas. It was not until 1895 that Essex County, New Jersey, began what was considered the first county parks system.[1] A short seven years later, the adjacent county of Hudson began a program to emulate Essex County.[2]

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[1]G. D. Butler (editor), County Parks (New York: Playground and Recreation Association of America, 1930), p. 1.

[2]Ibid.

The first county parks in the mid-west were established in Milwaukee County, Wisconsin, in 1910. Within five years Cook County and Du Page County established forest preserves, serving essentially the same purpose as county parks. That same year, 1915, Muskegon County, Michigan, established the first county park in the State.[1]

Prior to 1920 county parks were relatively uncommon. Between the years 1895 and 1920 a mere twenty new county parks were reported. It was likely that the adverse effect of World War One had much to do with that precarious beginning. However, soon after the war, interest in county parks increased rapidly. Table 1, below, depicts the number and size of county parks through the year 1929.

TABLE 1. --Number of County Parks and Total Acreage Increases from 1900 to 1929.

Year	Number of Parks	Total Acreage
Before 1900	6	904.70
1900-1910	12	994.89
1910-1920	2	20,681.56
1920-1929	160	46,564.60

Source: G. S. Butler (editor), County Parks (New York: Playground and Recreation Association of America, 1930), p. 1.

[1] Ibid.

The next ten years, 1920 to 1930, showed a continued increase in county park development and acquisition. Table 2, taken from a later publication by the National Recreation Association, indicated that increase.

TABLE 2. --Number of County Parks and Total Acreage Increases from 1900 to 1940.

Year	Number of Parks	Total Acreage
Before 1900	21	781
1901-1910	20	1,396
1911-1920	22	2,169
1921-1930	159	49,497
1931-1940	308	39,537
Split	26	19,156

Source: G. D. Butler (editor), Municipal and County Parks in the United States, 1940 (New York: National Recreation Association, 1942), p. 49.

The differences between the figures in Tables 1 and 2 were undoubtedly due to the different means of reporting; Table 1 referred to the actual numbers of parks, while Table 2 referred to the date of acquisition. Neither of these tables were inclusive for all counties. Table 2, for example, reported only three-fourths of the actual number of parks, and slightly over one-half the total acreage. The "split" category at the end of Table 2 apparently indicated park acquisition between 1935 and 1940.

The depression could have had a significant adverse effect on county park development. However, various assistance programs, such as the Civilian Conservation Corps, and Works Project Assistance, actually aided the county park development during the 1930's.

The effect a second world war had on domestic development programs was exemplified by the county park example. In the five years after the depression the United States gradually showed signs of recovery. However, very quickly the entire world was once again forced to prepare for the possibility of a second world war. The money and manpower once directed toward conservation and development was reallocated for purposes of war. For example, despite the return to a semblance of prosperity in the late 1930's, only twenty-six new county parks were established.

A second source for county park statistics was the book compiled by Marion Clawson, Statistics on Outdoor Recreation. Clawson's survey, inclusive through the year 1950, reported the increase in county parks shown in Table 3 on the following page.

There appeared to have been some discrepancy between the findings reported by Marion Clawson and the earlier findings credited to Butler. For example, in the year 1940 there was a difference of 249 reported parks and 120,057 acres reported in the two sources. Whether one used Butler's or Clawson's figures, at least one

general characteristic held true for both: county parks received their initial major impetus during the 1930's and grew in numbers and size ever since.

TABLE 3. --Number of County Parks and Total Acreage Increases from 1925 to 1950.

Year	Number of Parks	Acreage Increases
1925	135	67,465
1930	415	108,485
1935	526	159,262
1940	779	197,350
1950	933	213,437

Source: Marion Clawson, Statistics for Outdoor Recreation (Washington, D.C.: Resources for the Future, April, 1958), p. 82.

In Clawson's data we again encountered the detrimental influence of a world war on the development of county parks. Between 1930 and 1940, 364 new county parks were established, compared to only 154 in the next ten war years, 1940 to 1950.

Since the end of 1950 a marked increase in every aspect of county park development occurred. Today, approximately 4,149 county park areas totaling 691,042 acres have been reported.

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[1]J. E. Arles, "County Government," Parks and Recreation (April, 1969), pp. 30-32.

County park expenditures increased from an annual average expenditure of $7.6 million in 1957 to $195 million in 1965. In 1960 county parks employed 7,990 people, compared to 11,912 in 1965.[1]

A Review of Recreation's Development and Effect on the Present Society

The objective of this chapter has been to present a brief history of significant historical developments of recreation up to the present time. It is now necessary to reflect on what has passed before us in order to create a setting for the present and future.

One of the earliest points, that man has always engaged in play activities in some form, undoubtedly held true for as long as man inhabited the earth. As previously indicated, play activities varied from time to time. The nature and extent of recreation depended on the values of social institutions for that period. It can be generally stated that social institutions, here referred to as all formal group relationships, largely governed the nature and extent of the play activities. Though the institutions changed or altered their philosophy over time, many of the old ideas continued to influence contemporary thought.

One factor instigated by the church during the Middle Ages continued to influence play activities for many years after. Play,

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[1] Ibid.

or recreation, came only after work and was participated in as a means of re-creating oneself for the rigors of future work. In the United States that belief was carried to an extreme by the early Puritan settlers. The "work before play" attitude continued to dominate the lives of a large proportion of the American people. However, the reasoning behind that attitude probably resulted more from an economic than a religious significance.

The religious influence, termed Puritan Ethic, gradually declined. In its place a new concept developed. Americans slowly began to recognize the influence of Aristotle. It was Aristotle who said: "Leisure is preferable to work; it is the aim of all work."[1] Like a few people in Greek history, Americans have been relieved from the necessity of working long hours. If it was said the Greek citizens had twelve slaves each, it can also be said we now possess ninety.

Man now has more free time. But how do we spend our free time? Like the Romans, many Americans are a nation of spectators more content to watch television at home than actively participate in an activity themselves. When asked what would be

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[1]Miller and Robinson, op. cit., p. 42.

America's greatest concern in the future, commentator Eric Severide replied, "the use of leisure time."[1]

Today society needs a balance. Man must work at some productive pursuit to prove his worth in society. More importantly, man must engage in personally and socially productive pursuits in order to develop himself and society to their greatest potential. One of these pursuits is recreation. That recreation should be a function of government was previously indicated by De Grazia. It may not be the function of government to teach values. It is, however, government's duty to provide reasonable access to, and reinforcement of, those things people require in order to express their own values.

We have seen from Chapter II that recreation was an integral part of man's life. It was further emphasized that a society "owed" the people access to recreational opportunities. Therefore, the initial hypothesis that recreation is a valid responsibility for county government within the context of the previous discussion has been substantiated.

In its unique position between the city and the State, the county faced ever greater demands for recreation from a greater number of people. Are counties meeting this demand? A means of analyzing methods of determining an answer to that question has been developed in Chapter III.

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[1]Comment was made by Mr. Severide on the television program "Meet the Press," March 20, 1967.

CHAPTER III

COUNTY RESPONSIBILITY AND A DETERMINATION OF RELATED STANDARDS

What parks and recreation goals should the county have established for itself? How much park and recreation area was enough? How did one county compare with another? These questions, and many others like them, have undoubtedly been the discussion topic of county officials for some time. To answer these questions one had to understand what was to be accomplished, which approach or technique best met that objective, and how to measure adequacy or inadequacy of the current situation in order to reach the acceptable level of accomplishment.

The previous discussion has indicated county government's need for policy clarification. Once a policy was formulated, additional information was required relating to acceptable standards.

A Policy for County Park and Recreation Systems

In the past, questions of policy-direction created considerable concern for county officials. Realizing the need for clarification,

the National Association of County Officials adopted a national policy for county parks and recreation. That policy suggested:

> The special role of the county is to acquire, develop and maintain parks and to administer public recreation programs that will serve the needs of communities broader than the local neighborhood or municipality, but less than state-wide or national in scope.
>
> In addition the county should plan and coordinate local neighborhood and community facilities with the cooperation of the cities, townships, and other intra-county units, and should itself cooperate in state and federal planning and coordinative activities.
>
> Where there is no existing unit of local government except the county to provide needed local neighborhood or municipal facilities and programs, the county should provide such facilities and programs, utilizing county service districts, local assessments and other methods by which those benefited will pay the cost. Coordination with local boards of education should include the park-school concept of building park sites adjacent to schools.[1]

The county recreation policy indicated that the county played a role in both an urban and a rural environment. It was further suggested that the county had to work with both the municipality and the state to fill the vacancy found between the two. In a few cases the county was further thought to have assumed responsibilities generally designated to the state or local governments. The flexibility inherent within any park system was aptly stated by Doell:

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[1] Philip Warren (editor), County Parks and Recreation . . . A Basis for Action (Washington, D.C.: National Association of County Officials and National Recreation Association, 1964), p. xiii.

> . . . parks, however established, are for the recreation of the people and that a system of parks and its administration must be flexible enough to adjust to changing conditions and so alter its functional policies to meet those changes.[1]

However, equally obvious was the realization that the county could not, nor should, attempt to provide all recreational services for all people. Throughout the history of recreation's development as a governmental function certain types of facilities have been found more advantageously administered by certain levels of government.

Nature of County Park Systems

Lynn Rodney explained: "A county park and recreation system has as its prime purposes the giving of recreation services as well as the provision of recreation opportunities to people within the county."[2]

Rodney's statement was interpreted to have suggested the county was first responsible for the recreational needs of those living within that county. Only when that responsibility had been completely fulfilled was the county free to begin providing services for nonresidents. Those recreational activities and areas that

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[1]Charles E. Doell, Elements of Park and Recreation Administration (Minneapolis: Burgess Publishing Company, 1964), p. 47.

[2]Lynn Rodney, Administration of Public Recreation (New York: Ronald Press Company, 1964), pp. 177-178.

constituted a "greater than county significance" were thought to have been functions of the federal, state, or regional government.

For the county, the greatest difficulty in definition appeared to be that of determining what was regional in purpose, and what was county-orientated. In the policy statement for Genesee County, the county-regional park was defined as:

> . . . a land and/or water site, scenic in character and large enough to serve at the inter-city, county, or inter-county level. The regional park conserves a large natural open space for the use and enjoyment of people. Developments are concentrated so as not to destroy the character of the land. The park is used by persons residing or working in a radius of 30 to 40 miles. . . .[1]

Similarly, Rodney suggested regional parks were:

> A recreational area that, by its unusual development or unique features, gives people of an entire region an opportunity to enjoy certain types of recreation activities. It possesses natural features and is intended to give people a chance to get away from an urban environment, but its primary purpose is to provide pleasant surroundings for engaging in a variety of special recreation activities that lend themselves to the park setting.[2]

County parks in Michigan have been defined as:

> The county park is a recreation facility designed and intended for use by citizens of the county or metropolitan sub-region in which the park is located.[3]

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[1]Genesee County Parks and Recreation Commission, Policy Statement (R. Ammerman, Chairman, Flint, Michigan), p. 11.

[2]Rodney, op. cit., p. 330.

[3]Detroit Metropolitan Area Regional Planning Commission, Guidelines for Levels of Functions and Responsibility for Public Outdoor Recreation in Southeastern Michigan (Detroit: Paul Reid, Director, 1966), p. 7.

Among the preceding definitions there appears to be a very slight difference in what has been termed county, and what has been termed regional. From these definitions the assumption was made that regional and county park systems served essentially similar recreational functions. The difference between the two has been generally attributed to the pervasive influence distance had on the service areas of each.[1] Regional parks were considered to have a service area of more than one county. County parks, then, were thought to be those parks predominately used by residents of that county.

It was necessary to make the distinction between county and regional service areas because park planning has been dependent on certain defined human characteristics of park users. The distinctions between users of county and regional parks may vary greatly when considering group socio-economic characteristics for a multi-county region or a single county.

A second reason for determining regional or county responsibility has been the factor of the cost and benefit attributed to each park. It has been generally stated that each unit of government had the responsibility of providing services for its constituents. These

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[1]John Friedmann, Regional Development and Planning (Cambridge, Mass.: Massachusetts Institute of Technology, 1964), p. 62.

constituents, in turn, were then charged for that service. When people from one area used, or received benefits, from another area, it was assumed that they should also be assessed for that privilege. Therefore, regional parks would normally be paid for by regional residents. County parks were similarly assumed to have been paid for by county residents.

It has been shown that county and regional parks provided comparable services. From these definitions used to distinguish between county and region it was further possible to determine the type of service being rendered. County parks have generally been thought of as extensions of Olmsted's principle of large parks near the city.[1] These parks were to be places where county residents could engage in active and passive recreational pursuits within a pleasing natural environment.

The need for that type of "day-use" recreational area has been well documented. For example, in Oakland County the major recreation need was defined as:

> . . . Every activity in day-use facilities. There is a tremendous urgency for land to be acquired and held in public trust to meet the recreational needs of ALL of our people. The objective is to provide opportunities for a wide variety of activities for groups and all individuals.[2]

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[1]Doell, op. cit., p. 45.

[2]George C. Lacey, The Creation of Recreation (Pontiac, Mich.: Oakland County Park and Recreation Commission, 1968).

The type of services normally provided in county parks have been characterized as being relatively unstructured, individual or group day-use experiences. Facilities for picnicking, horseshoes, softball, tennis, baseball, shuffleboard, and camping were characteristic of existing county parks.

Often the counties actually broke the types of parks down into major functions. In Kent County the Road and Park Commission suggested county parks served the following purposes:

1. County-Urban Parks to augment the needs of urban fringe areas and outlying communities;
2. County-Wide Parks designed for varying classes of use to serve the needs of the entire county;
3. County Forests to administer the preservation, control, and supervision of forests under county jurisdiction;
4. Open Space Developments to provide for preservation and development of large open areas for general recreational uses.[1]

Throughout the previous discussion the effort has been directed toward defining certain general characteristics. The first of these indicated that county park and recreation systems were

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[1]Kent County Road and Park Commission, Kent County Parks, Recreation and Open Space Plan (Grand Rapids, Michigan, June, 1968), p. 58.

closely attached to "land areas" as a base for recreational functions. A second factor was that the counties often provided a wide range of possible services, depending on the need and policy of the administration.

The quality of any system appeared to have been dependent on intuitive and practical experience related to land and services. Using the knowledge and experience garnered from numerous sources, the following standards were suggested to have been major factors in any county park system.

Standards for County Park and Recreation Systems

County park and recreation administration

It has been generally stated that every county park and recreation system required a governing body to establish policy. While county parks and recreation was in its infancy as a governmental responsibility, various agencies assumed the county's responsibility for developing recreation areas and activities. In Michigan, the most common "external" type of control was the County Road Commission.

The correlation between county parks and county roads probably was rather significant when county parks were relatively unused rest areas along travel routes. However, it has been

generally assumed that the combined department concept has since outgrown its usefulness. County Road Departments have been said to serve one purpose, i.e., the building and maintaining of county roads.[1] County parks serve strictly a recreational function. Therefore, in order to best meet the challenge of providing adequate county roads and county recreation programs, the view generally taken has been one of encouraging separate agencies for each activity.

Prior to 1965 county government lacked the legislative authority to authorize separate County Park and Recreation Commissions. Apparently, many people thought that the counties needed the separate commission form; consequently they encouraged adoption of that type of enabling legislation. For example, one committee suggested the following:

> . . . that state enabling legislation be enacted. This legislation would "permit" counties to establish park facilities through a separate County Park and Recreation Commission.[2]

One of the recommendations adopted by the Recreation Advisory Committee, of the Detroit Regional Planning Commission, stated the desire for separate recreation agencies as follows:

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[1]C. A. Elliot, "Advanced Road Planning for Recreational Development," County Parks and Recreation . . . A Basis for Action (Washington, D.C.: National Association of County Officials, 1964).

[2]Detroit Metropolitan Area Regional Planning Commission, Recreation in the Detroit Region (Detroit: Regional Planning Comm., 1958), p. ii.

> They should integrate their parks and recreational land programs with the regional and state agencies that already have or may have parks and recreational facilities within their borders. To this end it is recommended that counties establish within their governmental framework separate agencies whose sole responsibility is that of parks and recreation.[1]

A basic premise of Chapter II was that recreation has been an integral and necessary part of man's existence. As such, Meyer stated, "It should receive an identity and prestige which sets it on a plane with education, health, welfare, and other public services concerned with the needs of the people."[2] All the public services indicated by Meyer have been generally governed by separate agencies. Therefore, it was further assumed that recreation required a comparable type of governing agency.

The creation of a separate park and recreation commission does not impair interagency cooperation. Act 261 actually encourages contact between agencies and interested lay people by requiring the following membership on the board: chairman of the county road, drain, and planning commissions, and seven members appointed by the board of supervisors.[3]

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[1] J. F. Miller, Park User Survey (Detroit: Detroit Metropolitan Area Regional Planning Commission, April 25, 1959), p. 5.

[2] Brightbill and Meyer, op. cit., p. 92.

[3] Twardzik, loc. cit.

From the preceding statements, and from the position taken by many others, it appeared that each county could be measured by evaluating the type of administrative control employed. Therefore, it was suggested that an essential component of adequate county park systems included the nature of the governing body. Whether a county did or did not have a separate park and recreation commission was thought to be an indication of how that county valued parks and recreation. Those counties with a favorable attitude were assumed to have a separately administered county park and recreation department.

On the basis of the preceding analysis, the first standard was adopted. That was, each county park system was to be administered by a separate county park commission.

County park size

The county park has been termed one of the most integral factors in the county park and recreation system. The acquisition and use made of each park has generally been determined by the local County Park Commissions. However, there have been certain general criteria on which new county parks were normally acquired. Oakland County, for example, used the following criteria:

1. Availability of land
2. Amenities of the land in relation to park development
   a. water
   b. size of acreage
   c. terrain
   d. horticultural material

3. Economic feasibility
   a. cost of land
   b. cost of improvements present
   c. cost of projected improvements
4. Location of land
   a. relation to roads
   b. relation to population[1]

These factors largely determined whether one site was to be acquired rather than another, other factors being equal. However, in order to adequately meet the requirements placed on that park, some knowledge of its recreational carrying-capacity had to be known.

In the analysis of county park carrying-capacity various human and environmental factors have been suggested as being the most critical determinants. These factors included: Geology and soils, topography and aspect, vegetation, climate, water, fauna, policy, management, and user characteristics.[2]

For the county, probably the most significant determinants were those of policy, management, and user characteristics. As has often been the case, much of the land previously acquired for passive recreational purposes has been more intensively developed. That development was necessary to satisfy greater user demands

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[1] Lacey, op. cit.

[2] Michael Chubb and Peter Ashton, Park and Recreation Standards Research (East Lansing, Mich.: Michigan State University, Recreation Research and Planning Unit, January, 1969), pp. 18-29.

for active recreation.[1] In those instances the factors of policy, management and user characteristics became the predominant influences.

It has been a fairly common assumption that the counties must acquire more land areas, or as the previous reference indicated, develop what they have more intensively. Undoubtedly most urban counties will be forced into the latter position. In those cases, the State government may be called upon to supply more of the needed "primitive" or natural areas.

The stance taken by most county park agencies and authorities suggested that county parks should not be less than one hundred acres in size. The basis for a minimum acreage criteria was indicated by Mr. Palmer, long-time head of Kent County's Recreation Department:

> A County park nowadays should have a minimum of 80 acres, historical or scenic value, good sanitation, water supply and daily maintenance if it is to be a real recreation area . . . any acreage smaller than 80 is difficult to develop properly because some recreational facilities could not be included, thus creating a second or third rate park.[2]

Other minimum space standards included:

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[1] R. B. Habben, Regional Recreation Lands Plan Interim Report (Detroit: Detroit Metropolitan Area Regional Planning Commission, March, 1966), p. 29.

[2] David Barnes, "Developing County Parks," Parks and Recreation (April, 1963), p. 150.

	Agency or Authority	Size
1.	South Carolina Wildlife Resources Dept.[1]	Over 100 acres
2.	Planning Commission of Lackawana Co.[2]	Minimum 200 acres
3.	G. D. Butler[3]	100 to 300 acres
4.	Multnmach County[4]	500 to 1,000 acres
5.	Vancouver, Washington[5]	150 to 1,000 acres
6.	Forest Grove, Washington[6]	Several hundred
7.	Luzerne County Planning Comm.[7]	400 acres plus
8.	Berk County Planning Comm.[8]	100 to 400 acres
9.	San Diago County[9]	Not less than 100
10.	Dept. of Parks and Rec., Div. of Rec., Calif.[10]	200 to 500 acres

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[1]South Carolina Wildlife Resources Department, Outdoor Recreation in South Carolina (Columbia, South Carolina, 1966), pp. 3-5.

[2]Lackawana County Planning Commission, Recreation and Open Space Plan (Lackawana County, Penn.: Candeub, Cabot, and Assoc., 1963), p. 20.

[3]George Butler, Introduction to Community Recreation (New York: McGraw-Hill Co., 1959), p. 166.

[4]"Pacific Northwest Park and Recreation Studies," Park Maintenance (April, 1966), p. 17.

[5]Ibid.

[6]Ibid.

[7]Luzerne County Planning Commission, Recreation Report (Part of the Comprehensive Plan for the Wilkes-Barre/Hazelton Metropolitan Area, 1960), p. 30.

The purpose of county parks, as previously indicated, was to generally serve as scenic areas where men could engage in recreational activities. It was further suggested that county parks served the entire county. These factors dictated the need for sizable areas. Generally that size was thought to have been greater than large municipal parks and less than regional parks. Standards suggested for large municipal parks generally range up to one hundred acres; regional parks, in turn, should have been at least four hundred acres. Therefore, county parks were thought to have been a median size.

Based on the logic of the preceding discussion and the recommended standards of various agencies and authors, standard number two suggested that county parks range between one hundred and four hundred acres in size. Parks found to have been less than one hundred acres in area were termed too small to adequately serve the purposes of a county park.

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[8]Berks County Planning Commission, Open Space and Recreation, Comprehensive Plan #4, February, 1963, p. 21.

[9]"Regional Parks," Recreation, The San Diago County Regional Plan, Objectives and Policies, Part 4, 1960, p. 12.

[10]County Regional Parks and Recreation Areas, A Planning Guide, Dept. of Parks and Recreation, Division of Recreation Resources Agency, California, 1964, p. 6.

The actual size of parks was of little significance if the parks were not readily accessible to users. Therefore, the following section considered service areas for county parks.

County park location--
as related to time-distance

County park activities have been termed to be in Milstein and Reid's group one activities, that is, high distance resistance with little or no minimum time requirement.[1] That classification indicated people using county parks were not as concerned with time expenditures as they were with the distance it took to reach their destination. Therefore, to ensure maximum use, county parks were best located as close to the user's home as possible.

In an analysis of nonparticipation, the Outdoor Recreation Resources Commission[2] Report Number Nineteen found that many people desired to participate in more outdoor recreational activity; however, they were largely prevented from doing so primarily

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[1]D. N. Milstein and L. M. Reid, Michigan Outdoor Recreation Demand Study, Volume One, "Methods and Models" (Michigan Dept. of Commerce, Tech. Report 6, June, 1966), p. 44.

[2]The Outdoor Recreation Resources Review Commission (O.R.R.R.C.) was responsible for a national study of Outdoor Recreation in the United States. The proceedings were published in twenty-five volumes in 1962.

because they lacked time, and to some extent lacked the money enabling them to participate.[1]

The promise of more free time in the future has been a well documented factor affecting the greater demand for more recreation. Therefore, that factor was not developed further here. Probably of much greater significance to county park systems was the actual time or distance county park users were willing to travel in order to reach their destination.

There have been certain inherent problems involved in the study of time-distance factors at the county level. Probably the most significant of these factors was the availability of park areas within any given region varied. Therefore, attempts to compare time expended to reach county parks largely depended on the traveling distance or time required to reach existing county parks.

Despite these inherent problems in time-distance analysis, there have been some significant studies conducted in the area. One study, the Park Users Study, conducted in the Detroit region, made the following analysis:

1. On weekdays, park users travel about 12 miles from home.
2. On weekends, park users travel 18 miles from home.
3. Families select a more distant park, in preference to a

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[1]Eva Mueller and Gerald Gurin, The Demand for Outdoor Recreation (Ann Arbor, Mich.: University of Michigan, April, 1961), p. 22.

closer one, if access to that park permits traveling on less congested traffic arteries.[1]

A second source of average distance traveled in typical county park situations was the 1965 Bureau of Outdoor Recreation study. In that study, recreation outings, defined as an outdoor occasion occupying the better part of a day, were studied to determine trend characteristics. The significant findings included:

1. The average distance between home and destination was 31 miles.
2. Sixty-three percent of the outings were less than 50 miles round trip.
3. Only four percent were to destinations more than one hundred miles round trip.
4. Fifty-three percent were one-half hour or less from home.[2]

The National Resources Planning Board studied factors related to county park use. On the subject of time-distance the Board suggested:

> The kind and quality of available resources will frequently determine the usefulness of nonurban recreation resources. . . . The distance people can and will travel for an outing is determined by factors of time, cost, and available means of travel. Numerous studies of attendance and use of parks in the Southeast supplemented travel surveys indicate that by far a majority of southern people are confined to within 10 to 15 miles of their homes for weekday outings, 15 to 20 miles for holiday outings, a hundred miles for extended week-end outings, and three hundred miles for vacation outings.[3]

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[1]Miller, op. cit., p. 6.

[2]Bureau of Outdoor Recreation, The 1965 Survey of Outdoor Recreation Activities, October, 1967, pp. 35-36.

[3]Meyer and Brightbill, op. cit., p. 14.

These studies indicated a general criteria on which location of county parks should have been based. When county parks were located at distances greater than fifteen miles from the user's home, excessive distance limited use. Therefore, standard number three suggested that county parks were to be located within at least fifteen miles, or thirty miles roundtrip, of the user's home.

At this point three standards have been suggested. These standards were termed essential ingredients for any county park system. However, probably the most perplexing component in county park research has been the attempts to relate supply to demand. It was that factor that would enable county government to determine current deficiencies and future requirements.

Supply-demand analysis

At the county level several different techniques have been employed with limited success. Some of these techniques included: A straight acres-per-thousand population approach; acres-per-thousand or five percent of the total county land area;[1] or, "go thou and locate thy park next to thy school and thereby reap rich rewards for thy citizens."[2]

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[1]Meyer and Brightbill, op. cit., p. 103.

[2]Jack Urner, "An Area-Wide Approach to Park and Recreation Planning," County Parks and Recreation . . . A Basis for Action (Washington, D.C.: National Association of County Officials, 1964), p. 125.

Recreation professionals generally realized the critical shortcomings inherent in "educated guesses." Even more important, legislators and other groups controlling park budgets required more accurate standards for future planning purposes. Due, however, to the limitations of finances and staff, the county was probably the least prepared of all governmental units to develop acceptable standards.

Standards themselves were considered of little value unless they were actually utilized. Therefore, standards devised for county parks had to be developed within those limitations under which county systems operated. For the study of supply-demand analysis the following initial considerations were suggested as principles on which a standard was to be developed:

1. The new standard had to be an improvement over older methods.
2. The standard had to be relatively easy to obtain by county officials.
3. The standard had to be relatively inexpensive to obtain.
4. The result of the standard had to be updated periodically to consider changes in the county system and demand characteristics.

Probably the foremost criticism of the commonly used acres-per-thousand approach was that it did not consider variations

between areas. A recent article on recreation standards explained:

> . . . The commonly used acreage or population standard has been proven by many municipalities to be inapplicable because of varying local factors, primarily socio-economic, which have a direct influence on the amount and kind of recreation programs and areas which are necessary to meet local needs and interests. In other words, the acreage and/or population standard does not possess the degree of flexibility necessary to make its application valid in municipalities which possess vastly different physical, economic and social characteristics.[1]

Essentially, what was needed was a means of more closely relating local supply to local demand. Demand, the appraisal of recreation standards article indicated, was partially determined by social and economic characteristics of a population. Therefore, if counties continued to use an acres-per-thousand approach, as it appeared likely they would, that approach had to be more closely related to county socio-economic characteristics.

Generally there have been numerous social and economic characteristics suggested as having some influence on recreation participation; the O.R.R.R.C. Reports reviewed twenty-nine characteristics. However, some variables tended to have more influence than did others. From the O.R.R.R.C. Reports the following variables were selected as being primary indicators of social

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[1]A. H. Mittlestaelt, R. G. Ward, and R. F. Lowery, "An Appraisal of Recreation Standards," Parks and Recreation (July, 1969), p. 20.

relationships and demand: Age, sex, income, education, race, and place of residence.

The general influence of these variables were as follows:

1. Age had a strong influence on participation in all activities. The younger groups tended to be far more active than older groups. With few exceptions, each succeeding advance in age resulted in a decrease in activity level.
2. Men tended to be more active than women. There were exceptions to that trend; but they were not enough to nullify the overall validity.
3. As income increased, so did participation. A peak was reached around the $10,000 mark. Further monetary increases over $10,000 did not result in greater recreational participation.
4. Whites had a higher level of participation than non-whites. That trend was especially evident in water-orientated activities.
5. The higher the level of education, for both sexes, the greater the participation rate. There was one exception. Apparently college educated people had a lower level of participation in public outdoor recreation

activities than did those with only a high school education. That characteristic was probably due to the more advanced age of the college educated when they finished school.

6. People living in metropolitan areas were more active participants than nonurban residents. Exceptions were noted for a few sports, such as hunting, not commonly found in county parks.

There was the possibility that these characteristics had been significant for only one period in time. Therefore, it became necessary to search for other more current evaluations as a check.

In 1965 the Bureau of Outdoor Recreation did a follow-up survey to determine the change in recreation patterns found in the O.R.R.R.C. Reports. Though the B.O.R. Survey reported a slightly lower overall activity rate, the six socio-economic variables continued to act in their previous pattern.[1]

A third study, conducted in the Detroit region, employed four variables: Income, age, race, and auto ownership.[2] Once

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[1] Bureau of Outdoor Recreation, 1965 Survey of Outdoor Recreation Activities (October, 1967), p. 161.

[2] J. B. Lansing and G. Hendricks, Living Patterns and Attitudes in the Detroit Region (Detroit: Detroit Metropolitan Area Regional Planning Commission, January, 1967), pp. 28-30.

again the trends found in the O.R.R.R.C. and B.O.R. Reports for age, income, and race were confirmed.

Finally, a fourth source entitled Outdoor Recreation Research[1] considered the differences in participation between farm and urban respondents. In that study of eleven selected activities, urban residents indicated a higher participation response than did the rural residents in nine of the eleven activities. Only in the cases of hunting and gardening did rural respondents have higher participation rates. These activities were assumed to have almost negligible representation in most county parks. Consequently, they were negated.

Using the results of the four studies as a guide, it was then a matter of breaking the six variables down into sub-classes based on their influence on participation. To make the results applicable in Michigan, that meant some modification of the original groupings used in the O.R.R.R.C. Reports was necessary. Each variable was based on a five-point scale. Three, the median score, was equated with the median social or economic characteristic for the State. When a county indicated a variation above or below the median, it

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[1]R. J. Burdge, J. H. Sitterly, and F. S. So, Outdoor Recreation Research (Columbus, Ohio: Natural Resources Institute, Ohio State University, 1962), p. 12.

received an adjusted score for that variable. Five was assumed to have the greatest influence on participation, one the least.

Table 4 indicated how the variables were eventually broken down for Michigan.

One additional step was necessary before the six factors could be utilized. As O.R.R.R.C. Report Number Nineteen indicated, there was not a direct one-to-one relationship between the six variables and demand.[1] In O.R.R.R.C. Report Number Nineteen, each variable was weighted according to the influence it had on participation. A value of one was given to place of residence, since it had the least "weight" of the six variables. The other five were then assigned values in relation to place of residence.

The final weights applied were as follows:

Place of Residence	1.00
Income	1.14
Sex	1.46
Race	1.56
Education	1.58
Age	3.77
TOTAL WEIGHT	10.51

Utilizing characteristics derived from the 1960 Census of Population, each county received a score for each variable. The

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[1]Mueller and Gurin, op. cit., p. 64.

TABLE 4. --Breakdown of the Six Socio-Economic Variables Used in Measuring Demand for County Recreation.

Points	Residence (density)	Income	Age	Education	Race (percent white)	Sex (percent male)
1	50 persons/ square mile	$3000	35 years	8 years	90.0%	41-44%
2	100 persons/ square mile	$4000	31.5 years	9 years	92.5%	45-48%
3	150 persons/ square mile	$5000	28 years	10 years	95.0%	49-51%
4	200 persons/ square mile	$6000	25 years	11 years	97.5%	52-55%
5	250 persons/ square mile	$7000	22 years	12 years	100 %	56-59%

score was then multiplied by the weighting factor for that variable. The six scores, one for each variable, were then totaled and divided by the total weighting factor (10.51), resulting in an average socio-economic score for that county. The county average was assumed to have represented demand.

On the supply side there has been no clear indication as to what constituted a desirable standard for a particular type of county. Generally the procedure followed has been one of looking at what other counties were suggesting. These suggestions were then adapted to fit what that particular county believed best suited their own situation. As an example, Cape May County, New Jersey, established its standard by noting that the National Recreation Association recommended a county park standard of ten acres-per-thousand.[1] It was then decided that standards should vary in application between different areas. Cape May County officials noted several factors that could modify the standard, including: Size, natural and physical features, age, income level, social characteristics, and density of residential development. But in the final analysis they selected a standard of ten acres-per-thousand, which indicated the factors mentioned were not used in the determination of a standard.

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[1] Public Open Space and Recreation (Cape May County, New Jersey: Cape May County Parks and Recreation Commission, 1966), p. 21.

Certain general trends appeared during the review of numerous standard proposals for counties. Generally, county park standards were found to vary between five and twenty-five acres-per-thousand population. The most commonly quoted standard was fifteen acres for every thousand persons.

Using the range and mean as a guide, it became possible to divide acres-per-thousand into five general classes. The classes, as indicated below, presented a range from five to twenty-five acres-per-thousand, with fifteen acres-per-thousand as the median.

Value	Acres-per-thousand Population
1	5 acres
2	10 acres
3	15 acres
4	20 acres
5	25 acres

The demand score for each county would be somewhere between zero and five. When that score was inserted into the supply scale, the resulting supply criteria was interpreted as being an acceptable acres-per-thousand standard. For example, if County A had a socio-economic rating of 2.5, that rating would indicate a standard of thirteen acres-per-thousand. Similarly, if County B had a socio-economic rating of 3.6, it received a standard of eighteen acres-per-thousand.

There were several inherent problems with this type of approach to development of standards. For example, there was no basis for using acres-per-thousand as a standard, other than the measure has been the most commonly used method in the past.

An alternative solution would have been to develop standards for each activity until all activities offered in the county system have been included. An example of that approach would suggest two acres of picnicking for every thousand persons, one golf course for every twenty thousand persons, etc. That idea was discarded because it did not allow for variation in natural land features and facilities between sites. By using the straight acres-per-thousand approach, the county assumed greater freedom to structure park facilities to meet local requirements.

A second alternative would have been to use some of the many mathematical and statistical devices employed in other related areas. Maricopa County, Arizona, was one of the first counties to use a mathematical model. Maricopa County hired a consulting firm, Sam L. Huddleston and Associates, to develop a predictive model for attendance. However, as Dr. Chubb stated, the mathematical aspects of the planning procedure were lengthy and complicated.[1] Generally it may be stated that county park systems

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[1]Michael Chubb, Outdoor Recreation Planning in Michigan by a Systems Analysis Approach (East Lansing, Mich.: Michigan State University, February, 1968), p. 47.

in Michigan, with few exceptions, were not in a position to utilize that type of approach because of the cost involved.

The study of demand has been limited to the analysis of a limited number of influences on recreation demand. Other factors which might influence demand were not investigated.

It might be added that some of the recent, more elaborate attempts at measuring demand have been only partially successful. The difficulty leads one to believe that human nature was too complex to enable researchers to make accurate predictions of demand at this time.

The measure of demand used in this study considered a small portion of the total factors influencing participation and demand. The lack of comprehensive analysis of all factors was the greatest weakness of the approach. However, when compared to the techniques employed in developing most county standards, the suggested method was an improvement. The demand method was thought to have been a more accurate appraisal of county requirements, while retaining a simplicity in approach.

Standards Summary

It has been suggested that county parks and recreation systems should be evaluated based on the previously suggested

county park standards. To review, the following list indicates the standards utilized in the evaluation:

1. Each county park system was to be under a separate county park commission as provided for in the Public Acts of 1965, Act 261.
2. County park facilities were best located within at least fifteen miles one way of the user's home.
3. County parks, excluding roadside parks, were to be between one hundred and four hundred acres in size, depending on the nature of use.
4. Total county park acreage was to be determined by the suggested approach equating demand with supply.

CHAPTER IV

RESULTS OF COUNTY PARK FINDINGS

Data Collection

Knowledge of government's contribution to recreation in Michigan has been hindered by a lack of information concerning facilities and programs supplied. In an attempt to provide better understanding of what counties were doing, the Michigan State Association of Supervisors mailed a park and recreation questionnaire to each county. The completed forms were returned in April, 1969. Since the questionnaire supplied all the necessary data required in the study, it was decided to utilize them rather than ask the county officials to complete a second questionnaire.

To minimize the possibility of errors being present in the questionnaire, numerous other sources of recent county information were also reviewed. The County Recreation Potential studies conducted by representatives of the Soil Conservation Service provided a cross-reference for about ten of the eighty-three counties. It was also possible to check the data from Kent, Genesee, and the five

Southeastern Michigan counties in the Huron-Clinton Authority through perusal of their Recreation Master Plans. In total, seventeen of the eighty-three counties were cross-referenced. With few exceptions the information supplied in the Michigan State Association of Supervisors' questionnaires coincided with the information found in the other sources.

County Park Administration

As indicated in Chapter III, the local county Board of Supervisors were given legislative permission to establish separate Park and Recreation Commissions in 1965. In the four years since the authority was granted, seventeen counties have taken advantage of the law. Twenty-eight counties have retained the County Road Commissions as the supervisory authority. It was found that there were nine counties that held county parks under a variety of administrative agencies. In addition, twenty-eight counties reported no county parks or commissions of any kind.

In analyzing the distribution of the various forms of administrative agencies, the most significant factor appeared to have been the wide, heterogeneous distribution. No single region had a significantly larger proportion of one type of authority than did any other region. Distribution was also characterized by the lack of consistency between urban counties and nonurban counties. For

example, the three urban counties of Muskegon, Kent, and Wayne have had extensive county park systems under the direction of the County Road Commissions. In contrast, Genesee, Kalamazoo, and Jackson Counties had significant county park systems directed by Park and Recreation Commissions.

One factor found in the survey tended to substantiate the need for county parks. The Huron-Clinton Metropolitan Authority, composed of Wayne, Washtenaw, Oakland, Macomb, and Livingston Counties, provided regional recreation services comparable to portions being provided by county parks. It was interesting to note, however, that of the five member counties, four maintained separate county park authorities. The reason for "overlap" was that the regional system supplied but one of the necessary county park and recreation products. Washtenaw County, for example, suggested that county parks "provide those recreational facilities that can be used by the residents of the county as a unit and that are generally not provided by the local units of government, Huron-Clinton Metropolitan Authority, and the Michigan Conservation Department.[1] If future Regional Park Authorities were to provide both county and

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[1] Illustrative Statement of Goals and Objectives, op. cit., p. 16.

regional recreational services,[2] then the need for county park systems would not be as evident.

Analysis of why one county created a separate county commission while another has not was difficult to determine. Generally, there were two significant factors involved. First, counties such as Wayne, Kent, and Muskegon have been under the control of the County Road Commissions for as long as 40 years. Conversion to a new system would necessitate the breaking of long political ties. The problem of political situations at the county level undoubtedly played a significant role in many of the county's decisions.

The second factor dealt with those counties having no county parks at all. Several of these counties were already characterized as having State and Federal lands within their boundaries. With extensive land areas already eliminated from the tax roles and dedicated to public use, why allocate more for county parks? Further discussion of this problem and a possible alternative have been included in Chapter V. However, it is sufficient to note here that counties having no county parks, or alternatives to county parks, did not recognize the value inherent in county park recreational experiences.

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[1]Reference was made to the nature of county park services in Chapter III, the second section, entitled "Nature of County Park Systems."

Undoubtedly, other counties will create separate Park and Recreation Commissions in the future. This movement will probably gain emphasis as more counties, primarily urban, recognize the value and need for county park services.

The map on page 76 depicts the distribution of county park and recreation authorities as of April, 1969.

County Park Space Requirements

In April, 1969, there were 21,765 acres of reported county park land in Michigan. In addition, there were seventeen parks in seven counties for which acreages were not obtained. To the county supply could be added 17,698 acres of park land operated by the Huron-Clinton Authority. Together there was a combined county-regional supply of 39,453 acres of park land.

The demand for county park space, developed by the supply-demand standard, showed a need for 129,237 acres of county park land. Using the county supply by itself, a deficit of 107,472 acres was shown. When the county-regional supplies were combined, the need dropped to 89,784 acres. Even if the latter deficiency figure was used, it showed that current supply had to more than double to meet the demand.[1]

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[1]The study did not consider township or State parks serving recreational functions comparable to county parks. It was assumed

Legend

P@R -- Park and Recreation Commission
R. C. -- Road Commission
B. S. -- Board of Supervisors
NO -- No Commission
C. D. C. -- County Development Commission
N. R. C. -- Natural Resources Commission
V. T. C. -- Village, Township, City
? -- Form Unknown

FIGURE 1. --Distribution of Forms of County Recreation Commissions.

Only five counties met or exceeded the local standard. Those counties were Genesee, Huron, Alcona, Antrim, and Iron. The graph presented on page 78 indicates a general numeral distribution of county deficiencies.

The acreages of Muskegon County's eight parks and Bay County's one park were not supplied. However, unless the acreages totaled at least 700 to 800 acres, these counties would have been included in the "Over 1000" groups as well.

It was found that the greatest regional need for county parks was in the southern portion of the State.[1] From the Indiana border northward to a line from Oceana to Sanilac Counties, most counties required substantially greater county park acreage.

Counties in the northern half of the lower peninsula and the entire upper peninsula displayed an extremely varied, though less extensive, demand for additional parks than was found in the southern counties. Generally, the lowest block of demand for counties was in the center of the northern half of the lower peninsula. These

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that these parks were not too significant to alter the overall deficit substantially. However, in local instances the parks probably did have a significant influence.

[1]Note map on page 79 showing the general distribution of deficiency.

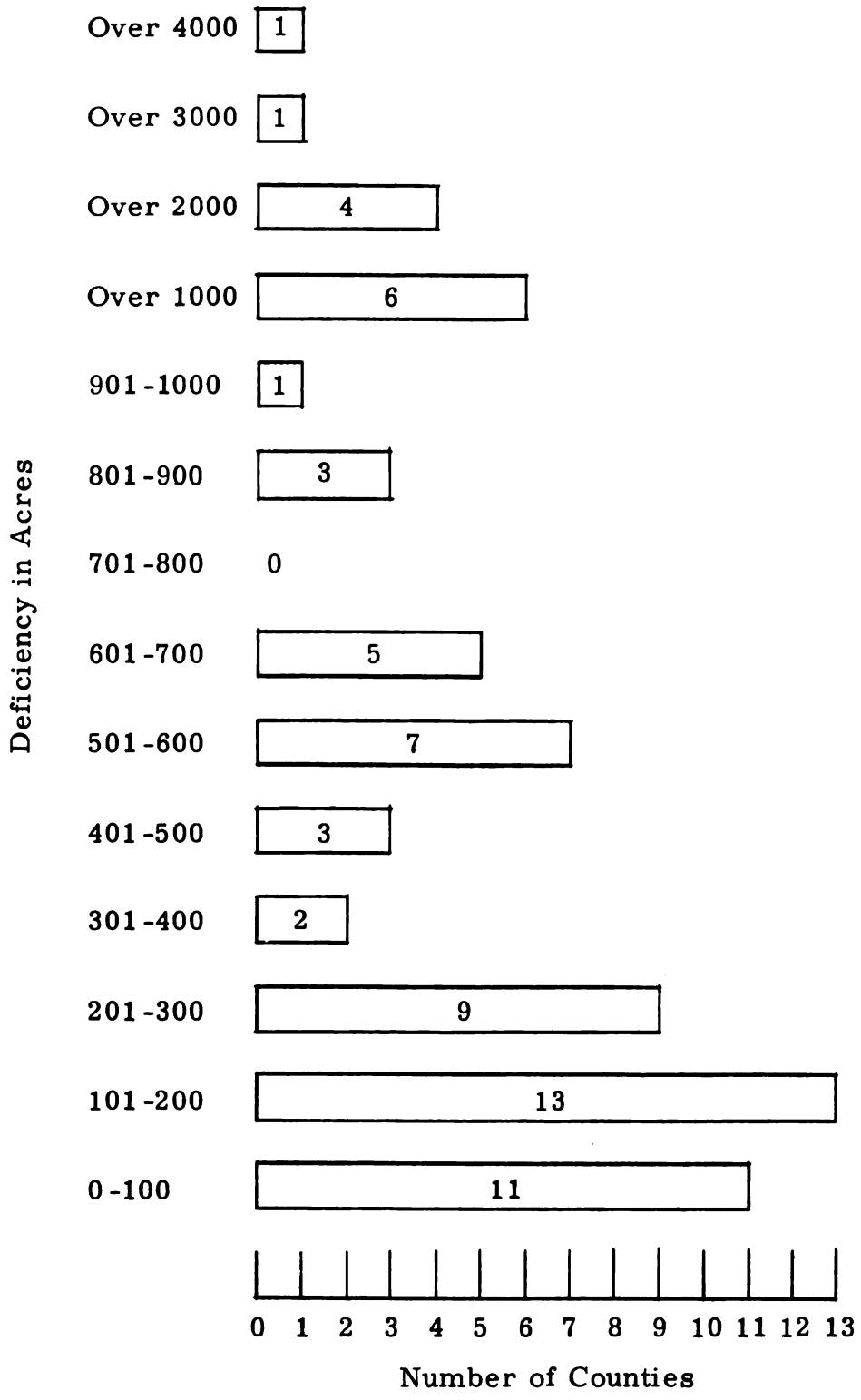

FIGURE 2. --The Number of Counties Requiring Specific Acreage Increases.

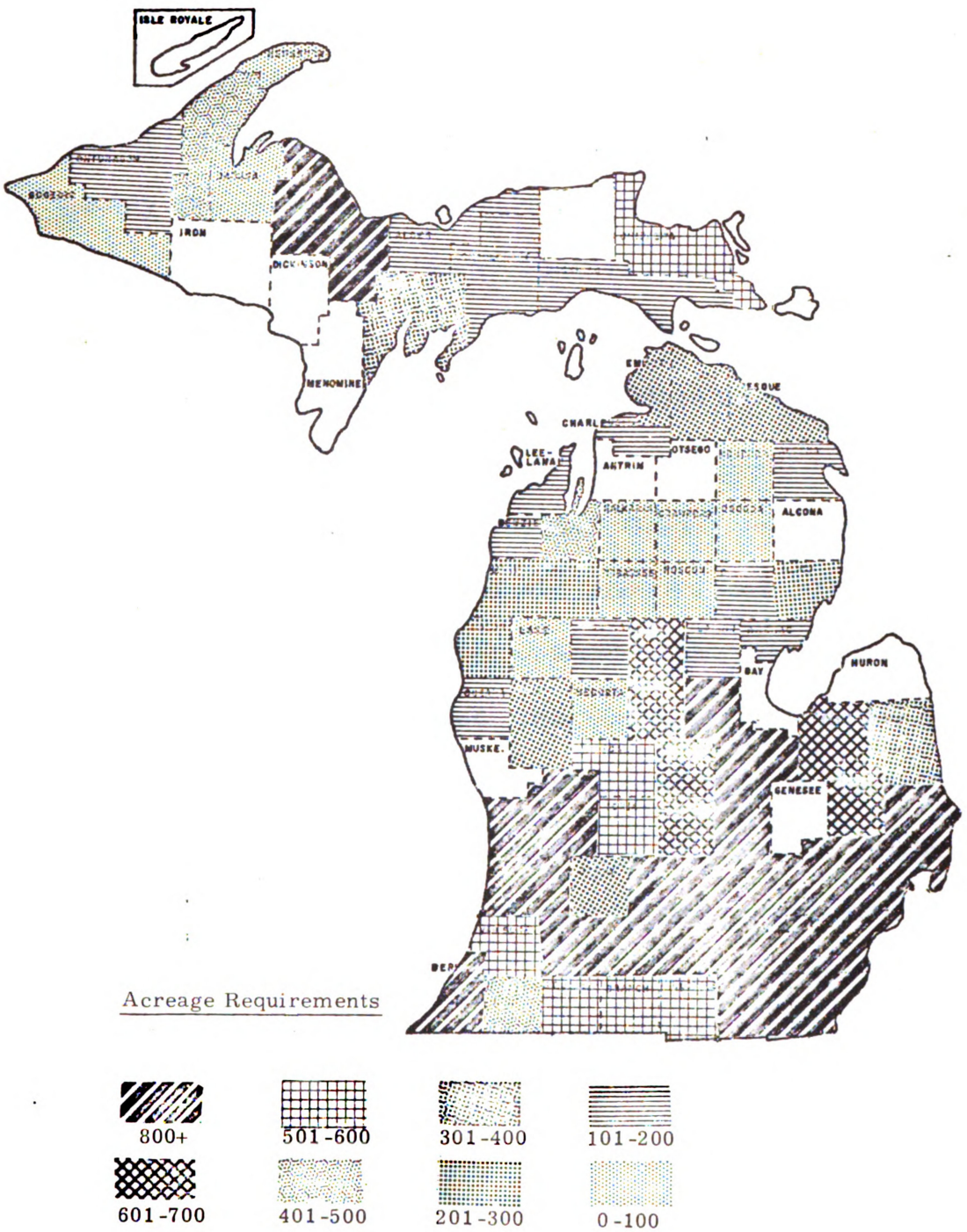

FIGURE 3. --Distribution of County Acreage Deficiencies.

counties included: Montmorency, Otsego, Oscoda, Crawford, Kalkaska, Missaukee, and Roscommon.

On the State as a whole there were thirty-three counties within at least 300 acres of the suggested supply. There were twenty-one counties in the less desirable position of requiring from 300 to 1000 acres. The twelve counties requiring more than 1000 acres were assumed to have been in an extremely poor position.

The preceding graph did not include the five counties in the Huron-Clinton Authority. Four of the five member counties maintained separate county park systems. Therefore, it was necessary to consider each county separately, and as a unit. The total acreage requirement for the five counties was 57,585. The county-regional supply was 23,701 acres, indicating a deficiency of 33,884 acres. The following table separates supply and demand by county; the total supply and the total demand indicate regional characteristics.

Deficiencies in park acreage tended to correspond directly to the size of the population of a county. However, the relationship was not a constant ordinal-scale correlation since county socio-economic characteristics and current supply tended to alter the actual deficiency. An example of the influence supply had on deficiencies has been shown on page 82 for ten of the most deficient counties.

TABLE 5. --Supply and Demand for Huron-Clinton Metropolitan Authority and Member Counties.

County	Demand	Supply		Total
		Huron-Clinton Metropolitan Authority	County	
Wayne	39,993	4,544	4,111	-31,338
Oakland	13,812	5,572	1,577	- 6,663
Macomb	8,549	4,323	0	- 4,226
Livingston	611	1,984	0	+ 1,373
Washtenaw	3,275	1,275	315	- 1,685
	Total Demand		Total Supply	Deficiency
	57,585		23,701	-33,884

	County	Deficiency	Demand	Supply
1.	Ingham	4,104	4,224	120
2.	Kent	3,849	6,525	2,686
3.	Saginaw	2,760	2,860	100
4.	Kalamazoo	2,713	3,224	511
5.	Berrien	2,243	2,247	3
6.	Monroe	1,805	1,819	14
7.	Jackson	1,437	2,110	673
8.	Lenawee	1,398	1,398	0
9.	St. Clair	1,268	1,608	340
10.	Midland	1,059	1,079	20

Total acreage deficiency was not necessarily an adequate criterion for comparing adequacy or inadequacy among counties. A better approach was to determine the percentage of demand county parks were satisfying. A measure of percentage for the ten counties showed that Lenawee, Berrien, Monroe, Midland, Ingham, and Saginaw Counties were, respectively, most inadequate. The "best" counties were Kent and Jackson, followed by St. Clair and Kalamazoo.

The reason for using a "percentage of demand fulfilled" was that in a county such as Lenawee, the residents had no opportunity for county recreational experiences at all. On the opposite extreme, Kent County residents had a higher deficiency rate but also a greater opportunity rate. Therefore, in some counties residents probably experience rather crowded conditions, while residents of other counties received no experience. The problem then became a matter of degrees of inadequacy--as determined by supply equaling demand.

A complete list of all counties' supply-demand deficiency, and percent of demand fulfilled information, has been included in Appendix C.

Size of Parks

As previously indicated in Chapter III, sufficient total park acreage did not always indicate an adequate county park system. One of the standards advanced was that each county park should have been at least 100 acres in size.

Fifty counties in Michigan reported a total of 180 county parks. Of the 180 parks, only 149 reported an exact acreage. The median size for the 149 given acreages was found to have been 145.1 acres. That size was misleading. Six county parks comprised 61.1 percent of the total supply, or 13,318 acres. When these six parks were not considered, the average size of the remaining 143 parks fell to 59.0 acres.

As the second average indicated, most county parks were 41 acres less than the standard. There were, in fact, only 44 parks in excess of the standard. Still another 43 parks were 10 acres or less in size. Over half of the parks were between 11 and 99 acres.

The counties having the greatest number of parks over 100 acres were Kent and Genesee, with seven each. They were followed

by Oakland with five and Wayne with four. Another five counties had two parks each over the 100-acre standard.

In the Detroit area the regional parks added significantly to the number of large parks. Generally, regional parks were thought to have been at least 400 acres in size. However, for this study regional parks over 100 acres were also considered.

Whether a county was to have two or three large parks or a series of smaller parks depended on three major hypothetical factors. First, the intended use to be made of the park dictated size. Second, ecological factors played a part. These two factors could have been partially controlled by management decisions and techniques. The third factor was access to a park, or service areas.[1]

In actuality, county park authorities probably had little chance to practice sound park planning techniques in cases where parks were donated to the county. Many of these parks are small and of little value for recreational purposes. County officials would be wise to re-evaluate the value of these small tracts. If the parks serve no significant recreational purposes, they could be sold. The money collected from the sales could then be allocated toward the purchase of more usable park areas.

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[1]Service Areas were defined as the geographical area served by a specific park. The use made of the park would come primarily from residents living within that service area.

Service Areas

Practically every county park was thought to have had a specific service area. However, there has not been sufficient research conducted on service areas to enable the allocation of given distances to parks of given sizes. The standard service area suggested for county parks was fifteen miles. It was assumed that the fifteen mile radius pertained solely to those county parks meeting the 100-acre size limit.

Given the general philosophy that all people within a county should have equal access to county parks, it followed that a sufficient number of parks were required to ensure equal access. In order to examine the criteria, it was necessary to locate the service area of every 100 acre county park in the State. Regional parks were measured on the same basis as county parks. As in the case of differences in size of parks, the service areas of county and regional parks also differ. These differences were, once again, not considered.

In mapping service areas the State was divided into six regions. In addition to the actual service area itself, other factors were included on each regional map. These factors included population centers and significant large water sites; both were essential elements in the proper location of service areas. It was recognized

that other elements played a significant role as well as those considered here. However, it was impossible to analyze these on a State-wide study of this nature. The maps have been included on the last seven pages of this chapter.

Region One, the western half of the upper peninsula, had three county parks with recognized service areas. These parks were located in the counties of Gogebic, Iron, and Delta. In addition, the service areas mapped for the three parks overlapped into Menominee and Ontonagon Counties. All five of the remaining counties completely lacked reasonable access to county parks. To those five could be added significant portions of four other counties partially included in Region One having no access to county parks.

The three existing parks all appeared to have been related geographically to population centers of the county. The most significant problem pointed out in the region was the lack of sufficient numbers of county parks. Every county required better coverage. The need for county parks was shown particularly in Marquette, Alger, and Houghton Counties.

Region Two, composed of seven entire counties and parts of two others, was the eastern half of the upper peninsula and the three northern-most counties of the lower peninsula. Only a very small portion of two parks from Regions Three and Four served

Region Two. There were, in fact, only two county parks reported in Region Two. Only one of these parks reported an acreage figure.

Region Three was the northwestern half of the lower peninsula. While the actual number of county parks reported was higher than Regions One and Two, only one county park in Region Three exceeded 100 acres in size. The service area for that park was only half that of other parks because of its location on Lake Michigan. A portion of the county park service area lapped over into an adjoining county, Region Two, resulting in an even lower coverage for Region Three.

Region Four was the northeast half of the lower peninsula. In the twelve complete and four partial counties represented in the region, a total of five county parks in excess of 100 acres were located. Two county parks serviced Alpena County. These parks were well spaced, providing extensive coverage of Alpena and neighboring counties. Alcona County had one park. That park serviced a large portion of the county, but not the major population centers. The two remaining county parks in Region Four overlapped portions of Genesee, Saginaw, and Tuscola Counties. Both parks were well situated in relation to urban centers.

Region Five was the southwestern portion of the lower peninsula. As the map for Region Five indicated, Kent County had

one of the most comprehensive geographical coverages of any county in the State. In total there were seven county parks over 100 acres in Kent County. Practically every one of these parks served the major city of Grand Rapids.

Five other counties in Region Five contained county parks with distinguishable service areas. Two of these parks served the city of Kalamazoo. It was found that Kalamazoo, Barry, Ottawa, Kent, and Ionia Counties had ample coverage. There were, however, almost four entire counties and portions of six others with no access to county parks at all. No park acreage figures were supplied for Muskegon County, making it impossible to evaluate the coverage for that county.

The final region, Region Six, encompassed eleven total counties and parts of eight others. Three of the eleven entire counties and four of the eight partial counties had no county parks at all. The remaining area was served by nineteen county and eight regional parks. Wayne, Oakland, and Genesee Counties had extensive coverage, with one or more parks serving all portions of the counties. The major urban centers in the three counties were all relatively well covered. The greatest need for parks in the region appeared to have been in Monroe, Lenawee, and Ingham Counties.

Summary

An examination of the four subhypotheses has been completed. This section attempts to evaluate all the counties in relation to the four subhypotheses. Each subhypothesis was arbitrarily broken down into a series of point-values.[1] Each county was then given the rating corresponding to the characteristics found for that county. The point-values assigned to each subhypothesis were as follows:

Subhypothesis One
Type of Administrative Agency

Value	Characteristic
2	Park and Recreation Board
1	Other type of Board
0	No Board of any kind

Subhypothesis Two
Number of 100-Acre Parks

Value	Characteristic
3	Four parks or more
2	Two to three parks
1	One park
0	No parks

[1] The ratings have been applied according to judgment evaluations. No mathematical weightings were developed, creating the possibility of errors inherent in the ratings. However, the purpose of the ratings, to analyze combined standards, was to obtain a general view of the combined results. For accurate results on any point the reader must refer to the specific subhypothesis in question.

Subhypothesis Three
Proportion of County Covered by Service Areas

Value	
3	Good coverage
2	Fair coverage
1	Poor coverage
0	No coverage

Subhypothesis Four
Percent of Required Acreage
Currently Being Supplied

Value	
3	51 percent and over
2	26 to 50 percent
1	1 to 25 percent
0	None supplied

The highest possible score was eleven. A complete listing of the score given each county has been included in Appendix II-D.

As the ratings indicated, county park systems could be broken down into three groups. The largest group, 54 counties, could be termed "insignificant suppliers" of park services and facilities. Many of these counties were given small ratings for service areas because adjoining county park service areas crossed over the county boundaries. Several other counties received a higher score than was justified by supply; the reason for the inequality was due to the initial low acreage requirement.

The second group of counties could be termed the "emerging group." A total of 23 counties, with ratings from four to eight, were included in the second group. These counties were either adequate in one or two areas and weak in others; or they were poor to fair, though represented, in all areas.

The third group was adequate or close to adequate. There were six counties in this group. Genesee County was actually the only county rated adequate in all four areas. Others in the group scored high in all except one or two of the subhypotheses.

The breakdown or rating of counties was actually a rough comparison of one county with another. When the standards were used as a measure, only two measures could be obtained, i.e., adequate or inadequate. Only Genesee County met the minimum requirement for "adequacy."

FIGURE 4. --Service Areas Mapped for Six Regions in the State of Michigan.

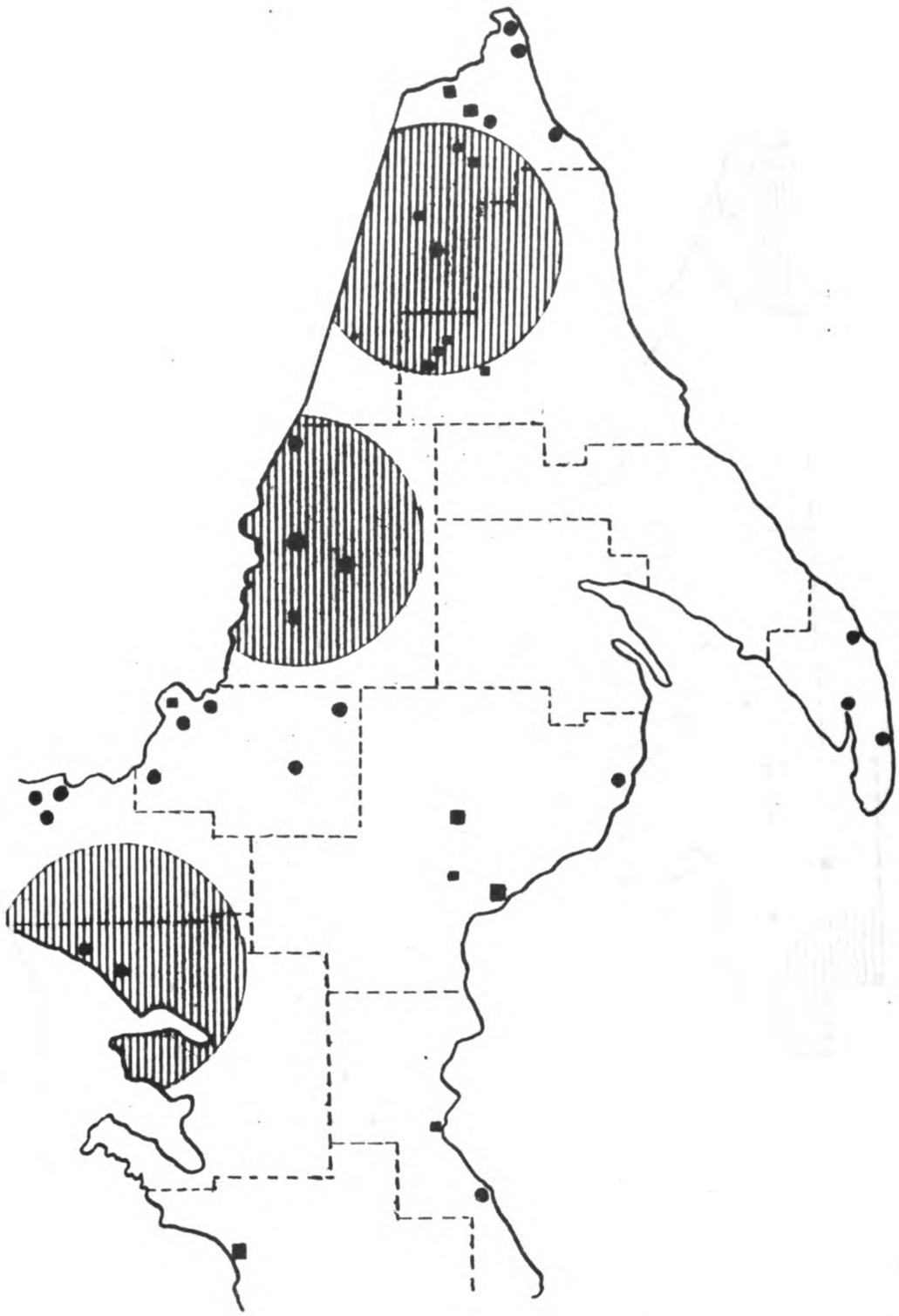

FIGURE 5. --Region One Service Areas.

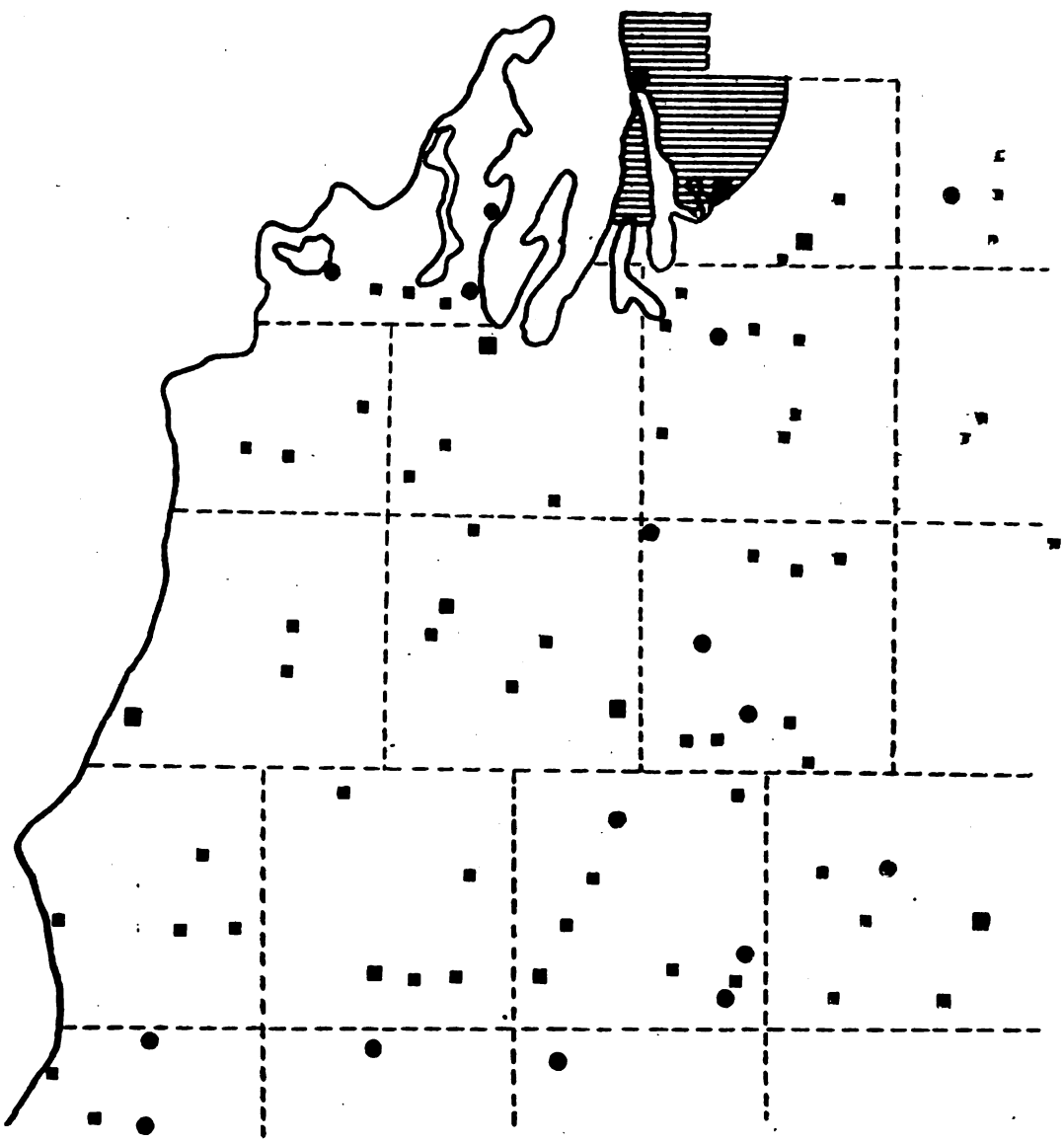

FIGURE 7. --Region Three Service Areas.

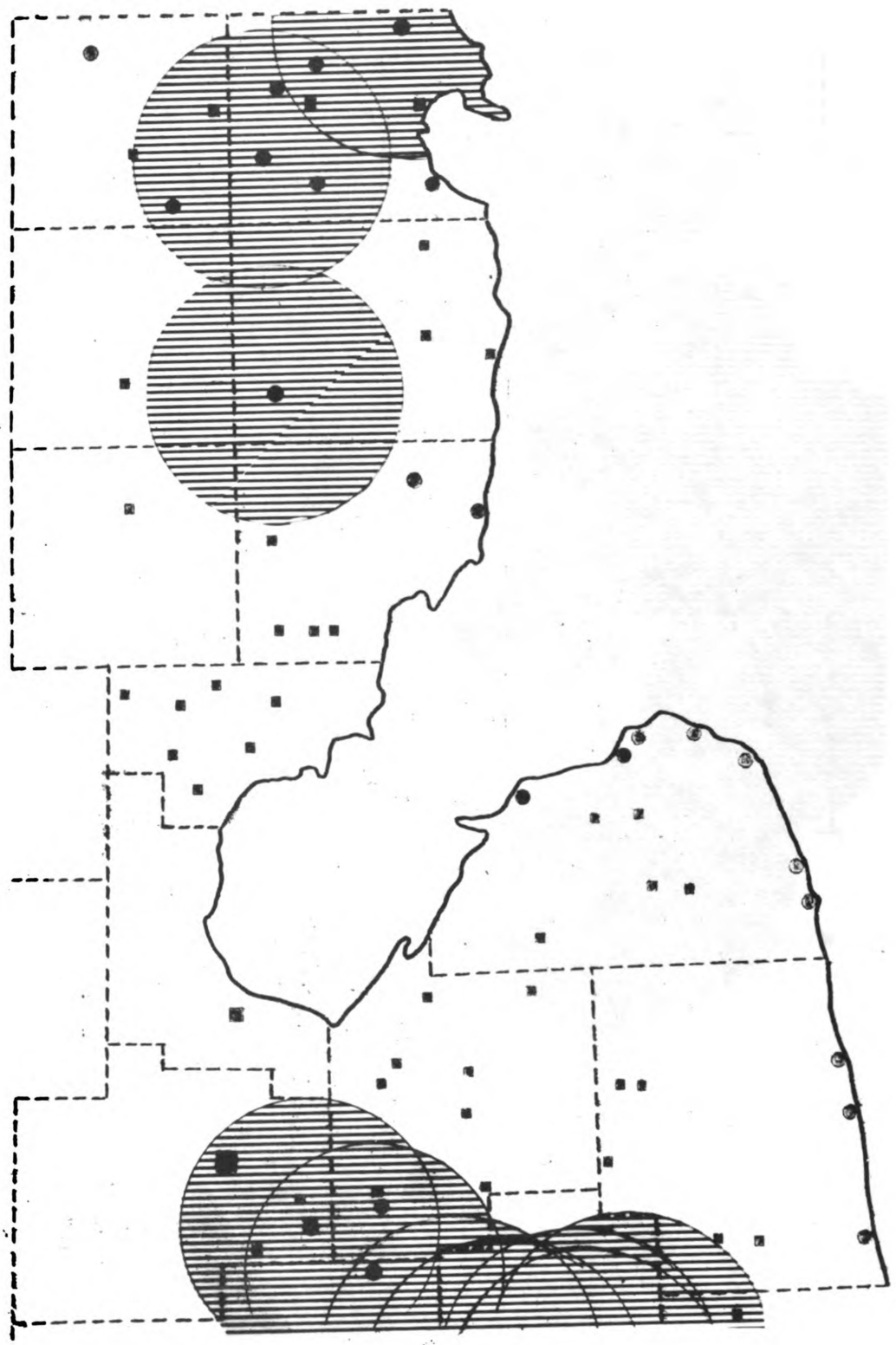

FIGURE 8. --Region Four Service Areas.

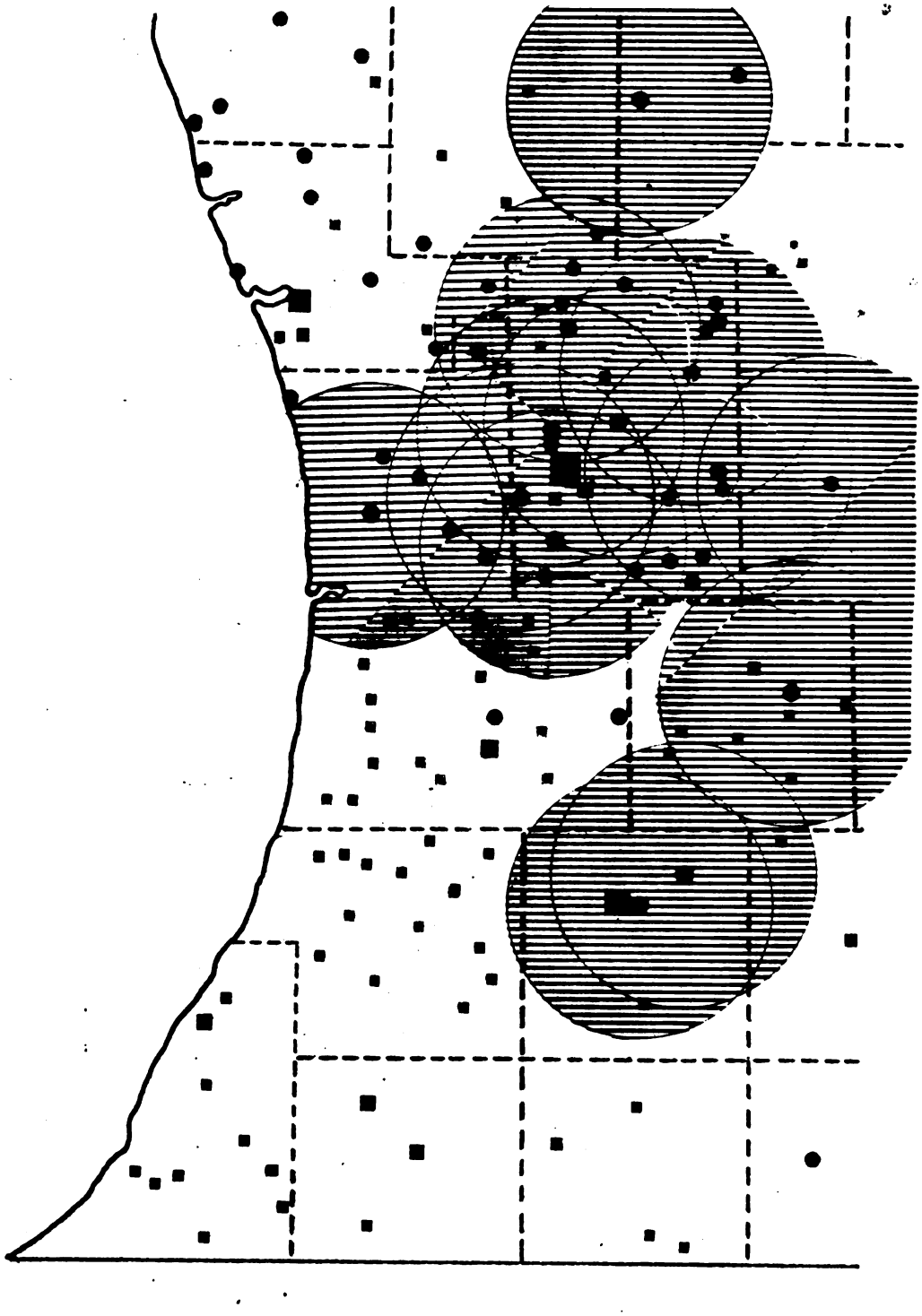

FIGURE 9. --Region Five Service Areas.

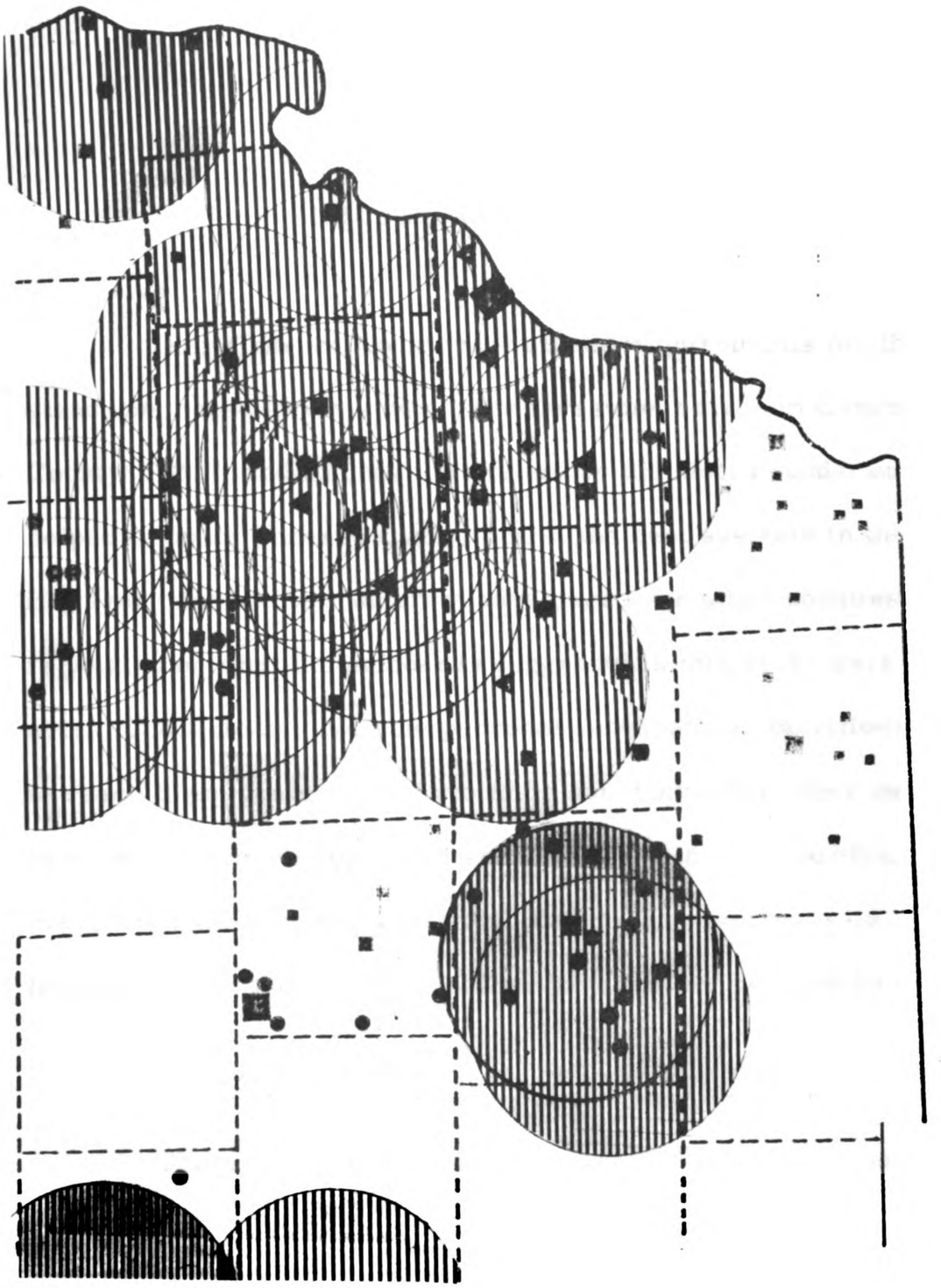

FIGURE 10. --Region Six Service Areas.

CHAPTER V

ANALYSIS AND CONCLUSIONS

Only Genesee County met all the requirements for the four standards posed in the study. The investment made in Genesee County's Park and Recreation system by the Mott Foundation has helped to make Genesee County one of the best systems in the nation. However, despite that inherent advantage over other counties, the fact is pointed out that the standards suggested in this study were obtainable. Undoubtedly, both the personal and financial sacrifices required to reach these goals would have to be substantial for other counties to reach the minimum suggested standards. In the final analysis, however, the sacrifice would be worth it. As Hanson once said, "We have learned how to make a living but we have not learned how to live."[1]

A Beginning Point for a County Park System

There must be some point at which a particular county can reasonably justify the expenditure of its resources for a county park

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[1] A. H. Hanson, "Standards and Values in a Rich Society," Private Wants and Public Needs (New York: Norton and Company, 1965), p. 11.

system. The answer to that problem involves an in-depth analysis of local situations to a greater extent than has been covered here. However, two significant factors have been analyzed in the study that may help in the decision-making process. The first was that county parks should have been at least 100 acres in size. The second was that each county possessed a particular demand score which was then converted into an acreage requirement.

Realistically, a county could not afford competent park and recreation staff and equipment for the maintenance of only one park. The hiring of professional staff and expenditures for recreation would be more amenable in counties requiring at least two or three 100-acre parks. The method of determining that need was suggested to have been the demand-supply requirement. Therefore, it was suggested that counties having a demand score of less than 200 acres did not require a formal county park and recreation system. In Michigan there were 26 counties with requirements of less than 200 acres. Those counties should be cautioned, however, that a decision to create or not to create a county park system should be based on future projections of demand. It would be more difficult and expensive to attempt to "make up" in the future that which can be anticipated today.

If a county decided not to establish a park system, then there must be a replacement by some other comparable program. The replacement could be from sources that were public, private, or a combination of the two. In counties already having large segments of State or Federal land holdings within their borders, the best method may be a joint cooperation system. The acreage required for a county park would be contributed by the State or Federal governments, while the county would provide recreational leadership. The general idea appears to be practical, though it would undoubtedly require considerable negotiation in each case.

Regional Developments

As the process of urbanization continued, the search for governmental units capable of providing services at levels between the city and state became more pertinent to the well-being of the people. Essentially there were two governmental systems considered capable of solving the type of problem found in Michigan. One system used the county as a base and the other suggested a regional orientation. Both systems had their advantages. Probably the county's greatest asset was that it was already an established governmental unit. Other factors suggested that regional approaches were necessary.

The distinction between county and regional recreation services was largely a matter of degree. Generally, the county park programs offered personal contact with park users in addition to the larger, more unsupervised programs and facilities. The regional system was characterized almost exclusively as a supplier of the unsupervised services.

There have been several factors that necessitated a regional approach to park planning. The first of these was the factor of park-users' patterns of travel. County units of jurisdiction were difficult to recognize. However, the cost of providing and maintaining county parks was the responsibility of each county. It followed then that cross-flows between county parks could be both advantageous and disadvantageous, depending on which county was being considered. As an example, it would be a financial liability for Eaton County to construct a park system that would be primarily used by Ingham County residents. One solution to that problem would have been the creation of a regional park system in which each member county contributed a certain proportion of the cost for acquisition and maintenance.

Second, when one county becomes substantially developed, both the availability and cost of potential county park areas become limiting factors. Therefore, if the people in the county are to be

provided with recreational facilities at a reasonable cost, the land must be acquired wherever it is available, even in other counties.

At present, the Huron-Clinton Metropolitan Authority has the only regional organization in the State concerned with recreation. Undoubtedly there should be others. Future regional authorities might include:

1. Clinton, Eaton, Ingham
2. Tuscola, Saginaw, Shiawassee, Genesee, Lapeer
3. Muskegon, Ottawa, Kent, Allegan

In addition, the counties of Monroe and St. Clair might consider joining the Huron-Clinton Metropolitan Authority.

The basis for regions, whether for park or economic analysis, generally includes at least one metropolitan center around which there is a surrounding rural fringe. The development of the region must be mutually advantageous to all parties. However, regional systems, such as the Huron-Clinton example, are not to be considered substitutes for county park systems. As in the Huron-Clinton example, the regional parks complement the county parks. Each system plays a vital and necessary role.

County Park and Recreation Orientation

After analyzing the location of county parks, and facilities within the parks, it appeared that a number of counties had taken the

wrong orientation. County parks were assumed to have been day-use recreation areas for the use of all county residents. In some counties, however, the emphasis appeared to have been more on providing camping areas for tourists. Undoubtedly there was a need for this type of facility. The primary purpose of county parks should be the provision of recreational opportunities for county residents. When the needs of county residents are satisfied, then the county can offer services to others. It would be difficult to find a single county in Michigan capable of adequately providing the first requirement.

Future Directions

Recreation was stated to have been an integral component necessary for the development of society. As such, recreation became a responsibility of government. The four standards presented in the thesis were designed to suggest guidelines on which county government could structure recreation programs. By following these four directives, the county would be properly fulfilling an essential portion of its recreation responsibilities in society.

Standards do not remain constant. As new information becomes available, standards must change with them. Examples of these changes might include new developments in travel speeds, allowing park service areas to increase. A second variable is the dynamics of change inherent in social systems. An example of

social change could be the future differences in park use by different races. In the studies used to develop demand characteristics it was found that whites required more park area than did nonwhites. However, that characteristic was probably dependent on several other factors, such as educational and income differences between the groups. It has been speculated that as the social and economic characteristics separating whites and nonwhites more closely approximate each other, differences in county recreational requirements would also diminish.

In essence, it was suggested that the counties utilize the standards presented here. However, as time and techniques change, the standards and methods of computing standards must keep pace. New and improved methods will follow. The counties must be prepared to utilize them and encourage their development.

Results and Recommendations

The analysis of each subhypothesis results varied; however, the results of the complete study confirmed the hypothesis that county park systems in Michigan were inadequate. The only exception to the hypothesis was Genesee County. County park systems were significant in only a limited number of counties. The need for additional acreage. larger parks, better service area coverage, and county park and recreation boards was evident throughout the State.

It is recommended that each county government re-evaluate the county park system. The study indicated four steps that should be taken. First, each county requires a separate Park and Recreation Board. Second, each county requires a specific number of acres for county parks. Third, additional parks, or additions to existing parks, should be made to ensure a minimum of 100 acres in size. Fourth, parks should be located to ensure equal access to parks for all county residents.

REFERENCES CITED

Books

Burns, C. D. Leisure in the Modern World. New York: Century Company, 1932.

Butler, G. D., Editor. County Parks. Playground and Recreation Association, National Recreation and Park Association. New York: McGraw-Hill Company, 1959.

_____. Municipal and County Parks in the United States, 1940. New York: National Recreation and Park Association, 1942.

Clawson, Marion. Statistics on Outdoor Recreation. Resources for the Future. Washington, D.C. April, 1958.

De Grazia, Sebastian. Of Time, Work, and Leisure. Garden City, New York: Doubleday and Company, 1964.

Doell, Charles. Elements of Park and Recreation Administration. Minneapolis: Burgess Publishing Company, 1964.

_____, and Fitzgerald, G. B. A Brief History of Parks and Recreation. Chicago: Athletic Institute, 1954.

Duncombe, H. S. County Government in America. Washington, D.C.: National Association of Counties, 1966.

Elliot, C. A. "Advanced Road Programming for Recreational Development." County Parks and Recreation . . . A Basis for Action. Edited by Philip Warren. Washington, D.C.: National Association of County Officials, 1964.

Friedmann, John. "Regional Planning as a Field of Study." Regional Development and Planning. Edited by John Friedmann. Cambridge, Massachusetts: Massachusetts Institute of Technology, 1964.

Gibbon, E. The History of the Decline and Fall of the Roman Empire. Volume 3. Philadelphia: Coat and Porter Company.

Hanson, A. H. "Standards and Values in a Rich Society. Private Wants and Public Needs. Edited by E. S. Phelps. New York: W. W. Norton and Company, 1965.

Huizinga, Johan. Homo Ludens. Boston: Beacon Press, 1950.

Lee, Robert. Religion and Leisure in America. New York: Abington Press, 1964.

Meyer, H. D., and Brightbill, C. K. Community Recreation. Prentice-Hall Incorporated, 1956.

Miller, N. P., and Robinson, D. M. The Leisure Age. Belmont, California: Wadsworth Publishing Company, 1967.

Neumeyer, M. H., and Neumeyer, E. S. Leisure and Recreation. New York: Ronald Press Company, 1958.

Rodney, Lynn. Administration of Public Recreation. New York: Ronald Press Company, 1964.

Urner, Jack. "An Area-wide Approach to Parks and Recreation." County Parks and Recreation . . . A Basis for Action. Edited by Philip Warren. National Association of County Officials, National Recreation Association, 1964.

Veblan, Thorstein. The Theory of the Leisure Class. New York: Mentor Book, 1953.

Warren, Philip, Editor. County Parks and Recreation . . . A Basis for Action. Washington, D.C.; New York: National Association of County Officials, National Recreation Association, 1964.

Woody, Thomas. Life and Education in Early Societies. New York: MacMillan Company, 1949.

Periodicals

Arles, James. "County Government." Parks and Recreation, Volume 4, Number 8, August, 1969, pp. 30-32.

Barnes, David. "Developing County Parks." Parks and Recreation, April, 1963, p. 150.

Mittlestaelt, A. H., Ward, R. G., and Lowrey, R. F. "An Appraisal of Recreation Standards." Parks and Recreation, Volume 4, July, 1969, p. 20.

"A New Look at Open Space and User Standards." Park Maintenance, April, 1966, pp. 16-18.

"Regional Parks." Recreation. The San Diago County Regional Plan, Objectives and Policies, Part 4.

Reports

Berks County Planning Commission. Open Space and Recreation. Comprehensive Plan, Number 4, February, 1963.

Burdge, R. J., Sitterly, J. H., and So, F. S. Outdoor Recreation Research. National Resources Institute. Columbus, Ohio: Ohio State University, 1962.

Bureau of Outdoor Recreation. The 1965 Survey of Outdoor Recreation Activities. United States Department of Interior. October, 1967.

Candeub, Cabot, and Associates. Recreation and Open Space Plan. Lackawana County, Pennsylvania: Lackawana County Planning Commission, 1963.

Chubb, M., and Ashton, P. Park and Recreation Standard Research. Technical Report Number 5. East Lansing: Michigan State University, January, 1969.

_____. Outdoor Recreation Planning in Michigan by a Systems Analysis Approach. East Lansing: Michigan State University, February, 1968.

Detroit Metropolitan Area Regional Planning Commission. Guidelines for Levels of Function and Responsibility for Public Outdoor Recreation in Southeastern Michigan. (Paul Reid, Director.) Detroit, Michigan, March, 1966.

Department of Conservation and Economic Development. Park and Recreational Land Use in New Jersey. June, 1965.

Genesee County Parks and Recreation Commission. Policy Statement. C. R. Ammerman, Chairman. Flint, Michigan.

Habben, R. B. Regional Recreation Lands Plan, Interim Report. Detroit: Detroit Metropolitan Area Regional Planning Commission, 1966.

Kent County Road and Park Commission. Kent County Parks, Recreation and Open Space. E. D. Mueller, Chairman. Grand Rapids, Michigan, June, 1968.

Lacey, G. C. The Creation of Recreation. Oakland County Parks and Recreation Commission.

Lansing, J. B., Hendricks, G. Living Patterns and Attitudes in the Detroit Region. Detroit Metropolitan Area Regional Planning Commission, January, 1967.

Luzerne County Planning Commission. Recreation Report. Part of the Comprehensive Master Plan for the Wilkes-Barre/ Hazleton Metropolitan Area. Luzerne County, Pennsylvania, 1960.

Miller, J. F. Recreation in the Detroit Region, Part 2, Park Users Survey. Detroit Metropolitan Authority Planning Commission, April 25, 1959.

Milstein, D. N., and Reid, L. M. Michigan Outdoor Recreation Demand Study, Volume 1, Methods and Models. Michigan Department of Commerce. Technical Report 6, June, 1966.

Mueller, E., and Gurin, G. The Demand for Outdoor Recreation. Outdoor Recreation Resources Review Commission. Institute of Social Research. Ann Arbor, Michigan: University of Michigan, 1961.

Planning Division. Illustrative Statement of Goals and Objectives for Public Recreation in Southeastern Michigan. Southeast Michigan Council of Governments, April, 1968.

Public Open Space and Recreation. Cape May County, New Jersey: Cape May County Planning Commission.

Putters, Max. Recreation in the Detroit Region, Part 1, 1957 Inventory and Analysis of Public Lands. Detroit Metropolitan Authority Planning Commission, February, 1958.

South Carolina Wildlife Resources Department. Outdoor Recreation in South Carolina. Columbia, South Carolina, 1966.

Twardzik, L. F. Summary of Laws Relating to Local Parks and Recreation. East Lansing: Michigan State University, 1965.

APPENDIX I

1969 COUNTY PARK AND RECREATION SURVEY

COUNTY: _____ APRIL 11, 1969

Name of Park: _____

Camping: Tent: _____ Trailer: _____

Fee: Day: ___ Week: ___ Month: ___ Season: ___

Swimming: Yes: _____ No: _____ Fee: _____

Boating Ramps: Yes: _____ No: _____ Fee: _____

Fishing: Yes: _____ No: _____ Fee: _____

Picnicking: Yes: _____ No: _____ Fee: _____

Park Size in Acreage: _____

Is the County Park controlled by a Committee under the Board of Supervisors or a Special Park Authority:

_____

_____

Other:

_____

_____

APPENDIX II

COUNTY SOCIO-ECONOMIC CHARACTERISTICS

A. SEX (PERCENT MALE)

County	Percent	Rating	County	Percent	Rating
Alcona	51.0%	3.20	Crawford	53.5%	3.65
Alger	52.0	3.40	Delta	49.6	2.86
Allegan	49.6	2.86	Dickinson	49.1	2.81
Alpena	49.4	2.84	Eaton	49.1	2.81
Antrim	49.6	2.86	Emmet	47.9	2.49
Arenac	51.0	3.20	Genesee	49.0	2.80
Baraga	53.2	3.62	Gladwin	50.2	3.02
Barry	50.7	3.07	Gogebic	50.1	3.01
Bay	48.6	2.66	Grand Traverse	49.0	2.80
Benzie	49.3	2.83	Gratiot	48.8	2.68
Berrien	48.7	2.67	Hillsdale	49.2	2.82
Branch	49.8	2.88	Houghton	53.1	3.61
Calhoun	49.3	2.83	Huron	50.3	3.03
Cass	49.3	2.83	Ingham	48.7	2.67
Charlevoix	49.8	2.88	Ionia	54.0	3.80
Cheboygan	49.6	2.86	Iosco	51.8	3.28
Chippewa	52.8	3.48	Iron	50.5	3.05
Clare	49.3	2.83	Isabella	49.8	2.88
Clinton	49.9	2.89	Jackson	51.4	3.24

County	Percent	Rating	County	Percent	Rating
Kalamazoo	48.0%	2.60	Muskegon	48.4	2.64
Kalkaska	50.1	3.01	Newaygo	49.5	2.85
Kent	47.5	2.45	Oakland	48.7	2.67
Keweenaw	57.2	4.62	Oceana	50.0	3.00
Lake	48.5	2.65	Ogemaw	50.4	3.04
Lapeer	49.9	2.89	Ontonagon	54.2	3.82
Leelanau	51.7	3.27	Osceola	50.1	3.01
Livingston	50.1	3.01	Oscoda	49.5	2.85
Lenawee	48.1	2.61	Otsego	50.4	3.04
Luce	50.8	3.08	Ottawa	48.9	2.69
Mackinac	50.4	3.04	Presque Isle	52.4	3.44
Macomb	49.7	2.87	Roscommon	50.3	3.03
Manistee	49.1	2.87	Saginaw	48.3	2.63
Marquette	52.3	3.43	St. Clair	48.5	2.65
Mason	49.6	2.86	St. Joseph	48.4	2.64
Mecosta	54.6	3.86	Sanilac	50.5	3.05
Menominee	50.1	3.01	Schoolcraft	49.6	2.86
Midland	49.0	2.80	Shiawassee	49.0	2.80
Missaukee	50.0	3.00	Tuscola	49.6	2.86
Monroe	49.6	2.86	Washtenaw	50.0	3.00
Montcalm	49.2	2.82	Wayne	48.4	2.64
Montmorency	50.9	3.09	Wexford	48.3	2.63

APPENDIX II

COUNTY SOCIO-ECONOMIC CHARACTERISTICS

B. EDUCATION

County	Years Completed	Rating	County	Years Completed	Rating
Alcona	9.60	2.6	Clinton	10.55	3.6
Alger	9.40	2.5	Crawford	10.50	3.6
Allegan	9.80	2.8	Delta	10.25	3.3
Alpena	9.60	2.6	Dickinson	10.65	3.7
Antrim	10.30	3.3	Eaton	11.40	4.3
Arenac	9.50	2.6	Emmet	11.00	3.9
Baraga	9.40	2.5	Genesee	10.85	3.9
Barry	10.90	3.9	Gladwin	9.50	2.6
Bay	10.05	3.0	Gogebic	10.45	3.5
Benzie	10.40	3.0	Grand Traverse	10.75	3.7
Berrien	10.35	3.4	Gratiot	10.45	3.4
Branch	10.20	3.2	Hillsdale	11.45	4.4
Calhoun	11.20	4.2	Houghton	9.40	2.5
Cass	10.10	3.1	Huron	8.75	1.8
Charlevoix	10.65	3.7	Ingham	12.10	5.0
Cheboygan	9.50	2.5	Ionia	10.40	3.5
Chippewa	10.50	3.6	Iosco	11.50	4.6
Clare	10.15	3.2	Iron	10.35	3.4

County	Years Completed	Rating	County	Years Completed	Rating
Isabella	10.40	3.5	Muskegon	10.50	3.4
Jackson	10.90	4.0	Newaygo	9.70	2.7
Kalamazoo	11.70	4.7	Oakland	12.05	5.0
Kalkaska	10.25	3.3	Oceana	9.55	2.6
Kent	11.5	4.2	Ogemaw	9.45	2.5
Keweenaw	8.45	1.5	Ontonagon	9.30	2.5
Lake	8.75	1.8	Osceola	9.90	2.9
Lapeer	9.70	2.7	Oscoda	9.90	2.9
Leelanau	9.85	2.9	Otsego	9.60	2.6
Lenawee	11.20	4.1	Ottawa	9.90	2.9
Livingston	11.05	4.0	Presque Isle	9.00	2.0
Luce	8.75	1.8	Roscommon	10.20	3.3
Mackinac	9.90	2.9	Saginaw	10.35	3.3
Macomb	11.00	4.0	St. Clair	10.20	3.1
Manistee	9.85	2.9	St. Joseph	11.00	4.0
Marquette	10.80	3.8	Sanilac	9.45	2.5
Mason	10.40	3.4	Schoolcraft	9.65	2.7
Mecosta	10.45	3.5	Shiawassee	10.70	3.7
Menominee	9.65	2.7	Tuscola	9.35	2.4
Midland	12.15	5.0	Van Buren	10.20	3.2
Missaukee	8.95	2.0	Washtenaw	12.25	5.3
Monroe	9.50	2.5	Wayne	10.50	3.5
Montcalm	10.55	3.5	Wexford	10.05	3.0
Montmorency	9.75	2.8			

APPENDIX II

COUNTY SOCIO-ECONOMIC CHARACTERISTICS

C. RACE

County	Percent White	Rating	County	Percent White	Rating
Alcona	99.5%	4.8	Crawford	97.3%	3.8
Alger	98.5	4.4	Delta	99.3	4.8
Allegan	98.3	4.2	Dickinson	99.9	4.8
Alpena	100.0	5.0	Eaton	99.8	4.8
Antrim	98.7	4.4	Emmet	96.0	3.4
Arenac	99.2	4.6	Genesee	90.1	1.0
Baraga	96.3	3.8	Gladwin	100.0	5.0
Barry	99.9	4.8	Gogebic	99.7	4.8
Bay	99.3	4.6	Grand Traverse	99.0	4.8
Benzie	98.5	4.4	Gratiot	99.6	4.8
Berrien	91.3	1.4	Hillsdale	99.7	4.8
Branch	99.2	4.6	Houghton	99.7	4.8
Calhoun	92.6	2.0	Huron	99.9	4.8
Cass	89.5	0.8	Ingham	96.1	3.4
Charlevoix	98.3	4.2	Ionia	97.2	3.8
Chippewa	96.9	3.6	Iosco	98.8	4.4
Clare	99.7	4.8	Iron	99.9	4.8
Clinton	99.6	4.8	Isabella	97.9	4.0

County	Percent White	Rating	County	Percent White	Rating
Jackson	94.3%	2.6	Muskegon	91.3%	1.4
Kalamazoo	96.4	3.4	Newaygo	97.8	4.0
Kalkaska	98.8	4.4	Oakland	96.5	3.6
Kent	95.7	3.2	Oceana	99.0	4.6
Keweenaw	98.2	4.2	Ogemaw	99.9	4.8
Lake	73.4	0.0	Ontonagon	99.9	4.8
Lapeer	98.7	4.4	Osceola	99.5	4.8
Leelanau	97.5	4.0	Oscoda	99.7	4.8
Lenawee	99.3	4.6	Otsego	99.5	4.8
Livingston	99.1	4.6	Ottawa	99.6	4.8
Luce	98.9	4.4	Presque Isle	99.8	4.8
Mackinac	97.5	4.0	Roscommon	99.9	4.8
Macomb	98.3	4.2	Saginaw	90.0	1.0
Manistee	98.5	4.4	St. Clair	97.5	4.0
Marquette	97.8	4.0	St. Joseph	98.4	4.2
Mason	99.4	4.6	Sanilac	99.9	4.8
Mecosta	98.9	4.4	Schoolcraft	99.5	4.8
Menominee	99.2	4.6	Shiawassee	99.9	4.8
Midland	99.9	4.8	Tuscola	98.8	4.4
Missaukee	99.9	4.8	Van Buren	92.6	2.0
Monroe	98.0	4.2	Washtenaw	92.5	2.0
Montcalm	99.8	4.8	Wayne	80.0	0.0
Montmorency	100.0	5.0	Wexford	99.9	4.8

APPENDIX II

COUNTY SOCIO-ECONOMIC CHARACTERISTICS

D. INCOME

County	Median Income	Rating	County	Median Income	Rating
Alcona	$4167	2.2	Clinton	$5636	3.5
Alger	5028	2.9	Crawford	4399	2.4
Allegan	5532	3.4	Delta	5009	2.9
Alpena	5575	3.4	Dickinson	4770	2.7
Antrim	4002	2.0	Eaton	5821	3.6
Arenac	4237	2.2	Emmet	4694	2.6
Baraga	4287	2.3	Genesee	6340	4.0
Barry	5592	3.4	Gladwin	4481	2.4
Bay	6041	3.7	Gogebic	4287	2.3
Benzie	4563	2.5	Grand Traverse	5259	3.1
Berrien	6145	3.8	Gratiot	5218	3.0
Branch	5449	3.3	Hillsdale	4940	2.8
Calhoun	6376	4.0	Houghton	4260	2.3
Cass	5412	3.2	Huron	4198	2.2
Charlevoix	4502	2.5	Ingham	6393	4.0
Cheboygan	4291	2.3	Ionia	5091	2.9
Chippewa	4975	2.8	Iosco	4602	2.5
Clare	4400	2.4	Isabella	5206	3.0

County	Median Income	Rating	County	Median Income	Rating
Jackson	$6421	4.1	Muskegon	$6048	3.7
Kalamazoo	6526	4.1	Newaygo	4583	2.5
Kalkaska	3876	1.9	Oakland	7576	5.0
Kent	6329	4.0	Oceana	4841	2.7
Keweenaw	3952	2.0	Ogemaw	3874	1.9
Lake	3158	1.3	Ontonagon	4736	2.6
Lapeer	5284	3.1	Osceola	4350	2.3
Leelanau	4139	2.1	Oscoda	4442	2.4
Lenawee	5699	3.4	Otsego	4556	2.5
Livingston	5775	3.5	Ottawa	5920	3.6
Luce	5254	3.1	Presque Isle	5140	3.0
Mackinac	4721	2.6	Roscommon	4477	2.4
Macomb	7091	4.6	Saginaw	5953	3.7
Manistee	5112	3.0	St. Clair	5546	3.3
Marquette	5022	2.9	St. Joseph	5626	3.4
Mason	4991	2.9	Sanilac	4428	2.4
Mecosta	4322	2.3	Schoolcraft	4438	2.4
Menominee	4323	2.3	Shiawassee	5740	3.5
Midland	6627	4.2	Tuscola	4993	2.9
Missaukee	3678	1.8	Van Buren	5196	3.0
Monroe	5892	3.6	Washtenaw	6890	4.4
Montcalm	4815	2.7	Wayne	6597	4.2
Montmorency	3574	1.8	Wexford	4865	2.8

APPENDIX II

COUNTY SOCIO-ECONOMIC CHARACTERISTICS

E. AGE

County	Median Age	Rating	County	Median Age	Rating
Alcona	32.0	1.95	Clinton	24.8	4.20
Alger	28.4	2.90	Crawford	30.6	2.10
Allegan	26.6	3.60	Delta	29.2	2.65
Alpena	25.0	4.00	Eaton	26.6	3.60
Antrim	31.7	2.00	Emmet	30.2	2.45
Arenac	29.9	2.40	Genesee	26.1	3.65
Baraga	32.4	1.45	Gladwin	27.6	3.10
Barry	28.6	2.75	Gogebic	35.9	0.95
Bay	26.4	3.50	Grand Traverse	32.1	1.90
Benzie	30.2	2.40	Gratiot	26.4	3.60
Berrien	28.5	2.85	Hillsdale	28.2	2.95
Branch	28.5	2.85	Houghton	33.3	1.75
Calhoun	28.4	2.85	Huron	27.8	3.30
Cass	28.7	2.70	Ingham	25.4	3.80
Charlevoix	30.2	2.25	Ionia	25.4	3.80
Cheboygan	27.9	3.10	Iosco	26.7	3.55
Chippewa	24.5	4.15	Iron	34.9	1.10
Clare	28.5	2.85	Isabella	22.4	4.80

County	Median Age	Rating	County	Median Age	Rating
Jackson	29.1	2.70	Muskegon	26.1	3.70
Kalamazoo	26.7	3.65	Newaygo	27.6	3.35
Kalkaska	32.1	1.90	Oakland	26.8	3.70
Kent	27.8	3.10	Oceana	28.5	3.00
Keweenaw	38.7	0.15	Ogemaw	30.1	2.40
Lake	38.9	0.10	Ontonagon	30.4	2.40
Lapeer	26.7	3.55	Osceola	29.4	2.75
Leelanau	29.7	2.50	Otsego	28.4	3.00
Lenawee	26.6	3.60	Ottawa	25.0	4.00
Livingston	27.0	3.35	Presque Isle	26.4	3.70
Luce	35.3	1.00	Roscommon	36.4	0.90
Mackinac	27.3	3.30	Saginaw	26.4	3.70
Macomb	24.8	4.10	St. Clair	28.4	3.00
Manistee	31.9	1.90	St. Joseph	30.2	2.40
Marquette	28.1	3.00	Sanilac	29.5	2.75
Mason	31.7	2.00	Schoolcraft	29.2	2.75
Mecosta	23.8	4.70	Shiawassee	26.9	3.70
Menominee	31.0	2.00	Tuscola	27.4	3.35
Midland	22.8	5.00	Van Buren	30.1	2.40
Missaukee	27.3	3.35	Washtenaw	25.1	4.00
Monroe	25.7	4.00	Wayne	30.8	2.40
Montcalm	28.9	3.00	Wexford	29.6	2.75
Montmorency	33.3	1.80			

APPENDIX II

COUNTY SOCIO-ECONOMIC CHARACTERISTICS

F. PLACE OF RESIDENCE (DENSITY)

County	Density	Rating	County	Density	Rating
Alcona	9	0.1	Crawford	9	0.1
Alger	10	0.1	Delta	29	0.5
Allegan	70	1.4	Dickinson	32	0.6
Alpena	50	1.0	Eaton	88	1.7
Antrim	22	0.4	Emmet	34	0.6
Arenac	27	0.5	Genesee	581	5.0
Baraga	8	0.1	Gladwin	21	0.4
Barry	58	1.1	Gogebic	22	0.4
Bay	240	4.8	Grand Traverse	72	1.4
Benzie	25	0.5	Gratiot	65	1.3
Berrien	258	5.0	Hillsdale	58	1.1
Branch	69	1.3	Houghton	35	0.7
Calhoun	196	3.9	Huron	41	0.8
Cass	76	1.5	Ingham	378	5.0
Charlevoix	32	0.6	Ionia	75	1.5
Cheboygan	20	0.4	Iosco	30	0.6
Chippewa	21	0.4	Iron	14	0.2
Clare	20	0.4	Isabella	62	1.2
Clinton	66	1.3	Jackson	187	3.6

County	Density	Rating	County	Density	Rating
Kalamazoo	299	5.0	Muskegon	298	5.0
Kalkaska	8	0.1	Newaygo	28	0.5
Kent	421	5.0	Oakland	787	5.0
Keweenaw	4	0.0	Oceana	31	0.6
Lake	9	0.1	Ogemaw	17	0.3
Lapeer	64	1.2	Ontonagon	8	0.1
Leelanau	27	0.5	Osceola	23	0.4
Lenawee	103	2.0	Otsego	14	0.2
Livingston	67	1.3	Ottawa	175	3.5
Luce	9	0.1	Presque Isle	20	0.4
Mackinac	11	0.2	Roscommon	14	0.2
Macomb	844	5.0	St. Clair	145	2.9
Manistee	34	0.6	St. Joseph	83	1.6
Marquette	31	0.6	Sanilac	34	0.6
Mason	44	0.8	Schoolcraft	7	0.1
Mecosta	37	0.7	Shiawassee	99	1.9
Menominee	24	0.4	Saginaw	235	4.7
Midland	99	1.9	Tuscola	53	1.0
Missaukee	12	0.2	Van Buren	80	1.6
Monroe	180	3.6	Washtenaw	241	4.8
Montcalm	50	1.0	Wayne	4393	5.0
Montmorency	8	0.1	Wexford	33	0.6

APPENDIX III

FINAL DETERMINATION OF DEMAND

County	Weighted Factors	=	Score (acres /1000)	Score	×	Popu-lation	=	Needed Acres
Alcona	2.47		12	12		6.3		75.6
Alger	2.89		14	14		9.2		128.8
Allegan	3.24		16	16		57.7		923.2
Alpena	3.39		17	17		28.5		484.5
Antrim	2.51		13	13		10.3		133.9
Arenac	2.76		14	14		9.8		137.2
Baraga	2.37		12	12		7.1		85.2
Barry	3.24		16	16		31.7		507.2
Bay	3.66		18	18		107.0		1926.0
Benzie	2.71		14	14		7.8		109.2
Berrien	3.02		15	15		149.2		2247.0
Branch	3.12		16	16		34.9		558.4
Calhoun	3.18		16	16		138.8		2220.8
Cass	2.52		13	13		36.9		479.7
Charlevoix	2.74		14	14		13.4		187.6
Cheboygan	2.92		15	15		14.5		217.5
Chippewa	3.42		17	17		32.6		554.2
Clare	2.94		15	15		11.6		174.0
Clinton	3.68		18	18		37.9		682.2

County	Weighted Factors	=	Score (acres 1000)	Score	×	Popu-lation	=	Needed Acres
Crawford	2.74		14	14		4.9		68.9
Delta	2.90		14.5	14.5		34.2		495.0
Dickinson	2.59		13	13		23.9		310.7
Eaton	3.46		17	17		49.6		843.2
Emmet	2.66		13	13		15.9		206.7
Genesee	3.34		17	17		374.3		6363.1
Gladwin	2.96		15	15		10.7		160.5
Gogebic	2.24		11	11		24.3		267.3
Grand Traverse	2.72		14	14		33.4		467.6
Gratiot	3.34		17	17		37.0		629.0
Hillsdale	3.22		16	16		34.7		555.2
Houghton	2.52		13	13		35.6		462.8
Huron	2.90		14.5	14.5		34.0		493.0
Ingham	3.94		20.0	20.0		211.2		4224.0
Ionia	3.49		17	17		43.1		732.7
Iosco	3.35		17	17		16.5		280.5
Iron	2.28		11	11		17.1		188.1
Isabella	3.73		19	19		35.3		670.7
Jackson	3.18		16	16		131.9		2110.4
Kalamazoo	3.79		19	19		169.7		3224.3
Kalkaska	2.45		12	12		4.3		51.6
Kent	3.52		18	18		363.1		6535.8
Keweenaw	1.78		9	9		2.4		21.6
Lake	0.87		4	4		5.3		21.2
Lapeer	3.21		16	16		41.9		670.4
Leelanau	2.74		14	14		9.3		130.2
Lenawee	3.52		18	18		77.7		1398.6

County	Weighted Factors	=	Score (acres /1000)	Score	×	Popu-lation	=	Needed Acres
Livingston	3.29		16	16		38.2		611.2
Luce	2.02		10	10		7.8		78.0
Macomb	4.12		20.5	20.5				
Mackinac	2.93		15	15		10.8		162.0
Marquette	3.01		15	15		56.1		841.5
Mason	2.67		13	13		21.9		284.7
Mecosta	2.62		13	13		21.0		273.0
Menominee	2.48		12	12		24.6		295.2
Midland	4.25		21	21		51.4		1079.4
Missaukee	2.81		14	14		6.7		93.8
Monroe	3.53		18	18		101.1		1819.8
Montcalm	3.07		15	15		35.7		535.5
Montmorency	2.42		12	12		4.4		52.8
Muskegon	3.26		16	16		149.9		2398.4
Newaygo	2.89		14	14		24.1		337.4
Oakland	3.98		20	20		690.6		13812.0
Oceana	2.90		14.5	14.5		16.5		239.2
Ogemaw	2.57		13	13		9.6		124.8
Ontonagon	2.74		14	14		10.5		147.0
Osceola	2.80		14	14		13.5		189.0
Otsego	2.84		14	14		7.5		105.0
Ottawa	3.65		18	18		98.7		1776.6
Presque Isle	3.14		16	16		13.1		209.6
Roscommon	2.20		11	11		7.2		79.2
Saginaw	2.99		15	15		190.7		2860.5
St. Clair	2.98		15	15		107.2		1608.0

County	Weighted Factors	=	Score (acres / 1000)	Score	×	Population	=	Needed Acres
St. Joseph	2.85		14	14		42.3		592.2
Sanilac	2.74		14	14		32.3		457.2
Schoolcraft	2.91		15	15		8.9		133.5
Shiawassee	3.77		19	19		53.4		1014.6
Tuscola	2.99		15	15		43.3		649.5
Van Buren	2.47		12	12		48.3		579.6
Washtenaw	3.81		19	19		172.4		3275.6
Wayne	2.96		15	15		2666.2		39993.0
Wexford	2.99		15	15		18.4		276.0

APPENDIX IV

SUPPLY-DEMAND, DEFICIENCY, AND ADEQUACY

County	Acres			Percent Adequacy
	Demand	Supply	Deficiency	
Alcona	75.6	1000	+ 925	1333.3%
Alger	128.8	10	- 118.8	7.8
Allegan	923.2	25	- 898.0	2.7
Alpena	484.5	327	- 157	67.5
Antrim	133.9	150	+ 17	112.7
Arenac	137.2	29	- 108	21.1
Baraga	85.2	0	- 85.2	0.0
Barry	507.2	300	- 207.2	59.1
Bay	1926.0	?	?	?
Benzie	109.2	0	- 109.2	0.0
Berrien	2247.0	3	-2244.0	0.01
Branch	558.4	30	- 528.4	5.3
Calhoun	2220.0	2	-2218.0	0.01
Cass	497.0	0	- 497.0	0.0
Cheboygan	217.5	0	- 217.5	0.0
Chippewa	554.2	0	- 554.2	0.0
Clare	174.0	?	?	?
Clinton	682.2	0	- 682.2	0.0
Crawford	68.6	0	- 68.6	0.0

County	Acres			Percent Adequacy
	Demand	Supply	Deficiency	
Delta	495.0	100	- 395.0	20.2%
Dickinson	310.7	?	?	?
Eaton	843.2	0	- 843.2	0.0
Emmet	206.7	1	- 205.7	0.04
Charlevoix	187.6	20	- 167.6	10.6
Genesee	6363	6745	+ 382	106.0
Gladwin	160.5	0	- 160.5	0.0
Gogebic	267.3	222	- 83.1	83.1
Grand Traverse	467.6	0	- 467.6	0.0
Gratiot	629.0	0	- 629.0	0.0
Huron	493.0	450	- 43.0	91.8
Hillsdale	555.2	0	- 555.2	0.0
Houghton	462.8	0	- 462.8	0.0
Ingham	4224.0	120	-4104.0	2.8
Ionia	732.7	185	- 550.0	25.2
Iosco	280.5	62	- 218.0	22.1
Iron	188.1	203	+ 15.0	107.9
Isabella	670.7	40	- 630.0	5.9
Jackson	2110.4	673	-1437.0	31.8
Kalamazoo	3224.3	511	-2713.0	15.8
Kalkaska	51.6	40	- 11.6	78.4
Kent	6535.8	2686	-2713.0	41.1
Keweenaw	21.6	10	- 11.0	47.6
Lake	21.2	0	- 21.2	0.0
Lapeer	670.4	40	- 630.0	5.9
Leelanau	130.2	1	- 129.2	0.01
Lenawee	1398.6	0	-1398.6	0.0

County	Acres			Percent Adequacy
	Demand	Supply	Deficiency	
Livingston	611.2	0	- 611.2	0.0%
Luce	78.0	?	?	?
Mackinac	162.0	0	- 162.0	0.0
Manistee	247.0	0	- 247.0	0.0
Macomb	8549.1	0	-8549.1	0.0
Marquette	841.5	30.0	- 811.0	3.5
Mason	284.7	0	- 284.7	0.0
Mecosta	273.0	265.0	- 8.0	97.0
Menominee	295.0	?	?	?
Midland	1079.4	20.0	-1059.4	1.8
Missaukee	93.8	32.0	- 61.8	34.4
Monroe	1819.8	14.0	-1805.8	0.01
Montcalm	535.5	9.0	- 526.0	0.01
Montmorency	52.8	0	- 52.8	0.0
Muskegon	2398.4	?	?	?
Newaygo	337.4	60.0	- 277.4	17.8
Oakland	13812.0	1577	-11235.0	14.0
Oceana	239.2	90	- 149.0	37.6
Ontonagon	147.0	0	- 147.0	0.0
Ogemaw	124.8	0	- 124.8	0.0
Osceola	189.0	68	- 121.0	35.9
Oscoda	40.8	20	- 20.8	50.0
Otsego	105.0	?	?	?
Ottawa	1776.6	323	-1453.0	18.1
Presque Isle	209.6	0	- 209.6	0.0
Roscommon	79.2	0	- 79.2	0.0
Saginaw	2860.5	100	-2760.5	3.4

County	Acres			Percent Adequacy
	Demand	Supply	Deficiency	
Schoolcraft	133.5	0	- 133.5	0.0%
Shiawassee	1014.6	66	- 948.0	6.5
St. Clair	1608.6	340	-1268.6	21.1
Sanilac	452.2	104	- 348.2	23.0
St. Joseph	592.2	0	- 592.2	0.0
Tuscola	649.5	10	- 639.5	1.5
Van Buren	579.6	0	- 579.6	0.0
Washtenaw	3275.6	315	-2961.0	9.6
Wayne	39993.0	4111	-35882.0	10.2
Wexford	276.0	0	- 276.0	0.0

Huron-Clinton

(County-Regional Analysis)

County	Acres			Percent Adequacy
	Demand	Supply	Deficiency	
Livingston	611	1984	+ 1373	+324.7%
Macomb	8548	4323	- 4226	- 50.5
Oakland	13812	7149	- 6063	- 51.7
Washtenaw	3275	1590	- 1685	- 48.5
Wayne	31338	8655	-22683	- 27.6
TOTAL	57585	32701	-33884	- 41.1

APPENDIX V

COUNTY SCORES AND TOTAL FOR EACH STANDARD

County	Administrative Agency	Deficiency	Size	Service Areas	Total
Alcona	1	3	1	2	7
Alger	1	1	0	0	2
Allegan	2	1	0	1	4
Alpena	2	3	2	3	10
Antrim	1	3	1	1	6
Arenac	1	1	0	0	2
Baraga	0	0	0	0	0
Barry	2	3	1	3	9
Bay	2	?	0	0	2?
Benzie	0	0	0	0	0
Berrien	1	1	0	0	2
Branch	1	1	0	0	2
Calhoun	1	1	0	1	3
Charlevoix	1	1	0	1	3
Cass	0	0	0	0	0
Cheboygan	0	0	0	0	0
Chippewa	0	0	0	0	0
Clare	1	?	0	0	1?
Clinton	0	0	0	0	0

County	Administrative Agency	Deficiency	Size	Service Areas	Total
Crawford	0	0	0	0	0
Delta	1	1	1	1	4
Dickinson	1	?	0	0	1?
Eaton	0	0	0	1	1
Emmet	1	1	0	0	2
Genesee	2	3	3	3	11
Gladwin	0	0	0	0	0
Gogebic	1	3	1	2	7
Grand Traverse	0	0	0	0	0
Gratiot	0	0	0	0	0
Huron	1	3	0	0	4
Hillsdale	0	0	0	1	1
Houghton	0	0	0	0	0
Ingham	1	1	0	0	2
Ionia	1	2	1	3	7
Iosco	2	1	0	1	4
Iron	2	3	1	2	8
Isabella	1	1	0	0	2
Jackson	2	2	2	3	9
Kalamazoo	2	1	2	3	8
Kalkaska	1	3	0	0	4
Kent	1	2	3	3	9
Keweenaw	1	2	0	0	3
Lake	0	0	0	0	0
Lapeer	1	1	0	1	3
Leelanau	1	0	0	0	1

County	Administrative Agency	Deficiency	Size	Service Areas	Total
Lenawee	1	0	0	0	1
Livingston	0	0	0	2	2
Luce	1	?	0	0	1?
Mackinac	0	0	0	0	0
Macomb	2	0	2	3	7
Manistee	0	0	0	0	0
Marquette	2	1	0	0	3
Mason	0	0	0	0	0
Mecosta	2	3	1	1	7
Menominee	1	?	0	1	2?
Midland	2	1	0	0	3
Missaukee	1	2	0	0	3
Monroe	1	0	0	1	2
Montcalm	1	1	0	1	3
Montmorency	0	0	0	1	1
Muskegon	1	?	?	?	1?
Newaygo	2	1	0	1	4
Oakland	2	1	3	3	9
Oceana	?	3	0	0	3?
Ontonagon	0	0	0	1	1
Ogemaw	0	0	0	1	1
Osceola	1	2	0	0	3
Oscoda	2	3	0	1	6
Otsego	1	?	0	0	1?
Ottawa	1	1	1	3	6
Presque Isle	0	0	0	1	1

County	Administrative Agency	Deficiency	Size	Service Areas	Total
Roscommon	0	0	0	0	0
Saginaw	1	1	1	1	4
Sanilac	1	1	0	0	2
Schoolcraft	0	0	0	0	0
Shiawassee	1	1	0	2	4
St. Clair	1	1	1	3	6
St. Joseph	0	0	0	0	0
Tuscola	2	1	0	1	4
Van Buren	0	0	0	1	1
Washtenaw	1	1	1	3	6
Wayne	1	1	3	3	8
Wexford	0	0	0	0	0