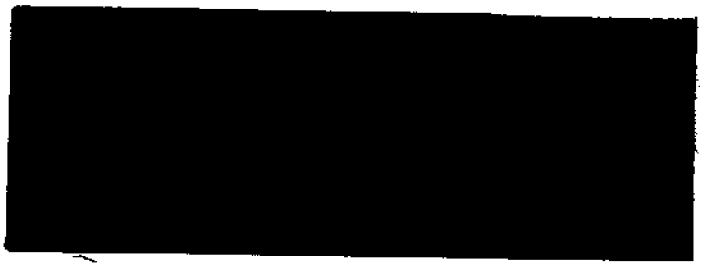

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FACTORS INFLUENCING GROWTH AND DEVELOPMENT DECISIONS MADE BY COMMERCIAL MARINA OWNERS ON OHIO'S LAKE ERIE SHORELINE

by John Cooper McKinney

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A Thesis

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Science

by

John Cooper McKinney, B.S.

The Ohio State University
1979

Approved by

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CHAPTER I.

Introduction

Background to the Problem Situation

Demand for recreation boating facilities on Lake Erie has surpassed the supply. Expanded capacity and a wider range of marine services are needed to meet the demand. This study was undertaken for the purpose of analyzing the important influences and motivations affecting marina owners' decisions regarding expansion and development of their businesses.

Recreation boating in Ohio was actively participated in by 10 percent of the population in 1977, with over 265,000 boats registered (Ohio Department of Natural Resources Bulletin, 1977). Owners of one fourth of these registered boats indicated that they use Lake Erie shoreline facilities to some degree in the pursuit of the activity.[1] The Great Lakes Basin Framework Study, (GLB, 1975), which is recognized as the baseline work in the field, determined that "boat registrations in Ohio have been increasing at an annual average rate of 6.5 percent". (GLB, 1975a). The Framework Study also noted that Ohio essentially had reached the limit of capacity for her inland lakes and that the obvious and only practical outlet remaining for recreation boating was Lake Erie. The 1975 Study reached the conclusion that the Lake Erie waters were being utilized at only 30 percent of capacity and that "a high priority should be placed on marina and harbor development".

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[1]Personal contact with representative of the Ohio Department of Natural Resources, Division of Watercraft.

A study completed in early 1978, of Lake Erie marina capacity, confirmed a high existing demand with virtually all facilities operating at 100 percent of seasonal capacity. (Wenner, 1978a). The implication clearly seen in this work was that expanded development of present facilities as well as the construction of new facilities should be a major concern of the marine recreation industry.

Another conclusion of the Great Lakes Basin Framework study (GLB, 1975a) stated that "only a major program can provide the desired expansion within the time frame demanded and that if a program of such magnitude were not implemented, boating would move out of the Basin or the pattern of recreation activities would change to non-water related activities". The Report went on to state that it was absolutely necessary for the regions to begin background work preparing the recreation boating industry to respond to the present and anticipated demands.

With current demand far outstripping supply and increased potential demand forecast, collecting data relating to boating facility expansion on Lake Erie was seen as a high priority concern. Expansion and development situations in business ultimately are resolved through the decision-making of the ownership. On this basis, it was determined that the study should concentrate on the owners and the factors which motivate their decisions.

A substantial segment of the recreation boating capacity is provided by public (state and municipal) facilities or by private membership clubs (Wenner, 1978a). These types of ownership and

management units were not included in this study. (The reasons for their exclusion are listed in the study methods section.)

Literature Review and Justification

An extensive review of the literature attached to the marine recreation and outdoor recreation fields was conducted in preparation for the project. Literature directly relating to Ohio's marina situation was found to be quite sparse. A survey of the sources that provided information and served as a basis for the formulation of the study are included in the following paragraphs.

Pertinent background information relative to the industry in Ohio is contained in the Federally mandated Ohio Statewide Comprehensive Outdoor Recreation Plan (SCORP) (ODNR, 1975); currently being updated under the auspices of the Ohio Department of Natural Resources. The SCORP report, however, does not contain the type of data sufficient to permit in-depth analysis of industry decisions or motivations. SCORP does provide inventory and statistical summaries of use in defining the scope of activity found in the chosen study area.

Summary statements taken from the proceedings of the Conference entitled Planning for Lake Erie's Future (Tocher, 1971) pinpointed a major drawback of the broad studies discussed in this thesis; namely "that it often becomes a situation whereby overall planning groups and agencies make exhaustive studies and extensive recommendations only to have the implementing bodies at lower level government either fail to act or misdirect the efforts for reasons of expediency, politics or economics". Broad surveys are, of course,

needed but localized research is indispensible to progress. Also discussed at the conference was the need to identify and include interested groups in decision-making processes. This included marina owners and operators. The point made concerning these groups was that their "... participation in the future of Lake Erie was predicated upon the assumption that each is well informed about the exact nature of the problems as they affect the group; that each knows the relative costs of several schemes to alter these effects and that the role each plays vis a vis other groups is well understood".

Small business enterprises, and small outdoor recreation businesses in particular, have been studied quite extensively with a view toward identifying important factors controlling their viability (SBA, 1974). It was found that the major concerns typically related to financial aspects of the running of the business could be categorized as follows: factors which limit the availability of financial resources such as lack of collateral, insufficient business experience or inadequate management capabilities; and, factors which increase the financial burden such as land cost and availability, seasonality, weather, environmental and anti-pollution restrictions and unpredictable constantly changing markets (demand). Additionally, factors of a social or personal nature have been of significant influence in business management. It is these areas of general concern, expanded and categorized, which were considered since they directly reflect the industry's ability to grow. A determination of their relative importance within the scope of Ohio lakeshore marinas was the focus of this study.

A study of the relationship of management decisions to small business growth indicated that there exist certain fundamental decision-making characteristics which determine the stability and growth potential for any firm. (Fowler, 1964). Among these factors were the ability and personality of the maker, limitations on information and the importance placed on goal setting. The study concluded that most small businessmen need assistance in formulating decision-making processes.

Marina industry studies have been conducted in other states. The study, entitled "An Analysis of the Rhode Island Marina Industry" (Kelley and Rorhelm, 1974), inventoried marina management types, services offered, employment data, economic impact and expansion concerns of all the commercial operations in that state. Factors identified as retarding expansion were problems with government permits, zoning and land acquisition. A second state report, entitled "New Hampshire Marina Industry Study" (Shaw and Henry, 1974), was a comprehensive look at that state's marinas and recreation boating needs. Statistics and opinions were gathered on numerous aspects of the industry. Both of these analyses were conducted without generalizable application in mind and their conclusions are useful only for comparison purposes to Ohio. The value of these works to the researcher was in observing the framework chosen and the emphasis given to factors important to marina expansion. Both reports were sponsored by the Department of Commerce, Sea Grant Research Program, and conducted by the state universities.

A parallel situation involving current marina expansion is the report of the Erie County Recreational Boating Task Force (Erie County, 1977). This gave an extensive history of the Northwestern Pennsylvania county's problems, needs and proposed solutions to marina development. This report was valuable because of the geographical proximity and similarity to Ohio's shoreline situation. A subsequent publication of equal interest was the "Feasibility Study for Expansion of Presque Isle State Park Marina, Erie, Pennsylvania" (Kornman, 1978). This lengthy document constituted an exhaustive professionally conducted survey of all aspects of that proposed marina development. One aspect included in the study addressed and evaluated the factors weighing in the decision related to the expansion of the marina facilities. The marina expansion was to be a publicly financed facility, but the aspects discussed are relevant to private development in Ohio.

The demand for more Marine Recreation capacity on Ohio's Lake Erie shoreline exists and should increase unabated into the foreseeable future (GLB, 1975b). The pressures on all segments of the marina industry and on the natural resource base has prompted several agencies to undertake programs and special studies to collect and analyze data relating to present and future use of the water and shoreline area. The Center for Lake Erie Area Research (CLEAR) has done work on water quality; the Coastal Zone Management Program (CZMP) is studying shoreline land usage policy and planning; the Ohio Capability Analysis Program (OCAP) is using computer technology to record land use capability for widespread application in recreation development situations; the Ohio Department of Natural Resources operates through various

programs of preservation, safety, regulation and management of lake area land and water facilities; and, the Environmental Protection Agency (EPA) has major impact through its regulatory functions in pollution control. Also, numerous regional and local groups such as the Ottawa County Regional Planning Commission, Ashtabula River Economic Impact Study Group, and Port Clinton Chamber of Commerce and the Lake Erie Marine Trades Association have instituted actions to examine aspects of the future growth along the Lake and in the Lake communities.

The Lake Erie Marine Trades Association (LEMTA), whose membership contains a segment of these marinas, recognized a need for data relating to marina development and operation, and initiated a continuing series of studies with the Division of Parks and Recreation Administration, School of Natural Resources, The Ohio State University. (Wenner, 1978a, 1978b). One of the stated goals of LEMTA is to encourage further research efforts aimed at defining the position of the marine recreation industry in the overall context of Lake Erie's future. Their desire for information included that of what controls marina growth and which factors are most important in decision-making processes.

It was from this background and to this end that the research study was directed.

Objectives of the Study

I. Identify and define factors relevant to commercial marina expansion and development decisions on the Lake Erie shoreline of Ohio.

II. Ascertain the relative importance of the factors to the study sample and the motivation guiding the decision-making process.

III. Develop a set of recommendations whose objective is the facilitation of optimum marina growth on Lake Erie.

CHAPTER II.

The Research Setting

The project field study area consisted, geographically, of the 262 mile long shoreline of Lake Erie bordered by the State of Ohio. (Figure 1). This particular shoreline is the most southerly in the Great Lakes System, enjoying the longest boating season and most suitable climate for marine recreation activity, as well as proximity to the largest population concentrations in the Midwestern United States. (Figure 2). A boater survey conducted during the summer of 1978 by the Division of Parks and Recreation Administration, The Ohio State University, (Wenner, 1978b), verified that the recreation drawing range of the Lake Erie marina concentration extended into 6 states and the adjacent Canadian province. Arbitrarily choosing political borders to define the study area presented some difficulties with factors such as weather, topography and transient boater movements which were found to be influenced on regional and continental levels.

The study group of commercial marinas was scattered sporadically along the shoreline of eight Ohio counties (Figure 3). The shoreline definition included the estuaries and navigable river systems draining into the Lake. With one major exception, the river mouths provide the natural shelter found on this coast. Figure 4 gives an indication of the saturation of use now prevalent on most of the rivers.

Figure 1. State of Ohio Map Showing Study Area Counties on Lake Erie; and Surrounding Major Population Centers.

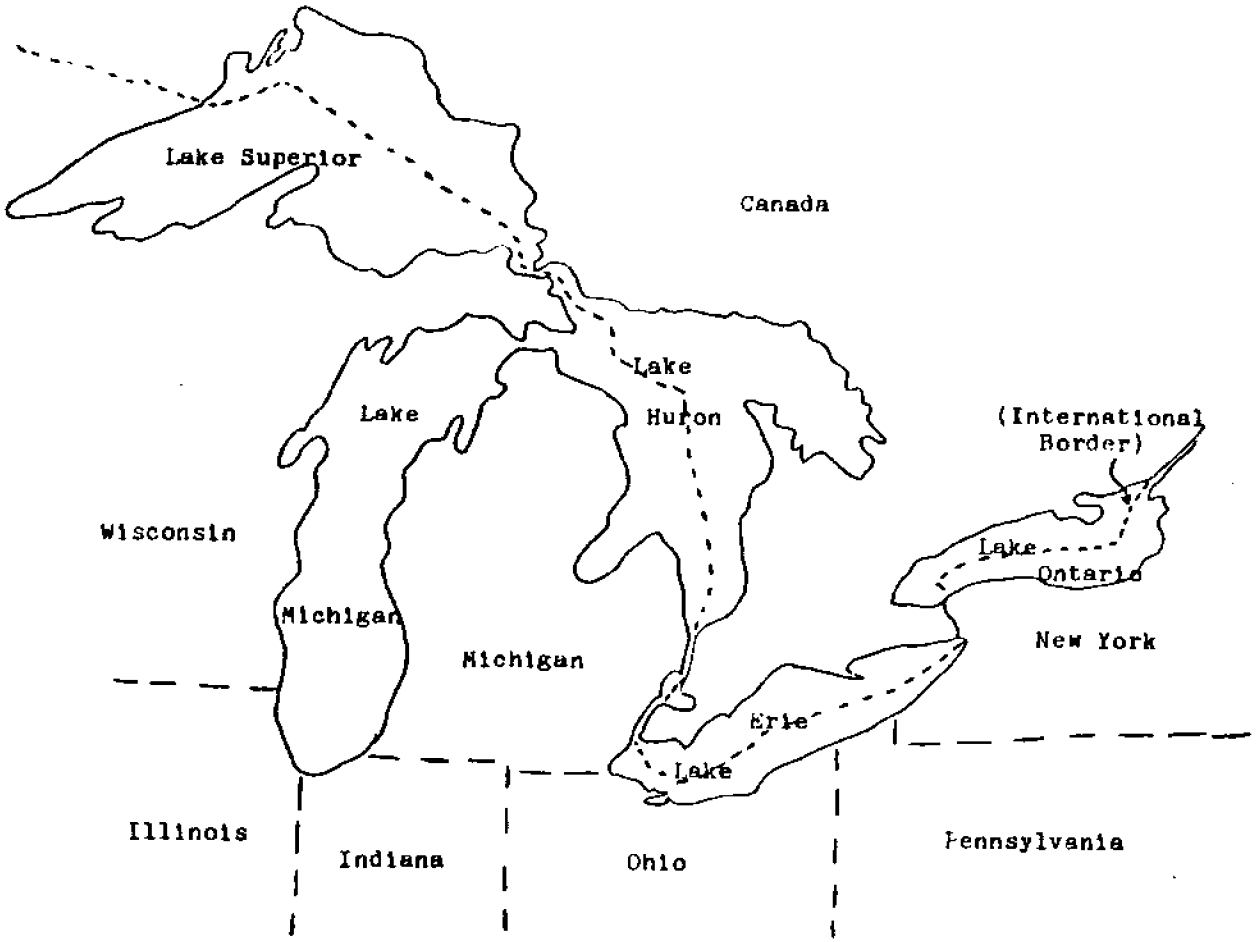


Figure 2. Great Lakes Basin Regional Map Showing Relationship of Study Area to Bordering States, Other Great Lakes and Canada.

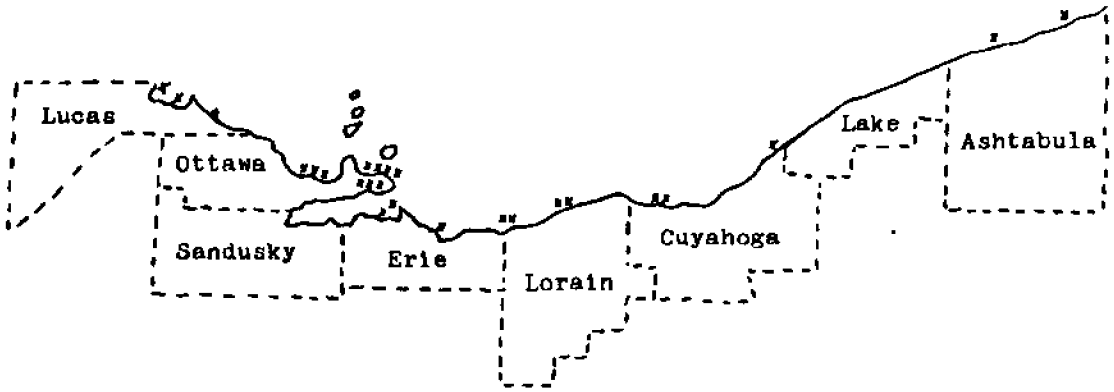


Figure 3. Study Area Map Showing Approximate Geographical Location of the 25 Sample Facilities Surveyed.

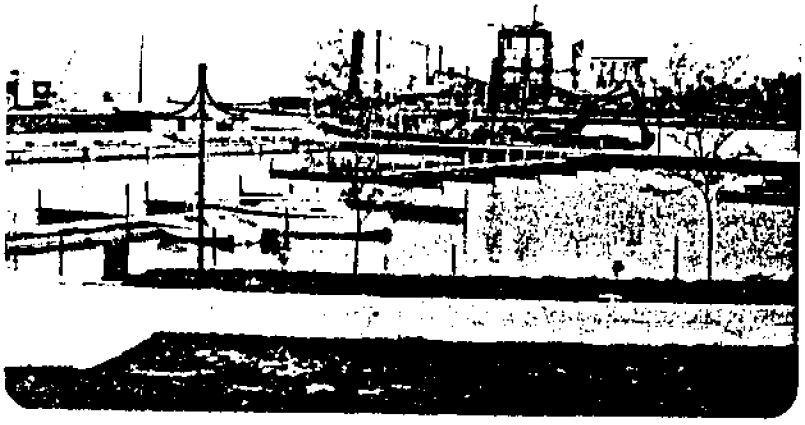
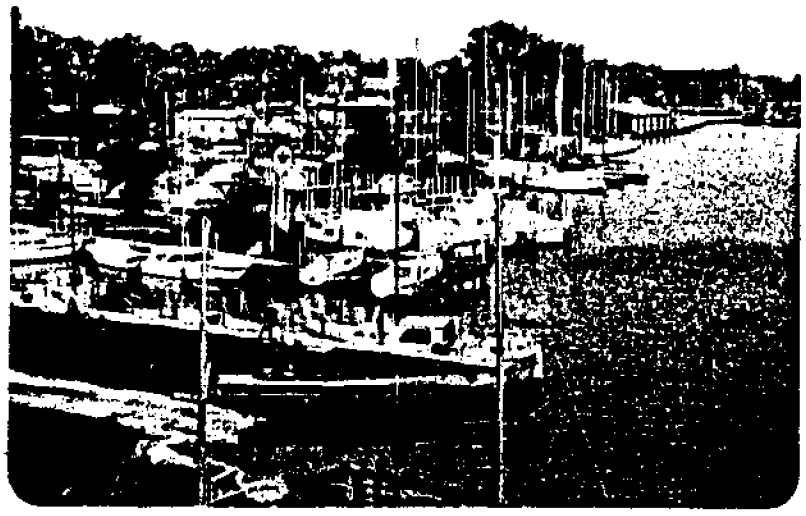


Figure 4.
Photographs Illustrating Saturated Situation Typical of the Natural Boating Shelter in the Study Area



The Catawba Island - Marblehead Peninsula which juts into the lake from Ottawa County provides a natural shelter for approximately one half of the marina capacity found in the study area and consequently, a similar proportion of study time and effort was spent there (Figure 5). The shelter, the natural beauty, the history, and the nearby fishing grounds have made the Peninsula and the island area the premier recreation boating center on the Great Lakes. (Schultz, 1978).

Recreation is not the most important activity taking place in the study area. Industrial, residential and other commercial interests continue to dominate the economy, the land use patterns, and provide stiff competition in any situation that involves developing shoreland. However, marine recreation's importance relative to the needs of the outdoor recreation sector is great and the potential for meeting future capacity demands is a matter of vital concern to planners throughout the Midwest region.

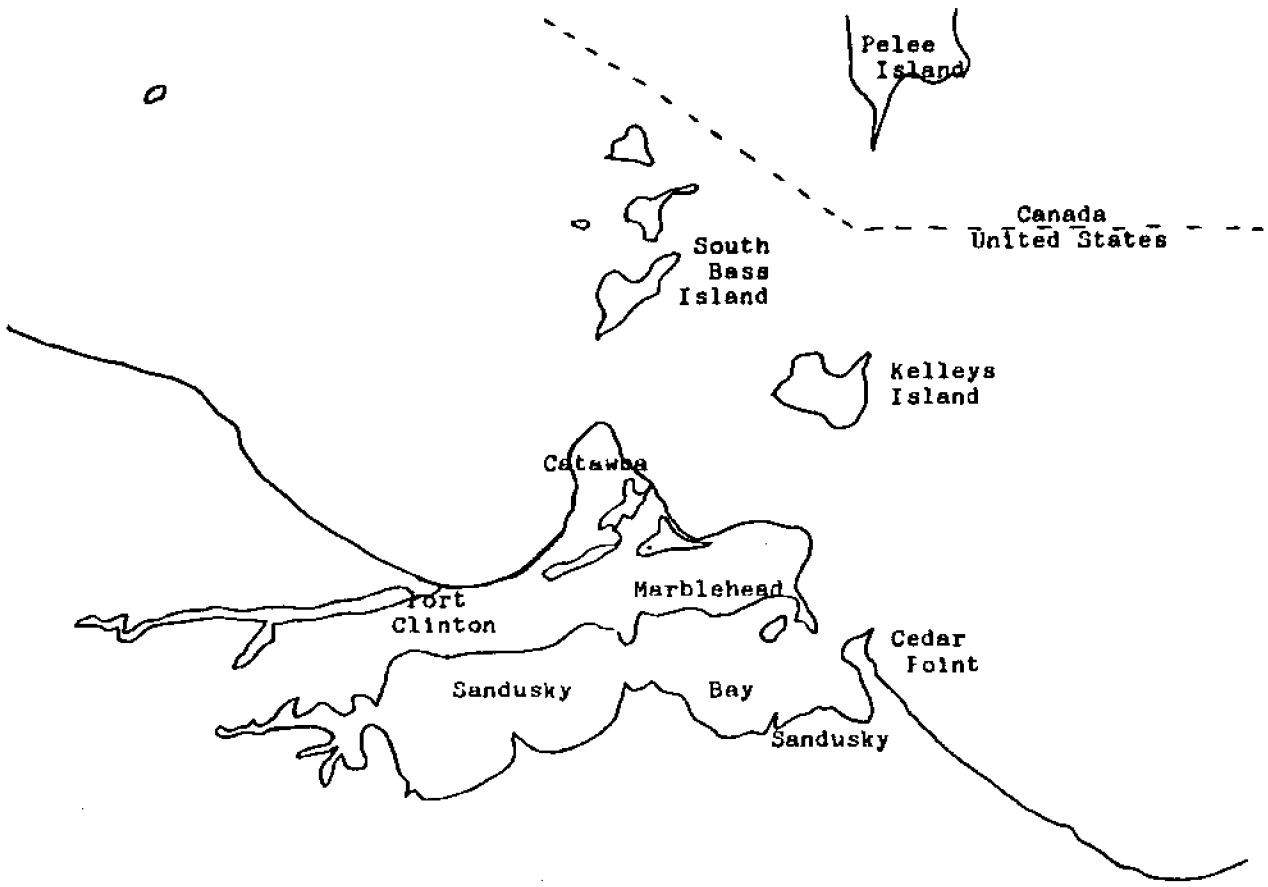


Figure 5. Map of Catawba-Marblehead Peninsula and the Lake Erie Island Area. Heaviest Concentration of Commercial Marinas Found Here.

CHAPTER III.

Methods

The general format of this study involved collecting, analyzing, and interpreting data relative to certain critical factors which, it was hypothesized, controlled the marina owners' decisions in questions of business expansion. The study utilized responses from questionnaires personally administered to a sample of marina owners to determine the major or prime factors identified by the marina owners as being of major consideration to expansion of their marina facilities. Follow-up interviews were then conducted with representatives of various public and private groups whose functions contributed to the activities involving the prime factors as identified by the marina owners. The follow-up interviews were conducted with representatives from; the Environmental Protection Agency, the Small Business Administration, Coastal Zone Management, Ohio Department of Natural Resources, Regional planning groups, financial institutions, marine supply dealers, news media, marina employees and boaters.

A second round of personal interviews was then conducted with ten of the marina owners to discuss with the owners the information obtained from the agency representative interviews.

The Sample

Lake marinas are defined for this study as "commercial establishments, located on lake shores or extending into the lake, for the purpose of servicing and mooring boats. Marinas may have storage for boats and provide various accommodations for boat owners" (GLB, 1975b).

The group studied comprised a sample taken from the population identified in the first phase of the Lake Erie Marine Trade Association project (Wenner, 1978a). There were 206 active marina operations of all types listed in the published inventory. Of these, 80 were publicly owned and operated or were limited membership clubs not included in this study because: there are basic dissimilarities in organization and operation; the financing methods and decision-making processes tended to be insulated from open market conditions; there is limited access to facilities and information; and decision-makers, for various reasons, are not amenable to discussing their operational affairs.

A sample of 25 or 20% of the 127 privately owned marinas was selected and used in this study. The two key factors in the marina sample selection process were geographical (county) distribution and the marina size. The number of marinas in each county varied from 3 to 62. The sizes of the marinas were divided into two classes -- thirty-eight (38) marinas had over one hundred (100) individual boat docks and eighty-nine (89) had one hundred (100) or less. Therefore, in order to maintain a uniform proportion of size classes in the sample, either 2 or 3 small marinas were sampled for each large marina. This was conducted on a per county basis. In several situations the total number of marinas to be sampled in a county was sufficiently small as to prohibit sampling on the 2 or 3 to 1 ratio. Also, in several counties there were no marinas in one or the other of the size classes. In these unusual circumstances the differences in sample numbers were adjusted in the adjacent counties. Table 1 indicates the number of marinas located in each county and the number of marinas sampled in each

county. In counties where the number of marinas was large, the additional factor of ownership type, either family owned or corporately owned, was used in order to insure both types were included in the sample. An attempt also was made to include a wide range of marina service mixtures -- i.e. marinas having only docks versus marinas offering docks, gasoline sales, boat sales, boat repairs, and food service. Figure 6 illustrates contrasting examples of marina types.

Figure 6.
Photographs Illustrating Contrast in Commercial Facilities on Lake Erie

TABLE 1

The number of marinas in each of the eight Ohio counties bordering Lake Erie, and the number of marinas included in the study from each of these counties.

County	Total Commercial	Sample	Percent
Lucas	12	3	25%
Ottawa	62	11	18%
Sandusky	3	0	0%
Erie	26	4	15%
Lorain	5	1	20%
Cuyahoga	5	2	40%
Lake	10	3	30%
Ashtabula	4	1	25%
	127	25	20%

Time Frame

The project was initiated in April, 1978. Field study work was designed to coincide with a related study of boating recreation activities on Lake Erie. Both studies required an extended series of on site visits lasting through the 1978 Summer boating season (July, August, September) and included weekend and weekday times. Approximately 25 days involving 10 overnight trips were spent in the study area. Following the traditional Labor Day Weekend closing of the season, the data from the questionnaire were evaluated and the selected follow-up interviews were conducted in September and October 1978.

Data Collection Method

Many strategies for research data collection exist, with their use depending upon the information desired and the resources available to the researcher (Kearl, 1975). The strategy deemed most feasible within the constraints of this project was the direct personal survey method

utilizing single contacts with the subject, structured and unstructured exchanges and the use of a questionnaire. Advantages offered by the direct approach were better control of the responses, maintenance of the subjects interest level, clearer understanding of the non-respondents, and reduction of misunderstanding and misinterpretation by the respondent.

Data Collection Procedure

Depending on the circumstances of time of day, day of the week or weekend, and availability of the owners, the researcher used a mixture of casual contacts and prearranged appointments to complete the needed sample. At least a 30 minute time block was required to adequately administer the questionnaire. However, several meetings became involved with meals, entertainments and establishing a camaraderie of exceptional value to the research effort and lasted much longer.

Data Collection Instrument

The survey instrument served two main functions: to provide a procedurally sound basis for determination of the most important factors and the opportunity for natural extension into open ended discussion that proved invaluable in terms of background data and insight.

The questionnaire consisted of two parts. The first part contained a list of 33 factors, divided into 4 classes. Each factor was to be rated on a scale of importance and knowledge of the owner. (see questionnaire form in Appendix A). Initially, the owner was asked whether he was interested in expansion of his marina facilities. This

opening was chosen to orient the owner with the issue. Regardless of the response, the subject (marina owner) was encouraged to complete the survey since the object was to determine influences to either decision. The second part of the questionnaire contained a list of open ended questions.

The 33 factors in the first part were evolved through the researchers reading of the literature, experience on related projects, and counsel with marina personnel and project advisors. Emphasis was placed on providing a range of topics sufficiently broad in scope yet specific enough for identification of the important issues. To further clarify the issues, and to facilitate later analyzation efforts, the factors were placed into 4 classes: Economic, Physical, Institutional and Social. These classes had been identified as indicative of the major areas of concern in small business management study (SBA, 1975). Table 2 is a list of the factors and classes.

Owners were instructed to rate each factor based on their conception of relative importance to personal expansion decisions. Ratings were based on the scale shown in Table 3. The scale was recommended by The Ohio State University Statistical Laboratory consultants as the most likely to yield usable results from this type of format and data. Space was provided for additional factors suggested by respondents.

TABLE 2

List of 33 Factors Chosen for Use in the Questionnaire Instrument

ECONOMIC FACTORS

Nearby Competition
Taxes
Profitability
Labor Costs
Construction Costs
Insurance Costs
Cost of Financing
Economic Outlook of Marine Expansion on Lake Erie
Fishing on Lake Erie

INSTITUTIONAL FACTORS

Zoning Laws and Land Use Regulations
EPA Regulations State and Federal
Political Concerns National, State, Local
Water Quality Standards
License Requirements
Building Permits
Management Problems

PHYSICAL FACTORS

Water Levels
Wave Action
Silting
Seasonal Limitations
ODNR Proposed Shelters
Public Accessability
Bridge Heights
Parking Space
Encroaching Development
Land Availability

SOCIAL FACTORS

Personal Time Requirements
Desire for Income
Personal Age
Insurance Liability
Complexity of Business
Personal Health
Labor Concerns

TABLE 3

Questionnaire Rating Scale

1 - very important
2 - important
3 - less important
4 - unimportant
5 - no comment (no response)

Following is an individual listing of the factors by class with explanations for their inclusion.

ECONOMIC FACTORS are economic aspects of business management closely related to financial matters.

Nearby Competition was included to provide opportunity for owners to show relative importance of competitive facilities in development plans. Such competition meant other marinas of all types as well as businesses engaged in attracting the marine recreation participants.

Taxes constitute an increasingly important element in business economics. Marinas and marina owners must pay income taxes, real estate taxes and numerous local and special taxes, therefore decisions to expand must reckon with the tax question.

Profitability was the bottom line determinant in most small recreation business decisions according to the Small Business Administration (SBA, 1974). Placing an obviously important factor in the survey was for the purpose of testing the instruments responsiveness.

Labor Costs, in light of the inflationary wage and price spiral overshadowing the American economy, have become unusually important in the construction industry and could directly impact the marina development schemes.

Construction Costs have generally paralleled labor costs. The two were separated to test whether owners perceived a difference in their own situations.

Insurance Costs are a major item in business accountings reflecting much in terms of the cost of doing business. The burden of liability weighs heavily on the marina owner as on any operation catering to the public. A wide range of insurance protection has become mandatory to prudent businessmen and the cost escalates with the extent of liability incurred.

Cost of Financing was included on the tenable assumption that money is always available at a price. Finance charges and terms of borrowing have become exceptionally important to management decisions. Lending policies are a reflection of the economy and marina owners must consider present as well as future conditions prior to making decisions.

The Economic Outlook of Marine Expansion on Lake Erie as a factor allowed a measure of response relative to confidence in the future of marinas on the Lake.

Fishing on Lake Erie and recreation boating activity are very much interrelated. According to one source, 78 percent of boat motor purchasers mention fishing as the intended use (GLB, 1975a). Parallels can be drawn between good fishing and high demand for marina facilities. Consequently, the degree of recognition of this information by the owners was sought.

PHYSICAL FACTORS are factors relating to matters of physical location and surrounding natural circumstances.

Water Levels. Lake Erie has a history of fluctuating water levels. Such changes, whether predictable or not, profoundly affect marina operations and become extraordinarily important in plans to expand which often necessitate development in higher risk locations. Fluctuations result from a varying combination of water depth, seasonal change, wind intensity and direction, barometric disturbances and seiches. Record changes up to 13 feet have been recorded. (GLB, 1975a).

Wave Action onto or along a shoreline has great potential for damage, not only to the shore itself through erosion and shifting of materials, but also to man made structures. By the nature of their physical locations, marinas are prone to these damages and must develop plans accordingly.

Silting relates to the previous physical factors but has a special significance to marinas. The effect of bottom accumulations and water controlling depth of boating activities varies greatly by location. Wind, currents, land masses and frequency of dredging all must be considered in assessing development potential.

Seasonal Limitations in marina operations refers to the shortened yearly time span allowed by nature for recouping the investment. Shortening the span increases the risk of failure. Marinas on Lake Erie fare better than more northerly Great Lakes operations

and attempts to extend the season such as ice fishing services, snowmobiling and boat sales have helped, but expansion of investment considerations must weigh this uncertainty carefully.

Ohio Department of Natural Resources Proposed Shelters. To conform with recommendations made by the Great Lakes Basin Commission (GLB, 1975a) calling for storm shelters at least every 15 miles, ODNR has proposed several constructions. While helpful to the boater, these shelters will have little effect on marinas. The factor was included to stimulate discussion of the role of the State.

Public Accessibility to Site. Being accessible to the customer is a business necessity with some measure of the quality of the activity determining the distance that will be covered.

Bridge Heights affect marinas in certain locations. Much older marina construction was done in the natural river shelters. Bridges were built, often without consideration of river potential, and have become limiting factors in these situations. The relative importance to the population was polled.

Parking Space is a vital ingredient in the business mix related to land, accessibility and other factors.

Encroaching Development. A measure of importance was sought concerning changes in nearby development as a limiting or influencing factor on expansion plans. These included not only lake front water oriented encroachments, but also private residential and other commercial buildups.

Land Availability. Basic to expansion of facilities is having space for it. Increasing demands for space on Lake shorelines have caused this factor to take on special importance, especially in areas of urban concentrations and those with natural attractions to recreation activities.

INSTITUTIONAL FACTORS are matters requiring owners to deal with regulations and regulatory bodies and with the intricacies of a political bureaucracy.

Zoning Laws and Land Use Regulations apply to all businesses and conforming can be a costly burden limiting to expansion ideas. Uniformity of approach and application in land use law has been a major emphasis of programs conducted by the Coastal Zone Management and Ohio Land Use Review Committee (OLURC, 1977).

Environmental Protection Agency Regulations (State and Federal). EPA in Ohio is a coordinating agency, working under Federal guidance, with regulatory responsibilities in four general areas: water systems, sewage treatment, air pollution, and land pollution. Marinas often must contend with all four aspects through various government departments which license and inspect facilities. New development decisions can be influenced by the degree of government approval needed.

Political Concerns (National, State and Local). Politics, in some form, affect every aspect of business life. The importance of political action, or lack of it, to marina decision-making was sought as vital to the discussion.

Water Quality Standards are an EPA related function handled in Ohio by the Health Department. Water Quality regulation applies to virtually any expansion or development involving recreation facilities or public involvement.

License Requirements affect changes in capacity and type of operation for marinas and owner must comprehend and comply. This often expensive and time consuming aspect was included for the discussion it would generate.

Building Permits are a necessity in most facility expansion or alteration plans.

Management Problems at the institutional level included other EPA regulations such as sewage control, problems with the Corps of Engineers dredging requirements under Section 404 or employee wage and benefit problems. Incurring any of a wide range of management problems could have influence on owners' decisions.

SOCIAL FACTORS relate to the mental and physical well being of the owner. They are concerns of a personal nature that affect decision-making yet do not obviously relate to the previous classes. Often these factors are of overriding importance in business decisions although obscured by more tangible matters. Several of these were interpreted as possible indicators of the owners confidence in his business skills and self image.

Personal Age. Age is relative, and in terms of business decisions, often depends on the surrounding circumstances such as family and

transition of leadership plans. How the owner views his own age was seen as an important aspect for discussion.

Insurance Liability. Aside from the economic cost of increased insurance coverage, how the burden of social responsibility and liability weighed in a decision to expand was relevant to the understanding of the motivation.

Desire for Income. Possibly the major factor motivating private business is the desire for income or profit. The importance an owner places on making more money should weigh heavily in any expansion plans.

Personal Time Requirements. Marina operation is a short season business, on Lake Erie, requiring the presence of top management or owners for long hours. Expansion usually demands more time and there is a limit which decision-makers must consider.

Complexity of Business. The relative importance of increasing the complexity along with the size of a marina operation was polled as a measure of the owners self-confidence.

Personal Health of the owner was obviously important, even vital to decisions made.

Labor Concerns. Aside from the financial cost of increased labor in a business expansion, there are other aspects such as responsibility for providing continuous employment, social benefits or rewards which could influence the thinking and decision-making of the owner.

Open Ended Questions

Survey participants were asked to write open ended responses to eight questions that had a bearing on the expansion decision. Responses were used as variables in data analysis and as stimulators of discussion on the general theme of marina development. The questions with explanation were as follows:

"What single factor would you choose as being the most important in your decision of whether to expand?" The question was asked to correlate response with the rated factors as a check on the adequacy of the list in determining the major concerns.

"For your operation, what would you estimate to be the cost of one additional well space?" A measure of uniformity in opinion was sought.

"How would the proposed ODNR plan for construction of boat safety barriers every 15 miles affect your operations?" This was an attempt to use a specific State proposal as a catalyst for discussion. The ODNR proposal entails work on three additional barriers in the system, each of which will affect only a small proportion of marina operations.

"Do you know of Federal or State monies available to you for this purpose?" This represented a polling of owners knowledge of money sources and interest in the subject.

"Does the marina operation provide you full-time employment during the summer?" The degree of involvement by the owner during the season was thought to be pertinent to evaluating his response to other portions of the survey.

"What percent of your net income comes from the marina operation?" A measure of the owners financial dependence was seen as important to evaluating his business decisions.

"How long have you owned this facility?" Length of ownership was seen as a factor in assessing the owners experience and knowledgeability of marina operations.

Additional Data Collected

Data were also collected as to whether the sampled marina was located on the Lake or a river, was family or corporately owned, was over or under 100 individual boat dock capacity, and located in the Catawba area.

Data Analysis

Analysis of the data contained in the completed questionnaires was accomplished through the use of two methods. The first method consisted of a numeric analysis. Ratings for each of the 33 factors were totaled and averaged individually. All the factors within each of the classes also were totaled and averaged to determine a relative rating between classes. The second method consisted of a Chi Square Contingency Table to test the relationship among the seven additional variables studied in this project.

To further explore motivations and influencing factors, it was determined desirable to analyze possible relationships among three factors collected from open ended questions on the survey instrument

and four additional factors for which data were collected. These seven factors are listed and defined in Table 4. The Chi Square test basically consisted of ranging individual variables of one type against those of a second type such that a measure of dependent or independent relationship was determined. The four classes of factors were arrayed against seven individual categories of the 25 surveyed marinas producing 28 measures of relationships. A summary of the categorizations appears in Table 4. The coding key used in preparation of the computer program appears in Table 5. Variables were condensed into a 2 by 2 matrix arrangement to minimize the possible inaccuracies of small sample size.

TABLE 4.

Individual Marina Data for Each of the Seven Categories of Information Used in the Chi Square Tests. (Columns are defined below)

Marina	A River/Lake Based	B Years in Business	C Initial Response	D Family Type	E Size <100>	F Income %	G Catawba Area
1	R	19	No	Yes	<	5	No
2	R	10	Yes	Yes	<	25	No
3	R	1	Yes	Yes	>	50	Yes
4	L	9	No	No	>	100	Yes
5	L	6	No	Yes	<	100	Yes
6	L	35	No	Yes	<	100	Yes
7	R	18	No	Yes	<	50	Yes
8	L	8	No	Yes	>	15	Yes
9	L	4	No	Yes	<	100	Yes
10	L	30	Yes	Yes	<	100	Yes
11	L	2	No	No	>	100	Yes
12	L	2	Yes	Yes	>	20	Yes
13	L	5	Yes	No	>	5	Yes
14	L	6	Yes	Yes	<	100	Yes
15	L	4	Yes	Yes	<	20	No
16	R	29	No	Yes	<	100	No
17	R	2	Yes	No	<	50	No
18	R	19	Yes	Yes	<	20	No
19	R	7	No	Yes	<	75	No
20	R	10	Yes	No	<	100	No
21	R	8	Yes	Yes	<	80	No
22	R	12	Yes	Yes	<	25	No
23	R	30	Yes	Yes	<	5	No
24	R	23	Yes	Yes	<	100	No
25	L	3	Yes	Yes	>	100	No

A - Whether a river based (R) or laked based (L) marina
B - Years owner in marina business
C - Owner response to desire for expansion question
D - Family or non-family type operation
E - Size of facility by capacity (individual boat wells)
F - Percent of owners income derived from the marina
G - Whether located in Catawba Area (Ottawa County)

Table 5. Coding Key Used in Computer Program for Chi Square Tests. Code Numbers (1) or (2) were Assigned to the Individual Marinas and the Factor Classes on the Following Basis:

Category

A - Lake based (1) or River based (2)
B - Years in Business: 8 or less (1); more than 8 (2)
C - Response to initial questionnaire question: Yes (1); No (2)
D - Family Operation (1); Non Family (2)
E - Size of Operation (well space): 100 or less (1); more than 100 (2)
F - Income derived from the business: 50% or less (1); more than 50% (2)
G - Located in Catawba Area (Ottawa County): Yes (1); No (2)

Factor Class

Median responses were computed for each class. Below the median was considered a rating of high importance (1) and above the median was considered a rating of low importance (2).

Figure 7. Example of the Chi Square Matrix Tables. Table shown was significant at the 5% level.

(Factor Class)
EF (Economic Factors)

(Category) A	(high importance) 1	(low importance) 2
(river) 1	4	10
(lake) 2	8	3

Chi Square = .013

Selected Interviews

On the basis of the data anlaysis, factors having an average value of 2.0 or less were defined as being prime factors. In-depth discussions were conducted with selected owners to provide further amplification as to why the identified prime factors were considered as major influences on marina owners' decisions. To accomplish this, owners were selected who had emphasized the prime factors and also indicated a willingness to participate in lengthy discussions of their motivations. For each prime factor at least two owners who had rated it '1' on the scale were interviewed. Overlap occurred but the goal of talking to pertinent people was served. Ten owners were contacted for this purpose.

In conjunction with the owner interviews, additional interviews were conducted with representatives of various public and private groups whose functions contributed significantly to the activities involving the prime factors. Interviews were also sought with private financial institutions, marine supply dealers, news media personnel, marina employees and boaters. The aim was to clarify their various roles and define their position relative to the marina expansion question.

The interviews were all directed toward establishing the reasons for importance attached to factors by the owners. Opinions as to possible solutions or changes that might benefit the situations were solicited from the owners.

CHAPTER IV.

Results

Analysis of the Questionnaire

Responses to the 25 surveys were tabulated resulting in measures of relative importance. Results are summarized in Table 6. It was determined that factors receiving an average response of "important" to "very important" (less than a 2.00 rating) were the prime factors and thus the main focus of the study discussion. Of the 33 factors, 10 averaged below a 2.00 level of importance, 19 were between 2.00 and 3.00 with the remaining 4 above 3.00. The overall average rating given was a 2.29 while the average rating received by the prime factors was 1.71. Table 7 lists the top 10 with their respective ratings of importance by the owners.

It was recognized that many generalizations could have been formulated from data of this type. As proposed, the use made of the factor analysis was restricted to serving as a foundation for the discussions that follow.

By classes, the factors showed a degree of diversity as seen in Table 8.

TABLE 6.

Individual Results of Factor Ratings from Questionnaire Administered to Marina Owners

ECONOMIC FACTORS
- Nearby Competition (3.56)
- Taxes (2.28)
- Profitability (1.48)
- Labor Costs (2.04)
- Construction Costs (1.67)
- Insurance Costs (2.16)
- Cost of Financing (1.88)
- Economic Outlook of Marina Expansion on Lake Erie (2.12)
- Fishing on Lake Erie (2.16)

PHYSICAL FACTORS
- Water Levels (1.78)
- Wave Action (2.76)
- Silting (2.80)
- Seasonal Limitations (2.68)
- ODNR Proposed Shelters (every 15 miles) (3.64)
- Public Accessibility to Site (2.64)
- Bridge Heights (3.12)
- Parking Space (2.52)
- Encroaching Development (3.36)
- Land Availability (1.83)

INSTITUTIONAL FACTORS
- Zoning Laws and Land Use Regulations (2.12)
- EPA Regulations: State and Federal (1.58)
- Political Concerns:
  - National (3.08)
  - State (2.56)
  - Local (2.52)
- Water Quality Standards (1.74)
- License Requirements (2.40)
- Building Permits (2.40)
- Management Problems (2.56)

SOCIAL FACTORS
- Personal Time (1.82)
- Desire for Income (1.61)
- Personal Age (2.56)
- Insurance Liability (2.36)
- Complexity of Business (2.24)
- Personal Health (2.12)
- Labor Costs (1.80)

TABLE 7.

The Most Important Factors with Their Ratings

Profitability - 1.48
EPA Regulations - 1.58
Desire for Income - 1.61
Construction Costs - 1.67
Water Quality Standards - 1.74
Water Levels - 1.78
Labor Costs - 1.80
Personal Time Requirements - 1.82
Land Availability - 1.83
Cost of Financing - 1.88

TABLE 8.

Factor Classes with Their Average Ratings

Social Factors - 2.07
Economic Factors - 2.15
Institutional Factors - 2.25
Physical Factors - 2.71

The results of the 28 Chi Square Contingency Tables (illustrated in Figure 7) showed only 2 of the 28 relationships as having significant dependence at the most commonly accepted level, .05. This 5 percent level had been decided upon because of the absence of baseline data or any established formula applicable in this situation. At the .20 level of significance there were 8 dependent relationships, however the reliability at that point was considered too questionable. The value in knowing the high degree of independence lay in being able to substantiate the statement that the individual marina results could be generalized for the entire sample and thus the population.

The two exceptions to the above conclusion were the finding of a dependent relationship between lake based marinas and Economic factors and a similarly dependent relationship for marina owners deriving less than 50 percent of their income from the operation and Institutional factors. Owners questioned about these found little basis for justification therefore no further attempts to analyze the relationships were conducted.

Comparison of the prime factors with responses to the survey question about the single most important factor resulted in a general

agreement between the two data collection procedures. The factors that showed up as the more important in both lists can be seen by comparing Table 7 with Table 9.

TABLE 9.

Response to Single Most Important Factor Question

Factor	Number of Responses
Lack of space	5
Money Concerns	10
Permits	3
Government	2
Age-Health	1
Time	1
Security	1
General Economy	1
Parking and Access	1

Analyzation of the questionnaire data resulted in two conclusions very important to reaching the study objectives. First, that there were factors (10) which had a relatively larger influence on marina owners' decisions regarding expansion and second, that the results were generalizable to the population since little interdependence was found.

Results of the Selected Interview Discussions

The following discussions incorporate the findings from the questionnaires, information gained from the interviewed parties and observations of the researcher. Included were aspects of the ten most important factors, related issues, interrelationships with lesser factors and certain ramifications that appeared pertinent. In addition, four general issues were widely commented upon as influencing the owners

in expansion decision questions. These issues were the role of government, the Lake fishing question, organization of the industry and growth of the industry. The discussion section was expanded to include these important matters. Opinions illustrating points were not referenced in every case. Generalizations in some instances resulted from a series of conversations and could not easily be attached to a single source.

Ten Most Important Factors

Profitability - Unanimous agreement was found on the paramount importance of profitability to any expansion consideration. The need for a positive financial outcome, while necessary, was seen from different viewpoints. Some owners felt that an immediate return was the only way to judge a plan. Owners who were in a position to wait thought in terms of long term returns and tax schemes which involved possible losses being used as a means of offsetting gains elsewhere. An owner's statement explaining still another view was that the "money is in appreciation, not operations". A number of marinas were merely "holding operations" with older, often family type, businesses as well as some more recently purchased operations waiting for land appreciation to create the profit. The situation has given rise to a certain amount of speculative investment activity from outside the industry.

Generally, it was found, marinas ran on a low profit margin basis which meant that a steady predictable cash flow was needed. Deviations from this flow played havoc with financial statements, which in turn influenced the ability to borrow capital needed to maintain a profitable

operation. Profit margins were seen by the researcher as dependent on the service mix, since owners stated that the margin of net return ranged from quite high for dockage and some boat sales to exceptionally low for repairs and stores. Naturally, these figures vary for every operation, but the point was that finding the optimum mix and having the skill to manage it were of prime importance. Any decision to expand would include consideration of the effect on the profitability of the whole business.

All sources felt that marinas as a whole were well able to protect themselves financially because of the basic law of supply and demand. Owners felt that in the long run the small, less efficient operations, without a prime location would not survive economically; that the so-called "smart money" would move in and exert control over the industry unless attempts were made to provide protection through government financing or through organized efforts from within the industry.

A banking source expressed the opinion that marina prices generate an adequate profit and that extraordinary price increases arbitrarily assessed would constitute price gouging. Several owners stated their intention of using increased prices to inflate their profitability and thus their ability to qualify for loans to be used in expansion plans. Another idea seen by owners as a way to circumvent traditional profitability patterns was the innovation called rack storage. Banks have been more willing to lend money to these schemes because of the short payback (4-5 years) of principle period. The pros and cons of rack facilities were a much debated topic among owners themselves. Rhode Island owners felt that the idea has great potential for increasing

berthing capacity in areas of limited shoreline and also that small boats would eventually be forced to go this route as water space was priced out of their range. (Kelley and Rorholm, 1974) It was ideas such as these that owners saw as necessary to change the profitability patterns that now limit the options open to marinas and influence decisions on expansion.

Construction Costs - Inflation was seen by all marina owners as a fact of business life. Costs of virtually everything reflect the high annual increases, with construction costs being no exception. Owners spoke of these costs as unusually inflated, "out of sight, doubled, tripled". Along with labor, insurance, and land costs, as well as the cost of money itself, the concern for construction costs had obvious implications for any expansion decisions.

Movement away from the traditional types of construction into areas such as the rack buildings was seen by owners as offering possibilities for alleviating the heavy costs. Although these buildings can cost as much as $500,000 and the negative hydraulic fork lifts can cost $75,000, they involve simpler types of work and don't require the specialized and exceptionally expensive skills often found in marina construction.

Marina owners felt that they had no real control over construction costs, but that it was a "known" factor in their decision-making process. It was stated by several owners that they felt at the mercy of some suppliers, including suppliers of construction materials, when

operating on an individual basis and that some benefit might be gained through a mutual exchange of information or coordinated bargaining efforts.

Cost of Financing - Marina owners must pay the prevailing rate, currently over 10 percent, and qualify as any commercial borrower, based solely on creditability and pay-back potential.[2] Owners felt that they received no special considerations from traditional lending sources, in spite of the low profit margins, uncertainties of seasonality and shifts in public demand for their product. This situation made planning for future expansion and development of facilities exceptionally difficult.

Over the past several years, the marina business has improved as the Lake has regained its vitality. Banks now look more favorably upon the marine recreation industry's potential as a growth area to be supported. Consequently, capital is readily available, but still only to those with sound financial records.

Discussion with the owners convinced the researcher that alternative methods of financing business expansion were needed. The Small Business Administration has shown willingness to assist marina borrowers but with certain restrictions that do not appeal to independent-minded owners.[3] Most other government money is tied to public projects and

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[2]Interview with Vice-President of Bank in Port Clinton, September, 1978.

[3]Interview with SBA officials, Cleveland Office, September, 1978.

unavailable for private use. Organized efforts by owners under the sponsorship of local public bodies have resulted in funds being used to the mutual advantage of many and providing aid on individual expansion projects. Personnel from the Ohio Department of Natural Resources indicated that, while available, public funds had not been fully utilized in the past.[4]

Banks have shown a willingness to experiment with new concepts of marina financing. The most pertinent example was the mentioned multiple tier rack storage offering the short pay-back period. In areas like the crowded Catawba Peninsula this idea has flourished, especially for those with limited dock space and a prime location.

Another concern voiced by the owners was the effect on the industry of new marina facilities built by interests outside the industry and financed with funds from the outside. It was surmised that the motivation behind the influx was either recognition of a sound business investment or a good tax shelter. In some instances the obvious outlay did not appear justified by the potential for return and several owners expressed the feeling that such construction was unfairly competing with established businesses.

Financing costs were seen by the owners as tied to the general economy of the country. With no major improvement in sight, owners felt that their efforts should go toward finding alternatives for growth other than direct capital financing. Numerous comments were

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[4]Interview with Ohio Department of Natural Resources, Division of Watercraft, Director and Assistant Director, September, 1978.

made to the effect that changes in the mixture of services offered, ranging from expanding sales of boats to improving service for existing customers were the answer. What was seen as necessary by the researcher was a means of preparing owners for making these choices and acquainting them with the industry-wide facts.

Water Levels - Basic to all marina activity is the need for adequate water levels. Lake Erie, historically, has had uncertain, often erratic, water level fluctuations which resulted in disruption and disaster for marina businesses on occasion. No owner would consider expansion of his facility unless he has a degree of confidence in the water around him. Concerns expressed by the owners related to man's control of the level, dredging policies and attempts to control natural fluctuations caused by weather seasonality on local levels.

A surprisingly wide range of owners were adamant in their belief that the "government," through the Corp of Engineers, manipulated the levels from both ends of the lake through a policy that reflected insufficient concern for lake front businesses. Several owners testified to 20 or 30 years of personal measurement and felt that given the chance they could prove the suspected unnatural fluctuations. Further inquiry by the researcher indicated that the Lake level was capable of some control and that decisions to artificially adjust had been made with consideration of a wide range of interest groups.

Water fluctuations which affect controlling depth and the minimum draft for boats were a particular problem in the rivers and estuaries where regular dredging operations must be maintained. Channelization

and related barrier construction concerns have great influence on an owner deciding whether to expand or not. Such activities require major expenses, and usually either a strong individual financial commitment, or cooperative efforts among owners and public bodies.

Weather and climate fluctuations, over time, have profound effects on Lake Erie water levels. Whether localized or regional, these changes are inevitable and must be reckoned with in decision-making. Tides, winds and seiches have influence on water movement, which make their understanding and control vital to the marina business.

One example mentioned by owners of the attempt to overcome the negative aspects of the problem, was the floating dock idea. Such docks automatically adjust to changes in water level, eliminating or minimizing damages. Conversion to this scheme was seen as expensive but worthwhile in the long term, and a good way of maintaining or expanding operations through protecting the service to the customer.

Most aspects of this important factor were seen by the owners as essentially uncontrollable, but always a consideration to any decision of facility development on the water.

Land Availability - Current studies mentioned in this report indicate shoreland along Lake Erie has come under increasing pressure for use from many directions. Who controls the land use was the issue of concern to the majority of owners. With few exceptions, owners were very much aware of surrounding area land situations and often had contingency plans ready whenever decisions about land use policy were made. Suitable lands are seldom available now, although there is some variation among counties depending on proximity

to popular areas. The best land was put to use long ago. Natural shelters in rivers and the island areas have become overcrowded. Land was seen as available for a price, but opportunities for new or expanded development were rare unless money was available or a willingness to take risks existed. Some marinas have land available and contemplate expanded operations, but others "locked into" a restrictive location must consider alternatives like switching the emphasis of the business or holding the land for real estate appreciation.

There is no ideal solution to the land problem. On an individual level, it has become a survival of the fittest. The course taken by government agencies and other interested bodies has been toward comprehensive planning of land use practices aimed at the optimum type and level of use. Local zoning has traditionally been the method used. Its inherent weaknesses and flagrant failures, based on fragmented responsibilities or political expendiency, coupled with the great demands being placed on the land have shown the need for better planning efforts.

Programs of this type were found by the researcher to have common goals. The Ohio Land Use Review Committee Report stated a "need for comprehensive, coordinated efforts of a pragmatic nature which would provide some uniformity in the land use laws of Ohio". (OLURC, 1977). An interview with the Ottawa County Planning Commission staff revealed that efforts were being made to seek the appropriate balance of use

and avoid reliance on any one use.[5] This was a particular concern of Ottawa County which has a high level of marine recreation use during the season, but relatively low off-season use. Marine recreation interests in this county actively engaged in a survey designed to illustrate the actual dollar input resulting from recreation activities. The idea was to influence voters and planners. The most comprehensive planning effort involving Lake Erie has been that of the Coastal Zone Management Program (CZMP). By looking at historical, environmental, economic, social and cultural uses, CZMP planners hope to arrive at a land use plan acceptable to all concerned.[6]

Marina owners recognized the benefits of uniform regulations, but were concerned that their unique need for use of the shoreline might not receive adequate consideration in the plans. One owner stated the common feeling that "location is everything" to marinas. His Cuyahoga facility was viable only at its exact location. A forced shift, because of altered planning policy, might endanger his business which depended on particular water movements and access. Astute owners saw that marinas must work together to inform the planners and the public, as well as other owners, about the consequences of unfavorable land use policy and its potential effect on development for their industry.

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[5]Interview with personnel of Ottawa County Planning Commission, Port Clinton, Ohio, September, 1978.

[6]Interview with Coastal Zone Management Program Personnel, 1978.

Environmental Protection Agency (EPA) Regulations - Marina owners, rated EPA regulations high in their evaluation of decision influencing factors. Water Quality Standards are EPA regulated, and will be considered in this section.

EPA functions relating to Lake Erie matters were channeled through Regional offices such as the Northwest Office at Bowling Green. Discussion with personnel there disclosed that marinas and marina development were treated no differently than other activities affecting the environment.[7] The EPA was described as a coordinating and regulatory agency, working primarily through state and local government departments, with responsibilities in water systems, sewage treatment, air pollution, and land pollution.

EPA influence was felt directly, as in waste disposal inspections, or indirectly through agencies such as the Corps of Engineers' controlling dredging and health departments' enforcement of water use standards. EPA activities relating to the expansion decision usually followed the land use and zoning questions and were seen as the final phases of development activity.

Studies of the environmental quality of the Lake Erie water resource have been conducted by the Reference Group of Great Lakes Pollution from Land Use Activities (PLUARG) as a part of the international concern. Problems identified at this level have bearing on marina owners' activities and decisions. (PLUARG, 1977). A recent study of the Lake undertaken by the Center for Lake Erie Area Research

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[7]Telephone interview with EPA regional office personnel. September, 1978.

(CLEAR) indicated that the Lake has now reached a stable state ecologically and that further improvement on the present condition will require stronger regulation of man's activities (CLEAR, 1976).

Owners recognize the overwhelming importance of protecting the Lake environment and the need for "someone" to regulate activities. Their concern was the time and effort required to gain approval from so many different levels for most projects. The EPA is charged with looking not just at isolated plans, but with fostering cooperation and coordination of the overall plan.

Several owners stated the opinions that the regulations were fair but did not apply equally to everyone; that industrial facilities should be monitored as closely as marinas and other public gathering places; and that regulatory processes should be streamlined. EPA officials admitted that there was cause for concern while explaining that their activities were dependent upon legislative action. Again, owners stated that only through organized efforts on their part could they expect to see changes.

Personal Time Requirement - A major concern of owners was the amount of their own time spent "on the job". Any decision to expand the business, especially the smaller ones, required careful consideration of increased demands which might be made on that time. Marinas traditionally have required long working hours in season, both by employers and employees. The owners' philosophy on time most often heard by the researcher was that "you almost have to love it to put up with it; its tough, not for everybody". Owners continually spoke of 70 hour work weeks.

Clearly, the high rating of this factor was understandable as a reflection of the value owners place on their time. Complaints included lack of time to learn more about their own industry. It was felt that some means was needed by which they could participate more in the determination of common problems, including that of expansion of services and facilities. One idea mentioned frequently was an organization, possibly with full time staff devoted solely to evaluating marina owners' problems and informing them of possible courses of action.

Desire for Income - The reasoning behind the choice of this factor was obvious from conversations with owners. They were in business to make a profitable living. Any consideration such as expanding or improving their operation would be undertaken to either generate more profit or protect the level of current income. The preceding statements need to be amplified to show the interesting, even fascinating, range of motivations. Owners' comments included "a good investment potential", "a retirement occupation", "a quiet peaceful existence that paid for itself", "a way of keeping the family together and providing a future for the kids", "the love of fishing" and "an inherited business that was thrust upon me". The point made was that owners' actions and decisions were based on some aspect of the desire for income.

Labor Concerns - To marina owners, expansion of their operations meant increasing labor needs and labor related problems associated with more employees. Marina owners, with few exceptions, stated that

one of their biggest headaches was worry about the availability of enough skilled and unskilled workers. The apparent labor shortage was also seen as a deterrent to expansion as well as a cause of decline in service. Labor problems were not entirely of a financial nature. The biggest problem resulted from the inherent seasonality of jobs. Workers would not make themsleves available for only 6 or 8 months, yet most marinas could offer no more working time. This situation was confirmed in interviews with workers at different facilities.

Some owners saw expansion of services and facilities as a way to solve the labor situation, by providing year round employment and benefits. For most owners, the concerns of finding and keeping people employed has a great influence on all decisions.

Four Additional Issues

Role of Government - Many aspects of government activity have already been discussed, but others raised by owners were seen as equally important to a full exploration of the issue. Owners question whether the state and local government should be in direct competition with them in providing facilities, contending that the public operations had unfair advantage. Ohio Division of Watercraft personnel responded by stating that the policy was to never enter into direct competition except where circumstances dictate, such as the Catawba Island State Park, where marina facilities came with the purchase of the park area. The position taken by the Great Lakes Basin Commission was that such competition could be good for the industry and that "public investments, when properly planned can be powerful catalysts for private development

of facilities to meet a portion of the needs" (GLB, 1975B). Owners in the Cleveland area agreed and felt that the state involvement in revitalization of the Lakefront there was going to stimulate much private marina expansion. Opinions were mixed, depending on an individual owners situation, but the issue had great significance to plans for expansion.

How the State disbursed the gasoline tax revenue was a constantly mentioned topic. The marine recreation industry has apparently felt for years that tax money generated by their activities was not being returned proportionally to the area. Particularly strong feelings revolved around state facilities that benefited other segments of the recreation boating public. State officials made a strong case for their position that the money was spent in fair proportion with statistics showing 25 percent of boaters registered listing Lake Erie as their main location and 45 percent of the expenditures going to that area. They contended that Lake marina people did not realize the extent of State spending on the Lake.[8]

Related to the above concern was the question of why states like Michigan have seemingly been able to do more for their marina system. Again the facts are self-explanatory when known. Michigan has a much larger boating population than Ohio with registration fees scaled much higher, thus providing more money (ODNR, 1977). Assessing the role of

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[8]Interview with Division of Watercraft Personnel, Ohio Department of Natural Resources, 1978.

the State in private marina situations required a realistic view of the financial aspects.

Discussions disclosed local political concerns which have become "political footballs" with interest groups and elected officials contending for the right to control development. In Ashtabula, the river has an available site for additional facilities, but thus far progress towards development has been hampered by controversy among groups over ownership rights and by unresolved questions of suitable marina type. Ottawa County, because of the concentration of marinas and marine recreation facilities, has many such problems. For example, there is a continuing battle waged in county government and planning bodies between interests wishing to maintain agricultural land characteristics and those who see the need to develop and support more areas for tourism and boating. Issues such as these have no clear answers. They exist and have influence on marina expansion decisions.

The Fishing Question - Much discussion centered on one activity common to all Lake Erie marinas: fishing. The return of good fishing to the Lake was almost unanimously regarded as the salvation of marina activity. Although not rated as one of the most important in the questionnaire, owners showed it as a critical underlying factor in their planning. The issue was how fishing was being regulated; by whom and for whom. Sport fishing rights as opposed to commercial fishing rights was the problem seen as facing the various regulatory bodies. Ohio's Department of Natural Resources assessed the situation as follows: "Lake Erie fish populations are viewed as 'common property'

by the various border states and the Canadian Province of Ontario. The diversity and intensity of the sport and commercial fisheries exerted by these states and province amplify the need for sound fish management programs." (ODNR, 1978).

Arriving at the optimum balance in terms of catch limits, zones of use and allowable methods involves many factors, including international fishing law, military overwater firing ranges and a great deal of cooperation. A totally satisfactory compromise probably does not exist, but a situation where commercially caught fresh fish were smuggled into Ohio to sell to sport fishermen would seem to indicate some imbalance on the control system.

Efforts to lessen the conflicts have included undertakings to improve the natural resource by developing a better quality and quantity of fish. One notable project has the aim of making the Freshwater Drum, or Sheepshead, species acceptable for both commercial and sport uses, thus increasing the available fish and reducing pressure on the overfished more popular species.

Commercial fishing interests enjoy the advantage of having a full time agent representing their interests and advising them on the issues. The agent was funded through the Federal Sea Grant Program. Owners of marinas felt that such a person could also effectively represent marinas and sport fishing interests. Discussion with Center for Lake Erie Area Research (CLEAR) office personnel at The Ohio State University revealed that funding support for a post of this type could be proposed with a good probability of acceptance.[9]

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[9]Interview with CLEAR office personnel, September 1978.

Organizing the Industry - Another issue frequently commented upon concerned the value of a "united voice for marina owners". It was generally agreed by owners that as individuals dealing with problems their position was not always strong. The researcher felt that while some owners had little difficulty with handling their business affairs, others were not able or willing to confront them, even showing a certain fear of doing so. Owners felt that the "strength of numbers" in an organization or association would give them a better bargaining position with agencies, the public and their own suppliers. In practical terms, they saw some difficult obstacles. The idea was not entirely new; combinations of owners had organized before with varying success. It was recognized that in the past the burden of action had been shouldered by only a few. The problem was seen as one of forming an organization such that all members could, and would, contribute and benefit. Geographic interests and economic interests would have to be considered carefully in the planning. These interests were seen as so diverse that the challenge might well prove insurmountable. To be accepted, let alone effective, owners felt such a liaison type organization would need to prove a sound allegiance to the cause of marinas and show clear ability in dealing with all the issues.

Growth of the Industry - A final consideration and a logical extension of the preceding factor analysis was to examine the owners' thoughts about the type and direction of growth they foresaw for their industry. Interestingly, even surprisingly, these business owners found much common ground with regard to the future. Their

concern for the broader economic issues coupled with the recent prosperity in the Lake Erie marina industry appeared to generate a consensus of cautious optimism.

Owners felt that while individual local factors governed their individual decisions, broader economic factors controlled the industry growth regionally. For example, much of what happens in northeastern Ohio (and northwestern Pennsylvania) as far as marina growth depends on steel industry decisions, which in turn depend on international affairs. Concerns about the potential effects on power boating of any new energy crisis were commonly expressed by owners.

A recurring subject concerned the desire to make Ohio facilities more appealing to a wider boating public. Ohio has been called a tourist "pass through" area and a "net exporter of tourists".[10] Yet with its natural crossroads advantage and position as the southernmost Great Lake shore, owners felt that efforts should be made to capture a larger share of the regional, national and even international tourist market. Even more specifically, owners would like to slow the exodus of Ohio boaters to Canada and other nearby marine recreation areas.

To foster this type of growth, owners saw the need to diversity the industry, with facilities providing a broad range of services appealing to an expanded market. Ideas such as these were suggested with the understanding that not all marina owners wanted them or were in a position to act on them. Diversification geographically was also seen

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[10] Interview with local newspaper personnel, Ottawa County, 1978.

as an eventual necessity. Concentrations of marinas have customarily been located near the population centers and the best fishing and scenic boating areas. These natural sites have become saturated, and thinking of future growth must be directed to less ideal spots and to the creation of artificial marina situations. Examples of this already being done were observed by the researcher. They had a record of success and failure. Making something from nothing was viewed by owners as costly and risky. The opinions of most owners were that only the government was in the position to undertake the necessary large financial burden and protect its investment. Government was seen as the catalyst paving the way for smaller private interests, possibly patterned after the National Park Service idea of peripheral private businesses supplementing and complementing a central public facility. Ideas of this type were discussed from a local and regional standpoint.

The researcher, as an extension of the thesis effort, spent time on a comparative study of marina facilities found in selected locations in the British Isles. A case in point, illustrating the government role of stimulating growth in an area not feasible for private expansion activity was observed in Brighton, England. The location on the "English Riviera" had long been a land resort but never a boating center due to its exposed shore. The potential, however, had always been great based on its geographical crossroads siting and the excellent boating water and weather. The government, at some cost, created a marina complex of unusual ingenuity, literally something from nothing, and effectively revitalized a stagnant regional economy but also made

possible the birth of a private marina industry never thought possible. (A more complete description can be found in Appendix 2). The Brighton example has application to Ohio's situation on Lake Erie with respect to future development. Owners readily recognized that growth decisions must be made for the longer term future and that extraordinary proposals need to be considered.

Related to this discussion was the feeling that to attract a larger market segment required further development of the "complete package" facilities containing a wide range of activities at one site. Owners felt that this type of expansion was limited to those owners able to make the investment and willing to assume the responsibilities. The need to maintain a full range of service mixes and diversity in the field was seen as equally as vital as the plans discussed above. It was felt that the industry needed to develop greater capacity for services, such as short term dockage for transient boaters and the mentioned "complete package" of services in order to ensure the desired growth patterns.

Owners, for the most part, were realistic in assessing the potential for growth in their industry. They know that constructive growth efforts will come about only after the resolution of long standing political situations and through reconciliation of interest groups. Marina owners see themselves as only one of many interest groups who must adopt the attitude of compromise as the road to progress.

CHAPTER V.

Conclusions and Recommendations

In light of the response to the initial questionnaire and the consequent discussions, the researcher has arrived at a series of conclusions and recommendations relative to marina expansion and development decisions. The objective of this study and the focus of these concluding statements is the facilitation of optimum growth within Lake Erie's commercial marina industry.

It was concluded that certain identified factors did exert decisive influence on the decisions and were measurably more important to the owners as a whole. Each owner had arrived at his own solutions, and it was evident that all factors had major importance in some situations. In fact, the commercial marina industry was seen as fragmented, factionalized and individualized to the extent that each marina represented almost a unique mixture of variables resulting in correspondingly unique decisions.

At the same time it was recognized that these factors did not exist in vacuums, and were in turn influenced by each other and by external forces essentially outside the control of the owners. Broad economic and financial policies, politics and other regional or national affairs generally were the underlying issues.

A further conclusion drawn by the researcher was that commercial marinas as an industry were expanding; were in a state of transition regarding growth and development of facilities and had a very great need for direction. The changing role of the industry from a specialized leisure activity to a broad-based public recreation has put pressure

on owners who were in many cases unprepared or unwilling to meet the challenge. New ideas and new thinking were seen as necessary to meet the new demands. How the owners and the industry choose to respond is the question. Much of the uncertainty and difficulty observed in the discussions was attributable to failures in communication of ideas and to a lack of comprehensive planning among the owners, the public and the various government levels of authority.

It was also concluded that above everything there existed a consensus of opinion about the value of maintaining the quality of the Lake resource. Marina owners were readily aware of how dependent their livelihood was upon the "health of the lake".

Finally, it was the conclusion of the researcher that, although many of the decision-influencing factors were outside the control of the individual owners, the individual decisions were still a reflection of the owner's knowledge and awareness of his surrounding circumstances. Therefore, the most important recommendations are for the owners to realistically prepare themselves as best they can to confront the issues within the scope of abilities and resources available to them.

Recommendations

The following recommendations, both specific and general, are not intended as absolute answers to the many difficult development decisions faced by the marina owners. Rather, they are given as guidelines toward formation of better decision-making processes suited to marina growth in the Lake Erie circumstances.

It is recommended that the marina owners take steps to organize their industry for the purposes of better defining the role of commercial marinas in the future of the lake community and creating a vehicle for cooperative educational and economic activities. The need is for a strong collective voice to deal with all aspects of marina activity including, but not limited to, the factors identified here. There should be attempts to provide a forum for exchanges of experience and information of the type that would help owners better understand their situation and how to react to it. It is the contention of the researcher that solutions to many problems facing owners are to be found within their own membership. Such an organization would be able to provide united lobbying efforts, educational workshops, regional exchange conferences, cooperative advertising and publications (newsletters, fact sheets, position statements, etc.) as well as social activities designed to draw the membership together. Organization could provide the means for better understanding the changing recreation boating market needs. Owners could maximize their opportunities for successfully dealing with business concerns and improve their decision-making processes.

An alternative, or possibly an additional aspect that is recommended to the owners is the creation of a spokesman position for the industry. A full time representative could organize and coordinate activities while acting as liaison to the public, the governments and the agencies. Owners would derive the full benefits at minimum cost in time and effort. One possibility for financing such a position exists through the Federal Sea Grant Program. Money is made available

for projects which benefit defined water oriented groups of citizens. An advisory post has already been funded through this program for the commercial fishing industry on Lake Erie. Indications from the granting office are that marinas or marine recreation interests could successfully qualify for a similar post.

Difficulties are inherent in the idea of organizing such a stratified, diverse collection of individuals. Common causes might be better served through geographical groupings or through combinations based on the type of categories used in the analysis. Organizations could be entirely new or based on existing associations. Whichever course should be chosen, the collective strength in numbers is seen as the important goal.

Whether as individuals, groups with common interests or as an organized industry, it is further recommended that the owners make contributions to the various programs and planning efforts in progress seeking to gauge man's impact on the lake and how it should be controlled. Throughout the study it was apparent that communication, or the lack of it, was at the root of most problems. Only through communication of their ideas can owners expect to play their deserved part in the development plans for the lakeshore. Through planning, organizing and communicating this exchange of information owners have a better opportunity of finding solutions to growth and development decision problems.

The remaining recommendations are directed to the concerns identified by the owners as prime factors influencing their decisions. With regard to the Environmental Protection Agency regulations, which include the health department's water quality standards and the Corps

of Engineers dredging rules, individual owners can do little to circumvent or alter the law. As an organization they might be able to cause change, but realistically they must deal with the system as it exists. It is recommended that owners learn the systems, attempt to understand the procedures and problems involved, and actively communicate with the administrators. Making the system work faster, more efficiently and with less inconvenience can be accomplished, but only through mutual awareness and the cooperation of all parties. Being able to anticipate and plan ahead will reduce the uncertainty and delay problems so detrimental to decision-making.

These same agencies are encouraged to take appropriate measures to establish reciprocal contacts. A particular recommendation is that the Ohio Department of Natural Resources form some type of link specifically aimed at informing the marina owners of programs, plans and money matters relative to their industry.

Costs associated with construction, labor and the cost of money itself are essentially beyond the control of individual businessmen. Owners are, again, recommended to think ahead, to explore all available alternative sources and to plan their expansion projects based on the best knowledge. Competition among construction and supply companies, labor sources and financial institutions can lead to significant cost advantages for the diligent owner.

Every owner's personal time requirements are different. Recommendations to any one would need to consider specific circumstances. Owners should evaluate their own management skills along with the administrative and personal time needs of his business. Marina owners who know their

own limitations, time and ability, should seek assistance through self-training and consulting, or hiring experienced personnel. The Small Business Administration provides a comprehensive series of management training and evaluation programs for just this purpose.

Water levels are of great importance to marinas, but their effects are mostly determined by natural phenomena. A recommendation to those owners concerned about artificial control of lake levels by the Corps of Engineers is to familiarize themselves with established priorities on the lake, forge links of communication with the decision makers, and when feasible, advance their own cases. Again, the problems and misunderstandings could be substantially lessened if more exchanges of information were made.

Owners concerned about land availability problems on Lake Erie and its effects on their expansion decisions are recommended to actively participate in land use planning and zoning board activities. Knowing the exact situation as far as what is available and what changes can be expected, coupled with awareness of alternative types of operation and space needs (such as the much discussed rack storage idea) could improve the chance for making the correct expansion decision.

Profitability and desire for income refer here to the marina owners' concern for the financial result of a decision to expand. Profit margins and levels of income reflect the owners' ability to develop and manage the optimum package of services. To maximize this ability and reach the most acceptable answer to the question of expansion owners should consider certain recommended guidelines. Realistic goals or objectives need to be established, taking into consideration all factors. Feasible

alternatives within any decision situation should be examined, including the alternative of making no change. Supporting information should be sought utilizing sources and methods described earlier. Singly, or in organized efforts, owners should examine economic forecasts and published reports, as well as analyze informal information, such as conversations and personal observations in evaluating their operations.

Above all else, the owners need to be able to judge the performance of their own internal operations. It is highly recommended that owners arrange for accounting statements of expenditure, income and profit for each segment of their business. Detailed internal profitability data should help owners identify strengths and weaknesses in the service mix, in personnel effectiveness and in overall management capability. Sound cost accounting methods, accompanied by critical examination of external factors as they relate to goals and alternatives, is the recommended basis for evaluating profit potential from a decision to expand.

It is further recommended that growth and expansion decisions be thought of in terms of diversification and decentralization. Owners should consider diversification ideas such as complete package development, area wide coordination of facilities and cooperative efforts involving public resources (as in the Brighton case study). Innovations such as rack storage operation and inclusion of winter sport and other off-season activities should be among their alternatives. Also, owners are urged to weigh the possibilities and potential benefits for geographic decentralization of the industry. As opportunities for expansion in present locations become more restricted by social and

and physical limits, lesser areas will become more attractive. Individual marinas must determine their own courses of action, but a healthy industry will require the whole spectrum of services and locations.

A final recommendation is that encouragement be given to additional studies relative to marina development on Ohio's Lake Erie shoreline. Specific issues raised and relationships not fully examined should receive more attention. Suggested study areas include: available financing methods and alternatives; land availability specifically related to marinas; methods to streamline regulatory and licensing procedures; cost analysis of marina finances and cost effectiveness of marina activities; employment patterns and practices; direct and indirect economic impacts of marina activity on the lake communities and the state; time usage (efficient use) related to personal factors; economies of scale benefits related to organization of the industry; and important interrelationships and interfaces between marinas and government at the local, state, and national levels.

APPENDIX A

Sample Questionnaire

THE OHIO STATE UNIVERSITY, SCHOOL OF NATURAL RESOURCES, IN COOPERATION WITH THE LAKE ERIE MARINE TRADES ASSOCIATION, IS CONDUCTING A STUDY OF LAKE ERIE MARINA OPERATIONS TO DETERMINE THE PRESENT SCOPE OF THE INDUSTRY, ITS IMPACT ON THE ECONOMY OF THE LAKE COMMUNITY AND ITS FUTURE ROLE IN THE DEVELOPMENT OF OHIO RECREATION.

THIS SUMMER THE STUDY INVOLVES SURVEYING THE OWNERS AND OPERATORS' OPINIONS ABOUT THE IMPORTANCE OF CERTAIN DECISION MAKING FACTORS THAT RELATE TO EXPANSION AND DEVELOPMENT OF PHYSICAL FACILITIES.

ALL ANSWERS ARE CONFIDENTIAL AND WILL BE USED ONLY IN FIGURING TOTALS AND AVERAGES FOR THE FINAL REPORT. NAMES OF PERSONS AND BUSINESSES ARE NOT BEING SOLICITED AND WILL NOT BE INCLUDED IN ANY USE OF THE RESPONSES. YOUR COOPERATION IS ENTIRELY VOLUNTARY.

FACILITY NAME _____

Are you interested in expanding your boating facilities? _____
If YES, what facilities and to what extent? _____

_____

_____

How important are the following factors in your decision of whether or not to expand your boating facilities?

1 - very important
2 - important
3 - less important
4 - unimportant
5 - no comment (no response)

ECONOMIC FACTORS

1. Nearby Competition _____
2. Taxes _____
3. Profitability _____
4. Labor Costs _____
5. Construction Costs _____
6. Insurance Costs _____
7. Cost of Financing _____
8. Economic Outlook of Marine Expansion on Lake Erie _____
9. Fishing on Lake Erie _____
10. _____ _____

PHYSICAL FACTORS

1. Water Levels _____
2. Wave Action _____
3. Silting _____
4. Seasonal Limitations _____
5. ODNR Proposed Shelters (every 15 miles) _____
6. Public Accessability to Site _____
7. Bridge Heights _____
8. Parking Space _____
9. Encroaching Development _____
10. Land Availability _____
11. _____ _____

INSTITUTIONAL FACTORS

1. Zoning Laws and Land Use Regulations _____
2. EPA Regulations
   State _____
   Federal _____
3. Political Concerns
   National _____
   State _____
   Local _____
4. Water Quality Standards _____
5. License Requirements _____
6. Building Permits _____
7. Management Problems _____
8. _____ _____

2

SOCIAL FACTORS

1. Personal Time Requirements	____	5. Complexity of Business	____
2. Desire for Income	____	6. Personal Health	____
3. Personal Age	____	7. Labor Costs	____
4. Insurance Liability	____	8. _____	____

QUESTIONS

1. Which single factor would you choose as being the most important in your own decision of whether to expand? (This answer need not be from the above list.)

   _____

   _____

   Please briefly explain your answer. _____

   _____

2. For your operation, what would you estimate to be the cost of one additional well space? _____

3. How would the proposed ODNR plan for construction of boat safety barriers every 15 miles affect your operations? _____

   _____

4. Would you describe your operation as stable, growing, or declining?

   _____

5. Do you know of Federal or State monies available to you for this purpose?

   _____

6. Does the marina operation provide you full-time employment during the summer? _____

7. What percent of your net income comes from the marina operation? _____

8. How long have you owned this facility? _____

APPENDIX B

Select aspects of the Brighton, England Marina Project -
a comparison with application to
Ohio's Lake Erie shoreline development

While Northern Ohio and Southern England are different in nearly every respect, there are still what might be termed universals present in some form wherever recreation-pleasure boating facilities are found. Illustrating such parallels can be useful in showing not only that Lake Erie problems exist elsewhere but also to point out solutions found or tried.

Similarities exist between English and American recreation populations. Both have increased leisure time, more discretionary money and greater mobility. In both countries there is an increased interest in marine recreation and boating. Developments in the field have made it a more accessible activity. Governments in each country have increased their role by making opportunities available to a wider public. Elements in both societies are now realizing the possible economic impacts and other benefits associated with participation.

Although pleasure boating facilities have been present far longer in the British Isles, the economic situation there is only now reaching the point where significant expansion of facilities has become feasible. Conditions are still such that the explosion of growth in marinas, such as experienced in the United States, has not yet occurred. Areas of concentration of the magnitude found on segments of Lake Erie do not exist. Possibly the English will learn from our predicaments how to avoid or at least regulate such massive shifts in public interest, and prevent the resultant deterioration of the natural environment.

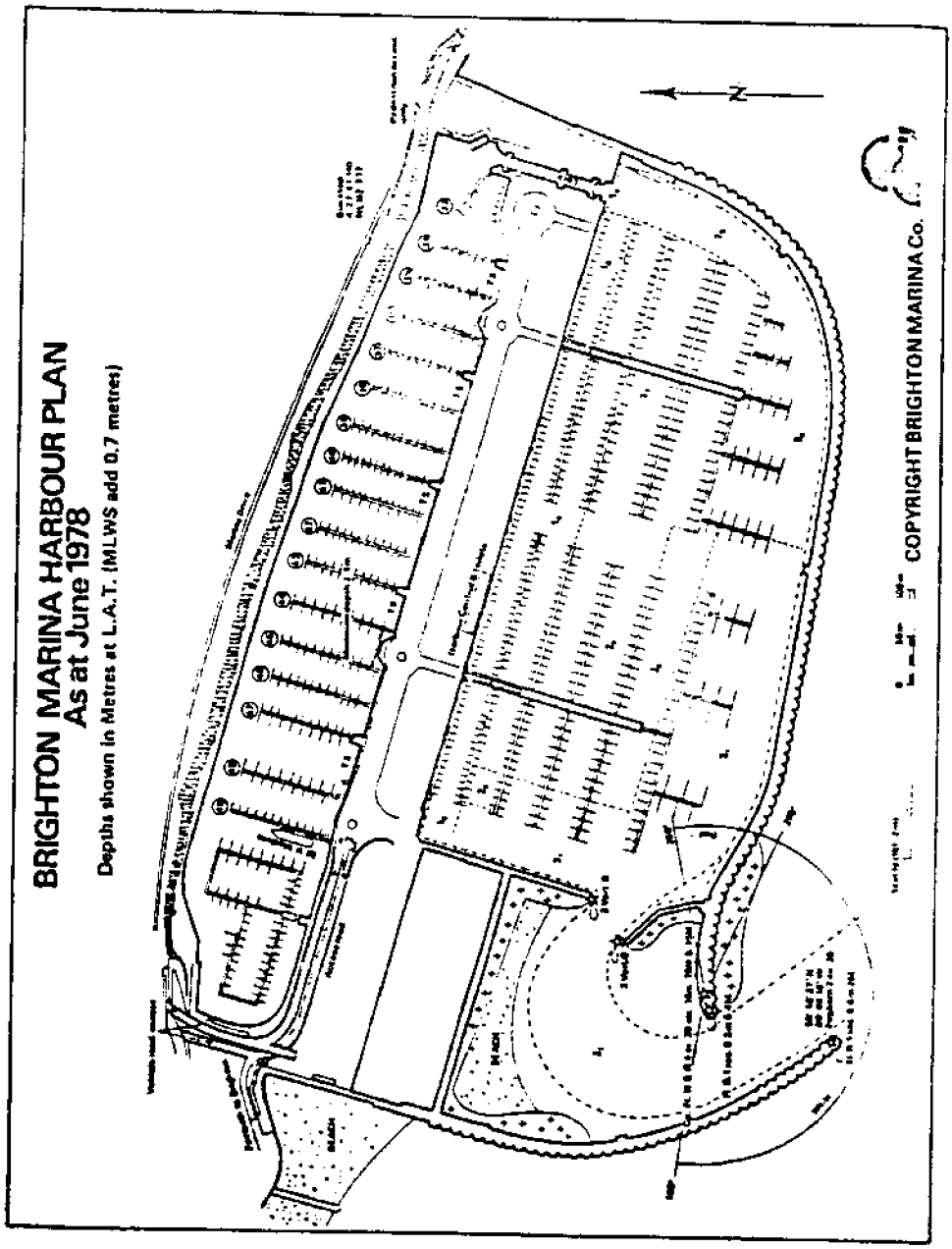
Brighton is located on the Southern Coast of England. A coastal situation exists there with similarities to segments of Ohio's shoreline, especially the area in Northeast Ohio. There is a common lack of large

natural harbors or shelters. Both locations have sizeable populations relatively close that would make use of adequate, reasonably priced facilities. Both areas could benefit greatly from an economic standpoint. Neither area could develop a major project without government assistance, at least initially.

There are dissimilarities to consider; however, none detract significantly from the basic idea. English coasts are exposed to ocean waters and weathers. Tidal changes present problems. Lake Erie has comparable fluctuations. English boaters are less interested in big power boats, being more in favor of sailing. This is seen as a consequence of the cost of fuel and a different view of the boating experience. The English think more in terms of "communing with and competing against nature" (Hodges, 1977), as opposed to the American phenomenon of the floating cocktail bar.

Brighton has seen fit to go ahead. Its solution to the dilemma of supplying needed capacity represents new innovative ideas for marine recreation facilities; a combining of economic, physical and sociological factors. The Brighton facility provides a comprehensive operation capable of handling recreation boats of all sizes, geared to international and domestic clientele, and offering a full range of services and activities year round. Unique technological features which make it an all-weather port include artificial water level lock mechanisms and custom designed breakwaters to meet the widely fluctuating weather and water conditions.

Such a project is feasible and plausible for Ohio. Given the opportunity and considering the circumstances, the marina industry would do well to advocate development on this scale.


BRIGHTON MARINA HARBOUR PLAN
As at June 1978
Depths shown in Metres at L.A.T. (MLWS add 0.7 metres)
N
COPYRIGHT BRIGHTON MARINA Co.

REFERENCE MATERIALS

Center for Lake Erie Area Research (CLEAR). "Report to Environmental Protection Agency on Lake Erie Water Quality". The Ohio State University. Columbus, Ohio. 1976.

Cohn, Theodore and Roy A. Lindberg. Survival and Growth: Management Strategies for the Small Firm. American Management Associations. New York. 1974.

Erie County Recreational Boating Task Force. "Report to the Governor of the Commonwealth of Pennsylvania". Erie, Pennsylvania. 1977.

Fowler, F. Parker, Jr. and E. W. Sandberg. The Relationship of Management Decision Making to Small Business Growth. Colorado State University Research Foundation. Fort Collins, Colorado. 1964.

Great Lakes Basin Commission. Great Lakes Basin Framework Study, Recreation Boating, Appendix 9. Public Information Office, Ann Arbor, Michigan. 1975a.

Great Lakes Basin Commission. Great Lakes Basin Framework Study, Outdoor Recreation, Appendix 21. Public Information Office, Ann Arbor, Michigan. 1975b.

Hegarty, W. and Harry Kelsey. "Four Winds Marina." Case Study presented in Case Workshop at Purdue University. Intercollegiate Case Clearing House. Boston, Massachusetts. 1975.

Hoad, William M. and Peter Rosko. "Management Factors Contributing to the Success or Failure of New Small Manufacturers". University of Michigan. Ann Arbor, Michigan. 1964.

Hodges, R. M. Brighton Marina and Harbour. C. C. Facilities. Howe, Sussex, England. 1977.

Kearl, B. Field Data Collection in the Social Sciences. The Agriculture Development Council. New York. 1976.

Kelley, Robert and Neils Rorholm. "An Analysis of the Rhode Island Marina Industry". University of Rhode Island, Kingston, Rhode Island. 1974.

Korman, Robert W. "Feasibility Study for Expansion of Presque Isle State Park Marina, Erie, Pennsylvania". Department of Environmental Resources, Division of Outdoor Recreation, Masterplanning Section. Erie, Pennsylvania. 1978.

Ohio Department of Natural Resources (ODNR). Office of Outdoor Recreation Resources. Statewide Comprehensive Outdoor Recreation Plan: 1975-1980. Columbus, Ohio. 1974.

Ohio Department of Natural Resources (ODNR). Division of Water. Ohio Coastal Zone Management Program, First Year Report. Columbus, Ohio. 1976.

Ohio Department of Natural Resources (ODNR). Bulletin. "Boat Registration Fees of Neighboring States". Columbus, Ohio. 1977.

Ohio Department of Natural Resources (ODNR). Division of Wildlife. Status of Ohio's Lake Erie Fisheries. Columbus, Ohio. 1978.

Ohio Land Use Review Committee (OLURC). "Report to the Ohio General Assembly." Columbus, Ohio. 1977.

Murdick, Robert G., et al. Business Policy; A Framework for Analysis. Grid, Inc. Columbus, Ohio. 1972.

Paine, Frank T. and William Naumes. Strategy and Policy Information: An Integrative Approach. W. B. Saunders Company. Philadelphia, Pennsylvania. 1974.

Pollution from Land Use Activities Reference Group (PLUARG). "Land Use Activities in the Great Lakes Basin". Bulletin. International Joint Commission, Great Lakes Region Office. Windsor, Ontario. 1977.

Schultz, Norman. "Putting in at Put-in-Bay". Motorboat Magazine. Cleveland, Ohio. June, 1978.

Schwirian, Kent. "Quantitative Research Techniques in Sociology". Unpublished textual materials. The Ohio State University, Columbus, Ohio. 1977.

Shaw, George W. and William F. Henry. "New Hampshire Marina Industry Study". University of New Hampshire. Durham, New Hampshire. 1974.

Seigel, Sidney. NonParametric Statistics for the Behavioral Sciences. McGraw-Hill Book Company. New York, New York. 1956.

Small Business Administration (SBA). Small Business Enterprises in Outdoor Recreation and Tourism. U. S. Government Printing Office. Washington, D. C. 1974.

Tocher, S. Ross. "Planning for Lake Erie's Future". Conference Proceedings. John Carroll University Aquatic Ecology Information Center. Cleveland, Ohio. 1971

United States Department of the Interior. Bureau of Outdoor Recreation. Boating Facilities: Sources of Assistance for Development. Washington, D. C. 1971.

Wenner, Kenneth A. "Guide to Boating Facilities on the Ohio Segment of Lake Erie." Cooperative Extension Service and Division of Parks and Recreation Administration, School of Natural Resources, The Ohio State University. Columbus, Ohio. 1978a.

Wenner, Kenneth A. "A Study of Lake Erie Marine Recreation in Ohio: Boater Survey". Unpublished Report. Division of Parks and Recreation Administration, School of Natural Resources, The Ohio State University. Columbus, Ohio. 1978b.

Young, Jerald F. Decision Making for Small Business Management. John Wiley and Sons, New York, New York. 1977.

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