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CHICAGO LAKEFRONT

RECREATIONAL BOATING SURVEY REPORT

1979

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City of Chicago
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PREFACE

Under the rules of the Lake Michigan and Chicago Lakefront Protection Ordinance, the Department of Planning, City and Community Development has a responsibility to review development proposals within the lakefront protection district. Concurrent with that function, the Department has been charged with the implementation of the 1972 Lakefront Plan of Chicago. In order to better fulfill these responsibilities, which in part relate to the construction of new and improved boating facilities, the Department has prepared a series of documents related to urban recreational boating. This series includes: the Strategies for Recreational Boating Development on the Chicago Lakefront report, the Design Concepts and Standards for Chicago Lakefront Recreational Boating Facilities report, and this report.

This particular report provides insights into the characteristics of recreational boaters in the region. This information was generated by a random mail-out questionnaire to registered boatowners in the region. Topics that receive attention are size, type and use of the boat, expenses, preferences for type and location of new boating facilities, desired boater services, and perceptions of the quality of the boating experience along the Chicoag shoreline. This information, in conjunction with the other boating reports, should help boating facility planners and designers to better meet the needs of the boater.

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CHAPTER I

INTRODUCTION

A. BACKGROUND

Recreational boating is an extremely popular activity on Lake Michigan and appears to be growing in popularity. Although the Chicago Park District now provides berthages for more than 4,000 boats in seven harbors within the lakefront park system, and also provides launching ramps for trailerable boats with a total of twenty-four lanes, these appear to be completely inadequate to satisfy existing demand, let alone that which might occur in the future. However, these statements of unmet demand are only hypotheses at this time and must be proved or disproved prior to any effort to expand the system. In order to accomplish these two questions should be answered. First, what is the extent of the demand for additional recreational boating facilities along the Chicago lakefront; and secondly, what are the boaters' preferences regarding the location and type of any new facilities.

B. STUDY OBJECTIVES

In order to answer the questions regarding the level and distribution of demand for additional recreational boating facilities, a survey of boaters was decided upon that would have five objectives. The first objective was to determine the major characteristics (i.e.; physical makeup, usage patterns, and storage needs) of the Chicago area recreational boating fleet. The second objective was to determine the concerns of Chicago-area boaters regarding such issues as boating safety and boating trends. The third objective was to determine the effect of providing substantial areas of sheltered water, as envisioned in the Lakefront Plan of Chicago, upon the boating patterns in the Chicago area. The fourth objective was to determine the extent and distribution of demand for berthages and launching facilities along Chicago's lakefront. The fifth objective was to determine the preferences of potential users regarding the location of new lakefront facilities and the services that should be provided therein. The findings of this study would serve as the basis for the expansion of existing facilities and the construction of new facilities.

C. STUDY REGION

In determining the major characteristics of the Chicago area boating fleet, it was necessary to define the geographical extent of an area within which some reasonable demand might exist for Chicago lakefront facilities. The assumed "market area" for the purposes of this study included the six counties within the Chicago Standard Metropolitan Statistical Area (i.e., Cook, Lake, DuPage, Kane, Will, McHenry). As of July, 1978, there were 92,446 registered boats (by the Illinois Department of Conservation) and 2,040 documented boats (by the U.S. Coast Guard) within the six-county area.

D. STUDY APPROACH

In order to meet the objectives of the study a decision was made to prepare and administer a questionnaire to a statistically valid random sample of the owners of the 94,486 registered/documented boats. A total of 2,240 questionnaires were mailed to boatowners and 1,581 usable responses were received. In order to obtain this high response rate two follow-up reminders were used.

The following chapter of this report presents the study findings, conclusions, and recommendations. Chapter III presents an analysis of the boating fleet characteristics, location and type of present storage being utilized, expressed need for additional lakefront berthages, user costs of boating, boating activity patterns, lakefront boating safety concerns, and other related comments. Chapter IV presents an evaluation of development needs for Lake Michigan boating development. It includes an analysis of boater preferences regarding possible new lakefront development which is referenced by boat length and type.

It is important to remember that study findings presented in Chapters II through VI are based upon raw survey data obtained through responses to the questionnaire, and that these responses do not fully represent a true cross-section of the Chicago-area boating public. Study objectives necessitated that a statistically valid sample from a "large boat" category be obtained. The result of this procedure is that large boats are "over-represented" in the raw survey data. The reader is cautioned that a distorted interpretation of raw data may result if this over-representation in the large boat category is ignored. Chapter VII discusses a method by which raw data may be "expanded" to properly represent the overall Chicago-area boat fleet. A detailed discussion of the survey method is presented in Appendix I.

CHAPTER II

EXECUTIVE SUMMARY

This chapter summarizes the major survey findings and conclusions regarding the major study objectives identified earlier. More detailed analyses of specific results will be presented in subsequent chapters of this report. Many of the findings are presented by boat length categories, which for the purposes of this study were defined as 1) 0-15 ft; 2) 16-25ft; 3) 26+ ft.

A. PRESENT STORAGE CHARACTERISTICS

Harbor and marina facilities within Chicago berth 18.6% while those outside Chicago berth 22.0% of boats owned by respondents.

Chicago Park District harbors berth 16.5% of all respondent owned boats. Of these respondents, 81.7% reside in Cook County, 10.6% from DuPage County, 6.4% from Lake County, and the remaining 1.3% from the counties of Will, Kane, and McHenry.

Of those respondents who berth their craft at a harbor or marina (40.6% of total), 55.1% rent slip space, 30.9% rent mooring space, and 14.1% rent summer dry storage space.

Of those respondents who own the berth motorboats, 75.2% rent slip space, 11.4% rent mooring space, and 13.1% rent dry storage space. Some 64.0% of respondents who own and berth sailboats rent mooring space, 20.1% rent slip space, and 15.9% rent dry storage space.

Asked if they had sought Chicago Park District (CPD) space, 12.1% of respondents answered "YES" while 87.8% marked "NO". Of those responding "YES", 26.9% had obtained space, 18.3% are still waiting for space, 48.1% "GAVE UP", and 6.7% indicated other outcomes.

Reasons for not seeking CPD space ranged from "boat is trailered" (46.9%), and "thought I had no chance" (11.7%), to "Haven't yet, but intend to try" (3.9%). Around fourteen percent of total survey respondents indicated an immediate need for CPD space.

According to response data, 34.2% of all sailboat owners, who do not presently have a berthing space at a Chicago Park District harbor have made application to the District, against 9.0% for all motorboat owners. Of respondents who have made application, 58.1% own craft 26 feet and over, 36.9% own craft 16 through 25 feet, and 5.0% own craft 15 feet and under.

Chicago Park District harbors currently provide berthing for nearly one half, (46.9%) of all area boats 26 ft. or longer. CPD facilities berth 3.7% of area boats between 16-25 ft., and less than 0.1% of area boats 15 ft. or less.

B. BOATING ACTIVITY PATTERNS

Of total respondents, 41.9% use Lake Michigan, 58.1% do not. Approximately one-half of those boaters who do not use the lake have craft too small to safely boat on this water body, 5.8% do not due to lack of available berthage space, 8.0% do not because of lake access problems (mainly lack of adequate ramp facilities). Sailboats amount for 37.4% of those who use the lake; motorboaters, 62.6%.

In terms of boating activities on Lake Michigan, "crusing and sailing" received the greatest portion of total response, followed by "fishing", "water skiing", "using boat at slip or mooring", "other activities", and "racing".

C. OTHER RESPONDENT COMMENTS

Concerning boating safety issues along the Chicago lakefront, respondents placed particular stress on "crowding in harbors", "crowding at launch ramps", and "vandalism at berths".

Additional statements heavily emphasized by respondents included:

-- New harbor facilities needed

-- New launching ramps needed

-- More automobile and trailer parking needed

-- Other improvements needed (e.g., more hoisting cranes, support facilities close to docks/ramps, etc.)

D. LAKE MICHIGAN FACILITY DEVELOPMENT NEEDS

One main objective of the boating survey was to determine the attitudes and preferences of area boaters for new harbor and launch ramp development.

Respondents owning craft 26 feet or longer predominantly favor new lakefront development by a margin of nine to one. Around three quarters of respondents owning boats 16 through 25 feet in length favor new lakefront development. Of those respondents with boats 15 feet and under, 57% favor additional harbor and launch ramp development along the Chicago Lakefront. It can reasonably be concluded from other data elements, that the predominant portion of respondents who disfavor lakefront development do not use Lake Michigan or do not boat from the Chicago shoreline.

Respondents were asked to indicate their "preference level" regarding the suitability of developing four facility types along the Chicago lakefront; slips, moorings, summer dry storage, and boat launching ramps. Some 69.7% of those responding favor new slip development. New launch ramps received a high level of preference among respondents. The least preferred facility type was "summer dry storage", although it is significant that 40.9% of those boaters responding to this type of development indicated that they "preferred" or would accept dry storage.

Approximately three-quarters of the respondents had not kept their boat at a Park District facility during the 1978 boating season. Slightly over one-quarter of them meet our definition of "boaters seeking CPD space." Around 82.0% of these boaters "prefer" slip development. Some 32.8% of these same boaters, alternatively, "prefer" mooring development, 15.7% prefer summer dry storage development. Of total boaters seeking CPD space, it is noteworthy that 45.8% prefer or would accept dry storage.

Respondents were asked to rank in terms of importance the component services and facilities that a harbor should offer. Although slightly different rankings resulted between motorboat vs. sailboat users and berth vs. ramp users, "Showers-Restrooms" and "Emergency Repair" were ranked first and second by all boaters. Overall response ranked the following facilities/services in the order named; 3) Restaurants-fastfoods, 4) Boating supplies, 5) Routine maintenance, 6) Groceries and convenience items. Motorboats were somewhat more concerned with the inclusion of fishing-oriented facilities; sailboaters with transient oriented facilities.

E. LAKE MICHIGAN FACILITY LOCATIONAL PREFERENCES

Another primary objective of the boating survey was to determine the preferences of area boaters regarding the placement of new and additional boating facilities along the Lake Michigan shoreline.

Regarding "first" choice, 26.6% of all respondents indicated a preference for Lakefront Area 1, Lakefront Area 3, with 17.8% of the total response, represented the second most popular Chicago shoreline. "Other Lakefront Areas", specifically that shoreline reaching north of the Chicago city limits, received 18.2% of the total response.

Lakefront Area 1 was heavily stressed for all preferred types of boating facility development. However, with reference to the Chicago shoreline, respondents preferring slip development distributed their locational preferences somewhat more evenly over all areas than did those favoring mooring development. Those respondents preferring summer dry storage and launching ramp development heavily chose Lakefront Area 1, and secondly to a considerably lesser degree, Lakefront Area 4.

Cook County registrants mainly prefer Lakefront Area 1 for new development; DuPage County registrants, Lakefront Area 3 and 2; and Lake County registrants, "Other Lakefront Areas". These preferences obviously reflect boater accessibility to boating areas.

F. LAKE MICHIGAN SHELTERED WATER DEVELOPMENT NEEDS

Of the 1,314 boaters who responded, 73.5% indicated that they would use Lake Michigan if sheltered water were available, while 26.5% would not use the Lake. (During the 1978 boating season, 41.9% of respondents "used" Lake Michigan; 58.1% did not).

Of respondents with boats 15 feet and under in length, 52.2% would use Lake Michigan if sheltered water were available; 47.8% would not use the Lake. For respondents in the 16 through 25 foot category, this distribution is 79.7% and 20.3%. Some 90.9% of respondents with craft 26 feet and over would use Lake Michigan if sheltered watere were available; 9.1% would not. The following text table compares present usage of Lake Michigan with potential usage by boat length category:

Boat Length Category	Percent Who Used Lake Michigan During 1978	Percent Who Would Use Lake Michigan if Sheltered Water were Available
15 feet and Under	10.9%	52.2%
16 through 25 feet	40.0%	79.7%
26 feet and over	78.8%	90.9%
Total respondents	41.8%	73.5%

These figures clearly demonstrate that the creation of sheltered water would result in increased use of Lake Michigan, predominantly by those boaters who feel it is not safe to boat on Lake Michigan and those whose activity preferences (e.g., water skiing) require calmer water conditions. The figures presented above in actuality will probably never be realized since the inherent assumption is that facilities will be available to accomodate all these new boats.

G. EXISTING EXCESS DEMAND

The survey indicates that substantial excess demand exists for both lakefront berthages and boat launching ramps. The analysis of demand presented in Chapter VII identifies a range of possible demand figures. The significance of this range is that even very low and conservative demand estimates will be satisfied only through extensive lakefront development. A very conservative current demand estimate for berthages is in excess of 6,000 boats. An estimate in excess of 9,000 boat berths may better represent the current demand situation of Chicago-area boating. The estimate of demand for launching ramps range from facilities to accommodate approximately 11,200 to 17,000 boaters.

CHAPTER III

ANALYSIS OF SURVEY RESPONSE

A. INTRODUCTION

This Chapter presents an analysis of boater response to a series of questions disclosing, among other concerns, boat fleet and storage characteristics, user costs of boating,and boating activity patterns. Consideration is given to several important issues concerning recreational boating on Lake Michigan, such as: What portion of the fleet utilized the lake, and for what boating activities? To what extent would boaters curtail these activities if user costs increased dramatically? What are the principal safety concerns of area boaters? What types of fish would boaters, especially fishermen, like to see introduced or increased in Lake Michigan?

Furthermore, this Chapter provides tabulations on certain variables -- such as boat lengths and types -- which in subsequent Chapters of this report will be compared with responses to the demand for new harbor development and the preferred location of such development. This information, then will constitute the basic, primary data for the enventual development of a siting strategy and design guidelines for new harbor and launching facilities along the Chicago lakefront.

B. BOAT FLEET CHARACTERISTICS

Of the 1,581 boaters throughout the six-county metropolitan area who responded to the survey, 1,471 indicated a boat length as summarized below:

Boat Length Category	Absolute Frequency	Relative Frequency
15 Feet and Over	477	32.4%
16 Through 25 Feet	544	37.0
26 Feet and Over	450	30.6
Total Responses	1,471	100.0%

1. Percent Boat Ownership

To the question, "Do you now own the boat which has the registration number on the address lable attached to our letter?", of the 1,563 boaters who responded, 1,438 (92%) indicated YES while 125 (8.0%) marked NO.* Of those respondents who still own their craft, 33.1% fell into the 15 feet and under boat length category, 38.0% into the 16 through 25 feet category, and 28.0% into the 26 feet and over category.

Respondents to question -- "How long is this boat and what type is it?" -- further revealed that 77.9% of boats presently owned are motorboats, 20.1% are sailboats, and 2.0% are "other" types (e.g. canoes, houseboats, rowboats without motors, etc.). The length characteristics

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*Boaters who marked "NO" in Question #1 were directed to proceed to question #15. Boaters indicating "YES" constitute the sample population upon which analyses in Sections A through E.

of owned boats by type are given below:

Boat Length Category	Motorboat	Sailboat	Other
15 Feet and Under	35.1%	18.0%	55.6%
16 through 25 Feet	41.9	19.9	37.0
26 Feet and Over	23.0	62.1	7.4
Total Responses	100.0%	100.0%	100.0%

Some 1,341 boaters responded to the question -- "How many years have you owned this boat?" That the area's boat population experiences a relatively high turnover is evidenced by the fact that 28.0% of the present fleet has been owned under two years, another 19.0% for approximately three years, and some 13.0% for around four years. The average length of boat ownership is 5.1 years, the median is 3.8 years.

2. Characteristics of probable new boat purchaces

Some 1,417 boat registrants (both those who presently do and do not own these boats) responded to the question -- "Are you considering the purchase of a new or different boat during the next 2 years?" Of these, 39.9% indicated their intention to purchase a new or different boat over the coming two year period. Of those respondents who intend to purchase, 92.7% are present owners of registered craft, 7.3% are not.

Motorboats dominate new/different boat purchases. Some 74.9% of respondents indicated a preference for motorboats, 24.4% for sailboats, and 0.7% for other types. However, the survey detected a slight trend toward sailboats

(sailboats comprise 20.1% of the present fleet of the six-county area).

As noted above, 92.7% of those who intend to purchase presently own boats. The following table compares boat types presently owned with new types specified by this group.

Type of Present Boat	Type of New Boat Motor	Sail	Present Distribution
Motor	97.9%	17.3%	78.2%
Sail	2.1	82.7	21.8
New Distribution	74.0	26.0%	100.0%

As shown above, the distribution of boats by type among boaters who presently own and intend to purchase new boats will shift slightly toward a greater portion of sailboats over the coming two-year period. Of new sailboats purchased by this group, 17.3% presently own motorboats. Of new motorboats purchased by this group, 2.1% now own sailboats.

Boat owners who intend to purchase new or different craft generally tend toward larger boats, as revelaed by survey results. According to the data, the average size of all boats the respondents are planning to purchase over the coming two years will be 26.2 feet (as opposed to 21.0 feet for all boats owned by respondents), while the median will be 24.2 feet. The follwoing table gives a comparative analysis on boat lengths for the present fleet and proposed purchases:

Boat Length Category	Present Boat Fleet*	New Boat Purchases
15 Feet and Under	15.2%	28.5%
16 through 25 Feet	43.2	37.4
26 Feet and Over	5.6	34.1
Total	100.0%	100.0%

Respondents indicated that 33.2% of the motorboats to be purchased will be 15 feet and under in length, 40.1% will be 16 through 25 feet, and 26.6% will be 26 feet and over. Some 15.0% of the sailboats to be purchased will be 15 feet and under in length, 24.8% from 16 through 25 feet, and 60.2% 26 feet and over.

C. BOAT STORAGE CHARACTERISTICS

Data on boat storage sought by the survey included the distribution of boats by place and type of storage, and the experience boaters have had or anticipate having in securing berthing space from the Chicago Park District.

1. Place of Storage

One-Thousand-Four-Hundred-Thirty-Eight boaters responded to the question -- "Where have you usually kept this boat during the 1978 boating season?" The following table summarized the total responses by place of storage:

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*ILLINOIS DEPARTMENT OF CONSERVATION AND U.S. COAST GUARD On All Boats registered and documented within six-county Chicago metropolitan area.

Place of Storage	Absolute Frequency	Relative Frequency
At My Permanent Home	672	46.7%
At My Summer Cottage	184	12.8
At A Harbor or Marina Outside Chicago	316	22.0
At A Harbor Operated by The Chicago Park District	236	16.5
At a Private Marina Within Chicago	30	2.1
Total Response	1,438	100.0%

Harbor and Marina facilities berth 40.6% of boats owned by respondents. Private marinas and Chicago Park District harbors berth 18.6% of respondents' boats, with 34.1% of boats owned by these respondents sized 26 feet and over. Harbors and marinas outside Chicago store 22.0% of all boats owned by respondents. The following table distributes the total response of those boaters who berth at Chicago Park District Harbors:

Chicago Park Distric Harbor	Percent of Response
Monroe	32.5%
Burham	22.4
Montrose	14.6
Belmont	11.0
Diversey	10.2
Jackson	8.2
59th Street	0.9
Total Response	100.0%

Of total respondents who store boats at a Chicago Park District Harbor, 81.7% reside in Cook County, 19.6% from DuPage County, 6.4% from Lake County, and the remaining 1.3% from the counties of Will, Kane and McHenry.

Some 20.7% of Cook County boaters who responded to the survey berth at harbors or marinas outside Chicago, 22.9% of DuPage County boaters, 19.5% of Kane County boaters, 29.2% of Lake County boaters, 18.2% of McHenry County Boaters, and 20.3% of Will County boaters.

Approximately one-half of all sailboats owned by respondents are moored at Chicago Park District facilities as revealed below:

			Percent of "Total" Berthed at[1]		
Boat Type	Distrib. by Type	Percent 26 Ft. & Over	CPD Harbor	Private Marina Inside Chicago	Marina Outside Chicago
Motor	77.9%	23.0%	8.8%	2.2%	22.0%
Sail	20.1	62.1	49.6	1.4	25.7

(1) Percent of respective boat type category

NOTE: Percent of total respondent fleet. Does not add to 100.0% due to exclusion of "other" boat types.

Nonetheless, one-quarter of all sailboats owned by respondents are moored at marinas "outside" Chicago. Meanwhile, only 8.8% of respondent-owned motorboats are berthed at a Chicago Park District facility.

This data indicates a shortage of lakefront berthing space within Chicago. The problem is particularly acute for Cook County respondents who own 65.5% of sailboats and 63.0% of motorboats in the survey. Cook County boaters indicated 70.6% of all respondent owned boats 26 feet and over in length.

2. Type of Storage

As indicated above, 40.6% of all respondents berth their craft at a harbor or marina. Of these, 55.1% rent slip space, 30.9% rent mooring space, and 14.1% rent summer dry storage space.

Of respondents who own and berth motorboats, 75.2% rent slip space, 11.4% rent mooring space, and 13.1% rent dry storage space. Some 64.0% of respondents who own and berth sailboats rent mooring space, 20.1% rent slip space, and 15.9% rent dry storage space.

The distribution of rented space by type with boat length categories is shown below:

	Type of Berthage Rented		
Boat Length Category	Slip	Mooring	Dry Storage
15 Feet and Under	2.2%	1.7%	22.8%
16 through 25 Feet	22.9	18.5	59.5
26 Feet and Over	74.9	79.8	17.7
Total Response	100.0%	100.0%	100.0%

The preponderant proportion of wet storage space rented to sailboaters (who responded to the survey) is utilized for craft 26 feet and over in length. According to survey data, 90.5% of slip space and 86.9% of mooring space occupied by sailboats is rented for boats in this length category.

This situation is not characteristic of motorboats 26 feet and over in length. Of total slip space rented to motorboaters (who responded), 72.7% is occupied by craft in this length category, while 25.1% is occupied by motorboats 16 through 25 feet, and 2.2% by motorboats 15 feet and under. Of total mooring space rented to motorboaters, 56.1% is occupied by craft 26 feet and over, 36.6% by craft 16 through 25 feet, and 7.3% by motorboats 15 feet and under.

Around 15.2% of summer dry berthage rented to motorboaters and 21.2% of dry berthage rented to sailboaters is occupied by craft 26 feet and over. The vast proportion of dry storage space, however, is rented for boats 16 through 26 feet in length. Of motorboats occupying dry berthage, 67.4% are in this length category; 48.5% of sailboats who occupy dry storage are 16 through 25 feet.

3. Expressed Need for Lakefront Berthing Space

The question -- "If during the 1978 boating season, this boat has not been kept at a Chicago park District facility, have you ever sought a slip or mooring space from the Chicago Park District?" -- allowed a better understanding of the current need by area boat owners for lakefront space. Three-fourths of all respondents answered this question.

Of those boaters who responded, 12.1% marked "YES" while 87.9% marked "NO" to question #6. Of area boaters who had sought Park District space, the outcome ranged as follows:

Outcome	Relative Frequency
Obtained Space	26.9%
Still Waiting for space	18.3
Gave up	48.1
Other outcome	6.7

Reasons why area boaters have not sought a slip or mooring space from the Chicago Park District are shown below:

Reasons For Not Seeking Space	Relative Frequency
Boat is Trailered	46.9%
Fee is Too Expensive	3.6
Prefer Other Lakefront Areas	21.9
Haven't Yet, but Intend to Try	3.9
Thought I had no Chance	11.7
Other Reasons	12.0
Total "NO" Response	100.0%

The immediate need for lakefront berthing space is, to a degree, reflected by the total respone of area boaters to "Still waiting for space," "Gave up" "Haven't yet, but intend to try", and "Thought I had no chance". Together this group accounts for 18.1% of those boaters who responded to this question, or 13.7% of the Total survey response.

While these statistics indicate the current need for Chicago lakefront space to meet the requirements of existing metropolitan area boatowners, it is important to recognize that a survey of this type does not reach potential boatowners who do not presently own boats due to 1) the current lack of local berthing space, 2) insufficient current income levels, and 3) numerous other reasons which potentially could be overcome in time. The real demand for space represented by this group probably is vast.

Of those respondents who had applied to the Chicago Park District for space, Cook County boatowners accounted for 70.0%; DuPage County boatowners, 13.0%; Lake County boatowners, 9.0%; McHenry County boatowners, 4.0%; Kane County boatowners, 2.0%; and Will County boatowners, 2.0%. The vast majority of boatowners with an immediate need for Park District space are from the counties of Cook and DuPage, as shown below:

	As Percent of Total Individual Response	
Owner Response	Cook Cnty.	DuPage Cnty.
Gave Up	30.6%	69.4%
Still Waiting for Space	63.2	36.8
Haven't Yet, But Intend To Try	13.9	83.3
Thought I Had No Chance	10.9	89.1

As revealed, around two-thirds of applicants still waiting for Park District space are sailboaters; while over two-thirds of those who gave up trying are motorboaters. Undoubtedly, a large proportion of those boatowners who "gave up" currently berth at marinas or harbors outside Chicago. This predicament could apply equally to other responses listed in the above text table.

The size distribution of boats for which application has been made to the Chicago Park District is given in the following table:

	Respondents Who Have Made Application for CPD Space		
Boat Length Category	All Owners	Sail-boat Owners	Motor-boat Owners
15 Feet and Under	5.0%	4.1%	3.4%
16 Through 25 Feet	36.9	32.6	39.8
26 Feet and Over	58.1	63.3	56.8
Total Response	100.0%	100.0%	100.0%

As shown, of respondents who have made application to the Chicago Park District for berthing space, 58.1% own craft 26 feet and over, while 36.9% own craft 16 through 25 feet in length.

D. USER COSTS OF BOATING ALONG CHICAGO LAKEFRONT

"User costs" are herein defined as boat storage and launching ramp fees, marine fuel, boat insurance, maintenance and repairs, and other boat user costs. The survey did not solicit information on "investment" in boats, although this too is part of the total cost of boating. When necessary, investment (capital cost) data for both "resales" and new boats may be obtained through industry and newspaper advertisements.

Table III-1 gives the percentage distribution of respondents by fee paid for summer and winter boat storage. Table III-2 indicates the mean and median fee paid by storage type.

The wide variation of response reflects the diversity of boat sizes within the six-county metropolitan area. Size variations particularly are noticeable with respect to motorboats, and this is somewhat pronounced by the divergence between "Mean" and "Median" cost for motorboats vs. sailboats in table III-2.

Launch ramp fees paid over the 1978 boating season, likewise, vary widely as shown below:

Ramp Fee Category	Distribution of Total Response
Under $25	20.1%
$25 Through $49	43.9
$50 Through $74	21.0
$75 Through $99	6.5
$100 Trhough $149	3.8
$150 and Over	4.7
Total Response	100.0%

Table III-3 gives the percentage distribution of respondents by annual user cost of "other" items. Based on this data, the mean and median costs by item are as follows:

TABLE III-1

SEASONAL COST OF BOAT STORAGE BY FEE CATEGORY[1]
(Percent of Total Response)

	SUMMER STORAGE				WINTER
FEE CATEGORY	ALL BERTHS	SLIPS	MOORINGS	DRY BERTHS	DRY STORAGE
UNDER $51.00	5.3%	1.6%	1.3%	21.3%	4.2%
$51 Through $100	5.8	3.2	2.0	23.4	5.0
$101 Through $150	3.8	2.4	6.0	8.5	5.7
$151 Through $200	13.6	7.2	19.9	19.1	10.5
$201 Through $250	12.7	6.0	30.5	2.1	7.7
$251 Through $300	9.8	9.6	7.9	12.8	12.2
$301 Through $400	17.0	16.0	21.2	10.6	13.7
$401 Through $500	10.5	14.0	8.6	2.1	9.7
$501 Through $600	6.7	11.6	0.7	0.0	9.7
$601 Through $700	6.0	10.8	0.0	0.0	5.0
$701 Through $999	6.5	11.6	1.3	0.0	5.7
$1,000 and Over	2.4	6.0	0.7	0.0	10.7
TOTAL RESPONSE	100.0%	100.0%	100.0%	100.0%	100.0%

(1) Along The Chicago Lakefront

SOURCE: Chicago Recreational Boating Needs Survey, September-November, 1978.

TABLE III-2

MEAN AND MEDIAN COST OF STORAGE BY TYPE(1)
FOR SAILBOATS AND MOTORBOATS OWNED BY RESPONDENTS

TYPE OF BOAT	SUMMER STORAGE SLIPS	SUMMER STORAGE MOORINGS	SUMMER STORAGE DRY BERTHS	WINTER DRY STORAGE
SAILBOATS				
MEAN COST	$444	$274	$213	$464
MEDIAN COST	$402	$250	$189	$400
MOTORBOATS				
MEAN COST	$500	$334	$128	$460
MEDIAN COST	$450	$248	$ 78	$301
ALL BOATS				
MEAN COST	$487	$287	$166	$460
MEDIAN COST	$426	$250	$150	$350

(1) Along The Chicago Lakefront

Source: Chicago Recreational Boating Needs Survey, September - November, 1978.

TABLE III-3

ANNUAL USER COST OF BOATING[1]
FOR SELECTED CATEGORIES
(Percent of Total Response)

COST CATEGORY	MARINE FUEL	BOAT INSURANCE	MAINTE-NANCE/ REPAIRS	OTHER USER COSTS
UNDER $51.00	31.2%	8.5%	20.3%	19.4%
$51 Through $100	17.7	16.1	20.1	19.4
$101 Through $150	7.2	14.1	6.5	9.7
$151 Through $200	9.2	14.4	14.5	11.3
$201 Through $300	12.1	1716	11.8	11.3
$301 Through $400	5.1	10.9	4.5	1.6
$401 Through $500	5.6	7.1	7.5	12.9
$501 Through $1,000	8.2	11.3	9.1	14.5
$1,001 Through $1,500	2.0	0.0	3.1	0.0
$1,501 And Over	1.6	0.0	2.5	0.0
TOTAL RESPONSE	100.0%	100.0%	100.0%	100.0%

(1) Along The Chicago Lakefront

Source: Chicago Recreational Boating Needs Survey, September
November, 1978

Cost Item	Number of Responses	Mean Cost	Median Cost
Marine Fuel	693	$261	$125
Boat Insurance	603	272	200
Maintenance/Repairs	557	354	199
Other User Costs	62	288	161

Average annual fuel costs vary widely among boat length categories. Boats 15 feet and under in length expend, on the average, $111 per annum for marine fuel; boats 16 through 25 feet, $198 per year; and boats 26 feet and over, $368 per year. Average annual boat insurance costs are $77 for boats 15 feet and under, $141 for boats 16 through 25 feet, and $407 for boats 26 feet and over. Average annual maintenance repair costs are $87, $141 and $572, respectively, for these length categoreis.

E. BOATING ACTIVITY PATTERNS

This part of the report analyzes the use of Lake Michigan for recreational boating, according to the response of boaters residing in the six-county metropolitan Chicago area. Topics include Lake Michigan boating activity patterns and the effect on boating activity which would result from a given increase in boater costs.

1. Usage of Lake Michigan

Some 1,439 area boaters responded to the question -- "During the boating season was this boat used on Lake Michigan?" Of these, 41.9% responded "YES" while 58.1%

responded "NO".

Boaters were asked to express their reason for NOT boating on the lake. This distribution is given in the following table:

Reasons for Not Using Lake Michigan	Relative Frequency
Boat Too Small to Safely Use on Lake Michigan	49.2%
Prefer Other Water Bodies	29.8
No Seasonal Berth Available	5.8
Lake Access Problem	7.0
Other Reasons	3.2
Total "NO" Responses	100.0%

Consequently, of the 58.1% of respondents who DO NOT use Lake Michigan, 5.8% do not use this body of water due to lack of available berthage space. Of these boaters, 53.7% have boats registered in Cook County, 22.0% in DuPage County, and 14.6% in Lake County.

Sailboaters account for 37.4% of the craft who use the Lake; motorboaters, 62.6%. Of total sailboats, 80.2% are used on the lake. Of total motorboats, 34.4% are used on Lake Michigan.

As expected, only a small portion of craft sized 15 feet or less uses Lake Michigan -- or, 10.9% according to the survey. Those boaters with craft of this size who do not use the Lake, in large, indicated that boat size influenced their decision.

Forty percent of all boats 16 through 25 feet in length use Lake Michigan. The two predominant reasons for not using the Lake for this size category are 1) boat too small (31.1% of respondents with boats in this category indicating "NO"), and 2) prefer other water bodies (38.6% of these same respondents.)

The majority (78.8%) of boaters with craft 26 feet and over use Lake Michigan. Of those in this class who do not boat on the lake, roughly one-half prefer other water bodies; while another one-quarter do not use the lake due to lack of storage space.

At least seventy-five percent of all boats registered in the six-county area are "trailered". Of these, 25.9% use Lake Michigan; 74.1% do not. Of those trailered boats not used on the lake, 63.7% are too small according to respondents, while 22.9% are used on other water bodies. Lake access problems -- such as lack of launch ramp facilities -- hinder 6.9% of those obaters with trailered craft from using Lake Michigan.

2. Lake Michigan Launching and Trip Characteristics

Boaters were asked to estimate the number of times in each month during 1978 they launched their respective boats. Respondents indicated that 43.0% of all launchings took place along the Chicago lakefront; leaving 57.0% to take place in "other" areas. Launchings which take place along the Chicago lakefront roughly are equally distributed among the following lakefront areas:

Launch Area	% Distribution of Total Chgo. Lakefront Launchings	% Distribution of Total Launchings in All Areas
Lakefront Area I	25.4%	10.9%
Lakefront Area II	27.0	11.6
Lakefront Area III	24.9	10.7
Lakefront Area IV	22.7	9.8
Other Areas	-	57.9
Total Response	100.0%	100.0%

Launching activity is particularly heavy during the three summer months of June, July and August as shown below:

Month	Launchings Along Chicago Lakefront	Launchings In All Areas
April	7.7%	6.0%
May	14.7	12.8
June	17.9	18.1
July	18.1	20.2
August	17.3	19.4
September	15.9	14.7
October	7.1	6.5
Rest of Year	1.4	2.3
Total Response	100.0%	100.0%

Over eighty percent of all launching occur during the primary boating season of May through September.

Boaters who berth in a harbor or marina were asked to estimate the number of trips they would make on Lake Michigan over the 1978 boating season. Survey data revealed that boaters who rent permanent summer storage make, on the average, 34.2 trips per season into the lake ("median" number of trips equalled 29.7).

The crew size per boating event (launchings and trips) averaged 4.0 persons. The average crew size per launched boat equaled 3.5 persons, and 4.5 persons per berthed boat.

3. Boating Activities

Table III-4 gives the distribution of the total response to the Qeustion -- "During the 1978 boating season, what percent of your use of this boat involved the following activities?" Six types of activities were identified. "Cruising and sailing" received the greatest portion of total response, followed by "Fishing", "Water Skiing", "Using boat at slip or mooring", "Other activities", and "Racing". This ordering held in terms of both "Number of responses" and "As a percent of total boating activity" (i.e., any given activity as a percent of total boating time).

Boaters with craft 15 feet and under in length participate predominantly in "Fishing" activity. They spend approximately one-half as much time "Cruising and Sailing." Boats 26 feet and over in length are used primarily for "Cruising and Sailing", followed by "Using boat at slip or mooring" and (at some distance) by "Fishing".

TABLE III-4

BOATING ACTIVITY PATTERNS [1]

BOATING ACTIVITIES	TOTAL # OF RESPONSES PER ACTIVITY	PERCENT OF TOTAL RESPONSES	AS % OF TOTAL BOATING ACTIVITY	AS % OF TOTAL RESPONDENT BOAT OWNERS [2]
CRUISING OR SAILING	949	38.7%	44.1%	66.0%
FISHING	704	28.7	33.1	49.0
WATER SKIING	330	13.4	10.0	22.9
UNING BOAT AT SLIP OR MOORING	305	12.4	8.0	21.2
RACING	81	3.3	2.8	5.6
OTHER ACTIVITES	85	3.5	5.0	5.9
TOTAL RESPONSE	2,454	100.0%	100.0%	---

[1] ON ALL WATER BODIES

[2] 1,438 SURVEY RESPONDENTS INDICATED OWNERSHIP OF REGISTERED BOATS.

SOURCE: Chicago Recreational Boating Needs Survey, September November 1978.

4. Effect of User Cost Increases on Overall Boating Activity

As a relative measurement of willingness to pay respondents were asked to indicate the effect on their overall boating activity of a one-third increase in various user cost items. These cost items are given in Table III-5 along with total response and, for any given item, the distribution of response according to probable effect of a cost increase on boating activity.

Table III-5 shows that boaters utilizing ramp facilities along the Chicago lakefront are especially sensitive concerning fee increases. Twenty-two percent of those responding would cut boating activity along the lakefront by as much as one-half if ramp fees were increased by one-third over present levels. Another 10.6% would "give up" boating along the lakefront.

Other sensitive cost items which strongly influence boating activity are 1) winter storage, 2) slip rental fees, 3) boat insurance, and 4) "other" user costs. According to respondents, if total boating user costs were increased by one-third (1978 dollars), boating activity along the Chicago lakefront would be decreased by one-half of 11.1% of area boaters, while another 12.3% would give up boating.

F. LAKE MICHIGAN FISH STOCKING NEEDS

The question -- "What type of fish would you like to see the State of Illinois introduce into Lake Michigan?", was responded to by 920 area boaters, including 301 fisherman

TABLE III-5

EFFECT ON BOATING ACTIVITY ALONG CHICAGO LAKEFRONT

OF A ONE-THIRD INCREASE IN BOATING USER COSTS

	TOTAL RESPONSE		EFFECT ON BOATING OF A ONE-THIRD COST INCREASE			
COST ITEM	NUMBER	PERCENT DISTRIBUTION	TOTAL RESPONSE	LITTLE OR NONE	DECREASE BY 1/2	WOULD GIVE UP BOATING
MARINE FUEL	877	17.5%	100.0%	77.4%	15.2%	7.4%
SLIP SPACE	537	10.7	100.0	77.5	6.7	15.8
MOORING SPACE	464	9.3	100.0	78.9	8.0	13.1
LAUNCHING RAMP FEE	473	9.4	100.0	67.4	22.0	10.6
SUMMER DRY STORAGE	365	7.3	100.0	81.6	6.3	12.1
WINTER STORAGE	670	13.4	100.0	76.2	7.8	16.0
BOAT INSURANCE	801	16.0	100.0	76.4	9.7	13.9
MAINTENANCE/ REPAIRS	744	14.8	100.0	77.8	11.1	11.1
OTHER USER COSTS	82	1.6	100.0	74.4	11.0	14.6
TOTAL RESPONSE	5,013	100.0%	100.0%	76.6	11.1	12.3

Source: Chicago Recreational Boating Needs Survey, September - November, 1978.

(defined herein as boaters participating in "Fishing" more thant 50% of their total boating time). The following table indicates for all respondents and for fishermen the emphasis accorded various fish types:

	% Distribution of Total Response	
Fish Type Desired	All Respondents	Fishermen
Coho	19.6%	18.3%
Chinook	13.1	15.9
Lake Trout	43.7	32.2
Brown Trout	0.5	0.6
Steelhead	12.9	17.4
Other Types	10.2	15.5
Total Response	100.0%	100.0%

As revealed, all respondents, including "Fishermen" as a group, prefer a fish stocking program which would expand Lake Trout in Lake Michigan. However, as noted, fishermen further prefer a broad program emphasizing several types of fish.

G. LAKEFRONT BOATING SAFETY CONCERNS

Boaters were also asked to express their attitudes concerning boating safety along the Chicago lakefront. Respondents were given nine problem areas and were asked to rank these in order of importance.

As shown in Table III-6, the tabulated response for all possibilities equaled 4,895. Respondents placed particular

TABLE III-6

MAIN BOATING SAFETY PROBLEMS
ENCOUNTERED ALONG THE CHICAGO LAKEFRONT

SAFETY PROBLEM ENCOUNTERED	TOTAL RESPONSE		PERCENT OF RESPONDENTS EMPHASIZING PROBLEM AS:		
	Number	Percent Distribution	First Priority	Second Priority	Third Priority
CROWDING IN HARBORS	755	15.4%	25.6%	24.2%	14.3%
VANDALISM AT BERTHS	688	14.0	23.1	18.6	15.3
CROUWDING AT LAUNCH RAMPS	660	13.5	29.8	20.2	13.6
INADEQUATE SAFETY PATROLLING	606	12.4	9.4	19.5	17.7
INADEQUATE BOATING SAFETY EDUCATION PROGRAMS	558	11.4	17.7	11.3	14.0
CONFLICTS BETWEEN MOTOR AND SAILBOATS	541	11.1	11.3	13.9	18.3
LACK OF NAVIGATIONAL AIDS	500	10.2	10.0	10.4	15.2
LACK OF WEATHER NAVIGATIONAL INFO.	478	9.8	11.1	13.2	12.1
OTHER PROBLEMS	109	2.2	33.0	14.7	11.0
TOTAL RESPONSE	4,895	100.0%	--	--	--

Source: Chicago Recreational Boating Needs Survey, September-November, 1978.

emphasis on "Crowding in harbors", "Crowding at launch ramps", and "Vandalism at berths". Both "Users" and "Non-users" of Lake Michigan placed equal emphasis on these three safety problems.

Problem areas of special concern to sailboaters are 1) "Harbor Crowding" (60.5% ranked this problem either first or second in importance), and 2) "Vandalism" (56.4% ranked this first or second). Motorboaters are concerned especially with 1) "Ramp crowding" (54.2%, first or second), and 2) "Harbor crowding" (46.7%, first or second). Sailboaters are considerably more concerned than motorboaters to "Conflicts between sailboats and motorboats" (or, 37.4% vs. 20.2% ranking this problem either first or second).

H. <u>OTHER SURVEY COMMENTS</u>

Boaters were asked to comment on boating trends observed during the past five years while boating from Chicago based facilities on Lake Michigan. In addition an opportunity was provided for respondents to make any additional comments concerning Chicago lakefront boating they cared to.

Of 730 respondents, 24.0% regarded "More boats, particularly sailing craft; more intensive use of boating facilities" as the most noticeable <u>trend</u> concerning lakefront boating. Some 12.0% indicated "More fishing boats and Charters" as the most prevalent boating trend; 10.0% mentioned "More crowded harobrs" as the most striking trend.

The second most observable trends included "Less concern for safety and less considerate boaters", "Harbor and launch facilities outpaced by increase in boating", and "More inexperienced and uneducated boaters".

Four hundred eight-five respondents who own motorboats emphasized two trends in particular; or, "More boats, particularly sailing craft; more intensive use of boating facilities", and "More fishing boats and charters". Motorboaters also expressed concern for corwded harbors and inconsiderate boaters. Respondents owning sailboats likewise stressed these boating trends, but placed more emphasis on "More boats; more intensive use of facilities", and "More crowded harbors". Meanwhile, these trends equally were stressed by respondents regardless of boat size, and by "Users" of Lake Michigan.

Regarding additional comments on lakefront boating, the following statements received heavy emphasis:

-- New harbor facilities needed (generally)

-- New harbor facilities needed (specific location indicated)

-- New launching ramps needed (generally)

-- More automobile and trailer parking needed

-- Other improvements needed (e.g. more hoisting cranes, support facilities close to docks/ramps, etc.)

Motorboaters commented, in particular, on the need for new harbor facilities (18.0%), new launching facilities (14.0%, and more automobile and trailer parking (emphasized as second most important facilities). Fifty percent of respondents owning sailboats commented on the need for new harbors.

CHAPTER IV

LAKE MICHIGAN FACILITY DEVELOPMENT NEEDS

One main objective of the boating survey was to determine the attitudes and preferences of area boaters regarding new harbor and launch ramp development along the Chicago lakefront. This information, summarized below, is basic to the development of design guidelines for new harbor and ramp facilities along this waterfront.

A. ATTITUDES AND PREFERENCES CONCERNING ADDITIONAL HARBOR AND LAUNCH RAMP DEVELOPMENT

Boaters were asked to indicate whether or not they desired new (additional) harbor or launch ramp development along the Chicago lakefront, and, if so, which type of development was most suitable to their needs.

Table IV-I summarized boaters response towards new lakefront development. As shown, of the 1,267 boaters who responded to this question, 74.9% expressed a desire for new harbor/launch ramp development, while 25.1% disfavored any new development.

Respondents owning craft 26 feet and over in length predominantly favor new lakefront development by a margin of nine to one. Around three-quarters of respondents owning boats 16 through 25 feet in length favor new lakefront development. Of those respondents with boats 15 feet and under, 42.3% do not favor additional harbor and launch ramp development along the Chicago lakefront. The predominant

TABLE IV-1

ATTITUDE OF RESPONDENTS TOWARD ADDITIONAL HARBOR AND/OR BOAT LAUNCHING RAMP DEVELOPMENT ALONG THE CITY OF CHICAGO LAKEFRONT

	Total Response	Want New Development	Do Not Want New Development
All Respondents	1,267	74.9%	25.1%
Respondents by Length Category of Boat Presently Owned			
15 Ft. and Under	331	57.7	42.3
16 Through 25 Ft.	448	74.6	25.4
26 Ft. and Over	417	91.7	8.3
Respondents by Type of Boat Presently Owned			
Motorboat	880	72.8	27.2
Sailboat	272	89.3	10.7

Source: Chicago Recreational Boating Needs Survey, September - November, 1978

portion of respondents who disfavor lakefront development do not use Lake Michigan or do not boat from the Chicago shoreline.

A comparison of development preferences with boat types revealed that 72.8% of area motorboaters desire additional harbor and/or launch ramp development along the Chicago lakefront; 27.8% disfavor development. Sailboaters by a margin of nine to one favor new lakefront development.

Of those respondents who boated on Lake Michigan during the 1978 boating season, 91.3% favor additional lakefront development, while 8.7% disfavor new development. Respondents who did not boat on the lake during 1978 favor new lakefront development by a 3:2 ration.

Respondents were asked to indicate their "preference level" regarding the suitability of four facility types along the lakefront; slips, moorings, summer dry storage, and boat launching ramps. The total response to this question is shown below:

Type of Facility	Total Response	Percent of Total Response Preferred	Acceptable	Unacceptable
Slips	670	69.7%	19.1%	11.2%
Moorings	596	35.1	41.3	23.8
Summer Dry Storage	486	14.8	26.1	59.1
Launch Ramps	680	50.7	17.5	31.8

Respondents were asked to express their preference for all or some of these facilities. As shown above, 69.7% of 670 respondents are favorable toward new slip development. New launch ramps received a high level of preference among respondents. The least response was received for "summer dry storage", although it is significant that 40.9% of those boaters responding to this type of development indicated that they "preferred" or would accept dry storage.

Table IV-2 shows the percent of respondents who "preferred" development of the various facilities types by size and type of boat owned. As shown, 85.6% of these respondents who own boats 15 feet and under in length would prefer new boat launching ramps. In addition, 31.3% of boaters in this same length category would prefer new slips.

Respondents owning craft 16 through 25 feet in length also prefer new launch ramp development along the Chicago lakefront. These owners, meanwhile, indicated a high preference level for slip development, but also for new moorings. Respondents owning boats 26 feet and over predominantly prefer new slip development.

Motorboaters have a high preference for new slip and launch ramp development, while sailboaters prefer slip or mooring development.

B. DEVELOPMENT PREFERENCES OF BOATERS WITH BERTHS

Those respondents who presently rent berthing space were compared with "preferred", berth type as shown below:

TABLE IV-2

PERCENT OF RESPONDENTS WHO "PREFER" DEVELOPMENT OF SLIPS, MOORINGS, SUMMER DRY STORAGE, OR LAUNCHING RAMPS BY SIZE AND TYPE OF BOAT PRESENTLY OWNED.

	Percent of Respondents Who "Prefer" Development Of:			
	Slips	Moorings	Summer Dry Storage	Launching Ramp
Respondents by Length category of Boat Presently Owned				
15 Ft. and Under	31.3%	21.4%	26.8%	85.6%
16 Through 25 Ft.	63.0	33.4	18.1	62.7
26 Ft. and Over	83.0	41.1	8.5	9.8
Respondents by Type of Boat Presently Owned				
Motorboat	74.1	22.2	16.2	62.6
Sailboat	60.2	54.8	12.2	17.4

Source: Chicago Recreational Boating Needs Survey, September - November, 1978

Berth Type Preferred	Distribution of Preferred Response By Type of Berthage Presently Rented: Total	Slip	Mooring	Summer Dry Storage
Slip	100%	68.4%	23.5%	8.1%
Mooring	100	25.2	65.0	9.8
Summer Dry Storage	100	28.9	15.8	55.3

Of those respondents who indicated a preference for additional slip development along the Chicago lakefront, 68.4% presently rent slip space, 23.5% rent mooring space, and 8.1% rent summer dry storage. Of those who prefer additional mooring development, 25.2% presently rent slips, while 9.8% presently rent summer dry storage. Roughly fourty-five percent of those who prefer additional summer dry storage space now rent slips or moorings.

C. DEVELOPMENT PREFERENCES OF BOATERS SEEKING CHICAGO PARK DISTRICT BERTHAGE SPACE

Boaters seeking Chicago Park District space are defined as those respondents who indicated that they had sought but not secured Park District berthing plus those who "Haven't yet, but intend to try" and who "Thought I had no chance". The preference levels of those seeking CPD space by type of new development is given in the following text table:

Type of New Development	Suitability of New Facility Development by Respondents Seeking CPD Space		
	Preferred	Acceptable	Not Acceptable
Slip	80.2%	14.%	3.8%
Mooring	32.8	47.1	20.1
Summer Dry Storage	15.7	30.1	54.2

Approximately three-quarters of the surveyed population who responded to the questionnaire had not kept their boat at a Park District facility during the 1978 boating season. Slightly over one-quarter of these respondents meet our definition of "boaters seeking CPD space". As shown above, 80.0% of these boaters "prefer" slip development. Some 32.8% of these same boaters, alternatively, "prefer" mooring development; 15.7% prefer summer dry storage development. Of total boaters seeking CPD space, it is noteworthy that 45.8% prefer or would accept dry storage.

D. MARINA ANCILLARY FACILITY NEEDS

Boaters were asked "Utilizing the list presented below, indicate the support facilities that are important to any Marina facility in the Chicago area". Ten items plus a space for "other" were listed on questionnaire. Respondents were asked to rank five of these items by degree of importance. Specifically excluded from this list were such basic features as sewer, water, electricity and gas facilities. Such facilities are assumed in the design of any modern boating facility.

TABLE IV-3

MARINA ANCILLARY FACILITY REQUIREMENTS

Facility	Number of Respondents Favoring Development of Facility	Distribution of Response by Degree of Importance Facility's Development Priorities First	Second	Third
Showers/Restrooms	911	40.8%	16.7%	10.9%
Emergency Repair	816	20.1	20.2	20.2
Restaurant/Fast Foods	685	11.5	23.6	19.7
Boating Supplies	667	7.2	12.1	17.5
Routine Maintenance	541	9.4	21.6	19.2
Groceries/Conv. Items	510	3.9	11.4	18.8
Fishing Supplies	389	10.5	14.4	16.2
Winter Storage	334	20.4	13.2	12.3
Fish Cleaning Station	252	8.7	12.7	15.9
Storage Lockers	195	8.2	11.3	13.3
Other Ancillary Facilities	102	53.9	13.7	11.8

Source: Chicago Recreational Boating Needs Survey, September-November, 1978

Table IV-3 shows the preferences by type of ancillary (support) facility, including the distribution of that response by the indicated degree of importance of the respective facility's development. For example, 911 respondents emphasized the importance of "Showers and Restrooms". Of these respondents, 40.8% indicated this item should be a <u>first priority</u> feature of marina design. Other facilities heavily emphasized by respondents included "Emergency Repair", "Restaurants and Fast Foods", and "Boating Supplies". Some 102 respondents specified "Other" features which they considered highly important to Marina design, including, for example, park, picnic and playground areas, transient accommodations, other retail outlets and marina activities areas.

Finally, Table IV-4 ranks the various Marina facilities according to the respnse received from "users" of Lake Michigan and by type of boat presently owned by respondents. As shown, respondents were unanimous in their choice of "Showers and Restrooms" and "Emergency Repair" as the first and second most important features of a Marina. Respondents, likewise, were close in thier selection of "Restaurants and Fast Foods" and "Boating Supplies" as third and fourth in importance. Unamimity again was observed regarding the importance of "Routine Maintenance" and "Groceries and Convenience Items" (ranked fifth and sixth, respectively). Motorboaters were somewhat more concerned with the inclusion of fishing oriented facilities; sailboaters with transient oriented facilities.

TABLE IV-4

RANKING OF MARINA ANCILLARY FACILITIES BY "USERS" OF LAKE MICHIGAN AND BY BOAT TYPE OWNED BY RESPONDENTS 1)

Facility	Ranking of Facilities By Users of Lake Michigan	Ranking of Facilities By Type of Boat Owned By Respondents		
		Total Respondents	Motor-boat	Sail-boat
Showers/Restrooms	1	1	1	1
Emergency Repair	2	2	2	2
Restaurants/Fast Food	3	3	3	4
Boating Supplies	4	4	4	3
Routine Maintenance	5	5	5	5
Groceries/Conv. Items	6	6	6	6
Winter Storage	7	8	8	7
Fishing Supplies	8	7	7	10
Storage Lockers	9	10	10	8
Fish Cleaning Station	10	9	9	11
Other Ancillary Facilities	11	11	11	9

1) Facilities ranked according to total itemized response.

SOURCE: Chicago Recreational Needs Survey, September - November, 1978.

CHAPTER V

LAKE MICHIGAN FACILITY LOCATIONAL PREFERENCES

Another primary objective of the boating survey was to determine the preferences of boaters regarding the placement of additional boating facilities along the Lake Michigan shoreline. These results are highlighted in this Chapter, and will serve as basic information for the eventual development of a locational strategy for the installation of new boating facilities along the Chicago lakefront.

A. LOCATIONAL CHOICE OF ALL RESPONDENTS

Boaters were asked -- "If you think additional recreational boating development is needed, where would you like to see such development occur?" Respondents were asked to refer to the map on the back of the introductory letter (see text map), and were directed to mark "1" in the box beside the area of first choice (of six possible choices) and "2" in the box of second choice, thereby indicating their locational preferences.

Table V-1 gives the first and second locational choices of all respondents for additional recreational boating development, as well as the response, respectively, of motorboaters and sailboaters, Regarding "first" choice, 26.6% of all respondents indicated a preference for Lakefront Area 1, Lakefront Area 3, and 17.8% of the total response, represented the second most popular Chicago shoreline. "Other Lakefront Areas", specifically that shoreline north

TABLE V-1

FIRST AND SECOND LOCATIONAL CHOICE OF RESPONDENTS FOR ADDITIONAL RECREATIONAL BOATING DEVELOPMENT

Locational Choice	All Respondents Absolute Frequency	All Respondents Relative Frequency	Relative Frequency of Respondents Owning Motor-Boats	Relative Frequency of Respondents Owning Sail-Boats
First Choice				
Lakefront Area I	275	26.6%	27.1%	24.2%
Lakefront Area 2	161	15.6	14.1	22.2
Lakefront Area 3	184	17.8	16.1	22.9
Lakefront Area 4	112	10.8	13.4	2.9
Other Lakefront Areas	187	18.2	17.7	20.4
No Preference	114	11.0	11.6	7.4
Total Respondents	1,033	100.0%	100.0%	100.0%
Second Choice				
Lakefront Area 1	144	21.0%	21.0%	23.7%
Lakefront Area 2	249	36.6	35.4	39.8
Lakefront Area 3	98	14.3	12.2	19.9
Lakefront Area 4	60	8.8	9.6	5.4
Other Lakefront Areas	80	11.7	13.1	7.0
No Preference	52	7.6	8.7	4.2
Total Respondents	683	100.0%	100.0%	100.0%

Source: Chicago Recreational Boating Needs Survey, September - November, 1978

of Chicago, received 18.2% of the total response to this question.

Lakefront Area 2 received heavy emphasis from all respondents as the "second choice" for new and additional recreational boating development or 36.6% of the total second choice response. Lakefront Area 1 was stressed by 21.0% of those respondents who indicated a second choice.

Further, as shown in Table V-1, motorboaters mainly prefer Lakefront Area 1 for new development. Sailboaters, who prefer Lakefront Area 1 by a slight margin, chose to a roughly equal degree Areas 1, 2 and 3, and "Other Lakefront Areas". Lakefront Area 4 was the most unpopular location for new boating facilities development, particularly with sailboaters.

Finally, Table V-2 reveals the first and second choices of respondents for additional recreational boating development by <u>length category of boat owned</u>. As shown, of the 242 respondents to "first choice" who also own craft 15 feet and under in length, 23.6% prefer "Other Lakefront Areas", 21.1% frefer Lakefront Area 1, and 20.7% had no particular preference. While it is indeterminate, it is possible that respondents in this length category considered "Other Lakefront Areas" to mean inland lake areas also. The most popular "second choice" among respondents in the 15 feet and under category was Lakefront Area 2.

Of 382 respondents with craft 16 through 25 feet in length, 31.4% selected Lakefront Area 1 as their first

TABLE V-2

FIRST AND SECOND LOCATIONAL CHOICE OF RESPONDENTS FOR ADDITIONAL RECREATIONAL BOATING DEVELOPMENT BY LENGTH CATEGORY OF BOAT OWNED

	Length Category of Boat Owned		
Location Choice	0-15	16-25	26+
First Choice			
Number of Respondents	242	382	381
Percentage Distribution of Respondents			
Lakefront Area 1	21.1%	31.4%	34.5%
Lakefront Area 2	9.0	15.2	20.7
Lakefront Area 3	13.2	14.6	23.9
Lakefront Area 4	12.4	11.4	9.6
Other Lakefront Areas	23.6	18.6	14.1
No Preference	20.7	8.8	7.2
Total Respondents	100.0%	100.0%	100.0%
Second Choice			
Number of Respondents	125	252	280
Percentage Distribution of Respondents			
Lakefront Area 1	19.2%	20.3%	23.0%
Lakefront Area 2	30.4	35.5	40.9
Lakefront Area 3	9.6	13.6	18.3
Lakefront Area 4	10.4	8.7	7.5
Other Lakefront Areas	17.6	14.0	6.1
No Preference	12.8	7.9	4.3
Total Respondents	100.0%	100.0%	100.0%

Source: Chicago Recreational Boating needs Survey, Sept. - Nov., 1978 locational choice for new development. Some 35.5% of respondents in this length category indicated Lakefront Area 2 as the most popular "second choice".

Lakefront Areas 1, 2 and 3 received almost equal preference as the first choice for new development among the 381 respondents owning boats 26 feet and over in length. Lakefront Area 1 again was the most popular first choice, however. Regarding second locational choice respondents heavily emphasized lakefront Area 2.

B. LOCATIONAL CHOICE BY COUNTY OF ORIGIN

Of all respondents to the locational preference question, 67.1% have boats registered in Cook County, 12.7% in DuPage County, 11.1% in Lake County; with the remaining 9.1% distributed throughout the counties of Kane, McHenry and Will. The survey response from the first three counties is thought to be of sufficient size to say something concerning the "first choice" locational preferences of boaters registering in these counties. These results are given in the following text table:

First Choice Locational Preferences	County of Boat Registration Cook	Dupage	Lake
Lakefront Area 1	28.2%	17.7%	28.4%
Lakefront Area 2	16.4	26.2	6.0
Lakefront Area 3	19.0	28.5	3.4
Lakefront Area 4	14.0	3.1	0.9
Other Lakefront Areas	12.2	11.5	56.1
No Preference	10.1	13.0	5.2

As indicated above, Cook County registrants mainly prefer Lakefront Area 1 for new development; DuPage County registrants, Lakefront Area 3 and 2; and Lake County registrants, "Other Lakefront Areas." These preferences obviously reflect boater accessibility to boating areas.

C. LOCATIONAL CHOICE BY FACILITY DEVELOPMENT PREFERENCE

Table V-3 gives the first locational choice of respondents by "preferred" type of recreational boating development.

As shown, of those respondents favoring Chicago lakefront development, 29.3% prefer Lakefront Area 1, 19.6% prefer Lakefront Area 3, 16.9% prefer Lakefront Area 2, and 12.0% prefer Lakefront Area 4. Some 22.2% of these respondents prefer outside-Chicago development or have no particular locational preference.

Lakefront Area 1 was a heavy favorite for all preferred types of boating facility development. However, with reference to the Chicago shoreline, respondents preferring slip development distributed their locational preferences somewhat more evenly over all areas than did those favoring mooring development. Those respondents preferring summer dry storage and launching ramp development heavily chose Lakefront Area 1, and secondly to a considerably lesser degree, Lakefront Area 4.

Finally, an evaluation of respondents who currently store their boats at marinas outside Chicago revealed that 32.0% of these respondents prefer Lakefront Area 1; 28.8%

TABLE V-3

FIRST LOCATIONAL CHOICE OF RESPONDENTS BY "PREFERRED" TYPE OF RECREATIONAL BOATING DEVELOPMENT

	Preferred Development	Slips	Moorings	Summer Dry Storage	Launching Ramps
Lakefront Area 1	29.3%	29.3%	32.5%	37.9%	33.2%
Lakefront Area 2	16.9	18.6	23.6	10.6	13.8
Lakefront Area 3	19.6	21.7	20.1	10.6	13.5
Lakefront Area 4	23.0	10.9	5.7	15.2	15.0
Other Lakefront Area	15.7	15.0	12.4	22.7	16.9
No Preference	6.5	4.5	5.7	3.0	7.6

Source: Chicago Recreational Boating Needs Survey, September - November, 1978

Other Lakefront Areas; 13.9%, Lakefront Area 3; 9.8%, Lakefront Area 2; 9.0%, Lakefront Area 4; and 6.5%, no locational preference.

D. LOCATIONAL CHOICE OF LAKE MICHIGAN USERS AND NON-USERS

Table V-4 indicates that the locational preferences of both "users" and "non-users" of Lake Michigan (during the 1978 boating season) roughly parallels the preferences for all respondents, as analyzed above. "Users" prefer Lakefront Areas 1 and 3 to a like degree. "Non-users" prefer Lakefront Area 1 to a considerable degree; and Lakefront Areas 2 through 4, within Chicago, to a much less but roughly equal degreee. Users and non-users heavily prefer Lakefront Area 2 as their "second" locational choice for new and additional boating facilities development.

TABLE V-4

FIRST AND SECOND LOCATIONAL CHOICE FOR ADDITIONAL RECREATIONAL BOATING DEVELOPMENT OF RESPONDENTS WHO USED AND DID NOT USE LAKE MICHIGAN DURING THE 1978 BOATING SEASON

	Used Lake	Did Not Use Lake
First Choice		
Lakefront Area 1	23.3%	29.9%
Lakefront Area 2	18.0	12.9
Lakefront Area 3	23.6	9.8
Lakefront Area 4	10.9	10.6
Other Lakefront Areas	18.6	18.4
No Preference	5.6	18.4
Second Choice		
Lakefront Area 1	24.2%	17.3%
Lakefront Area 2	36.5	37.0
Lakefront Area 3	14.6	14.0
Lakefront Area 4	8.9	7.4
Other Lakefront Areas	8.0	15.2
No Preference	6.9	9.1

Source: Chicago Recreational Boating Needs Survey
September - November, 1978

CHAPTER VI

LAKE MICHIGAN SHELTERED WATER DEVELOPMENT NEEDS

According to Policy Number Six of The Lakefront Plan of Chicago:

> "There is a great and increasing need for more usable lakefront land and facilities. To avoid overtaxing existing recreational space and to improve the functioning of the lakeshore parks, expansion of lakefront park space is indicated. New park space should be provided through landfill, which could provide for shoreline continuity, and through shore extensions, peninsulas, and off-shore islands."

One aspect of lake-oriented land development would be the provision of "sheltered water" areas in Lake Michigan, thereby dramatically increasing the opportunity, particularly, for small boat activity on the Lake. The question -- "Would you use this boat on Lake Michigan if sheltered water (areas protected by islands, land extensions, and breakwaters) were available?" -- addresses the extent to which this opportunity would be seized upon by area boaters. The following paragraphs summarize these findings.

A. DESIRE FOR SHELTERED WATER DEVELOPMENT BY ALL RESPONDENTS

Of the 1,314 area boaters who responded to the question, 966, or 73.5%, indicated that they would use Lake Michigan if sheltered water were available, while 348, or 26.5%, would not use the Lake. (During the 1978 boating season, 41.9% of respondents "used" Lake Michigan; 58.1% did not). The distribution of these respondents by county of boat registration is given below:

County of Registration	If Sheltered Water were Available: Would use Lake	Would not use Lake
Cook	67.3%	50.9%
DuPage	13.1	12.4
Kane	1.9	4.9
Lake	11.3	13.9
McHenry	3.0	9.2
Will	3.4	8.7
Total Respondents	100.0%	100.0%

As revealed above, boaters residing in outer counties would use Lake Michigan to a considerably lesser degree, relatively speaking, than near lake counties if sheltered water were available. Of total respondents to the use question, 63.0% have boats registered in Cook County. Of these, 78.6% would use the lake while 21.3% would not, given sheltered areas. DuPage County registrants follow a roughly equal distribution. For Lake County registrants, around 70.0% would use the Lake. However, of Kane, McHenry and Will County registrants, only one-half would use the Lake assuming sheltered water development.

B. DESIRE FOR SHELTERED WATER DEVELOPMENT BY CHARACTERISTIC OF BOAT OWNED

Table IV-I shows the desire for sheltered water development by length and type characteristic of boats owned by respondents. Of 433 respondents with boats 15 feet and under in length, 52.5% would use Lake Michigan if sheltered water were available; 47.8% would not use the Lake. For respondents in the 16 through 25 foot category (533 total), this distribution is 79.7% and 20.3%. Some 90.9% of the 415 respondents with craft 26 feet and over would use Lake Michigan if sheltered water were available; 9.1% would not. The following text table compares present usage of Lake Michigan with potential usage by boat length category:

Boat Length Category	Percent Who Used Lake Mich. during 1978	Percent Who Would Use Lake Michigan if Sheltered Water were Available
15 Feet and Under	10.9%	52.2%
16 Through 25 Feet	40.0	79.7
26 Feet and Over	78.8	90.9
Total Respondents	41.8%	73.5%

These figures clearly demonstrate that increased opportunity for boating activity on Lake Michigan, which would result from sheltered water development, would in fact result in real increases in lake usage. Activity on the Lake would increase by five-fold for boats 15 feet and under, and double for boats 16 through 25 feet in length.

Meanwhile, the greatest real increases in Lake Michigan boating activity resulting from sheltered water development would be accountable to motorboats. As noted in Table V-1, assuming development, 70.9% of area motorboats would be used on the Lake, as opposed to 34.3% which were used on the Lake during the 1978 boating season. In 1978, 80.2%

of sailboats were used on Lake Michigan, while 92.1% would be used on the Lake if sheltered water were available. As revealed in Table V-I, only 7.9% of area sailboats would not be used on the Lake if development occurred.

The usage of trailered boats on Lake Michigan would be reversed from 1978 levels if sheltered water were available. In 1978, 25.9% of trailered boats were used on the Lake. Assuming sheltered water development, 71.3% of trailered boats would be used on the Lake.

C. ANALYSIS OF RESPONSE OF NON-USERS OF LAKE MICHIGAN TO THE PROVISION OF SHELTERED WATER

In 1978, 58.1% of area boaters who responded to the survey did not use Lake Michigan. Of this group, in the event of sheltered water development, 56.9% would use Lake Michigan, while 43.1% would not use the Lake. Thus, well over one-half of those boaters who do not now use the Lake would do so if sheltered water areas were available.

The following text table gives the first and second locational choices for new boating facilities development of respondents who did not use the Lake during 1978 but would if sheltered areas were available:

Area Preferred	First Locational Choice	Second Locational Choice
Lakefront Area 1	33.9%	18.9%
Lakefront Area 2	14.8	39.5
Lakefront Area 3	10.2	15.3
Lakefront Area 4	12.2	6.3
Other Lakefront Areas	16.8	12.1
No Preference	12.1	7.9
Total Respondents	100.0%	100.0%

Lakefront Area 1 received considerable stress from present non-users of Lake Michigan who would use the Lake in the event of sheltered water development. Lakefront Area 2 was the popular second choice of these same respondents.

The present boating activity pattern of non-users who would be users of the Lake given sheltered areas is shown below:

Boating Activity	Number of Responses	Percent Distribution
Cruising/Sailing	258	35.7%
Water Skiing	148	20.5
Use at Slip/Mooring	43	5.9
Racing	15	2.1
Fishing	231	31.9
Other Activities	28	3.9
Total Responses	723	100.0%

As shown, among these boaters, cruising or sailing, fishing, and water skiing are activities having high participation.

The ancillary facility requirements of respondents who did not use Lake Michigan during 1978, but would if sheltered water areas were provided, roughly reflect those needs of all area boaters. Some 17.0% of these respondents expressed a need for new restrooms; 15.1% for emergency repair stations; 13.1% for restaurants/fast foods; 11.9% for boating supplies; 9.4% for fishing supplies; 10.3% for routine maintenance; and 9.2% for grocery items.

The above analysis indicates that current non-users who would use Lake Michigan if sheltered areas were available would prefer the development of such areas along Lakefront Area 1; would use such areas primarily for cruising, sailing and fishing activities; and would frequent establishments selling foods products, and basic boating and fishing supplies and services. The vast majority of these boaters own motored craft under 20 feet in length.

TABLE VI-1

DESIRE FOR SHELTERED WATER DEVELOPMENT BY CHARACTERISTICS OF BOATS OWNED BY RESPONDENTS

Boat Characteristics	Would Use Boat on Lake Michigan if Sheltered Water Were Available	Would Not Use Boat on Lake Michigan if Sheltered Water Were Available
Percentage Distribution of respondents by length category of boat owned		
15 Feet and Under	52.2%	47.8%
16 Through 25 Feet	79.7	20.3
26 Feet and Over	90.0	9.1
Percentage Distribution of respondents by type of boat owned		
Motor	70.9%	29.1%
Sail	92.1	7.9
Other 1)	45.8	54.2

1) Includes Canoes, Houseboats, etc.

Source: Chicago Recreational Boating Needs Survey, September - November, 1978

CHAPTER VII

ANALYSIS OF DEMAND INDICATORS

A. INTRODUCTION

One of the principal objectives of the Chicago Recreational Boating Study was to develop estimates of demand for boating facilities (berthing and launching) along the Chicago shoreline.

The term, "berthing demand" in the context of this report refers to boatowners who presently do not berth their boat in any Chicago Park District Harbor, but who have indicated a predisposition or willingness to do so if space were available. A measure of latent demand for such facilities by people who do not currently own a boat but who might purchase a boat if space to berth it were available is beyond the scope of this study. "Launching demand" refers to the demand for launch facilities indicated by those who currently do not launch from the Chicago shoreline due to problems of congestion and those who do currently launch but whould launch more often if congenstion were less of a problem.

In formulating the questionnaire, it was decided to derive demand indicators indirectly rather than directly. A direct approach would entail asking the respondent whether or not he would take a lakefront berthing space if space were available at a competitive price. It was felt that this approach would lead the respondent to "second-guess" the purpose of the study and thus not give a true reflection of boater attitudes.

B. HARBOR BERTHAGE DEMAND

The demand for berthages along the Chicago lakefront is based on a variety of indicators. To constitute a "demander", a boatowner must have given a proper response to one or a combination of these factors. The following is a list of factors included in the questionnaire which were used to indicate a desire for Chicago Lakefront berthing space:

Boater has sought CPD space and is either: waiting, gave up, other;

Boater has not sought CPD space because he felt he had no chance, or has not done so but intends to try;

Boat was used on Lake Michigan but kept in a private marina, or marina outside Chicago;

Boater indicates he favors further lakefront development and indicates preference for slips, moorings, or dry storage;

Boater favors further lakefront development in any of the four Chicago lakefront areas (see map Exhibit B1);

Boater incurs berthing fees for greater than $10 per foot of boat; and

Boater would use Lake Michigan if sheltered water were available.

Taken individually, possibly only one of these factors (i.e., Boater sought CPD space, but has not obtained it) can be taken as sufficient in itself to indicate demand. However, a combination of several factors may provide a much stronger indication of demand for lakefront berthage. Therefore, these indicators were used to develop four mutually exclusive demand groups. The grouping was defined as follows:

Demand Group 1: Boaters who had not used Lake Michigan due to no available berth, access problems, or other, (Question 7) had sought a CPD space but had not obtained it (Question 6).

Demand Group 2: Boaters who had not used Lake Michigan due to no available berth, access problems, or other and who had not sought CPD space thinking he had no chance or still intends to try.

Demand Group 3: Boaters who had used Lake Michigan; kept at other than CPD facilities; and had sought CPD space but had not obtained it.

Demand Group 4: Boaters who had used the Lake; kept at other than CPD facilities; and had not sought CPD space thinking there was no chance, or intending to try.

Although not quantifiable, it may be assumed that these four groups differ in their intensity of demand. For example, a boater who has sought CPD space but does not use his boat on Lake Michigan due to lack of seasonal berths (Demand Group 1) is probably more apt to accept berthing once available than one who did not seek CPD space but used the Lake anyway (Demand 4). For purpose of analysis, Demand Groups 1 and 3 will be considered "strong demanders" and Groups 2 and 4 will be considered "moderate demanders".

Analysis of data revealed that the following numbers of boaters by demand group and boat length category

	0-15	16-25	26+	Total
	Length Category			
Group 1	0	4	14	18
Group 2	5	26	17	48
Group 3	3	34	37	74
Group 4	2	28	29	59
Total	10	92	97	

Combining demand groups 1 with 3 and 2 with 4 gives a count by boat length of "strong" demanders and "moderate demanders".

	0-15	16-25	26+
Demand Strength	Length of Boat		
Strong	3	38	51
Moderate	7	54	46

Expansion of the data by boat length category to represent the entire six-county area reveals the following numbers of boats in each length category that could be expected to exhibit strong and moderate demand for future Chicago lakefront berthing space.[1]

	0-15	16-25	26+	Total
Demand Strength	Lengths of Boat			
Strong	303	2,856	597	3,757
Moderate	707	4,060	538	5,305
Total	1,010	6,917	1,135	9,062

[1]The process by which survey results are expanded to the total population, and the validity of this technique is discussed at the end of this section.

These figures indicate that in the six-county metro area a strong demand for additional lakefront berthing may be felt from a total of about 3,750 boaters, with an additional 5,300 boaters with a moderate propensity to seek lakefront berthing.

C. LAUNCHING RAMP DEMAND

The demand for additional launching facilities along the Chicago lakefront must be treated in a different manner than the demand for berth space because in the case of ramps, a current user may also be a demander. In the case of slips, however, if a boater received berth space, he no longer can be considered a demander.

The first step in quantifying launching ramp demand was to identify all trailered or trailable boats. The most obvious indicators that a boat is trailered are that 1) the boat was kept at one's permanent home or 2) CPD space was not sought because boat is trailered (see Questions 4 and 6). Other indicators include the boat being too small to use on Lake Michigan and a total launch ramp use of greater than 2 times in the boating season.

Boats which fit any one or more of these criteria were selected and identified as potentially trailerable boats. From this sample three demand groups similar to those for berthing space were identified for ramp demanders. These groups can be summarized as follows:

Group 1 (Strong demander) - Those trailerable boats that are used on Lake Michigan, favor further lakefront development (Question 16), and find ramps either the preferable or an acceptable type of lake access facility (Question 17)

Group 2 (Moderate demanders) - Those trailerable boats which are not used on Lake Michigan for reasons of lake access or other (Question 7)

Group 3 (Sheltered water demand) - Those trailerable boats which are not used on Lake Michigan because of being too small or boater preference for other water bodies, but would boat on the Lake if sheltered water were provided (Question 7 and 8). This group of boaters was considered launch ramp demand although if sheltered water were provided these boaters may seek slips of other seasonal berthing.

Analysis of survey response revealed the following number of boaters by demand group and boat length category:

Strength of Demand	0-15	16-25	26+	Total
	Length of Boat			
Demand Group 1	32	106	2	140
Demand Group 2	27	43	0	70
Subtotal	59	149	2	210
Demand Group 3	147	83	4	234
Total	206	232	6	434

Expanding the data for demand groups 1 and 2 shows that a substantial number of area boaters (approximately 11,200) favor further ramp development along Chicago's lakefront, with an additional large subgroup (5900) who would probably make use of new ramps if development occurred.

	0-15	16-25	26+	Total
	Length of Boat			
Demand Group 1	3,232	7,971	23	11,226
Demand Group 2	2,727	3,233	0	5,960
Total	5,959	11,204	23	17,186

Expansion of the sheltered water demand group reflects the possible tremendous increase in the use of Lake Michigan, primarily by small boats, reported earlier in Chapter VI.

	0-15	16-25	26+	Total
	Length of Boat			
Sheltered Water Demand	14,847	6,242	47	21,136

It is important to note two important factors in relation to the demand estimates just presented. First, the dramatic increase in the use of Lake Michigan by small boats with the creation of sheltered water is dependent upon sufficient facilities being provided to accommodate them. Secondly, estimates of demand for harbor and launching facilities may very well be underestimates. For example, if lakefront expansion were to occur, moderate demanders may very well become strong demanders who actively seek berthing space, and people who presently do not even own a boat may buy one, anticipating a berth will be available.

D. EXPANSION OF SURVEY DATA

The expansion of survey data to the overall boater population is necessary in order to make estimates of the total number of boaters who likely exhibit a certain characteristic or hold a specific attitude toward Lake Michigan boating. As a point of information in the survey methodology it was decided that a return of approximately 400 responses was needed for each of the three boat length categories, these being 0-15 feet in length, 16 to 25 feet, and 26 feet and greater. Since there are far fewer total boats in the upper length category, the sample return of 450 from this category is a much higher sampling fraction than for the smaller boat length categories. The "raw" survey data, therefore, is biased heavily toward larger boats because of this "over-representation". The expansion process must take into consideration the different sampling fractions for each of the 3 boat length categories.

The following figures represent the per length category boat population, the survey return realized for that length category, and the resultant sampling fraction:

	0-15	16-25	16+
	Length of Boat		
Six-county boat registration	48,331	40,865	5,290
Survey Return	477	544	450
Sampling Fraction	.0099	.0133	.1850

The reciprocal of the sampling fraction will give an expansion for each length cateogry:

0-15	101.0
16-25	75.2
26+	11.7

Therefore, reporting characteristics for the overall boating population first requires that the data be sorted by length category. The data can then be expanded using the above factors. The attempt has been made throughout the text of this report to distinguish between "raw survey results," which are biased toward large boats, and "estimated population characteristics," the results of raw data expansion. When reporting characteristics within a given length category, no expansion need be done.

The most critical aspect of this report is the estimation of existing boater demand for lakefront facilities. Because of the implications that such estimates may have on the planning of future boating facilities, an analysis of the validity or reliability of such estimates is mandatory. Social survey statistical methodologies have been employed to test the validity of the demand figures presented earlier in this chapter. The statistical analysis of harbor berthing demand is described in detail below. It is assumed that the statistical analysis of ramp demand estimates will result in similar measures of validity.

Estimations of Proportions: The following formula was used to estimate the proportion of the overall boater population that could be expected to fit into the "strong" and "moderate" demand categories developed earlier:

$$P = \left[\frac{1}{f_1} S_1 + \frac{1}{f_2} S_2 + \frac{1}{f_3} S_3\right] / N$$

Where: P = estimated proportion of boaters fitting demand categories

S = number of respondents within each length category that falls into each demand category

N = total number of boaters in 6-county boating fleet

f = sampling fraction for each length category

This result in:

Strong demand = 3.0% overall boating population =		2834 boats
Moderate demand = 5.6% overall boating population =		5291 boats
	TOTAL	8125 boats

These demand estimates are reasonably close to estimates generated earlier in a slightly different manner.

Computation of Standard Deviation: The computation of standard deviation for the above estimates will indicate the degree to which researchers and planners can accept these estimates as valid.

$$V_p = \frac{1}{N^2}\left[\frac{1}{f_1^2} n_1 p_1 (1-p_1)(1-f_1) + \frac{1}{f_2^2} n_2 p_2 (1-p_2)(1-f_2) + \frac{1}{f_3^2} n_3 p_3 (1-p_3)(1-f_3)\right]$$

Where n = number of respondents in each category

Standard deviation = $\sqrt{V_p}$

The use of these formulae results in the following measures of standard deviation for the two demand estimates:

S.D. (strong)	= 0.0045
S.D. (moderate)	= 0.0063

The significance of a standard deviation measure in statistical theory is that the researcher is provided with a range of possible true population values, of which the sample proportion is an estimate. Associates with this range is a level of confidence with which the researcher can state that the true population value actually lies within that range of values. For planning and investment purposes, a high level of confidence is often required and a confidence level of 95% is considered an acceptable level. A confidence level of 95% is delimited by a range of values defined by the sample proportion ± two standard deviations. Thus, it can be said that with 95% confidence, the true population value will fall within two standard deviations of the sample proportion. In a similar manner, a 68% confidence level is defined by one standard deviation on either side of the sample proportion.

Using the standard deviations and sample proportion calculated earlier, the following possible ranges in number of boats in each demand category have been calculated at a 95% confidence level. The low estimate represents the sample proportion minus two standard deviations; the high estimate represents the sample proportion plus two standard deviations.

	Low Estimate	High Estimate
Strong demand	1984	3684
Moderate demand	4063	6519
TOTAL	6047	10203

Although the population estimate falls within a wide range at 95% confidence level, a crucial factor from a planning standpoint is that a <u>very</u> <u>conservative</u> estimate of <u>existing demand</u> totals over 6,000 boats. Since further development of boating facilities will be done in a planned step-wise approach, and since no single facility along the Chicago lakefront will accommodate close to 6,000 boats, the decision upon a single estimate of demand for harbor berthings is unnecessary. The results of this survey indicate that substantial demand exists even using very conservative estimates. The true or realizable demand will probably be much greater than this low estimate of 6047.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

A. INTRODUCTION

This final Chapter will be devoted to conclusions and recommendations with respect to two major topics. First, the strengths and weaknesses of the study methodology will be assessed, with recommendations for improvement of potential future surveys. Secondly, the results of the survey will be analyzed with a focus on the implications such results have upon the long-range planning of lakefront boating facilities. Further research needs are also identified.

B. VALIDITY AND RELIABILITY OF STUDY APPROACH

The validity of the survey results depends upon the quality and accuracy of many constituent components; the randomness of the sample, the accuracy of name and address information, and accuracy of coding and keypunching procedures, etc. All areas in which error could have occured shall not be addressed, instead just those aspects of the study which apparently did influence the validity of results will be discussed.

A basic tenent of survey research is that a high percentage of response from a random sample should be sought. In studies where response rate is low, the possibility of biased results is increased. It was decided that an intense follow-up approach would be employed in this study and the return of 70.7% is a good indication of the effectiveness of this approach. However, despite the high response rate, it is felt that response from non-Lake Michigan users is lower than response for boaters who used the Lake. This effect to some degree is unavoidable when the questionnaire, of necessity, is geared to Lake Michigan boating. The transmittal letter which accompanied the questionnaire stressed that a response was necessary whether or not the boat was still owned or used. Response rate from non-Lake Michigan users may have been increased if it was also stressed that a response was needed whether or not the boat was used on Lake Michigan.

The problem of non-response by those who did not use Lake Michigan in 1978 was also present in relation to specific questions, which were worded in such a way as to refer only to Lake Michigan. For example, question 13 was probably misinterpreted by many to refer only to Lake Michigan launchings. Information was sought on launchings at smaller lakes and rivers in the 'Other Areas' row. However, this was not made explicit. A thorough pre-test of the questionnaire may have pinpointed such problems. Time and money constraints, however, permitted only a cursory pre-test.

In formulating the questionnaire, consideration was given as to how best to elicit indicators of demand for Chicago Lakefront berthage and launch facilities. In previous studies, the direct approach was used. This would have entailed posing a question such as "Would you accept a berthage space along the Chicago lakefront if one were available at a competitive price?" It was felt, however, that such an approach could be construed by critics as a leading question. To avoid possible criticism along such lines it was decided to use indirect indicators as the basis for making demand estimates. These indirect indicators are identified in Chapter VII. It is recommended that in subsequent studies, possibly both the direct and indirect approach to demand estimates be used. Each will provide a cross-check for the other.

The four-page length limit seems to have been a good decision and although this required the elimination of a few desirable questions, it is felt that even at four pages, response to later questions was dwindling. This effect would be even greater with a longer questionnaire.

The use of a private firm to place the data directly on tape from the questionnaire and verify it, saved researchers the headaches associated with computer cards. THis procedure also made it unnecessary to code sequence numbers into the body of the questionnaire. This method of handling the data is recommended whenever the budget will allow it.

C. LONG-RANGE PLANNING IMPLICATIONS

The Chicago Recreational Boating Needs Study was undertaken to serve as a guide for planning of boating facilities along the Chicago lakefront. In some respects the results confirm intuitive ideas held by researchers at the outset.

A few results were suprising. The following is a discussion of survey results by the identified study objectives, and the implications these results have upon future boating facility development.

1. Fleet Characteristics

A very generalized statement may be made that large sailboats dominate the Chicago lakefront. More sailboats than motorboats are now kept at CPD facilities even though there are far less sailboats owned than motorboats in Illinois, even in the largest length category. Sailboat owners also have a greater propensity to seek CPD space. Large boats, as one would expect, dominate the lakefront. However, it was surprising to find that very close to half of all boats in the largest length category are now kept at CPD harobrs throughout the boating season. The great majority of the remainder are kept at harbors or marianas outside of Chicago. This leads to the conclusion that in the Chicago area owners of large boats, and those trying to sell large boats, are quite dependent upon space being available along the Chicago waterfront. This supports the contention by some boat sales firms that their business is severely limited by the unavailability of berth space.

It is anticipated that the character of Lake Michigan boating will continue to be dominated by large sailboats. The survey indicates that a much higher percentage of motorboat owners are considering the purchase of sailboats than the reverse. This may in part be due to escalating fuel prices. Regardless of the cause of this trend, it is one which must be kept in mind, since sailboats require different harbor specifications than do motorboats. Sailboats generally have greater draft than do motorboats, and because of masts, no overhead obstructions (e.g., bridges) can be allowed.

D. HARBOR FACILITIES AND SERVICES

Respondents were asked to identify the facilities and services that are most important to a harbor or marina. Fuel stations and pumpout were excluded from this analysis since these two services would be considered mandatory by virtually all boaters. Table IV-4 shows how each choice ranked. Restrooms, emergency repair facilities, and restaurants were ranked 1, 2, 3 by the overall response.

Greater consideration should be given to the possible inclusion of such facilities and services in new harbor developments as well as at existing facilities. A more in-depth discussion of ancillary facilities is included in the report.

E. BERTHING PREFERENCES

The analysis presented earlier of responses to berth type preferences (question 16) indicated that slips were by far the most preferred berthing mode; with moorings and dry storage being for many boaters an acceptable alternative. The convenience that a slip provides would serve to make it the obvious choice of the boater. It must be realized, however, that the respondents in answering this question were not asked to consider the cost differential between slips and other berthing modes, including trailering. Although slips are also the preferable mode in terms of the number of boats that can be accommodated in a given water area, more indepth analysis of boater willingness to pay for the different berthing types should be undertaken prior to any mass conversion of slips. One important aspect of this recommended study is to what degree boaters would accept dry-stack storage. The economy of space realizable with this mode of storage makes it an attractive alternative from the standpoint of the developer.

F. SAFETY PROBLEMS

Harbor berthers and ramp users differed in their ranking of safety problem, ranking harbor crowding and ramp crowding respectively the most important. This in itself is an indication of the need for additional facilities.

Although total response by boaters who berth in a harbor or marina indicated that harobr crowding is the most serious safety problem, it is significant that CPD harbor users ranked vandalism as the biggest safety problem. Methods for increasing the security of the harobr area and boats within its confines are enumerated in the report.

Inadequate safety patrolling and inadequate boating safety education programs were also ranked relatively high.

Several respondents, however, commented that adequate safety educations programs exist but too few boaters are aware of them and/or take advantage of them. This indicates the need for better publicity of such programs. The Chicago Park District might also consider making the successful completion of such a safety course a prerequisite for securing CPD berthing.

G. EXISITING EXCESS DEMAND ESTIMATES

The demand estimates presented earlier, even if lower limits are used, indicate that a substantial number of boaters are seeking CPD facilities or would do so if they perceived obtianing a space as a resonable possibility. These demand estimates in no way reflect the possible "induced" demand, those who would buy boats if there were a reasonable possibility of obtaining berthing space.

The implication of these estimates is that any incremental increase in berthing space will be immediately filled. Although this was assumed to be the case, statistically valid data now substantiate the assumption. It is recommended that, as lakefront development proceeds, studies similar to this one be undertaken at 4-5 year intervals to monitor changes, the demand for berthage and facilities, and perceived operational and safety problems.

H. EFFECTS OF CREATING SHELTERED WATER

Chapter VI of this report cited the large possible increases in the use of Lake Michigan by area boaters if sheltered water were provided through island or land extension projects. These large increases would only be realized if many new facilities for handling boat traffic were included as part of the lakefront project. It would be reasonable to assume that the percentage increase in Lake use by the several boat length categories would never be realized. The figures do, however, shed light on the magnitude of the problem of satisfying all boater "demand" for Lake Michigan access.

The creation of sheltered water would indeed change the complexion of lakefront boating. The use of smaller motorboats and day sailers would likely increase substantially. Water skiing as an activity might become much more popular. Fishing may change in terms of numbers and species, although such changes would only be identified by an indepth environmental impact assessment. Along with such changes in boating patterns, there would be changes in the demand for berthing facilities and ancillary services and facilities. Dry moorings and dry-stack storage may become much more important berthing alternatives. Such changes that sheltered water would effect should be identified in full and incorporated into the planning and design process.

APPENDIX I

SURVEY METHODOLOGY

Previous Studies

In preparing for the administration of the Chicago Recreational Boating Survey, previous boating surveys were reviewed for format and content. This enabled researchers to build upon already proven techniques. Three previous boating surveys, given special attention, were the 1974 Corps of Engineers Lake Michigan Regional Boating Survey and the 1971 and 1974 Michigan Recreational Boating Studies. The latter two studies served as models for the eventual layout design of the survey instrument used in this study. Consideration of these previous studies also aided in the setting of specific study objectives and in determining ways in which to obtain required information. The major objective of the survey was to collect information which could aid in the assessment of current"demand" for new lakefront boating facilities and promote the proper siting and design of any such facilities.

Sampling

It was determined that the most crucial factor of a boating fleet in regard to the planning of a new boating facility is the length distribution of potential users of the facility. It was therefore decided that the sampling procedure should provide a basis upon which valid decision on facility design could be made for boats of various length categories within the boating fleet. Statistical theory dictates that for the proportional sampling required in order to make valid statements with respect to different length categories, a minimum of 400 responses per length category would be needed.

Boats are licenced in one of two manners in Illinois. The Illinois Department of Conservation registers any boat greater than 12 feet in length or mechanically propelled while the United States Coast Guard documents any boat exceeding 5 net tons, which includes most boats over 25 feet in lingth. It was determined that very few boats would be regestered with both agencies; therefore, negating the possibility of double sampling. A further analysis of the Department of Conservation boat registry enabled researchers to determine a workable boat length category breakdown. Registrations are filed in one of five length categories: 0-15 ft., 16-25 ft., 26-39 ft, 40-60 ft., 65+ feet. Since very few boats are registered in the upper three length categories, and Coast Guard documented are virtually all above 26 ft. in length, it was decided to combine all boats registered with the Department of Conservation as 26 ft. or greater as one category. The categories of 0-15 ft. and 16-25 ft. as registered with the Department of Conservation would form the other two length categories utilized in this study.

The actual sampling of registered and documented boats required that certain decisions be made. First, it was decided that the target level or response would be 400 responses per length category. Such a sample size would allow the researcher to make statements abouve specific length categories with 95% confidence. Secondly, it was decided that with an intensive follow-up procedure, a return of 66% could be realized. Therefore, it was decided that approximately 750 boats per length category would be surveyed. The sampling procedure resulted in the following numbers of boats in each length category:

	0-15	16-25	26+	
Department of Conservation	872	786	433	
U.S. Coast Guard	___	___	301	Total
	872	786	734	2,392

Inexactness in the computer sampling procedure that was used accounts for the divergence between the actual sample and the 750 target number per length category. Given a handful of unusable names and addresses, 2,375 questionnaires were mailed in the first mailing of which approximately 2,240 were delivered to the addressee.

Mailing and Follow-up Procedures

The first mailing consisted of questionnaire (Exhibit A) a transmittal letter with map (Exhibit B, B1) and a Business Reply return envelope (Exhibit C), all in a window envelope (Exhibit D). The letter explained the purpose of the survey and encouraged the boatowner to complete and return the questionnaire regardless of whether or not he still owned the boat. The map on the reverse side of the letter was to help the respondent answer a couple questions on the questionnaire. The Business Reply envelope enabled the boatowner to mail the questionnaire without incurring the cost of postage. All correspondence utilited the Illinois Coastal Zone Management Program letterhead.

As returns were received, the use of a sequence number coded on the questionnaire enabled researchers to keep track of those who had and who had not responded. Two weeks after the initial mailing, a postcard (Exhibit E) was mailed to remind the boatowner to compelte and return the questionnaire. Finally, four weeks after the initial mailing those wo had not yet responded were mailed another questionnaire with a second transmittal letter (Exhibit F). Each mailing was followed by a rush of returns which slowly dwindled until another mailing brought another rush of returns. Returns were compiled until December 1, the prearranged date set for closing the returns.

The following is a summary of the mailing follow-up schedule:

September 29	Mailing first questionnaire
October 14	Mailing Post Card
October 28	Mail second Questionnaire
December 1	Cut-off date for returned questionnaire

Coding

The questionnaires were coded by hand, entering proper codes in the coding column at the right-hand of each page.

The coding scheme is detailed in the code book (Exhibit G). After coding, the questionnaires were sent to a private firm which tabulated the data on magnetic computer tape.

Questionnaire Design

The primary objectives in designing the layout of the questionnaire were to keep the questionnaire short and easily readable, yet soliciting all required information. It was decided that 4 pages should be a maximum length - that additional pages would discourage response. The readibility of the questionnaire was enhanced through the use of shading to emphasize certain items and dark, solid lines separating each question. The use of varying print sizes and the use of colored paper helped to make the questionnaire more attractive, thus promoting response. As much as possible, the blocks in which respondents indicated their answers were located adjacent to the coding column to facilitate coding. The coding column itself was lightly shaded to distinguish it from the body of the questionnaire. Since many boaters own more than one boat, it was emphasized through bold printing that all questions were to be answered for the boat that was randomly selected. If this point had not been emphasized, the general tendency would have been for the boaters to answer for the boat used most often or to answer for two or more boats. To do so would result in exaggerated estimates of boating activity.

Conclusions, Recommendations and Survey Design

It is felt that the 70.7 response rate which was realized by this study indicates the effectiveness of the follow-up procedures used. The lower rate of response that was realized for boats in the smallest length category and for outlying counties was probably due to the feeling on the part of boatowners that the survey did not apply to them. Although the transmittal letter stressed that a response was needed from all boaters whether or not they still owned their boat, it was not stressed that the survey applied to those who did not boat on Lake Michigan as well as those who did. If this had been stressed an even higher response rate may have been realized.

The misconception on the part of some boatowners that only Lake Michigan boating issues were being sought was furthered by the improper workding of some of the questions. For example, in Question B, which requested information on launching behavior, the term "Other areas" is nowhere defined as including inland lakes and rivers as well as Lake Michigan shoreline. This omission probably caused many people to pass over this question, assuming that only Lake Michigan launchings applied. It is also anticipated that much expenditure data was lost in Question 12 because non-Lake Michigan boaters felt this question did not apply to them. Specific wording problems such as these are bound to occur in any first-attempt survey such as this one. Time and money constraints had not permitted a thorough pretesting of the questionnaire which may have pinpointed problems such as these.

In formulating the questionnaire, consideration was given as to how best to elicit indicators of demand for Chicago lakefront berthage and launch facilities. In previous studies, the direct approach has been used. This would have entailed posing a question such as "Would you accept a berthage space along the Chicago lakefront if one were available at a competitive price?" It was felt, however, that such an approach could be construed by critics as a leading question so to avoid possible criticism along such lines it was decided to use indirect indicators as the basis for making dmeand estimates. These indirect indicators are identified in Chapter . In hinsight, it is recommended that in subsequent studies, possibly both the direct and indirect approach to demand estimates be used. Each will prvide a corss-check for the other.

BOATING QUESTIONNAIRE CODEBOOK

Question No.	Column No.	Var. Name	Code
-	1-4	Seqno	If Coast Guard boat (ie. 9---), code in exactly as given (eg. 9248) If Dept of Cons. boat (5-digits), code in only 2nd through 5th digits (eg 41317 = 1317)
-	5	County	Dept. of Cons. boats - first of the 5 digits C.G. boats - county must be looke up. Then 1=Cook 4=Lake 2=DuPage 5=McHenry 3=Kane 6=Will 0=Missing
-	6	Lcat	Refer to Question 2. (length) 1=o to 15ft. 0,9 = Missing 2= 16 to 26ft. 3= 26 and up
1	7	Own	1=Yes 2=No/First M. 3=No/SecondM. 0=missin
2	8-9	Length	Enter actual lenght in feet 0=missing
	10	Type	1=Motor 2=Sail 3=Other 0=missing
3	11-12	Years	Enter years owned (eg. 3years = 03)
4	13	Kept	1=Peranent home 0=missing 2=Summer cottage 3=Harbor outside Chicago 4=CPD harbor 5=Private Marina
	14	Cpd	If Column 13 is (4): 1=Montrose 5=Burnham 0-Missing 2=Belmont 6=51th Street 3=Diversey 7-Jackson 4=Monroe
	15-16	Priv	If boat was kept at CPD facility but not specified, enter 9
5	17	Berth	1=slip 3=summer dry storage 0=N/A 2=mooring
	18-20	Fee	Enter actual dollar amount--If no $ figure entered after indication of rental, enter 000.
6	21	Seek	1=yes 2=No 0=missing
	22	Outcome	1=Obtained space 2=Still waiting 3=Gave up 4=Other 0=Missing or N/A

6(cont.)	23	Whynotl	0=missing or N/A 1=boat is trailered 2=too expensive 3=prefer other areas 4=intend to try 5=had no chance 6=other 9=more than 1 response checked
7	24	Used	1=yes 2=no 0=missing or N/A
	25	Whynot2	1=boat too small 2=prefer other areas 3=no berthage available 4=lake access problems 5=other 9=more than 1 response checked
8	26	Woodu	1=yes 2=no 0=missing
9	27-29	Cruise	Enter percentage of time in each activity.
	30-32	Ski	If no entry for a given activity, leave blank.
	33-35	Atslip	NOTE: Coding spaces and questionnaire entries
	36-38	Race	are not in same order
	39-41	Fish	(eg. 25% = 025) 0=missing or None
	42-44	Other	
10	45	Crew	Enter average size of crew. 0=10 or more
11	46-48	Stockl	1=Coho 4=Brown Trout 0=missing or N/A
		Stock2	2=Chinook 5=Steelhead 3=Lake Trout 6=Other 0=N/A 9=more than three or all
12	49-80	(Expenditures)	Enter dollar amount in appropriate boxes. If no $ amount given, enter 0's.
	81-89	(Effects)	For each expenditure type, 1=little/no effect 2=decrease by ½ 3=give up boating 0=missing or N/A
13	90-97	-	Enter Area I data, using one coding box for each of the eight cells.
	98-105	-	Enter Area II data
	106-113	-	Enter Area III data 0=missing or N/A
	114-121	-	Enter Area IV data (subject to Change)
	122-129	-	Enter OTHER Area data
14	154-155	Trips	Number of trips (eg. 9 trips = 09) 99=99 or more
15	156	Purch	1=yes 2=no 0=missing
	157-158	Leng	Enter length in feet 0=missing
	159	Kind	1=Motor 2=Sail 3=Other 9=Not Specified

16	160	Dev	1=Yes 2=No 0=Missing
	161	Slip	1=Preferred
	162	Moor	2=Acceptable
	163	Dry	3=Not Acceptable
	164	Ramp	0=Missing
17	165	Choice1	1=AreaI 4=AreaIV
	166	Choice2	2=AreaII 5=Other Lakefront
			3=AreaIII 6=No preference
			9=Checked (not ranked)
18	167-177	Fac1 to Fac11	For Fac1 through Fac11, if item is ranked on the 1-5 scale, enter that ranking; otherwise leave blank. 0=not ranked 9=checked
19	178-187	Saf1 to Saf10	Code same as #18. More or less than five items may be ranked. 0=not ranked 9-checked
20	188-193	Trend1 to Trend3	Code first trend mentioned first, etc. as follows:

01 = more crowded harbors
02 = more crowded launching ramps
03 = more fishing
04 = more intensive use of facilities

10 = more boating accidents
11 = increased vandalism
12 = less concern for safety by boaters
13 = better law enforcement
14 = worse law enforcement

20 = Better coordination of services
21 = more pollution control
22 = Park District more responsive
23 = Park District less responsive
24 = Coast Guard doing better job
25 = Coast Guard not doing job as well

30 = higher costs
31 = higher launching fees
32 = dirtier water
33 = cleaner water
35 = lake level decline causing problems

(EXHIBIT A)

CHICAGO RECREATIONAL BOATING NEEDS QUESTIONNAIRE

IF YOU OWN MORE THAN ONE REGISTERED OR DOCUMENTED BOAT, PLEASE ANSWER FOR THE BOAT IDENTIFIED BY THE REGISTRATION/DOCUMENTATION NUMBER SHOWN IN THE UPPER RIGHT HAND CORNER OF THE ADDRESS LABEL ON THE LETTER

This column for office use only

Seq. No. ☐ ☐ 3 ☐ 4 ☐

☐

PLEASE REPLY EVEN IF THE BOAT WAS NOT USED OR WAS SOLD OR DESTROYED

1 DO YOU NOW OWN THE BOAT WHICH HAS THE REGISTRATION NUMBER ON THE ADDRESS LABEL ATTACHED TO OUR LETTER?

YES ☐; If "yes", please proceed to Question 2.

NO ☐; If "no", please proceed to Question 16.

Own 7 ☐

2 HOW LONG IS **THIS** BOAT AND WHAT TYPE IS IT?

Length: ________ Feet

Type: Motor ☐ Sail ☐

Length 8 ☐ 9 ☐
Type 10 ☐

3 HOW MANY YEARS HAVE YOU OWNED **THIS** BOAT? ____________ years

Years 11 ☐ 12 ☐

4 WHERE HAVE YOU USUALLY KEPT **THIS** BOAT DURING THE 1978 **BOATING** SEASON?

(Check only one)

- At my permanent home ☐
- At my summer cottage ☐
- At a harbor or marina outside Chicago ☐
- At a harbor operated by the Chicago Park District (Name: ____________) ☐
- At a private marina within Chicago (Name: ____________) ☐

Kept 13 ☐
Cpd 14 ☐
Priv 15 ☐ 16 ☐

5 IF DURING THE 1978 BOATING SEASON, YOU RENTED SPACE FOR **THIS** BOAT, WHAT WAS THE TYPE OF BERTH AND WHAT WAS THE SEASONAL FEE?

Rental Fee: $ ______ per season

Slip ☐ Mooring ☐
Summer Dry Storage ☐

Berth 17 ☐
Fee 18 ☐ 19 ☐ 20 ☐

6 IF DURING THE 1978 BOATING SEASON, **THIS** BOAT HAS **NOT** BEEN KEPT AT A CHICAGO PARK DISTRICT FACILITY, HAVE YOU EVER SOUGHT A SLIP OR MOORING SPACE FROM THE CHICAGO PARK DISTRICT?

YES ☐; If "yes", what was the outcome?

(Check only one)

- Obtained space ☐
- Still waiting for space ☐
- Gave up ☐
- Other: (explain) ____________ ☐

NO ☐; If "no", why not?

(Check only one)

- Boat is trailered ☐
- Fee is too expensive ☐
- Prefer other lakefront areas ☐
- Haven't yet, but intend to try ☐
- Thought I had no chance ☐
- Other: (explain) ____________ ☐

Seek 21 ☐
Outcome 22 ☐
Why Not 1 23 ☐

7 DURING THE 1978 BOATING SEASON WAS **THIS** BOAT USED ON LAKE MICHIGAN?

YES ☐; If "yes", please proceed to Question 8.

NO ☐; If "no", why not?

(Check only one)

- Boat too small to safely use on Lake Michigan ☐
- Prefer other water bodies ☐
- No seasonal berth available ☐
- Lake access problems (explain) ____________ ☐
- Other: (specify) ____________ ☐

Used 24 ☐
Why Not 2 25 ☐

8 WOULD YOU USE THIS BOAT ON LAKE MICHIGAN IF SHELTERED WATER (AREAS PROTECTED BY ISLANDS, LAND EXTENSIONS, AND BREAKWATERS) WERE AVAILABLE?

YES ☐ NO ☐

Woodu 25

9 DURING THE 1978 BOATING SEASON, WHAT PERCENT OF YOUR USE OF THIS BOAT INVOLVED THE FOLLOWING ACTIVITIES?

Cruising or Sailing .... ____%
Water Skiing .... ____%
Racing .... ____%
Fishing .... ____%
Using boat at slip/mooring .... ____%
Other: (specify) ______________ ____%
Total = 100%

Cruise 27 28 29
Ski 30 31 32
Atslip 33 34 35
Race 36 37 38
Fish 39 40 41
Other 42 43 44

10 PLEASE ESTIMATE THE AVERAGE NUMBER OF BOATERS PER TRIP WHEN THIS BOAT WAS UTILIZED ON LAKE MICHIGAN DURING THE 1978 BOATING SEASON

______________ BOATERS PER TRIP

Crew 45

11 WHAT TYPE OF FISH WOULD YOU LIKE TO SEE THE STATE OF ILLINOIS INTRODUCE INTO LAKE MICHIGAN (e.g., COHO SALMON, CHINOOK SALMON, LAKE TROUT, STEELHEAD)?

Specify: ______________

Stock 1 46
Stock 2 47
Stock 3 48

12 IF THE COST OF THE FOLLOWING ITEMS WERE INCREASED BY ONE-THIRD, WOULD IT AFFECT THE AMOUNT OF TIME YOU SPEND BOATING ALONG THE CHICAGO LAKEFRONT?

ITEMS	ESTIMATE CURRENT ANNUAL EXPENDITURE FOR EACH ITEM	(Please mark one check mark per line.) EFFECT ON BOATING ACTIVITY OF A ONE-THIRD COST INCREASE		
		LITTLE OR NONE	DECREASE BY ONE-HALF	WOULD GIVE UP BOATING
MARINE FUEL	$			
SLIP SPACE	$			
MOORING SPACE	$			
LAUNCHING RAMP FEE	$			
SUMMER DRY STORAGE	$			
WINTER STORAGE	$			
[illegible]	$			
MAINTENANCE/REPAIRS	$			
OTHER: ________	$			

Fuelex 49 50 51 52
Slipex 53 54 55 56
Moorex 57 58 59 60
Rampex 61 62 63
Dryex 64 65 66
Wintex 67 68 69 70
Insex 71 72 73
Maintex 74 75 76 77
Otherex 78 79 80
Fuelef 81
Slipef 82
Mooref 83
Rampef 84
Dryef 85
Wintef 86
Insef 87
Maintef 88
Otheref 89

13 IF YOU LAUNCHED THIS BOAT DURING 1978, PLEASE ESTIMATE THE NUMBER OF TIMES IN EACH MONTH DURING 1978 YOU HAVE LAUNCHED OR ANTICIPATE LAUNCHING THIS BOAT ALONG THE LAKEFRONT AREAS LISTED BELOW.

(REFER TO MAP ON BACK OF OUR LETTER.)

AREA	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	REST OF YEAR
EXAMPLE LAKEFRONT AREA X	0	0	1	0	1	2	0	0
LAKEFRONT AREA I								
LAKEFRONT AREA II								
LAKEFRONT AREA III								
LAKEFRONT AREA IV								
OTHER AREAS								

I: 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105
II: 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121
III: 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137
IV: 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153

14 IF THIS BOAT HAS BEEN BERTHED IN A HARBOR OR MARINA DURING 1978 BOATING SEASON, PLEASE ESTIMATE THE NUMBER OF TRIPS YOU WILL MAKE ON LAKE MICHIGAN OVER THE 1978 BOATING SEASON.

Number of trips: ______

Trips 154 155

15 ARE YOU CONSIDERING THE PURCHASE OF A NEW OR DIFFERENT BOAT DURING THE NEXT 2 YEARS?

YES ☐; If "yes", what length and type of boat? NO ☐; If "no", proceed to Question 16.

Length ______ feet

Motor ☐ Sail ☐

Purch 156
Leng 157 158
Kind 159

16 DO YOU THINK ADDITIONAL HARBOR AND/OR BOAT LAUNCHING RAMP DEVELOPMENT IS NECESSARY ALONG THE CITY OF CHICAGO LAKEFRONT?

YES ☐; If "yes", please indicate in the table below the suitability of each of the following facilities for the boat which has the registration numbers listed on the address label.

NO ☐; If "no", please proceed to question 19

(MAKE ONE CHECK PER LINE)

TYPE OF FACILITY	PREFERRED	ACCEPTABLE	NOT ACCEPTABLE
SLIP			
MOORING			
SUMMER DRY STORAGE			
BOAT LAUNCHING RAMPS			

Dev. 160
Slip 161
Moor 162
Dry 163
Ramp 164

17 IF YOUR THINK ADDITIONAL RECREATIONAL BOATING DEVELOPMENT IS NEEDED, WHERE WOULD YOU LIKE TO SEE SUCH DEVELOPMENT OCCUR?

(REFERRING TO MAP ON BACK OF OUR LETTER, MARK "1" IN THE BOX BESIDE AREA OF FIRST CHOICE AND "2" IN BOX BESIDE AREA OF SECOND CHOICE.)

Lakefront Area I . . . . ☐
Lakefront Area II . . . . ☐
Lakefront Area III . . . . ☐
Lakefront Area IV . . . . ☐
Other Illinois Lakefront . . . . ☐
No preference . . . . ☐

Choice 1 165
Choice 2 166

18 UTILIZING THE LIST PRESENTED BELOW, INDICATE THE <u>SUPPORT</u> FACILITIES THAT ARE IMPORTANT TO ANY MARINA FACILITY IN THE CHICAGO AREA.

(PLEASE RANK 5 ITEMS BY DEGREE OF IMPORTANCE, WITH NUMBER 1 BEING THE HIGHEST PRIORITY.)

- Showers/Restrooms ☐
- Restaurant/Fast Foods ☐
- Fishing Supplies ☐
- Fish Cleaning Station ☐
- Winter Storage ☐
- Other: (specify) ____ ☐
- Routine Maintenance ☐
- Emergency Repair ☐
- Storage Lockers ☐
- Boating Supplies ☐
- Groceries/Convenience Items ☐

Fac 1 ☐ 167
Fac 2 ☐ 168
Fac 3 ☐ 169
Fac 4 ☐ 170
Fac 5 ☐ 171
Fac 6 ☐ 172
Fac 7 ☐ 173
Fac 8 ☐ 174
Fac 9 ☐ 175
Fac 10 ☐ 176
Fac 11 ☐ 177

19 WHAT DO YOU THINK ARE THE MAIN BOATING SAFETY PROBLEMS ENCOUNTERED ALONG THE CHICAGO LAKEFRONT?

(RANK THE MOST IMPORTANT PROBLEMS, WITH NUMBER 1 BEING THE HIGHEST PRIORITY.)

- Lack of navigational aids ☐
- Lack of weather navigational information ☐
- Crowding in harbors ☐
- Crowding at launching ramps ☐
- Conflicts between sailboats and motorboats ☐
- Vandalism at berths ☐
- Inadequate safety patrolling ☐
- Inadequate boating safety education programs ☐
- Other: (explain) ____ ☐

Saf 1 ☐ 178
Saf 2 ☐ 179
Saf 3 ☐ 180
Saf 4 ☐ 181
Saf 5 ☐ 182
Saf 6 ☐ 183
Saf 7 ☐ 184
Saf 8 ☐ 185
Saf 9 ☐ 186
Saf 10 ☐ 187

20 DURING THE PAST FIVE YEARS, WHAT BOATING TRENDS HAVE YOU NOTICED WHILE BOATING FROM CHICAGO-BASED FACILITIES ON LAKE MICHIGAN?

____
____
____
____
____

Trend 1 ☐ 188 ☐ 189
Trend 2 ☐ 190 ☐ 191
Trend 3 ☐ 192 ☐ 193

21 PLEASE MAKE ANY ADDITIONAL COMMENTS YOU HAVE CONCERNING BOATING ON LAKE MICHIGAN ALONG THE CHICAGO LAKEFRONT (ESPECIALLY WITH REGARD TO DESIGN AND LOCATION OF BOATING FACILITIES).

____
____
____
____
____

Comment 1 ☐ 194 ☐ 195
Comment 2 ☐ 196 ☐ 197
Comment 3 ☐ 198 ☐ 199

THANKS FOR YOUR HELP!

If you accidentally misplace the return envelope provided, please mail to:

Chicago Lakefront Program
1 E. Wacker Drive, Suite 3630
Chicago, Illinois 60601

(EXHIBIT B)

Illinois Department of Transportation
Division of Water Resources
Marina City Office Building/Room 1010
300 North State/Chicago, Illinois/60610

September, 1978

Dear Boat Owner:

As the 1978 boating season comes to a close, planning is underway for the coming season and the seasons ahead. This activity is a joint effort of the Illinois Coastal Zone Management Program, the Chicago Park District, and the City of Chicago, and is part of an overall effort to make sure that Lake Michigan offers safe and accessible recreation to all who love the water.

To help with this effort, we need your assistance in identifying the kinds and location of facilities you and other boaters require. We, therefore, hope that you will take a few minutes to fill out this questionnaire and to return it to the Chicago Lakefront Program.

Your name was selected at random from a list of registered and documented boat owners and your reply need not be signed. The results of this survey will be totaled, but your individual response will be held confidential. Your response and the responses of others will be used to determine the location and extent of new boating facilities.

Please answer the questionnaire based on the boat identified by the registration/documentation number shown in the upper right hand corner of the address label above, regardless of whether or not you still own and operate this boat. Then, please place the completed questionnaire in the envelope provided for your convenience and mail it to us. The map on the back of this letter is provided to help you answer several of the questions. Should you have any questions, please contact the Chicago Lakefront Program at 744-4158.

Thank you very much for your help.

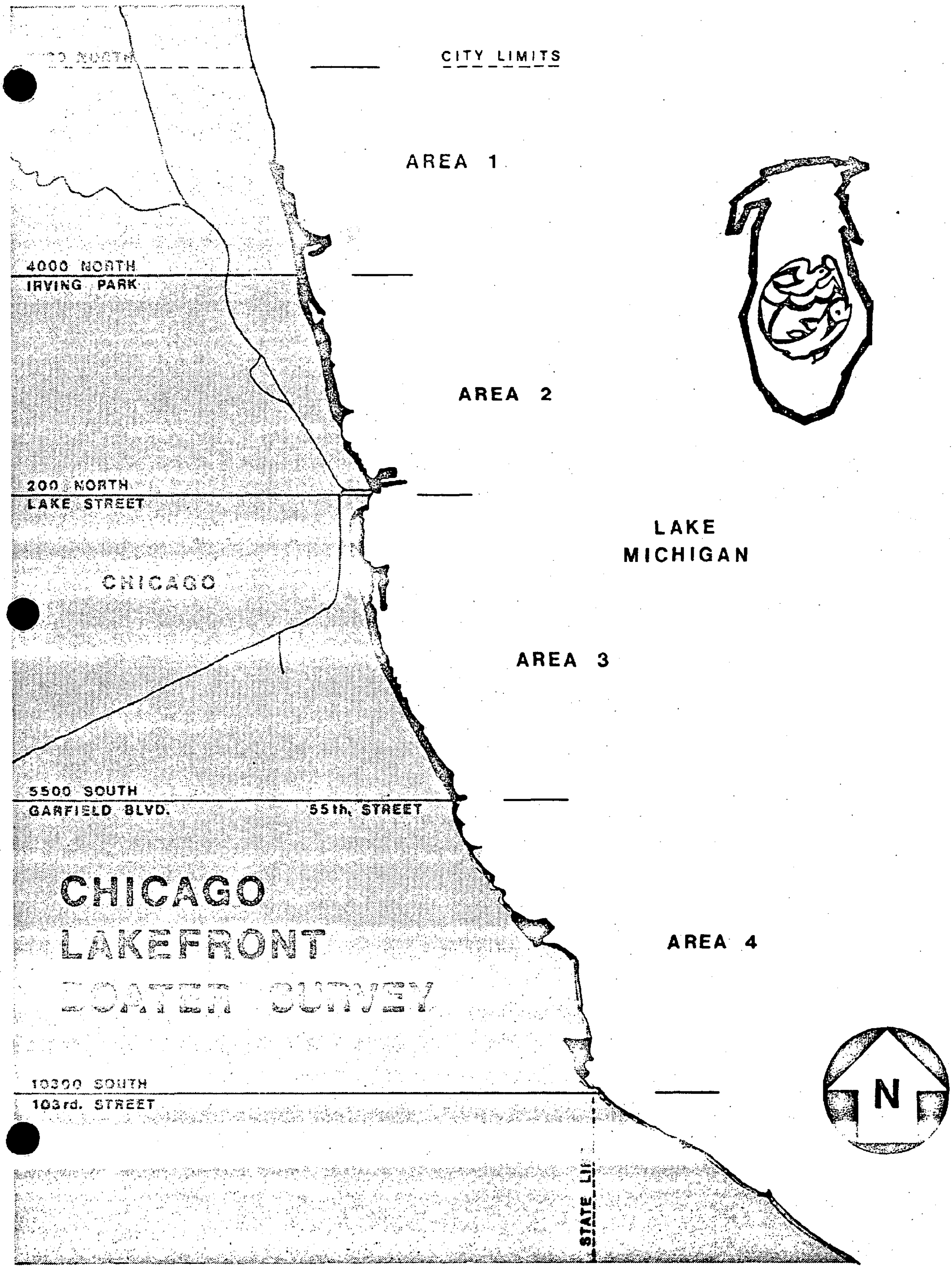
Very truly yours,

Frank Kudrna
Director

Attachment

The Illinois Coastal Zone Management Program
(312) 793-3126

(EXHIBIT B1)


CITY LIMITS
AREA 1
4000 NORTH
IRVING PARK
AREA 2
200 NORTH
LAKE STREET
LAKE
MICHIGAN
CHICAGO
AREA 3
5500 SOUTH
GARFIELD BLVD.
55th. STREET
CHICAGO
LAKEFRONT
AREA 4
N
10300 SOUTH
103rd. STREET
STATE LI

(EXHIBIT C)

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MAIL

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CHICAGO LAKEFRONT PROGRAM

1 E. Wacker Drive, Suite 3630
Chicago, Illinois 60601

(EXHIBIT D)

The Illinois Coastal Zone Management Program
Marina City Office Building/Room 1010
300 North State/Chicago, Illinois/60610

Notice To Postmaster:

If Letter is Undeliverable To Addressee, Please Return to:
CHICAGO LAKEFRONT PROGRAM
1 E. Wacker Drive, Suite 3630
Chicago, Illinois 60601

(EXHIBIT E)

Dear Boat Owner:

About two weeks ago, a copy of the 1978 Recreational Boating Needs questionnaire was mailed to you. Perhaps you have already completed and returned it. If not, please, will you fill it out and mail it back today? We realize that it will take some time and effort, but it is important that we have a reply, even if the boat was not used or was sold or destroyed.

Thank you,

Frank Kudrna, Director
Division of Water Resources

(EXHIBIT F)

Illinois Department of Transportation
Division of Water Resources
Marina City Office Building/Room 1010
300 North State/Chicago, Illinois/60610

October 6, 1978

Dear Boat Owner:

About four weeks ago, we mailed to you a copy of the 1978 Recreational Boating Needs questionnaire requesting information on the use of your boat during this season. (The boat's registration number is shown in the upper right-hand corner of the address label above.) Hopefully, you have already completed and returned the questionnaire. If not, would you please find time to do so today? Another questionnaire is enclosed in case the first one was misplaced.

A response is needed even if this boat was sold or not used for recreational purposes during the 1978 season. If you feel you cannot complete the questionnaire, please return it unanswered and include a brief note explaining the circumstances.

Your name was taken at random from the list of boat registrants. It will be used with all the other replies to show boating patterns and to indicate where we should be providing new or improved facilities or safety programs.

This survey is rapidly coming to a close and it is important that your information be included in the results so that a more accurate picture of Lake Michigan boating may be obtained. Please return the questionnaire in the enclosed envelope at your earliest convenience.

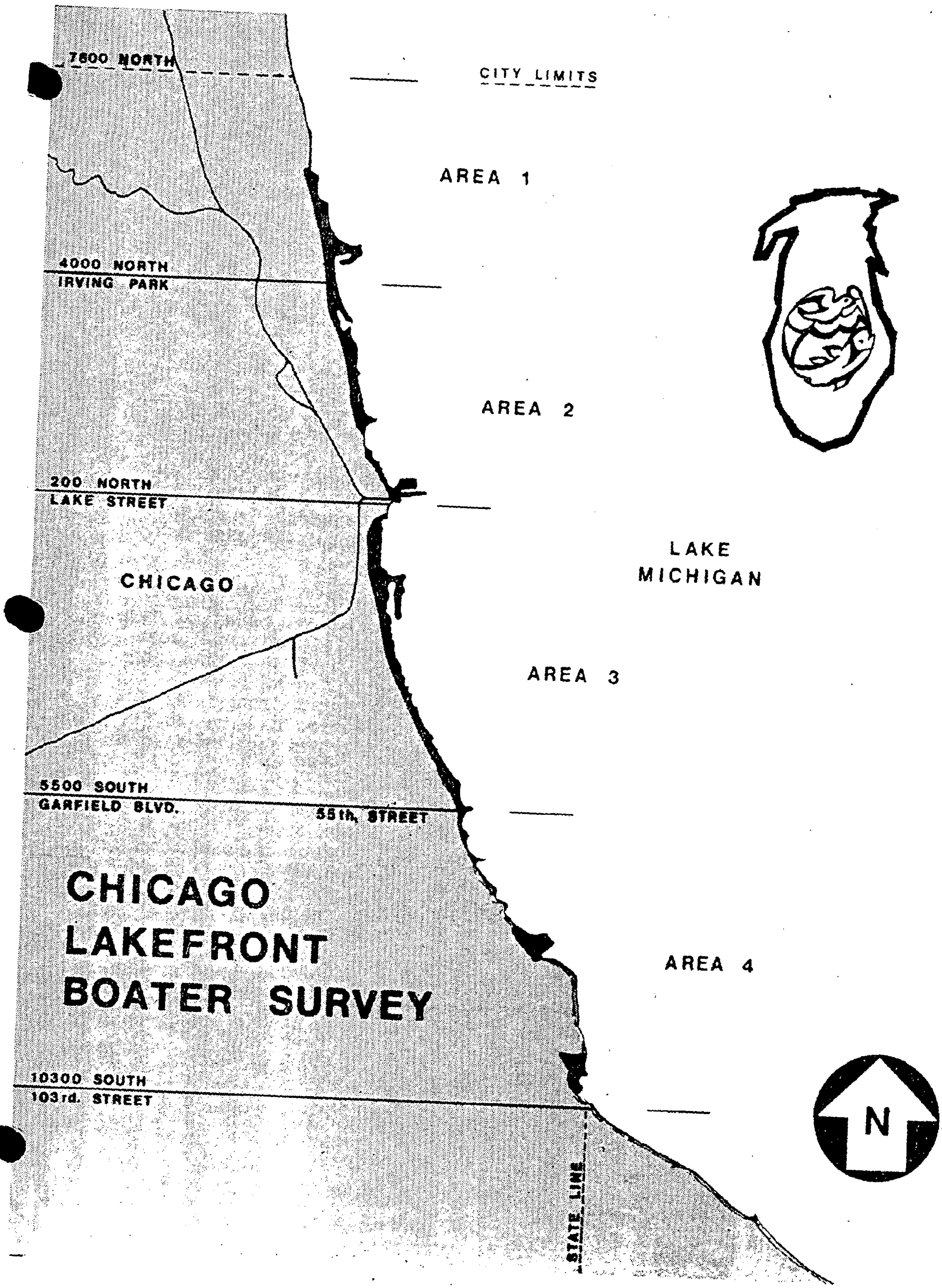
A map on the back of this letter may help you with the questions on location.

Sincerely yours,

Frank Kudrna
Director

Enclosure

The Illinois Coastal Zone Management Program
(312) 793-3126


7600 NORTH
CITY LIMITS
AREA 1
4000 NORTH
IRVING PARK
AREA 2
200 NORTH
LAKE STREET
LAKE
MICHIGAN
CHICAGO
AREA 3
5500 SOUTH
GARFIELD BLVD.
55th. STREET
CHICAGO
LAKEFRONT
BOATER SURVEY
AREA 4
10300 SOUTH
103rd. STREET
STATE LINE
N