ABSTRACT

INLAND LAKE WATERFRONT DEVELOPMENT

A Case Study of Hess Lake, Newaygo County, Michigan

by Gerald H. Matthews

The shorelines of Michigan's inland lakes are rapidly being consumed by uncontrolled residential, commercial and other forms of development. Much of this shoreline must be preserved for use by the general public, thus the careful planning and utilization of waterfront property is essential.

As the American public becomes more recreation conscious it tends to effect their living habits. Factors of more spendable income and leisure time combined with rapidly improving transportation facilities have enabled more people to enjoy water-oriented recreation. An increasing number of them, both young families and retiring couples have elected to take up permanent residence on or near lakes in order to enjoy the water on more than a weekend basis. This influx of people moving to lakes has turned once resort oriented lakes into small social communities of mixed permanent and summer residents.

The relatively rapid residential development of lakefront property has created numerous problems of overcrowded land and water, undesirable patterns of mixed land uses, irregular street sizes and patterns, lack of public access to water and sanitation. The basis for many of these problems is lack of laws or enforcement of them at the local government

level due to the rural environment of many lakes. Compounding this is a confusing complex of "water rights" in Michigan which generally leaves the legal relationship of land to water somewhat in doubt.

The purpose of this thesis is twofold: first, to examine development problems characteristic of Michigan inland lakes; and secondly, through an analysis of these problems and the application of existing planning principles to formulate a number of development principles to facilitate the solution of the problems.

By conducting an investigation of existing conditions at Hess Lake, Newaygo County, Michigan, an understanding of specific development problems was achieved. The problems found consisted of: excessive aquatic weed growth, water level control, mixed land uses, inadequate street size and design, poor utilization of lakefront and inland property, and residential development on low organic soils poorly suited to septic tank disposal systems.

In the analysis of existing problems there was found a general lack of local controls on residential development. In some cases where the legal tools were available for control, they went unused. Practically all the problems could be solved by action at the local level. Before any action is forthcoming however, residents of lakeshore property and local governments having lakes in their jurisdiction must be made aware of the problems created by uncontrolled development. Should ineffective controls be allowed to continue,

the natural beauty of lakes which attract permanent and summer residents will be destroyed.

Adequate legal tools are available to enable lake residents and government officials to establish controls on residential development. For those counties or townships capable of doing so, the establishment of a planning commission and adoption of zoning and subdivision controls would be desirable. Other townships can gain some measure of control through Building and Sanitary Codes. These controls must be drafted to fit physical development problems unique to waterfront property. They must also involve a decision on the type of development that is desirable on a given lake. This involves a question of public policy.

In the future more information will be needed on the natural qualities of a lake which make it attractive, the monetary value of lakefront development, and the maximum number of people a lake will support. This information is necessary to produce an intelligent decision on how a lake should be developed. On many Michigan lakes these issues have been resolved by overcrowded uncontrolled development, but there are many more relatively unsettled lakes on which more desirable decisions could be made.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF PLATES

INTRODUCTION

The shorelines of the United States are rapidly becoming one of the most sought after of all existing natural resources. In areas where natural shorelines are scarce, or where they are becoming fully developed by man, artificial lakes are created and submerged lowlands filled, simply to provide more miles of shoreline for development.

In view of this demand on waterfront property it would appear that carefully formulated plans and policies shaping the development of this natural resource are desirable, as the supply of waterfront property is not unlimited, and the people locating on waterfronts tend to destroy the natural resources which attracted them. The numerous interest groups competing for waterfront land is another factor in shoreline development problems. Cities have historically located on waterfronts as water was necessary for transportation, power, industry, public consumption, waste disposal and a multitude of other uses. Other interests in waterfront lands, for varying reasons, are agriculture, forestry, commercial fishing, recreation, water-oriented commercial developments, residential, and wildlife and waterfowl. Some of these uses are compatible and multiple use concepts for water can be worked out, but once waterfront land becomes developed for any particular use, it is exceedingly difficult to change that original use.

On a broad scale there are many different types of waterfront lands, each with different sets of problems, depending

on the character of the body of water. National coast lines have problems of currents, tides, wind and water erosion, salt water and destructive elements of nature such as hurricanes, sharks, etc. Great Lakes shorelines also suffer from wind and water erosion, but on a smaller scale. They also suffer from a fluctuating water level, but are not subject to tidal action.

Rivers and smaller streams have as a major problem changing water level; destructive flooding, inadequate flow or dry stream beds. In recent years streams are presenting another problem which at times is very serious, pollution.

Artificial inland lakes and reservoirs have problems of adequate supplies of good water, fluctuating water levels to suit various interests, construction and maintenance of dams and access and development of newly created waterfront property.

Natural inland lakes have many of the above problems, on a smaller scale, but are non-the-less important to the property owners around the lake and to the existence of the lake itself as a contributing natural resource.

In spite of the numerous problems various types of waterfront lands pose, the advantages obviously outweigh them since the American people are flocking to the waterfronts at a rate unsurpassed in history.

> "The endless variations of shoreline hold a tremendous appeal for all of us...
> Shoreline means many things to many people. To some, it is symbolized by a light house guarding a lonely shore. To others, it means pounding surf on a rock bound coast. Still others think

> of marshlands that shelter the elusive mallard, the migrating goose, the stately heron. To most people, however, shoreline is a combination of surf and sand often backed up by rolling dunes and forests that create an atmosphere of solitude -- a soul-refreshing contrast to our hurried, everyday way of life.[1]

The above mentioned solitude will soon vanish if steps are not taken to regulate waterfront property, and indeed, the surface of the water itself. This is particularly true in areas which are essentially rural in character and have inadequate ordinances and regulations to control development of waterfront lands. Haphazard and uncontrolled development of waterfront lands in rural areas create development problems for present and future generations, and consume waterfront land. These areas are basically residential in character, and it is this area which is emphasized in this study.

This thesis will examine only a small portion of the overall waterfront land picture, it's purpose being twofold: first, to examine development problems characteristic of Michigan inland lakes; and secondly, through an analysis of these problems and the application of existing planning principles, to formulate a number of development principles applicable to these problems. This will be done through a case study of one Michigan inland lake.

Before any sound development principles relating specifically to inland lakes can be formulated, there must of necessity, be research done on the lakes themselves. Professor Humphrys, Department of Resource Development, Michigan State University, has pointed out that the following data about Michigan's inland lakes are unknown:

1. total number of lakes
2. physical characteristics of lakes that affect their value for future development
3. total lineal lake frontage
4. dollar value of water frontage per front foot
5. total number of cottages and year around homes
6. the value of landscaping, utilities, docks, etc. built upon water frontage property.[2]

Thus there is a large amount of work to do before any planning principles relating specifically to inland lakes can be formulated which could be applied on a statewide basis. For protection of one of the state's most valuable resources, however, it is vital that this type of research be initiated.

Footnotes

1. A. T. Edmunds, "The Great Lakes Shoreline Survey," Michigan's Resources for Outdoor Recreation, Papers presented at The Michigan Natural Resources Council Annual Meeting, Lansing, Mich., (Oct. 28, 1959), p. 31.

2. C. R. Humphrys, "Michigan's Many Jewels, Trend To Artificial Lakes Grows As Demand For Shore Lots Peaks," Reprint from Michigan Challenge, Vol. 3, No. 31, April, 1963, p. 1.

CHAPTER I

ELEMENTS CONTRIBUTING TO RESIDENTIAL WATERFRONT DEVELOPMENT

Pressures of Urbanization on Waterfronts

There are many land uses which occupy waterfront land, as has been pointed out. It is the residential housing boom however, which has, of late, engulfed hundreds of miles of shoreline on seashore, streams and natural and artificial lakes. The recent flight to the suburbs for housing accommodations has had far reaching effects, beyond the area immediately surrounding incorporated cities and villages. This residential expansion boom has extended to, and in some cases, engulfed, waterfront areas which were formerly summer cottage developments and resort areas. Improvements in transportation facilities have made it possible for people to commute to work as far as thirty or forty miles a day. This type of commuting enables a person to work in the city and live in the country, or if desired, on a waterfront, be it seashore, lake or stream.

A report on the 1957 survey of the Great Lakes shorelines by the National Park Service makes the following observation:

> "Residential and commercial developments, though are the principal consumers of desirable shoreline. Real estate developments are removing the forest cover, leveling sand dunes and utilizing every foot of accessible frontage. Many residential communities are excluding the general public from access to their beaches. Marshes that once provided ideal habitat for waterfowl and wildlife have been dredged filled and subdivided."[1]

This survey was, of course, recreation oriented, but it points up the rapid consumption of waterfront land by only

two of the many land uses which seek waterfront property. It is not so much the fact that waterfronts are being developed, because this is inevitable. It is the manner in which the development takes place that creates problems. Haphazard development without any controls does not result, in most cases, in a desirable pattern of waterfront land use. There are areas of shorelines which, because of physical features, are much more desirable for recreational uses rather than industrial, commercial, or even residential. These areas must be preserved for present and future generations. As stated by the National Park Service in their report on the Atlantic Coastline:

> "The seashore is a priceless scenic and scientific resource for which there is no substitute. Once subdivided and developed it is lost forever."[2]

This is true for any waterfront, be it seashore, stream or lake.

Increasing demand for waterfront property stems from several sources; expanding population, leisure time, and spendable income, improved transportation facilities, greater emphasis on recreation, increased interest in boating, and a search for open space.

The increased population of Michigan and the United States is responsible for a good share of the increased pressure for residential housing on shorelines. The 1984 Michigan population is estimated to number nearly 14,000,000, almost twice the present figure.[3]

Much of the increased residential pressure on waterfronts

is a direct side effect of the ever-increasing population seeking recreation. Evidence points to the fact that mass production, specialization and automation may mean more leisure time for many families and individuals. To some, this means an opportunity to acquire further income from a second job, but to many others leisure time means recreation, and synonomous with recreation, particularly in the summer, is water. A sociologist views the advent of leisure time and it's relation to recreation as:

> "The increased division of labor and specialization inevitably accompanied by the monotony of a job which consists merely of the endless repetition of a few tasks, are said to make a wide variety of leisure time activities absolutely necessary... in the machine age, with many of nature's forces harnessed and in the service of man, with labor highly organized and able to enforce a large share of its demands, the amount of leisure time available to the bulk of the population has increased tremendously."[4]

Other factors contributing to an increase in leisure time are longer vacations, life-span and earlier retirement.

Along with the increase in leisure time, the number and percentage of families receiving higher incomes have increased also, permitting larger expenditures for recreational purposes.[5] National expenditures on recreation in 1946 totaled about $8 million. It is estimated that for 1964 this figure will triple to approximately $24 million.[6] Wide spread use of credit has also aided families and individuals in securing recreation enjoyment, particularly in the field of vacation home purchasing. Many home builders are going into the vacation home market extensively, as it can be a profitable

one. The price of waterfront lots on Lido Island, Newport Beach, California, has tripled since 1947, now selling for up to $375 per front foot. Lots on an artificial lake near Detroit sell for $9,500 to $11,500 on water, as opposed to $7,500 for inland lots.[7] Vacation home builders cater to families with an eye toward recreation, and to a lesser degree to couples eyeing a retirement home. However, builders have found that in some cases up to 50% of sales are to people buying permanent homes.[8]

Increased mobility is caused by increased quality and quantity of roads, highways and automobiles. Real estate developers in the vacation home market estimate that people will travel from one to five hours to reach their "second homes", with most willing to travel about two hours.[9] In addition to providing added mobility, new and improved roads have permitted access to vacation areas here-to-fore untapped.

In some fields of recreation research the thought exists that there is a greater need for outdoor recreation now than there has been in the past. This recreation is beyond that afforded by community parks and playgrounds. Whether this be true or not, there is a definite increase in outdoor recreation. This increase was recognized at the Federal level of government by the creation of the Bureau of Outdoor Recreation in 1962. The Connecticut Water Resources Commission expresses the view that there is a definite need for outdoor recreation in today's world in the following passage:

"Man can exist in cement and steel towers...but it

> is being proven that such an existence is unbalanced and leads to a society that is sterile and impoverished, physically, mentally, and spiritually. Outdoor recreation restores the balance, and outdoor recreation in all of its forms involves a good supply of good clean water."[10]

Not every form of outdoor recreation requires good clean water, but water plays an important role in fulfilling the recreational needs of millions of Americans. The National Park Service estimates that 75% of all outdoor recreation is water-oriented.[11]

Another factor contributing to the increase in outdoor recreation is the tremendous increase in boating. The boating boom started about 1947 with about two and a half million pleasure craft in use.[12] There was an accelerated rate of growth in the 1950's, reaching a peak in 1960, then tapering off until 1963 when the Outboard Boating Club of America reported nearly eight million recreational craft of all types in use. The same association also estimated that over thirty-eight million persons went boating on a more-than-casual basis in 1963, spending a record two and one-half billion dollars for recreational boating.[13] It has been estimated that by 1985 there will be twelve million pleasure boats in use on the nations waterways.[14]

A final factor contributing to the increased pressures of residential construction on waterfronts is the search for open space. Open space may mean many different things to different people - rural country side, golf courses, undeveloped wooded areas, community or village parks, or grade school playgrounds. To many, however, the quest for open space has

taken them to water, as any reasonable sized water area offers a more or less permanent open space. A home builder in St. Petersburg, Florida questioned waterfront owners, both workers and retirees, on why they preferred living on waterfront. Almost 50% listed view, relief from monotony, changing scene and restfulness.[15]

The above factors of increased population, leisure time, spendable income, mobility, recreation and the quest for open space, all combine to create a substantial force in which water is shaping the criteria for the location of vacation and permanent homes.

> "Preferred locations today may depend more on their relation to recreational facilities and what people like to do on weekends, than on what they do during the week and where they work from Monday to Friday. Strange as it may seem, people may accept fighting traffic to get to work, providing they can run down to the beach, or tennis court, or golf course, evenings and week-ends."[16]

Limits of Study

There are over 11,000 inland lakes in Michigan, the exact total depending on what definition of a lake is used. In order to accurately list Michigan's inland lakes a decision must be made as to the differences between marshes, swamps, ponds and lakes.[17] The size and character of Hess Lake leave no doubt as to its being classed as a lake, regardless of what the dividing line between lakes and ponds might be. The important factor is that this study, with the exception of the last chapter, is concerned with a natural inland lake, as opposed to lakes created artificially. Even in discussing problems of natural inland lakes alone the problems will vary

with different lakes in different geographic locations. Therefore this study is limited to a specific inland lake, the results of which may have to be modified when applied to other natural inland lakes in Michigan.

The factors involved which prevent the results of the study of one inland lake from being applied to all Michigan lakes is the character of individual lakes. Depth, bottom type, aquatic vegetation, shoreline topography and soils, are only a few of the characteristics that play a part in how, and to what extent, a lake will be developed. As the physical make up of Michigan's natural inland lakes vary considerably, so also, do the developmental problems encountered on each.

Another factor which prevents generalities from being applied to all inland lakes in Michigan is the types of cultural environment which has emerged around each lake. A lake which is basically residential-resort in character has different problems than one that is residential-industrial in character. Geographical relation of the lake to urban centers, and accessibility by road, are two more factors which can play a role in the type of development problems which will be encountered on an inland lake.

This is not to say that all the development problems of one inland lake are unique to that lake alone. A poorly drained, flood-prone soil on a lake in southern Michigan is no more suited to residential development than the same soil qualities on a lake in the Upper Peninsula. Thus many of the

development problems discussed in this study will be found on numerous other Michigan Lakes. The danger lies, however, in regarding this study and its findings as being representative of all the natural inland lakes of Michigan.

Footnotes

1. A. T. Edmunds, "The Great Lakes Shoreline Survey," Michigan's Resources For Outdoor Recreation, Papers presented at The Michigan Natural Resources Council Annual Meeting, Lansing, Mich., (Oct. 28, 1959), p. 37.

2. U. S., Department of Interior, Our Vanishing Shoreline, National Park Service, (1954), p. 7.

3. "Water For Michigan," Michigan Conservation, March-April 1960, pp. 17-32.

4. T. L. Smith, The Sociology of Urban Life, (New York: The Dryden Press, 1951), pp. 555-56.

5. Bruce Briggs and Jon K. Rosenthal, Recreational Boating Facilities, Planning Advisory Service Report No. 147, American Society of Planning Officials, (Chicago: 1961) pp. 1-2.

6. "Vacation Homes: An Exploding Market Takes On A New Shape," House And Home, (Feb. 1964), p. 106.

7. "The New Boom In Houses By The Water," House And Home, (June 1963), pp. 98-101.

8. "Vacation Homes: An Exploding Market Takes On A New Shape," op. cit., p. 107.

9. Ibid., p. 110.

10. Connecticut, Water Resources Commission, Water Resources of Connecticut, Report To The General Assembly, (1957) p. 41.

11. Frances W. Herring, A. A. Klingebiel, and S. Kenneth Love, "Bases For Urban Development: Air, Soil, Water," Planning, 1963, American Society of Planning Official, (Chicago: 1963), p. 53.

12. Bruce Briggs and Jon K. Rosenthal, op. cit., p. 1.

13. The State Journal, (Lansing), March 10, 1964, p. D-16.

14. Bruce Briggs and Jon K. Rosenthal, op. cit., p. 1.

15. "The New Boom In Houses By The Water," op. cit., p. 99.

16. Ibid., p. 100.

17. C. R. Humphrys, "Michigan's Many Jewels, Trend To Artificial Lakes Grows As Demand For Shore Lots Peaks," Reprint from Michigan Challenge, Vol. 3, No. 31, (April 1963), p. 1.

CHAPTER II

LEGAL FRAMEWORK

Water Rights of Michigan

The legal doctrines which apply to the use of water in Michigan, as well as in other states, are called water rights. A water right is simply a right to the use of water which is based on written law, custom or court decision.

Water rights vary to some extent, depending on the source of the water; surface or ground. Surface water is classed as (1), water courses with a definite source of supply, such as lakes and streams and (2), diffused surface waters standing or flowing in natural depressions on the earth's surface, such as melting snow or rain water.[1] Ground water is found beneath the earth's surface and is classed as (1), water occurring in well defined subterranean channels (underground streams) and (2), diffused percolating waters from indefinite sources and not in definite channels.[2]

As this study is concerned primarily with natural inland lakes, the legal emphasis will be on natural surface water courses. It must be pointed out however, that while water rights for surface waters are more numerous and complex than those for ground water, the two sources cannot be treated separately. Lake beds are nothing more than depressions in the earth's surface that extend downward past the level where the ground water level is intersected.[3]

There is no basic, overall system of state laws in

Michigan which spells out what rights and responsibilities are involved for all parties in the use of surface water. A body of common laws is currently the only legal tool a waterfront property owner has to protect his interests in property and water.[4] From this body of common laws has come the riparian doctrine which is the basic legal foundation for water rights in Michigan.

Water rights under the riparian doctrine stem from the ownership of land abutting upon a natural water course. The chief aim of the doctrine is to protect both quality and quantity of the water, and also to give all riparian owners equal rights.

Because of the common law history of the riparian doctrine, virtually all Michigan law pertaining to inland lakes and streams is derived from court decisions which come about because of water use conflicts between two or more parties. As a result of these court decisions handed down over the years riparian rights have been modified to some extent from the original doctrine. This modification is still taking place as new court decisions are handed down. It is because of this common law history of riparian rights that no generalizations can be completely accurate about water rights in Michigan since the court cases are piecemeal and do not cover all phases.[5] Despite this there are certain elements of the riparian doctrine which have been court proven and are used today to protect riparian owners.

Riparian rights are real property rights but these rights

are limited to use. It is not the right of ownership of the water, as water is a moving resource as opposed to a stationary resource which can be possessed.[6]

A riparian is entitled to have a lake or stream move by his property undiminished in quantity and unchanged in quality, except that the owner may use water for domestic uses such as human and animal consumption, recreation and navigation.[7] As originally interpreted the riparian doctrine required that a riparian could use the water from a lake or stream, but he could not reduce quantity or impair quality. This is known as the Natural Flow Theory. Increased development of waterfronts placed heavy pressures on this theory and it had to be modified by court decisions over the years to include the factor of reasonable use. The Reasonable Use Theory evolved from the question of whether or not the use of water is "reasonable", at a certain place, time and for a particular purpose. If the use is found to be usual, necessary and convenient, court decisions will probably favor it, even though it may impair quality or reduce the quantity of water in question.[8]

One concept of the riparian doctrine important today is that of public rights on inland lakes and streams. The problem of water being private or public is a complicated one due to piecemeal court decisions, but is made even more difficult by the fact that private water may become public water and vice versa. The classification of Michigan's streams as private or public is dependent on the factors of navigability,

floatage, public access and prescriptive rights.[9]

In Michigan, all waters navigable in fact, are considered legally navigable and are therefore public. The test of navigability, down through the years, has been floatage. Streams floating to market products of the soil along the banks were found by courts to be navigable, thus giving the public a right of way.[10]

Public access is, in many cases, the real determining factor in establishing public interest. If there is no public access, there is no public use.[11]

If the public were to establish prescriptive rights against private water, it would change the classification of that water from private to public. It has been established by the courts that prescriptive rights "may be obtained by occupation, diversion, possession, control and for use or enjoyment."[12]

The determination of public interest in streams is important to many inland lakes. If the lake has an outlet or inlet watercourse which is navigable, the public has a right of way of access to that lake.

Determination of public interest in inland lakes is also dependent upon the above mentioned stream factors, and in addition, they have been defined by Michigan Law.

> "A public inland lake is hereby defined to be any lake which is accessible to the public via public owned lands, water or highways contiguous thereto, or via the bed of a navigable stream and which may be used for navigation, fishing, hunting or other lawful purpose and reasonably capable of supporting a beneficial public interest, the Great Lakes and connecting waters excepted.

> Private inland lakes are hereby defined to be any and all inland lakes other than public inland lakes as above defined."[13]

In general, under the riparian doctrine, a riparian owns land to the center of the lake, thus if he owns all the land around a lake, he would own the lake bed and it would be private. This common law principle has been modified to some extent so that size of lake, fish in the lake, and public access have become important. These factors are all interrelated and too involved to be of primary interest here. As a rule, however, inland lakes which are in private ownership, and possess no visible outlet or inlet connecting it with other natural water courses, are said to be private waters in which the public has no interest. If the same lake had an inlet or outlet connecting to other waters so that fish might pass into or out of the lake, there may be a public interest in the lake, even though it is privately owned.[14]

Varying natural characteristics of inland lakes present a multitude of different situations, thus the decision on whether a lake is public or private must be settled on the merits of each case.

In addition to public interest and other riparian rights discussed above, the following concepts have been established by court rulings:

1. Each riparian owner must share his rights with other riparians on the same water, and his water use rights are limited by the rights of others.
2. Downstream riparian owners cannot claim water use priority

from upstream riparian owners on the basis of being there first.

3. Riparian owners have no legal right to hold back the flow of streams or use surface waters if their action brings injury to lower riparian owners.[15]
4. Water rights are transferred with the land.
5. No loss of water rights are incurred by non-use.
6. No water may be diverted for use on property other than the riparian property.
7. Any riparian owner may seek relief in court for any intrusions on his water rights.
8. Changes in water rights must operate in a legal environment of due process. No riparian owner may be deprived of property rights in water except by due process and with compensation if required.[16]

There are, in addition to the riparian doctrine, basically only two legal doctrines pertaining to surface water in the United States, and for clarification they will be briefly defined.

1. Appropriation Doctrine - This right originates through a permit by statute. Water rights are granted to users in the order of appropriation, thus a person who first appropriates water and puts it to a beneficial use within a reasonable length of time acquires a prior right to its continued use, as long as the use continues to be reasonable. This right relates to a definite amount of water, at a specific time in a particular place. As long

as there is ample water in the stream or lake to satisfy this right in the order of its priority, it is quite dependable. During periods of low water flow, the earlier rights take precedence. It is basically a first come - first served beneficial use policy.[17]

This doctrine is used primarily in the western United States where water is often limited in supply. There are several features of the appropriation doctrine which differ significantly from the riparian doctrine. The appropriation doctrine gives more protection to the rights of the person acquiring the right, as they are specific. Under this doctrine an unused right is forfeited, thus a right cannot be obtained and held unused for future speculation or to prevent water use by another. The appropriation doctrine also affords some degree of flexibility of water use, in that water does not have to be used on adjoining property, or even in the same watershed. While it protects existing rights, it tends to "freeze" the existing pattern of uses, regardless of changing conditions which may call for different water use priorities.[18]

2. Prescription Doctrine - This is a right acquired by use for the statutory period of adverse possession of land under the claim of right, even though the water user did not have a valid right to use the water in the first place. A prescription use, however, cannot become a valid water right if the use is permissive in the first place. A prescriptive right is for a definite amount of water at a

specific time for use at a particular place. For this reason, in periods of water shortage, prescription rights may take precedence over riparian rights.[19]

All the factors of time, amount of water used, and the particular use must be proven in court before it becomes a right, but once proven it is a very stable water use right.[20]

The present framework of water rights in Michigan is a complex one, and it is questionable whether or not it is adequate to protect Michigan's inland lakes and streams. As changeable as common law is, possibly the present system of water rights will change to provide a better set of tools to protect waterfront property from being exploited. This is doubtful, as common law changes derive from court decisions, which are time consuming. There appears to be a need for some type of regulation more stable than that existing, but it must be intelligently conceived to protect both public and private interests.

An "inland lakes and streams" bill was defeated by the 1964 Michigan Legislature. Two key features of this bill were to control filling and dredging by requiring permits from the Conservation Department and establishment of an ordinary high water mark, which would fix the riparian's title to all land above this line, and uphold his ownership of submerged lands that fall below the line.[21] This bill, while defeated, represents the efforts being made to remove some of the question marks which exist under the riparian rights doctrine.

Land Laws Pertaining to Water

There are several laws in Michigan which were adopted to cover land development, but which apply to waterfront property. Among these are zoning, subdivision regulations, health ordinances and state hunting and fishing laws. As this study is concerned with inland lakes in rural areas, only laws and ordinances applicable to these areas will be discussed.

The use of zoning powers in controlling waterfront development is becoming more common as additional waterfront lands become developed. Townships now zone under authority of a law passed in 1943. This law permits townships to provide for the establishment of zones and for the regulation by ordinance of land use and structure use; the height, area, size and location of buildings; adequate open space to provide light and ventilation of buildings; and density of population.[22]

The power to zone arises from the police power, to protect the health, welfare and safety of citizens. In using zoning in this light it has been applied to waterfront property much the same as inland property. One additional feature however, is it's use for flood control. As the zoning ordinance can regulate land use, it can be used to control development in flood prone areas.

Townships have the power to regulate subdivisions under the Plat Act of 1929. Under this act, a person desiring to divide a parcel of land into five or more lots, plats, sites

or divisions of land for the purpose of sale or occupancy for residential development, must submit to the township board a plan of the proposed development for approval.[23] Under this regulation a township can, through a design standards section, control the location of residential lots. If the proposed plat includes lots on flood plains or low areas subject to high water, the plat may be rejected and the developer recommended to re-design the subdivision. Thus subdivision regulations have some effect on water and waterfront development, even though it basically applies to inland development.

State laws and administrative regulations and county health ordinances are other forms of regulations which set some limits on the use of waterfront land and the water itself. The major factor here is pollution. At the state level there are two agencies with an interest in water pollution, the Water Resources Commission and the State Health Department. At the County level the local county health office is concerned over pollution of inland lakes and streams. The powers and functions of these agencies will be discussed in more detail in Chapter IV.

Counties have responsibility for construction and maintenance of all county roads, thus are concerned with design and construction of new streets. In addition to having responsibility for streets, the county also has certain powers over the surface water within their boundaries. Under Act 146, Public Acts of 1961, as amended, counties have authority to have determined through court action the normal water

level on inland lakes.[24] Act 140, Public Acts of 1961 gives County Boards of Supervisors power to authorize the improvement of inland lakes, allow dredging and removal of undesirable materials from lakes, and establish special assessments districts to finance any improvements.[25] Act 156, Public Acts of 1851 grants power to counties to permit or prohibit construction of any dams or bridges over or across any navigable streams.[26]

The legal framework surrounding the natural inland lakes of Michigan is a complex one, and all indications show that this complexity will increase. This chapter has presented only the major laws and ordinances in Michigan which pertain to inland lake waterfront.

Footnotes

1. Russel G. Mawby, et. al., What Are Your Water Rights In Michigan?, Cooperative Extension Service Report No. 20, (Michigan State University, Department of Agricultural Economics, E. Lansing: 1957), p. 2.

2. O. Fink and J. Foreman, Home Watersheds, Friends of the Land, (Hidden Acres Farm, Zanesville, (Ohio: n.d.), p. 15.

3. C. R. Humphrys, Water Rights In Michigan, Department of Resource Development, (Michigan State University, E. Lansing: 1958), p. 1.

4. G. Taack, "Water Wonderland Or Water Wreckage?," Michigan Conservation, (May-June 1961), p. 5.

5. Allan A. Schmid, Evolution of Michigan Water Laws, Circular Bulletin 227, Department of Agricultural Economics, (Michigan State University, E. Lansing: 1960) p. 3.

6. O. Fink and J. Foreman, op. cit., p. 15.

7. Ibid.

8. C. R. Humphrys, Water Resource Analysis of Genesee County, Department of Resource Development, (Michigan State University, E. Lansing: Feb. 18, 1960), p. 15.

9. C. R. Humphrys, Public And Private Waters, Department of Resource Development, (Michigan State University, E. Lansing: 1958), p. 1.

10. Ibid., pp. 1-2.

11. Ibid., p. 2.

12. Ibid.

13. Michigan, Compiled Laws of, (1948), Sect. 281.201 and Sect. 281.202, As Amended.

14. R. N. Horner, "Inland Lakes - Public or Private?," Unpublished paper, Department of Resource Development, (Michigan State University, E. Lansing: 1958), p. 1.

15. Russel G. Mawby, et. al., op. cit., p. 2.

16. C. R. Humphrys, Water Resource Analysis of Genesee County, op. cit., p. 15.

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1. Russel G. Mawby, et. al., What Are Your Water Rights In Michigan?, Cooperative Extension Service Report No. 20, (Michigan State University, Department of Agricultural Economics, E. Lansing: 1957), p. 2.

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9. C. R. Humphrys, Public And Private Waters, Department of Resource Development, (Michigan State University, E. Lansing: 1958), p. 1.

10. Ibid., pp. 1-2.

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14. R. N. Horner, "Inland Lakes - Public or Private?," Unpublished paper, Department of Resource Development, (Michigan State University, E. Lansing: 1958), p. 1.

15. Russel G. Mawby, et. al., op. cit., p. 2.

16. C. R. Humphrys, Water Resource Analysis of Genesee County, op. cit., p. 15.

17. O. Fink and J. Foreman, op. cit., p. 15.

18. Russel G. Mawby, et. al., op. cit., p. 4.

19. O. Fink and J. Foreman, op. cit., pp. 15-16.

20. Ibid., p. 16.

21. The State Journal, (Lansing), March 15, 1964

22. Kenneth Verburg, A Study of the Legal Powers of Michigan Local Governments, Institute for Community Development and Services, (Michigan State University, E. Lansing: 1960), p. 20.

23. Charles W. Barr, Planning The Countryside, (Michigan State College Press: 1950), p. 61.

24. Michigan, State of, "Inland Lake Level Act of 1961," Act 146, Public Acts of 1961.

25. Michigan, State of, "Inland Lake Improvement Act of 1961," Act 140, Public Acts of 1961.

26. Michigan, State of, Act 156, Public Acts of 1851.

CHAPTER III

A CASE STUDY OF AN INLAND LAKE

Basis For Selection

The selection of Hess Lake, for a case study is based on the belief that it is typical of many Michigan inland lakes which are rural in character and basically residential-resort in nature, but it is located close enough to a large metropolitan area to feel some effects from its expanding growth. The lake has a history which is largely resort in nature, but over the years has become a permanent place of residence for an increasing number of people.

Geographic Location

Hess Lake is located in Brooks and Grant Townships, Newaygo County, Michigan. A major portion of it is in Brooks Township, this portion also lies in the Manistee National Forest. The closest towns are Newaygo, four miles north with a population of about 1,500 and Grant, six miles south of the lake with a population of 1,000.

Hess Lake is nearly one and one-half miles long in a general east-west direction and varies in width between one-half and three-fourths of a mile. Total size of the lake is 755 acres, making it the second largest natural inland lake in the county. It lies adjacent to, and drains into, Brooks Lake, which is 293 acres in size.

History

The formation of Hess Lake stems from glacial action

creating an outwash plain. Within this plain large blocks of ice were isolated and covered with debris. These blocks eventually melted, causing the material above to settle, thus creating a pit, or lake basin.[1]

The first cottages on Hess Lake were probably built about 1880. The lake was popular as a resort because of accessibility and sandy beaches on the north and east shore. The first permanent residents settled there in 1922, at which time there were about fifty to sixty cottages on the lake. A majority of these cottagers came from Newaygo and Grand Rapids, but approximately one-third came from Chicago and spent the entire summer.[2] The popularity of the lake as a resort has continued, there now being 458 permanent and temporary dwellings around the lake.

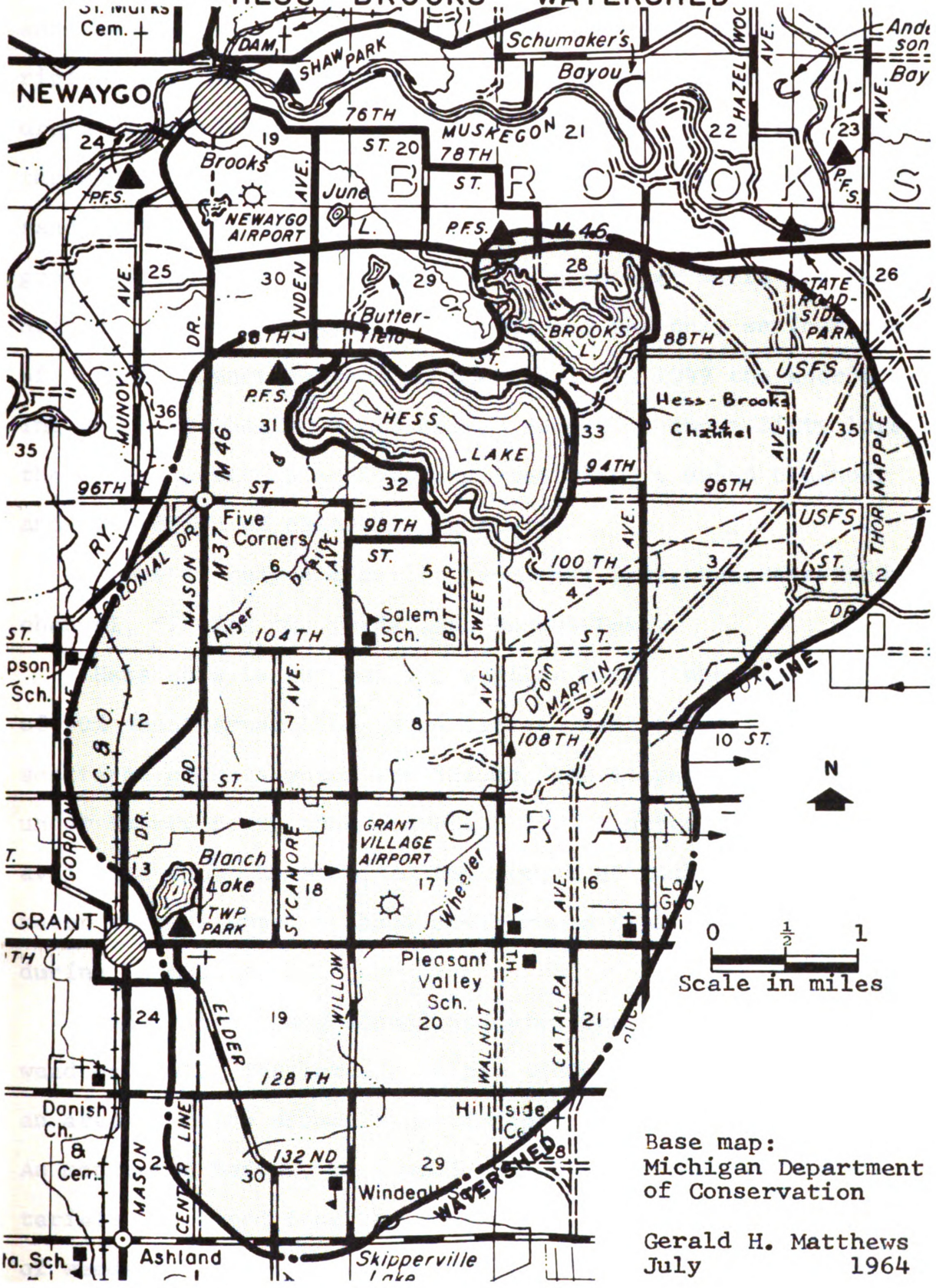
Natural Characteristics

The climatic conditions of Newaygo County are recorded at Croton Dam, six miles northeast of Hess Lake. Records for a period of thirty-one years show the January average to be 22° F, while the July average is 70.7° F. The growing season lasts an average of 142 days, with the last average killing frost in the spring occurring on May 15th, and the first in the fall occurring on October 4th. The average annual precipitation for Newaygo County is 31.04 inches.[3]

The total drainage area for Hess and Brooks Lakes, shown on Plate I, comprises twenty-five square miles. All but two square miles of this drains into Hess Lake.[4] Waterways within the drainage basin feeding directly into Hess Lake are four

PLATE 1

HESS - BROOKS WATERSHED



Base map:
Michigan Department
of Conservation

Gerald H. Matthews
July 1964

small spring-fed streams, Alger drain which is two miles long, and Wheeler drain. The latter being over five miles long, originates from Blanch Lake at the village of Grant. Wheeler drain flows through an area of muck farm land, and later, through sandy soils, thus carrying into the lake deposits of sand, silt and fertilizer. The fertilizer deposits have aggravated an aquatic weed problem in the lake, while the deposition of organic materials has caused the only serious case of shoreline encroachment on the lake. In 1949 the encroaching delta of Wheeler drain caused damage to about fifty lots, the owners petitioning for, and receiving, a drain cleanout and correction of channel alignment.[5]

There is only one outlet from Hess Lake, the Hess-Brook channel, flowing 300 yards into Brooks Lake.

Hess Lake is basically a shallow water lake, consisting of 70% shoal areas (less than fifteen feet deep). There are scattered pockets which are deeper, the deepest being just under thirty feet, shown on Plate II. Limited information available from the Michigan Department of Conservation show water temperatures in shoal areas range from 69° F. to 74° F. during late summer.

One problem long associated with the lake is aquatic weed control. The lake is fairly weedy in its entirety, but an area of fifty acres is particularly bad near Wheeler drain. As mentioned before, this weed condition is worsened by materials deposited from the drain itself. Experimental control of weeds by chemicals was tried for three successive years

PLATE II

HESS LAKE — NATURAL CHARACTERISTICS

INSTITUTE FOR FISHERIES RESEARCH

DIVISION OF FISHERIES MICHIGAN CONSERVATION DEPT.

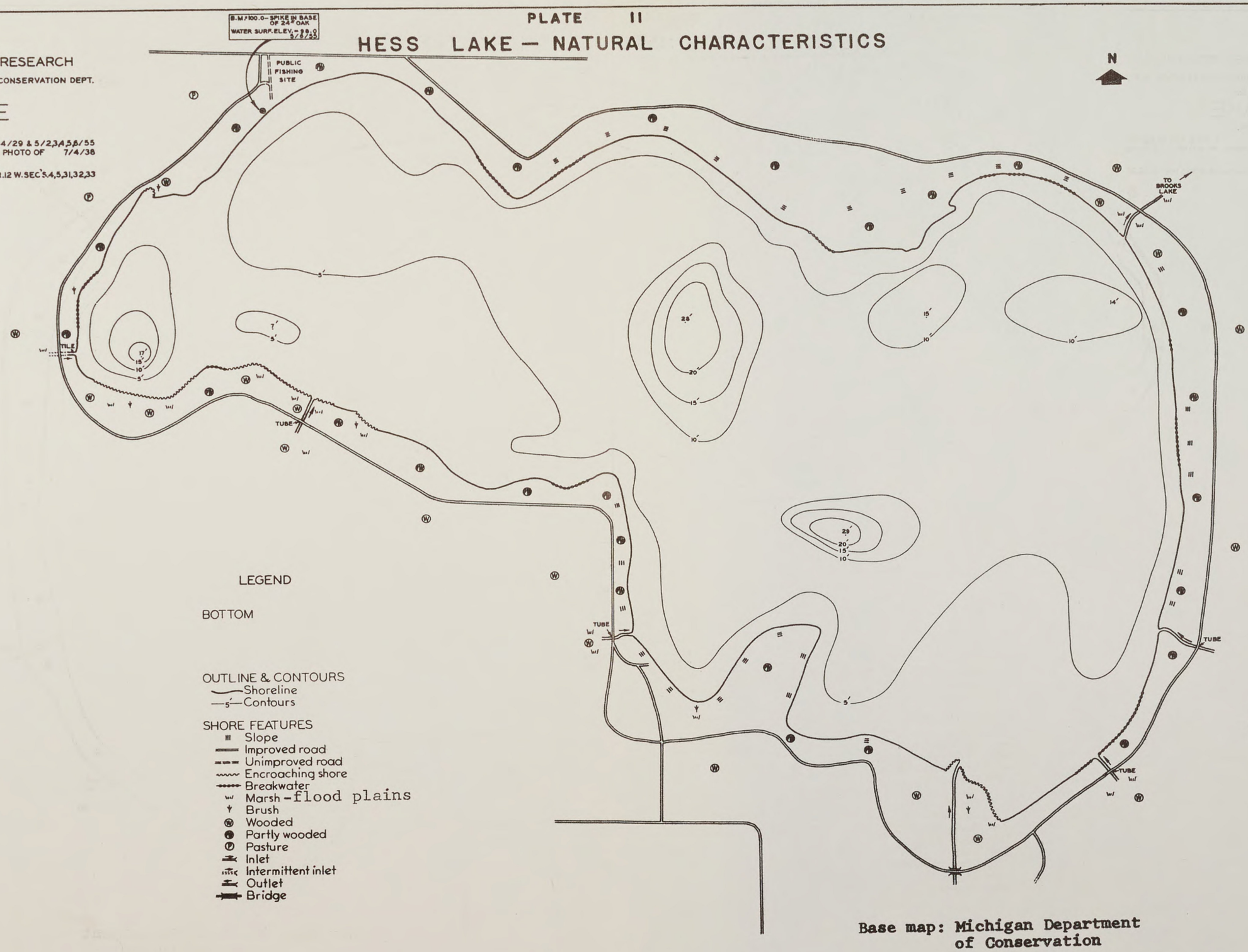
LAKE INVENTORY MAP

HESS LAKE

AREA 755 ACRES

MARGINAL SURVEY AND SOUNDINGS 4/29 & 5/2,3,4,5,&/55
SHORE OUTLINE BASED ON U.S.DEPT. AGRIC. AERIAL PHOTO OF 7/4/38

NEWAYGO COUNTY T. 11-12 N. R. 12 W. SEC'S. 4,5,31,32,33



Base map: Michigan Department of Conservation

Gerald H. Matthews
July 1964

beginning in 1942, but results were not satisfactory.[6]

Hess Lake has a long history of water level problems, with attempts at setting a legal satisfactory level dating back to 1934, with no success. Under normal conditions the water level fluctuates about one foot, enough to cause damage to some properties along the south-west end of the lake. Refer to Plate II for flood areas which would experience problems from excessive high water levels. Factors contributing to high water levels are the inadequate characteristics in the outlet dam and ensuing channel, plus high water levels on Brooks Lake.

In the early 1930's County Boards of Supervisors had authority to set inland lake levels without Court proceedings. The Newaygo County Board of Supervisors did so on Hess Lake in 1934, but it's ambiguous wording referring to water levels at the dam now means that the only way to determine the level that Board had in mind would be to know the history of dam modifications since 1934.

Since 1934 there have been two periods of time when high water caused property damage. The first period was spring of 1946, the second was from fall of 1961 through spring of 1962. Cause of the latter period can be traced to a temporary dam at the lake outlet, put in by the Hess Lake Improvement Association during the summer of 1961.[7]

Over a period of time the original 1934 dam came into disrepair and did not control the lake level as it was intended

to. During this time numerous shoreline lots were sold, improved upon, and cottages or homes built. Thus, when the temporary wood-slab dam was put up in the summer of 1961, without an adequate engineering study to determine the effects of the dam, a number of lots in low areas experienced high water problems. Since July of 1961 the Michigan Department of Conservation has received numerous letters from residents of Hess Lake citing damage to property, trees, shorelines, and septic tank disposal systems.[8]

Following the many requests for aid, the Michigan Conservation Department representatives met with interested residents and officials of the Hess Lake Improvement Association and some effort was made to lower the dam, thus easing, but not solving, the water level problem. Since the original request for aid in 1941, the Conservation Department has been recommending that a legal level be established for Hess Lake, which was possible under Act 194, Public Acts of 1939, and more recently, Act 146, Public Acts of 1961. After many previous false starts by various interested parties, once again an attempt is being made to have a legal level established for Hess Lake.[9]

Shoreline erosion takes place to some extent on all the lake shoreline, more so, on the easterly end of the lake because of prevailing west winds. This erosion does not take place at a rapid rate but does cause loss of property over a period of years. In some cases individuals or groups have constructed concrete breakwaters. Encroaching shoreline is

a problem only at the delta of Wheeler drain, but does occur at other locations. Plate II illustrates areas of encroaching shorelines and breakwater devices.

Lake bottom soil types in deep water areas (over fifteen feet deep) consist of marl, muck and pulpy peat. Bottom soils in shoal areas are either silt, fibrous peat, or sand. There is a limited amount of beach area which is sand, thus providing good swimming areas.

With the exception of relatively small areas, the shoreline of the lake is composed of soils which are adaptable to residential development. Approximately 75% of the lakefront property and the lands behind it are composed of sands or sandy loams. These soils for the most part are not well adapted to agricultural uses, supporting certain crops only with extensive fertilization and irrigation practices. While not well adapted to farming, these soils, with their excellent drainage qualities, are well suited to individual septic tank disposal systems. Refer to Table 1 for Soil Characteristics, to be used in conjunction with Plate IV. There are several areas of organic soils along the south shore of the lake which are characterized by poor drainage and contain seasonal high water tables. Despite these unfavorable conditions, permanent and summer homes currently occupy portions of this area. (See photographs on Plate III). These organic soils and others are shown on the Generalized Soils Map, Plate IV.

Topography of the land surrounding the lake ranges from

Plate III

LOWLAND DEVELOPMENT ON HESS LAKE

High lake level on low land, south-west shore. Note half submerged dock. April 15, 1964

Effects of high water table on low land development, south-west shore. April 15, 1964

Table 1: Soil Characteristics

Soil Symbol	Soil Name	Slope	Drainage
Deep dry sands on plains			
Ps	Plainfield sand	0-3%	Well drained, run off slow
Psg	Plainfield sand rolling phase	8-15%	Well drained, run off slow
Ru	Rubicon sand	0-3%	Well drained, run off slow to very slow
Deep dry sands on undulating to rolling lands			
Rf	Roselawn fine sand	8-15%	Excessively to well drained
Rfu	Roselawn fine sand, undulating phase	4-7%	Excessively to well drained
Well drained sandy loams on rolling to hilly uplands			
MR	Montcalm-Roselawn complex	8-15%	Well to moderate, run off medium
MRu	Montcalm-Roselawn complex, undulating phase	4-7%	Well to moderate, run off rapid
Poorly drained to moderately well drained sand on plains (sand substratum)			
Nd	Newton loamy fine sand	0-3%	Poor to very poor, run off slow to ponded
Organic soils			
Rp	Rifle peat	0-2%	Very poor, high water table normal
Rpw	Rifle peat, shallow phase	0-2%	Very poor, high water table normal
Hm	Houghton muck	0-2%	Very poor, run off slow to ponded, water table at or near surface
Cm	Carlisle muck	0-2%	Very poor, high water table normal
Gp	Greenwood peat	0-2%	Very poor, high water table normal

Source: U. S., Department of Agriculture, National Cooperative Soil Survey, (unpublished: n.d.)

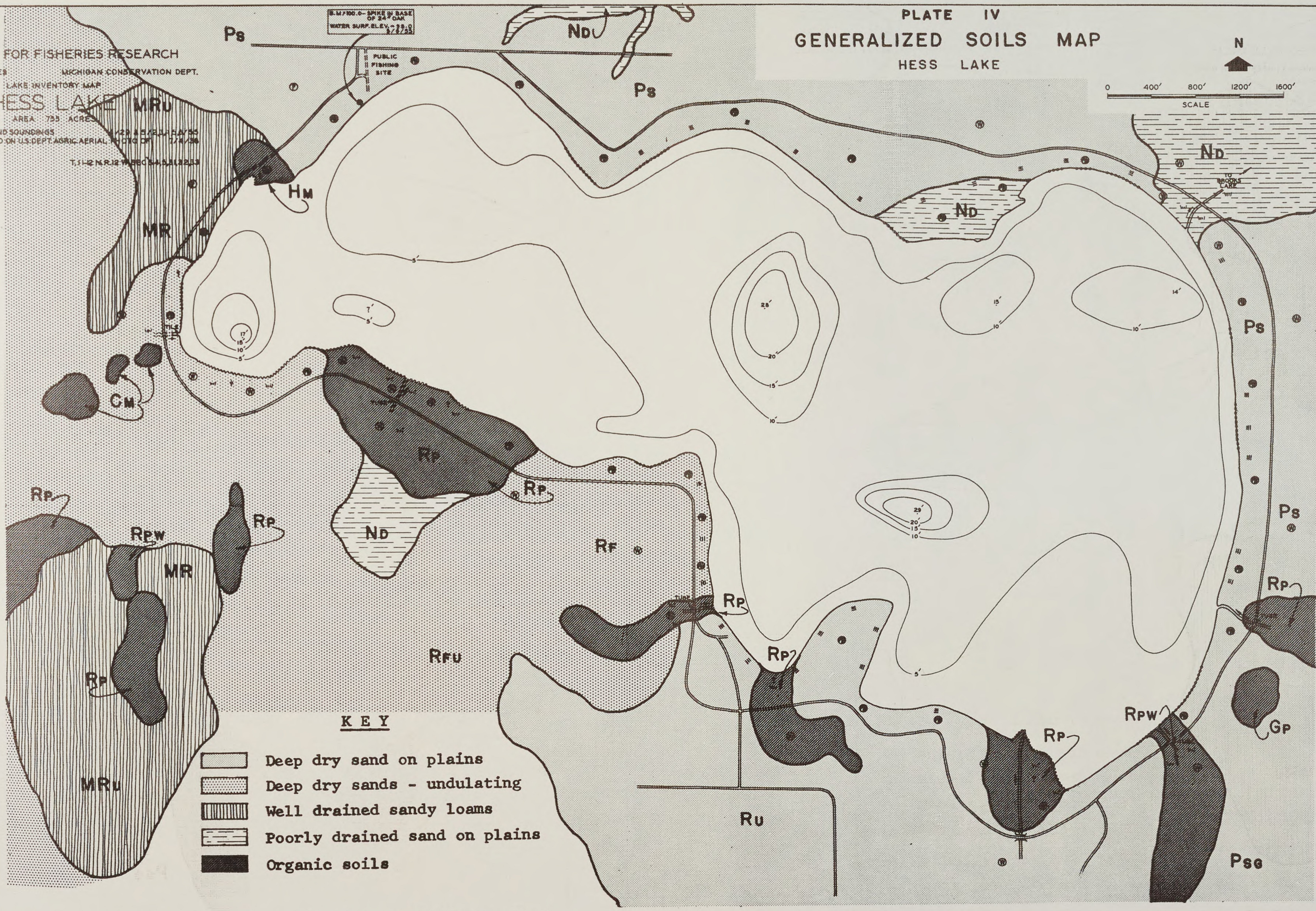


PLATE IV
GENERALIZED SOILS MAP
HESS LAKE
N
0 400' 800' 1200' 1600'
SCALE
INSTITUTE FOR FISHERIES RESEARCH
DIVISION OF FISHERIES
MICHIGAN CONSERVATION DEPT.
LAKE INVENTORY MAP
HESS LAKE
NEWAYGO COUNTY
PUBLIC FISHING SITE
KEY
Deep dry sand on plains
Deep dry sands - undulating
Well drained sandy loams
Poorly drained sand on plains
Organic soils
Ps
Nd
MRu
MR
Hm
Cm
Rp
Rpw
Rf
Rfu
Ru
Gp
Psg

Source: U.S. Department of Agriculture and Michigan Agricultural Experiment Station, Soil Survey, Newaygo County Michigan, Series 1939, No. 9, April, 1951.

Base map: Michigan Department of Conservation

Gerald H. Matthews
July 1964

flat areas to severe slopes, rising in excess of thirty feet above the lake to plateaus which provide building sites. It is this higher land which was first developed, most of the lakefront property now vacant being low land or swamp. Plate II indicates general areas of pronounced slope.

Lakefront and back property around the lake is well wooded, except for the extreme east end, which is partially pasture land. Tree types dominating the lake area are White and Black Oak, American Elm, Sugar Maple, and White Pine.

Hess Lake is a very productive lake for warm water fish, with the exception of Walleyed Pike, for which there are no suitable spawning grounds for reproduction. From 1943 through 1947 approximately 850 Walleyed Pike were planted but they failed to establish themselves satisfactorily and now are rarely caught. Other game fish inhabiting the lake are Bluegills, Sunfish, Perch, Rockbass, Black Crappie, Largemouth and Smallmouth Black Bass and Northern Pike. Coarse fish present are Bullheads and Lake Chub Suckers, and obnoxious fish include Dogfish, Longnose Gar-Pike, and Carp.[10]

In 1949 special fish regulations for Hess Lake permitted keeping of panfish under the normal six inch length, and provided no closed season. These laws did not appear to adversely affect the panfish population and in general, fishing has improved since that time. The fishing pressure on Hess Lake is now normal for a lake of its size,[11] particularly during the winter, when ice fishing for panfish and Northern Pike has enjoyed a marked increase.

The number of animal species which reside permanently on the lake is rather small, consisting mainly of muskrats and an occasional mink. These two species are subject to light trapping pressure in the fall.

During spring and fall annual migrating flights of wildfowl frequent the lake. This spectacle is enjoyed in varying degrees by residents of the lake, one of the aesthetic values of living near water which cannot be measured in monetary terms.

Existing Physical Development

Hess Lake is located in the south-central portion of Newaygo County, making it readily accessible from the Grand Rapids area, thirty-five miles south, and from Muskegon, thirty-five miles in a westerly direction. These are the two largest cities relatively close to Hess Lake and they, along with numerous towns and villages, have good access to the lake over two main Michigan highway routes, M-37, and M-46. The lake is only one mile east of M-37, the north-south route bisecting the west half of the state, and M-46 which traverses the state east to west. For area location refer to Plate I.

The population of Hess Lake, as with any other lake, must be divided into permanent residents and temporary or summer residents. On the basis of tax records and personal interviews with select permanent residents of the lake, the number of total permanent dwellings around the lake was found to be 156.[12] Using a figure of 2.5 persons per dwelling, the total permanent population of the lake would be 390.

Temporary or summer dwellings numbered 302, the distribution of owners of these dwellings residing within 100 miles of Hess Lake being shown on Plate V. Applying the 2.5 person per dwelling figure here gives a summer cottage population of 755. This figure combined with permanent residents gives the lake a summer population on a given weekend of about 1,150 people. Daily tourists and guests could increase this figure to about 1,400 people. A majority of the summer residents come from within thirty-five miles, which includes Grand Rapids, others travel in excess of 100 miles. Table 2 shows a percentage breakdown of distances traveled by summer cottage owners to Hess Lake.

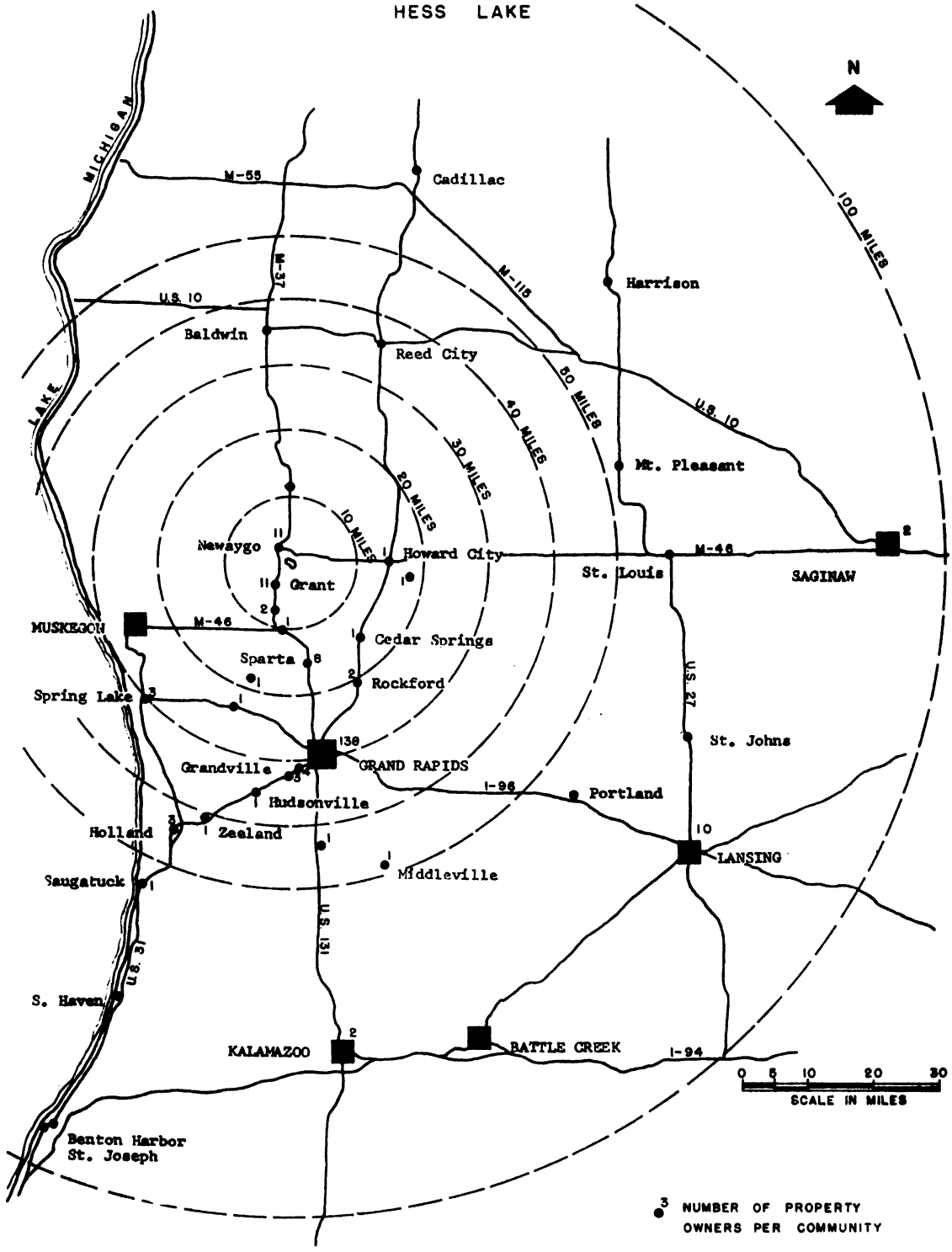
Table 2: Percentage Distribution of Distances Traveled By Summer Cottage Owners

Distance from Hess Lake (miles)	Total Number	Per Cent of Total
0-10	24	9.7
11-20	12	4.9
21-30	150	60.7
31-40	8	3.2
41-50	6	2.4
51-100	15	6.1
100+ (Michigan)	14	5.7
100+ (Outstate)	18	7.3
Total	247	100.0

Source: Mailing addresses in tax assessment records, Newaygo County. Information available only on 247 out of 302 total summer cottages. April 15, 1964.

PLATE V

DISTRIBUTION OF SUMMER COTTAGE OWNERS WITHIN A 100 MILE RADIUS



Source: Mailing addresses in tax assessment records, Newaygo County, Michigan, April 15, 1964. Information available only on 247 out of 302 total summer cottages.

Gerald H. Matthews
July 1964

Because of the residential-resort nature of the lake the developed land area is limited, extending, except in certain areas, back from the lake the depth of one lot. The predominant land use around the lake is residential, both permanent and summer use, shown on the Land Use Map, Plate VI. There are three commercial properties around the lake, one of which is vacant. In addition to the commercial properties there are two resorts on the lake. There also are several properties used as business establishments as well as residences. The real property assessed value of waterfront property is about $750,000, including vacant property. Assessed value of developed inland property is approximately $22,000, giving a total for the lake of over $970,000.[13]

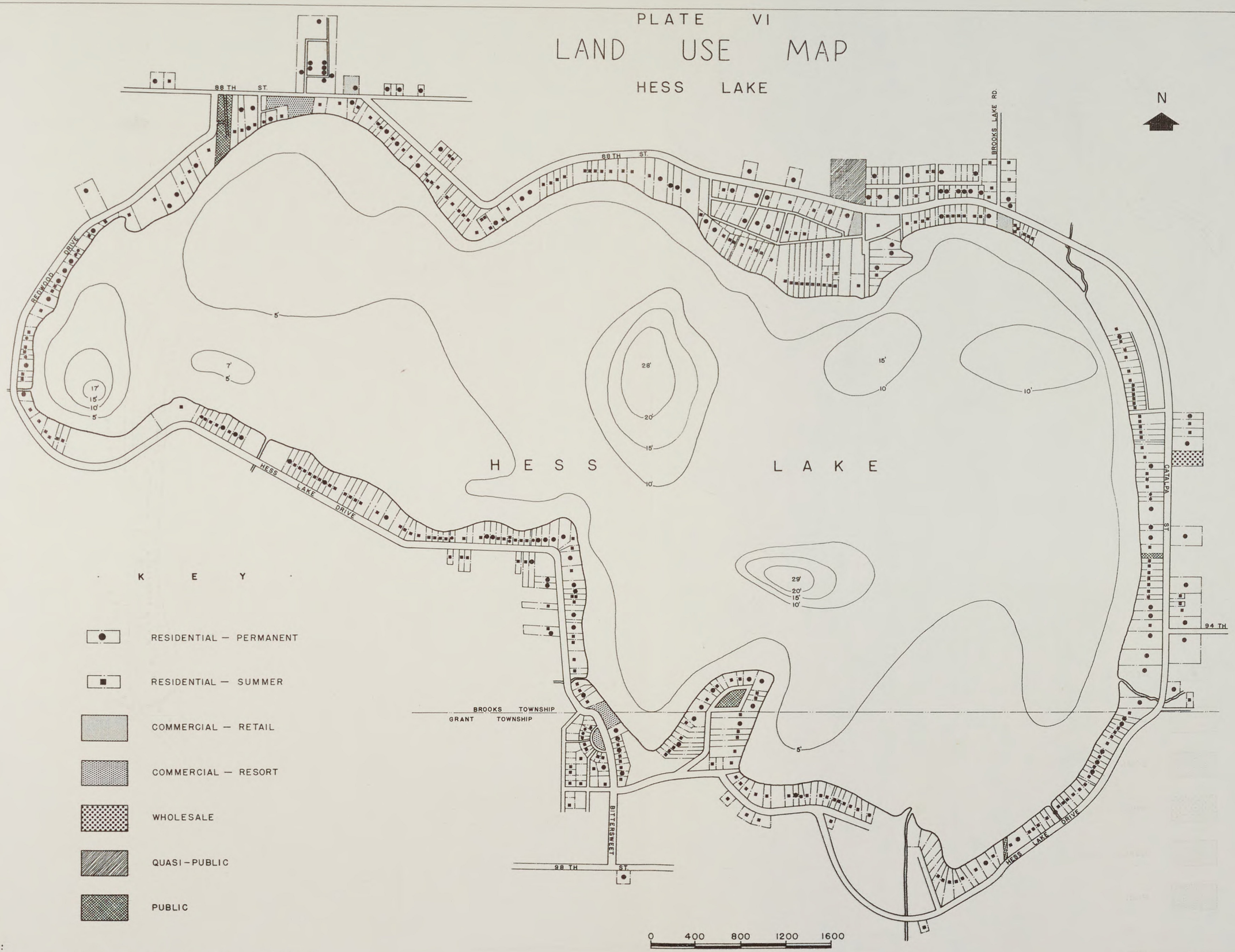
The main road around the lake was largely fashioned from plats in the early 1900's, thus with few exceptions, it's relationship to the lakeshore is favorable to residential development. In one case, however, it is too close to allow any type of development. In one other case it is a considerable distance from the lake, requiring a series of trails to reach the lakefront properties. Despite this property being platted with a definite street layout, in reality some trails used do not follow the original plat, resulting in dead end trails. The road encircling the lake is six miles long, approximately two-thirds of it paved, the remainder gravel or sand. Refer to the Land Use Map, Plate VI for additional information on the road network.

Virtually all of the lakefront property, and some land

PLATE VI

LAND USE MAP

HESS LAKE



K E Y

- RESIDENTIAL — PERMANENT
- RESIDENTIAL — SUMMER
- COMMERCIAL — RETAIL
- COMMERCIAL — RESORT
- WHOLESALE
- QUASI-PUBLIC
- PUBLIC

SOURCE:

LAKE MAP — MICHIGAN DEPARTMENT OF CONSERVATION

SHORELINE DEVELOPMENT — RECORDED PLATS AND TAX RECORDS, NEWAYGO COUNTY, MICHIGAN, APRIL 15, 1964

GERALD H. MATTHEWS

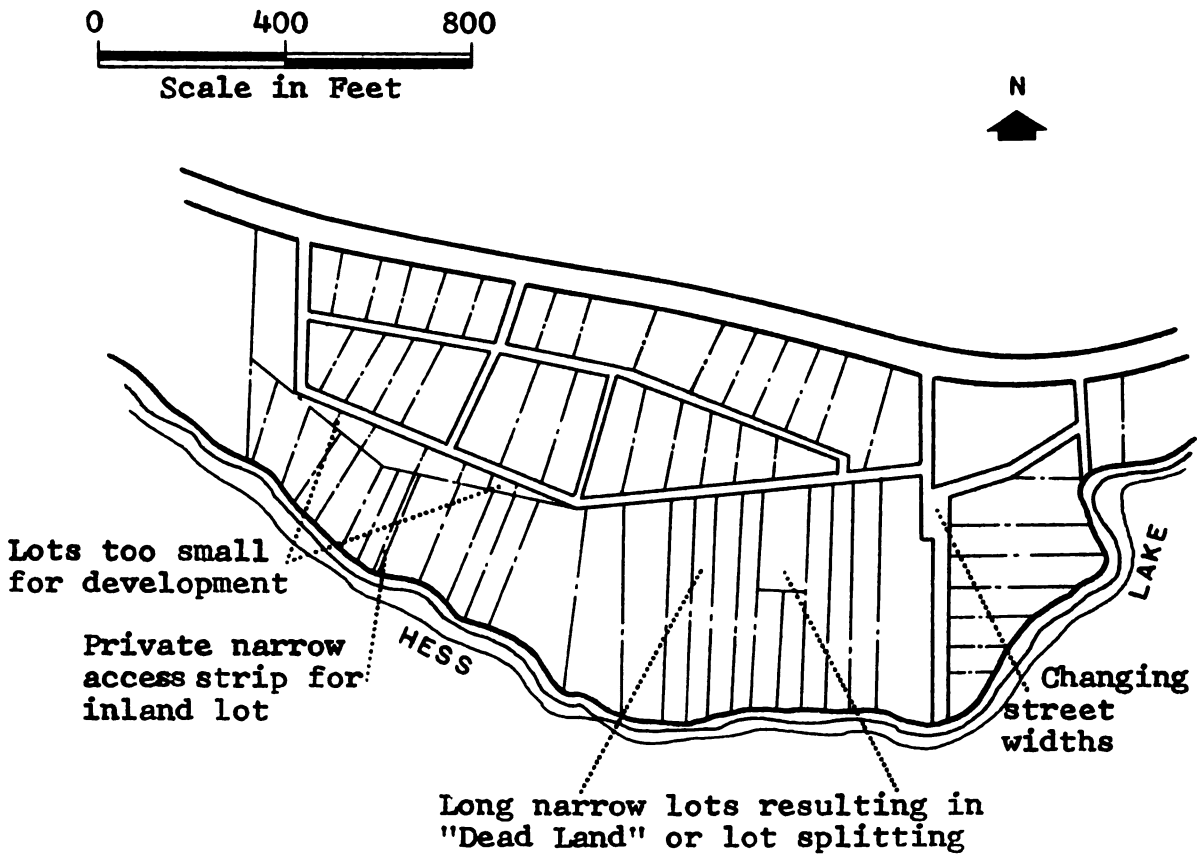
JULY 1964

without lakefront, is platted. With few exceptions this platting occurred in the early 1900's. Two main problems arose from this early platting; very small lots and no lake access for back lot development. A major portion of the east end of the lake was platted into twenty foot lots, creating building location problems unsettled today. In cases where inland property was platted, little or no access was provided to the water. This has created a condition of back lot owners needing to buy narrow strips of land from lakefront property owners to gain access to the lake. These access strips are seldom over ten feet wide. While they do permit access to the lake, it leaves no room for beach and water activities and these overflow on adjacent private properties. A lakefront owner selling his neighbor a right-of-way to the lake may be opening the door to a large number of people who will use his beach and dock facilities and may even make him liable for damages incurred. Plate VII shows examples of poor platting and land use practices found at Hess Lake.

Water supply for domestic use around the lake comes from fairly shallow wells. There have been no cases of polluted well water reported to the County Health Department despite exclusive use of privies and septic tank systems for sewage disposal, often on small lots and with no installation regulations. There has been one case of septic tank effluent causing some pollution in the lake, but this was corrected after being reported to the County Health Department. One common problem with septic tank systems is installation of a small system

PLATE VII

EXAMPLES OF POOR PLATTING IN, WATERFRONT DEVELOPMENT



Source: Plat maps from Brooks Township, Newaygo County, Michigan, 1920

Gerald H. Matthews
July 1964

because the cottage is used during the summer only. In many cases the summer cottage is becoming a permanent home, the original septic tank and drain field is no longer adequate, the usual solution being a completely new system. There are about eighty privies still in use around the lake, virtually all by summer cottagers.

There is only one State public fishing site on the lake, on the north-west corner. It is one and four-tenths acres in size and has 194 feet of lake frontage. It has a boat launching area, parking, and sanitary facilities. In addition there are several dedicated streets under County control which end at the lakefront serving as public access to the lake. These are narrow, twenty or forty feet, thus allowing access, but very limited parking. These areas are overcrowded and cause problems of privacy to adjoining private properties. There also are two private resorts, one on the north shore and one on the south. These offer swimming and boating, plus boat launching areas for private boats.

Public services around the lake are at present limited to telephone, electricity and private garbage pick up. In due time natural gas will be piped around the lake. It is currently available along M-37 between Grant and Newaygo.

Both elementary and high school students are transported via bus to schools in Newaygo.

Regulatory Controls

One Federal law affecting Hess Lake residents is the Federal Boating Act of 1958. Under this Act the Coast Guard

was empowered to assign identification numbers to vessels operating on all navigable waters in the United States which were powered by more than ten horsepower. The States have the option of assuming this function by enactment of a suitable law and approval of its numbering system by the U. S. Coast Guard.[14] Michigan did this with enactment of Act 240, Public Acts of 1962. The only other Federal regulations directly concerning Hess Lake are the wildlife regulations of seasons and bag limits on migratory waterfowl.

At the state level the State Plat Act requires submission of plats when land is divided into five or more lots. The Water Resources Commission is concerned with lake pollution while the State Health Department has an interest in safe wells and adequate septic tank disposal systems. There exists a state plumbing code, but township adoption is voluntary, and neither Brooks or Grant townships have done so. In townships where the code has not been adopted, the state offers inspection service to individual homeowners or plumbing contractors upon their request, through the application for a plumbing permit.[15]

State laws relating to boating come under Act 245, Public Acts of 1959, as amended by Act 240, Public Acts of 1962. These laws provide for uniform registration of motorboats, reporting of accidents and other aspects of safety and operational controls. In addition, it provides for a system of state control over water use regulations, but allows local units of government to accept or reject the proposed controls.

If rejected, only the general controls afforded by the state statute will be in effect on that lake or stream.[16]

The State Conservation Department is concerned with regulating fishing, trapping and non-migratory wildfowl hunting, as well as natural characteristics of the lake such as water levels and weeds, and must maintain the state public fishing right on the lake.

County level regulations are more directly concerned with development on Hess Lake, especially in the areas of sanitation. There are no controls on individual wells in Newaygo County. The only controls on wells is found in the County of Newaygo Sanitary Code, which refers to Public Water Supply Standards of the Michigan Department of Health. These standards apply to water systems in public and semi-public places of assembly, and includes trailer coach parks, motels, resorts, and convalescent homes. Following sections of this Act are pertinent:

> "3.11 All wells shall be located at least 75' from any source of possible contamination; such as sink drains, seepage pits, cesspools, outhouses, septic tanks disposal fields and any sewage or liquid wastes draining into the soil...
>
> .....
>
> "Wells shall not be located in areas subject to flooding unless protected as prescribed in writing by the health officer."[17]

The county of Newaygo Sanitary Code also contains the only controls on sewage disposal in the county, and these refer primarily to public and semi-public places of assembly. The Sanitary Code requires that all parts of a public disposal

system be at least seventy-five feet from the nearest well. It also requires that sewage disposal systems comply with the construction standards set up and issued in Engineering Bulletin #2, Michigan Department of Health. These standards require all parts of the system to be at least twenty-five feet from any lake or stream, and further states that the septic tank should be placed at such a depth that the soil absorption system can be covered with one foot of earth and still be at least two feet above the maximum ground water level. In addition, they shall not be located in areas subject to flooding.[18]

The only reference in the Sanitary Code relating to private disposal systems are the following:

> "K. Private Sewage Disposal. Any premise, dwelling or other private residence shall not dispose of sewage of any kind into a lake, stream, watercourse, open ditch, or county drain, nor on the ground surface within 200 yards of a public road, public park, public premise, or a private residence.
>
> .....
>
> T. An Privy constructed on or after the effective date of these rules and regulations shall comply with provisions of Act 273 of the Public Acts of 1939..."[19]

The Newaygo County Building Ordinance provides that sewage disposal systems for every dwelling be erected and maintained in accordance with the standards recommended by the County Health Department or the Michigan Department of Health. Enforcement however, is township responsibility.[20] Thus far only one township in the County has adopted these standards.

The County also provides the usual county services of

police protection, road construction and maintenance, and administration.

At the township level the only controls in Grant and Brooks Townships are building ordinances, and in Brooks Township only, a Junk Yard Ordinance. The Grant Township Building Ordinance, adopted in May 1956, in addition to building construction qualifications, requires a thirty-three foot setback from the closest highway right-of-way for a dwelling, and a minimum of thirty feet between dwellings. It also enforces the county in stating that septic tanks shall be at least fifty feet from a well.[21]

The Brooks Township Building Ordinance, adopted in 1955, contains no reference to septic tank regulations. It sets a minimum lot width for dwelling construction at eighty feet, and a building set-back of sixty-three feet from the center of the highway. Minimum side yard requirements are eight feet.[22]

The Hess Lake Improvement Association was formed about 1918 to solve the lake level problem, which at that time was low. The Association was instrumental in bringing electricity to the lake, and also in constructing the concrete dam in the mid-1930's. The Association also has worked on the aquatic weed problem and other features to improve the lake environment, such as installation of road signs. Some mis-management in the past and lack of support from residents of the lake has caused the Association to be largely ineffective at present. Only about ten to fifteen percent of the total dwellings around the lake are represented in the organization.[23]

Footnotes

1. Irving D. Scott, Inland Lakes of Michigan, Michigan Geological and Biological Survey, Publication 30, (Geological Series 25, 1920), p. 32.

2. Interview with Mr. and Mrs. William Faust, First permanent residents of Hess Lake, June 1, 1964.

3. U. S. Department of Agriculture, Climate and Man, (Yearbook of Agriculture 1941, Washington, D.C.: United States Government Printing Office, 1941), p. 916.

4. Michigan, Department of Conservation, Brooks Lake Level Control, Newaygo County, Preliminary Engineering Investigation, by Richard G. Foster, (1950), p. 3.

5. Hess Lake File, Michigan Department of Conservation, Engineering and Architecture Division, March 23, 1964.

6. Michigan, Department of Conservation, Aquatic Plant Control At Hess Lake, Newaygo County, by Norman O. Levardsen Division of Fisheries, Report No. 1306, (Nov. 16, 1951), pp. 5-6.

7. Hess Lake File, op. cit.

8. Ibid.

9. Ibid.

10. Hess Lake File, Michigan, Department of Conservation, Fish Division, Aug. 21, 1953.

11. Ibid.

12. A dwelling was considered permanent if occupied six months or more of one year.

13. Derived from property tax records at the Newaygo County Treasurer's Office, White Cloud, Michigan, May 15, 1964. Structures not in platted subdivisions and new structures not yet assessed were assigned a value of $2,000, thus the total figure for the lake is probably low.

14. U. S., Coast Guard, Pleasure Craft, Treasury Department, CG-290, (June 1, 1962), p. 1.

15. Kenneth Verburg, A Study Of The Legal Powers Of Michigan Local Governments, (Institute For Community Development and Services Michigan State University, East Lansing, Mich., 1960), p. 37.

16. Gerald E. Eddy, "Boating - Boon or Bust?," Michigan Conservation, (July-August 1963), pp. 6-7.

17. Michigan, Department of Health, Regulations For Certain Water Supplies In Michigan, (1957), pp. 2-3.

18. Michigan, Department of Health and Michigan State University Cooperative Extension Service, Questions And Answers About Home Sewage Disposal, by W. F. Shephard, George Amundson, and Walter Sheldon, (1963), p. 4.

19. County of Newaygo, Sanitary Code, (Oct. 26, 1961). Also see Appendix A for pertinent excerpts from Act 273, Public Acts of 1939.

20. County of Newaygo, Building Ordinance, (July 5, 1962).

21. Township of Grant, Building Ordinance, (April 12, 1956).

22. Township of Brooks, Building Ordinance, (Aug. 25, 1955).

23. Interview with Mr. Philipp Bevelacqua, President, Hess Lake Improvement Association, June 1, 1964.

CHAPTER IV

AN ANALYSIS OF THE CASE STUDY

Natural Resource Aspects

The most pressing problem confronting Hess Lake residents at present is water level control. The long unsettled history of this problem has made it more complex and increased hard feelings. The dwellings along the south shore, in the low areas, built during a period when water levels on the lake were low, are in a position of suffering the most damage from high water, and desire low lake levels. The remainder of the lakefront does not experience great harm from high water except possibly some shoreline erosion, which can be controlled on an individual or group basis. A low water level may be disagreeable to these people as it may adversely effect their beach area.

The solution to the problem lies in having a legal level for the lake established, with provision for maintaining this level in the future. Establishment of a legal level will not satisfy all parties involved. Some may be required to relocate septic tank disposal systems or wells, or fill a foot or more to raise ground levels. A legal level should benefit the majority, thus the establishment of the level must involve participation of Hess Lake residents. This can most effectively be done through the Hess Lake Improvement Association. All the legal tools are available, and have been for years, to have a legal level established. (See Act 146, Public Acts of

1961 in Appendix B.). For the Residents of Hess Lake to postpone the decision longer only invites more problems in the future. There is still lake frontage to be developed and most of it is low, subject to seasonal standing surface water. This land is similar to that occurring in areas along the south shore currently holding structures, shown on Plate III, and creating a majority of the current water problems. Should the established legal level flood some low land, it has been determined by court action that the use of governmental power of eminent domain allows the selection of the level most advantageous to the majority, with compensation for those who may suffer damage.[1]

A further case for establishment of a legal level can be made by combining a study of Hess and Brooks Lake water levels to insure that residents of both lakes settle the problem once and for all. A legal level was established for Brooks Lake in 1947. At that time the Michigan Department of Conservation suggested the possibility of a single water level for both lakes. Whether or not this is possible cannot be known without a survey under existing conditions. It is feasible that a level set on Hess Lake may adversely effect a desired level on Brooks Lake, and it is a known fact that the reverse is true. High water levels on Brooks affect the tailwaters at the Hess Lake outlet, thus reducing the volume of flow. While the two lakes are separate physical entities, they are linked together by nature and they form a small social community which is slowly growing together. A little cooperation

in the early stages of this growth will make the latter stages more fruitful.

A second problem confronting Hess Lake residents is the heavy growth of aquatic vegetation. There have been some efforts in past years to control it by chemicals. These efforts, by the Conservation Department, were not satisfactory, either requiring too much chemical to be effective or being too expensive. At the conclusion of the treatments the Hess Lake Improvement Association did not seem interested in solving the weed problem through chemicals. The Association has at times experimented with a weed cutting machine, but this is only a temporary solution at best. Results were unsatisfactory and the project dropped. It would appear that if any relief from the weed problem is to be had, it must be through chemicals. There are several of these used by the Conservation Department which afford control for the duration of one summer. They are costly, and the cost must be borne by lake property owners. It is possible, to reduce costs and still gain some relief, by treating only selected areas. At best, weed control, in any form, is temporary. To eliminate all weeds, lake bottom soils would have to be drastically changed, and this could mean an end to all fish life.[2] The legal tool to carry out a program of this type is Act 140, Public Acts of 1961. This Act is to:

> "provide for the improvement of certain inland lakes; to authorize dredging and removal of undesirable materials from lakes,....to authorize the raising of money by taxation and special assessments for the purposes of this act;..."[3]

For further information on this Act see Appendix C.

The solution to the weed problem will, as in the water level situation, require the support of all the permanent and summer residents of the lake, and because it is a local problem, could best be handled through the Hess Lake Improvement Association.

Existing Physical Development Aspects

The problem of individual water supply and waste disposal systems is closely related to soil types and ground water levels. There are several small areas, shown on Plate IV, of low areas containing soils primarily composed of peats and muck. These soils possess very poor drainage qualities and seasonal high ground water tables. It is these low areas which comprise the limited flood plain areas of the lake. Some of this land has already been built upon, without any fill material being added. This land is not suitable for installation of septic tank disposal systems and it probably does not meet Newaygo County's installation recommendations. In spite of this, low land development continues. A majority of the dwellings being built in these low areas are summer cottages, a few are permanent homes. As these summer homes are converted into permanent homes, poorly functioning disposal systems will increase. When septic tank systems overflow and seep to the ground surface, the easiest thing to do is drain it off. On lakefront property this usually means draining it into the lake. Here it goes unnoticed until neighbors complain. Thus far Hess Lake has been quite free of this type pollution. The Hess Lake Improvement Association,

on an informal basis, has done a good job of policing new disposal system installation.

To insure the future sanitation of lakefront properties however, local codes or ordinances are superior to informal local supervision. In the past, residential construction has been fairly evenly spaced and not difficult to supervise. With the present demand for waterfront property however, pressures on local administrative personnel to be more lax in building restrictions will increase. This is when a local ordinance is necessary.

The most common method of establishing and implementing waste disposal controls is through subdivision regulations. The other possiblility, that of a group sewage disposal system is impractical at present. More information is needed on operating procedures and costs.[4] The presence of only 156 permanent dwellings around the lake, and their geographical distribution, financially prohibits such a system. It thus appears that individual disposal systems are the answer, at least for the present, for Hess and many other Michigan lakes.

The main standard for controlling septic tank installation is through lot size. This can be either fixed or vary with soil conditions. Where it is based on soil conditions the lot requirements, of necessity, are larger in the poorer drainage soils. This method permits a more flexible use of the land. This type of standard would be very useful around Hess Lake, where large areas of well drained soils are present. The well drained soils could accomodate more waste disposal

systems per acre than the muck and peat soils.[5] This system is more complicated to administer, and rural areas newly entering the field of subdivision and waste disposal control may find it simpler to adopt a minimum lot size for the entire area. Recommended minimum lot sizes for septic tank systems on the same lot as the well, run from one-half an acre on up. One-half acre represents a lot about 100' x 200', or 20,000 square feet. A major portion of the lots around Hess Lake do not begin to approach 20,000 sq. ft., thus it would appear that a smaller minimum lot size, perhaps 10,000 to 15,000 sq. ft. with option to require larger lots where soil conditions require it, would be more realistic.

In addition to minimum lot sizes it is important to set forth minimum distances between the septic tank with drain field and other physical features. This is particularly true in waterfront areas in order to protect the water from pollution. Washtenaw County, in addition to strict soil interpretation for septic tank usage, sets forth the following minimum distances:

Table 3: Disposal System Isolation Distances

Isolation from	Septic tank	Disposal field
Property line	10'	10'
Building foundation (No basement)	5'	10'
Basement wall	10'	15'
Water supply well (25' or more deep)	50'*	100'*
Shallow well (Under 25' deep)	75'*	150'*
Lake or stream	25'	50'

*Isolation distances shall be increased as required from wells serving other than individual dwellings.

Source: Washtenaw County Metropolitan Planning Commission, A Subdivision Guide, (Ann Arbor, Michigan, April 1963), p. 50.

The control of septic tank disposal systems in resort areas such as Hess Lake is imperative if the present attractiveness of these areas is to be preserved. The existing pattern of small lots and individual disposal systems has not yet caused many serious problems, but as the area continues to expand and densities increase, danger of hazards to well water supplies and malfunctioning disposal systems increases tremendously. Septic tank disposal systems were designed for isolated residences. When a large number of them are in use in a small area they tend to saturate the soil and function improperly. Thus some type of control is desirable to prevent this. Much of the shoreline around Hess Lake is composed of large areas of well drained sands in which septic tanks function very well. There are, however, areas of poorly drained soil which are not suited for septic tank systems. It is the responsibility of the people residing in the townships, or the county, to adopt regulations to protect their environment.

The street pattern around a lake plays an important role in the land use pattern which will develop. This is particularly true of the main road which normally encircles a lake. Land between the road and lake will develop first, and the type of development which takes place depends largely on the size and shape of the parcels of land created by road and lakeshore. A main road too close to the lake means homes and cottages on very shallow lots, often with the road as the back yard. A main road over 100 feet from the lakeshore, on

rural resort lakes, usually means a series of dirt trails forming no particular pattern, just providing access to the waterfront lots. In this latter case large parcels of land between road and water can be well designed and optimum use made of the land. Unfortunately this doesn't always occur.

Secondary roads in the vicinity of Hess Lake are sand trails, but for the most part follow the routes designated by twenty foot wide streets on the original subdivision plats of the lake. These trails tend to be narrow, thus not handling traffic effectively, which fails to promote sound residential growth. In addition winter maintenance is difficult. These trails are passable for the number and type of existing dwellings. When these subdivisions become fully developed however, poor traffic circulation will be a continuous problem. Through subdivision regulation this type of road development can be averted in the future.

The 156 permanent dwellings and 302 summer cottages mean that the primary land use on the lake is for dwellings. As this is the primary basis for the existence of the social community, any other land uses should necessarily be compatible with this residential-resort environment. In addition to dwellings, Hess Lake has three combined food and sporting goods stores, one of which is currently vacant. There are also two resorts providing swimming, boating, and snacks, with the South Side Park featuring roller skating and the North Side Resort, dancing. On the east end of the lake is a plumbing warehouse, run in conjunction with the owner's residence.

This particular use is the only one around the lake which is not compatible with a resort area.

The American Society of Planning Officials lists the following land uses which must be reconciled to each other in rural resort areas:

Summer cottages or residences

Year-around residences

Summer resorts (hotels, motels, cabins, boarding houses)

Hunting, fishing, gun, and riding clubs (in wilderness areas)

Combination resorts and hunting camps

Boy' and Girls' camps

Golf courses

Beaches (private, public, and commercial)

Marinas, boat liveries, and boat launching ramps

Recreation clubs (yacht, boat beach, golf, country)

Amusement parks

Tent colonies and auto trailer parks

Institutionally owned facilities (unions, churches, fraternal)[6]

As Hess Lake is already fairly well established as a residential-resort lake, it should remain in that category in evaluating compatible land uses. The two resorts on the lake are both flanked by private development, thus there is no room for expansion. Neither is there room for any type of buffer planting to provide some privacy for the adjacent residential properties. This would be highly desirable, as both resorts are very popular on weekends, and the adjoining private

residences are located close to the resort structures. An additional problem with the South Side Resort is parking, which is very limited, thus parking on road shoulders and private property occurs, and traffic congestion follows.

The two food stores in operation also serve as gas stations. These are located on the road encircling the lake, on non-waterfront property. Waterfront is not necessarily desirable since they do not require it to conduct their business.

Newaygo County operates a youth camp accommodating fifty to sixty children at the lake, on inland property with access to the lake. It is well isolated from already established residential areas and from the road, thus not being a disturbing element to the residents. When water-oriented activities are enjoyed however, it is necessary for children to walk on the main road to reach an access point to the lake. This is not a desirable feature for a children's camp.

In any future commercial ventures desiring to establish on the lake, it is desirable that waterfront property be reserved as much as possible for activities requiring it, such as beaches, marinas, and sport and boat centers. These uses must have sufficient frontage so that ensuing activities do not overflow in front of adjacent private property. Other commercial ventures can still be successful but do not need a waterfront location. These include restaurants, gas stations, food stores, gift shops and drive-in snack bars.[7]

As stated above, most of the undeveloped waterfront property is swamp or low, poorly drained areas. These areas are

better suited to some land use other than private dwellings. If the area is extremely swampy, such as that existing along the channel into Brooks Lake from Hess, it may be best preserved in its natural state and developed as a wildlife producing area to both Hess and Brooks Lake.

The low ground along the south shore of Hess Lake could possibly be filled and developed as a township or county park. This would provide a much needed boat launching and picnic area that was large enough to accommodate adequate parking in addition to launching boats. If this were done some, or all, of the very small county access points could be reserved for local residents needing access to the lake. These access points could be reserved for local residents needing access to the lake. These access points are too narrow to be suitable for boat launching and subsequent car and trailer parking. The only larger public access point on the lake is the public fishing site on the north-west corner. With 194 feet of frontage it is not large, and is flanked by private dwellings. This site is the property of, and is maintained by, the Michigan Department of Conservation. The Department is limited financially in the amount of waterfront property they can purchase. They are desirous of acquiring sites large enough to be adequate for the use intended and still allow a buffer zone on each side. At present they consider 200 feet a minimum frontage on lakes, but 400 feet would be preferable.[8]

People using Hess Lake are fortunate in having one large public fishing site, but more public access could be used,

particularly in areas where inland property is being developed.

Public access also makes inland property more valuable for homesites and business supporting water recreation. Inland properties would reflect this value by experiencing a sound residential development and thus greater tax return to the township or county. Lakes which are completely ringed with private development have virtually shut off any potential inland development, as the water has appeal only to those who can use it. Different ways public access can aid inland development will be shown in Chapter V.

The methods open to the township or county for securing land for public use are zoning, subdivision regulations, tax deferment, outright purchase or a gift. In the case of Hess Lake and many others like it, local governments are in no position financially to acquire, develop, and maintain waterfront lands for the public. What they can do, through planning, is to study and support new design concepts, such as those presented in Chapter V.

Administrative

There are not enough Federal Administration regulations on most Michigan inland lakes to consider discussion here. The agencies of the Federal government concerned with water become involved more with larger bodies of water which cross state lines.

At present state regulations concerning residents of Michigan's inland lakes are primarily involved in preserving

lake and stream environment through pollution control. The state may become more involved in future years if local governments fail to respond in enacting some form of control on lakefront property. The lack of local efforts in regulating waterfront development has caused nationwide concern. It has been suggested in Wisconsin that the state manage all navigable waters and also undertake a land use planning and zoning program in areas bordering these waters.[9] An interstate subcommittee studying New York's Lake Champlain urged the state legislature to enact laws providing for guidance and financial assistance to local governments to initiate planning and zoning in resort areas.[10]

To be completely successful, planning done through local participation is more desirable than a state controlled program. Lack of local interest in the problem however, tends to bring the state into the picture, as a majority of the lakes are public waters.

It is at the local levels of government that more effective action can be taken to protect inland lakes. It is typical of local governments not to take action until it is too late. Newaygo County's Sheridan Township, surrounding Fremont Lake, finally adopted a simplified zoning ordinance, but only after pollution became so bad in the lake that something had to be done. It is difficult for people to accept public regulations, particularly in rural areas where for years none were necessary. It would be too great a step to expect Newaygo County or one of its townships to suddenly adopt and carry out

a planning program with zoning and subdivision regulations. The start must be made with strengthening and enforcing the limited codes and ordinances now in effect. There is very little control now on single dwelling septic tank installation. Initial remedial action here could be a stronger sanitary and building code by the county, expressly prohibiting septic installation in undesirable locations. The standards used could be those recommended by the Michigan Department of Health, or a variation of these more suitable to conditions in Newaygo County. Stronger codes at the county level would not only benefit all lakefront in the county, but may stimulate action by townships to add to, strengthen, and enforce their codes. The adoption of a Junk Yard Ordinance by Brooks Township indicates a growing awareness on the part of township residents that they cannot exist forever on simply a building ordinance and still live in a desirable environment.

The Hess Lake Improvement Association has a long history, with periods of high and low activity. It is through this organization that the residents of the lake have a voice in local matters. The existing problems of weeds and water level should be handled through this Association. To be effective and representative, an association must receive the wholehearted support of those it serves. The members must work together and support the programs agreed upon. It appears that of late the Hess Lake Association has been bogged down either by member apathy or official decisions without member support. A little effort on the part of key residents of the lake could

coordinate organization activities with property owners' desires. The biggest single factor which would eliminate ill feelings among lake residents would be the solution of the lake level problem.

It is advantageous to lake residents to have an effective organization working for them. It is their voice in all matters which concern them as riparian or non-riparian owners with an interest in a particular lake. An Association is especially important if the residents are concerned with state invasion of private property rights on water. Such a fear has prompted the residents of two lakes in Northern Michigan to work together on a statement of their beliefs in their rights as riparian owners. Article 7 of this Association's "Bill of Rights" states that:

> "present laws are available to protect waterfront owners from over-zealous developers. Michigan will benefit most by encouraging investment in the physical nature of our lakes and streams it is extremely doubtful if state-wide laws would prove equitable."[11]

The complete list of proposed rights appears in Appendix D.

The voice of lake residents shall become stronger through the newly created Association of Michigan Lakes and Streams Associations. This non-profit organization was formed in 1963 for the purpose of promoting:

> "an understanding and appreciation of all the property rights included in riparian lands; to assist riparian owners with a solution of common problems; ... to act as a clearing house for all problems and information relevant to Michigan's natural resources and the use of surface water;..."[12]

Through a state association, local organizations of

geographically linked lakes, such as Hess and Brooks, could be stimulated to cooperate in solving common problems.

The way to solving development problems is found in planning, through the use of zoning and subdivision ordinances in conjunction with other local ordinances. These tools of regulation are available to counties and townships in Michigan. They are not used extensively in rural areas, mainly because of lack of understanding as to what they are and can do. If a local government unit wishes to go into a planning program it must start by educating the people on planning. Local residents made to realize the need for planned development, will respond favorably to the program. Because of the rural nature of many resort areas, the personnel and financial situation does not at present warrant the formal planning program found in highly populated areas. In resort areas, such as Hess Lake, planned development can be achieved through zoning, subdivision regulations and other local ordinances.

Zoning is the most practical answer in separating land uses. For maximum effectiveness it should promote a land use plan. It is through zoning that residential, resort, commercial, industrial and other land uses are arranged in a pattern which makes them compatible. Through zoning, flood plain areas and low areas not suited for development can be preserved for open-space uses. Building set backs also can be required for each use, thus achieving, through buffer zones, a harmonious relationship of land uses.

A feature of zoning peculiar to waterfront property is

that of zoning land under water. It is desirable to indicate on the zoning map that the body of water is in some zone, as opposed to leaving it unzoned. This insures that waterfront areas are protected from incompatible uses of water as well as land. Establishing boundaries over water and along shorelines presents problems, as it is difficult to establish a point in mid-water, and shorelines are often changing. The following are possible means of zoning land under water:

(1) projection of zone boundaries from the land into the water up to a point a given distance from shore.

(2) projection of boundary lines into the water.

(3) zone the water in reference to the zoning of abutting land.

(4) use the shoreline as the boundary of all zones, leaving the water unzoned unless specific districts are determined for it.[13]

Zoning ordinances can be complicated, or very simplified. An example of the latter is that of Sheridan Township in Newaygo County. While simplified, it serves as a start in a resort area badly in need of some controls to halt pollution of Fremont Lake. A characteristic of zoning on lakefronts is the need to provide recreation zones. This is usually done in conjunction with a commercial zone, thus giving a recreation-commercial zone. This zone would include commercial uses supporting recreation, such as food stores, gas stations and restaurants, as well as water-oriented commercial uses requiring waterfront property. A major portion of this land

would be inland property. A residential-recreation zone would be primarily for permanent and summer dwellings, but could permit public beaches for recreation as a special use. A third zone could be special recreational. In this zone would be permitted such uses as youth camps, riding stables and camp grounds.[14] The uses permitted in each zone will vary with local opinions and needs, and additional zones may be needed. The important factor is that a zoning ordinance need not be extremely complicated in rural resort areas.

Interest in rural zoning in Michigan has been mainly at the township level. Approximately 400 townships out of 1,257 have enacted zoning ordinances, or are in the process. This indicates a fair endorsement of the concept of rural zoning in Michigan.[15]

In addition to zoning, the other major tool available to townships to help control growth is subdivision regulations. These regulations can aid in controlling waste disposal, lake and stream pollution, street design and construction, public access and, low land development. This is important in resort areas if they are to remain active. As discussed earlier, sewage disposal is one of the pressing problems on inland lakes. The solution to this problem lies chiefly in subdivision controls, through not allowing installation in poor drainage areas and setting minimum lot sizes and septic tank installation standards. These standards may be coordinated with the legal water level as done in Branch County. The legal level on the Coldwater chain of lakes became the basis

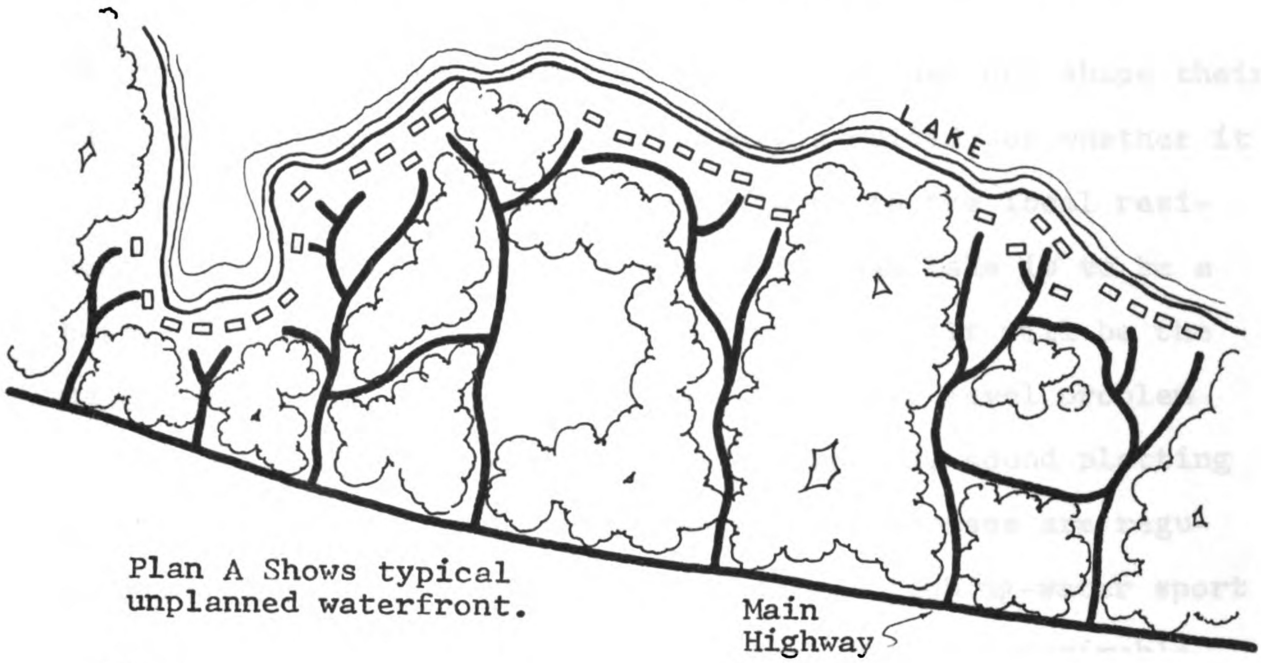
for issuing permits for installing sewage disposal systems. This was required by all townships on the lake chain and is enforced by the County Health Department.[16] This is an excellent example of coordinating natural resource factors with planned development. Also it represents cooperation between lake residents, townships and the county.

A second major problem area controlled by subdivision regulations is that of platting. Through these regulations proper street width and design can be achieved, and closer coordination in streets between adjacent plats is secured. This latter point is missing in the existing plats on Hess Lake. In addition to streets, the plats can be required to show what property rights riparian owners have in relation to the waters edge. This means an accurate portrayal of the lakefront on the property. Plat control can also eliminate the excessively deep lots occurring along some waterfront areas on Hess Lake. The rear area of these lots goes undeveloped and is "dead land". Plate VIII depicts schematically what subdivision regulations can do for lakefront property.

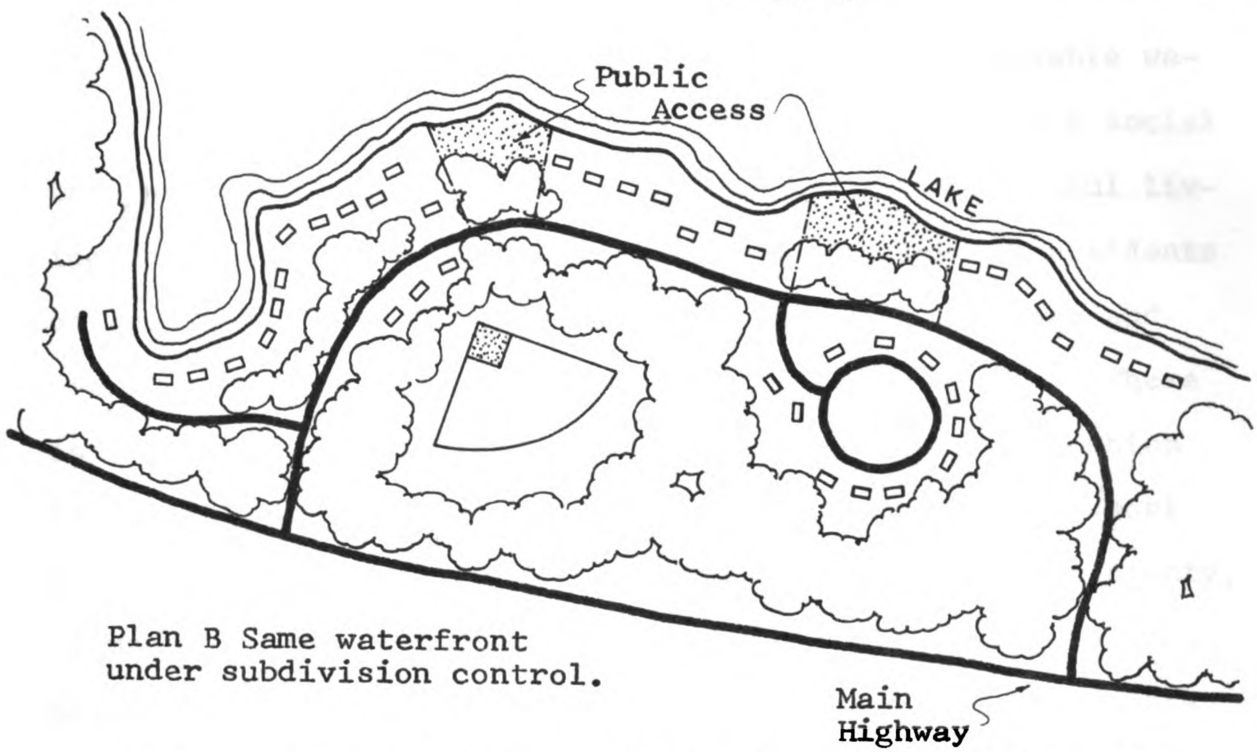
These are a few of the more important phases of zoning and subdivision regulations applied to inland lakes. They require time to prepare, and money. Rural townships undertaking either program would benefit by working with a professional experienced in planning. Once ordinances are passed they require enforcement. Whenever zoning and/or subdivision regulations are adopted, it is wise to coordinate these efforts with adjoining townships to achieve some degree of uniformity in standards.

PLATE VIII

BENEFITS OF SUBDIVISION CONTROL



Plan A Shows typical unplanned waterfront.



Plan B Same waterfront under subdivision control.

Source: Waterfronts: Planning for Resort and Residential Uses, Planning Advisory Service No. 118, American Society of Planning Officials, Chicago: 1959, p. 27.

Gerald H. Matthews
July 1964

Public policy will be the one major factor in the future development of Hess Lake. There are many tools available to Michigan townships and counties with which they can shape their future. Whether this new development is guided, or whether it is permitted to grow "topsy-turvy", is up to the local residents. Public policy must determine if Hess Lake is to be a better than average residential-resort area. It will be the major determining factor in whether the water level problem is solved, low land development is controlled, sound platting practices are practiced, and undesirable land uses are regulated. Public policy will deterine if the fishing-water sport conflict will be settled or allowed to continue. Desirable lakes of the future will be those which afford enjoyable water recreation of all types in a safe manner, and in a social and physical environment which is conducive to healthful living. Public policy will also determine whether the residents of Brooks and Hess Lake can discard their ill feelings and work together to create a desirable social community. There is a large amount of land surrounding these two lakes which is suitable for residential-resort development. While most of the lakefront property is developed, there is still plenty, if used wisely, to allow subdivision of inland property and allow access to the lakes. The decision is up to the people of Grant and Brooks townships, they can guide progress or they can remain quiet and hope it will pass them by.

On a higher scale, public policy plays an important role

in determining what type of development will take place on a lake. Many of Michigan's inland lakes are yet undeveloped. To what are they best suited? Water is a key element in many forms of recreation, and is indispensible to wildlife, which in itself is a part of recreation. Public policy should determine what use a body of water is best suited for, and subsequent regulations controlling development should be drawn up accordingly. At present the criteria for determining the best use of a lake is limited, but research is being done in this area.[17] It will be a mistake if, when adequate criteria are available, the people of Michigan, in a position to use it, fail to do so.

Footnotes

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7. Ibid., p. 11.

8. Interview with Mr. Floyd Faneslow, Head of Public Fishing Site Section, Fish Division, Michigan Department of Conservation, March 1964.

9. Waterfronts: Planning for Resort and Residential Uses, op. cit., p. 5.

10. Ibid.

11. Elk-Skegemog Lakes Association, "Bill of Rights," (n.d.).

12. Michigan, Association of Lakes and Streams Associations, "Constitution," Article II, (1963), p. 1.

13. Waterfronts: Planning for Resort and Residential Uses, op. cit., p. 19.

14. Ibid., pp. 13-14.

15. Louis A. Wolfanger, Rural Zoning in a Nutshell, Extension Folder F-272, Cooperative Extension Service, (Michigan State University, E. Lansing: Feb. 1963), p. 6.

16. A. Allan Schmid, op. cit., pp. 17-18.

CHAPTER V

ADDITIONAL WATER PROBLEMS AND DESIGN TRENDS

Water Surface User Rights

Michigan water users are experiencing a new type of problem in recent years - a water use conflict between fisherman and fast motorboats with and without water skiers. Fishing requires relatively little water area as opposed to motor boating. Fishing tends to be a passive sport as opposed to motor boating. Complicating the problem is the fact that over the years fishing license fees have paid for a substantial portion of public fishing sites in Michigan. Now the angler must wait in line just to get his boat in the water. Motor boats and water skiers contribute nothing financially toward developing public water fronts. In addition many anglers disheartened by congestion on beach and lake have given up fishing, resulting in a drop in fishing license funds. This is an important factor in tourist oriented Michigan.[1]

The problem received legislative attention in 1962, and now a State Boating Control Committee has broad powers in regulating boats and associated recreational water users. This group meets with local citizens at their request, holds public hearings, and makes recommendations for water control. For these recommendations to be enforced, the local government must adopt them in an ordinance. After the first year, the Committee found in many cases a good job of enforcing existing state boating laws would reduce or eliminate the

problem. During this first year the Committee held thirty-five public hearings on local boating problems, in thirty-one cases specific additional local controls were recommended.[2]

Suggestions for solving the conflict come in numerous forms: limit motor horsepower, license boat operators, prohibit water skiing, limit water skiing to certain hours, and zone the water surface for the different uses. The Michigan Boating Control Committee has determined the fairest method to be limiting uses to certain hours. In its first year of operation eleven lakes officially limited water skiing to the period between 10:00 A.M. and 6:30 P.M. The Committee also found that on large bodies of lakes it was practical to zone for particular uses. These zones are appropriately marked, and are reserved for major water activities such as fishing, water skiing, and racing.[3]

A question remains as to how water surface zoning for water activities will effect a lake bottom zoned under a local zoning ordinance. In a single family residential zone, which uses are permitted, fishing, water skiing, or racing? If the local government adopts two ordinances, one zoning the bottom of the lake and one the top, which ordinance has precedence?

It appears that there must be some cooperation between local zoning authorities and the Boating Control Committee in determining cases where both types of zoning are involved.

The water conflict problem is relatively new, and much

progress has been made toward easing the problem. Hopefully, lakes experiencing the conflict will resort to the correct legal channels to solve the problem, rather than take it upon themselves to draw up a set of "Water Use Rules" applicable to their own lake, but not enforceable under any state, county or township law.

Dredging and Filling

The increasing demand for waterfront property has made once valueless swamp land into valuable real estate. This is because current machinery (dredges and draglines) can economically convert low ground into homesites. Three ways this can be done are:

(1) Build up low land around lakes.

(2) Dredge deep canals in swamp land and build up land between canals enabling all homesites to have waterfronts.

(3) Add to shoreline property of lakes by filling.[4]

The advantage of filling is that it can create more useable waterfront property for homes, cottages, marinas and other water-oriented activities. The disadvantages however, if filling is done indiscriminately, can far outweigh the advantages. Indiscriminate filling can damage fish and wildlife habitat (including valuable spawning grounds), interfere with navigation, increase riparian rights controversies, increase sanitation problems, and overcrowd lakes by providing many homesites on a very small body of water.[5]

The fill problem is relatively new except in Florida,

and few subdivision regulations contain standards for controlling it. The main factor in allowing fill operations to take place is to insure that the method and type of fill is adequate for the type of development proposed. Competent engineering is needed to aid local planners in formulating and enforcing controls. An example of fill regulations is shown in a subdivision ordinance for Marin County, California:

> "Filling. Where marsh or low lands are proposed for subdivision, the subdivider shall have a soil investigation and recommendation made by a recognized, qualified soil mechanics engineer, and the program for development shall be made on the basis thereof...
>
> .....
>
> Required fill shall be of suitable filling material and placed in such a manner to insure that the finished elevation of all lots and roadway areas will be adequate to protect the subdivision from floods.., and then only where there is an adequate provision for the passage of storm water run-off and after settlement and compaction."[6]

A second area of concern to local governments and planners is that of fill material which adds property to the lakefront. If a lake is zoned by the local government and a portion of the lake is made into buildable homesites by filling, what effect does the zoning ordinance have on this land, if any? This problem possibly could be solved by making provision in the local zoning and subdivision regulations, but only if local governments are aware that this circumstance may arise in their area jurisdiction.

In the future there will be added pressure to develop all types of waterfront lands, even those currently under water. To maintain high standards of living local governments must review surface water resources in their area and,

if applicable, design their ordinances to include the possibility of fill areas developing.

Artificial Lakes

A shortage of natural lakes, and nearly 100% lakefront development of natural lakes in urbanized areas, has led to the development of artificial lakes for residential homesites, as well as other uses. Other uses may include recreation, water for domestic and industrial use, flood control, and augmenting low flow periods to reduce pollution. At present most artificial lakes are built solely for real estate promotion, without any planning going into multi-purpose use concepts.

The following problems occur in artificial lakes:

(1) no construction standards resulting in poorly constructed dams.

(2) maintenance responsibility of dam and lake upon completion.

(3) quantity and quality of water supply for lake.[7]

(4) management of lake water level.

(5) control of pollution.

(6) selection and introduction of proper fish species.

(7) control of shoreline development, beaches, piers, boat houses, etc.[8]

Further problems stem from questions involving riparian rights. Aside from the problems discussed in Chapter II, the developer may reserve certain riparian rights, such as lake level determination and water use. Reserved rights can

adversely affect the property owner, thus his riparian rights should be specified in his deed.

Property owners should also be aware of areas of responsibility in connection with water level maintenance. Providing the dam breaks and the lake drains, whose responsibility are the repairs? If the lake is supplied water by pumping from an adjacent natural lake or stream, can the property owner be assured that this source is dependable and not contested by riparians on the natural body of water? Is periodic draining of the lake for dam repairs or other reasons to be expected? These and other problems must be answered by legal provisions, assuring property owners and local governments that responsibility for the lake lies somewhere. It may be desirable to require the developer to post a bond guaranteeing the performance of the dam and water supply.[9]

Whether the lake is private or public must be determined. If private who is responsible for its maintenance? If public, access points must be established and its relation to back lands be determined. The riparian owner who purchased early may find that he must share the lake with far more people than he anticipated if he is unaware of potential inland development.

At present the only controls on artificial lake creation in Michigan is in the form of dam construction permits. Under Act 156, Public Acts of 1851, County boards of Supervisors have the power within their counties, "to permit or

prohibit the construction of any dam or bridge over or across any navigable stream."[10] Until 1963 this was the only control on dams, applicable only to navigable streams. In 1963 Act 184, Public Acts of 1963 requires a permit from the Michigan Department of Conservation to erect dams in streams or rivers. Section 1 states:

> "No person shall construct or permit construction of any dam on land owned by him in any stream or river impounding more than five acres without first obtaining from the department of conservation a permit approving the plans for such construction."[11]

The impact upon local governments of an artificial lake created within their jurisdiction will vary, but few have provisions in their ordinances controlling such a circumstance. Subdivision regulations and zoning ordinances already dealing with waterfront development can be adapted to artificial lakes. Those government units having no controls over waterfront development may find it necessary to revise their thinking, and their ordinances. In the future subdivision and zoning controls must be devised to consider the possibility of artificial lakes.

Planned Community Development

The use of artificial lakes to promote real estate ventures is one way to capitalize on the appeal water has for people. On a larger scale is the planned community located on waterfront property. Developers specializing in the second-home market are finding that many of these people want all the conveniences of their first home environment. Thus the planned community on water provides housing (both permanent

and summer), recreation (water-oriented), stores, gas stations, churches and even some small industries.

An example of such a community is found on the northeast shore of Lake Tahoe. This development offers housing and water recreation, but also includes three shopping centers, service stations, hospital, civic center and light service industry. Total population when completed is expected to reach 250,000, about 70% of which will be second-home buyers. There are only fifty lots on the lake itself, with 3,000 feet of lake frontage devoted to apartment type dwellings. A large portion of the lakefront is dedicated as community beach, for use by citizens of the community.[12]

A well planned community with ample public access represents somewhat of an ideal way to utilize waterfront property to benefit the largest number of persons seeking summer or permanent homes near water. At the same time it raises the question of recreational-use capacity of a lake. Can Lake Tahoe support a community of 250,000 in addition to other residential and resort developments around the lake and remain unpolluted and uncrowded enough to be a desirable recreation area? This same question applies to artificial lakes and natural inland lakes. Research is needed to explore the proper use for different type lakes, what the shoreline property is worth, and the total number of cottages and permanent homes on a body of water. In addition values and standards must be established in order to determine a maximum population a given body of water can support. This factor will be

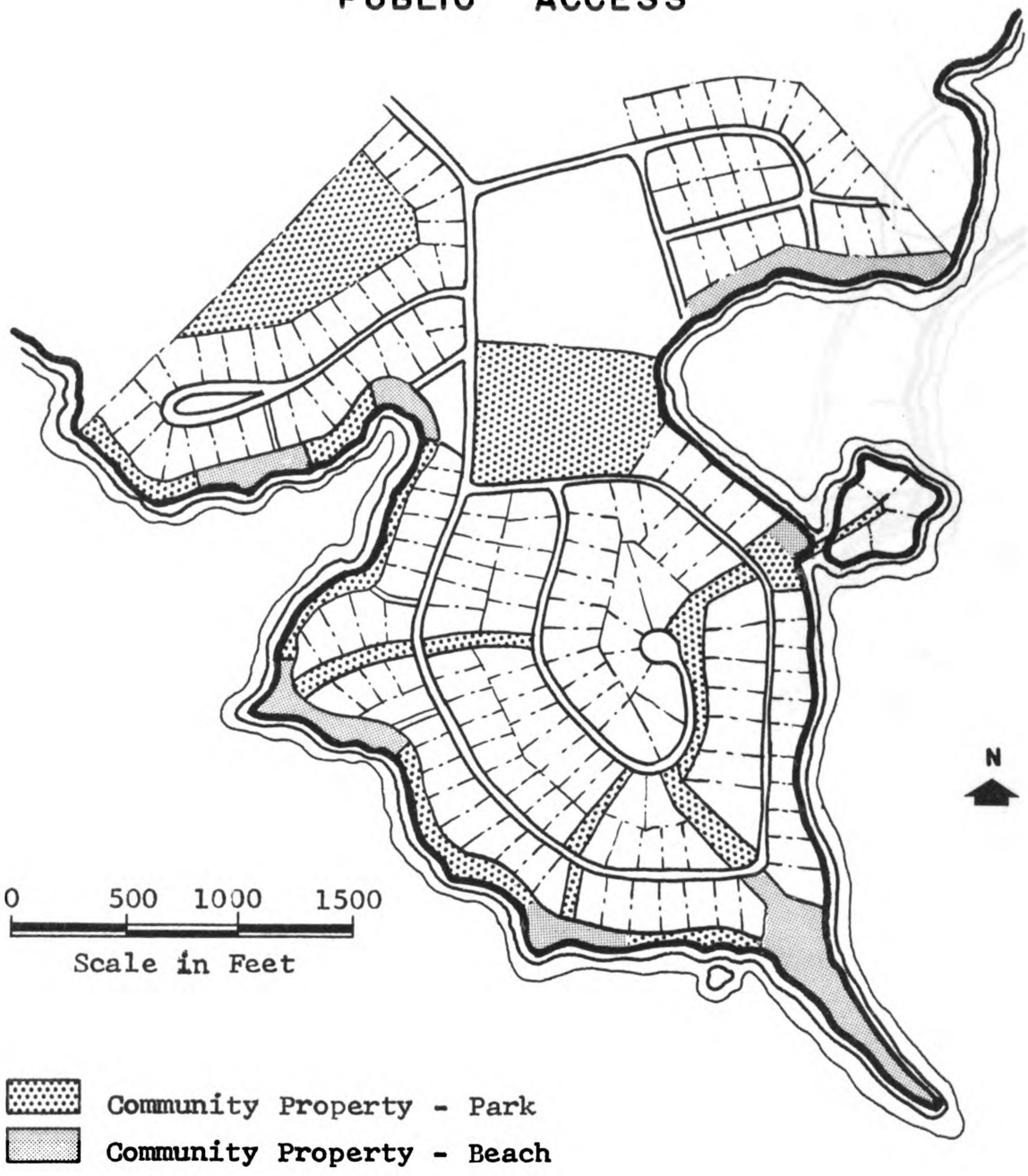
important in policy making decisions on the proper use of inland lakes and other bodies of water.

Current Subdivision Trends

Current subdivision design of waterfront property is aimed at making the water available to a larger number of people. The concept of dividing an entire shoreline into individual lots is no longer acceptable. High on the list of uses for surface water is recreation. To enjoy the water, people must have access. This applies to inland property owners as well as people from urban environments. In addition to providing public access for the general public, new design criteria call for access points related to inland homesites. This reduces the amount of "dead land" created under the old design patterns. Waterfront subdivisions once left inland property no access to water, and it loses its value of being near the water. By designing inland property in conjunction with the lakefront, this property capitalizes on its proximity to the water. An example of how this can be done is shown in Plate IX. This plan emphasizes the need for careful planning in large tracts of land to insure maximum use of waterfront and inland property. This plan devotes more waterfront to public access than most, but it is designed for a large number of users. Notice the pedestrian parkways leading through the residential areas to the waterfront, a feature reducing pedestrian traffic through private property. Plate X shows a more typical development permitting public access.

PLATE IX

PUBLIC ACCESS



Source: Waterfronts: Planning for Resort and Residential Uses, Planning Advisory Service, No. 118, American Society of Planning Officials, Chicago: 1959, p. 27.

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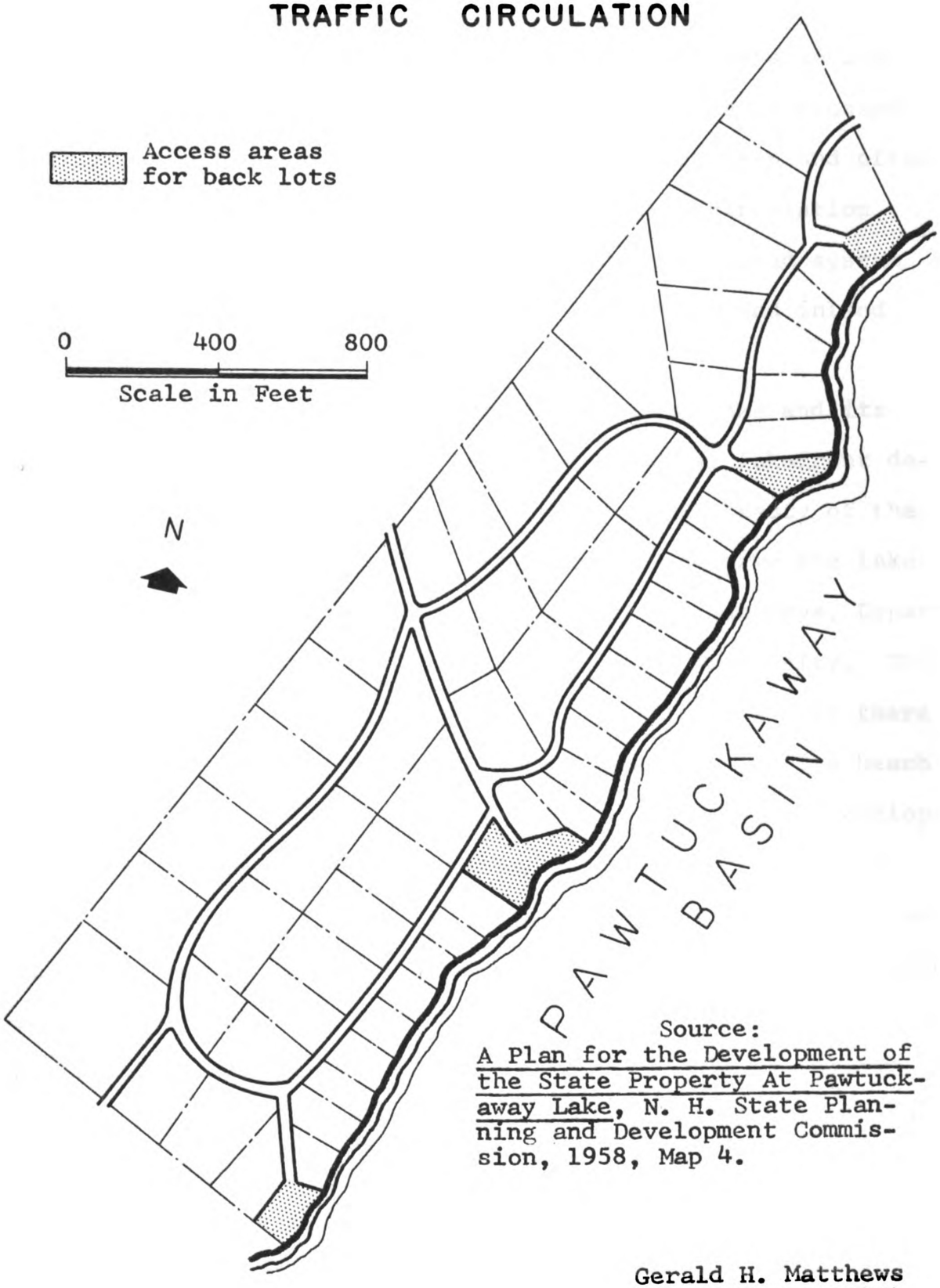
July 1964

PLATE X

TRAFFIC CIRCULATION



Source:
A Plan for the Development of the State Property At Pawtuckaway Lake, N. H. State Planning and Development Commission, 1958, Map 4.

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July 1964

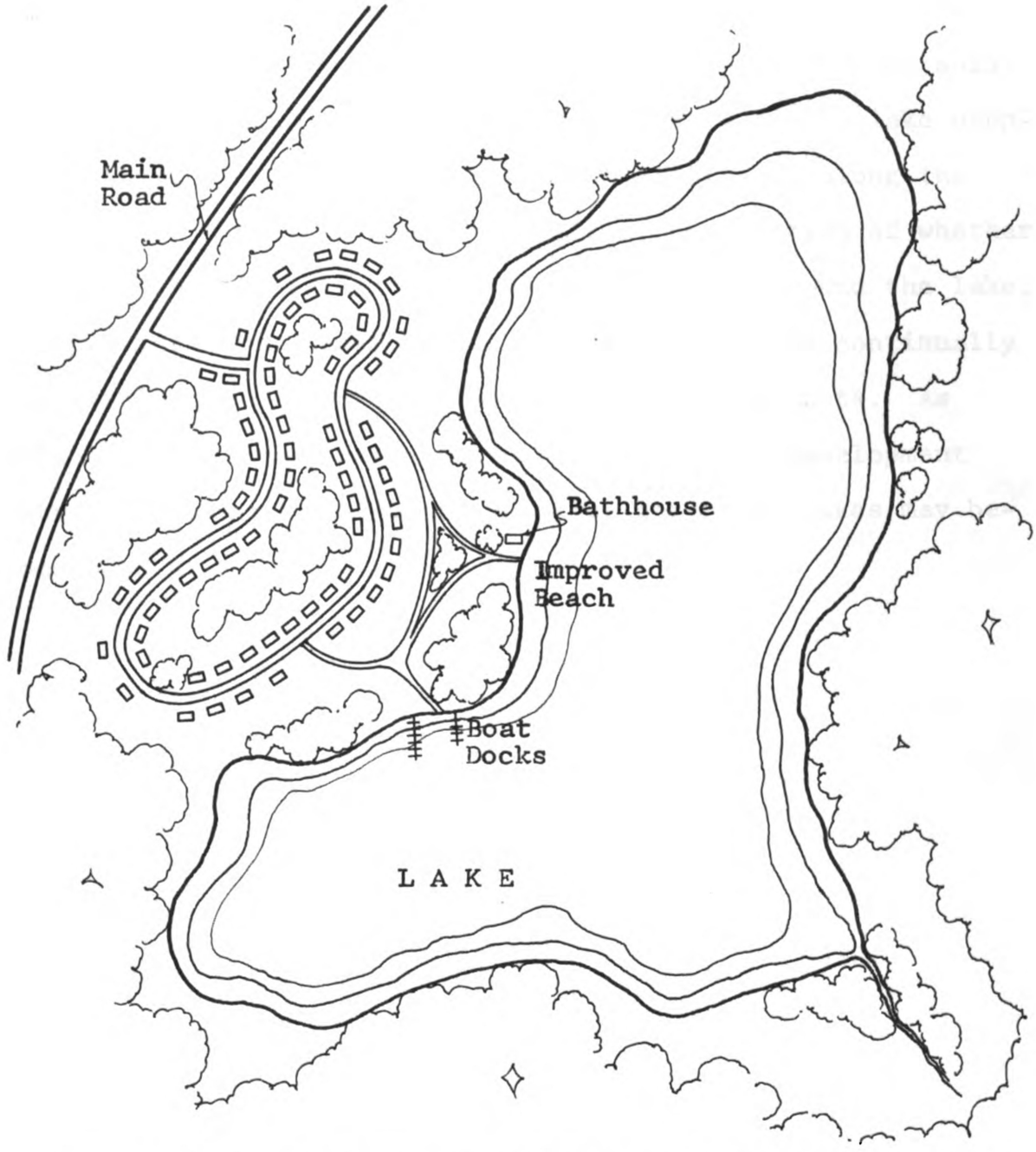
Current design trends also call for improved road lay-out in conjunction with public access points, lot size and shape, and general circulation. A common problem discussed earlier involves platting which permitted very deep and often odd shapes and sizes, often with poor traffic circulation. Plates IX and X demonstrate how a well designed road system and lot layout allows maximum use of waterfront and inland property.

The unique physical characteristics of a lake and its shoreline is what makes it attractive. Typical lakefront development tends to destroy much of the natural beauty of the lake. A method of development which would preserve the lake in its natural condition is proposed by C. R. Humphrys, Department of Resource Development, Michigan State University. This plan is shown on Plate XI. The difference here is that there are no lakefront lots, everyone shares the lake and its beach area on an equal basis. The cluster type residential development offers economy in street and utility layout, possibly being large enough to utilize a package sewage treatment plant. It also offers a degree of assurance that the lake will remain unpolluted by non-functioning septic tanks. While shown on a small lake, this type of development is possible on a large lake by allowing several housing clusters at strategic spots around the lake.

The problems involved in the success of this plan are several. First would be public acceptance of the fact that there are no lakefront lots. Secondly, for the plan to be

PLATE XI

SCHEMATIC LAKE DEVELOPMENT



Source: C. R. Humphrys, "Michigan's Many Jewels, Trend To Artificial Lakes Grows As Demand for Shore Lots Peaks," Reprint from Michigan Challenge, Vol. 3 No. 31, (April 1963), p. 2.

Gerald H. Matthews
July 1964

successful, control of the entire lake would be necessary. This control would permit complete control of both land and water use of the lake, but would be difficult to achieve unless through private ownership of the entire lake. One solution would be to purchase development rights of the lake property, possibly allowing limited private cottages along the lakeshore. A plan of this type raises the question of whether it makes the highest and best use of the land around the lake. The pressures for development of waterfront lands continually increase, with most of it directed to lakefront lots. As more lakes are rendered undesirable by current development patterns however, a cluster type development on lakes may become popular.

Footnotes

1. Gerald E. Eddy, "Boating - Boon or Bust?," Michigan Conservation, (July-August 1963), p. 5.

2. Michigan, Boating Control Committee, "First Annual Report," (unpublished paper; August 20, 1963), pp. 1-2.

3. Ibid., pp. 3-4.

4. "How To Get Better Land For Less And How To Use Good Land Better," Reprint from House And Home, (August 1960), p. 164b.

5. A. Allen Schmid, Michigan Water Use And Development Problems, Circular Bulletin 230., Agricultural Experiment Station, Department of Agricultural Economics (Michigan State University, E. Lansing: 1961), p. 19.

6. Waterfronts: Planning For Resort and Residential Uses, Planning Advisory Service Report No. 118, American Society of Planning Officials, (Chicago: 1959), p. 26. See also: James J. Truncer, "A Brief Look At Artificial Beach Development In Michigan," Unpublished paper for The Department of Resource Development, (Michigan State University, E. Lansing: March 14, 1961) and W. Turner Wallace and Associates, A Practical Method For The Control of Bayfills, (Tallahassee, Florida: n.d.).

7. A. Allan Schmid, op. cit., pp. 18-19.

8. C. R. Humphrys, "Artificial Lakes," Reprint from The Michigan Economic Record, Vol. 4, No. 3, (March: 1962), Bureau of Business and Economic Research, Michigan State University, E. Lansing, p. 2.

9. Ibid.

10. Michigan, State of, "Construction of Dams," Excerpts from Act 156, Public Acts of 1851.

11. Michigan, State of, "Dam Construction Approval Act," Act 184, Public Acts of 1963.

12. "Vacation Homes: An Exploding Market Takes On A New Shape," House And Home, (Feb. 1964), pp. 109-110.

CHAPTER VI

CONCLUSIONS

The heavy increase in residential and other forms of development on inland lake shorelines has stemmed primarily from a higher interest in water-oriented recreation and a way of life enabling people to spend more time and money on it. There have always been a few people rich enough to afford a cottage on some lake, thus the concept is not new. The differnce today lies in the large number of people, not "rich", but who can afford a summer cottage within a few hours drive of their home. In addition to cottage owners there are those who desire to live on a lake within commuting distance of a satisfactory job. Those owning cottages often enjoy it so much they make it their permanent home. It is these various types of individuals or family groups which are invading waterfront property, on large lakes and small. As a majority of inland lakes are outside metropolitan areas, development controls are partially or totally lacking. Haphazard development disfigures the waterfront and creates problems of overcrowded land and water, poor land development practices, an undesirable pattern of mixed land uses, irregular street sizes and patterns, sanitation, and lack of public access to water.

Development problems on waterfront property are basically the same as for residential development occurring in non-lakefront areas. It does involve however, some additional problems which are unique because of the water. It has become apparent

that regulations written to control the development of land must involve the relationship of land to water, and the reverse is equally true. Many current subdivision regulations and zoning ordinances have little or no reference to waterfront property and its relation to the water. Much of this is due to the complex water-rights doctrine in Michigan, which at present is not stable enough for either land owners or government officials to be sure of what is legal. A comprehensive set of water laws for the State of Michigan is necessary to serve as an aid in drafting subdivision regulations, zoning ordinances and other local controls pertaining to waterfront property.

Any regulations on waterfront property should involve some thought as to what the lake is best suited for. Lakes with adequate size, good beaches and water quality are more suited to a resort type development than private residences. Small lakes with limited beaches and heavily weeded would be more suited to private residential development. Additional research is needed on waterfront development before completely accurate decisions can be made in this area of planning. Even without this research however, current regulations dealing with waterfront property should reflect some thought as to what the maximum usage of the lake is.

Through the analysis of development problems on Hess Lake and further problems discussed in Chapter V it is apparent that some course of action must be taken if these problems are to be remedied. Ideally a planning proposal

for action to insure a desirable development on an inland lake such as Hess Lake must include action at two levels of government; State and local.

The State has a high interest in inland lakes because a majority of them are public and they are a definite asset as tourist attractions. For these reasons the State should take the following action to enable local governments to better plan for waterfront development:

(1) Adopt state legislation firmly establishing a riparian owner's rights to land above water, submerged lands, and consumptive and non-consumptive uses of the water itself.

(2) Adopt legislation permitting local governments to establish a legal sea level elevation for lake water level, this elevation remaining permanent in spite of fluctuating water levels. This elevation could be referred to in drafting local ordinances.

(3) Conduct studies on the various types of lakes in the state and to what type of development they are best suited.

(4) Initiate surveys on the quantity and quality of use different types of lakes can support.

This legislation and information is necessary in order for local governments to more effectively plan for the development of their waterfront lands.

At the local level there are several proposals which, by receiving immediate attention, would alleviate current and

near-future problems. These proposals are only the first phase of a long range planning program designed to ultimately arrive at a complete planning program.

(1) Establishment of a legal water level under Act 146, Public Acts of 1961. This must be done, where possible, in conjunction with other lakes in the same watershed where levels may affect both lakes. It must be done by the people living around the lakes, working with the township and county.

(2) Township adoption of at least minimum standards set forth in the County Sanitary Code.

(3) Adoption of a subdivision ordinance which would include a minimum lot size with local option to increase it if soil conditions warrant it, and adequate subdivision design featuring the best use of waterfront and inland property. It must also cover the possibility of dredge and fill operations ocurring.

(4) Coordination of established legal water levels with county and township codes and ordinances.

(5) Consistent enforcement of above improved codes and ordinances.

(6) Initiation of a program educating the people of the county on the function and purpose of a planning program, accomplished jointly through township and officials.

The following second stage proposals would be initiated

at such time as the population around the lake and remainder of the township could financially support an active planning program. It would also require the cooperation of two townships working together, as Hess, like many other lakes, crosses political boundaries.

(1) Creation of a planning commission at the township level.

(2) Update subdivision regulations to include lot size requirements depending on soil conditions.

(3) Formulation of a master plan for the development of the township, including lakefront property. The treatment of each lake would vary according to type of lake and what type of use it is best suited for, and the amount of development it can support.

(4) Adoption of a zoning ordinance to support the master plan. Pertaining to lakes it must clearly specify the relation and boundaries of land zoning to the water and submerged lands. It would also refer to the legal level of the lake in defining zones.

(5) Continuation of educational programs to promote planning.

When these second phase proposals can be carried out will depend on how hard local officials work to promote planning. Before a program can be successfully initiated the people must be ready for it. The formulation of a master plan for the development of waterfront property, in addition to making the township eligible for Federal funds in future community

projects, is a sound way in which a community can assure that it's future growth will have some guidance.

It must be remembered that complete control of all development is not needed, nor is it desirable. What is needed is more thought and effort applied to what type of waterfront development is desirable. Michigan's inland lakes are valuable to those who wish to own property there, to those who only wish to use it occasionally, and to the State as an asset in it's tourist industry. The type of development which should take place on the lands surrounding Michigan's lakes must reflect all interests if full benefit is to be derived from the lakes themselves. Natural inland lakes are not inexhaustable in supply. Their shorelines, once developed in a haphazard manner, are lost forever.

APPENDIX A.

Excerpts from ACT 273, PUBLIC ACTS OF MICHIGAN 1939

Excerpts from A REGULATION PERTAINING TO THE CONSTRUCTION AND MAINTENANCE OF "OUTHOUSES" AND TO SAFEGUARD THE PUBLIC HEALTH BY PREVENTING THE SPREAD OF DISEASE AND THE EXISTENCE OF SOURCES OF CONTAMINATION IN ACCORDANCE WITH ACT NO. 273, P. A. 1939 (Michigan)

EXCERPTS FROM

ACT NO. 273, P. A. OF 1939 (Michigan)

AN ACT to protect the public health; to regulate the storage and disposition of sewage; to empower the state commissioner of health to make rules in regard thereto; and to prescribe penalties for the violation of the provisions of this act and said rules.

The People of the State of Michigan enact:

Section 1. It is hereby declared to be unlawful for any person, firm, association or corporation to maintain, or to permit to be maintained, on premises owned or controlled by such person any outhouse unless the same shall be kept at all times in a sanitary condition, and constructed and maintained in such manner as not to injure or endanger the public health. The term "outhouse" as used herein shall be construed to mean a building or other structure not connected with a sewerage system or with properly installed and operated sewage disposal system, and which is used for the reception, disposition or storage, either temporarily or permanently, of feces or other excreta from the human body.

.....

Section 4. Nothing herein contained shall apply to any outhouse located outside the corporate limits of any city or village, which is more than 200 yards from a residence other than the residence the outhouse serves, or more than 200 yards of any store, restaurant or other place where food, milk or drink is served, stored or prepared for human consumption, or more than 200 yards of any building used for public lodging or place where drinking water is offered to the traveling public, or more than 200 yards of a public gathering place.

EXCERPTS FROM

A REGULATION PERTAINING TO THE CONSTRUCTION AND MAINTENANCE OF "OUTHOUSES" AND TO SAFEGUARD THE PUBLIC HEALTH BY PREVENTING THE SPREAD OF DISEASE AND THE EXISTENCE OF SOURCES OF CONTAMINATION IN ACCORDANCE WITH ACT NO. 273, P. A. 1939
(Michigan)

SECTION 1. Principles

All "outhouses", buildings or other structures which are not connected with a sewerage system or with a properly installed and operated sewage disposal system, and which are used for the reception, disposition or storage, either temporarily or permanently, of feces or other excreta from the human body, shall be constructed and maintained in such manner as to conform at all times to the following:

.....

b. Location of Receptacle. -- The receptacle shall be so located as to prevent the pollution of private and public water supplies, lakes or streams; the overflow of the contents to the surrounding ground; and the flow of surface water into the receptacle. The receptacle should be convenient and accessible to use.

.....

SECTION 2. Minimum standards for earth-pit "Outhouses" shall be as follows:

a. Location. -- The pit should be located 100 feet or more from any well or other source of ground water supply and upon ground sloping away from the water supply, and shall never be located less than 75 feet therefrom without special approval of the Commissioner of the Michigan Department of Health. Provided, however, that no pit shall be located within 200 feet of any source of ground water used for a municipal water supply. No pit shall be located less than 2 feet from any lot or alley line or less than 25 feet from any lake or stream. In areas underlaid by limestone, or where fissured rock formations are common, or whenever ground water is encountered in the construction of the pit, approval of the construction and location of the pit based upon special investigation of the conditions must be obtained from the Commissioner of the Michigan Department of Health.

APPENDIX B

ACT 146, PUBLIC ACTS OF MICHIGAN 1961

Inland Lake Level Act of 1961

Outline of Procedures under Act 146, Public Acts of Michigan 1961

-102-

INLAND LAKE LEVELS

ACT 146, P.A. 1961

AN ACT to provide for the determination and maintenance of the normal height and level of the waters in inland lakes of this state, for the protection of the public health, safety and welfare and the conservation of the natural resources of this state; to authorize the building and maintenance of dams and embankments to accomplish such purposes; to authorize the acquisition of lands and other property by gift, grant, purchase or condemnation proceedings; to authorize the acceptance of gifts and grants of funds for the construction and maintenance of such dams and embankments; to authorize the raising of money by taxation and by special assessments for the purposes of this act; to prescribe the duties and powers of boards of supervisors, the conservation department of Michigan and county drain commissioners with reference hereto; and to repeal certain acts and parts of acts.

The People of the State of Michigan enact:

281.61 TITLE OF ACT.

Sec. 1. This act shall be known and may be cited as the "inland lake level act of 1961".

281.62 DEFINITIONS.

Sec. 2. As used in this act:

(a) Normal water level of any inland lake, natural or artificial, is such a level as, considering the height above sea level, established by government surveys; the high water line as disclosed by old surveys; testimony of old inhabitants; the extent to which drainage and other artificial causes have decreased the natural ground water table of the areas; the extent to which natural causes have either decreased or increased the natural ground water table; and all other pertinent surrounding facts and circumstances, will provide the most benefit to the public and best protect the public health, welfare and safety and which will best preserve the natural resources of the state, and preserve and protect the values of properties developed around said lake as a result of the creation of the normal level.

(b) Dams mean dams, embankments, dikes, pumps, weirs, locks, gates, tubes, ditches or any other devices or construction to keep and maintain the waters in lakes at normal height and level.

(c) A public inland lake is any lake which is accessible to the public via public owned lands, waters or highways contiguous thereto, or via the bed of a navigable stream and which may be used for navigation, fishing, hunting or other lawful purpose and reasonably capable of supporting a beneficial public interest, except the Great Lakes and connecting waters.

(d) A private inland lake is any inland lake other than a public inland lake.

(e) Department means the county drain commissioner or the county road commission in counties not having a drain commissioner, and if more than 1 county is involved the combined drain commissioners or drain commissioner and road commission in counties having no drain commissioner.

(f) Interested person is any person who has a record interest in the title to, right of ingress to or reversionary right to a piece or parcel of land which would be affected by a permanent change in the natural or normal level of a natural or artificial public or private inland lake, and in all cases, whether having such interest or not, the Michigan department of conservation shall be an interested person.

(g) Conservation department is the state conservation department.

281.63 BOARD OF SUPERVISORS, BY MOTION OR BY PETITION, CAUSE DETERMINATION OF NORMAL LEVEL, AND MAINTAIN BY DAMS, WELLS, OR PUMPS.

Sec. 3. The conservation department or the board of supervisors of any county in which the whole or any part of the waters of any inland lake is situated, upon its own motion or by a petition to the board of 2/3 of the freeholders owning lands abutting the lake, for the protection of the public health, welfare and safety and the conservation of the natural resources of this state, or to preserve property values around a lake, may cause to be determined the normal height and level of the waters in the inland lake, and construct and maintain sufficient dams to keep and maintain the water in the lake at its normal height and level. The board may drill wells to supply a lake with additional water in order to raise the level thereof or pump water from some other source, or in case it is necessary to lower the level thereof may arrange for the pumping of water from the lake.

281.64 DEPOSIT FOR PRELIMINARY COST.

Sec. 4. The board of supervisors, by resolution, may require a cash deposit sufficient to cover the preliminary costs when a petition is received from freeholders before further proceedings are undertaken pursuant to the petition.

281.65 BOARD OF SUPERVISORS TO DETERMINE EXPEDIENCY, METHOD OF FINANCING; TO DIRECT DEPARTMENT TO DETERMINE NORMAL LEVEL, AND ESTABLISH SPECIAL ASSESSMENT DISTRICT; TO DIRECT PROSECUTING ATTORNEY TO PETITION CIRCUIT COURT. LAKE IN 2 OR MORE COUNTIES.

Sec. 5. Whenever the board of supervisors of any county deems it expedient to have determined and established the normal height and level of the

waters in any inland lake situated in the county, the board, by resolution, shall determine the expediency of and the method of financing the initial costs and maintenance of any project at a regular or special meeting, and direct the department to determine the normal level of the lake and to establish a special assessment district if required.

The board shall also direct the prosecuting attorney of the county to institute by proper petition in the circuit court of the county a proceeding for determination.

When the waters of any inland lake are situated in 2 or more counties, the normal height and level of the waters of such lakes may be determined in the same manner if the boards of supervisors of all counties involved determine it to be expedient and by resolution may direct the department and prosecuting attorney of 1 or more counties to institute proceedings.

281.66 SPECIAL ASSESSMENT BONDS, LAKE LEVEL ORDERS, PROCEDURE.

Sec. 6. The special assessment district may issue bonds or lake level orders in anticipation of special assessments. All proceedings relating to the making, levying and collection of special assessments herein authorized and the issuance of bonds or lake level orders in anticipation of the collection thereof shall conform as near as may be to the proceedings for levying special assessments and issuing special assessment bonds or lake level orders as set forth in Act No. 40 of the Public Acts of 1956, as amended, being sections 280.1 to 280.623 of the Compiled Laws of 1948.

281.67 TAX ANTICIPATION NOTES, PROCEDURE.

Sec. 7. The special assessment district may issue tax anticipation notes subject to the provisions of Act No. 202 of the Public Acts of 1943, as amended, being sections 131.1 to 138.2 of the Compiled Laws of 1948.

281.68 CONSERVATION COMMISSION INSTITUTE PROCEEDINGS.

Sec. 8. If the conservation department deems it expedient to have the normal height and level of any inland lake determined, the conservation commission shall by resolution authorize the director to institut by proper petition on behalf of the state, in the circuit court of any county in which the lake or any part is situated, a proceeding for determination. The conservation department may likewise join with the board of supervisors of any counties of the state in instituting proceedings for determination as set forth in this act.

281.69 DEPARTMENT TO DETERMINE NORMAL LEVEL, ESTABLISH ASSESSMENT DISTRICT, PREPARE DATA, CONSTRUCT AND MAINTAIN PROJECT.

Sec. 9. The department, when instructed by resolution of the board of supervisors shall determine the normal level of any private and public inland lakes in its county and establish a special assessment di trict including therein all parcels of land and political subdivisions which are benefited by the establishment of a lake level. The board of supervisors may delegate to the

department such other ministerial duties including preparation, assembling and computation of statistical data for use by the board and the superintending, construction and maintenance of any project under this act.

281.70 HEARING. PROSECUTOR TO PUBLISH NOTICE, COPY TO PROPERTY OWNERS AND CONSERVATION DEPARTMENT. COURT DETERMINE LEVEL AND DEPARTURE FROM NORMAL.

Sec. 10. Upon receipt of petitions filed under this act the court shall fix a day of hearing, shall direct the prosecuting attorney or the conservation department to give notice thereof by publication in 1 or more newspapers of general circulation in the county, and if the waters of the inland lake are situated in 2 or more counties, in 1 or more newspapers in general circulation in each of the counties in which the lake or any part thereof is situated. The notice shall be published at least once each week for 6 successive weeks prior to the date fixed for the hearing. The court shall direct that copies of the published notice of hearing shall be served by certified mail at least 3 weeks prior to the date set for hearing to each person whose name appears upon the latest city or township tax assessment roll as owning lands within the special assessment district, at the address shown on the roll. If no address appears thereon then no notice need be mailed to the person. The department shall make an affidavit of mailing. The failure to receive any notice properly mailed shall not constitute a jurisdictional defect invalidating proceedings under this act. The prosecuting attorney shall also serve notice on the conservation department.

The court shall hear proofs and allegations of all parties interested and shall consider and review the description of lands within the special assessment district. The court shall determine the level to be established and maintained and may provide for departure from the normal level as may be necessary to accomplish the purposes of this act.

281.71 BOARD ACQUIRE DAMS, SITES, RIGHTS BY GIFT, GRANT, PURCHASE, CONDEMNATION; CONSTRUCT AND MAINTAIN DAM; DAM IN ADJOINING COUNTY.

Sec. 11. The board of supervisors of any county in which the whole or any portion of the waters of any inland lake are situated may acquire in the name of the county, by gift, grant, purchase or by condemnation proceedings any existing dam which may affect the level of the waters in the lake and any or all sites for dams or interests and rights in land needed or convenient in order to carry out the purposes of this act, and may proceed to construct and maintain any dam that may be determined by the board to be necessary for the purpose of maintaining the normal height and level of the waters of any lake as provided in section 3.

A dam may be constructed and maintained in a county next adjoining the county in which the lake or part thereof is located.

281.72 CONSERVATION DEPARTMENT ACQUIRE DAMS, SITES, RIGHTS BY GIFT, GRANT, PURCHASE, CONDEMNATION; CONSTRUCT AND MAINTAIN DAM.

Sec. 12. The conservation department may acquire in the name of the state by gift, grant, purchase or by condemnation proceedings any existing dam

which may affect the level of the waters in any inland lake, and may acquire by such means any or all sites for dams and rights in land needed or convenient in order to carry out the purpose of this act and may proceed to construct and maintain any dam that may be determined by the commission to be necessary for the purpose of maintaining the normal height and level of any inland lake.

281.73 NAVIGABLE STREAMS, DAMS.

Sec. 13. Nothing herein contained shall be construed to alter, limit, abridge or amend the provisions of law applicable to the location, construction and maintenance of dams in navigable streams or provide for the determination, establishment or maintenance of the level of waters impounded by such dams.

281.74 CONDEMNATION OF PRIVATE PROPERTY.

Sec. 14. The board of supervisors of any county in this state or the conservation department, within the limitations of the state constitution, may take private property for the uses or purposes specified in this act and to institute and prosecute proceedings for that purpose.

281.75 CONDEMNATION PROCEDURE.

Sec. 15. Whenever the conservation department or the board of supervisors of any county in the state determines by proper resolution that it is necessary to condemn private property for the purpose of this act the condemnation proceedings shall be commenced and conducted in accordance with the provisions of law applicable to the taking of private property for highway purposes by the state, or chapter 20 or chapter 21 of Act No. 40 of the Public Acts of 1956, as amended, being section 280.461 to section 280.538, inclusive, of the Compiled Laws of 1948.

281.76 GIFTS, GRANTS IN AID TO BOARD OF SUPERVISORS.

Sec. 16. The board of supervisors of any county of this state in which is situated, wholly or in part, the waters of any inland lake may receive and accept in the name of the county, gifts or grants in aid for the purpose of carrying out the provisions of this act, from persons and from other governmental units. If the waters of the inland lake are situated in 2 or more counties, gifts and grants in aid shall be apportioned to the respective counties as the facts may require and as determined by the donor or grantor.

281.77 GIFTS, GRANTS IN AID TO CONSERVATION DEPARTMENT.

Sec. 17. The conservation department in carrying out the purposes of this act may receive and accept, on behalf of the state, gifts and grants in aid from persons and other governmental units.

281.78 PLANS AND SPECIFICATIONS BY REGISTERED ENGINEER, BIDS, WORK RELIEF PROJECT.

Sec. 18. Whenever the board of supervisors causes to be constructed and maintained a dam as may have been determined to be necessary, plans and specifications therefor shall be prepared by a registered engineer under the direction of the board and bids may be advertised for the doing of the work in such manner as the board shall direct by resolution. The contract shall be let to the lowest responsible bidder giving adequate security for the performance of his contract but the board may reserve the right to reject any and all bids. The board may erect and maintain a dam as a work relief project in accordance with the provisions of the law applicable thereto.

281.79 ASSESSING AND LEVYING PROJECT COST AS GENERAL TAX ON COUNTY.

Sec. 19. If the board of supervisors alone conducts the proceedings under this act, the expense of determining the normal height and water level of any public inland lake, the expense of constructing and maintaining any dam, together with the cost and expense of acquiring lands and other property by condemnation necessary thereto, may be assessed, levied and collected upon the taxable property of the county, the same as other general taxes are assessed, levied and collected in such county.

281.80 DEPARTMENT TO COMPUTE PROJECT COST, ITEMS INCLUDED.

Sec. 20. Within 10 days after the letting of contracts, or in case of an appeal, then forthwith after the appeal has been decided the department shall make a computation of the entire cost of a project under this act, which shall include (1) all the expense of laying out and designating the special assessment districts, which item of expense shall include the entire cost of the survey; (2) the expense of locating, establishing and constructing of any dam or embankments; (3) the fees and expenses of special commissioners; (4) the compensation to be paid the board of review; (5) the cost of construction of bridges and culverts; (6) the contracts for the construction of a dam, or other work to be done on the project; (7) the estimated cost of an appeal if the apportionment made by the department is not sustained; (8) the estimated cost of inspection; (9) the cost of publishing all notices required; (10) all costs of the circuit court; (11) attorney fees for legal services in connection with the project; and (12) interest on bonds for the first year, if bonds are to be issued. The department may add not less than 10% nor more than 15% of the gross sum to cover contingent expenses, and the entire sum so ascertained shall be deemed to be the cost of the project to establish a lake level.

281.81 PUBLIC LAKE, CONSERVATION DEPARTMENT MAY JOIN BOARD AND MAY INTERVENE; MAY REQUIRE FISH LADDERS; ASSISTANCE BY CONSERVATION DEPARTMENT IN PREPARATION OF DATA.

Sec. 21. If the lake is a public lake, the conservation department may join with any board of supervisors in the proceedings thereafter taken and may intervene for the protection and conservation of the natural resources of the state. Whenever the lake is a public inland lake and proceedings are commenced for the purpose of determination and maintenance of the normal height and level thereof by a board of supervisors of any county, the conservation department shall aid and

assist in the preparation and presentation of the information, facts and data necessary under the provisions of this act. The conservation department may require the installation of fish ladders or other devices to permit the free passage of fish.

281.82 UNAUTHORIZED CHANGE OF LEVEL, PENALTY.

Sec. 22. Any unauthorized person who changes the level of any lake, the level of which has been established under the provisions of this act, is guilty of a misdemeanor and may be fined not to exceed $1,000.00 or imprisoned not to exceed 1 year in the county jail or both.

281.83 ARTIFICIAL LAKE FOR MUNICIPAL WATER SUPPLY.

Sec. 23. No normal water level shall be established under this act for an artificial lake created for the purpose of providing a reservoir for a municipal water supply system unless petitioned for by the governing body of the municipality.

281.84 ANNUAL INSPECTION; MAINTENANCE AND REPAIR LESS THAN $500.00.

Sec. 24. The department of each county shall make an annual inspection of all inland lakes within the county which have a normal level established under this act or any previous act governing lake levels. Whenever inspection discloses the necessity, the department without petition may expend an amount not to exceed $500.00 for maintenance and repair of each lake level project. If the funds of the department are not sufficient to meet this expenditure the department shall charge the special assessment district therefor according to benefits received.

281.85 MAINTENANCE OR REPAIR IN EXCESS OF $500.00, PROCEDURE.

Sec. 25. The procedure for repairs, maintenance, reconstruction, relocating, enlarging or altering of lake level projects established under this act or prior acts in excess of $500.00, shall be the same as that for the establishment of a normal lake level as set forth in this act.

281.86 ACTS REPEALED, CONTINUATION OF PROCEEDINGS COMMENCED.

Sec. 26. Act No. 377 of the Public Acts of 1921, being sections 281.1 to 281.30 of the Compiled Laws of 1948, Act No. 39 of the Public Acts of 1937, being sections 281.51 to 281.57 of the Compiled Laws of 1948, Act No. 194 of the Public Acts of 1939, as amended, being sections 281.101 to 281.121 of the Compiled Laws of 1948, Act No. 319 of the Public Acts of 1941, being sections 281.151 to 281.157 of the Compiled Laws of 1948 and Act No. 276 of the Public Acts of 1945, as amended, being sections 281.201 to 281.227 of the Compiled Laws of 1948, are hereby repealed, except that actions and petitions to establish and maintain an inland lake level now in process may be concluded under those acts or commenced under this act.

ACT NO. 25
PUBLIC ACTS OF MICHIGAN 1962

An Act to amend sections 3, 5, and 9 of Act No. 146 of the Public Acts of 1961, entitled "An act to provide for the determination and maintenance of the normal height and level of the waters in inland lakes of this state, for the protection of the public health, safety and welfare and the conservation of the natural resources of this state; to authorize the building and maintenance of dams and embankments to accomplish such purposes; to authorize the acquisition of lands and other property by gift, grant, purchase or condemnation proceedings; to authorize the acceptance of gifts and grants of funds for the construction and maintenance of such dams and embankments; to authorize the raising of money by taxation and by special assessments for the purposes of this act; to prescribe the duties and powers of boards of supervisors, the conservation department of Michigan and county drain commissioners with reference hereto; and to repeal certain acts and parts of acts," being sections 281.63, 281.65 and 281.69 of the Compiled Laws of 1948.

The People of the State of Michigan enact:

Section 1. Sections 3, 5, and 9 of Act No. 146 of the Public Acts of 1961, being sections 281.63, 281.65 and 281.69 of the Compiled Laws of 1948, are hereby amended to read as follows:

Sec. 3. The conservation department or the board of supervisors of any county in which the whole or any part of the waters of any inland lake is situated, may upon its own motion or shall by a petition to the board of 2/3 of the freeholders owning lands abutting the lake, for the protection of the public health, welfare and safety and the conservation of the natural resources of this state, or to preserve property values around a lake, cause to be determined the normal height and level of the waters in the inland lake, and construct and maintain sufficient dams to keep and maintain the water in the lake at its normal height and level. The board may drill wells to supply a lake with additional water in order to raise the level thereof or pump water from some other source, or in case it is necessary to lower the level thereof may arrange for the pumping of water from the lake.

Sec. 5. Whenever the board of supervisors of any county deems it expedient to have determined and established the normal height and level of the waters in any inland lake situated in the county, the board, by resolution, shall determine the expediency of and the method of financing the initial costs and maintenance of any project at a regular or special meeting, and direct the department to determine the tentative normal level of the lake and to establish a special assessment district if required.

The board shall also direct the prosecuting attorney of

the county to institute by proper petition in the circuit court of the county a proceeding for determination.

When the waters of any inland lake are situated in 2 or more counties, the normal height and level of the waters of such lakes may be determined in the same manner if the boards of supervisors of all counties involved determine it to be expedient and by resolution may direct the department and prosecuting attoney of 1 or more counties to institute proceedings.

Sec. 9. The department, when instructed by resolution of the board of supervisors shall determine the tentative normal level of any private and public inland lakes in its county and establish a special assessment district including therein all parcels of land and political subdivisions which are benefited by the establishment of a lake level. The board of supervisors may delegate to the department such other ministerial duties including preparation, assembling and computation of statistical data for use by the board and the superintending, construction and maintenance of any project under this act.

ACT NO. 203
PUBLIC ACTS OF MICHIGAN 1962

An Act to amend Act No. 146 of the Public Acts of 1961, entitled "An act to provide for the determination and maintenance of the normal height and level of the waters in inland lakes of this state, for the protection of the public health, safety and welfare and the conservation of the natural resources of this state; to authorize the building and maintenance of dams and embankments to accomplish such purposes; to authorize the acquisition of lands and other property by gift, grant, purchase or condemnation proceedings; to authorize the acceptance of gifts and grants of funds for the construction and maintenance of such dams and embankments; to authorize the raising of money by taxation and by special assessments for the purposes of this act; to prescribe the duties and powers of boards of supervisors, the conservation department of Michigan and county drain commissioners with reference hereto; and to repeal certain acts and parts of acts," being sections 281.61 to 281.86 of the Compiled Laws of 1948, by adding a new section 25a.

The People of the State of Michigan Enact:

Section 1. Act No. 146 of the Public Acts of 1961, being sections 281.61 to 281.86 of the Compiled Laws of 1948, is hereby amended by adding a new section 25a to read as follows:

Sec. 25a. Whenever any person desires to construct an artificial lake of more than 5 acres or to substantially alter any existing waterway, he shall petition the board of superfisors of each county in which the lake or any portion is to be situated for a permit. The application shall be accompanied by detailed plans and specifications. As a condition of the permit, where a lake is created, the board shall require the applicant to petition for the establishment of a normal lake level under this act. The board shall request the department to establish a special assessment district for future maintenance expenses of such lake level. When the special assessment district has been approved by the court the department shall record the order with the register of deeds.

This act is ordered to take immediate effect.

STABILIZING INLAND LAKE LEVELS

OUTLINE OF PROCEDURES UNDER ACT 146, PUBLIC ACTS 1961

Coordinated by

ENGINEERING AND ARCHITECTURE
MICHIGAN DEPARTMENT OF CONSERVATION
LANSING 26, MICHIGAN

1. COMMENCE PROCEEDINGS

By voluntary motion of the County Board of Supervisors or by petition of 2/3 of frontage owners (Sec. 3, Act 146).

Sample petitions available upon request from Engineering and Architecture, Michigan Department of Conservation.

Enlist the cooperation of your local township supervisor to introduce the resolutions to the Board of Supervisors.

An organized Lake Improvement Association can accomplish much more than individual property owners to prevail on the Board of Supervisors to act or to prepare and present a petition to the Board.

2. BOARD OF SUPERVISORS RESOLUTIONS

Board passes multiple resolution -- 4 parts required (Sec. 5), 2 parts optional (Sec. 4 and Sec. 21).

Required:

(a) Determine the expedience of establishing a normal lake level.
(b) Determine the method of financing.
(c) Direct the (drain commissioner) department to determine (recommend) the normal level and establish an assessment district, if required.
(d) Direct the prosecuting attorney to institute a proceeding for determination (establishment of normal lake level).

Optional:

(a) Require a cash deposit to cover initial costs (Sec. 4).
(b) Request the Department of Conservation to assist with the preliminary investigation (Sec. 21). A request from the drain commissioner for assistance will also be honored. Submit requests to *Engineering and Architecture*, Michigan Department of Conservation.
(c) Notify Michigan Department of Conservation when Board takes action, whether assistance is requested or not.

3. PRELIMINARY INVESTIGATION, RECOMMEND LEVEL, ASSESSMENT DISTRICT

Drain Commissioner is delegated to make an investigation to determine lake levels and set up an assessment district including all properties benefited (Sec. 9, Act 146). He may engage an engineer to assist him. Department of Conservation is authorized to aid and assist with an engineering investigation, including height above sea level, if the lake is a public lake. The Drain Commissioner should advise Engineering and Architecture, Michigan Department of Conservation, as to the extent of assistance he needs. The County Road Commission is delegated to act in counties having no Drain Commissioner.

4. HEARING IN COURT, PUBLICATION AND NOTICES (SEC. 10)

(a) On completion of preliminary investigation by the Drain Commissioner, the prosecuting attorney petitions the Circuit Court to set a date for hearing.
(b) Publish notice of hearing in newspaper 6 consecutive weeks.
(c) Three weeks prior to hearing, notify each owner of property in the assessment district.
(d) Drain Commissioner makes affidavit of mailing notices.
(e) Prosecutor serves notice on Conservation Department. Address notice to Secretary of the Conservation Commission.

5. INFORMAL HEARING OR GROUP MEETINGS

Schedule informal public hearings to explain the procedures and outline the benefits of lake level stabilization to interested parties prior to the court hearing. This is not stipulated by Act 146, but can provide all concerned with a better understanding of the proposal before it is considered by the Court.

Such meetings are almost a necessity to minimize opposition to the project.

6. THE CIRCUIT COURT JUDGE DETERMINES THE LAKE LEVEL (SEC. 10)

The court, and only the court, determines the lake level or levels that are to be established and maintained after he has heard all the facts and testimony from interested parties.

7. BOARD OF SUPERVISORS MAINTAINS THE LEVEL (SECS. 3, 9 AND 11)

(a) The Board of Supervisors may authorize the construction necessary to maintain the lake level established by Circuit Court (Sec. 3).
(b) The Board may delegate ministerial duties to the (Drain Commissioner) department, including supervision, construction and maintenance of lake level control facilities (Sec. 9).

8. THE DRAIN LAW MAY BE APPLIED FOR FINANCING (SEC. 6)

The (Drain Commissioner) department may follow the provisions of the Drain Law, Act 40, Public Acts of 1956, as near as it applies for financing lake level control projects.

9. COSTS MAY BE SPREAD ON COUNTY (SEC. 19)

At the option of the Board of Supervisors, the cost of determining, establishing and maintaining the level of a public lake may be assessed, levied and collected upon the taxable property of the county.

10. PLANS, BIDS AND CONTRACTS (SEC. 18)

Plans and specifications for construction of dams or other control facilities must be prepared by a registered civil engineer under the direction of the Board of Supervisors. Bids and contracts are dependent on resolutions by the Board of Supervisors.

11. CONSERVATION DEPARTMENT MAY PROCEED UNDER ACT 146

The Conservation Department is authorized to follow procedures similar to those outlined above for local county authorities, but funds have never been made available for financing construction to maintain legal normal levels. It has been necessary therefore for the department to adopt a policy of not undertaking lake level stabilization projects, except in rare cases where the State is the owner of the majority of lake frontage.

The Conservation Department is authorized to provide the assistance of its technical staff to local authorities and to the court in public inland lake level stabilization matters.

12. PENALTY FOR CHANGING THE ESTABLISHED LAKE LEVEL (SEC. 22)

Any unauthorized person who changes the established level of any lake shall be guilty of a misdemeanor and may be fined not to exceed $1,000 and/or may be imprisoned not to exceed 1 year.

13. ACT SHALL NOT CHANGE AUTHORITY ON NAVIGABLE STREAMS (SEC. 13)

County Board of Supervisors still retains authority over bridges and dams in navigable streams under Act 156, Public Acts of 1851.

14. REPEALS PRIOR INLAND LAKE LEVEL ACTS (SEC. 24)

The following Acts were in effect prior to May 31, 1961, and were repealed by this Act: (a) Inland Lake Level Act 194, Public Acts 1939; (b) Pumping Water In and Out of Lakes, Act 319, Public Acts 1941; (c) Special Act for Counties over 100,000 and less than 1,000,000 population, Act 276, Public Acts 1945.

Inland lake level proceedings commenced under a prior Act may be completed under the provisions of that Act or may be commenced under Act 146, P.A. 1961.

Michigan Department of Conservation
Engineering and Architecture
Hathaway J. Hanes, In Charge
Lansing 26, Michigan

APPENDIX C

Excerpts from ACT 140, PUBLIC ACTS OF MICHIGAN 1961

Inland Lake Improvement Act of 1961

EXCERPTS FROM

ACT NO. 140
PUBLIC ACTS OF MICHIGAN 1961

An Act to provide for the improvement of certain inland lakes; to authorize dredging and the removal of undesirable materials from lakes; to authorize the acquisition of lands and other property by gift. grant, purchase or condemnation; to authorize the raising of money by taxation and special assessments for the purposes of this act; to provide for review and appeal; to prescribe the duties and powers of boards of supervisors, the conservation department of Michigan and county drain commissioner.

The People of the State of Michigan enact:

Sec. 1. This act shall be known and may be cited as the "inland lake improvement act of 1961".

Sec. 2. As used in this act:

(a) "Public inland lake" means any lake which is accessible to the public via public owned lands, waters or highways contiguous thereto, or via the bed of a navigable stream and which may be used for navigation, fishing, hunting or other lawful purpose and reasonably capable of supporting a beneficial public interest, except the Great Lakes and connecting waters.

(b) "Private inland lake" means any inland lake other than a public inland lake.

(c) "Department" means the county drain commissioner or the county road commission in counties not having a drain commissioner, and if more than 1 county is involved, the combined drain commissioners or drain commissioner and road commission in counties having no drain commissioner.

(d) "Interested person" means any person who has a record interest in the title to, right of ingress to or reversionary right to a piece or parcel of land which would be affected by a permanent change in the bottom land of a natural or artificial, public or private inland lake, or adjacent swampland, and in all cases, whether having such interest or not, the Michigan department of Conservation shall be an interested person.

(e) "Conservation department" means the state conservation department.

Sec. 3. The conservation department or the board of supervisors of any county in which the whole or any part of the waters of any inland lake is situated, upon its own motion or by petition of 2/3 of the freeholders owning lands abutting the lake, for the protection of the public health, welfare and safety and the conservation of the natural resources of this state, or to preserve property values around a lake, may provide for the improvement of a lake, or adjacent swampland, and may take steps necessary to remove and properly dispose

of undesirable accumulated materials from the bottom of the lake or swamp by dredging, ditching, digging or other related work.

Sec. 4. The board of supervisors, by resolution, may require a cash deposit sufficient to cover the preliminary costs when a petition is received from freeholders before further proceedings are undertaken pursuant to the petition.

Sec. 5. Whenever the board of supervisors of any county deems it expedient to have a lake improved, the board, by resolution, shall determine the expediency of and the method of financing the initial costs and maintenance of any project to improve a lake at a regular or special meeting and direct the department to establish a special assessment district if required.

When the waters of any inland lake are situated in 2 or more counties, the improvement of such lake may be determined in the same manner if the boards of supervisors of all counties involved determine it to be expedient and, by resolution, may direct the department of 1 or more counties to institute proceedings.

Sec. 6. If the conservation department deems it expedient to have a lake dredged or improved, it shall, by resolution, authorize the director to institute by proper petition to the board of supervisors on behalf of the state a proceeding for an improvement of a lake. The conservation department may likewise join with the board of supervisors of any counties of the state in instituting proceedings for improvements as set forth in this act.

Sec. 7. The department, when instructed by resolution of the board of supervisors, shall determine the scope of the project and establish a special assessment district, including therein all parcels of land and political subdivisions which are benefited by the improvement of a lake. The board of supervisors may delegate to the department such other ministerial duties including preparation, assembling and computation of statistical data for use by the board and the superintending, construction and maintenance of any project under this act.

Sec. 8. After the establishment of the special assessment district, the department shall appoint a board of determination who shall determine the necessity of the project in the same manner and in accordance with the procedure set forth in section 72 of Act No. 40 of the Public Acts of 1956, as amended, being section 280.72 of the Compiled Laws of 1948.

.....

Sec. 18.. If the waters of any inland lake are public waters, the conservation department may join with any board of supervisors in the proceedings thereafter taken and may intervene for the protection and conservation of the natural resources of the state. Whenever the waters of any inland lake are public waters and proceedings are commenced for the purpose of dredging or otherwise improving a lake by the

board of supervisors of any county, the conservation department shall aid and assist in the preparation and presentation of the information, approve all plans and specifications, facts and data necessary under the provisions of this act, and shall assist in the inspection of the work to be performed. Whenever the conservation department or the board of supervisors of any county initiate any action to improve a lake for the protection of the public health, welfare, safety, and the conservation of the natural resources, or to preserve property values around a lake or provide for the improvement of a lake or adjacent swampland, they must have the approval of 2/3 of the freeholders in the assessment area if these said freeholders might be or otherwise become subject to assessment under this act or any other act.

This act is ordered to take immediate effect.

APPENDIX D

Bill of Rights of Elk-Skegemog Lakes Association

BILL OF RIGHTS

of

ELK-SKEGEMOG LAKES ASSOCIATION

We Believe That

1. a riparian owner is an owner of property abutting on any lake or stream in Michigan.

2. the potential investment in summer residence property is vital to the growing economy of the area. The current investment in water frontage in Michigan has never been accurately computed. On Elk-Skegemog Lakes it is estimated to be well in excess of ten million dollars in addition to values for cottages, boats and other capital expenditures.

3. private water frontage property owners have rights, title and interest in
   a. the upland purchased
   b. bottomlands offshore
   c. minerals under the surface water
   d. ice
   e. the use of water for drinking, cooking, washing, and stock watering
   f. trapping rights
   g. use of surface water in common with other riparian owners
   h. exclusive use of beach.

4. Michigan has a long history of expansion of State controlled water rights. The time is here when we should look at and analyze the rights of the man who owns the abutting property.

5. the State has no proprietary interest in surface water except in those locations where the State owns frontage on a lake or stream.

6. riparian owners should have the same right to develop their property as upland owners. They should be permitted to develop and use their bottom lands to full advantage.

7. present laws are available to protect water front owners from over-zealous developers. Michigan will benefit most by encouraging investment in water frontage. Because of the wide variation in the physical nature of our lakes and streams it is extremely doubtful if state-wide laws would prove equitable.

8. the rights of private water frontage owners are being eroded and/or restricted gradually by piece meal legislation.

9. efforts to expand state water rights, especially at the expense of the riparian owner, should be viewed with

growning concern. The due process clause of our State Constitution clearly states that no property shall be taken from private owners except by due process of law. The elements of due process include urgent need, condemnation, court approval, appraisal and compensation.

10. water frontage owners own the surface water in Michigan's lakes and streams.

11. the interest conveyed to riparian owners is amply reflected in the price he must pay for frontage as compared with back land areas.

12. present laws relating to problems of natural resources should be changed if they do not meet the needs of people today, providing these laws are changed to accommodate maximum economic utilization.

13. there is need for legislation which concerns the formal, legal verification of rights that legally and morally belong to private frontage owners.

14. research into the problems of our natural resources is a valuable tool and we look to the State Department of Conservation and other research agencies to give us expert advice and assistance in managing Elk and Skegemog Lakes.

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