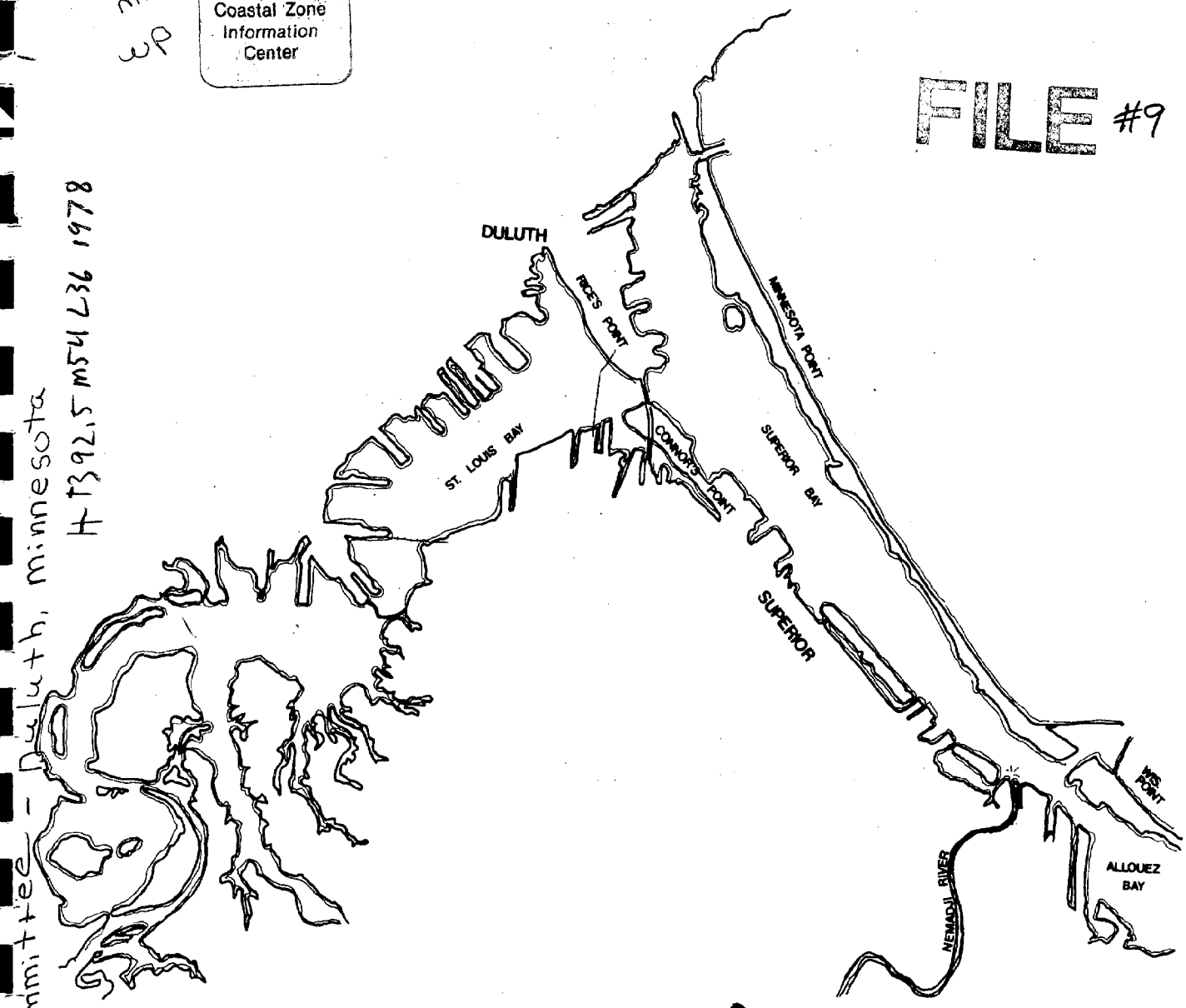



# FINAL DRAFT

# LAND USE AND MANAGEMENT PLAN

## FOR THE

## DULUTH-SUPERIOR HARBOR AREA



BY THE
ITAN INTERSTATE COMMITTEE...
VENTURE OF THE ARROWHEAD REGIONAL DEVELOPMENT COMMISSION,
HWEST REGIONAL PLANNING COMMISSION AND URBAN AREA
IES.

# metropolitan interstate committee

200 Arrowhead Place Duluth, Minnesota 55802 218-722-5545


April 20, 1978



Dear Reader,

You have before you the final draft of the Duluth-Superior harbor plan. Nearly two years of effort has gone into the production of this document. We fully realize that the plan is not perfect, but we are confident that it is a workable approach to handling the major issues in the harbor.

At its April 19, 1978 meeting the Metropolitan Interstate Committee voted to recommend this plan for adoption by Duluth, Superior, Superior Board of Harbor Commissioners and Seaway Port Authority of Duluth. However, changes to the plan can still be made. If you have questions or comments on the plan, please contact John Powers (722-5545) or the members of the above four governmental bodies.

Sincerely,

Leon Stilwell

Leon Stilwell, Co-chairman

Tom Micheletti

Tom Micheletti, Co-chairman

FINAL DRAFT

# LAND USE AND MANAGEMENT PLAN FOR THE DULUTH-SUPERIOR HARBOR AREA

April 1978

prepared by the
Duluth-Superior Metropolitan Interstate Committee

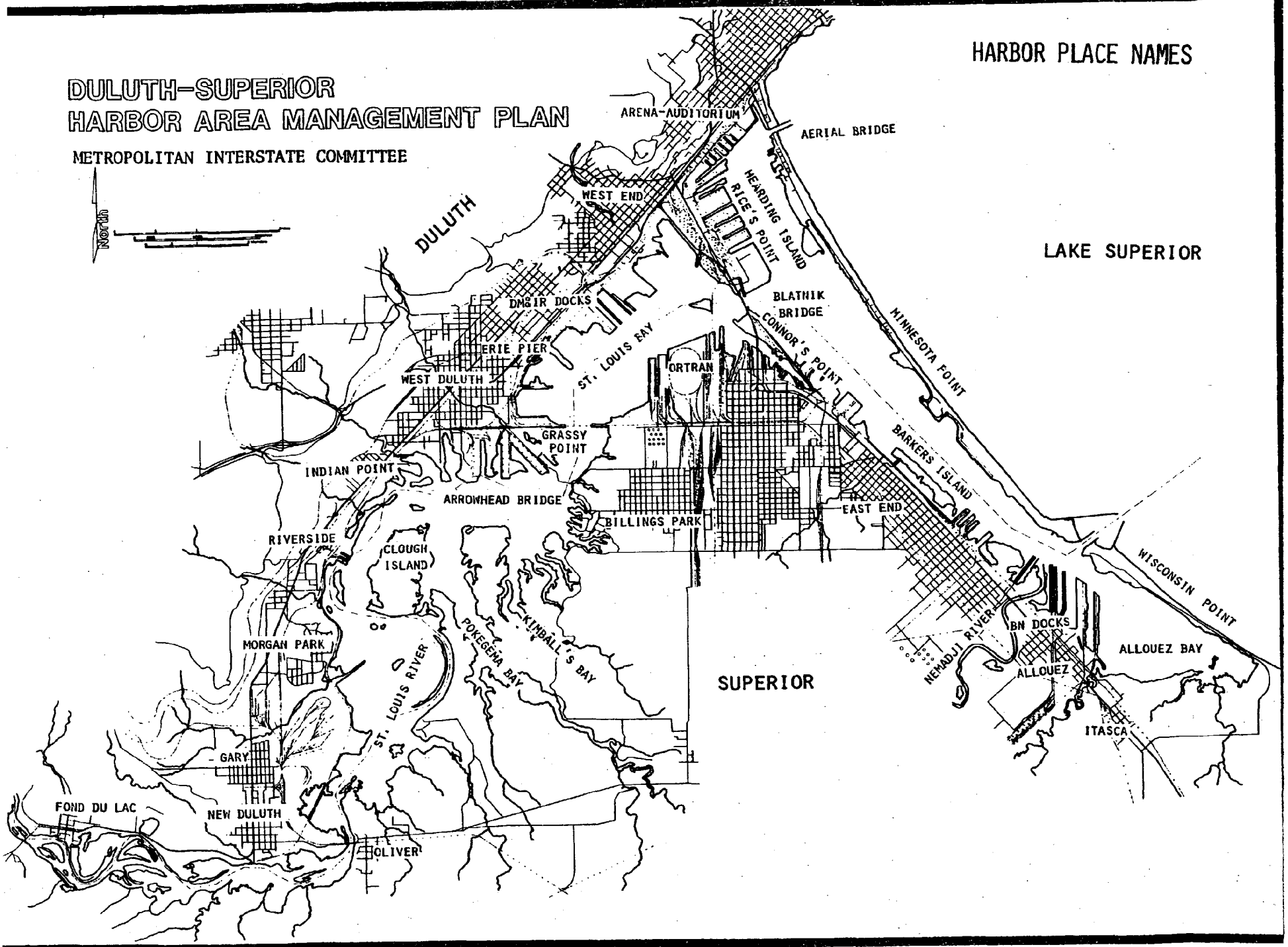
preparation funded in part
by a grant from the Office of Coastal Zone Management
(National Oceanic and Atmospheric Administration,
Department of Commerce) as administered by the
Minnesota and Wisconsin Coastal Management Programs.



Direct all comments and inquiries on the draft plan to:

John Powers
Metropolitan Interstate Committee
200 Arrowhead Place
Duluth, Minneaota 55802

218-722-5545


DULUTH-SUPERIOR
HARBOR AREA MANAGEMENT PLAN
METROPOLITAN INTERSTATE COMMITTEE
North
HARBOR PLACE NAMES
ARENA-AUDITORIUM
AERIAL BRIDGE
WEST END
DULUTH
HEARDING ISLAND
RICE'S POINT
LAKE SUPERIOR
DM&IR DOCKS
BLATNIK BRIDGE
CONNOR'S POINT
MINNESOTA POINT
ERIE PIER
ST. LOUIS BAY
ORTRAN
WEST DULUTH
GRASSY POINT
BARKERS ISLAND
INDIAN POINT
ARROWHEAD BRIDGE
EAST END
BILLINGS PARK
RIVERSIDE
CLOUGH ISLAND
WISCONSIN POINT
BN DOCKS
NEMADJI RIVER
ALLOUEZ BAY
MORGAN PARK
POKEGEMA BAY
KIMBALL'S BAY
SUPERIOR
ALLOUEZ
ST. LOUIS RIVER
ITASCA
GARY
FOND DU LAC
NEW DULUTH
OLIVER

CONTENTS

PREFACE

When asked to define the Duluth-Superior harbor, most people would begin to describe the places where lakers, tugboats, elevators and cranes dominate the view. They would not consider the backwaters of the St. Louis River, the pine forest on Minnesota Point or the marsh in Allouez Bay. Yet, the purposes of this plan, all of these areas from Fond du Lac to Wisconsin Point are part of the harbor.

By this definition the Duluth-Superior harbor is an incredibly large area occupied by a highly diverse number of activities. It is the intent of this plan to provide for the orderly and sound use of the land and water of the harbor. The plan sets forth policies to guide future development and, just as importantly, it creates a management framework with which to coordinate public action in the harbor.

It is has not been presumed that this plan will satisfactorily address all of the issues within the harbor. Indeed, it may do so only for a few of them. But, it does provide the first comprehensive look at harbor development, and, for the problems it does not resolve the plan initiates the steps required to correct them. This plan represents the end of one harbor planning process and the beginning of the next; it does not decide too much too soon.

Prior to this planning effort plans had been developed for the harbor, and of course, forms of management are underway at the present time. This plan should not be seen as a criticism of these plans or management operations. Instead, this plan is an attempt to weave together all of the concerns expressed by these efforts into one comprehensive and comprehensible package.

In part to approach the harbor as a single entity without dissecting it with state or municipal boundaries, this plan was developed by the Metropolitan Interstate Committee (MIC) on behalf of the local communities. Funding came from the Federal Office of Coastal Zone Management and the Department of Housing and Urban Development.

The MIC is comprised of local elected officials and concerned citizens selected by local units of government. Under the Committee's direction a technical advisory committee was formed to review and comment upon the planning process. Workshops were held to inform and involve citizens and organizations concerned with the harbor. Throughout the entire effort close contact was maintained with all appropriate units and levels of government.

The Coastal Zone Management program, under which the harbor plan was funded, is a major national attempt to plan for the proper use of America's coasts. Both Wisconsin and Minnesota have developed plans for their coasts including the Duluth-Superior harbor. This harbor plan, which is a local plan, will be reviewed for consistency with the State's plans.

While the MIC conducted the study, considerable amounts of assistance, information and advice were given by a wide variety of people and organizations. Without this aid the harbor plan would not be the strong, realistic document that it is. The MIC would like to acknowledge the assistance and cooperation from:

Seaway Port Authority of Duluth
Superior Board of Harbor Commissioners
Superior League of Women Voters
Duluth League of Women Voters
Lake Superior Basin Studies Center (UMD)
Center for Lake Superior Environmental Studies (UWS)
Superior Planning Commission and Staff
Duluth Planning Commission and Staff
U.S. Army Corps of Engineers
Coast Guard
Federal Maritime Administration
Minnesota Department of Natural Resources
Wisconsin Department of Natural Resources
Western Lake Superior Sanitary District
Minnesota Pollution Control Agency
Wisconsin Sea Grant Program
Minnesota Marine Advisory Service
Park Point Community Club

In addition, there are individuals representing harbor interests, unions, shippers and environmental organizations whose personal advice and assistance were essential to creating this plan. They are: Keith Yetter, Cliff Grindy, Bill Fayline, Gil Erickwon, Arnie LaPlante, MaxOie, Betty Hetzel, Lynne Campenhaut, Jim McCarville and especially, Paul Pella.

EXECUTIVE SUMMARY

## EXECUTIVE SUMMARY

A century has passed since man began to develop the Duluth-Superior harbor in earnest. Those 100 years have witnessed incredible changes to the shores, waters, ships and people of the harbor area. None of that change was planned, it just happened either by the wisdom of one person's foresight or by the ill-fated whim of another's fancy.

Today the harbor wears a patchwork coat of many colors. The white sails of sailboats stand in reverse silhouette to the black piles of coal and taconite. Massive amounts of green, subtly shaded in trees and marshes, highlight the blues, browns, whites and reds of the homes that line the shores. In all, the harbor is a complex mixture of uses complete with the pleasing and displeasing features accompanying them.

This plan seeks to redirect the historic process of change which has shaped the waterfront, to give a more human and perhaps artificial order to the harbor. The abundant and diverse resources contained by the harbor cannot be poorly perceived or poorly developed. To obtain the greatest economic gain, to achieve the highest sense of beauty and to retain the widest range of variety will require the cautious guidance of the harbor's future.

The harbor of this plan is actually the St. Louis River estuary. It encompasses the river, St. Louis Bay, the port area, Allouez Bay, and Minnesota and Wisconsin Points. Within this large and diverse expanse of land and water are numerous problems whose resolution require a coordinated plan of action. Among the issues necessitating the most urgent action are:

| | |
|---|---|
| MARINE DEVELOPMENT: | Both Duluth and Superior depend on the harbor for much of their economic strength. There is a need to protect the activity already found there as well as to provide for future expansion. Enough room must be reserved for these water-dependent industries. |
| NATURAL RESOURCES: | The harbor possesses an amazing array of both common and unique habitats and landforms important to the well-being of numerous wildlife and fish species. The continued and enhanced vitality of the undeveloped aspect of the harbor means that natural resources must be protected and properly managed. |
| HARBOR ACCESSIBILITY: | Neither Superior nor Duluth has extensive or easy contact with the waterfront; a positive sense of harbor character has not been created. The lack of physical and visual contact is a wedge between the two communities and the harbor which is so important to their existence. |
| DREDGE DISPOSAL: | Dredging is mandatory to the port's existence, but the disposal of the dredged materials has been a classic environment vs. development struggle. If the harbor is to maintain its function as a port, there must be a plan for the disposal of dredged materials which is acceptable by environmentalists, dredgers and developers. |

RECREATION: Recreational activity in all forms is popular along the harbor, but the number of facilities is limited. New and expanded operations are required to supply needs for camping, boating, parks, picnicking and trails.

MANAGEMENT: The problem is not that the harbor has been poorly managed, rather, it is that taken as a whole the harbor it not managed at all. Fragments of it have been actively cared for, such as the port, but at no time has the entirety of the harbor been comprehensively managed to better the full extent of the harbor's resources.

## THE PLAN

The Duluth-Superior harbor plan establishes the direction which the public is to take in guiding the development and use of the harbor. To accomplish this task the plan sets forth policies to govern public decisionmaking processes covering recreation, dredge disposal, industrial development, natural resources and other similar concerns. The plan also creates a preferred pattern for land use by delineating areas for general types of development and use.

Taken as a whole the plan's goals, policies and land use maps define an initial course of action as well as provide the basis for the on-going process of decision-making in the harbor.

Providing the foundation for the plan is a set of general goals regarding development and use of the harbor. Although there are goals relating to specific types of uses within the harbor, the primary, overall goal of the plan is

> *To maximize the value and use of all harbor resources through the multiple and complementary use of the land and water areas of the harbor.*

This goal is achieved by the plan through policies and a land use map which clearly outlines the future use of the harbor. Four straightfoward concepts synthesize the intent and impact of the policies and the map.

-Recognize, maintain and enhance the special qualities of the St. Louis River as a semi-wild river flowing through an urbanized area.

The St. Louis River offers the potential of a direct and continuous link between the wild and the developed. It affords residents and visitors alike the opportunity both to find solitude close to the city and to see the vast economic development supporting the head of the lakes region.

-Concentrate geographically and provide for the expansion of the commercial shipping industry.

The plan seeks to assure the vitality of existing operations as well as to provide for the location of new facilities. Any new development is to be located adjacent to or near the existing sites.

-Increase the amount, variety and quality of public contact with the total waterfront.

In order to fully integrate the harbor into the metropolitan community the plan promotes expanded public contact with the waterfront. Not only is the amount of contact and access to be enlarged, but also it is to be provided through a variety of activities including work, recreation, housing and commercial development.

-Preserve and enhance specific natural resources.

Throughout the harbor there are many natural resources which must be protected, enhanced and managed. These resources are vital to the harbor's roles as an importamt environmental area and as a recreation resource.

MANAGEMENT

To simply describe how the harbor should develop and be used is not enough. The plan becomes a whole entity only when a management component is fitted to the goals, concepts, policies and map. Under this harbor plan that management process involves the formation of the Harbor Coordinating Council under the legal jurisdiction of the Metropolitan Interstate Committee.

Formally the Council will only have the limited powers of the MIC which are to review and comment upon publicly funded project, review local governmental programs and plans, and to conduct areawide planning. However, the Council will be able to wield considerable influence because of its composition which includes federal, state and local agencies involved in the harbor as well as citizens representing harbor interests.

The Council's primary duty will be to seek the full implementation of the harbor plan. To achieve that goal it will conduct harbor planning, initiate research and development projects. help coordinate governmental activities and adopt an annual harbor improvement program.

HARBOR ISSUES

Full
Investment
Services

910 17th Street NW
Seventh Floor
Washington DC 20006
(202)857-0880

# JULIA M. WALSH & SONS, INC.

## PERSONAL DATA

Client's Name _____

Birthdate _____ Soc. Sec. No. _____ Occupation _____

Spouse's Name _____

Birthdate _____ Soc. Sec. No. _____ Occupation _____

Residence _____

_____

Home Phone No. _____ Office No. _____

| Children's Name | Birthdate | Yrs. to College | Whose Children |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Any Grandchildren? _____

Any Living Parents? If so, indicate which ones and if dependent on you for financial support:

| | Mother | Age | Support | Father | Age | Support |
|---|---|---|---|---|---|---|
| Client | | | | | | |
| Spouse | | | | | | |

# I. ASSET INVENTORY

## Savings & Checking Accounts

| | BANK OR S. & L. | BALANCE | OWNER* | INTEREST RATE |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |

*Indicate Ownership as follows: Client - "C" Spouse - "S" Joint - "Jt"

## CERTIFICATES OF DEPOSIT

| | BALANCE | INTEREST RATE | DUE DATE | OWNER |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |
| 6. | | | | |

## LIFE INSURANCE & ANNUITIES

| | COMPANY | DEATH VALUE | CASH VALUE LOANS | ISSUE DATE | WHOLE LIFE OR TERM TYPE | ANNUAL PREMIUM | OWNER | PERSON INSURED | BENE-FICIARY |
|---|---|---|---|---|---|---|---|---|---|
| 1. | | | | | | | | | |
| 2. | | | | | | | | | |
| 3. | | | | | | | | | |
| 4. | | | | | | | | | |
| 5. | | | | | | | | | |
| 6. | | | | | | | | | |
| 7. | | | | | | | | | |

## STOCKS

| | COMPANY | NO. OF SHARES | COST | DATE BOUGHT | OWNER |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| 7. | | | | | |
| 8. | | | | | |
| 9. | | | | | |
| 10. | | | | | |

## BONDS

| | MUNICIPAL/GOVTS. | COUPON & DUE DATE | COST | OWNER |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |

| | CORPORATE | COUPON & DUE DATE | COST | OWNER |
|---|---|---|---|---|
| 1. | | | | |
| 2. | | | | |
| 3. | | | | |
| 4. | | | | |
| 5. | | | | |

## MUTUAL FUNDS

| | MUTUAL FUND | NO. OF SHARES | COST | DATE BOUGHT | OWNER |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |

## REAL ESTATE

PRESENT VALUE OF HOME $ _____

Balance still due _____

Equity in home _____

Mortgage rate _____

| OTHER REAL ESTATE | $ _____ | $ _____ |
|---|---|---|
| Remaining Mortgage | _____ | _____ |
| Equity | _____ | _____ |
| Income from property | _____ | _____ |

## OTHER ASSETS

(Not previously listed - such as automobile and household furnishings)

_____

_____

## II. LIABILITIES

(Not listed elsewhere)

| | AMOUNT | MODE OF PAYMENT | DUE |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |

## III. CURRENT INCOME
(Indicate if self-employed)

Client's Salary $ _____ Additional Income $ _____

Spouse's Salary $ _____ Additional Income $ _____

Last year's TAXABLE INCOME from tax return $ _____

Do you or your spouse expect to receive or inherit a substantial amount of property? If so specify source and amount: _____

_____

## IV. RETIREMENT COVERAGE
(Employee Benefit Plans)
(When estimating future needs, indicate in terms of today's dollar value)

| | TAX QUALIFIED (X if yes) | EMPLOYEE CONTRIBUTION (If any) | PRESENT VALUE IMMEDIATELY OBTAINABLE | ANNUAL BENEFITS ANTICIPATED | TOTAL BENEFITS TO SURVIVORS WHEN DIE |
|---|---|---|---|---|---|
| Client | | | | | |
| Client | | | | | |
| Spouse | | | | | |

Estimated annual retirement income needed $ _____

Estimated disability income needed $ _____

Present Disability coverage $ _____ When effective _____

## V. ESTATE PLANNING

| | NO WILL (Distribution by State Law) | SIMPLE WILL (All to surviving marital partner or if none, then to children if any) | TWO PART WILL (To surviving marital partner one half marital deduction qualified; other ½ nonqualified with remainder to children, if any) | OTHER TYP (If none c the preceeding |
|---|---|---|---|---|
| Client has | | | | |
| Spouse has | | | | |

V. ESTATE PLANNING - Continued

Date will last reviewed _____

Are you opposed to lifetime transfers? _____

Estimated annual income needed by dependents after clients death $ _____

Dependents financial ability Good _____ Fair _____ Poor _____

SPECIAL TESTAMENTARY OBJECTIVES: _____

_____

_____

## VI. INVESTMENT PHILOSOPHY

1. What do you consider a good return on your investment? _____

2. List objectives in order of importance:

_____ Safety of Principal _____ Aggressive Growth

_____ High Current Income _____ Long Term Growth

_____ Tax Free Income

3. Do you have any tax shelters? If so, indicate kind and amount:

| KIND | AMOUNT INVESTED | AMOUNT STILL TO INVEST |
|---|---|---|
| | | |
| | | |
| | | |

4. The following are of concern to most people. Indicate how important they are to you.

| | VERY IMPORTANT | IMPORTANT | NOT VERY IMPORTANT |
|---|---|---|---|
| To combat the erosion of your assets and current income due to inflation and taxes | | | |
| To educate your children at college | | | |
| To retire in comfort | | | |
| In event of your death to provide family with comparable living standard maintained while you were alive | | | |

## VII. INCOME NEEDS

(These figures need not be exact -- a reasonable estimate is fine.)

| I. COMMITED EXPENSES | MONTHLY | ANNUAL |
|---|---|---|
| **HOUSING** | | |
| RENT | $ | $ |
| MORTGAGE PAYMENT | $ | $ |
| CONDO FEE | $ | $ |
| TAXES | $ | $ |
| TOTAL | $ | $ |
| **INSURANCE** | | |
| PROPERTY | $ | $ |
| AUTO & CASUALTY | $ | $ |
| LIFE | $ | $ |
| HEALTH | $ | $ |
| TOTAL | $ | $ |
| **II. NECESSARY VARIABLE EXPENSES** | | |
| HOUSING | $ | $ |
| FOOD | $ | $ |
| CLOTHING | $ | $ |
| AUTO & TRANSPORTATION | $ | $ |
| **PERSONAL & MISC.** | | |
| RECREATION | $ | $ |
| PERSONAL CARE | $ | $ |
| MEDICAL | $ | $ |
| CHARITY | $ | $ |
| EDUCATION | $ | $ |
| TOTAL | $ | $ |
| SAVINGS | $ | $ |

III. DO YOU HAVE A BUDGET? _____ A REGULAR SAVINGS PLAN? _____

IV. WHAT DO YOU THINK YOUR GROSS INCOME WILL BE THIS YEAR? _____

WHAT DO YOU THINK NEXT YEAR? _____

V. PLEASE SEND ME A COPY OF LAST YEAR'S TAX RETURN

## VII. BUSINESS INTERESTS

Business Form - Corporation _____ Other _____

Ownership percent - Client _____% Spouse _____% Community _____%

Children _____%

Salary and/or dividends - to client _____ to spouse _____

Estimated total value of business _____
(Check if non investable property)

Percent reduction in value on death of client _____%

of spouse _____%

Purchase agreement binding? _____
(Indicate if funded)

Amount receivable for client's interest _____

spouse's interest _____

## HARBOR ISSUES

A casual observer of the docks, industries and neighborhoods that string out along the waterfront might well feel a sense of permanence, that these structures have always been here and will last far into the future. Yet, a closer inspection reveals numerous pieces of evidence - weathered pilings, a hollowed out building, an old beached boat - indicating that continual change and not permanence has been the rule.

If a camera had been placed high upon Duluth's hills over a century ago and was left to photograph the harbor's history unfolding before it, the resulting pictures would astound the viewer. In the almost fifty years between 1824 and 1871 the camera would have recorded the transformation of a marshy, island-filled river estuary dotted with Chippewa encampments and American trading posts into a fledging harbor with two entries, numerous shipping operations and two embryonic cities on its shores.

Pictures of the next fifty years would present a dizzying kaleidoscope of changes that were fired by the railroads which tied the harbor to the West and to the Iron Range. The harbor rapidly became an important shipping center handling enormous quantities of lumber, coal, iron ore and general merchandise. In 1878 the harbor shipped 2.1 million tons of western grain; 35 million tons of Minnesota iron ore left the harbor in 1917; and, in 1920 almost 13 million tons of eastern coal entered the port. To handle these vast tonnages over fifty docks, elevators, flour mills and lumber mills lined the harbor's crowded shores. Also, of the thousands of ships serving the port many had been built in the harbor, including Alexander McDougall's unique whalebacks.

During the most recent fifty years there occurred a series of surges and declines in harbor activity. Shipping rose to new heights but tapered off following World War II. Harbor improvements not only created deeper channels, but the resulting dredged materials were used to build new islands and land areas in the harbor. The number of docks were reduced and shipments, too, declined. Still, the harbor remained a vital economic factor which was bolstered with the opening of the Seaway in 1959. In addition to the foreign shipments coming through the Seaway system, new cargos such as western coal started the harbor on an upswing that is just beginning now to gain its momentum.

While the camera could easily and spectacularly record the harbor's physical changes, it could not detect the subtler alterations of peoples' perceptions of the harbor and how it should be developed. An increasing awareness of the finiteness of the world's natural resources in general and the harbor's in specific gradually led people to more closely evaluate what happened to the harbor. In the harbor's earlier days people were of one mind concerning harbor development and the harbor's size seemed to allos for all uses. A plan then did not seem necessary. Today, however, the minds of people are split and the harbor, while still physically just as large, has assumed more definite and closer boundaries.

This changing concern is reflected in two prior plans for the Duluth side of the harbor. In 1927 the entire harbor was seen as fit for industrial development. By 1958 industrial uses still dominated but recreation and the natural environment gained recognition. Since the late 1960's, this trend accelerated to the point where concern for the natural environment equaled that for further development.

The arguments for both sides of the issue are valid and impressive. There is no doubt that shipping is economically significant to Duluth and, more especially, to Superior where 65% of the work force depends upon the harbor. Although existing facilities can handle most anticipated cargo increases, certain new or expanding cargo tonnages will necessitate the development of more operations. And, the amount of useable land along the waterfront is limited particularly when environmental considerations are taken into account.

There are within the harbor natural resources whose loss or diminution would be highly detrimental to the area. Fish spawning beds, bird nesting grounds and unique habitats are important to the overall value of the harbor and to people's enjoyment of it. Unlike the development side of the issue a monitary value cannot be readily placed upon these natural resources, but their worth is still indisputable.

No other issue has typified the struggle between development and environment as has the question of where to dispose material dredged from the harbor. Dredging itself is not questioned; without the annual removal of 130,000 cubic yards of material the harbor will gradually silt in forcing shipping operations to cease. In times past most of this dredged material had been dumped into the deep waters of Lake Superior although some has been used to create land in the harbor, to build a highway and as fill for construction projects.

The environmental problem with dredge disposal is twofold. First, certain amounts of the material is polluted and its disposal into Lake Superior or harbor waters is deemed water pollution. Second, much of the creation of land along the waterfront through disposal has come at the expense of valuable shallow water areas. At one point the controversy halted most dredging for over five years creating shipping hazards within the harbor. For the immediate future the proposed Erie Pier disposal site will handle disposal in an acceptable fashion. But once Erie Pier is filled, then what?

The impetus for a harbor plan is not limited to the environment versus development matters alone although that issue in the guise of the dredge disposal question is certainly a major force. Other conflicts and issues abound in the harbor each adding to the need to develop a coordinated plan.

The intent of any land use plan is to designate areas for specific types of development so as to insure orderly, compatible use of that area. For the Duluth-Superior harbor this means more than just finding room for new water-related industrial development or setting aside natural resource sites. Other legitimate uses are also competing for the land along the waterfront.

First of all, one general issue must be faced in order to put the others into the proper perspective. Duluth and Superior are two port communities whose access to the waterfront itself is limited or difficult at best. High volume streets, railroads and extensive industrial areas make much of the harbor inaccessible to the general public. As a result, neither city has developed a positive "atmosphere" associated with a harbor.

Among the measures that could be taken to strengthen the ties between water and land are those that encourage a diversity of land uses along the waterfront. For instance, residential neighborhoods along or near the water's edge can be expanded or new ones developed. Well-designed commercial retail sites can be used to create a flow of people to the waterfront area. If developments of this nature are carefully conceived and implemented, the general community's exposure to and awareness of the harbor will be increased.

Recreational activity holds, perhaps, the greatest potential for improving contact with the harbor. Currently, a handful of heavily visited sites - Canal Park, Park Point, Billings Park, Chambers Grove - bear the brunt of the demand for recreation along the waterfront. Moreover, access onto the water itself is made difficult by the near total absence of developed boat landings. Other shortcomings which contribute to the lack of good contact with the harbor include too few camping facilities, a shortage of boat slips, minor development of historical features and an insufficient trail system.

Simply to satisfy the needs of the present recreation demand will require substantial action. But, as the water quality of the harbor improves because of new sewage treatment facilities, even greater numbers of people will be attracted to the waterfront. By meeting these demands in an appropriate fashion the ties between water and land can be significantly bolstered.

The net result of the desire to increase contact with the waterfront is to encourage more and different land uses along selected portions of the harbor. In achieving this goal one is also satisfying the general demands for new housing, more recreation opportunities and expanded commercial retail operations. The problem then, is to locate these uses on property which is not valuable for water-related industry nor is a significant and sensitive natural resource. It is obvious that the demand for waterfront land is large and the amount of land is small, or at least limited.

Yet another item for consideration on development and use of the harbor involves the transportation systems which are central to the harbor's existence. The harbor's economic purpose is to transfer goods from one form of transportation to another form. Problems and issues related to transportation primarily involve making the transfer more efficient and in improving the conditions of the various systems.

Most of the harbor's difficult transportation problems relate to conflicts between the various modes of travel with bridges being the key problem areas. Duluth's Aerial Lift Bridge is probably the best known conflict between boats and autos, but the Burlington Northern's bridge in St. Louis Bay and the Arrowhead Bridge pose similar problems of their own. Railroad crossings along Superior's Northern waterfront and Duluth's Railroad Street are also particular troublesome conflict sites.

Generally, improvements required for the systems can be viewed less as problems and more as steps to increase performance and efficiency. In this regard, the water transportation system is hindered by the existence of the twenty-three foot depths in most portions of the Minnesota, Upper, North and South channels. Being less than the Seaway depth of twenty-seven feet, this stretch of channel prevents efficient use of vessels serving docks along its length. On the other hand, increased use of 1,000 foot long boats may pose definite navigation and safety problems at certain points in the harbor, especially where turning or maneuvering room is currently restricted. Two likely areas for this type of problem are the Cross channel and BN (old NP) Railroad Bridge.

Thus, since the harbor was first developed, the need for a coordinated plan has varied, gaining intensity as time passed until where, today, the urgency seems paramount. Logically, one might ask what agencies or authorities already exist to develop and implement a plan, or, why have not they acted before now? The answer is both simple and complex.

It is complex because so many different agencies exist which play some major or minor role involving harbor management. On the other hand, the answer is simple because no one has the mandate to view and manage the harbor, which is split both by state and city boundaries, as a single entity. No one acted because no one was in a solid position to act. Instead, they concerned themselves with their own areas of interest and there some of them did rather well.

However, the present planning effort is not the first to seek an unified approach to harbor management. In 1896 when Congress first made a single appropriation to maintain the Duluth-Superior harbor there was also a confident feeling that Duluth and Superior had resolved their differences to cooperatively run the harbor. Unfortunately, such was not the case.

Two recent studies continued efforts to increase cooperation if not attain outright merger. In 1974 the consulting firm Cresap, McCormick and Paget released their reports on the organization and development of the Duluth and Superior ports. They found that the Superior Board of Harbor Commissioners and the Seaway Port Authority of Duluth should eventually be consolidated into one unified body which would handle all Twin Ports public port and industrial development operations.

In early 1976 the Minnesota and Wisconsin legislatures created the Minnesota-Wisconsin Interstate Port Authority Commission to "develop a plan for the merger of the port authorities" of Duluth and Superior. While the IPAC mandate and viewpoint leaned towards merging the two port authorities, the unresolved issues of industrial development and finances precluded the making of a recommendation for merger. Instead, the commission recommended that the two cities adopt a timetable for improving cooperation.

But harbor management is more than port management. Land use and natural resource activities are also a part of it. In either instance existing programs are meager in their approach to harbor-wide management. Neither city has a land use plan for its own waterfront let alone a joint one for the entire harbor. Likewise, the natural resource agencies are without a common program for managing the harbor's fish, wildlife and habitat resources.

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Up until ten or twenty years ago the Duluth-Superior harbor did not require a plan because the majority of people were of a common mind as to how the harbor should be used and managed. But during the last two decades serious disagreements over the development and use of the harbor have surfaced. No longer can problems be approached from a single perspective. The issues that face the harbor today must be viewed from many angles and their resolution must be a balance of several differing arguments. Only a common plan with an on-going process of cooperative and uniform review and management can successfully undertake the challenge.

DESCRIPTION OF PLAN ORGANIZATION

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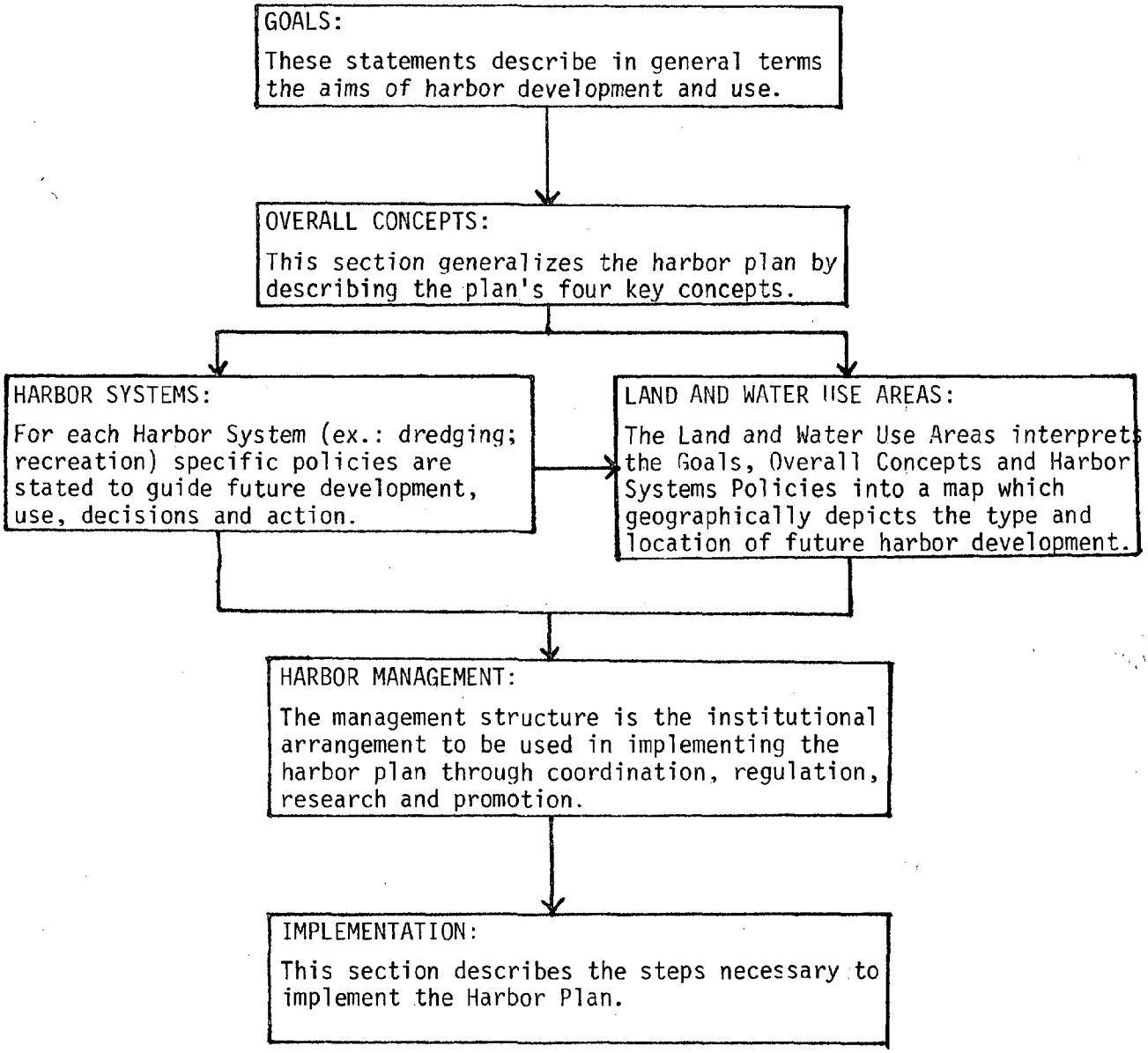
The Duluth-Superior Harbor Plan is composed of several elements which flow together to form a cohesive statement about future development and use of the harbor. The following diagram is offered so that the reader can better understand the relationships between these elements. Subsequent chapters present each element in detail.



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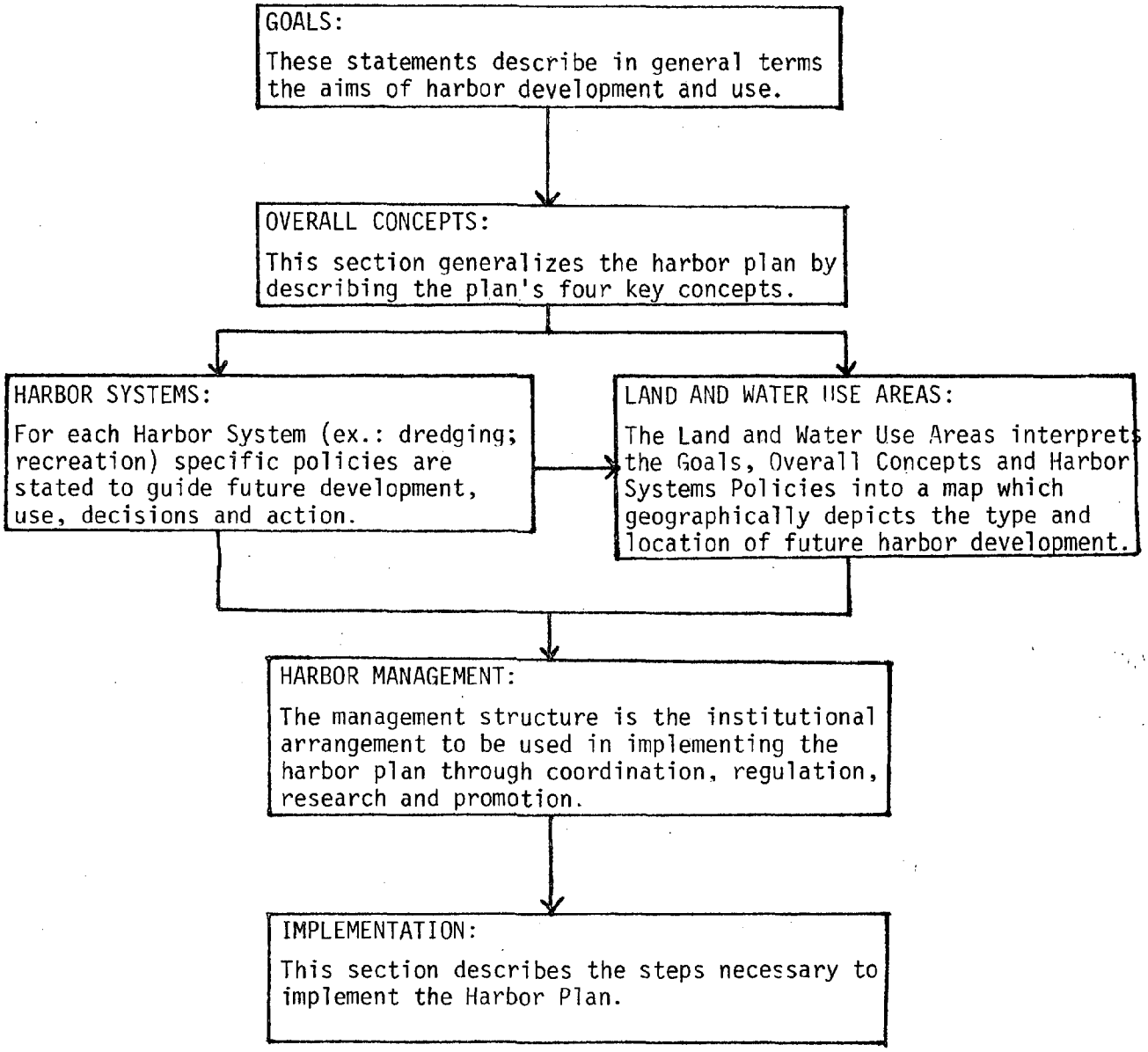


GOALS OF THE DULUTH-SUPERIOR HARBOR

# GOALS FOR THE DULUTH-SUPERIOR HARBOR

The sound use and development of the Duluth-Superior harbor area must rest upon a foundation of commonly accepted goals. Emerging from these goals is a picture of the desired end result of the harbor's development. The harbor plan contained in this document begins the transformation of the goals into reality.

| | |
|---|---|
| OVERALL GOAL | To maximize the value and use of all harbor resources through the multiple and complementary use of the of the land and water areas of the harbor. |
| TRANSPORTATION | To develop an intermodal system for the easy, safe and efficient movement of goods and people based upon the needs of harbor area activities and through traffic, and upon the transportation needs of the metropolitan area. |
| NATURAL RESOURCES | To maintain and enhance existing significant wildlife habitat, fisheries, hydrologic areas and scenic views and to develop new such areas in a fashion which expands the harbor's wildlife and fish productivity and which accents the beauty of the harbor. |
| | To maintain and improve the quality of the water, air and land of the Duluth-Superior harbor area, including all streams which feed into it. |
| RESIDENCE | To strengthen existing residential areas and plan new housing areas in a manner that preserves the beauty of the harbor's terrain and utilizes to the utmost advantage the waterfront location. |
| RECREATION | To strengthen and expand the recreational character of the harbor, and to develop a system of public open spaces and recreation areas that realizes the recreational potential of the harbor, that provides unity and identity to the urban area, and that reinforces the overall harbor relationships of water, land and sky. |
| INDUSTRY | To promote maritime industrial activities in those portions of the harbor which are served by active deep-water channels. |
| COMMERCE | To develop commercial activities along the waterfront that will satisfy the needs of the metropolitan area and that will significantly benefit from a waterfront location. |
| GENERAL | To develop the full potential of the waterfront in accord with the unusual opportunities presented by the relationships between the harbor, Lake Superior, the operating port, the maritime character, and the aesthetic qualities offered by water, topography, and views of the surrounding area. |
| | To increase the benefits the harbor gives to land not directly in contact with the waterfront. |
| | To maximize the amount of waterfront accessible to and useable by the general public. |
| | To minimize the cost of development within the harbor. |

OVERALL CONCEPTS FOR THE FUTURE USE OF THE HARBOR

## OVERALL CONCEPTS FOR FUTURE USE OF THE HARBOR

The Duluth-Superior Harbor plan can be quickly described and understood through four basic concepts. These statements embody the intent and impact of the goals, policies and recommendations noted in the plan. Underlying these concepts is a fifth, that being that a fair, consistent and effective management structure exists to assure their realization.

### RECOGNIZE, MAINTAIN AND ENHANCE THE SPECIAL QUALITIES OF THE ST. LOUIS RIVER AS A SEMI-WILD RIVER FLOWING THROUGH AN URBANIZED AREA.

To a region of the country which extolls the beauty of wilderness and which possesses so much of it, the St. Louis River offers the potential of a direct and continuing link between the wild and the developed. The river's abundant fish and wildlife and its quiet bays and backwaters provide a sharp contrast to the hustle of the port and the cities further downstream. Yet the contract is a pleasing one; it affords residents and visitors alike the opportunity both to find solitude close to the city and to see the vast economic development supporting the head of the lakes region.

Yet, for the most part it is an unrealized resource. It has been polluted and neglected. But, as the waters are cleansed, the river will be rediscovered. The plan's features strive to prevent future misuse by carefully restricting what is to occur along the river. Emphasis will be placed on recreation and natural resource management.

### CONCENTRATE GEOGRAPHICALLY AND PROVIDE FOR THE EXPANSION OF THE COMMERCIAL SHIPPING INDUSTRY.

For Superior and Douglas County commercial shipping is their economic backbone; for Duluth and St. Louis County, it represents a substantial element in a more diversified economy. Assurances of this industry's on-going vitality are a definite feature of the plan. The plan seeks to provide reasonable room for further development, especially regarding the shipment of western coal. However, this new development is encouraged at sites along the deepwater channels near the existing facilities which line St. Louis Bay, Rices Point and Superior's Eastern waterfront.

### INCREASE THE AMOUNT, VARIETY AND QUALITY OF PUBLIC CONTACT WITH THE TOTAL WATERFRONT.

To reap the full benefit of the harbor's total body of resources demands that the harbor be completely integrated into the metropolitan community. Public contact with the waterfront is to be readily available and near total. Exclusive private use of any stretch of the harbor is to be minimized to that which is absolutely essential, such as for shipping.

Yet, simply providing access is not enough. The harbor plan intends to lend meaning to that access by insuring a variety of experiences along the waterfront. People will work, play, shop, live and simply be along the harbor's edge or on its waters. Harbor developments are to be designed to take full advantage of the views, sounds and activities which are found only in the harbor. The connections between the harbor and the rest of the community are to be strengthened, restoring the historic ties which originally united the water with the people.

PRESERVE AND ENHANCE SPECIFIC NATURAL RESOURCES.

Scattered throughout the entire harbor can be found many natural resources - islands, wildlife habitat, scenic views - whose retention is paramount to the harbor's uniqueness and future vitality. Many of these resources are of critical importance to the well-being of game fish populations or various species of birds. Others attain their value by offering unparalleled scenic vistas or relaxing settings.

The plan identifies the types of areas to be protected and, where necessary, recommends programs required to maintain or improve them. Some of these areas are extremely large such as most of the St. Louis River while others, like Hearding Island are relatively small. Nonetheless, all contribute to making the harbor a special place for Duluth, Superior and the Midwest.

HARBOR SYSTEMS

## HARBOR SYSTEMS

A geographic description of a plan would reveal the harbor as if it were a folded map being opened panel by panel. Each segment is seen separate and distinct from its neighbors. Yet the harbor is a single entity bound together by many forces not the least of which is the flow of the water itself. One way to understand this view of the harbor and its plan is to examine the proposed systems which will operate throughout its length and breadth. The following section details the policies which are to regulate these systems within the harbor. Each section also offers an initial description of how those policies should be applied.

## NATURAL RESOURCES

From the vast wealth of natural resources found in the harbor has sprung the wide variety of uses now located there. Shipping, fishing, tourism and recreation all rely on specific and often different aspects of the harbor's resource base. To maintain each of these uses requires that the natural resources upon which they rest be protected and maintained. No one form of development can be permitted to undermine the foundation for the others. In this regard, management of land and water areas as fish and wildlife habitat is considered an integral and essential harbor activity.

### POLICIES:

(1) Habitat areas required for vigorous game and nongame fish and wildlife populations are to be preserved, managed and, if necessary, newly created.

a. Fish-food-production, resting and spawning areas, such as shallow submerged lands, wetlands and marshes are to be preserved. The use of adjacent shorelands should be controlled to protect these vital links in fish life cycles.

b. Fish stocking and habitat enhancement programs are strongly supported.

c. Where feasible, hatchery production in the harbor or its tributary streams is to be increased and damaged habitat is to be restored.

d. To avoid disruption of wildlife habitat appropriate areas should be designated for the use of off-road vehicles. Their use in other areas should be strictly regulated.

e. Significant fish and wildlife habitat areas are to be designated and protected accordingly.

f. Upland, shore, marsh and open-water areas essential for migratory wildfowl are to be preserved and managed in an appropriate fashion.

(2) There is to be no net loss of the biological potential found within the harbor.

a. The adverse impacts of harbor development involving destruction of marsh or shallow-water areas by dredging or filling must be mitigated by creation or restoration of habitat with a biological potential similar to that destroyed.

b. Wherever possible, land that is already under public control is to be used as the site for the mitigating action so as to reduce costs.

(3) Restoration of marginal and unused low-lying areas to wetland is encouraged.

(4) Natural vegetation in shoreland areas shall be preserved insofar as practical and reasonable in order to retard surface runoff and soil erosion, and to utilize excess nutrients. The removal of natural vegetation is to be in accordance with the following criteria:

A. Clearcutting is to be prohibited, except as necessary for placing public roads, utilities, structures, and parking areas.

B. Natural vegetation is to be restored insofar as feasible after any construction project.

C. Selective cutting of trees and underbrush is to be allowed as long as sufficient cover is left to screen motor vehicles and structures when viewed from the water.

D. Sufficiently wide natural vegetative buffer strips are to be maintained to serve as bank stabilization and a natural filter for runoff.

(5) Grading and filling in shoreland areas or any other substantial alteration of the natural topography is to be in accordance with the following criteria:

A. The smallest amount of bare ground is to be exposed for as short a time as feasible.

B. Temporary ground cover, such as mulch, is to be used and permanent vegetative cover, such as sod, shall be provided.

C. Methods to prevent erosion and trap sediment are to be employed.

D. Fill is to be stabilized to accepted engineering standards.

(6) The mouths of streams flowing into the harbor are to be retained in an undeveloped state, except where they are used as parks.

(7) Existing aesthetic resources including scenic views, unique vegetative areas, special natural resources and scientific areas are to be preserved and managed. New such features are to be promoted.

(8) Disposal or discharge of wastes, garbage and debris within the harbor area is to be according to appropriate Federal, State and local standards.

A. Facilities or services for the dumping of oil and emptying of holding tanks by commercial and recreational vessels are to be provided in convenient places.

B. Wastes from such non-point sources as road runoff, agricultural lands, and urban runoff are to be identified and diminished or

C. Public collection and treatment facilities are to be used where available and feasible for wastes from land developments.

D. All private sewage and other sanitary waste disposal systems are to conform to applicable Federal, State and local standards, criteria, rules and regulations.

(9) All applicable air and water quality standards are to be satisfied.

(10) Leachate pollution from open storage areas is to be eliminated.

POLICY APPLICATION:

The natural resources policies should be used to establish programs and activities which strengthen the harbor's resource base. The following concerns are the primary areas for initial action.

HABITAT:

Preserving, maintaining and expanding fish and wildlife habitat should account for most harbor natural resources activities. Stress should be given to public acquisition or dedication of habitat sites in all sections of the harbor. Marshes, spawning and breeding sites, and feeding areas are to be protected and, if necessary, improved. Individual habitat areas should be as large as possible with significant levels of isolation and protection from adverse development and human disturbance.

SCENIC VIEWS:

Another element concerns the retention and enhancement of the natural environment as a scenic resource. Uncluttered and clear views along beaches and shores should be maintained. Unique, rare or otherwise special topographic or vegetative features should be preserved throughout the harbor. Development along the shores is not to involve loss or degradation of the natural vegetative cover.

POLLUTION:

Facilities and management tools should be used to reduce the level of air and water pollution to accepted standards. This concern extends to such pollution items as litter where standards as such do not exist. Facilities for the collection and treatment of sewage, garbage, dunnage and vessel wastes should be constructed or implemented.

In addition, regulations requiring the use of these facilities should be enacted. Finally, on-going programs for monitoring harbor pollution need to be implemented.

EROSION:

Erosion is seen as a natural process not to be tampered with unless it threatens developed property. In that instance the preferred course of action would be to use land management measures to resolve the problem; structural solutions, which normally are more expensive, should be seen as a last resort.

MITIGATION:

Wherever development causes the loss of a significant environmental resource, that loss is to be mitigated by the creation of new or the enhancement of existing habitat. The required mitigative action for a given project is to be applied to a harbor-wide mitigation plan. Thus, the harbor's diversity of natural resources will be maintained. The harbor mitigation plan is to be incorporated into a harbor environment management program so that all phases of the harbor's natural resources base are managed in a coordinated fashion. [1]

LAND USE

Use of the land and water of the harbor has evolved over the years according more to the quirks of land ownership, land availability and personal whim than to the rigors of commonly agreed upon public policy. The net result of this process has not been necessarily negative, but it has caused conflict and waste and it has for the most part disregarded much of the wide potential of uses in the harbor. As a direct by-product of this development pattern, large stretches of shoreline have been effectively isolated from general public access. The harbor is a complex body of resources whose fullest use by public and private interests alike needs the direction, cohesiveness and scope that an established plan for development can offer.

POLICIES:

(1) Development and improvement of existing port sites is encouraged prior to development of new port sites:

(2) Dredging and/or filling for port improvement, expansion and modernization is to be encouraged only in development areas designated by the approved harbor plan.

(3) Shorelands with the combined characteristics of adjacent deep-water access, adequate rail and road access and sufficient backup land are to be designated for water-dependent development and reserved for future port development after giving due consideration to existing facilities and demand for port development;

(4) Port development needs are to be evaluated and plans developed in light of possible long-term national and Seaway needs.

(5) Where non-water-dependent residential, commercial or industrial development exists in areas designated for water-dependent development, local governments shall encourage gradual transition of shorelines to water-dependent uses through land use controls and favorable tax or other incentivies for property owners;

(6) In areas designated for non-water-dependent or related development, clustering of residential, commercial and industrial uses is preferred over scattered development in order to preserve the natural values of riparian vegetation and wildlife, to promote visual attractiveness and to provide for maximum open space;

(7) Major water-dependent and water-related residential, commercial and industrial shoreland developments shall be designed and constructed to minimize adverse environmental impacts, promote visual attractiveness and provide appropriate visitor facilities and public access to the water;

(8) Mitigation shall be provided for any damage to marsh areas occurring as part of any shoreland development.

(9) The economic vitality of the harbor is to be promoted.

(10) Those maritime industrial activities which render the greatest local economic impact are to be given priority for development.

(11) Orientation to and contact with the waterfront by existing residential neighborhoods are to be increased and enhanced.

(12) Opportunities for new housing units along the waterfront are to be provided.

a. Each development is to be evaluated to ensure that other more desirable water-dependent uses are not preempted.

b. Residential development is not to occur in areas reserved for water-dependent uses or for wildlife or natural resource management.

(13) Residential neighborhoods, existing and proposed, are to offer a variety in the type and cost of housing units.

(14) Retail commercial development will be permitted on the waterfront following a case-by-case evaluation that it:

a. Serves waterfront users;

b. Requires a waterfront location for the operation of the development;

c. Improves the general public's access to the waterfront;

d. Complements and coordinates with nearby recreational, residential or industrial development.

(15) Non-maritime dependent industrial uses are to be sited on appropriate land not within the harbor area.

(16) Proliferation of individual, single-purpose piers and mooring facilities are to be discouraged in favor of clustered public or private community facilities.

(17) Development in areas subject to flooding, excessive erosion and other similar hazards is generally discouraged and when proposed, shall be accompanied by an engineering report and site plan which shows how the proposed development will be protected from the hazard and how negative impacts (particularly off-site effects) will be prevented.

a. Shoreland, wetland and in-water development not in hazard areas shall be evaluated prior to construction, to ensure that it does not create or worsen hazards elsewhere; and

b. Measures will be taken to discourage reconstruction of structures in hazard areas, which have been damaged or destroyed.

(18) Federal, State and local actions in the harbor area are to provide for the maintenance and improvement of public access to water for all people, consistent with legitimate shoreland uses and the need for protection of the harbor from overuse.

(19) Where major shoreline developments are allowed, priority shall be given to those that make provision for public access to the shoreline. The new major development, in combination with other developments in the area, shall not exclude the public from shoreline access to areas traditionally used for fishing, hunting or other shoreline activities. Exceptions may be made if, after a public hearing, it is determined that the greater public good would be served by the change in land use.

(20) The exclusive use of shore areas by private interests is to be minimized.

(21) Compensation of land owners for damages caused by public access is to be provided.

(22) Public lands within the harbor area are to be managed in accordance with the approved harbor plan.

a. Public agencies shall exchange lands when it would result in more efficient and effective management of these lands.

b. No public land may be sold or traded without first a determination being made as to the best use and ownership of the land.

(23) Future construction on shorelands owned by federal, state and local governments shall be carried out to maximize public access to shorelines and to avoid closing these lands to public use. Public access to shorelands in present federal, state and local government properties shall be improved whenever possible, consistent with authorized use.

(24) Public access to scenic views shall be provided in a manner consistent with the nature of the area.

(25) Access to shoreline via public street ends should be enhanced.

(26) Special consideration should be given to making areas of the harbor available to the elderly, handicapped and physically disabled, so that they too may enjoy the natural and cultural features of the harbor.

(27) Prior to a slip being filled there must be a determination that there is no other feasible use which could utilize the slip.

(28) A statement of need citing evidence that existing operations are inadequate or cannot meet the anticipated demand is to accompany proposals for new development.

POLICY APPLICATION:

The possible application of the land use policies is broad and far reaching. Among the first uses are noted below.

SHIPPING:

Existing commercial shipping operations are to continue although any given site may undergo alterations to expand capacity or to accomodate different cargos. New operations should be located on unused or vacated shipping docks or on newly developed land adjacent to existing docks. While increases most cargos can be handled with existing operations or additions to them, two or three new coal docks may be necessary for expected future coal shipments.

INDUSTRY:

General, non-maritime dependent industrial development should be limited to those sites where shipping cannot be undertaken and where other water-related use is not feasible. More appropriate sites are located in the upland areas away from direct contact with the harbor.

RESIDENCE:

New residential neighborhoods could be developed at appropriate sites. Several existing areas could be expanded or otherwise improved. All sites should encourage maximum amounts of direct and visual contact with the waterfront, natural shoreline and accessibility to various income levels and household types.

COMMERCE:

Since the availability of potential sites is limited, all attempts should be made to develop commercial retail or service modes on the waterfront on those sites where the potential exists. These areas are to enhance the waterfront, require location there, utilize existing but underused property and to help draw people to the harbor. Such developments can assist in reinforcing the ties between the cities and the water. They can also represent major public or private investments designed at revitalizing the whole of the cities.

RECREATION/OPEN SPACE

Each year several million visitors make the harbor the single most important recreational resource in the head of the lakes region. Yet, even then the full potential of the harbor has not been grasped let alone attained. As the contact point for river, lake and land, the harbor brings together into one place the distinct recreational opportunities of each of the three resources. But more importantly, within the confines of the harbor these resources intermix and create within and between themselves new and more varied possibilities. The end product is an extremely dynamic and multidimensional recreational resource which is virtually unparalleled in the Uppder Midwest. To obtain the highest value from this enormous harbor resource will require more public awareness of the opportunities available, a far greater ease of access than now exists and a commitment to sensitively develop appropriate facilities so that the greatest number of uses can be accomodated without abusing the resource.

POLICIES:

(1) Only those recreational pursuits which actually require or are significantly enhanced by a waterfront location are to be developed or retained.

(2) Within the limits noted in Policy (1) the variety of recreational activities is to be expanded.

(3) The natural resources on which harbor recreational activities are based shall be conserved and enhanced;

(4) Local, state and federal agencies are encouraged to use their authority and resources to provide recreational facilities and maximum opportunity for public access to the harbor consistent with demand, natural resource values, private property rights and the need for other, more intensive development;

(5) Expansion and new development of motels, restaurants, shopping facilities, campgrounds, marinas and other facilities to support the recreation/tourism industry shall be encouraged, consistent with demand;

(6) Diversification of recreation and tourism that is not based on consumption of natural resources is to be encouraged when consistent with preservation of natural resources and overall community development.

(7) Areas should be reserved that will provide for adequate dock and moorage space for present and anticipated future recreational vessels;

(8) A network of boat accesses is to provide access to all portions of the harbor;

(9) Known, significant archaeological sites in areas where construction is intended shall be formally excavated or preserved intact in accordance with state and federal laws;

(10) The potential for restoration and re-creation of historical waterfront areas should be investigated;

a. Historical buildings and cultural landmarks under threat of demolition are to be examined to see if they can be moved or restored to useful life, or preserved in some way, either by public or private means;

(11) Physical and visual connections between the harbor and areas away from it are to be developed.

(12) Where feasible, recreational facilities are to be integrated with other developments such as housing, habitat and commercial areas.

(13) Wherever possible, recreation and open space areas are to be interconnected, especially along the shoreline.

(14) Recreational facilities are to be used to increase public access to the harbor.

POLICY APPLICATION:

The recreation/open space policies should be used to establish the following operations within the harbor.

ACCESSES:

A network of boat accesses should be developed to grant greater ease to people getting onto and enjoying the harbor's waters. In each major section of the harbor there should be an all-purpose landing capable of handling nearly all sizes of trailered boats. Also within each section should be one or more additional accesses to handle light boats and canoes with their smaller ranges than the larger craft. Roads serving accesses are not to cause traffic disruption in residential neighborhoods. The major accesses are to possess facilities including toilets and trash receptacles. When possible, accesses should be developed in conjunction with other recreational facilities. Finally, boat moorings should be constructed to facilitate and encourage use of recreational sites accessible by water.

CAMPING:

Intimate use of the waterfront, particularly the St. Louis River, is to be promoted by expanding camping opportunities. Existing campgrounds could be expanded in size and level of operation while several new sites should be created. Use of points and islands as campsites will greatly enhance the appeal of the operations. Provisions should be made for all levels of camping from primitive tenting to trailers.

PARKS:

Two types of parks can be developed to attract large numbers of people to all phases of the harbor: Lake Superior, the port, the river. First, the three existing multi-purpose parks - Chambers Grove, Billings Park, Park Point - offer ideal picnicking, hiking and field game sites. One or two more such parks can be developed within the harbor. The second type of park, such as Canal Park, stresses the shipping aspect of the harbor. Other parks of this nature can be located along the waterfront at convenient sites for viewing the ships and harbor operations.

TRAILS:

Nearly every recreational facility should possess a trail system of some sort to allow people a closer, more direct contact with the harbor. Trails for hiking, bicycling, skiing and snowmobiling should be built. Rather than being secondary features some trails can be major attractions in and of themselves. Many trails will be simple paths along the shore, through forests or up tributory creeks. On the other hand, the most special trail is the St. Louis River itself which can be used by canoeists, boaters and even commercial excursions.

MARINAS:

Although marinas are commercial operations, they are directly tied to recreation. There is currently a need for over 600 slips which can be met by expanding existing marinas or building new ones. At least one new marina could be primarily

for power boats and should be located on the St. Louis River. Superior's eastern waterfront should be considered for a major new sailboat marina so as to encourage more use of the Superior Entry and thus reduce conflicts at the Aerial Bridge. Also, boat mooring areas should be designated where they would receive maximum use and where land access to them is convenient.

CREEK CORRIDORS:

Streams flowing into the harbor should be developed as continuous open space connectors between the waterfront and the upland areas. These corridors will aid storm drainage, provide wildlife habitat, act as recreation trails, aid people in fishing along the streams, and help physically tie the harbor to the rest of the community.

HISTORIC FEATURES:

Points of historic interest should be identified, marked and connected by a self-guided trail system. These sites can be used to educate visitors about the harbor as it once was and how it came to be as it is today. The historic trail network should be coordinated with other trails and other recreational sites.

GENERAL:

Views of the harbor can be enhanced, indeed made possible, by providing viewing stands at appropriate sites throughout the harbor. Especially in the shipping sections, these stands can permit safe, inobtrusive viewing and increase understanding of the primary activities of the harbor.

Also scattered along the waterfront can be small fishing docks or piers. Old bridge abutments can provide some sites while others will need to be built. These piers will help grant anglers land access to fishing spots and aid in promoting what will become a major sport fishery in both states.

## TRANSPORTATION

Shipping iron ore, grain and coal to the rest of the nation and the world is the prime element in the harbor's existence. Transfering forty million tons of cargo each year ties the harbor to a vast rail and road network and the immense Great Lakes - St. Lawrence Seaway water transportation system. This movement of goods up and down the Great Lakes is the historic cornerstone of Duluth and Superior's economic foundation. Thus, it is imperative that steps be taken to continue the flow of goods through the port. Similarly, the local transportation system which serves all aspects of the harbor must be improved and maintained to promote better and more extensive use of the harbor's many-faceted resource base.

(1) The transfer of goods from one mode of transportation to another is to be made as efficient as possible.

(2) The condition of each transportation system is to be maintained in the best possible condition.

(3) Conflicts between types of transportation are to be eliminated or minimized.

(4) The most energy efficient movement of goods and people is to be promoted.

(5) Greater use of the port is to be promoted.

In addition, the following policies which apply to the water transportation system are to be included.[1]

(6) The system should provide the best transportation service possible within the limits of available financing.

   a. The system should permit all maritime-related sites to fully utilize their resources within the limits set by the entire Seaway network.

(7) The system should provide for the efficient movement of people and goods, taking care to reduce conflicts between them.

   a. The system should encourage full use of existing facilities and services (including public utilities) before creating a demand for new ones to be built or implemented.

   b. The system should not cause vessels to take unreasonably long routes within the harbor.

   c. The system should not create unnecessary conflicts with land transportation systems.

(8) The system should provide for the safe movement of people and goods, while protecting non-traveling persons and property from damage caused by transportation facilities or activities.

   a. The system should minimize personal injury and property damage.

   b. The system should minimize fatalities caused by travel.

(9) The system should curb adverse and promote positive environmental impacts.

   a. The system should minimize its contribution to air pollution.

   b. The system should minimize its contribution to water pollution, especially in this harbor which has a wide diversity of water related uses.

   c. The system should minimize noise near areas of human habitation.

[1]Refer to Policy Guidelines for the Water Transportation System of the Duluth-Superior Harbor, May 1977, MIC.

d. The system should seek to eliminate adverse impacts upon significant plant and animal communities in the harbor area.

(10) The system should emphasize the most economical modes of travel commensurate with reasonable standards of service.

a. The system should minimize the need for and cost of construction.

b. The system should minimize on-going operational costs.

c. The system should minimize direct costs to the users of the harbor.

(11) The system should minimize and compensate adequately for any displacement of residences and businesses caused by transportation improvements and reinforce local development plans.

a. The system should minimize acquisition of houses for new facilities.

b. The system should maximize potential for maintaining and increasing water transportation related jobs.

c. The system should encourage maximum utilization of waterfront property and increase opportunities for waterfront development.

d. The system should minimize harm caused to irreplaceable open space areas and should maximize development of or access to harbor open space, recreation and natural resource areas.

e. The system should operate within the overall objectives of the harbor as stated in appropriate community development plans and programs.

(12) The system should be designed to meet peak demands where they occur at different times of the day, week, month, or year to the extent possible.

a. The system should be able to accomodate peak demands and minimize congestion.

(13) The system should emphasize the most energy conserving modes of transportation commensurate with reasonable standards of service.

a. To the extent possible for the water transportation mode, the system should minimize energy useage. (This may include attracting cargo now being carried on less energy efficient modes).

POLICY APPLICATION:

Initially, the following transportation programs are to be operating within the harbor.

CHANNEL IMPROVEMENTS:

To facilitate more efficient shipment of cargos all shipping channels within the harbor should be at the Seaway depth of twenty-seven feet. Also, on-going review and analysis should be undertaken concerning creation of new anchorage basins, widening of channels, dredging of new channels and general safety measures.

BRIDGES:

Three bridges - Aerial Lift, Burlington Northern and Arrowhead - epitomize the conflicts between varying transportation forms. Measures should be taken to eliminate or minimize the disruption to land and water transportation caused by the bridges. These measures may be structural in the form of new or modified bridges, or in the form of institutional changes such as bridge hours, land use shifts or route changes.

ROAD ACCESS:

Access to the harbor for commercial, residential and recreational traffic is to be improved. Railroad crossings are to be improved with better signing, more lighting and increased lines of sight. Through traffic is to be rerouted around residential neighborhoods or, at least, the impact of the traffic is to be reduced or abated.

AIR TRANSPORTATION:

The use of harbor land and water for air transportation needs further study concerning the need for the facilities, their impact upon the harbor environment and the availability of alternate sites.

## DREDGING AND DREDGED MATERIALS DISPOSAL

Prior to the advent of the modern shipping industry at the head of the lakes the harbor was a marsh filled estuary with water depths seldom exceeding six to nine feet. Today, dredging is mandatory to accomodate the salties and lake carriers which visit the port. Although the need for dredging is understood and seldom questioned, the matter of disposing the resulting spoils is heavily contested. On one side are those interests favoring the method and sites which are least costly and easiest to undertake. Opposing them are those who insist that perhaps more expensive, less environmentally destructive methods and sites be chosen. Between these two stances lies a compromise which would satisfy most people and which wi-l best serve the total body of harbor resources.

POLICIES:

DREDGING

(1) Dredging shall be conducted to ensure that:

a. Access to port and marina facilities is preserved and improved at authorized channel depths;

b. Efficient and safe navigation is permitted;

c. Adverse short-term effects such as pollutant release, dissolved oxygen depletion and disturbance of important localized biological communities are minimized;

d. Adverse long-term effects such as a loss of fish habitat, destabilization of bottom sediments, overchannelization, and biologically harmful changes in circulation patterns are avoided.

(2) Dredging in designated natural areas is to be prohibited;

(3) Unfavorable impacts on fish habitat, riparian vegetation and wetlands should be minimized;

(4) Dredging is appropriate in support of water-dependent uses. The site design should serve to minimize unfavorable impacts on fish habitat, wetlands, and circulation of the estuary;

(5) Dredging to improve the harbor must be justified on the basis of economic, social and environmental needs;

a. Abandonment or downgrading of existing dredging operations must be similarly justified.

(6) Dredging is to be done in the least costly manner which satisfies the preceding policies.

DREDGED MATERIALS DISPOSAL

(7) Polluted dredged material or fill may not be deposited in the harbor, except behind an approved facility;

(8) Dredged material disposal, filling, and pile driving in wetlands and productive shallow submerged lands are generally discouraged. They may be allowed if the project:

a. Cannot feasibly be constructed elsewhere, is a water-dependent or water-related project in a designated development area, or is a part of a Dredged Material Disposal Plan;

b. Has site designed to minimize unfavorable impact on fish habitat, wetlands and circulation of the harbor;

c. Mitigating action is taken elsewhere in the harbor to create or restore habitat with a biological potential similar to that destroyed;

d. Has a justifiable need for the resulting land.

(9) Dredged material disposal, filling and pile driving are: forbidden in natural areas designated in the approved harbor plan and are permitted in development areas in support of water-dependent and water-related uses, subject to the restrictions elsewhere in these policies;

(10) Dredging and/or filling for port improvement, expansion and modernization is to be encouraged only in development areas designated in the approved harbor plan;

(11) To the degree possible dredged materials are to be used for constructive and beneficial purposes;

(12) Disposal into Lake Superior shall be done according to the following criteria:

a. polluted material may not be disposed into Lake Superior;

b. material is used for a constructive purpose such as rebuilding beaches.

(13) Disposal of dredged materials is to be done in an environmentally acceptable fashion;

(14) The costs of dredged materials disposal is to be shared by the local, state and federal governments and their respective agencies.

(15) Disposal sites must meet the following criteria:

a. Be available to all public and private dredging operations within the harbor;

b. Appropriate rail, road and water access is available to serve disposal and the eventual uses of the disposal site;

c. Appropriate utilities and services are available;

d. The disposal site and programmed uses are compatible with the approved harbor plan.

(16) Except where the use of the property requires otherwise, the shoreline resulting from disposal is to be given a "natural" appearance through a non-linear configuration and appropriate landscaping;

(17) Disposal of dredged materials on up-land sites is generally encouraged provided that:

a. The material is put to a beneficial use;

b. The site is environmentally acceptable;

c. The use of the site for disposal does not pre-empt a more valuable use of the property.

(18) Material used to fill designated disposal sites is:

a. To be obtained from maintenance or harbor improvement dredging operations;

b. To be obtained from approved up-land sources including construction debris;

c. Not to be obtained from dredging operations undertaken only to provide fill material.

(19) Disposal of dredged material is to be done in a cost effective manner.

a. Disposal is to be done in the least costly manner which satisfies the other policies of this plan;

b. Disposal is to involve a minimum amount of rehandling of the material.

POLICY APPLICATION:

DREDGING:

Where and to what extent dredging is to occur, at least as far as the public channels are concerned, is governed by federal authorizations. Dredging of these channels is conducted by the U.S. Army Corps of Engineers and the Corps work has been excellent in this regard.

This plan recommends, however, that the public channels be maintained only to Mile 7.3 (just upstream of Hallet Dock #6). Dredging beyond that point may be undertaken only to insure safe passage of recreational or commercial excursion craft, or for individual docks or boat landings.

This limitation will in no way harm the current or forecasted standing of the commercial shipping industry. According to other elements of the plan, the needs of shipping can be easily and adequately met through the careful use of existing and created land along St. Louis Bay and the outer harbor area. In a similar fashion dredging is not to be undertaken in Allouez Bay.

If in the future the needs of water-related industries require, this prohibition on channel extension will be re-evaluated. At the time the entire harbor plan will be reworked to insure that, as was the case this time, all facets of the harbor are entered into account.

Within the maintained portion of the harbor all channels are to be at least twenty-seven feet deep. Thus, all shipping facilities will be capable of operating at the maximum efficiency allowed by the Seaway system.

Careful evaluation needs to be undertaken concerning other harbor improvements which will require dredging. Channels, especially those at bends, should be reviewed for possible widening. Several large shallow areas in St. Louis Bay should be considered for removal so as to increase maneuvering room and mooring space.

Dredging which is not associated with the public channels or commercial shipping is to be evaluated on a case-by-case basis according to the applicable policies of this plan. In most situations dredging will be allowed if it is confined to to the immediate area of a dock or landing.

DREDGED MATERIALS DISPOSAL:

Disposal of dredged materials is to consider use of several methods and operations. Exclusive use of any one method may not satisfactorily respond to the variety of needs of harbor interests. Therefore, the following system is to be used for disposal of dredged materials. It is not site specific as each site must be evaluated individually within the context of the overall harbor plan for acceptability.

Because hydraulic dredges can operate at lower costs per cubic yard than mechanical dredges, they should be utilized if the disposal sites can be designed to adequately handle the effluent and if the scale of the dredging is sufficient to render the cost reductions through their use. Disposal sites for these projects are to be non-environmentally significant shallow water areas within the harbor. The resulting land is to be used for shipping or other waterfront related uses as established by the plan.

Operational and maintenance dredging should be done with a mechanical dredge. The material would be bottom dumped from scows into a designated slip equipped with all required environmental protection devices such as turbidity screens. From this site a permanently installed hydraulic device would pump the the spoils to an on-land disposal site. At this site the material would be graded (the pumping and settling process does most of this grading) and sold for construction or other uses. Materials which cannot be hydraulically pumped will be transported by truck.

Other uses of unpolluted spoils will include the possible creation of islands in the harbor for use as habitat or recreation. Expansion of existing islands for the same purposes could also be undertaken. Some spoils are to be used to fill obsolete slips, increase the height of certain docks and to fill in incomplete or irregularly shaped docks.

The marketing and sale of the spoils would be markedly benefitted by public agency commitments to use these materials before purchasing similar materials elsewhere. In this fashion the initial public cost of dredging and disposal can be balanced by the public use of the spoils. This latter public use could be free (which results in direct cost savings) or at reduced rates (which will help cover disposal costs and still insure reduced costs for the user).

The funding of the dredged materials program should be shared by all three levels of government. The Federal government via the Corps of Engineers should assume the cost of dredging and a portion of the cost for disposal. Because they economically benefit from the harbor, the state governments should assume a share of the resulting higher disposal costs. Finally, the local governments, because they benefit from new taxable land and jobs, should bear a small but significant portion of the disposal costs.

When an in-water disposal site has been selected, an evaluation of the site's existing biological conditions is to be conducted This information will be used to determine if the environmental loss will be significant. If it is, the site may be rejected. If it is not significant or if no other site can be found, then the lost resource will have to be gained elsewhere in the harbor at the time the site is filled. Costs of developing the new habitat will be borne by the owners of the filled in site. (Refer to the discussion on mitigation in the Natural Resources section).

## HARBOR DESIGN

The harbor endows Duluth and Superior with uncommon opportunities for exciting developments which add character and vigor to the cities. Within the harbor is a dazzling, moving collage of form and color repeated and strengthened by the vast expanses of water. Spectacular views of the harbor from overlooks high upon the bluffs are reflected by equally spectacular views of both cities from the harbor.

Lake Superior and the harbor influence Duluth and Superior's past and future. Water borne commerce was the area's original economic rationale for existence; this trade plus an expanding tourist trade framed around the water are also key to the area's future. Too, the contours and identations of the shore have been mimicked for better and worse by the cities' development. The water has bound the area together, but it has also separated and isolated.

Design of harbor development is important because it reflects and influences how people relate to the harbor. Physical separation reinforced by a lack of visual contact, as is the case in most of Superior and much of Duluth, isolates the harbor from the everyday flow of the area's activity. On the other hand, full and free physical access supported by complete and varied contact dramatically strengthens the ties between the cities and the water.

Proper design can enhance the panoramic views made possible by the water and hills; it can emphasize the harbor's connections to the world via the armada of ocean going vessels; it can aid in the populace's education about the area's history, stress the functions of the port or increase sensitivity to the serenity of the natural areas. Design is the integrating force which can add to or detract from the developments and the water they lie beside.

POLICIES:

(1) Within the active port area, development is to enhance the rich diversity of machines, ships and people and reinforce the atmosphere of an international port.

(2) For the natural sections of the harbor, development is to quietly blend into the textures, colors and rhythms of the plants, animals, earth and water.

(3) Visual and physical contact with the harbor is to be heightened so as to integrate the harbor and inland areas.

(4) Shorelines resulting from fill are, where the resulting uses allow, to be given a "natural appearance" through non-linear shorelines and appropriate landscaping.

(5) Commercial development is to utilize the motif of the water-front location, enhance pedestrian access to the shore, and promote views of the harbor.

POLICY APPLICATION:

The harbor design policies should be applied in the following manner.

VIEWS:

Views of the harbor are the most constant connection between the water and the cities. With its hills, Duluth has superb vistas with the best being from Skyline Parkway. Low-lying Superior has few; its best are along the northern waterfront where moored ships loom above buildings and streets. To preserve these views tall structures along the waterfront should be prevented wherever possible. Overlooks, especially in Superior, are necessary to obtain good views, particularly of the port operations. Also to be stressed are the night views of and from the harbor.

NODES:

A node is a centralized concentration of activity which identifies a particular segment of the harbor. Each node should be visually and physically connected with a certain element in the harbor. Canal Park is an excellent example as is the proposed Barkers Island Development. Billings Park is an example of a node along the less developed shoreline. Other such concentrations should be situated at other points in the harbor such as Connor's Point and Bayfront Park.

PATHS:

Paths are important tools in achieving continuity within the harbor and penetration from it into the upland areas. A path is a channel along which people move including transit routes, streets, alleys, trails, train tracks and the river. A path must be clearly defined, continuous, in visual contact with the harbor and distinct from other paths. New paths are desired along most stretches of the waterfront. Other types of paths which need to be developed are those that facilitate movement between the harbor and inland areas. The river, too, is an ideal path which is to be more fully utilized under this harbor plan.

EDGES:

Edges are linear elements which can either separate or sew together differing areas and activities. Clean, clear cut edges should be designed to define districts; these edges should be relatively impenetrable such as the road and railroad tracks which isolate Grassy Point. Edges which connect areas should be easily crossed. To be effective, edges must be continuous and visible. They should serve to orient people in the harbor area. The most noticeable and notable edge is the separation of land and water.

LANDSCAPING:

Effective landscaping can aid in the development of harmonious views and in making people comfortable along the waterfront. Trees and plantings can soften the impact of residential areas upon views from the water; trees and earth berms can visually soften industrial uses. Coal piles can be masked in this fashion with the trees serving another purpose, that being to control wind blown dust.

LIGHTING:

Appropriate lighting can highlight selected features or open up areas for safer use. The Aerial Bridge is already highlighted, as are, in their own ways, the docks. Portions of the waterfront are extremely dark at night. A feeling of safety and accessibility can be accomplished through a good lighting program.

SIGNS:

Signs and other forms of street furniture play an important role in lending continuity to the harbor. A unified system of signs and graphics can integrate the harbor's disparate elements. They can also inform and educate visitors and offer concise guidance through the harbor area.

SITE DESIGN:

Individual developments should use appropriate waterfront motifs as a means to enhance a positive harbor character. Considerations need also to be made on how the development can improve access to the shore and coordinate with nearby recreation facilities. Further, all aspects of the design concerns must be brought to bear on all harbor development, especially commercial, residential and recreational projects.

## HARBOR SERVICES

A vital series of services lends the support necessary to maintain a healthy and viable harbor. Without adequate levels of police and fire protection, water and sewer service or waste disposal the harbor area would be a less pleasant place in which to work, play or live. Although the public sector does not and should not supply all of services required within the harbor, the public nonetheless must be concerned with all services operating there. The public's role in seeking a soundly developed harbor leads the public to provide or encourage the provision of adequate levels of necessary services.

POLICIES:

(1) The public is to provide a level of police protection in the harbor area according to standards for such protection established within the respective jurisdictions.

   a. Law enforcement agencies are to cooperate fully on harbor security matters and to share information pertinent to each other's operations.

(2) The private provision of additional security protection is to occur with the full knowledge and cooperation of the appropriate law enforcement agency.

(3) The public is to provide a level of fire protection adequate to successfully fight or contain all fires involving structures or vessels.

a. Plans for fighting fires at specific locations or under specific circumstances within the harbor are to be prepared and such preparation is to be cooperatively accomplished between the fire departments, Coast Guard and the affected property owner.

(4) The private provision of fire prevention facilities or additional fire fighting capacity is to be done accodring to approved public standards and procedures and in cooperation with the appropriate fire department.

(5) Development along the harbor is to receive a quantity and quality of water supply sufficient to fulfill the needs of that development including drinking and firefighting.

(6) The public is to provide a system for the collection and treatment of sewage generated within the harbor area.

a. In situations where existing or proposed public collection systems or treatment facilities cannot accomodate certain types or amounts of sewage or cannot do so in a cost effective manner, the public is to cooperate with private operators who can provide the necessary service.

b. Systems for the collection and treatment of bilge water and ballast wastes are to be designed and implemented.

c. Private systems for the collection and/or treatment of sewage are to meet applicable public standards.

(7) Water and sanitary sewer services are to be provided according to the harbor land use plan.

a. Water and sanitary sewer services are not to be extended into areas designated for non-development.

b. Water and sanitary sewer services are to be extended to those areas where development is encouraged.

(8) Garbage, dunnage and other solid wastes from all harbor uses, including commercial vessels, are to be promptly collected and treated according to appropriate federal, state and local regulations.

(9) The public is to assist private providers of harbor services under the following circumstances:

a. the aid is essential to the provision of the service;

b. the type of assistance - funding, expertise, etc. - cannot be feasibly supplied by the private operator;

c. the aid will not give the recipient an unfair advantage over other private operations supplying the same service.

(10) Programs stressing commercial vessel and recreational boating safety and safe harbor operations are to be promoted.

(11) The public is to be responsible for maintaining harbor waters free of dangerous or unsightly debris.

(12) The public is responsible for maintaining healthful, litter-free conditions in the harbor.

a. Private land owners are to cooperate with the public in maintaining safe and healthy conditions on their property.

(13) Appropriate types and levels of social services are to be provided to sailors of commercial vessels.

(14) To the extent possible new utility systems are to utilize existing utility and transportation corridors, especially in the area upstream of Arrowhead Bridge.

POLICY APPLICATION:

Harbor services should be provided in the following manner:

POLICE AND FIRE PROTECTION:

For both of these services the public will provide the basic level of protection just as they do today. In most cases the levels for the harbor area will be the same as the community standard for similar uses (industry, residence, etc.) found elsewhere in the communities. Private security protection will probably continue as a major service for waterfront industries. Wherever this service is used, the appropriate police department should be knowledgeable of the amount of service and full cooperation between the public and private services should be attained.

The major fire protection consideration concerns cooperation between the various public firefighting crews. Joint use of equipment, especially fireboats, is a must. Also, joint training of firefighters should give an uniform quality to each side's waterfront firefighting capability; it may also reduce training costs.

Finally, it is essential that plans be prepared to fight fires at each waterfront site and under a variety of probable conditions. The Coast Guard should be involved in all of these plans as well as the police and private landowners. It may be helpful to have a representative from the other community's fire department in on these sessions so that information, ideas and techniques are shared.

WATER AND SANITARY SEWER:

The primary level of concern is that the developed portions of the harbor have adequate water supplies and sanitary sewer service. In some sections of the harbor, notably Fond du Lac and Oliver, these services will remain strictly a private matter with wells and on-site sewage systems provided that health standards are satisfied.

Water and sewer service is to be provided by the public (or in Superior's instance, the water is provided by a private utility) in step with the land use plan. Accordingly, service is to be withheld from non-development areas, but is to be provided to those areas where new development is to be permitted and promoted.

Certain services, especially sewage collection from ships, are being provided by private operators. The public sector should continue its policy of cooperating with these operations as long as the operations satisfactorily provide the service in a cost effective manner.

Sewage collection from vessels will probably still be necessary even if ships shift to use of onboard sanitation devices. In all liklihood holding tanks will be used in harbors and, thus, collection will be required.

A service which should be provided by both the public and private sector is pumping out sewage from recreational boats. All marinas should have such a facility designed and located for convenient use.

SOLID WASTE:

The collection of solid waste, particularly from foreign commercial ships, has been a problem in the harbor. It is suspected that there is considerable illegal dumping of these wastes in Lake Superior. Local ordinances should be adopted and enforced requiring the prompt removal of these wastes from all vessels in the harbor. Private operators can supply the service although public facilities may be necessary for treatment because of existing regulations and facility costs.

HEALTH AND SAFETY:

The public sector in cooperation with private landowners should institute a thorough campaign to clean up the water and land areas of the harbor. Floating debris, litter and illegal dumps should be promptly collected and properly disposed. Programs to control vegetation near developed areas, especially around grain elevators, should be carried out. These efforts should help reduce the harbor's rat problem, improve line-of-sight at railroad crossings and in general beautify the area.

On a more positive note the public sector can work with private owners to accomplish the tasks above through better landscaping, site design and operating procedures. It is true that the working areas of the harbor will never be parks, but, on the other hand, they do not have to be unnecessarily unsightly or unhealthy.

In close cooperation with the private sector the public should continue to expand training programs and monitoring efforts concerning commercial vessel and recreational boating safety. These efforts should also include safety at harbor operations.

SOCIAL SERVICES:

The existing social service efforts for domestic and foreign sailors is to be continued and expanded in the future (this statement does not mean other operations are not encouraged). Once again, the public can cooperate with the private provision of these services by assisting with funding if necessary, passes to area recreational facilities, passes on public transit and the like. The idea of social services to sailors, especially foreign ones, is to make them welcome in the area, encourage them to visit throughout the area, offer them help with their various problems - legal, medical, language, family, and to expose in a positive fashion more of the local community to the different cultures which visit the head of the lakes.

LAND AND WATER USE AREAS

## LAND AND WATER USE AREAS

The plan for the future use and development of the harbor extends beyond the statement of goals, concepts and policies to the actual application of those statements to the geographic areas of the harbor. By themselves the goals, concepts and policies guide future use of the harbor and in doing so they provide continuity and consistency to the decisionmaking processes involved in the harbor. But, to give the statements form and substance they must be interpreted into a map depicting use areas. This process attaches the goals, concepts and policies to the specific situations found in each portion.

The mapping of the goals, concepts and policies multiplies the impact and significance of those statements. Now, the plan provides parcel-specific guidance for reworking zoning or subdivision ordinances or establishing local policies on utility extensions. More importantly, the map helps protect existing uses and investments, encourages actions to preserve resources and offers incentives for the development of new operations.

It must be noted that the plan, either as a whole or divided into its component parts, is flexible and available for change. Yet, it is equally important to state that the plan is not to be lightly regarded, to be discarded whenever it suits one to do so. Flexibility to alter the plan is essential, but a fair and open reexploration of the harbor's basic issues must precede any such change. This plan is neither etched in stone nor is it written in the sand.

Enclosed*in this report is a map describing the plan's land and water use pattern for the Duluth-Superior harbor. To better understand the map the discussion of it will be broken down into the seven major subareas of the harbor.

*Map is not enclosed in final draft. Please refer to component maps in this section.

ST. LOUIS RIVER (Fond du Lac to Grassy Point)

Conservation and recreation should dominate the lower St. Louis River as the river begins to realize its potential as one of the area's outstanding natural resources. Once the new Western Lake Superior Sanitary District and the Superior treatment plants begin operations, the water quality of the river will drastically improve and as it does, more and more people will want to utilize the opportunities along the river. The plan seeks to protect most of the river in its undeveloped state while encouraging greater public use of it. Discrete amounts of development should be encouraged to continue or to be newly constructed.

CONSERVATION The bulk of the conservation activities along the St. Louis River are aimed at preserving and enhancing existing natural resources. For instance, all marshes should be maintained as effective habitat for wildfowl and other animals. No filling or other degradation of these marshes should be permitted. Similarly, most of the shoreland is to be kept in its natural state. Clearing of vegetation or alteration of the terrain should not be allowed except at the sites selected for development. Both of these measures also apply to the numerous islands found in the river. The river is a prime spawning and feeding area for walleyes, yellow perch, northern pike and suckers. No significant spawning or feeding areas for these fish should be disrupted or destroyed. Additionally, positive programs aimed at enhancing existing or building new habitat sites should be undertaken.

RECREATION Up until now the river has not been fully utilized as a recreational resource. The lack of good access and the polluted state of the water have discouraged many would-be visitors. However, as the water quality improves, more and more people will see the river as the fantastic resource that it is. Increased access to the water for boating should be made possible by developing upwards of seven landings. At least two major accesses are necessary; potential sites exist at Fond du Lac or New Duluth and in the Billings Park vicinity. Along the shore between these sites four or five light boat and canoe accesses should be built. These sites should enable boaters to use the waters of Pokegema Bay, Mud Lake, Spirit Lake and the rest of the river with relative ease of access. The two larger accesses will require ramps, docks, paved parking areas and toilets. The smaller ones need only have well defined parking spaces and good boat unloading facilities.

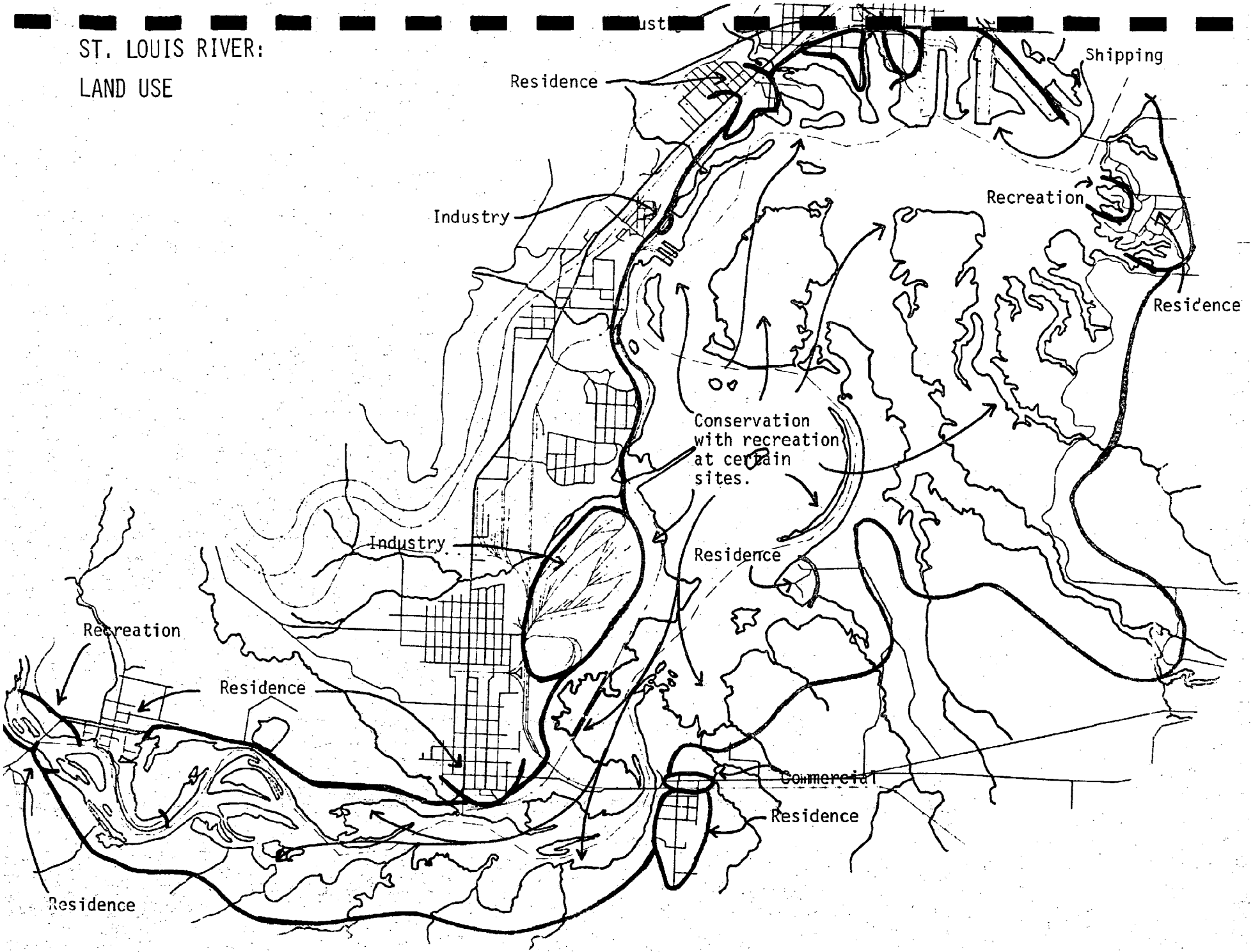
The possibility of building one or two power boat marinas exists as well within this section of the harbor. These marinas would encourage greater use of the river.

The shores of the river offer the potential for a wide variety of trails which should be developed to increase contact with the waterfront. First and foremost the St. Louis River itself is to be seen as a water trail carrying travelers throughout the entire area and leasing them to the various points of interest along the way.

Hiking, skiing, horse riding and snowmobiling trails in combination with or separate from one another could be located at any one of several sites. Superior's Municipal Forest is a prime site as is the abandoned railroad between New Duluth and Riverside in Duluth.

ST. LOUIS RIVER:

LAND USE



A trail system of a different sort should lead people to and from the river. Each of the dozen or so creeks and rivers flowing into the St. Louis River can be developed as corridors connecting the river to the interior areas. The creek valleys should be set aside and protected from development. In their natural state these creeks will serve as stormwater drainageways, habitat for wildlife, fishing access points, and visual and physical links with the river. Over time, selected creek corridors can be developed with paths to increase their value as connectors.

Along this particular portion of the harbor lay the greatest opportunities for establishing well-designed campgrounds. Superior especially has numerous sites on the points and bays which line the shore of the municipal forest. Duluth's Indian Point campground could be expanded to help meet part of the expected increase in campers. By providing sites for all styles of camping and by promoting the scenic and boating resources of the river both cities can attract large numbers of campers who currently drive through but cannot find enough adequate sites within the area.

Billings Park and Chambers Grove Park combine to serve well the need for parks along the river. A new facility of this sort is not needed, but promotion of the existing ones will bring more people to the water. Improvements to each may be required to expand the level of service.

RESIDENCE Beginning with the first Indian and white settlements at Fond du Lac there has been a long history of residential neighborhoods lying beside the river. At present Fond du Lac, Oliver, Riverside and Norton Park (Indian Point) are the closest to the water. These areas should be encouraged to continue and expand. In addition, the potential for new housing exists on the Duluth side near the site of the Old Coolerator Plant at Commonwealth Avenue and near Indian Point. If built, these developments should contain varied housing types at varying prices. They represent natural expansions of existing neighborhoods and will aid in drawing the flow of human activity closer to the water's edge.

While the goal is to increase contact with and awareness of the river through housing, these developments are not be presume private control of the shore in the vicinity of the developments. Instead, access to the shore is to remain undeveloped and open to the general public. This pattern should be adhered to in the existing residential areas as well. This means, then, that home owners would not be able to claim and privately use the shore by their homes (this rule would not apply to existing homes).

Access to the water from existing and new housing sites is to be permitted, but only with the minimal amount of disruption to the shoreline. New developments should seek to build a single access for the entire site. Coupled with the attempt to maintain public access to the shore will be prohibitions on the clearing of vegetation and alterations of the terrain except as strictly required for the development. As much as possible, the shore is to remain in its natural condition.

SHIPPING The existing docks of Hallet #6, Duluth Dock and Transport and C. Reiss Coal will remain in one form or another. If the channel is deepened to twenty-seven feet up to these docks, these operations may cease as they exist today, their slips may be filled and be replaced by a large scale coal transshipment facility. This action would give the harbor the capability of possessing three such operations assuming that the nation's energy and environmental outlooks will demand the expanded use of western coal.

The design of this or any similar facility, however, must be carefully devised. Plantings of trees and construction of earth berms should be used to act as windbreaks to reduce wind blown dust. Also, they will help soften the visual impact of the facility upon adjacent residential areas.

INDUSTRY The former steel plant in Morgan Park should be redeveloped as an industrial park. Since no shipping channels are to be extended beyond Hallett Dock #6, the industries locating here need not be dependent on water transportation. Appropriate landscaping techniques should be utilized to prevent views of the industrial development from the river.

ST. LOUIS BAY

Commercial shipping will assume the major role in St. Louis Bay. Ample room for expansion is provided, but without destroying vital natural resources which are found in the bay. Much of the land needed for the new shipping operations will be created through the disposal of dredged materials.

SHIPPING Enough acreage is reserved in the bay to accomodate at least two more western coal transshipment operations. In addition the plan provides space for new marine related industries and activities. Among the possible new activities which have moved from obsolete or inadequate docks located elsewhere in the harbor.

CONSERVATION Research to date has pinpointed several sites within St. Louis Bay which require preservation and possible management. Grassy Point in Duluth possesses a variety of habitats not found elsewhere in such concentration in the harbor. It is a popular nesting and feeding area for numerous wildfowl species.

Another site is Interstate Island adjacent to the BN bridge. Currently the site is a nesting area for songbirds. It has been identified as a potential site for future gull and tern nesting. It could also be expanded for replacing habitat resources lost elsewhere in the bay.

A third important site is a series of small islands located between MP&L's Hibbard Plant and their Grassy Point dock. These islands are heavily used by gulls and terns for nesting.

St. Louis Bay is important as a feeding area for walleyes. The shallow waters near shore are heavily used by these and other fish. Complete loss of these shallow areas cannot be tolerated, but if some is lost, enhancement of the remainder is essential to maintaining the harbor's large and soon-to-be-important sport fishery.

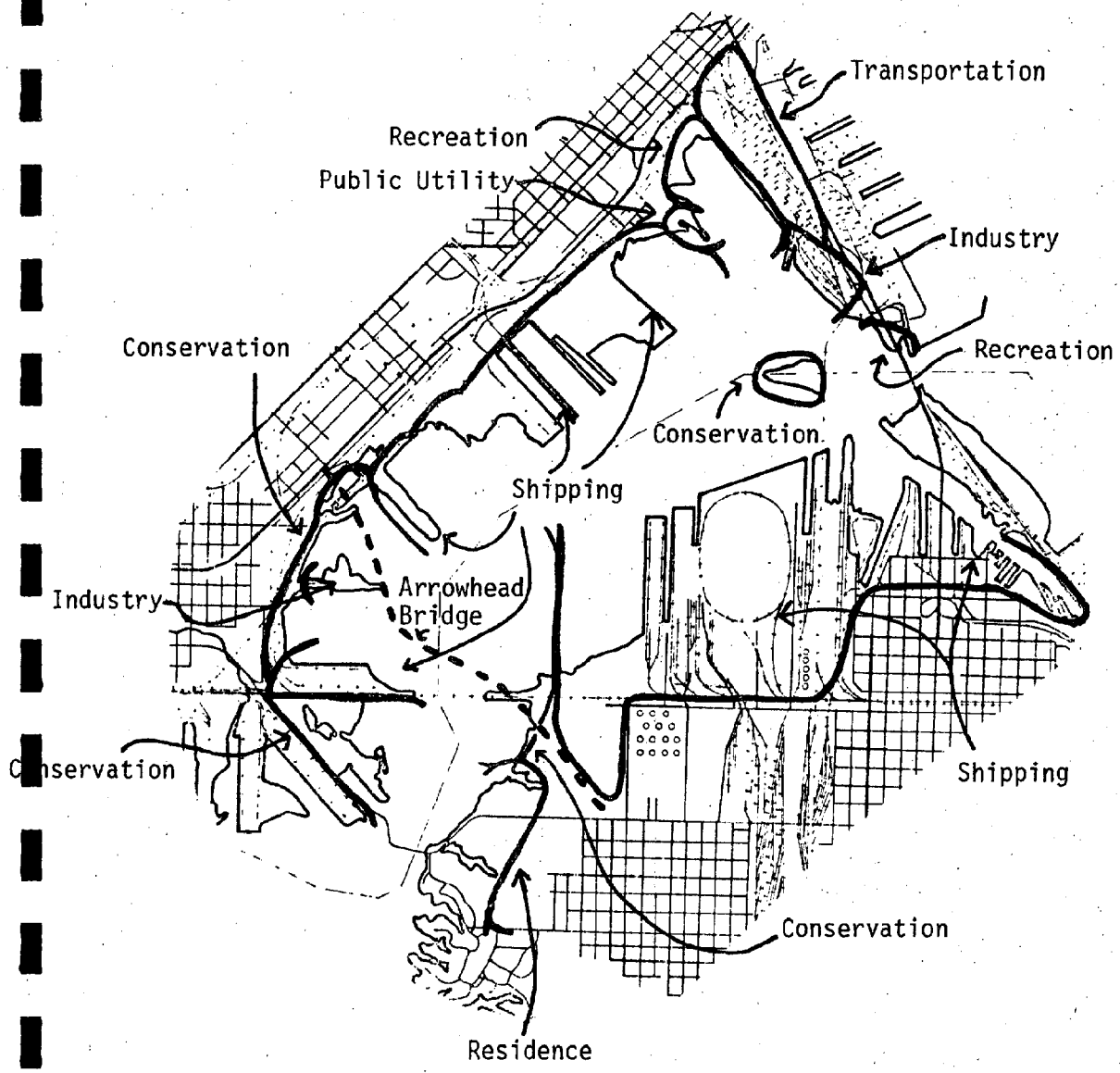
RECREATION Recreational opportunities are limited in St. Louis Bay and therefore few new recreational facilities are being proposed. One major boat access needs to be located in the bay as well as at least one smaller one. Each access is to have the sppropriate level of facilities. Rice's Point and the approach areas of the Arrowhead Bridge are possible access sites.

Contact between the West Duluth and West End (Duluth) neighborhoods and the waterfront should be developed. Use of creek corridors is the most probable and beneficial manner to accomplish this aim. Opportunities for developing these connections exist on Miller and 44th Avenue West creeks.

A general recreation area could be developed at the mouth of Miller Creek in the old 21st Avenue West slip. This low level facility could be matches by a similar one on the tip of Rice's Point. A boat access should be located at this latter park.

If and when the Arrowhead Bridge is replaced, the approach piers to the old bridge should be retained for fishing and viewing. This would represent a continuation of the current recreational use of the bridge.

ST. LOUIS BAY:
LAND USE



Although not fully a recreational consideration, protection or creation of views is an essential concern along the bay. The DM&IR overlook already provides a view of those iron ore docks, but new ones, especially at ORTRAN or Fraser, could expand visitors' understanding of the harbor. Along Superior's northern waterfront views of the harbor are not readily available. However, when viewed from the city the moored ships at Fraser and the elevators loom high above the trees and buildings offering picturesque scenes. All appropriate measures should be taken so that these views are not obstructed. Superior needs to retain every opportunity for visual contact with the harbor.

TRANSPORTATION Three bridges play or will play prominent roles in the St. Louis Bay. The Burlington Northern Bridge - the oldest in the harbor - poses a particular problem for shipping. Its two draw spans may be too narrow for safe navigation. Too, the South or Wisconsin Draw is not perfectly aligned with the shipping channel. This plan proposes that a detailed analysis be undertaken to determine the extent of the navigation problem if the problem requires remedial action, and if so, how the bridge should be modified or replaced so as to alleviate the problems cited.

The current Arrowhead Bridge should be replaced and removed (except for the approach piers). Its replacement should be a high profile structure which will carry large traffic loads without conflicting with shipping. The proposed bridge should be designed and located so as to relieve the over capacity traffic conditions on the Blatnik Bridge. On both sides of the bay the approaches to the new bridge must be designed so they will not interfere with nearby industrial sites.

Rail/vehicle conflicts on Superior's waterfront along North 1st Street should be reduced, if not eliminated, through better signing, improved lighting and maintenance of a proper line-of-sight by cutting all tall grass, clearing away debris and removing other obstacles.

To accomodate all classes of lake carriers all active channels within the harbor should be maintained to a depth of 27 feet. In addition, channels should be analysed for widening, development of new anchorage basins and elimination of hazards.

RESIDENCE A significant amount of land should be provided by extending the Billings Park neighborhood downstream along the river. Although this housing is not to be directly on the water, it will possess views of the harbor and can develop ready access to it. As with all other proposed housing areas, there is to be a variety of housing types and costs so that as wide range of people as possible can live near the water.

INDUSTRY Non-water transportation related industry should be highly restricted along the bay. On western Rice's Point, room for general industry is reserved because shipping cannot easily utilize this land. Also, the Minnesota Power and Light plant is to continue at its current site.

The portion of Rice's Point noted as transportation is contingent upon the further use of the railyards by the BN. If, however, these yards are transferred, then the land should be readied for general industrial development.

Fraser Shipyard should be encouraged to maintain and expand its operations. Particularly, a new dry dock facility which can accomodate the 1,000 foot vessels should be built. Both cities should work for this added capability for the shipyard.

EASTERN RICE'S POINT

Since the late 1800's Rice's Point has steadily shed the vestiges of its residential neighborhood and has rapidly become a commercial shipping center. Today Duluth's "Elevator Row" proudly stands along the slips and the Seaway Port Authority of Duluth's Clure Terminal lies at the tip. This plan seeks to continue and expand the role of shipping operations on Rice's Point.

SHIPPING All land currently used for shipping should remain dedicated for shipping although changes in the industrial operations may occur. For example, the Hallett Dock may shift from dry bulk to liquid bulk. Or, one of the elevators might be modernized or expanded.

CONSERVATION The major natural resource issue in this area is an oddly unique problem. Clure terminal was created twenty years ago with sand dredged from the harbor. While the entire site was earmarked for shipping related development, nearly one half still remains vacant. In the meantime gulls, terns and plovers have found the sand dunes to be an ideal nesting site. So as to use the land as it was originally intended and to preserve the bird colonies, the colonies should be gradually moved from Clure to managed sites elsewhere in the harbor.

TRANSPORTATION One of the particular transportation problems found along this portion of the waterfront involves rail/vehicle accidents on Railroad Street. The plan recommends the elimination of all obstructions near railroad crossings in this area - the most notable being the concrete supports for a long gone bridge, improvements to all crossing signs and improved lighting.

Curb cuts along Garfield Avenue should be minimized. The amount of traffic handled by this road requires a clean flow uninterrupted by unnecessary turning motions. One means of reducing the demand for such cuts is to prevent the development of more commercial enterprises along the avenue. The land west of Garfield Avenue should be developed in one or two large developments of an industrial nature.

Grain truck parking problems should be approached on an elevator by elevator basis. Only two elevators have problems and these can be alleviated easily. New land made by filling in an unused portion of a slip can handle General Mills' problem while continued use of unused land on Hallett dock can accomodate Capitol's overflow.

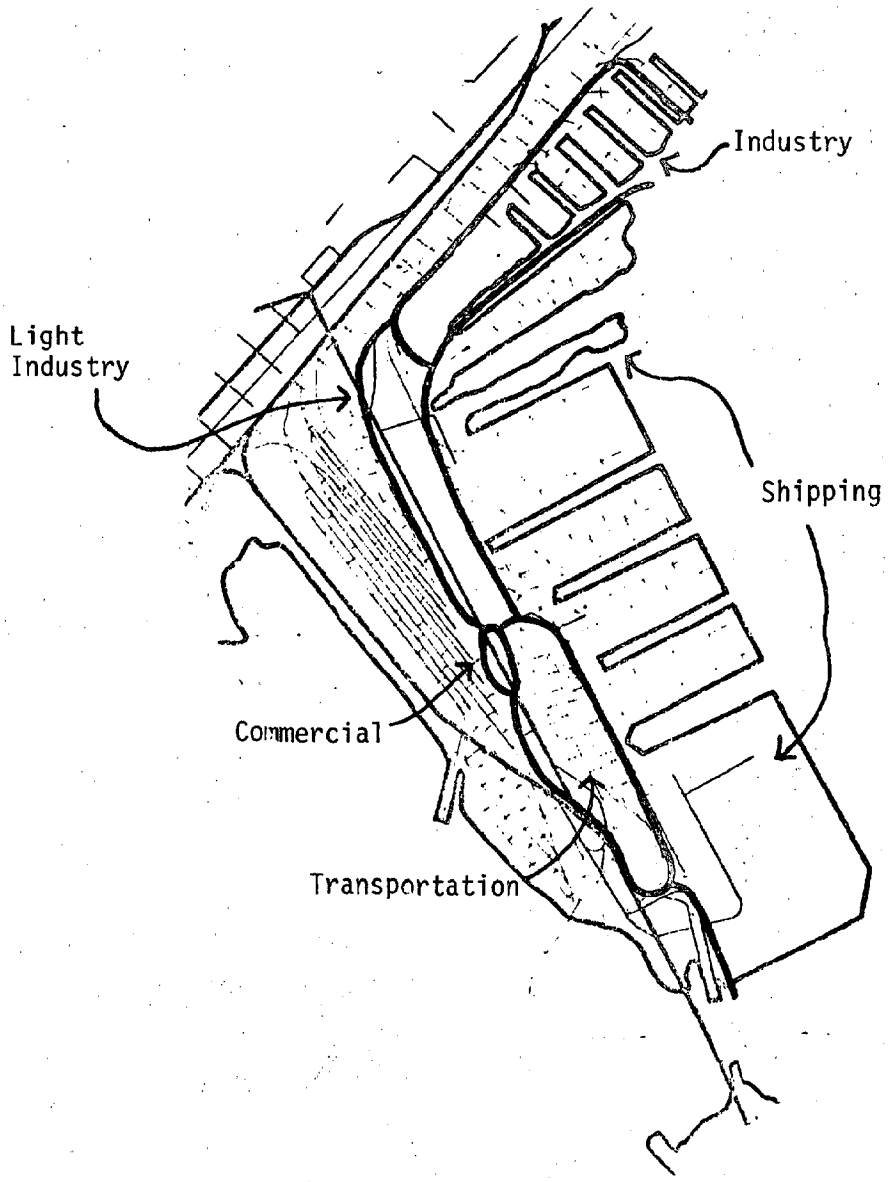
INDUSTRY The properties from Superwood to the Seventh Avenue West slip should be developed for industrial purposes. The remaining shipping operations, which still can utilize the short but nearly obsolete slips, should remain, but no new ones are to be encouraged. The unused slips could be filled in to create more land for new or expanded industries.

RECREATION As part of the overall attempt to draw more people to the waterfront to view port operations, viewing overlooks at selected sites should be constructed. These overlooks will permit visitors to see shipping operations at close range, but in a safe and unobtrusive manner. One ideal site would be on top of the transit sheds at the Clure dock. Also, improved signing could simultaneously help guide visitors along the waterfront while warning them of hazardous areas.

The potential also exists to develop a road system to provide a continual route along or near the harbor. However, the facility must be designed so as not to interfere with shipping operations.

EASTERN RICE'S POINT:

LAND USE



## SUPERIOR'S EASTERN WATERFRONT

Superior's Eastern Waterfront is a grab bag of activities with the primary emphasis on shipping. Yet, some of the harbor's most exciting potential for new commercial and recreational developments exists along this stretch of the waterfront. Superior, which currently lacks good contact with the harbor, should look to its eastern waterfront to supply this need. At the same time this reach of the harbor can also provide much of Superior's land for future shipping operations.

SHIPPING At the Burlington Northern docks one can see the newest and the oldest facilities for shipping iron ore/taconite from the harbor. The current docks are replacements for the originals which were built in 1892; the new, high speed conveyor loading dock was first used in 1977 and was built at a cost of $70 million. The nearby Bunge dock should be reserved for an even newer ore dock or a grain shipping facility. Likewise, Elevator 'O' should be reserved. On the other end of the eastern waterfront, the mostly vacant Connor's Point should be combined into a single parcel for future water related development.

In between these docks all existing shipping operations will be able to continue at current or expanded volumes as need dictates.

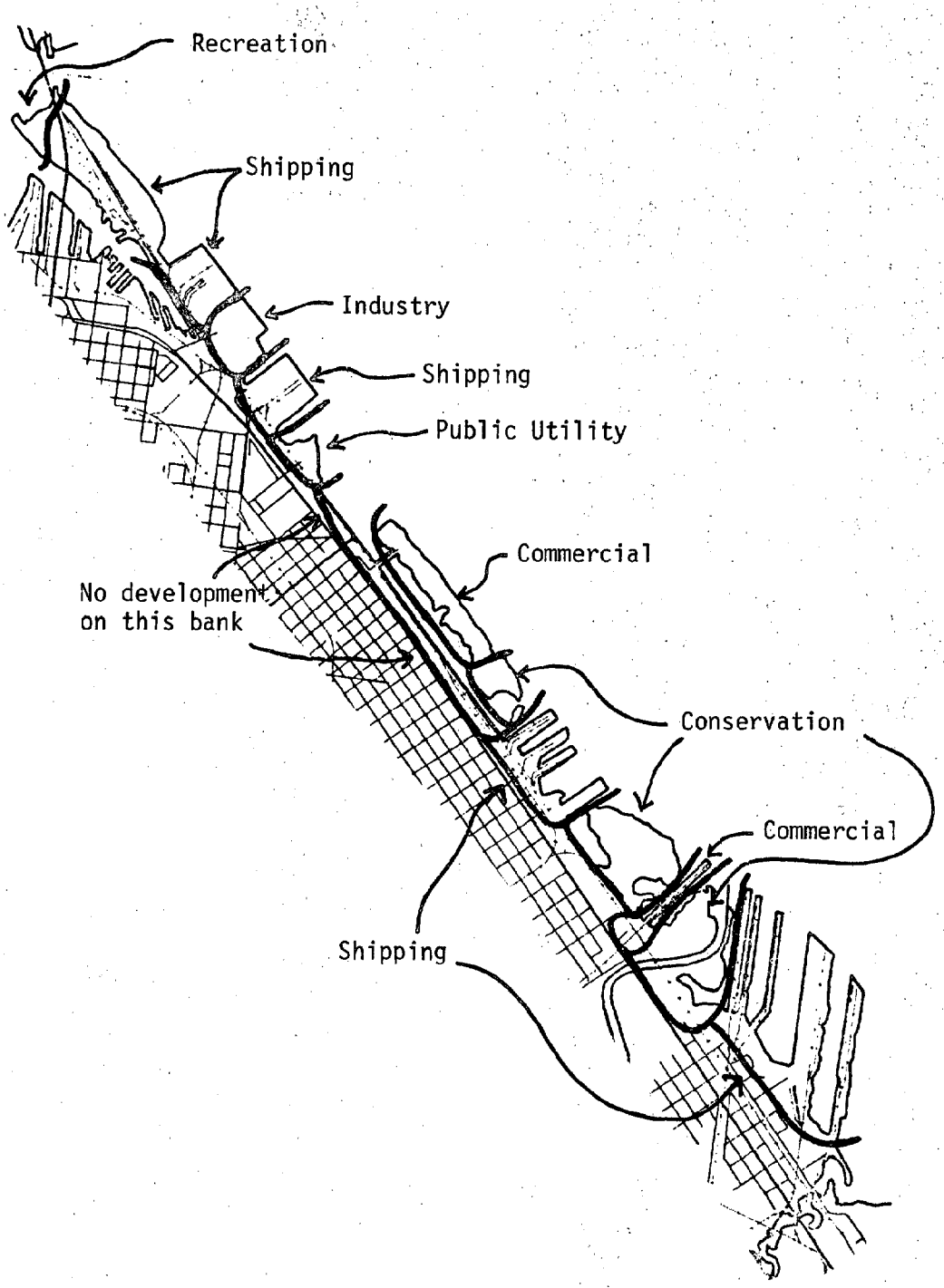
COMMERCIAL DEVELOPMENT According to this plan two multipurpose commercial centers could be developed on the eastern waterfront. The City already has underway a plan for the redevelopment of Barkers Island. This island, which was built over a 60 year span from materials dredged from the harbor, will possess a cautious mixture of commercial development and natural areas. A 162 room hotel with a pool, tennis courts and sun decks will lie beside a 350 slip marina, which incidentally, meets only half of the harbor's estimated marina needs. Beaches, picnic areas and trails fill out much of the island's middle section. On the northwest end there already sits the S.S Meteor museum and shops. The other tip, isolated and, in fact, to be fenced off, could be a managed nesting ground for wildfowl, most notably the relocated gulls, terns and plovers from the Clure terminal.

The land on the mainland opposite Barkers Island should remain undeveloped. Better views of the island and fewer negative impacts on nearby property will result from this prohibition.

The functionally obsolete and unused Northern Pacific (BN) ore dock offers another opportunity for commercial development. Up to now the dock has been idle used only for mooring inactive lake carriers. However, because it juts two thousand feet out into the harbor, it provides an unparalleled view of the harbor, Lake Superior and, because of its height, a sweeping view of Superior. No other opportunity like this one exists in the entire harbor. Potential uses include a marina, restaurant and small shops. If commercial use of the dock proves infeasible and if shipping uses are found feasible, then the dock is to be considered available for such use.

CONSERVATION Although the primary emphasis along Superior's eastern waterfront lies with shipping and commercial development, two significant natural resource elements in this area are involved in the plan. Hog Island, a piece of land created through years of dredge disposal, should be dedicated as a state wildlife management area. It provides valuable habitat for waterfowl, songbirds and shorebirds along a section of shore where there is little such land. Also, it may be one site for the relocation of the gull, tern and plover colonies which currently are at Duluth's Clure terminal.

SUPERIOR'S EASTERN WATERFRONT:
LAND USE



The second site is the mouth of the Nemadji River. Two spits of sandy clay which form the mouth of the river should be set aside as a feeding and nesting area, primarily for shorebirds. This land will also provide a scenic area for viewing by visitors. Possible commercial development of the NP ore dock will not interfere with this site or with the Hog Island site.

RECREATION Although the S.S. Meteor is the sole developed recreational facility along the eastern waterfront, the possibility of much more exists. The tip of Connor's Point, which commands a panoramic view of the inner harbor, could easily be developed into a boatwatching park with picnic and boat mooring facilities.

Overlooks could be constructed to complement the one at the BN docks. One could be sited along Howards Bay so that visitors could view the Fraser Shipyard operations.

Besides the proposed rebuilt access at Barkers Island another boat access is required in this portion of the harbor. This one would serve light trailered boats while the Barkers Island access would serve nearly all craft. Potential sites exist at the old NP ore dock or at the base of the Bunge dock.

Even though TH2/53 and railroads sever connections between residential neighborhoods and the waterfront, contact points could be developed. The Central Park Creek and the Nemadji River could be developed as corridors. The creek offers the chance to create close ties between Barkers Island and the nearby neighborhoods. Also, overhead sidewalks could be built to provide safe pedestrian and bicycle access to the water's edge.

TRANSPORTATION For the most part land transportation along the eastern waterfront is adequate. The East 2nd Street/Highway 2 route needs upgrading and widening, but traffic still flows rather smoothly. Additional curb cuts should be highly limited along this street. Truck parking for the Continental Elevator is inadequate with the result that trucks park on the public road on Connor's Point. The few residents there now complain, and when the Point is developed industrially and recreationally, the road will positively be off limits for overflow parking. Thus, Continental will have to develop a parking lot on undeveloped land on its dock.

GENERAL The capacity of the public utility lines serving the eastern waterfront should be analyzed prior to the construction of any major developments. Water supply at some sites had been questioned by some landowners during the development of this plan.

## DULUTH'S CENTRAL WATERFRONT

Tightening the physical and visual ties between the cities and their harbor is one of the basic elements of this plan. Duluth's central waterfront provides an excellent, and perhaps the only, opportunity to accomplish this task on a large scale over a sizeable stretch of shore. It is an opportunity that cannot be wasted or mundanely handled.

To the west of the Arena-Auditorium lies an unused slip with gravel and metal operations located on the adjacent dock. A complete redevelopment of this site, which is now called the Bayfront Park area, can be undertaken so that an array of public and private ventures can be situated on or near the waterfront. The key concept is the direct link with Duluth's downtown via 5th Avenue West and the recently opened Northwest Passage walkway.

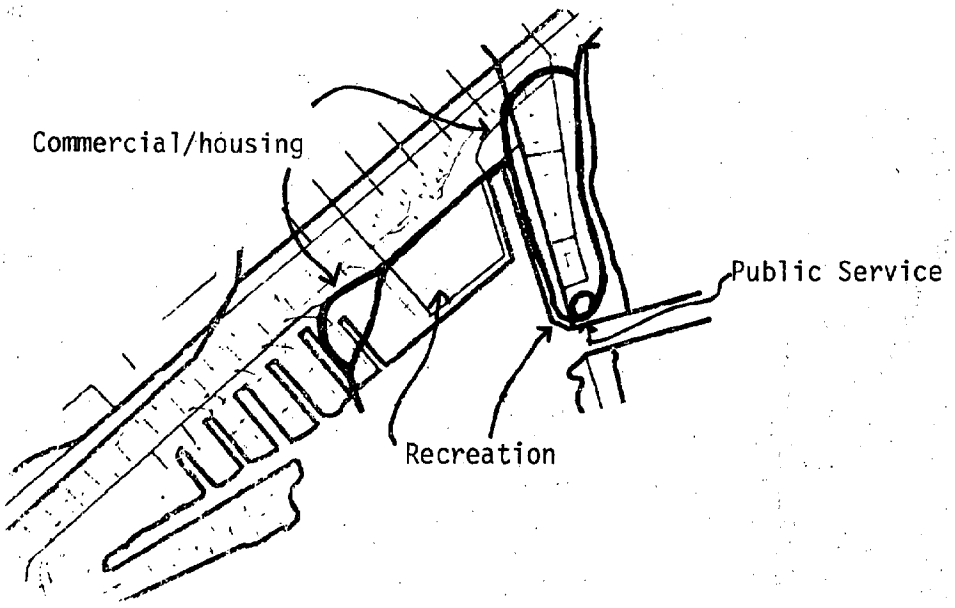
The land immediately on the waterfront should be publicly owned and developed. Facilities for boatwatching, tourist information, education and water-related research, boating services and the like could be a part of this element of the land's development. Transient boat mooring could be accomodated at a redesigned slip. Closely tied into the public uses, but not necessarily on the water's edge could be restaurants, shops and even housing.

East of the Arena-Auditorium lies Minnesota slip lined by Drill's Marina and assorted industrial operations. Further to the east is the Lake Avenue/South 1st Avenue developments which are primarily industrial in nature. While costs would be considerable, this large area should be considered for commercial, office and housing development to once again draw the city and the water closer together and to take advantage of the immense numbers of people who visit this portion of the waterfront.

Canal Park and the Corps of Engineers' Marine Museum are among the area's most popular sites. The Aerial Bridge, the Museum and views of passing ships are particularly attractive features. In fact, the useage is so heavy that expansion is required. Larger parking areas are necessary as are expanded facilities (the Museum is already planning to triple its present size). Coordinated site planning is required before any of the concerned parties undertakes an expansion program.

A path system should be developed in this area to not only tie the city and the water closer together, but also to dramatically illustrate the interrelationships between the lake and the harbor. A single path could be designed to trace the lake's shore, continue along the ship canal, around Minnesota Slip, beside the Arena-Auditorium and onto the proposed Bayfront Park site west of the Arena.

DULUTH'S CENTRAL WATERFRONT:
LAND USE



MINNESOTA POINT

Minnesota or Park Point is perhaps the best known and most heavily used non-industrial portion of the waterfront. It supports a wide variety of often conflicting uses whose increased use will only heighten the existing problems. This proposed plan suggests measures aimed at reducing the conflicts while maintaining the level and diversity of the uses.

RESIDENCE A continuation of the existing residential neighborhood should be guaranteed. However, the only new housing units to be allowed should be ones located on lots north of 19th Street. The intent is to fill in the undeveloped portions of the Point where the development can be accomodated. Most of these new units should be apartments, duplexes and condominiums in a move to open up the Point to a wide range of people. Contact with the bayside of the Point, which is mostly privately owned and hence inaccessible to most people, should be obtained by developing the public rights of way which exist on the undeveloped streets that dead end at the shore.

In encouraging more residential development in this section of the Point there must also be a complementary restriction or elimination of industrial activity in this same area. Minnesota Point is not the preferred site for industrial activity in the harbor.

RECREATION Recreational use of the Point should continue as is today with only minor changes to be made. Stress should be placed upon assuring that facilities are definitely oriented to the water or are enhanced by the waterfront location. An example of this action was the City Park Department's decision to remove all organized softball games from the Park Point Recreation Area fields.

Boating is a major recreational pasttime associated with the Point. A new landing for day sailers should be built and the existing sailboat marinas should be allowed to expand. A mooring area for boats, primarily sailboats, should be located on the bayside of the Point southeast of Hearding Island. Access for users of this area must be nearby and fully developed and strict regulations on the area's useage are important.

The trail system in the Park Point Forest should be expanded with the trails being for hiking and cross country skiing only. Provisions for handicapped people should be made along sections of the main trail.

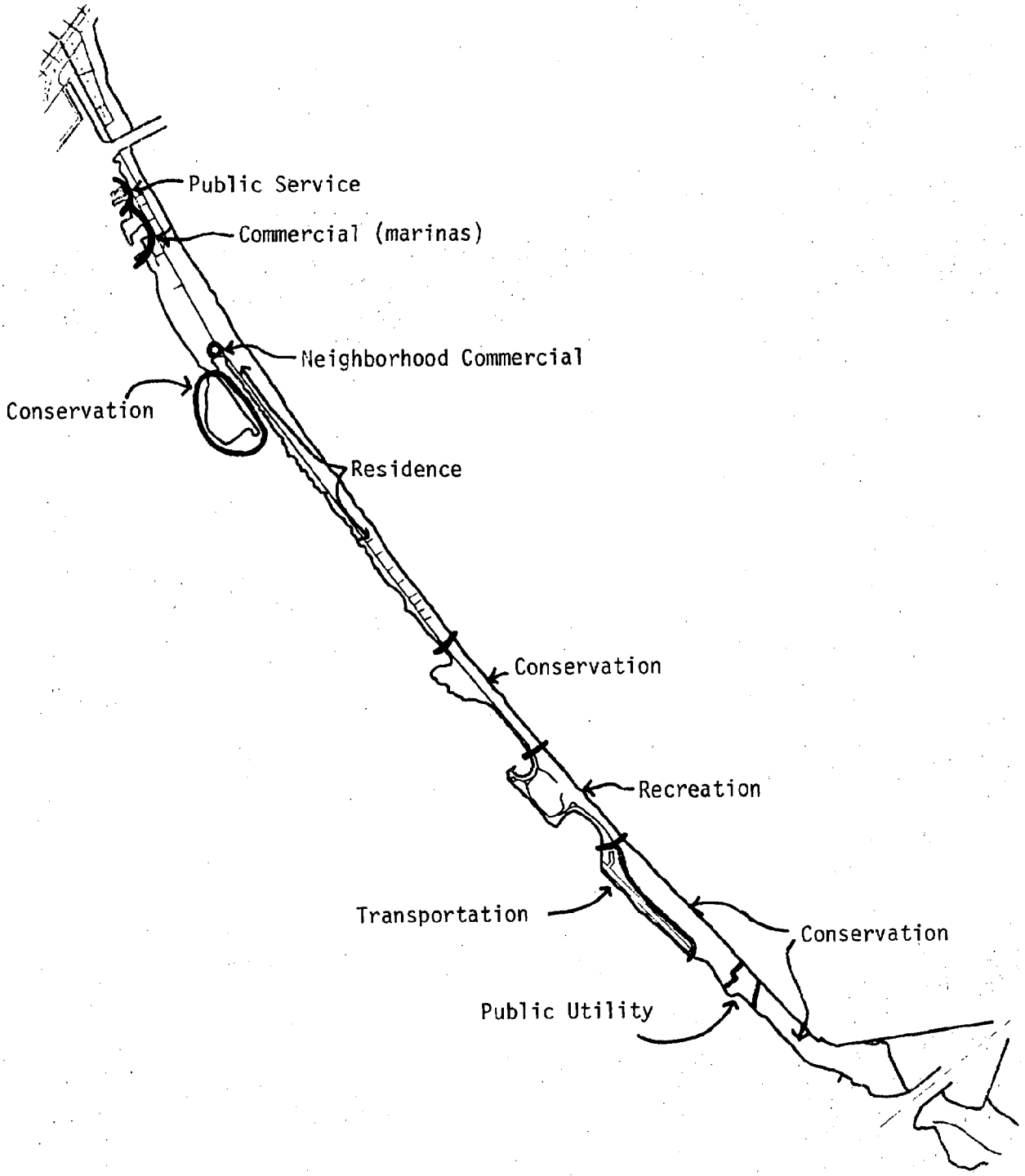
CONSERVATION As an unique vegetative and wildlife resource, Minnesota Point requires protection and, where necessary, active management. Several specific parcels of land need special designations in this regard. The Minnesota Point forest should be developed as a scientific research area. Hearding Island should be set aside as a wildlife management area and considered for active management as a gull and tern nesting site.

All steps are to be taken to preserve the dunes and beaches of the Point. Proposed actions include a complete ban on the use of motorized vehicles off public streets, prohibition of developments on dunes and the construction of walkways built up and over the dunes for access to the beach.

The erosion south of the ship canal will require more study. Currently, the Corps of Engineers and the City cannot agree as to a proper course of action. One proposed method would be to build an off-shore submerged breakwater and to

MINNESOTA POINT:

LAND USE



deposit clean fill upon the beach. Another, proposed by the Corps, is to periodically deposit clean material upon the beach and to manage the adjoining land for public park purposes thereby removing the threat to residential properties.

TRANSPORTATION Despite its value as a viewing attraction, the Aerial Lift Bridge creates water and land transportation problems. No one solution can entirely remedy the situation, but some may offer relief. This plan proposes that the City and the Coast Guard strictly enforce rules regulating lifting the bridge. Recreation vessels should navigate the canal under power and in clusters if possible. No lifts should be made for any craft which can clear the bridge in the down position. Recreational craft should be encouraged to use the Superior Entry whenever possible.

Tremendous conflicts arise on the Point due to the heavy amounts of recreational traffic which use the sole street to reach the recreation area. This traffic divides the residential neighborhood and poses traffic, safety, noise and related problems. A shifting of the alignment of the major route north of 19th Street should be carefully studied. Such a shift could greatly diminish the number of homes affected by the traffic, create quiet dead end streets to serve the homes and decrease general traffic problems.

The continued use of Skyharbor Airport should be studied. The need for an airport on the waterfront, especially on a resource such as Minnesota Point, should be analyzed as to the best use of the land and the need for the types of services provided by the facility.

COMMERCIAL The existing neighborhood commercial store on the Point should be continued as it provides a needed service to visitors and residents alike. Other commercial operations should be restricted as they create traffic related problems in an area that already has enough. Developing a commercial service center for boaters could be considered for a location somewhere on Minnesota Point.

GENERAL The 1977 fire at Industrial Welders graphically pointed out the shortcomings of the water supply system for the Point. Duluth should analyze all facets of water service to the Point and act upon that analysis. One part of the study should determine the exact extent of the water supply for fighting fires of various types on the Point. One possible remedy would be to upgrade the water supply system with emphasis given to where the line crosses the ship canal.

## WISCONSIN POINT AND ALLOUEZ BAY

Wisconsin Point and Allouez Bay form an outstanding natural resource and as a recreation area is firmly embedded in the harbor plan. Within this area is one of Lake Superior's few marshes, a climax pine forest, abundant wildlife habitat and long stretches of sand beaches.

CONSERVATION Allouez Bay and Wisconsin Point should be kept free of any substantive developments. Both areas should be left in their natural state as habitat for wildlife. Also, the Point and the Bay themselves represent significant landforms and vegetative communities which should be highly regarded and preserved in their own right. The continuation of waterfowl hunting in Allouez Bay should be reexamined for potential conflict with the area's value as a haven for birds.

Reduction or elimination of the erosion problem on the lake side of the Point is to be accomplished by whatever measure is deemed best after appropriate study. The city, state and Corps of Engineers should cooperate on a study of this problem so as to prevent future breaches of the Point or exposure of the old landfill.

RECREATION The entire Point should be dedicated as a city park and general improvements to facilities should be undertaken. Among these improvements should be new picnic sites with grills and tables, improved and well-defined parking spaces, signing, development of trails and the closing of roadways leading onto the beach.

A new park should be developed upon the site of the old landfill at the base of the Point. Picnic grounds, play equipment and an area for field games could be the primary facilities. Perhaps a bicycle rental operation could be opened to lessen traffic on the Point and to offer people a scenic trip.

The boat accesses should continue on the Point but they should be minimally developed and only serve light boats and canoes. Trailer usage should be eliminated or restricted. Heavier boats can use the accesses to be developed on Superior's eastern waterfront. In this way excess traffic will be drawn away from the Point.

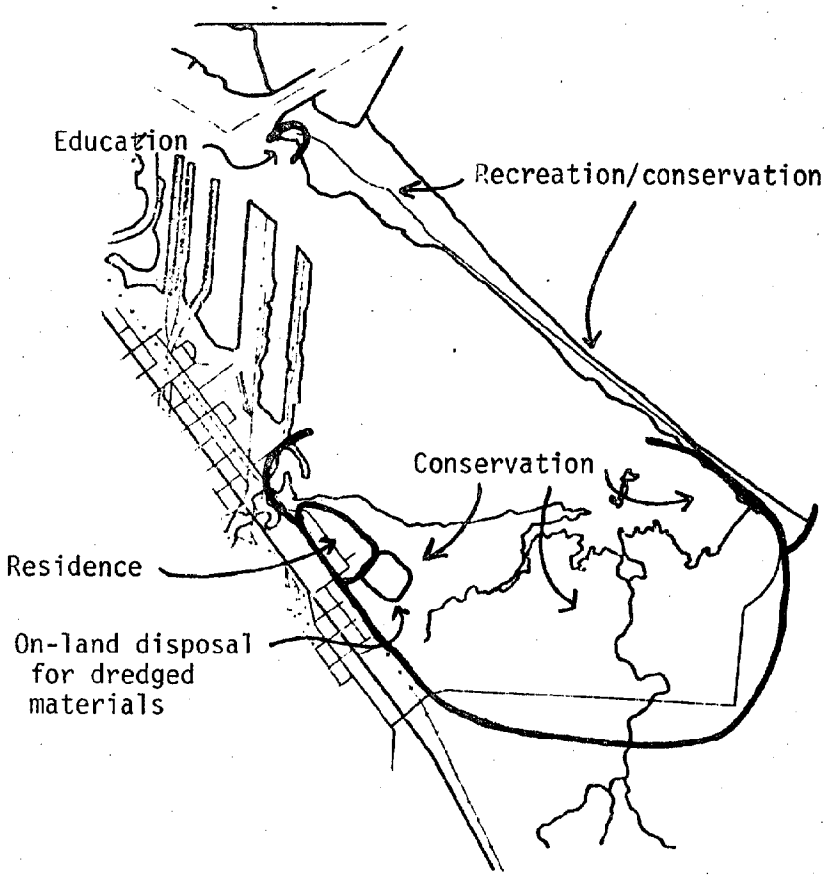
As with all other portions of the harbor, creek corridors are to be reserved. In this instance, Bluff Creek should be so designated and set aside.

HOUSING The potential for new housing can be found on the bluff upon the west shore of Allouez Bay. Up and back from the Bay, this housing would have a view of the harbor without intruding upon it. As with other proposed residential developments, a mix of types and costs are desired to open up the opportunity of living beside the harbor to as many people as feasible.

DREDGED MATERIALS DISPOSAL The so-called Itasca disposal site should be considered for further disposal of dredged materials. The site is already deemed acceptable for this use.

GENERAL Of general interest to the entire harbor is the development of a system of historical trails. The various historical sites within the harbor should be connected via self-guiding booklets in a move designed to educate visitors to the waterfront. Depending on the sites, the actual traveling could be by auto, bicycle, foot or boat. Certain historical sites may have to be restored while others may simply require markers.

WISCONSIN POINT AND ALLOUEZ BAY:
LAND USE



HARBOR MANAGEMENT PLAN

## HARBOR MANAGEMENT

The previously described land and water use areas depict how the harbor should be developed and used. Transforming that plan into reality is the role of the various processes which have been lumped together and labeled "harbor management".

But what exactly is meant by "harbor management"? Management of the harbor entails making decisions on harbor issues, designing and enforcing regulations concerning harbor activities and resources, and designing and funding programs to develop and maintain harbor resources. Managing the Duluth-Superior harbor spans the spectrum of issues from shipping to wildlife to zoning.

As with most things, the level of harbor management can vary and still achieve the same goal. However, regardless of the system chosen, certain policies are to be satisfied in order to achieve the quality of management designed for the Duluth-Superior harbor.

## POLICY GUIDELINES FOR HARBOR MANAGEMENT

The structure for managing the Duluth-Superior harbor should:

1. possess the ability to effectively implement a harbor plan and its recommendations;
2. achieve close cooperation and coordination between local, state and federal governments;
3. provide a major local role and responsibility in harbor management;
4. include active, formal involvement by citizens representing the public interest, marine industry, environmental organizations, unions and waterfront residential neighborhoods;
5. accomplish its tasks with the minimum cost to the public and private sectors;
6. achieve an effective balance between harbor interests and prevent domination by a single group;
7. assure its accountability to the public;
8. be responsive to the needs and concerns of all harbor interests;
9. represent the minimum amount of regulation control necessary to implement a harbor plan;
10. provide procedures for independent, periodic evaluations on the effectiveness of and need for a harbor management structure.

Potential management systems considered for the Duluth-Superior harbor varied from the "null" alternative or status quo to the creation of a "harbor government". The draft version of this plan contained descriptions of these options; a brief review of their collective shortcomings will serve to introduce the method selected in this document.

The weakness of the "null" alternative or status quo was evident during the recent dredge disposal issue where a lack of a cohesive, recognized management structure kept negotiations and discussions at a snail's pace. No one body was responsible for making the decision or initiating the process to make one. Proposals were tendered and rejected as all parties individually kept their options open and held steadfast to their own positions; collectively, they effectively stalled dredging in the harbor.

While still a possibility with the desirable feature of no loss of sovereignty, the null alternative has definite faults. At the minimum, a catalytic agent for harbor issues is necessary to keep a coordinated decisionmaking process on course and moving.

On the opposite end of the spectrum from the status quo is the creation of a new unit of government to govern the harbor. Under this alternative the two states would pass legislation establishing a single body to regulate nearly all aspects of harbor activity. While local, state and federal units of government would participate in this harbor government, primary control would be in the locals' hands.

The attractiveness of this option would be its probable efficiency and effectiveness; it would represent a one-stop, all-purpose government for the harbor. Its readily apparent failures would be chiefly political in nature. State agencies are highly reluctant to surrender existing authorities and both cities, if not the states, fear undue control by the other. Also, the proposal means establishing another governmental unit at a time when most people seem to prefer less government.

In short, neither a continuation of the existing process nor the creation of a harbor government is proposed in this plan. Between these two extremes lie numerous possibilities most of which rely on reworking the existing authority structure. The process chosen in this plan falls into this category with its prime feature being to pull together current authorities to form a rational, cooperative approach to harbor management.

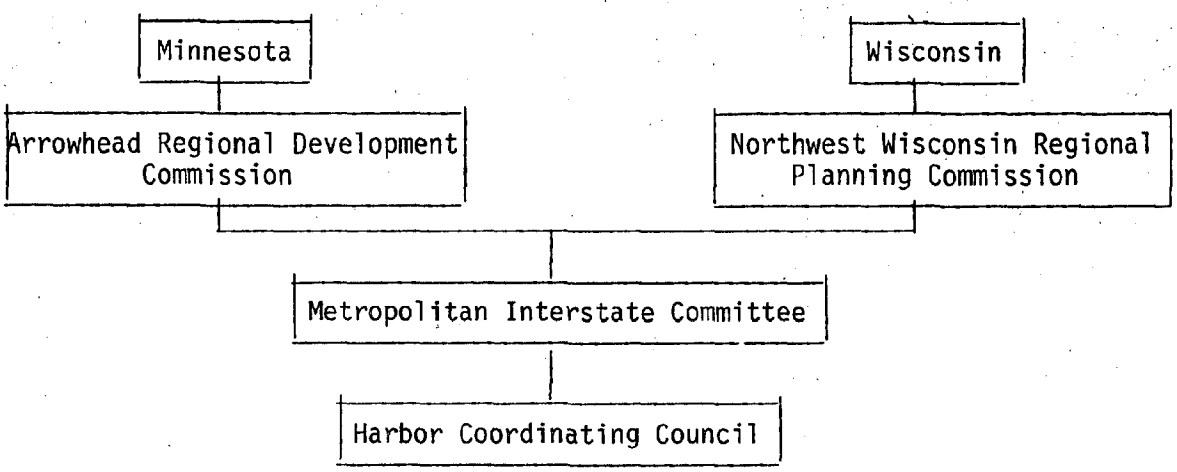
## DULUTH-SUPERIOR HARBOR COORDINATING COUNCIL

This plan recommends establishing a Duluth-Superior Harbor Coordinating Council (HCC) which is to be an advisory body to the Metropolitan Interstate Committee (MIC). Its purpose will be to coordinate existing management authorities relative to the harbor. It will be established by an agreement signed by the agencies (or their legal agent; ex., City of Superior for the Planning Commission) noted on the membership list. Figure I describes the HCC's position.

### Purpose

The purpose of the HCC will be to work towards the full implementation of the adopted plan for the Duluth-Superior harbor.

FIGURE 1: Duluth-Superior Harbor Coordinating Council




Membership

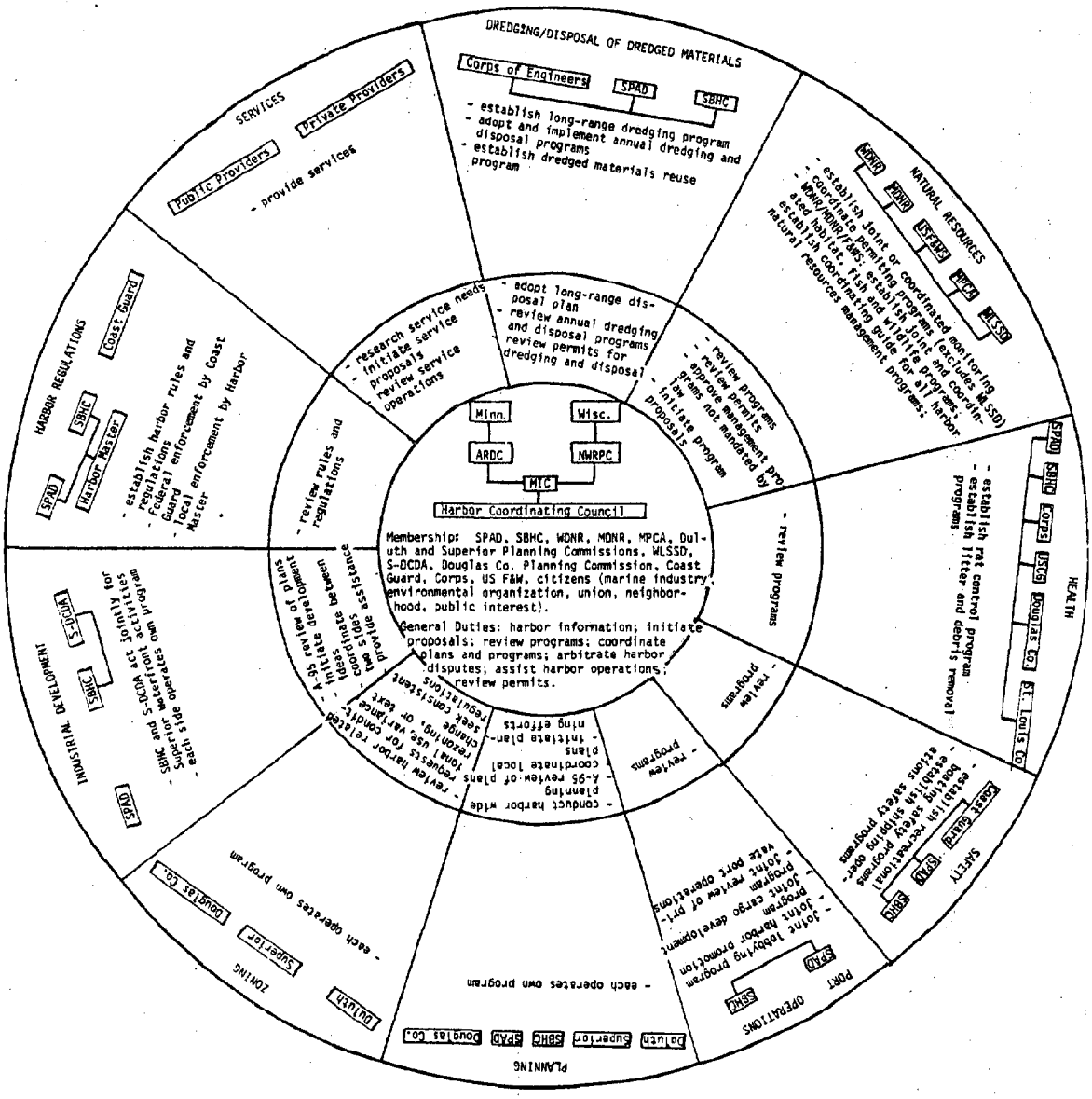
The membership of the HCC will reflect the various management agencies involved in the harbor as well as pertinent harbor interest groups. The proposed roster is:

US Army Corps of Engineers
US Coast Guard
US Fish and Wildlife Service
Wisconsin Department of Natural Resources
Minnesota Department of Natural Resources
Minnesota Pollution Control Agency
Douglas County Planning Commission
Western Lake Superior Sanitary District
Duluth Planning Commission
Superior Planning Commission
Superior-Douglas County Development Association
Seaway Port Authority of Duluth
Superior Board of Harbor Commissioners
Citizens representing:
- marine industry
- environmental organizations
- marine unions
- waterfront neighborhoods
- public interest

To the extent feasible the representatives from the public agencies are to be from their respective boards as opposed to staff personnel. For the first term Duluth's mayor will appoint one citizens representative each for marine industry, waterfront neighborhoods and the public interest; Superior's mayor will appoint one representative each for environmental organizations, marine unions and public interest. For each succeeding term the cities will rotate these appointments.

FIGURE II. HARBOR COORDINATING COUNCIL: FUNCTIONAL RELATIONSHIPS

Key: Outer ring contains agency duties and proposed arrangements.
Inner ring contains HCC duties.
Inner circle contains basic HCC structure.



Powers

The powers of the HCC are extremely limited because of its relationship as an advisory body to the MIC. Thus, the HCC's powers are those of the MIC as applied to the harbor area. According to the agreement between ARDC and NWRPC the MIC's powers are:

a. To direct and oversee research studies, collection and analysis of data, the preparation of plans to guide the harmonious physical, economic and social development of the Duluth-Superior Metropolitan Area and provide technical assistance to local units of government within the urban and urbanizing metropolitan area. Program responsibilities will be specified in the work programs adopted by MIC and contractual obligations established by NWRPC and ARDC. All policies and plans of the MIC will be subject to review and comment by NWRPC and ARDC pursuant to the Regional Development Act of Minnesota and the Regional Planning Commission Law of Wisconsin and appropriate federal regulations.

b. To perform the federal grant review and coordinating function for NWRPC and ARDC for the Duluth-Superior area pursuant to the designations held by ARDC and NWRPC and Regional Clearinghouses under the Office of Management and Budget Circular A-95. The regional commissions, however, will retain the option of reviewing grant proposals that have regional as well as metropolitan significance.

c. To review and comment upon all policies and plans provided to the MIC by local units of government that have jurisdiction in the metropolitan area.

d. To adopt plans which have been developed for the Duluth-Superior Metropolitan Area by any planning agency recognized by either Wisconsin or Minnesota or by any agency or department of the United States Government having authority to do so.

Duties

The duties of the HCC will be of two general types. First, the HCC is to recommend actions to the MIC on projects, programs, etc. which occur in the harbor and which fall under the jurisdiction of the MIC's existing authority. Secondly, the HCC will have duties which are separate from the normal affairs of the MIC, are harbor specific and do not require MIC approval of HCC actions.

HCC will advise the MIC on:

a. on-going harbor planning;

b. adoption of an annual harbor improvement program;

c. authorized reviews of local, state and federal policies, plans, permits, regulations and programs related to the harbor;

d. establishment of ad hoc task forces to investigate specific harbor issues;

HCC will undertake on its own:

e. provide information pertaining to the harbor;

f. arbitrate harbor disputes brought before it;

g. conduct and coordinate harbor related research;

h. coordinate provision of public services in the harbor;

i. coordinate local, state and federal activities in the harbor;

j. initiate action on harbor improvement or development proposals;

k. provide technical assistance to public and private harbor concerns;

l. conduct any other authorized activity deemed necessary to implement the approved harbor plan.

Staff

The MIC will provide staff for the HCC.

Related Agreements

By itself the HCC will not insure implementation of the harbor plan or coordinated management. Special arrangements between agencies will be necessary to achieve these goals. Therefore, by the agreement establishing the HCC the signatories also agree to establish the following arrangements.

a. Harbor Regulations

1. Parties: SPAD, SBHC and Coast Guard
2. Purpose: to adopt and enforce a uniform set of rules and regulations governing operation of commercial and recreational vessels within the Duluth-Superior harbor.
3. Arrangement and Duties: SPAD and SBHC are to jointly establish the position of Harbor Master whose duty it will be to enforce the rules and regulations adopted jointly by SPAD and SBHC. The Coast Guard is to advise the two authorities in the creation of the regulations. Also, the agreement is to delineate the separate roles in harbor enforcement of the Harbor Master and the Coast Guard.
4. HCC Role: to review the rules and regulations for consistency with the harbor plan.

b. Industrial Development

1. Parties: SBHC and S-DCDA.
2. Purpose: to coordinate industrial development along Superior's waterfront.
3. Arrangement and Duties: SBHC and S-DCDA will jointly undertake industrial development activities along Superior's waterfront with the SBHC being the lead agency for these efforts.
4. HCC role: review projects.

c. Dredging and Dredged Materials Disposal

1. Parties: Corps of Engineers, SBHC and SPAD
2. Purpose: to develop and implement an annual harbor dredging and disposal program.
3. Arrangement and Duties: the three agencies agree to jointly design a long-term dredging plan, devise an annual dredging program for each season, select public dredged materials disposal sites, and operate reuse programs for dredged materials.
4. HCC Role: design and adopt long-range dredged materials disposal plan; review annual dredging and disposal programs; review any permits required for dredging or disposal; assist in coordinating agency involvement for implementing dredging and disposal plans.

d. Health

1. Parties: Coast Guard, Corps of Engineers, Douglas County, St. Louis County, SPAD and SBHC.
2. Purpose: to develop and implement programs promoting a healthy harbor environment.
3. Arrangement and Duties: the parties are to jointly develop and implement programs to control harbor rat populations and other nuisances, to remove litter and debris from the harbor's land and water areas, to obtain the cooperation of private interests in these programs, and to generally improve the health and welfare of the harbor area.
4. HCC Role: review programs.

e. Safety

1. Parties: Coast Guard, SPAD and SBHC.
2. Purpose: to make the harbor a safe place in which to work, play and live.
3. Arragement and Duties: working through existing operations and the newly created Harbor Master's office the parties will implement or coordinate recreational boating, commercial shipping and general safety programs. These efforts are to include educational programs and harbor regulations.
4. HCC role: review programs.

f. Natural Resources

1. Parties: USF&WS, MDNR, WDNR, MPCA and WLSSD.
2. Purpose: to implement a coordinated program for the management of the harbor's natural resources.
3. Arrangement and Duties: all agencies agree to coordinate or merge their respective resource monitoring programs and share all harbor related information. The WDNR, MDNR and MPCA agree to coordinate their permit programs. The MDNR, WDNR and USF&WS agree to cooperate on management programs, and to establish an overall guide to harbor resource management.
4. HCC Role: review programs; review permits; approve any management program not mandated by law.

g. Port Operations

1. Parties: SPAD and SBHC.
2. Purpose: to better coordinate public port operations and to better promote the interests of the Duluth-Superior ports.
3. Arrangement and Duties: SPAD and SBHC will form joint committees on lobbying, promotion/cargo development and port operations.
4. HCC Role: review programs.

Reviewing and Amending Harbor Plan

In point of fact, there will be at least five "harbor plans" in effect although each plan will be identical to the others. The multiplication occurs when each of the primary agents - Superior, Duluth, SBHC, SPAD and MIC - adopt the same document but under their own separate legal authorities. Further expansion in the number of "plans" could occur if other agencies adopt the plan as their own; more likely, these agencies will only initial or endorse the plan as one they will use but not necessarily incorporate as their own. Nonetheless, there is a marked need for coordination to keep all plans in line with one another.

The responsibility for insuring that the harbor plan reflects current circumstances and that all versions of the plan are kept apace of all changes falls to the HCC. It will also be the HCC's role to review the plan for improvements and alterations.

The process for reviewing and amending the plan will be as follows:

a. Any party to the agreement who wishes to change the plan in an area where they have jurisdiction should first notify the HCC of the proposed change(s).

b. HCC then notifies all other parties of the proposed change(s).

c. Within 30 days the HCC will review the proposed change(s). Time extensions for this review can be provided. If the HCC does not act within the allotted time the HCC is assumed to find no fault with the proposal change(s).

d. HCC makes its determination on the change(s) and notifies all parties of the decision. The HCC amends the harbor plan accordingly.

e. The parties including the initiator of the change(s) amend their plans or endorsement of it as they see fit in regards only to the proposed change(s).

f. The HCC may also initiate plan changes via the steps outlined above.

Beyond this process the HCC will conduct a thorough evaluation of plan goals, policies and land use map every four years. Recommended changes resulting from this review will then be adopted according to the process above.

### Commitment of Agency Support

By signing the agreement establishing the HCC the parties agree to support the HCC, to provide representation on it, to abide by the HCC's decisions to the degree stipulated in the agreement, and to utilize the adopted harbor plan within their respective agencies.

### Reviewing the Management Process

Every four years the agreement establishing the HCC will expire requiring a reaffirmation by the members to continue it. Prior to this time the HCC will form a task force to undertake an evaluation of the HCC's management structure and alternatives to it.

The task force is to review the HCC structure, evaluate the performance of the HCC, determine overall harbor management needs and make recommendations concerning changes in harbor management.

## EVALUATION OF PROPOSED MANAGEMENT PLAN

Clearly, the Harbor Coordinating Council has the potential to provide sound management for the harbor. That it can do so through an essentially voluntary process is commendable although this approach also holds the seeds for the HCC's downfall. In order for the HCC to succeed each participant must fully honor its commitment.

As measured by the ten policy guidelines for harbor management listed earlier in this section, the HCC is acceptable. If the process works as described, all of the policy guidelines are satisfied. The HCC's performance, of course, will determine if the guidelines are actually met.

### Proposed Guidelines for Harbor Management

1. *Possess the ability to effectively implement a harbor plan and its recommendations.*

If the voluntary approach in the HCC is honored, then the proposal will satisfy this policy. The only power of the HCC is to advise the MIC, and the MIC's main authority is to review and comment upon projects involving state or federal funding. Obviously, the HCC will not have a direct enforcement power.

The HCC's main power will be the pressure on each agency to comply with decisions that have been reached by a body (the HCC) composed of other agencies. This pressure could be particularly intense if only a single agency decided to move counter to the other's position.

The HCC's link to the MIC can be both a strength or a weakness. Its strength is found in the make-up of the MIC, which is comprised of local elected officials. The HCC will be able to sensitize MIC members to harbor issues and, because of their positions on city councils or county boards, the MIC delegates can work on remedies via their own unit of government.

On the other hand, the link with the MIC can be a weakness in that it represents one more actor involved with a harbor decision. It allows for the possible reversal of a HCC decision by the MIC or by the MIC's parent organizations.

Another possible weakness of the HCC is its size and composition. Nineteen people on a committee can become unwieldy with problems in obtaining a quorum or facilitating discussions. Also, the HCC's mix of citizens, professional staff and policy people can create difficulites in communication and group dynamics. Quite often, the variance in status or level of knowledge can stifle debate, skew the groups thinking or otherwise hinder free and open discussions. On the other hand, such an unusual mix of people and positions can open up channels of communication that would otherwise remain closed.

2. *Achieve close cooperation and coordination between local, state and federal governments.*

While the performance of the HCC and its members will determine if this policy is satisfied, the structure itself provides a solid opportunity for cooperation to occur. The HCC will provide a far better forum for discussion and problem resolutions than currently exists.

One reason the HCC is composed of so many representatives of agencies is precisely to satisfy this requirement. It is because there is such a tremendous need to coordinate public action that the HCC format was selected. Other alternatives, such as an all local citizen body, were considered, but seemed unable to obtain the level of governmental cooperation deemed necessary.

3. *Provide a major local role and responsibility in harbor management.*

The largest bloc on the HCC will be composed of local representatives. Also, the HCC process formally involves local interests to a far greater extent than exists at present.

4. *Include active, formal involvement by citizens representing the public interest, marine industry, environmental organizations, unions and waterfront residential neighborhoods.*

The HCC specifically includes these groups.

5. *Accomplish its tasks with the minimum cost to the public and private sectors.*

The HCC is a readily implementable process which will not require any significant new expenditures. In all cases existing staff will be used and only a minimal amount of new costs should be incurred.

6. *Achieve an effective balance between harbor interests and prevent domination by a single group.*

There is a balance in the HCC membership both by interest group and level of government. Beyond that the issue is up to the representatives and their respective agencies.

7. *Assure it accountability to the public.*

Although the membership of the HCC will not be elected, the elected officials on the MIC will help assure public accountability. Furthermore, the wide and diverse membership will act as a ready conduit for public concern.

8. *Be responsive to the needs and concerns of all harbor interests.*

Nearly every conceivable harbor interest is represented on the HCC. The one group that is not directly represented is recreation interests.

9. *Represent the minimum amount of regulation and control necessary to implement a harbor plan.*

Under this process no new authority is created; there is only a coordinating body established to make better use of those that already exist. The laws or regulations that will be developed will be local in nature.

The HCC approach is the minimal organization possible save a continuation of the present situation. If anything, it may prove to be too minimal.

10. *Provide procedures for independent, periodic evaluations on the effectiveness of and need for a harbor management structure.*

These procedures are provided in the structure. There may be some question as to the independence of a task force established by the HCC to review harbor management. The MIC's role above the HCC may serve to counterbalance this potential problem.

MANAGEMENT OPERATIONS

Admittedly it is difficult to correctly anticipate how a management process will actually operate. However, a brief description of how the HCC might function will serve to highlight the HCC's intended role.

The HCC will have a dual responsibility in relationship to the harbor plan. First, the HCC will use the plan to react to proposals and programs. In this reactive role the HCC will comment upon proposals, suggest changes or provide or deny support for the measure using the plan as its guide. Where the plan does not adequately address a given issue, the HCC will have to formulate new policies not just to handle that specific situation, but to cover all cases of that general type.

Secondly, the HCC will use the harbor plan as a base for action. While the HCC's direct powers are extremely limited, it can suggest or otherwise affect the implementation of needed projects. In this active role, the HCC will aggressively pursue courses of action or urge others to as a means to implement the harbor plan. One particularly important form of action will be the HCC's collective impact on the membership's individual programs.

Between these two roles the HCC will be both a guide and a catalyst. Its restricted powers will not give it an abundance of legal authority to assure its goals. Yet, as observed in the evaluation, its composition could achieve this end.

It is possible that a particular issue may be so decisive that one or more members of the HCC will desire to withdraw. At this time it is inconceivable

that, given the HCC's limited powers, anyone would wish to do so since unilateral action by a single member is not precluded by HCC membership. It is hoped, however, that the HCC will serve to replace such unilateral action with coordinated implementation of a compromised resolution to an issue.

In fact, it is the notion of compromise or "trade-offs" that is central to the HCC's management role. The HCC is to use its concern for the harbor as a single entity and its multi-agency composition to provide the forum for the formulation of programs acceptable to all sides of an issue. To this end it may be reduced to being a meaningless debating society. On the other hand, it may serve to open up vital lines of communication and facilitate the resolution of issues.

IMPLEMENTATION

## IMPLEMENTATION

Implementing the harbor land use plan and management structure will require a concerted effort on the part of all levels of government and private interests. This section of the document outlines the general steps required to transform the plan into reality.

## PLAN ADOPTION and ENDORSEMENT

The first step in implementing the plan is to have local governments adopt it as official policy and to have various other units of government endorse or otherwise approve the document.

1. Plan adoption by:

    a. City of Superior - as an element of the City's comprehensive plan.
    b. City of Duluth - as an element of the City's comprehensive plan. Both cities will have to undergo formal adoption procedures which include hearings, planning commission action and council approval.
    c. Superior Board of Harbor Commissioners - as the SBHC's harbor plan under the authority given in Chapter 30.38(5) of state statutes.
    d. Seaway Port Authority of Duluth - as the SPAD's harbor plan under the authority given in Chapter 458.16 Subd 2(1) of state statutes.

2. Endorsed by the following agencies according to their own procedures: U.S. Army Corps of Engineers, Coast Guard, Fish and Wildlife Service, Wisconsin Department of Natural Resources, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, Western Lake Superior Sanitary District, Wisconsin Department of Transportation and Minnesota Department of Transportation.

3. Following action by the two cities the plan is to be adopted by the Metropolitan Interstate Committee and its two parent organizations the Arrowhead Regional Development Commission and Northwest Wisconsin Regional Planning Commission.

4. Reviewed by the Minnesota and Wisconsin Coastal Zone Management Programs for consistency with each state's coastal plan.

## IMPLEMENTATION

Once the plan has been adopted and endorsed, then actual impelementation can begin.

1. Harbor Management

    a. Joint agreement establishing the Harbor Coordinating Council signed by Duluth, Superior, SPAD, SBHC, WLSSD, WDNR, MDNR, MPCA, Corps of Engineers, Coast Guard, USF&WS, MIC, ARDC and NWRPC.
    b. The Harbor Coordinating Council is to establish a long-term improvement program to be implemented through annual programs.
    c. Identify any changes in legal authorities required to implement all aspects of the harbor plan.

c. Developed coordinated port promotion programs.

d. Establish programs which will involve the general public in the management of the harbor.

e. Establish a program for the review and evaluation of all harbor management efforts including the H.C.C.

2. Harbor Systems and Land Use Plan

a. Natural Resources

(1) Identify all significant natural resource sites within the harbor including habitat, spawning grounds, nesting sites, feeding areas, unique or rare resources and those threatened by development.
(2) Prepare management programs for the identified sites for the purpose of protecting, preserving and managing them. Possible management tools include public purchase, easment, cooperative public/private programs and incentive taxing.
(3) Establish a harbor environment improvement and management program which includes an environmental loss mitigation plan.
(4) Establish baseline data for the harbor's major natural resources.
(5) Establish an on-going process for monitoring the harbor's natural resources.
(6) Conduct research into means to manage, enhance and improve the harbor's natural resources.
(7) Establish coordinated fish and wildlife law enforcement programs.
(8) Undertake erosion control measures for critical erosion sites.
(9) Develop a simplified and coordinated permiting program.
(10) Devise and establish an uniform set of environmental standards for the harbor.
(11) Establish coordinated programs for the improvement of the quality of the air and water of the harbor.
(12) Establish programs designed to involve and assist private and citizens in improving the harbor's natural resources.

b. Land Use

(1) Make appropriate modifications to the text and maps of local zoning ordinances so as to conform with the harbor plan.
(2) Modify where necessary local subdivision regulations so as to conform to the harbor plan.
(3) Establish local utility extension policies which conform to the harbor plan.
(4) Undertake improvements to the harbor's port operations.
(5) Public sector is to devise strategies to encourage and assist residential, marine industrial, commercial and recreational developments which conform to the harbor plan.
(6) Design plans to guide development of sub-areas within the harbor.

c. Recreation

(1) Undertake a comprehensive site-by-site analysis of boat accesses, design the appropriate level of facility for each site and develop the sites.

(2) Evaluate existing recreation facilities for consistency with the harbor plan and identify means to upgrade them.
(3) Develop new water-related recreation facilities with emphasis on camping, boatwatching, trails and boat moorings.
(4) Provide a coordinated system for distributing information on harbor recreation.
(5) Develop an interpretive program for the harbor.
(6) Coordinate city and state recreation programs.
(7) Develop a coordinated system of trails throughout the harbor.
(8) Assess identified historical and archeological sites to determine their significance, interpretive potential and appropriate level of administration.
(9) Provide free access on public lands to the harbor, streams and Lake Superior to allow fishing.
(10) Establish recreation and access corridors along streams flowing into the harbor.
(11) Develop fishing piers along the shore.
(12) Develop scenic overlooks at key sites in the harbor.

d. Transportation

(1) Evaluate potential improvements to the water transportation system.
(2) Analyze bridge conflicts with the intent to devise measures to correct or reduce each problem.
(3) Identify means of correcting railroad crossing hazards.
(4) Research potential for expanding the use of the water transportation system.
(5) Evaluate potential improvements to the rail, auto and transit systems.
(6) Develop a coordinated bicycle and pedestrian pathway system.
(7) Analyze rail and road access problems for waterfront property.
(8) Conduct a study into the required level of airport service in the harbor.

e. Dredging and Dredged Materials Disposal

(1) Develop annual dredging operations programs.
(2) Develop a long-term dredged materials disposal plan with annual implementation programs.
(3) Develop uniform dredging and disposal permiting programs.
(4) Evaluate potential disposal sites for environmental, social, developmental and economic acceptability.
(5) Research constructive uses of dredged materials for use within the Duluth-Superior area.
(6) Conduct on-going monitoring of bottom sediments to determine levels of pollution.

f. Harbor Design

(1) Analyze harbor view corridors and determine required corrective measures, management strategies and development potential.
(2) Develop an uniform signing program.
(3) Analyze lighting in the harbor and identify means to improve lighting for the purposes of safety, tourism and energy consumption.

(4) Develop a guide for overall design considerations within the harbor.
(5) Develop criteria for designing shorelines altered or by resulting from fill or disposal.
(6) Develop site specific design ideas to improve aesthetic appeal, access to the waterfront and enhancement of a positive harbor "atmosphere".

g. Harbor Services
(1) Enact local ordinances regulating garbage/dunnage collection, treatment and disposal.
(2) Enact local ordinances regulating sewage treatment and disposal operations and facilities including those aboard vessels and recreational boat pumpouts.
(3) Develop a litter control program for both the land and water areas of the harbor.
(4) Provide assistance to private providers of harbor services.
(5) Develop a joint training program for firefighters with emphasis on probable types of fires to be fought along the waterfront.
(6) Develop plans for fighting fires at all harbor facilities including coordination between agencies, fire departments and facility operator.
(7) Review coordination between police operations and private security programs.
(8) Undertake an on-going rat control program.
(9) Undertake a vegetation control program as part of health, safety and beautification efforts.

APPENDIX

APPENDIX I:

SUGGESTED PROJECTS FOR PLAN IMPLEMENTATION

The following section presents specific programs or projects which could be used to implement portions of the harbor plan. These items are not presented as absolutes on what must occur, but rather as ideas for what could occur. Although each one satisfies the goals and policies of the harbor plan, a careful review of each project and its alternatives will be necessary to determine which project, site or program should actually be developed.

A. NATURAL RESOURCES

Preserve Specific Sites

Grassy Point, Interstate Island, Hearding Island, Minnesota Point Forest, Hog Island, mouth of Nemadji River, Wisconsin Point, and Allouez Bay and Marsh should be designated as state wildlife management areas, natural scientific areas or other categories which will protect and, if necessary, manage them properly. Local ordinances can be used to accomplish this task as well.

The degree of protection required or desired varies for each site, but the overall intent is to prevent them from being developed or otherwise adversely affected. In this vein, while Minnesota Point Forest and Wisconsin Point are to be protected, such recreational pursuits as picnicking, hiking and swimming should be allowed.

Even though this recommendation centers on certain sites, the management of them requires that they and all other harbor resources be seen as a single unit. Thus, coordination of efforts between states, cities and federal agencies will be essential.

Relocate Clure Terminal Bird Colonies

The gull, tern and plover colonies on Clure Terminal rest on land which someday will be developed for commercial shipping purposes. A last minute effort to relocate the birds would only delay development and probably harm the birds. Therefore, steps to relocate the colonies should be taken now.

Three parcels of land can be designated and developed as acceptable nesting habitat for the birds: a portion of Hearding Island can be cleared and fenced; the southeastern tip of Barkers can be similarly developed; a portion of Hog Island can also be cleared, but fencing would probably not be required.

Once these sites are readied, the Clure Terminal site can be allowed to naturally revegetate causing it to become undesirable habitat for nesting. During this time the site is to be posted to prevent disruption. If all goes as intended, the colonies will gradually relocate to the newly developed habitat.

Protect Herony

A great blue heron colony on Kimball's Bay should be publicly protected. Although the birds are not a rare or endangered species, they greatly add to the quality of experience along the harbor. This colony is the only one in the harbor and, in addition, it serves an area of approximately 60 miles in diameter. The nature of the site seems to indicate that it will last for 25-40 years. Public protection of it during that time would aid in maintaining a significant harbor resource.

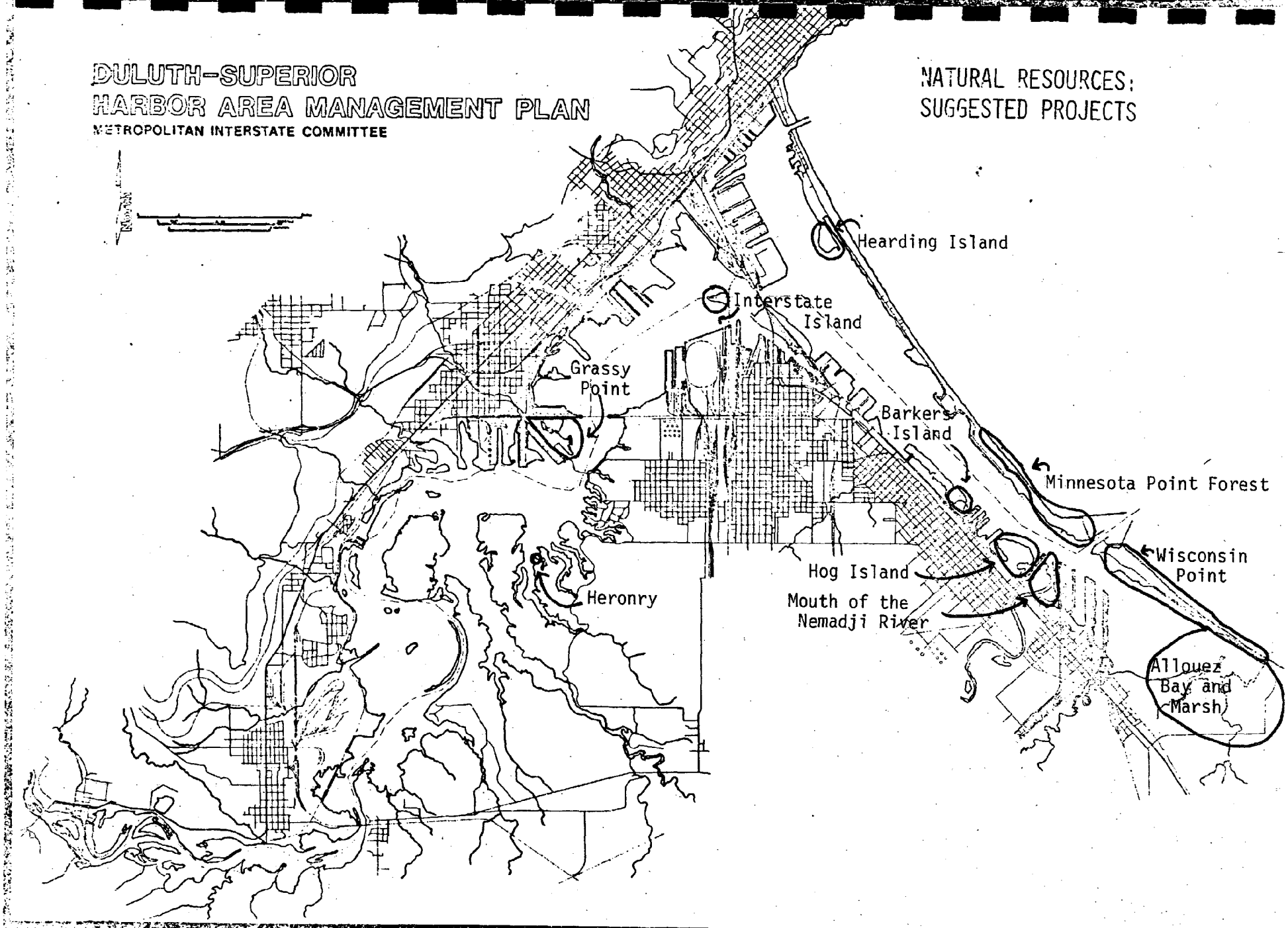
Fish Management

As the harbor's overall water quality improves, the importance of the harbor's fishery will rapidly increase. To protect and enhance this resource will require active management within the harbor. Existing fish spawning beds, especially the walleye grounds on the St. Louis River, should be protected from any adverse development. For other species, such as northern pike, the loss of marshy areas along the shores cannot be tolerated.

# DULUTH-SUPERIOR HARBOR AREA MANAGEMENT PLAN

METROPOLITAN INTERSTATE COMMITTEE

## NATURAL RESOURCES: SUGGESTED PROJECTS



Shallow water feeding areas in the lower St. Louis River and Bay also have to be protected or enhanced. Losses caused by proposed fill operations should be recovered by requiring that other shallow water areas be managed to obtain even better habitat. The loss of all adequate shallow water areas in these two reaches of the harbor cannot be permitted to occur.

All forms of habitat enhancement should be used in bettering the fishery. Rip-rapping on shores and artificial reefs or forage areas are to be utilized where appropriate.

While stocking of most fish species is not necessary, programs for stocking fish such as chinook salmon are to be continued and expanded. Also, a walleye egg stripping station on the St. Louis River and jointly operated by the two states would make beneficial use of the immense walleye spawning run on the river.

Preserve St. Louis River Marshes and Shores

The extensive marshes along the St. Louis River are important to the fish and wildlife of the harbor. The loss of these marshes to fill or other forms of degradation should be prohibited. This protection can be achieved through local land use controls, public purchase or easements.

At the same time the shores of the St. Louis River should also be protected. In the undeveloped portions of the river the shores provided habitat for wildlife and a scenic view of the highest quality. Clearcutting of shore vegetation or inappropriate development would disrupt and mar this resource. Once again, local land use controls could handle this situation although state or federal easements may be a more secure form of protection.

Interstate Island

Since its creation through dredge disposal, Interstate Island has become a significant natural resource whose greatest potential lies untapped. The island's location in St. Louis Bay makes it a prime site for recouping environmental losses in the bay resulting from possible fill operations. The island can be considerably enlarged to accomodate new marshes or sandy areas for gull or tern colonies. It can be used by natural resource managers as a site for experiments on habitat enhancement or creation. Additionally, the shoal area around the island can possibly be developed into a major fish foraging site.

B. LAND USE

Duluth's Central Waterfront

The land from Canal Park to west of the Arena-Auditorium holds a vast potential for redevelopment. To the west of the Arena along the waterfront and a rebuilt slip could be a tourist information center with headquarters for local marine organizations. This building could also hold facilities such as showers for boaters. A public mooring site along the slip would provide a needed service and lend "atmosphere" to the development.

In conjunction with this building could be a Lake Superior oriented education and research labratory operated on the same basis as the nearby cultural center. Thus, Duluth would have twin facilities catering to the cultural and scientific interests of the region.

Just off the shoreline but coordinated with these public facilities could be a series of private developments. A restaurant and small retail shops would readily complement the nearby public development and help draw people to the harbor.

Also, beginning at this site would be a path along the water's edge which would run from there, beside the Arena-Auditorium, around Minnesota slip and then connect with the Ship Canal paths.

Barkers Island

Superior's plans for Barkers Island are to be endorsed and supported. The marina-hotel complex will provide both needed boating services and an enormous attraction for Superior and the harbor.

St. Louis River and Bay Shipping

Several parcels of land could be redeveloped or created to support an expanding shipping industry. Land for potential new coal transshipment docks could be created in Superior west of ORTRAN, in the area between Hallett Dock #6 and C. Reiss dock, and possibly even at Erie Pier.

Erie Pier and the area west of the WLSSD plant offer excellent sites for shipping or related activities. One possibility would be to have all harbor services relocated and concentrated onto one of these sites in order to provide more room for these operations and to provide better services to the harbor.

All of these sites also provide the two cities with plentiful opportunities to attract more marine-related industries to the area.

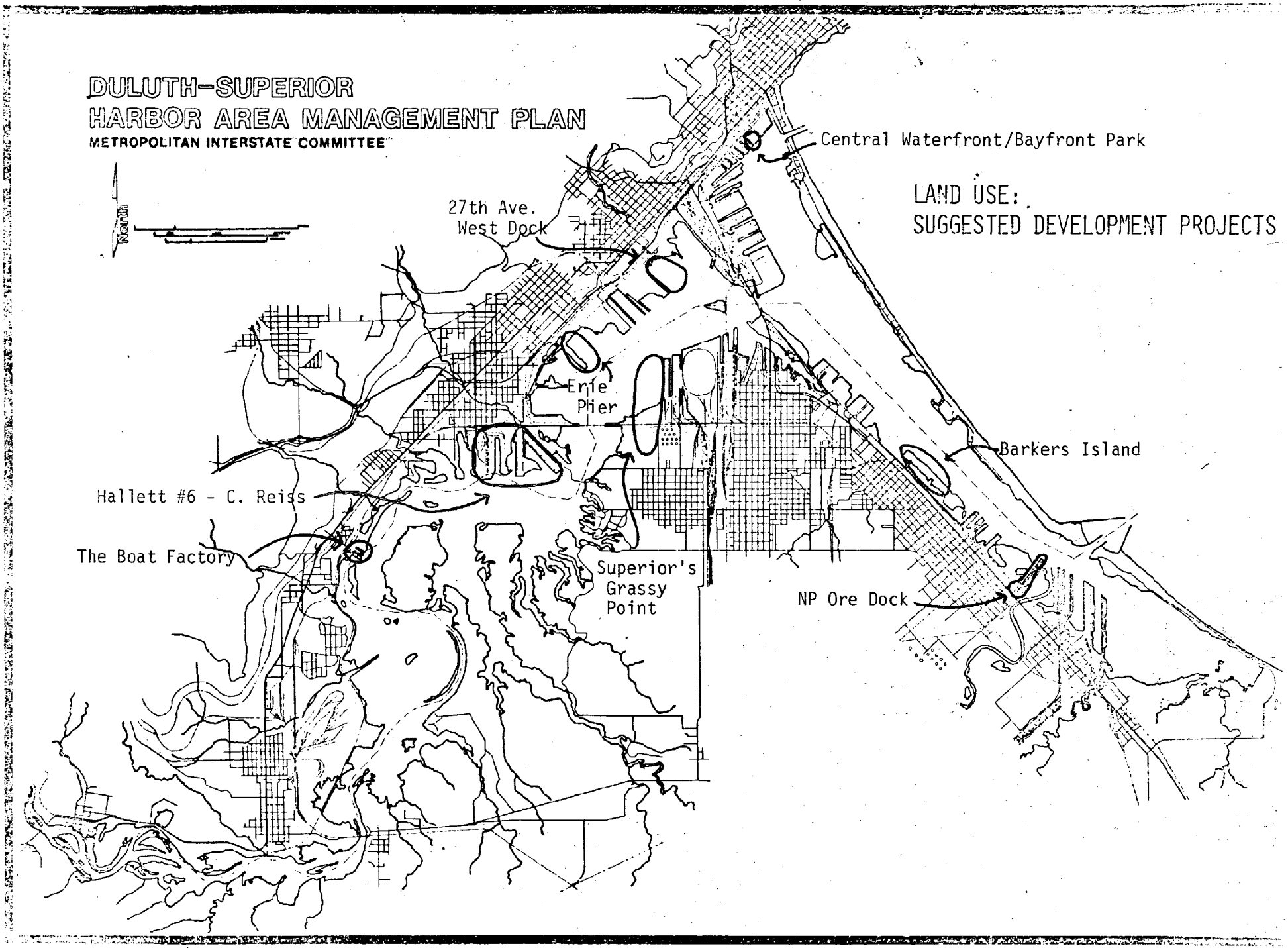
Northern Pacific (BN) Ore Dock

Now standing obsolete and vacant this dock has the potential to be transformed into an amazing commercial development. A marina of 150-300 slips could easily be built along the dock's southeastern flank. On the end of the dock, nearly 2000 feet out into the harbor and 75 feet above it, could be situated a first class restaurant and associated facilities. Elevators could shuttle people up from the marina and parking lots while trolly cars would transfer visitors along the tracks out to the restaurant.

While at the dock visitors would be treated to views of Superior, the Nemadji River, the Hog Island nature area, the BN ore docks, the Superior Entry, Wisconsin and Minnesota Points, Superior's eastern waterfront and Lake Superior. No other views of this extent and variety exist anywhere else in the entire harbor. Creative utilization of this dock would multiply many times understanding and enjoyment of the harbor as well as attract more people to it.

The Boat Factory

At the Riverside terminal of the Western Waterfront Trail could be an active reminder of the harbor's role in shipping on the Great Lakes. Prior to the now vacant marina the Riverside docks were the sites of several shipbuilding firms, the first being the McDougall Duluth Shipbuilding Company in 1917. To commemorate the area's shipbuilding past a new Boat Factory could be built with a rusticly designed building for a museum on shipbuilding on the Great Lakes as well as shops for teaching the building of small wooden boats and canoes. While, actual construction on the students' projects would take place here, the major effort would be the construction of replicas of the historic wooden ships which sailed the Great Lakes. Under the guidance of skilled craftsmen these vessels would be built and sold. The proceeds would be used for the construction of still more of the old boats. Also at the Boat Factory site could be a marina, landing and picnic grounds.


DULUTH-SUPERIOR
HARBOR AREA MANAGEMENT PLAN
METROPOLITAN INTERSTATE COMMITTEE
North
LAND USE:
SUGGESTED DEVELOPMENT PROJECTS
Central Waterfront/Bayfront Park
27th Ave.
West Dock
Erie
Pier
Barkers Island
Hallett #6 - C. Reiss
The Boat Factory
Superior's
Grassy
Point
NP Ore Dock

C. RECREATION

Western Waterfront Trail

Using the grade of an abandoned railroad track this multipurpose trail will connect Jay Cooke State Park with the Duluth Zoo and involve numerous sites in between. Operating on the rebuilt tracks will be an excursion train which will carry passengers between terminals at Commonwealth Avenue and Riverside. At each terminal will be boat accesses, picnic grounds and other activities.

Paralleling the tracks and extending beyond them at either end will be hiking and bicycling paths. Along the trail will be opportunities to view the river, observe wildlife and visit nature study points. This trail will act as an effective, but unobtrusive method of bringing people, especially the elderly and handicapped, into contact with the river.

Boat Accesses

A two-tiered network of boat accesses should be developed throughout the harbor. The first tier consists of major accesses which will serve nearly all sizes of trailered boats. Each of these sites should have launching ramps, docks, paved parking, toilets and trash containers. This level of access should be built at: the foot of Commonwealth Avenue, Riverside, Indian Point, Billings Park, Rices Point, Park Point Recreation Area, Barkers Island and the old N.P. Ore dock.

The second tier is comprised of accesses designed to serve canoes and small boats. The level of development at these sites is less than that for the other tier consisting of defined parking areas, trash containers and small docks to aid launching and landing. These accesses should be located at Fond du Lac, Oliver, Smithville, Pokegema Bay, just south of Billings Park, foot of Arrowhead Bridge, at one or two points along Minnesota Point, several on Wisconsin Point and one or two on the Nemadji River.

All sites should be marked as to location and level of use. Maps of the harbor showing the accesses would be a helpful guide to all boaters.

Camping

The Indian Point Campground should be expanded, better signed, better promoted and have its access road rebuilt and paved. Also, a nearby boat access should be constructed or made available to campers.

New camping facilities can initially be built at two sites in Superior. Whiteside or Clough Island can easily accomodate a semi-primitive level campground. The old Whiteside farm can be partially restored as a historical site and attraction. A boat landing would have to be rebuilt.

The other site would be on one of the points between Kimball's Bay and Billings Park (but not near the heron colony). This campground could serve all forms of camping, but in separate nodes. All necessary facilities and services would be provided at this site. A boat access probably could not be built because of the steep banks, but a mooring area could be constructed.

Other campsites accessible by boat only could be located on both sides of the St. Louis River between Fond du Lac and Billings Park. The opportunity would be provided for people to boat and camp this area, spend each night at a different site, be in a wild to semi-wild area and not ever be more than ten miles from the hearts of two cities holding 130,000 people.

Parks

Two major new parks should be built and several small sites developed or improved. At the tip of Connor's Point can be a boatwatching park built on the site of the old shipping operations. Picnic tables and grills would enhance this park, which affords visitors close up views of boats entering Howards Bay, loading at grain elevators, going through the BN Bridge and traveling between Rice's and Connor's Points. Relocating the road serving the point to run along Howards Bay will offer better views of Fraser Shipyard, give access to a possible overlook along the bay and separate the park area from proposed industrial use of the rest of the Point.

A new park could be built at the base of Wisconsin Point to complement the less intensive development on the Point itself. At this new park could be picnic grounds, play equipment and an area for field games. Also, bicycles could be rented out for leisurely rides along the Point. An important aspect of this park and Wisconsin Point in general is to improve both the access road and signing leading up to the Point.

On Rice's Point opposite the Connor's Point Park could be another smaller development concerning boatwatching. This site could be developed in conjunction with the proposed boat access.

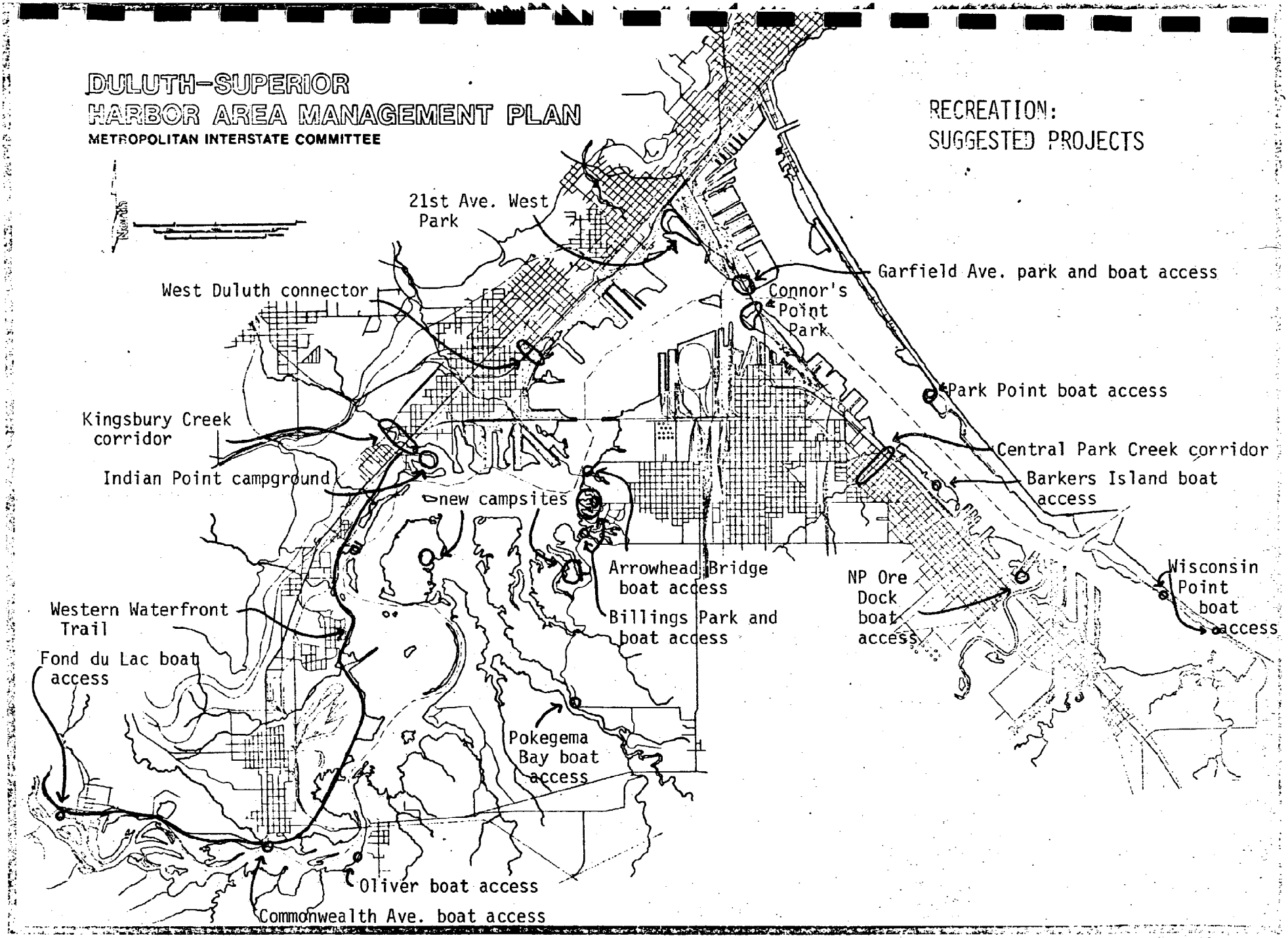
In Duluth's 21st Avenue West Slip a non-intensive open space should be developed utilizing the mouth of Miller Creek, the view of the water and the public right-of-way which encircles the nearby WLSSD plant. Birdwatching and picnicking would be the primary activities along with general harbor watching.

Billings Park, which is a beautiful riverfront park, should be upgraded with an old, now abandoned feature being restored. As already noted, the boat access should be rebuilt with a realigned access road. The small islands between Points One and Two are to have new rock rip-rapping to replace the current mixed concrete and rock material. Other general improvements such as rebuilding the seating area by the old beach can also be undertaken. Finally, a boat and canoe rental service should be reinstituted to allow more people to boat along the scenic and relatively calm shores of this section of the river.

# DULUTH–SUPERIOR HARBOR AREA MANAGEMENT PLAN

METROPOLITAN INTERSTATE COMMITTEE

## RECREATION: SUGGESTED PROJECTS



Creek Corridors

Priority should be given to developing three creeks as connecting links between the harbor and adjacent neighborhoods. In Superior Central Park Creek should have paths developed all along its course to provide a physical link between the Central Park area and the development at Barkers Island.

In Duluth, the 44th Avenue West Creek should be utilized as a solid connecting facility. This creek's valley is perhaps the only direct physical link between the West Duluth neighborhood and the bay. Numerous obstacles are in the way, but an attempt should be made to develop this essential connection. As an alternative, Keene Creek may be considered for this purpose.

Also in Duluth, Kingsbury Creek which flows through the zoo can be used to connect the harbor to the zoo and beyond it to Spirit Mountain. This particular connection would tie the zoo to the Western Waterfront Trail magnifying the attraction and impact of both facilities.

D. TRANSPORTATION

Aerial Lift Bridge Regulations

The institution of bridge hours for recreational craft should be studied, but delayed until a trial period of voluntary efforts to reduce lifts is evaluated. Recreational craft should be encouraged through signing, information booklets and other information processes to cluster into groups when using the bridge or to follow commercial craft through the canal. Also, there could be a voluntary effort to not use the canal during morning and evening rush hours. City ordinances governing the use of the Canal and the raising of the bridge should be enacted so that the bridge operators do not have to act on their own initiative.

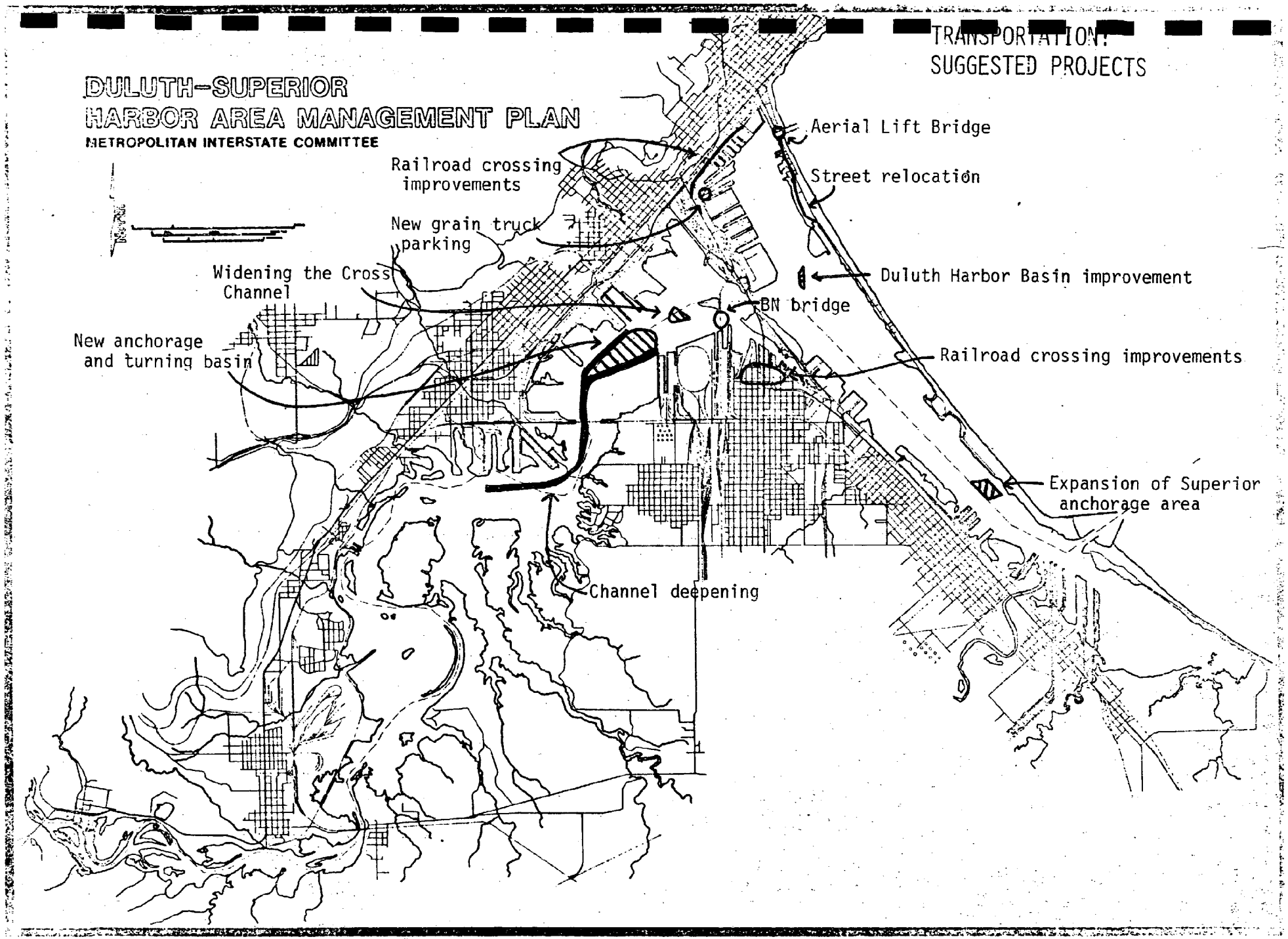
Minnesota Point Street Realignment

As originally suggested in the City of Duluth's Park Point Sketch Plan, the backbone street system for Minnesota Point should be realigned. This realignment would entail a two stage shifting of the road to the bayside of the point and returning to the original route at 19th Street.

This shift, as shown on the map, would greatly diminish the number of homes affected by the road. There would also be fewer turning motions and hence a safer flow of traffic. Moreover, the shift would permit the full development of a reunited Franklin Park. Segments of the old main route can be used for common parking and block parks.

Burlington Northern Bridge

A study should be initiated concerning both the Minnesota and Wisconsin draws of this bridge. The conflict betewen rail and water traffic probably will not be fully resolved, but a redesigned bridge might eliminate the difficulty ships have navigating the draws.


DULUTH-SUPERIOR
HARBOR AREA MANAGEMENT PLAN
METROPOLITAN INTERSTATE COMMITTEE
TRANSPORTATION:
SUGGESTED PROJECTS
Aerial Lift Bridge
Railroad crossing improvements
Street relocation
New grain truck parking
Widening the Cross Channel
Duluth Harbor Basin improvement
BN bridge
New anchorage and turning basin
Railroad crossing improvements
Expansion of Superior anchorage area
Channel deepening

Railroad Crossing Improvements

Along Duluth's Railroad Street and in Superior's northern waterfront area there are a series of railroad crossings that need to be improved. Measures which should be implemented as soon as possible include removal of two concrete pillars along Railroad Street, increased lighting, improved lines-of-sight and better signing.

Harbor Deepening

The harbor should have all channels dredged to a depth of 27 feet to facilitate efficient use of the entire harbor. This Corps of Engineers project should be undertaken in coordination with the dredge disposal program described in the following section.

Further consideration should be made of widening the Cross Channel and the Duluth Harbor Basin, expanding the Superior Anchorage area, and eliminating the shallow triangle lying between the North and South Channels west of the Cross Channel. Also, once the old Arrowhead Bridge is removed, the channel at that point should be widened to ease navigation along the curve found there.

Mooring Areas

Public mooring areas for recreational craft should be designated. The most probable location would be along Minnesota Point.

E. DESIGN

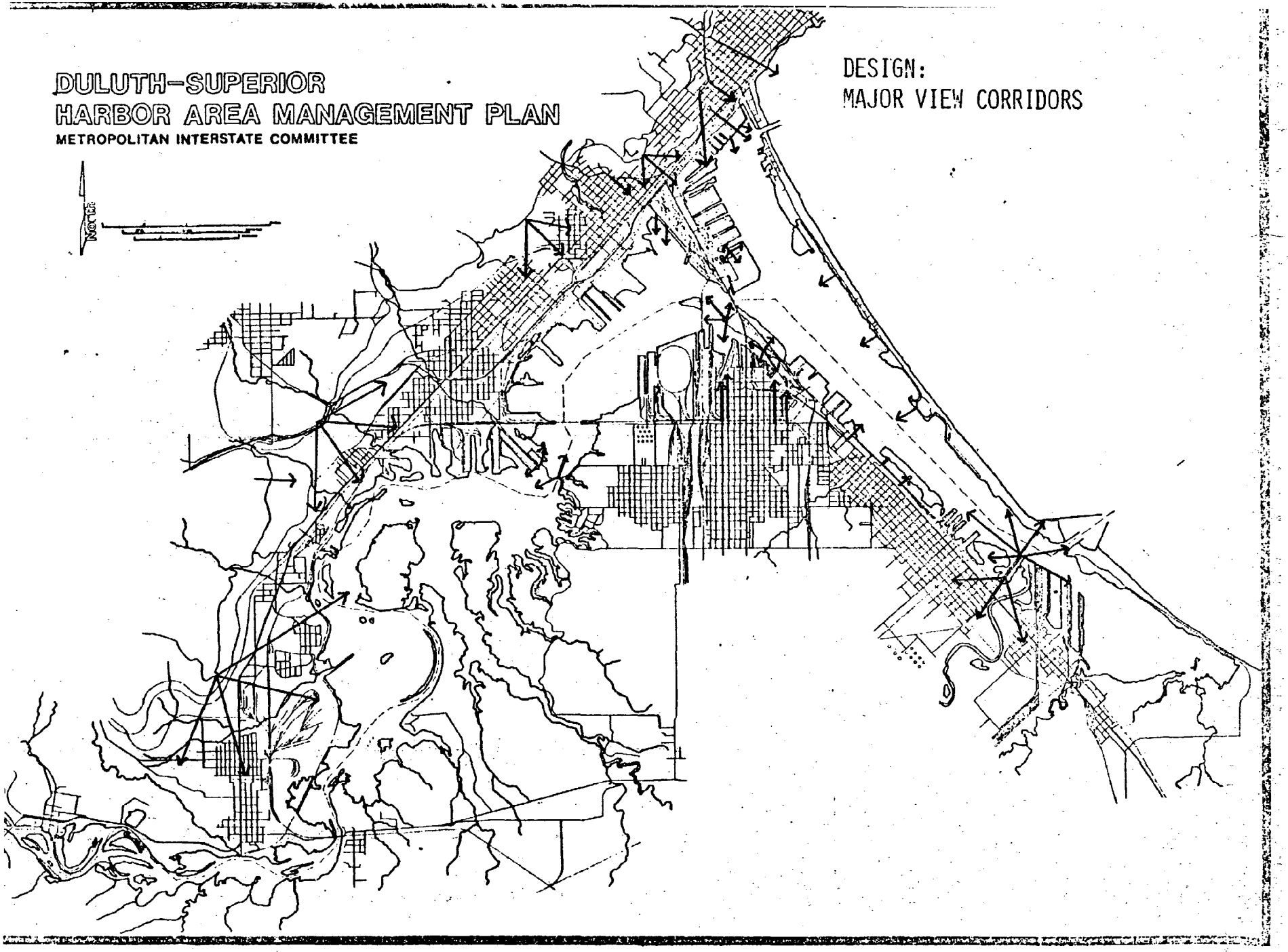
Since much of the concern with design involves individual developments, the primary overall emphasis should be on creating and maintaining view corridors open to the harbor. Major existing and proposed corridors open to the harbor. Major existing and proposed corridors are shown on the map although these represent only a rough examination of the issue with more intensive work being required.

The line of sight for corridors should be retained by preventing the construction of buildings or signs which obstruct the views. Vegetation should also be controlled for this purpose.

One means by which to establish new harbor viewing sites is to develop overlooks along the waterfront. Currently, such stands exist at the DM&IR and BN docks. New ones could be built atop the transit sheds at Clure Terminal, near ORTRAN in Howards Bay overlooking Fraser Shipyard, and on the old NP dock. Each of these overlooks would open up spectacular view corridors for visitors.

While down on the waterfront people should be reminded that the view of the surrounding cities from the harbor is also pleasing and surprising.

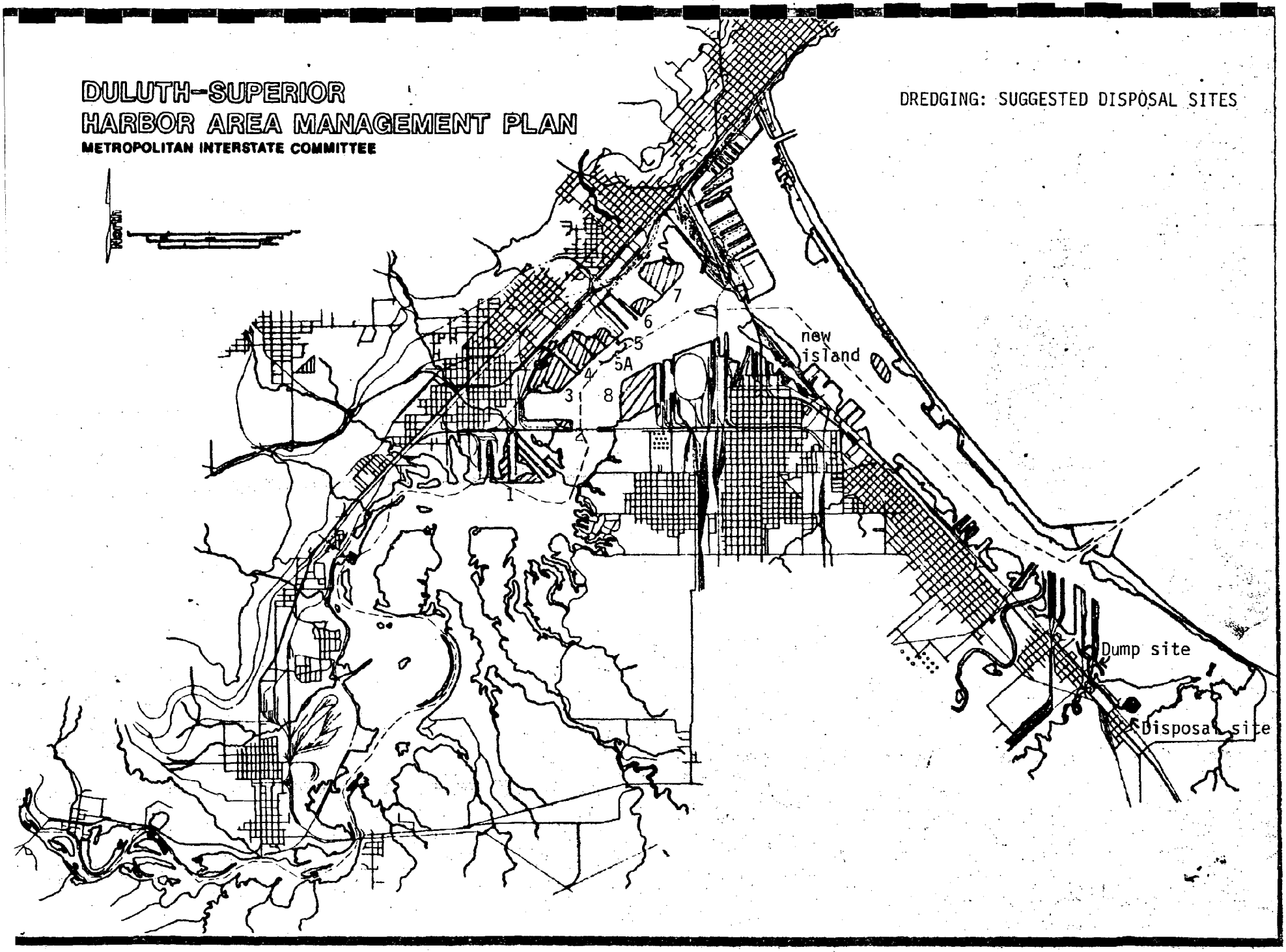
Another significant overall design project that should be undertaken is the development of an uniform signing program. Signs used to mark trails, designate historic sites, identify overlooks, give directions or mark recreation facilities should be coordinated and uniform throughout both sides of the harbor. This approach would add a distinctive flair to the harbor as well as greatly aid people's ability to move about the waterfront.


DULUTH-SUPERIOR
HARBOR AREA MANAGEMENT PLAN
METROPOLITAN INTERSTATE COMMITTEE
North
DESIGN:
MAJOR VIEW CORRIDORS

# DULUTH-SUPERIOR HARBOR AREA MANAGEMENT PLAN

METROPOLITAN INTERSTATE COMMITTEE





Except to fill in obsolete slips or to smooth out irregular docks, no filling is to be allowed unless there is documentation stating that reasonable demand for the resulting land exists or will exist in the near future. Creating land just to create land or for speculative purposes is not to be permitted.

The eight sites are:

1. Hallette #6 - C. Reiss: If the slips are completely filled in, two million cubic yards will create 80 acres of new land behind 3,600 feet of dikes. Probable use as per harbor plan: Shipping.
2. MP&L Dock: 195,555 cubic yards of material will create 14 acres of land behind 1,950 feet of dikes. This land will enlarge an existing, but currently idle, dock. Probable use: Shipping.
3. Erie Pier to MP&L's Hibbard Plant: Approximately 2 million cubic yards of material will create 80 acres of land behind 3,250 feet of dike. It abuts the existing Erie Pier disposal facility. Probable use: Shipping, marine dependent industries, recreation (for waterfront access).
4. Erie Pier: 1.5 million cubic yards of polluted spoils will be deposited on this site as part of the current disposal program. Probale use: Shipping, marine dependent industries,
5. Adjoining Hallett Dock #5: 126,667 cubic yards of material will create 9 acres of land behind 1,600 feet of dikes. It will adjoin an already developed dock. Probable use: Shipping.

5A. A variation of this site involves a 1,900 foot dike running from Hallett Dock #5 to the new Erie Pier dike. The total area created would be 41 acres utilizing 675,000 cubic yards of material. Probable use: Shipping, marine dependent industries.

6. Lakehead Materials Storage Dock: 470,000 cubic yards will create an additional 21 acres behind 1,200 feet of dike for this harbor facility. Probable use: Shipping.
7. 27th Avenue West: 1.1 million cubic yards of material will create 80 acres of land behind 2,800 feet of dikes. It will adjoin the WLSSD pier and the Lakehead Materials Storage Dock. Probable use: Shipping, marine dependent industries, recreation.
8. West of Incan dock: 2.3 million cubic yards of material will create 129 acres of land behind 4,900 feet of dike. Probable use: Shipping, marine dependent industries.

As stated earlier, also to be considered for fill are portions of slips, obsolete slips or irregularities in existing docks.

Creation of Islands and Marshes

Dredged materials can be used to create new islands within the harbor. These islands could be used as habitat for wildlife and fish using the newly created shallow water areas. Other possible uses include such recreational pastimes as picnicking, hiking, camping and boat mooring.

A 20-25 acre island of this nature would need about 445,000 cubic yards of material. If the material was polluted, a lined kike would most likely have to be used. However, for best island design, expecially along the shores, no dkie should be used. Therefore, clean dredged materials or other fill would prove to be better island making material. Of a dike or some other retaining device is required, it should be designed to help lend a natural appearance to the shoreline.

At this time only a single island is under consideration. Yet, a series of large and small islands is readily envisioned.

Prior to the active reworking of the harbor through dredging and filling the harbor was essentially a large marsh. Today little of that environment exists. The proper disposal of dredged materials can be a prime element in the rebuilding of marshes in selected portions of the harbor. Quite obviously only clean non-polluted material can be used for this endeavor.

These new and renovated marshes will eventually become excellent habitat for fish, wildfowl and small mammals.

Lake Superior

As of this time, both states have policies opposing disposal of dredged materials into Lake Superior. This suggested program allows for such disposal if the material is clean and unpolluted and if the material is used for a constructive purpose. One acceptable use would be so-called beach nourishment whereby eroding beaches are periodically replenished with dredged sand.

EVALUATION OF SUGGESTED DISPOSAL

The basis for evaluating the suggested disposal plans is the set of policies listed in the harbor plan. Figure I offers a site-by-site evaluation of the plan.

Environmental/Social Assessment

Many of the policies governing dredge disposal are designed to protect if not enhance the harbor's natural resources. It is the intent of the suggested program to minimize environmental losses, maximize environmental gains and create enough land to meet the anticipated demand.

In determining environmental impacts it is difficult to judge what is and is not significant in terms of habitat and what can and cannot be developed. Along the waterfront one must be aware that much of the habitat is actually areas once used by man that are now vacant, perhaps only on a temporary basis. If all of these sites were deemed environmentally significant or untouchable, development may well be stopped or, in the future, land owners fearful of such a decision may see to it that their vacant land is left as undesirable habitat. In the latter case, good but temporary habitat could be lost. The wiser course of action as noted in the harbor plan is to designate permanent habitat sites where development is forbidden.

Two examples of the concern described above are Grassy Point (Duluth) and Clure Terminal. The former is an old lumber dock long since transformed into an ideal habitat area; it is to become a wildlife management site. On the other hand, the vacant land at Clure where the terns and plovers nest, is to one day become developed; but, because the bird colonies are important, new nesting grounds will be established prior to development of that land at the Clure dock.

Evaluation of each suggested site will have to be more complete than that which is offered here. However, these assessments, which are based upon existing information,[1] do provide a general basis for review of the problems with each site.

[1]Sources: Assessment of Habitat Types and Bird Populations in the Duluth-Superior Harbor (UMD, Sept. 1977), Progress Report Duluth-Superior Harbor Fishery Survey (UWS, July 1977) and various environmental impact statements.

Figure I. EVALUATION OF SUGGESTED DISPOSAL SITES

| Disposal Policies - Proposed Fill Site (refer to pp. ) | 1 (a) | 2 | 3 | 4 | 5 | 5A | 6 | 7 | 8 | Lake Superior | Island | On-Land |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7. | + | + | + | + | + | + | + | + | + | N.A. | + | N.A. |
| 8a. | + | + | + | + | + | + | + | + | + | N.A. | + | N.A. |
| b. | + | + | - | - | + | - | + | + | + | + | + | + |
| c. | (b) | (b) | (b) | (b) | (b) | (b) | (b) | (b) | (b) | (b) | (b) | (b) |
| d. | (c) | (c) | (c) | (c) | (c) | (c) | (c) | (c) | (c) | N.A. | + | N.A. |
| 9. | + | + | + | + | + | + | + | + | + | + | + | + |
| 10. | + | + | + | + | + | + | + | + | + | N.A | N.A. | N.A. |
| 11. | + | + | + | + | + | + | + | + | + | + | + | + |
| 12a. | N.A | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | + | N.A. | N.A. |
| b. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | + | N.A. | N.A. |
| 13. | (d) | (d) | (d) | (d) | (d) | (d) | (d) | (d) | (d) | (d) | (d) | (d) |
| 14. | + | + | + | + | + | + | + | + | + | + | + | + |
| 15a. | + | + | + | + | + | + | + | + | + | N.A. | + | + |
| b. | + | + | + | + | + | + | + | + | + | + | + | + |
| c. | + | + | + | + | + | + | + | + | - | + | N.A. | + |
| d. | + | + | + | + | + | + | + | + | + | + | + | + |
| 16. | + | + | + | + | + | + | + | + | + | N.A | + | N.A. |
| 17a. | N.A | N.A | N.A | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | + |
| b. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | + |
| c. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | N.A. | + |
| 18a. | + | + | + | + | + | + | + | + | + | + | + | + |
| b. | + | + | + | + | + | + | + | + | + | + | + | N.A. |
| c. | + | + | + | + | + | + | + | + | + | + | + | N.A. |
| 19a. | (e) | (e) | (e) | (e) | (e) | (e) | (e) | (e) | (e) | (e) | (e) | (e) |
| b. | + | + | + | + | + | + | + | + | + | + | + | + |

(a) symbols mean: "+" (satisfies policy), "-" (does not satisfy policy), N.A. (policy does not apply).

(b) refer to following environmental assessment.

(c) need exists for any one site, but not for all at once.

(d) assumption is made that all appropriate procedures are applied and followed.

(e) refer to following cost analysis.

Site 1. Impact will not be significant as only slips are being filled. Keene Creek, which empties into one of the slips, would probably be moved so as to ease development. If this were done, the creek could be channeled so it flows onto the proposed Grassy Point Conservation site thereby improving the habitat there.

Site 2. Impact will probably be insignificant. Available research does not indicate any notable use of the site.

Site 3. Potential for significant impact at this site. Ring-billed Gull and Common Tern colonies located on MP&L pier may be adversely disrupted or destroyed; mitigative action might include habitat enhancement at Interstate Island or on existing colony sites in the area west of the MP&L plant. Also, the large shallow water area is used by game and non-game fish for feeding. Mitigating action for this and any other shallow water area would be to enhance remaining shallow water fish foraging sites in St. Louis Bay. Another loss would be the potential to develop a corridor along 48th Avenue West Creek, which would connect West Duluth with the waterfront.

Site 4. Impact is potentially significant. The loss of fish feeding areas may be significant. It may also reduce the value of the habitat area which lies immediately to the northeast of the site.

Site 5. Impact will probably be insignificant. There is the potential that if both Sites 4 and 5 are developed, then the habitat area which lies between them will lose it isolation which is a key factor in its significance as habitat.

Site 5A. Impact will be significant. The loss of the above-described marsh will be felt by shorebirds who use the isolated shallow water and shoreline. Also, some waterfowl may nest in this area. To replace this site Interstate Island could be reworked. to accomodate both shorebirds and waterfowl for nesting, feeding and loafing.

Site 6. Impact will be insignificant as the dock is already actively used for shipping and disposal.

Site 7. Impact will probably be insignificant. Years of sewage outflow into this area has left much of it biologically "dead". Nonetheless, if the fill area is properly designed, it can enhance the use of the 21st Avenue West Slip as a resting area for waterfowl. Consideration must be given to preserving the view of the bay from the road along Western Rice's Point.

Site 8. As with sites 3 and 4, this site will have significant impacts because of the loss of fish foraging areas.

Island(s). Impacts are unknown, but the creation of habitat on and around the island(s) should easily balance any possible losses.

Lake Superior. Impact would be insignificant as long as unpolluted material is used.

On-land. Impacts will probably be insignificant. The site is already used for disposal and has been found environmentally acceptable for those operations.

Cost Analysis

Policy 19 states that disposal costs are to be kept to a minimum assuming that all of the other policies are satisfied. Below is an admittedly rough estimation of basic site related costs. Several assumptions underlie the cost figures: the dikes are lined to prevent seepage; mooring facilities for disposal equipment are assumed to be similar to those for the proposed Erie Pier site; "other" costs fall within a set range and vary according to site size. Circumstances for a given site will vary, especially concerning dikes. If clean, unpolluted material is used, then dike costs could be greatly reduced.

Figure II. Site Related Disposal Costs (Estimates)

| Site | Acres | Length of dike | Cubic yards of fill | Costs | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Dike | Other[a] | Mooring | Total | $/c.y. |
| 1 | 64 | 9,600' | 1,512,500 | $1,680,000 | $400,000 | $200,000 | $2,280,000 | $1.51 |
| 2 | 15 | 1,950' | 195,555 | 341,250 | 300,000 | 200,000 | 841,250 | 4.30 |
| 3 | 80 | 3,250' | 2,000,000 | 568,750 | 400,000 | 200,000 | 1,168,750 | 0.58 |
| 4 | 76 | 3,900' | 1,340,000 | 682,500 | 300,000 | 200,000 | 1,182,500 | 0.88 |
| 5 | 9 | 1,600' | 126,667 | 280,000 | 300,000 | 200,000 | 780,000 | 6.15 |
| 5A | 41 | 1,900'[b] | 675,000 | 332,500 | 300,000 | 200,000 | 832,500 | 1.23 |
| 6 | 21 | 1,200' | 470,000 | 210,000 | 300,000 | 200,000 | 710,000 | 1.51 |
| 7 | 80 | 2,700' | 1,165,000 | 472,500 | 400,000 | 200,000 | 1,070,500 | |
| 8 | 129 | 4,900' | 2,310,000 | 857,500 | 400,000 | 200,000 | 1,457,500 | 0.63 |
| Island | 23 | -- | 445,000 | -- | 300,000 | -- | 775,000[c] | 1.74 |
| Superior (d) | | -- | -- | -- | -- | -- | -- | 0.00 |
| In-land (e) | | -- | -- | -- | -- | -- | -- | --- |

(a) this cost includes access roads, damages, site preparation and the like. It does not include a facility to treat the effluent from a hydraulic disposal operation. If such a facility is required, its cost will have to be included separately. Also not considered are costs related to action required to mitigate environmental losses.

(b) assumes Erie Pier (site 3) has already been completed.

(c) complete costs cannot be tabulated until type of dredging and dumping is known. If no dike is required and clean material is used, the cost could be zero.

(d) in-lake disposal has no site related costs.

(e) too many factors are involved in this operation for an easy, quick estimate to be made.

Summary

The suggested disposal plan encompasses nearly all methods for disposal. Yet, in allowing for flexibility in disposal, the policies carefully dictate when, where and how each method can be used. Circumstances may negate several of these methods because at that time, the methods or sites cannot satisfy the policies.

When the disposal policies are applied to the overall plan, the fairness and reasonableness of the plan is evident.

a. Dredged materials will be constructively used. Land is being created where needs for it are perceived; the rate of actual land creation will depend upon the changing needs for the land over time. The material will be marketed, as they are today, to the degree there is a need for them.

b. Costs are minimized insofar as they can be and still satisfy the remaining policies. Rehandling and transport of the material has been minimized and hence have lowered costs.

c. In most cases ease of operation has been achieved, particularly for the on-land disposal operation. Bottom dumping of the scows is quick and efficient. Their use as well as that of the hydraulic dredge for on-land transport means that unlike other transfer methods the unloading process will keep pace with the dredging operation.

d. Environmental losses have been kept to a minimum with no large significant areas being destroyed. On the other hand, mitigating action would create new habitat or enhance existing habitat to a degree that should more than make amends for the losses.

e. Although, the two States' policies banning disposal in Lake Superior are broken, the disposal plan's policies clearly state under what situations disposal is allowed. Specifically, only unpolluted clean material may be used and then only for constructive purposes.

APPENDIX II

Mitigation of Environmental Losses

One critical element of the Duluth-Superior harbor plan is the concept of mitigative action to balance environmental losses caused by development. Because mitigation as applied at this scale is relatively new, a brief discussion of it is deemed necessary.

Mitigation includes actions which have beneficial consequences for the environment, but which do not directly relate to the project's functional purpose. Definitions of mitigation vary as seen by this sample:

1. "to cause to become less harsh or hostile; to make less severe or painful." (Webster)

2. "any additional work recommended to restore or enhance ecosystems and improve ecosystem carrying capacity."[1]

3. "to mitigate is to prevent, correct, or compensate for damage in some degree, but not fully..." [2]

The need for mitigation is clearer than its definition. Wetlands and estuarine areas such as the harbor are immensely valuable natural resources. They are highly productive biological areas with a productivity level nearly 20 times that of deep waters and 10 times that of nearshore waters. [3] Their role in the food chain is central; they provide food, store nutrients and supply breeding habitat. In addition, the adjacent wetlands regulate storm-water run-off and filter natural and man-made pollutants which pass through them.

Thus, mitigation represents an attempt to balance the loss of important wetland, shoal water or estuarine areas by undertaking corrective actions elsewhere within the same general ecosystem. However, mitigative action cannot be an ad hoc proposition nor must it be an unreasonable process. For the Duluth-Superior harbor, mitigation is to involve these principles.

1. There must be a harbor-wide plan which defines the type of mitigation to be undertaken. Individual projects will be plugged into this plan. In this manner the cumulative impact of many single projects will not cause a gradual but disasterous loss or shift of habitat. Instead, each action will be fitted into an agreed upon overall plan.

   One of the key elements of the mitigation plan will be to retain or regain the diversity of the harbor's ecosystem. It is not enough to create marshes every time mitigation is required. At that rate the harbor's ecosystem would become all marsh with no shoal water feeding areas.

2. It must always be remembered that an adverse impact has occurred despite mitigation. Mitigation only balances the loss, but nonetheless there was a loss. Also, there is a loss of sorts where the mitigative action occurs. Thus, two vital points must be kept in mind and followed. First, bad decisions should not be mitigated. Mitigation does not magically transform an original bad decision

into a good one. Second, mitigation is bad if it allows inappropriate development. The first question should always be: must the development be located where it causes an adverse impact? If not, no amount of mitigation will correct this mistake.

3. Environmental options must be preserved. At all times the tendency must be to avoid irreversible, large-scale change.

4. The mitigative action is to be a replacement-in-kind for the area lost. Taken as a whole the harbor is not to undergo a net loss of its biological potential.

5. The mitigative action cannot be allowed to financially prevent the initial development from occurring. In Los Angeles certain mitigative actions were four times more expensive than the project that necessitated them. [4] The primary reason for this imbalance was the high cost of land acquisition. Thus, the use of public lands or incentives (deferred taxation, etc.) to obtain private lands as sites for mitigative actions will help make mitigation an economically realistic concept.

6. The process of determining and implementing mitigative action must be straightfoward, relatively simple and easy to administrate. It cannot be allowed to be so cumbersome, as it has been in some areas, that it creates unnecessary delays.

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[1]Clark, John R., Coastal Ecosystems Management, 1977, John Wiley and Sons, New York.

[2]U.S. Fish and Wildlife Service, Navigable Waters Handbook, U.S. Department of the Interior, Washington, D.C.

[3]Clark, Ibid.

[4]Weir, Robert R., Impacts of Coastal Dredging in San Pedro Bay, California, in Time-Stressed Coastal Environments: Assessments and Future Action, Proc. Second Annual Conference of the Coastal Society, November, 1978, p. 119.