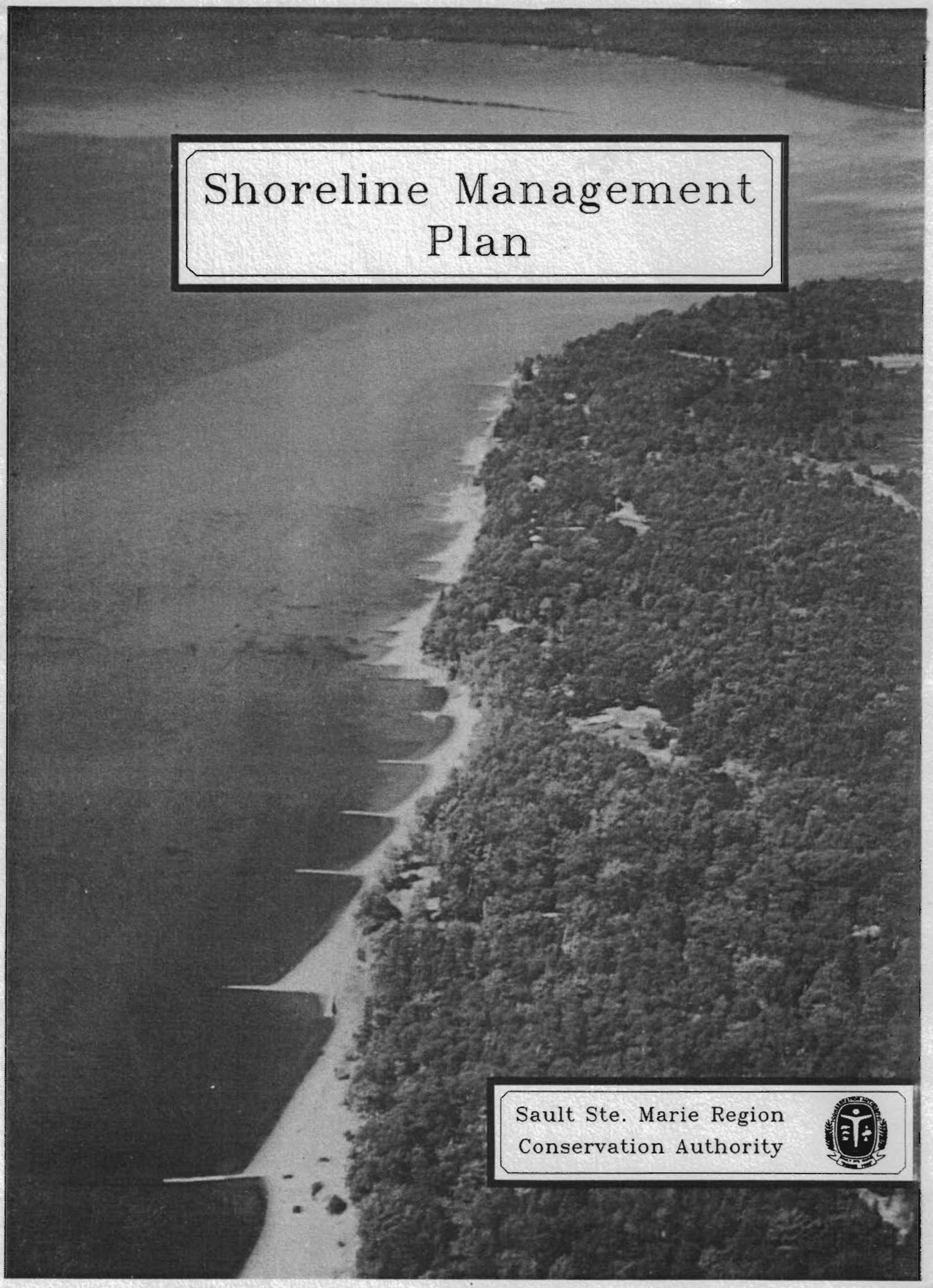


Shoreline Management Plan

Sault Ste. Marie Region
Conservation Authority

Front Cover:
25% of the upper river's shoreline has been altered by groyne fields. Randomly spaced groynes along Nokomis Beach contrast with the Engineer designed groyne field of Pointe Des Chene Park.

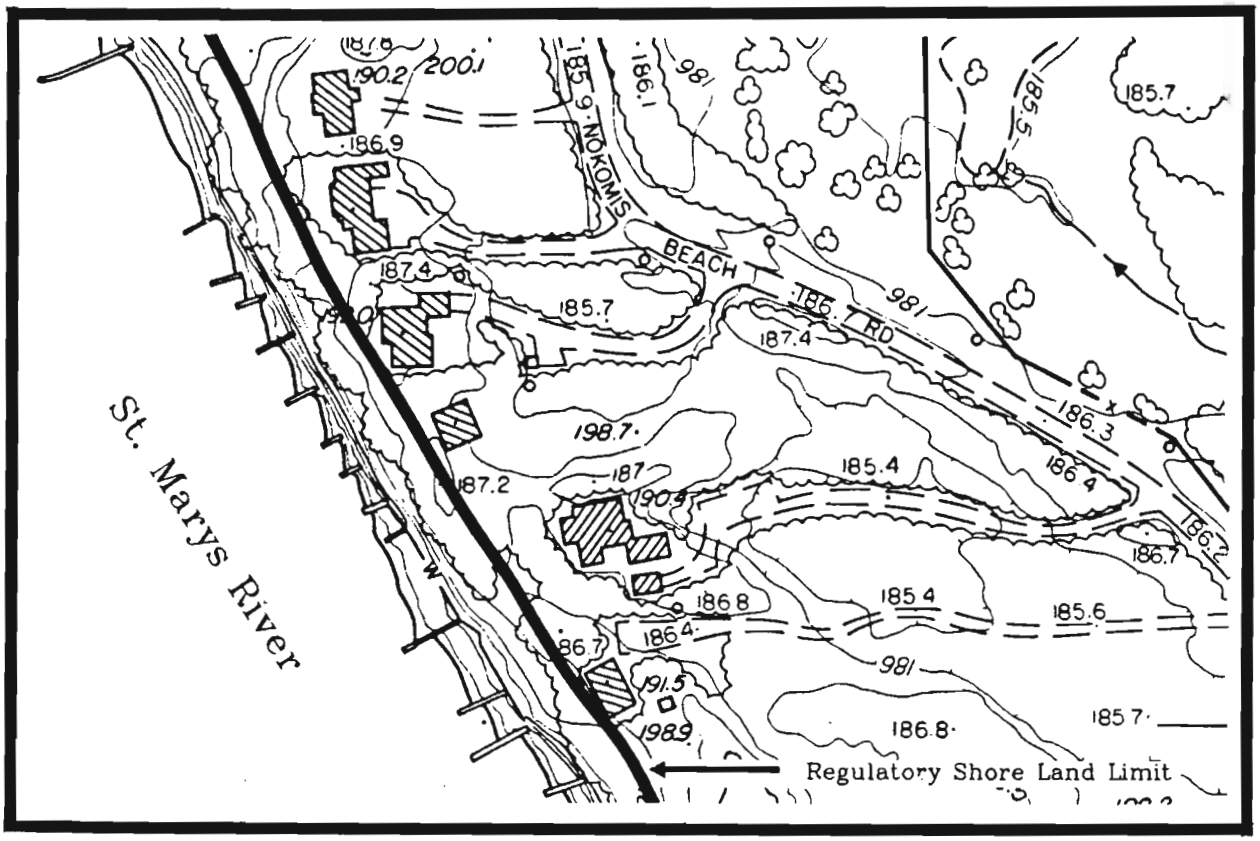
Opposite Page:
Nokomis Beach - regulatory shore land mapping.

PREFACE

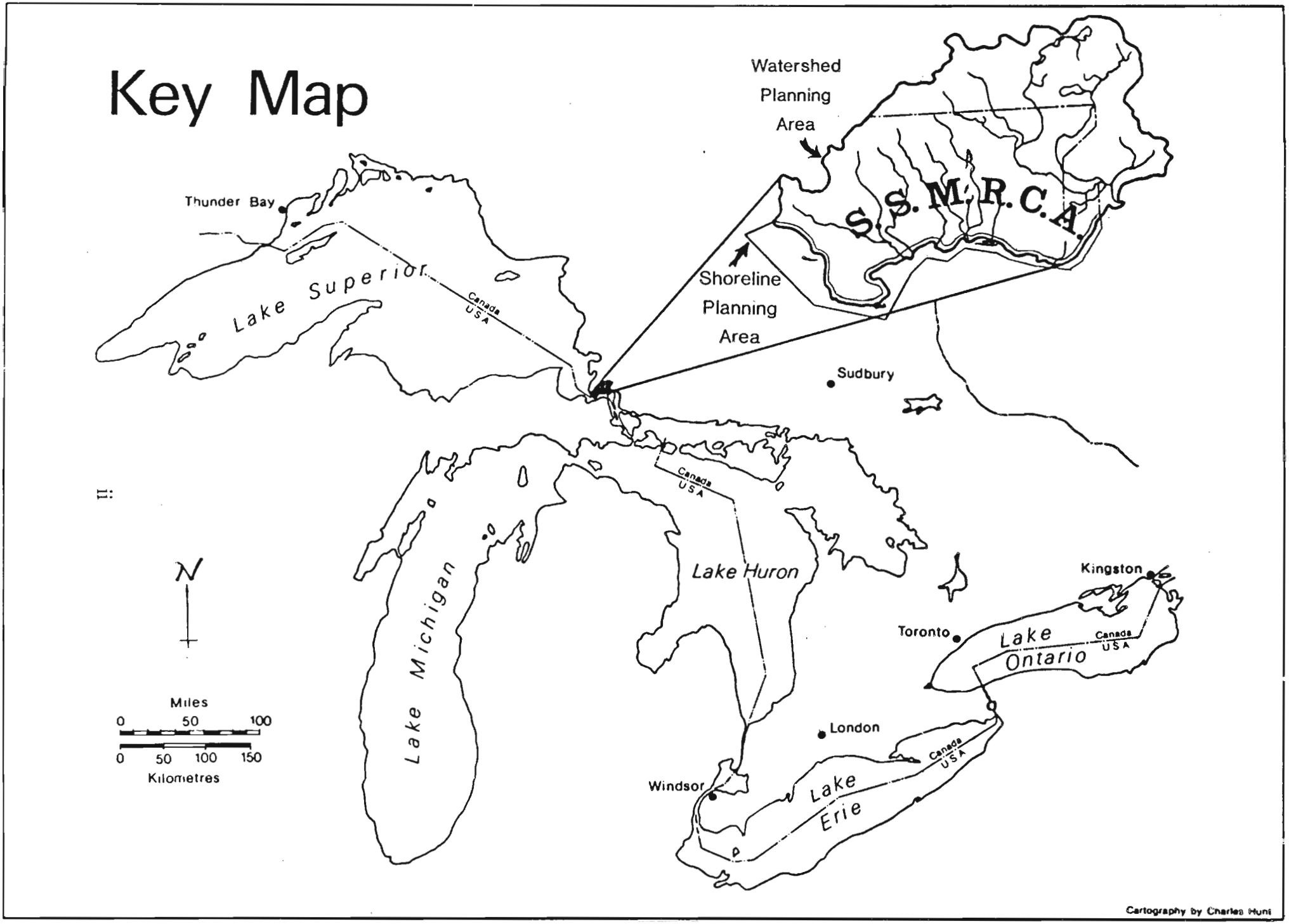
Conservation Authorities, in areas where they exist, have been designated the lead implementing agency for delivering the Great Lakes shoreline management program. Responsibilities include hazard land mapping, local shoreline planning and other management functions. The Ministry of Natural Resources is to assume this role in areas where Conservation Authorities have not been established.

This document and related background information will serve as a design for shoreline management within the planning area of the Sault Ste. Marie Region Conservation Authority. Management direction, policies, and strategies are subject to change as a result of changes in technology, land use, environment and government policy. To accommodate change the Shoreline Management Plan will be reviewed every 5 years.

Comments can be directed to the Secretary-Treasurer of the Conservation Authority at any time.



Key Map


Watershed
Planning
Area
S.S.M.R.C.A.
Shoreline
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Area
Thunder Bay
Lake Superior
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Sudbury
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Lake Michigan
Lake Huron
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Lake
Ontario
Canada
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Windsor
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Kilometres
Cartography by Charles Hunt

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INTRODUCTION

PURPOSE

The Shoreline Management Plan (SMP) was initiated in response to a Provincial directive and developed using the Guidelines For Developing Great Lakes Shoreline Management Plans. The SMP was prepared by an inter-disciplinary team with strong emphasis on public participation and input. The planning team consisted of representatives from the City of Sault Ste. Marie, Prince Township, Ministry of Natural Resources and the Conservation Authority. It is the intent of this plan to ensure review and input by all agencies, organizations and individuals with an interest in the shoreline resource.

The shoreline zone is a dynamic and fragile area. The natural physical and biological processes which shape the shoreline must be understood in order that development may safely occur and also sustain these processes. Development within this shoreline zone can no longer be viewed as the proverbial battle against the elements. Fluctuating water levels, erosion, *accretion*, *wetlands*, marine life, etc. all occur naturally and are essential for the health of the lake. Development that is not cognizant of the natural coastal processes and *ecosystems* has resulted in:

- loss of life;

- development within hazard lands;

- property damage and social disruption;

- draining, dredging and filling of *wetlands*;

- impairment and destruction of aquatic life;

- degradation of water quality;

- user conflicts;

- loss of fisheries *habitat*; and,

- accelerated erosion.

A comprehensive Shoreline Management Plan is necessary in order that development may safely occur within the shoreline zone and that future generations will benefit, as we have, from the rich plant and animal life of the area.

Strategies, policies and management direction have been developed to address the identified issues. These strategies and policies will cover six key components of the plan; prevention, protection, *environment*, emergency response, public involvement and monitoring.

OBJECTIVES

The objectives of the plan are:

(1) to prevent loss of life;

(2) to minimize property damage and social disruption;

(3) to minimize detrimental environmental effects of development and preserve shore *ecosystems*; and,

(4) to facilitate the orderly development and conservation of Ontario's land and water resources for continued social and economic benefits.

PLANNING AREA

The planning area includes approximately 50 kilometres of Lake Superior and St. Marys River shoreline. This shoreline is within the *jurisdiction* of the Sault Ste. Marie Region Conservation Authority, and extends from the easterly limit of the City of Sault Ste. Marie, to Gros Cap (Prince Township) in the west. The planning area includes *regulatory shore lands* and environmentally sensitive areas.

The two major zones of the planning area are the *Upper River* and the *Lower River*. They are separated by the *compensating works* at the Sault Locks. The *upper river* is on the Lake Superior side of the *compensating works* and the *lower river* on the Lake Huron side. The planning area has been further subdivided into *shoreline reaches*. *Shoreline reaches* are portions of a *littoral cell* and contain similar *physiographic* characteristics and shore dynamics such as rate of erosion, flood elevations, and also includes:

i) shore alignment;

ii) offshore *bathymetry*;

iii) *fetch* characteristics;

iv) *littoral transport* rates; and,

v) bluff and *beach* properties.

BACKGROUND INFORMATION

Background information used in the development of this plan is available for viewing at the Conservation Authority office in the Civic Centre, during normal office hours. The following summarizes some of the important aspects of the background information.

i) *Regulatory Shore Lands/Environmental Priority Areas* - 1:2000 scale mapping showing extent of *regulatory shore lands* and *environmental priority areas*. Presently this mapping exists for the *upper river only*.

ii) Shoreline Property Database - Computerized database of all shoreline property referenced by civic address. The database includes information on, ownership, land use, shoreline protection, historical notes, etc.

iii) Photo Library and Video Tape of shoreline.

iv) Great Lakes System Flood Levels and Water Related Hazards - 100 year flood levels for the Great Lakes and *Connecting Channels* prepared by the Conservation Authorities Water Management Branch.

v) Ministry of Natural Resources Sensitive Areas and Features Report for Sault Ste. Marie and Prince Township shoreline.

vi) Waterfront Development Study by the Sault Ste. Marie Region Conservation Authority

Background Perspective/Statistics

Approximately 50 kilometres of shoreline (Lake Superior/St. Marys River) fall within the scope of this plan. This includes the entire shoreline within the City of Sault Ste. Marie and 3.7 kilometres of shoreline within the Township of Prince. The area is extremely diverse, supporting a wide range of uses including, residential, commercial and industrial land uses, sport and commercial fishing, recreation, commercial navigation, power production, industry, commerce, and municipal water and sewage.

The *compensating works* split the area into two distinct zones: the *upper river* (Lake Superior) and the *lower river*. Combined the two zones form the *connecting channel* between Lake Superior and Lake Huron/Michigan. The water level drops approximately 6 metres (20 feet) from the upper river to the lower river. The upper river (Lake Superior) is one of two regulated Great Lakes and its outflow is controlled by the *International Joint Commission (IJC)*. Its outflow (average 2087 *cms*, 73700 *cfs*) has been regulated since the completion of a 16 gate dam at the head of the St. Marys Rapids in 1921. The priorities for use with respect to flow are:

1) commercial navigation;
2) sufficient flow to protect rapids fishery; and,
3) other uses such as power.

The *lower river* has been designated by the *IJC* as an "Area of Concern" (locations where water, sediment or fish quality are degraded). Please refer to the Upper Great Lakes Connecting Channel Study by Environment Canada for more information.

Industrial/municipal discharges are beyond the scope of this plan. However, the plan will address non-point source contamination.

Although water level regulation is also beyond the scope of this plan, the Conservation Authority recognizes that fluctuating water levels are natural, and are essential for the health of the lake, in particular, the shoreline ecosystem. Man's influence on the Great Lakes vary water levels in the order of centimetres. Natural factors such as changes in precipitation, evaporation, ice and wind cause variations in the order of decimetres. Coastal *wetlands* are the most productive and diverse component of the Great Lakes *ecosystem* and are dependent on fluctuating water levels.

The surficial geology of the shoreline is typically a low sandy glaciolacustrine plain, underlain by varved clays that were laid down during the life of the ancient glacial lakes. The loose to compact silty fine sand to gravel which comprise the upper levels of the stratum are believed to represent recent fluvial deposits from the St. Marys and the Carp Rivers. With the exception of Gros Cap the area is south of the Precambrian Shield, and typically is composed of palaeozoic rock consisting of sandstones, shales, limestone and dolomites.

93 percent of residential shoreline property is developed. Most of these properties have some form of shoreline protection, yet losses of up to 2 metres of shoreline from erosion were recorded during the high water levels of 1985/86. This does not so much imply inadequate or inappropriate shoreline protection as it does a lack of understanding of coastal processes.

The following items highlight some significant shoreline statistics:

i) 16 km (32%) of the shoreline is public lands;
ii) The majority of shoreline protection structures are revetments;
iii) 16 km (32%) of the shoreline has had filling;
iv) 75% of the existing permanent and seasonal shoreline residences on the *upper river* are in the *regulatory flood standard*; and,
(v) 95% of the existing permanent and seasonal shoreline residences on the *upper river* are in *regulatory shore lands*.

PUBLIC INVOLVEMENT

Public involvement to date has involved a coordinated effort with the Ministry of Natural Resources District Office in conjunction with the development of their shoreline management planning effort. This has maximized our resources and ensured a broad spectrum of public involvement.

Public involvement and input are an integral part of this plan. Shoreline land owners, fishermen, boaters, municipal planners, etc. provide an important resource base in the development of the plan. Their experience with the shoreline is invaluable and the implementation of any management strategy will require their cooperation.

To date several information sessions have been held locally. On June 18, 1988 the Provincial Shoreline Management Advisory Council solicited public opinion during a meeting at the Holiday Inn in Sault Ste. Marie. The I.J.C. has held several public opinion sessions, including a session on July 22, 1988 in SSM, Michigan and a teleconference throughout the Great Lakes Basin on October 23, 1988.

On November 1st and 2nd 1989 a shoreline management open house was held at the Holiday Inn in Sault Ste. Marie. This open house was sponsored by the Sault Ste. Marie Region Conservation Authority and the Ministry of Natural Resources. The purpose of the open house was to display background information gathered to date, solicit public opinion and draw on the publics wealth of experience. Participants at this session were asked to fill out the questionnaire that has been included in Appendix 'B' of this plan. A detailed summary of the results of the questionnaire was mailed to everyone on a mailing list (see Appendix 'B'). The mailing list included interest groups, associations, industry, government and private individuals.

The first draft of the shoreline management plan was displayed, and distributed at an open house held at the Holiday Inn on August 15th, and 16th, 1990. The results of this open house are shown in Appendix 'B'.

MAJOR COMPONENTS

Strategies and policies address the six major components of the plan:

- prevention
  - land use planning and regulation of development
- protection
  - non-structural/structural measures and acquisition
- *environment*
  - policies that compliment natural coastal process and the *environment* based on sustainable development principles
  - protection of wetlands and sensitive ecosystems

- emergency response
  - flood forecasting/warning, emergency measures strategy

- public involvement/information
  - public input and dissemination of information

- monitoring
  - monitoring changes in local condition through site inspections, plan input and review etc.

Prevention

Prevention is the preferred approach to shoreline management. This component involves implementing both *development* controls and regulations governing new development. By regulating development within *regulatory shore lands*, you can prevent or minimize, property damage, social disruption, and the risk of loss of life. Preventative approaches are the most cost-effective means of ensuring that new buildings and structures safely establish along the shoreline and that new development does not adversely effect existing development.

A cooperative effort between the governing bodies, their associated regulations and plans, and the public, must be maintained to ensure collaboration and minimize conflicts. The SMP will seek *Official Plan* and Zoning By-law amendments to the Sault Ste. Marie and Prince Township, Official Plan and Zoning By-laws.

Protection

Protection involves the implementation of non-structural and structural works intended to minimize flood and/or erosion damages. Non-structural works may include controlled access to beaches and bluffs, planting of stabilizing vegetation and controlled drainage. Structural works may include revetments, breakwaters, beach nourishment and the elevating of buildings and structures. These works are designed to provide protection to *development* located within flood and/or erosion susceptible shore land areas.

The plan identifies existing *development* in hazard areas and will make recommendations on the management of existing shoreline protection and/or construction of new protection works. It will be the responsibility of the shoreline property owner to ensure protection measures are properly maintained.

The plan identifies types of protection works that are recommended for given *shore reaches*. Engineering detail will be the responsibility of the individual proponent on a site specific basis.

Environment

The shoreline zone is a dynamic and fragile area. Development and shoreline alterations within this zone can have disastrous results, not only to both aquatic and terrestrial *ecosystems*, but could also result in property damage, social disruption or loss of life. Alterations may also have adverse effects upon other locations due to a disruption in *littoral transport*, a change in *wave climate* or a net increase/decrease in water velocity. The individual shoreline alteration may seemingly have negligible effect on the shoreline zone but this may not be the case when combined with all other shoreline alterations.

It is a goal of this plan to assure that activities within the shoreline zone will compliment the natural coastal processes, and ensure the proliferation of plant and animal life. Selected strategies and policies of this plan were developed with strong emphasis on environmental conservation.

Emergency Response

A comprehensive emergency measures strategy is in effect for the planning area. The administration of the Emergency Measures Plan is the responsibility of the Sault Ste. Marie's Emergency Measures Co-ordinator. The emergency measures strategy also applies to Prince Township through a mutual aid agreement between the Township and Sault Ste. Marie.

Public Involvement/Information

Public involvement will continue to be an integral part of the plan during all major review and amendment stages. The Conservation Authority will function as a resource base and disseminate information regarding shoreline management issues.

Monitoring

The shoreline is a dynamic zone, continually changing and evolving as local conditions change. Monitoring is essential to ensure the plan is kept current with natural and man made changes. Changes in local conditions will be monitored on an ongoing basis.

The monitoring component will outline changes to local conditions affecting shoreline management with a five-year review and modifications to the SMP. The responsibility for monitoring and development control currently resides with the SSMRCA through the Conservation Authorities Act.

This component includes:

i) approval, monitoring, and inspection of shoreline proposals;
ii) erosion rates - 2 erosion measuring stations were established in 1989. These will be surveyed at least once a year and net erosion or accretion calculated;

iii) changes to fish and wildlife and its *habitat* - solicit information from MNR, sport and commercial fisheries, naturalists, etc. regarding changes in species, number, and habitat;
iv) offshore and onshore coastal processes, 2 studies are presently proposed:
1) shore land erosion study for the upper river to determine the 100 year recession rate; and,
2) littoral transport study for the upper river;
v) social and economic factors are kept current and monitored through a shoreline database;
vi) other environmental factors;
vii) plan input and review functions of the SSMRCA;
viii) development proposals of the SSMRCA; and,
ix) review and comment of Official Plan and zoning amendments.

MANAGEMENT DIRECTION

SIGNIFICANT ISSUES/MANAGEMENT DIRECTION

The following is a compilation of significant issues which have been identified by planning team members, special interest groups, concerned citizens, government agencies, and shoreline property owners. Many of the issues which have been voiced were in response to an open house held November 1st and 2nd, 1989 at the Holiday Inn in Sault Ste. Marie. The chosen management direction, addresses each of the identified issues.

Issues	Management Direction
Unplanned and poorly designed alterations to shorelines	. approval of all shoreline alterations under the Conservation Authorities Act (Fill and Alterations to Waterways Permit) . develop *shoreline reach* prescriptions . MNR involvement where required . implementation of MNR shoreline structural standards . education
Development pressures	. rezoning of sensitive shoreline areas . regulatory shore land policy and environmental priority area policy . CA plan input and review of shoreline development proposals, zoning, etc.
Poorly planned development	. develop *shoreline reach* prescriptions . CA plan input and review of shoreline development proposals, zoning, etc. . education
Disregard of approved designs for docks, shore protection etc.	. approval of all shoreline alterations under the Conservation Authorities Act . environmental priority area policy . MNR involvement where required . implementation of MNR shoreline structural standards . greater emphasis on enforcement

Issues	Management Direction
Speed of pleasure craft in near shore waters	. this can be regulated by city by-law and enforced by the city police. Current speed limits will be investigated with respect to limits, enforcement and communication
Erosion	. undertake a shore land erosion study to determine the 100 recession rate (for *upper river* only) . undertake a *littoral transport* study within the first five years of the plan for the *upper river* only . two erosion measuring stations have been established. One near Pinder Drive (Prince Township) and the other in Pointe Des Chene Park. These are measured yearly . assess existing shoreline protection or lack thereof and make recommendations on repair, replacement, modification and installation . investigate shoreline stabilization at Pointe Des Chene Park . environmental priority area policy
Loss of fisheries habitat	. ensure *no net loss* of fisheries *habitat* . investigate methods of increasing fisheries *habitat* . require better dredging practices . minimize adverse siltation entering the water course from construction by encouraging the use of sediment ponds, silt screens etc.
Delays regarding approval process	. a resolution has been passed by the Conservation Authority Board permitting staff approval of certain applications . seek shorter response time with Provincial Agencies . identify work that may not require other agency involvement
1000' lake freighters causing increased wave action	. this will be brought to the attention of the U.S. Corps of Engineers and the Coast Guard

Issues	Management Direction
Disposal of contaminated dredge spoils	. testing and disposal of contaminated dredge spoils must comply with MOE's Dredgate Guidelines
Identification of hazard lands	. 100 year flood levels have been calculated for the Great Lakes and connection channels . mapping has been completed for the *upper river* . mapping of the *lower river* is being pursued . undertake a shore land erosion study to determine the 100 year recession rate (for *upper river* only)
Existing development within hazard lands	. development of a regulatory shore land policy . develop *flood proofing* standards (currently being pursed by Conservation Authorities Water Management Branch MNR) . investigate acquisition of properties at Sunnyside Beach in which structural protection measures are not feasible
New development within hazard lands	. development of a regulatory shore land policy . development of a *flood proofing* standards (currently being pursued by Conservation Authorities Water Management Branch MNR)
Identification of environmental priority areas	. this has been completed and will require amendments to the Official Plan and Zoning By-laws for the City of Sault Ste. Marie and Prince Township
Reluctance of authorities to lay charges against violators	. although this was identified as a problem during open house sessions in 1989, attitudes (especially those concerning *environment* issues) have changed dramatically. Charges have been brought against violators and this practice will continue

Issues	Management Direction
Dredging / Filling	. development of regulatory shore land policy and environmental priority area policy . ensure *no net loss* of fisheries *habitat* . stipulate procedures/precautions to be taken ie. use of filter cloth/sediment screens, testing of soils etc. . MOE and MNR approvals will be required
Recommended shoreline protection	. develop *shoreline reach* prescriptions . inspect existing shoreline protection and make recommendation on repair, replacement and modifications
Loss of wetland	. a wetland education program will be developed by the Authority and directed towards primary and secondary school students . develop environmental priority area policy . ensure *no net loss* of fisheries *habitat* . public education
Effects of development on natural coastal processes	. a monitoring program will assess any detrimental or beneficial effects of development on coastal processes . in order to fully understand the effects of development we must first determine our sediment budget. A *littoral transport* study for the *upper river* will commence within the first 5 years of the plan
Effects of development on ecosystems	. a monitoring program will assess any detrimental or beneficial effects of development on coastal *ecosystems* . ensure *no net loss* of fisheries habitat
Emergency response	. a comprehensive emergency response plan is in effect for the planning area. The plan will make recommendation, if necessary for any improvements

Issues	Management Direction
Enforcement	. in the past a cooperative effort between the Conservation Authority, MNR, MOE, the City of Sault Ste. Marie and Prince Township has existed and will undoubtedly continue . the Conservation Authority has appointed three violation officers
Communication	. a public wetland education program will be developed . the CA will disseminate information regarding shoreline issues
Water level fluctuations	. natural occurrence . diversity of shoreline *wetlands* are dependent on fluctuating water levels. Stability of water level is debilitating for natural flora and fauna . although Lake Superior is a regulated lake, man's influence on water levels is minimal compared to *fluctuations* resulting from natural causes. . public education
User conflicts, neighbour conflicts	. all individuals or groups who may have an interest in or be affected by a proposed work will be given an opportunity to comment. For most applications this will include abutting property owners only. The SSMRCA will determine the circulation list for applications
Unlawful use of crown land (docks, filling etc.)	. MNR involvement where required. Plans submitted in conjunction with shoreline application must indicate property boundaries

POLICIES

POLICIES/STRATEGIES

The following strategies and policies have been developed to address the identified issues, and to achieve the plan objectives which are:

(1) to prevent loss of life;
(2) to minimize property damage and social disruption;
(3) to minimize detrimental environmental effects of development and preserve shore *ecosystems*; and
(4) to facilitate the orderly development and conservation of Ontario's land and water resources for continued social and economic benefits.

The strategies and policies will cover the six key components of the plan (i.e. protection, prevention, *environment*, emergency response, public involvement and monitoring) under the following headings:

i) Regulatory Shore Land Policy;
ii) Environmental Priority Area Policy;
iii) Proposed Zoning Changes;
iv) Emergency Response;
v) Public Involvement; and
vi) Monitoring.

It is the intent of this plan to pursue incorporation of the regulatory shore land policy, environmental priority area policy, and proposed zoning changes into the Official Plan and Zoning By-laws of the City of Sault Ste. Marie and the Township of Prince.

Several of the policies of the SMP have been extracted from the provincial draft GREAT LAKES - ST. LAWRENCE RIVER FLOOD AND EROSION POLICY STATEMENT. When this provincial policy statement is approved, amendments to the shoreline management plan will be made in order to comply with provincial policy.

The Conservation Authority is seeking amendments to the draft provincial policy statement, which better reflect local conditions. One such amendment, is a change to the proposed regulatory erosion standard, which will allow the use of the 100 year recession rate, taking into account existing protection. The draft provincial regulatory erosion standard is illustrated in Appendix 'C'.

REGULATORY SHORE LAND POLICY

Description

Regulatory shore lands are those lands adjacent to Lake Superior and the St. Marys River which because of inherent physical constraints are unsuitable for development. Hazards encountered within regulatory shore lands include: *flooding*, *erosion*, ice pile up, soil instability, steep slopes, high *water tables*, and drainage constraints. Within regulatory shore lands, development will be restricted or prohibited in order to protect life and minimize property damage. In some instances where all shoreline hazards can be overcome development may be permitted provided that development does not adversely affect other properties, and is consistent with the regulatory shore land policy and environmental priority area policy.

Regulatory shore land refers to the land, including that covered by water, between the international boundary and the furthest landward limit of:

1. the regulatory flood standard;

2. the regulatory erosion standard;

   and includes;

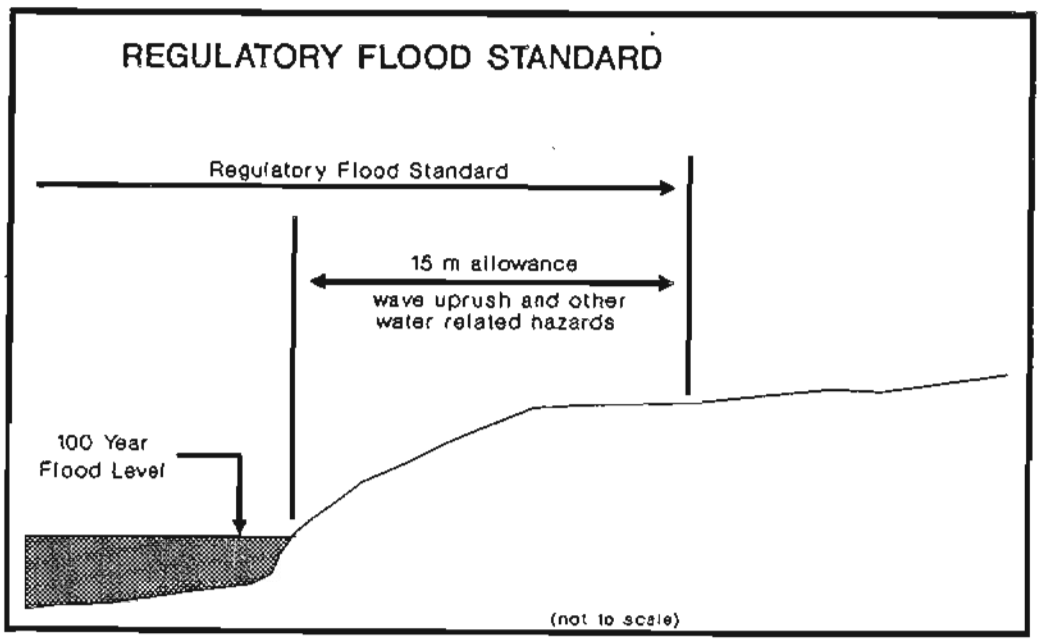
3. lands susceptible to ice pile to the furthest recorded or potential landward extent;

4. lands susceptible to other hazards including soil instability, high water table, and drainage constraints; and,

5. lands with slopes greater than 25%.

Regulatory Flood Standard - is the 100 year flood level plus a 15 metre allowance for *wave uprush* and other water related hazards.

Where studies using *accepted engineering principles* are conducted to determine wave uprush and other water related hazards then the regulatory flood standard shall be the *100 year flood level* plus the engineered allowance for *wave uprush* and other water related hazards.

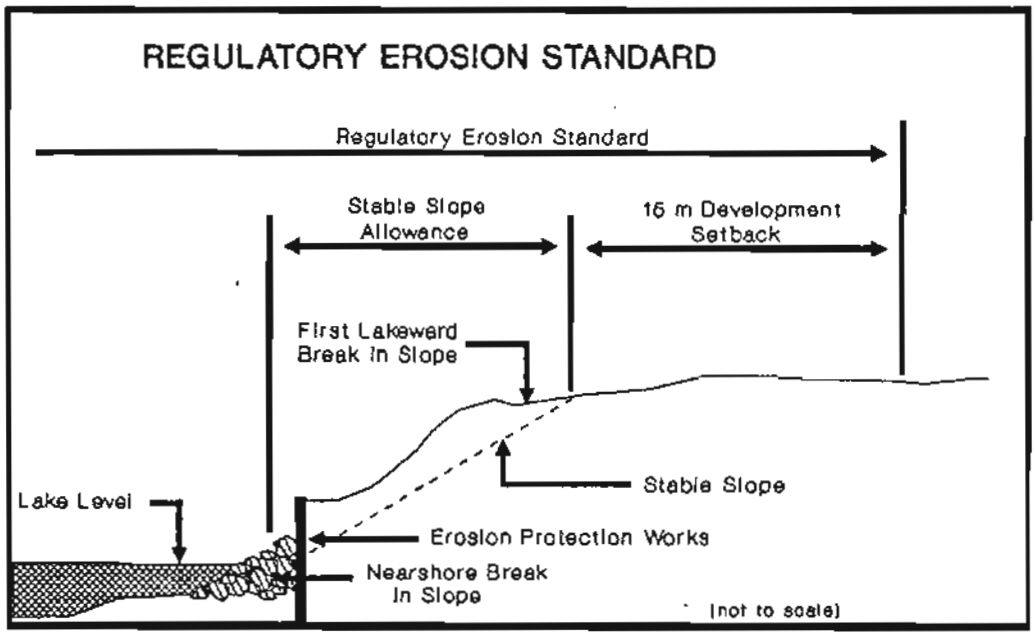


Regulatory Erosion Standard -

a) a study will be undertaken for the *upper river* to determine the erosion hazard.

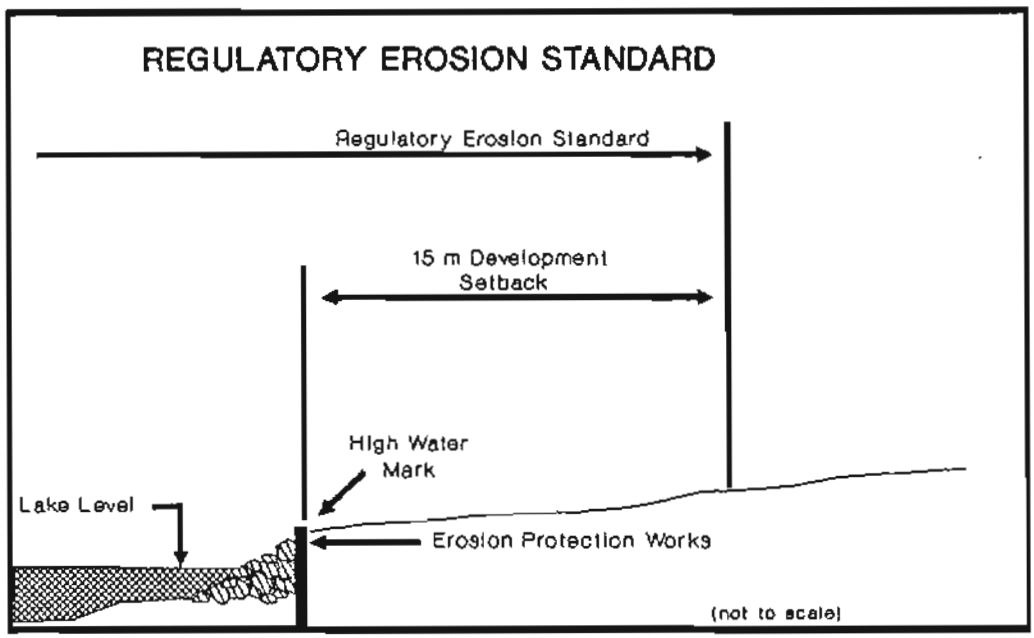
b) where erosion protection works have appropriately eliminated the erosion hazard, the regulatory erosion standard will be 15 metres measured landward from the greater of:

i) the stable slope allowance;



OR

ii) the high water mark.



c) where studies have not been undertaken to determine the erosion hazard, or the erosion hazard has not been appropriately eliminated, then the appropriate policies from the draft Provincial regulatory erosion standard will apply (see Appendix C).

d) In the absence of studies using *accepted geotechnical principles*, the allowance to achieve stable slope shall be defined as a horizontal setback measured landward from the nearshore break in slope equivalent to 3.0 times the difference in elevation between the first lakeward break in slope and the nearshore break in slope, whether above or below the water level.

Policy

1. No development may occur within *regulatory shore lands* that will create new or aggravate existing shoreline hazards. Development means the construction, reconstruction, erection or placing of a building, structure, protection works and/or flood proofing measures of any kind or the making of an addition or alteration to a building or structure that has the effect of increasing the size or usability thereof, and includes such related activities as site grading, excavation and the placing or dumping of fill.

2. No habitable dwellings may locate within *regulatory shore lands* except under the following conditions:

2.1) The individual or developer provide studies using accepted engineering principles demonstrating how they will overcome all shoreline hazards. This will include protection by acceptable *flood proofing*, *wave impact* and/or erosion protection actions or measures.

2.2) All other objectives of the policy are satisfied.

3. Development that must locate within *regulatory shore lands* by the nature of their use may be permitted to do so where studies using accepted engineering principles demonstrate that all shoreline hazards can be overcome (eg. Marina and associated structure).

4. Ingress/egress for habitable dwellings be such that vehicular and pedestrian movement is not prevented during times of flooding. Flood depths over access routes may not exceed 0.3 metres.

5. An existing residential structure within *regulatory shore lands* may not expand unless shoreline hazards have been overcome.

6. Due to the important role vegetation plays in the reduction of shoreline erosion, proponents wishing to develop shoreline property must submit a management plan for a vegetation buffer measured 7.5 metres landward from the High Water Mark.

7. No habitable dwellings will be permitted within 15 metres of the High Water Mark.

8. New development shall not be permitted to locate within *regulatory shore lands* where the use is:

8.1) associated with the manufacture, collection, storage, disposal and/or consumption of *hazardous substances*, which would pose an unacceptable threat to public safety if they were to escape their normal containment/use as a result of flooding, failure of *flood proofing* and/or erosion *protection works*, and/or *erosion*;

8.2) associated with institutional uses, such as hospitals, nursing homes and schools, which would pose a significant threat to the safety of the inhabitants (e.g. the sick, the elderly, the physically challenged or the young), if involved in an emergency evacuation situation as a result of flooding, failure of *flood proofing* and/or erosion *protection works*, and/or *erosion*; and

8.3) associated with services such as those provided by fire, police and ambulance stations and electrical substations, which would be impaired during a flood emergency as a result of flooding, failure of *flood proofing*, and/or erosion *protection works*.

9. Design and installation of *protection works* and placement of structures on shoreline property, must not prevent access to the *protection works* by heavy machinery for regular maintenance purposes and/or to repair the *protection works* should failure occur.

10. Industrial/Urban Core
This stretch of shoreline runs from A.B. McLean to the Plummer Memorial Public Hospital. This shoreline has been subject to extensive filling operations and is now composed entirely of fill. Due to the existing nature and future potential use within this area the 15 metre setback from the 100 year flood level will not apply. All other regulatory shore land policies will still apply.

11. Shore land and shoreline work that may result in an introduction of sediment loads to Lake Superior or the St. Marys River must employ methods to prevent this loading. Methods could include the use of settling ponds, sediment screens, timing of works, etc.

ENVIRONMENTAL PRIORITY AREA POLICY

Description

Environmental priority areas are those areas which have been identified as environmentally sensitive and contain unique, threatened, or essential flora, fauna, or natural processes that must be protected to ensure their preservation and proliferation and minimize degradation to the natural environment. Environmental priority areas include areas containing *wetland*, significant flora or fauna, and all land and waters from the high water mark to the international border.

Environmental priority areas may overlay regulatory shore lands. When this is the case, the environmental priority area policy will take precedence.

Regional, Provincial and National Archaeological Sites will also be subject to the environmental priority area policy. These include Marks Bay, and Black Thistle Archaeological Site.

Policy

1. Development will be restricted within environmental priority areas unless it can be demonstrated that such development will not result in a net loss to fisheries *habitat* or degradation to the natural environmental conditions. (Development is defined as building construction, filling, excavating, dredging, construction of shoreline protection structures.)

2. Uses which will assist in conserving or managing water supplies, wildlife, or other natural characteristics including conservation education, will be permitted provided other objectives of the policy are met.

3. Recreational structures such as docks, boat houses, and boat slips will be permitted provided other objectives of the policy are met.

4. *No development may occur* that will create new or aggravate existing shoreline hazards.

5. Shoreline protection will only be permitted if values including property are threatened. Shoreline protection methods which emulate the natural conditions will be promoted ie. revetments, *beach nourishment*, indigenous vegetation.

6. Development that must locate within environmental priority areas by the nature of their use may be permitted to do so provided other objectives of the policy are met.

7. Anyone proposing development who, in the opinion of the Conservation Authority has not demonstrated that all objectives of this policy will be met, will be required to prepare a detailed Environmental Impact Report which will indicate how the objectives of this policy will be met.

8. Structural works must be designed using *accepted engineering principles*.

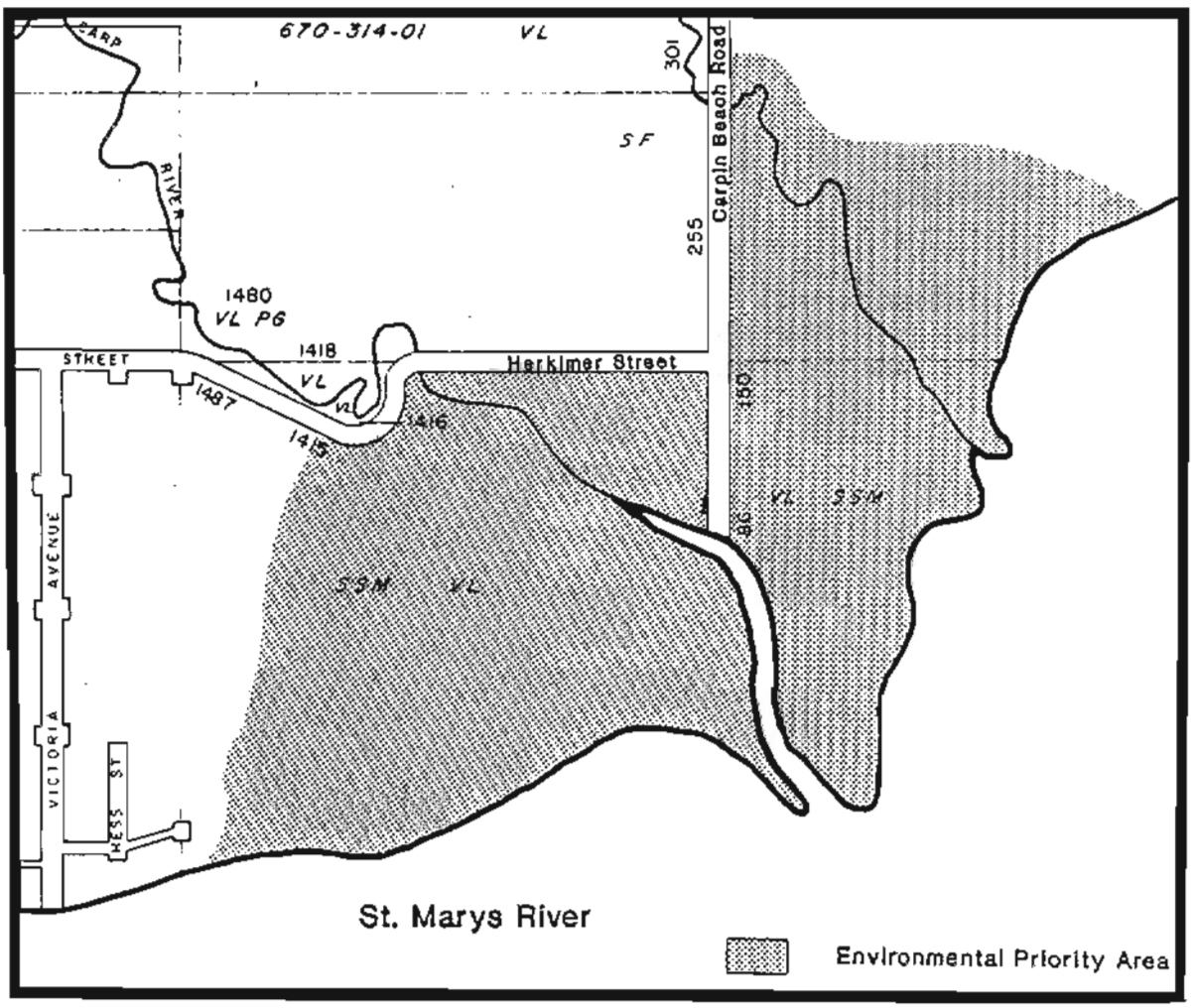
9. Dredging, filling, and shore protection proposals will be subject to review and approval by the Conservation Authority, the Ministry of Natural Resources and the Ministry of Environment.

10. *Development* which may affect archaeological sites will be subject to the approval of the Regional Archaeologist.

11. Shore land and shoreline work that may result in an introduction of sediment loads to Lake Superior or the St. Marys River must employ methods to prevent this loading. Methods could include the use of settling ponds, sediment screens, timing of works, etc.

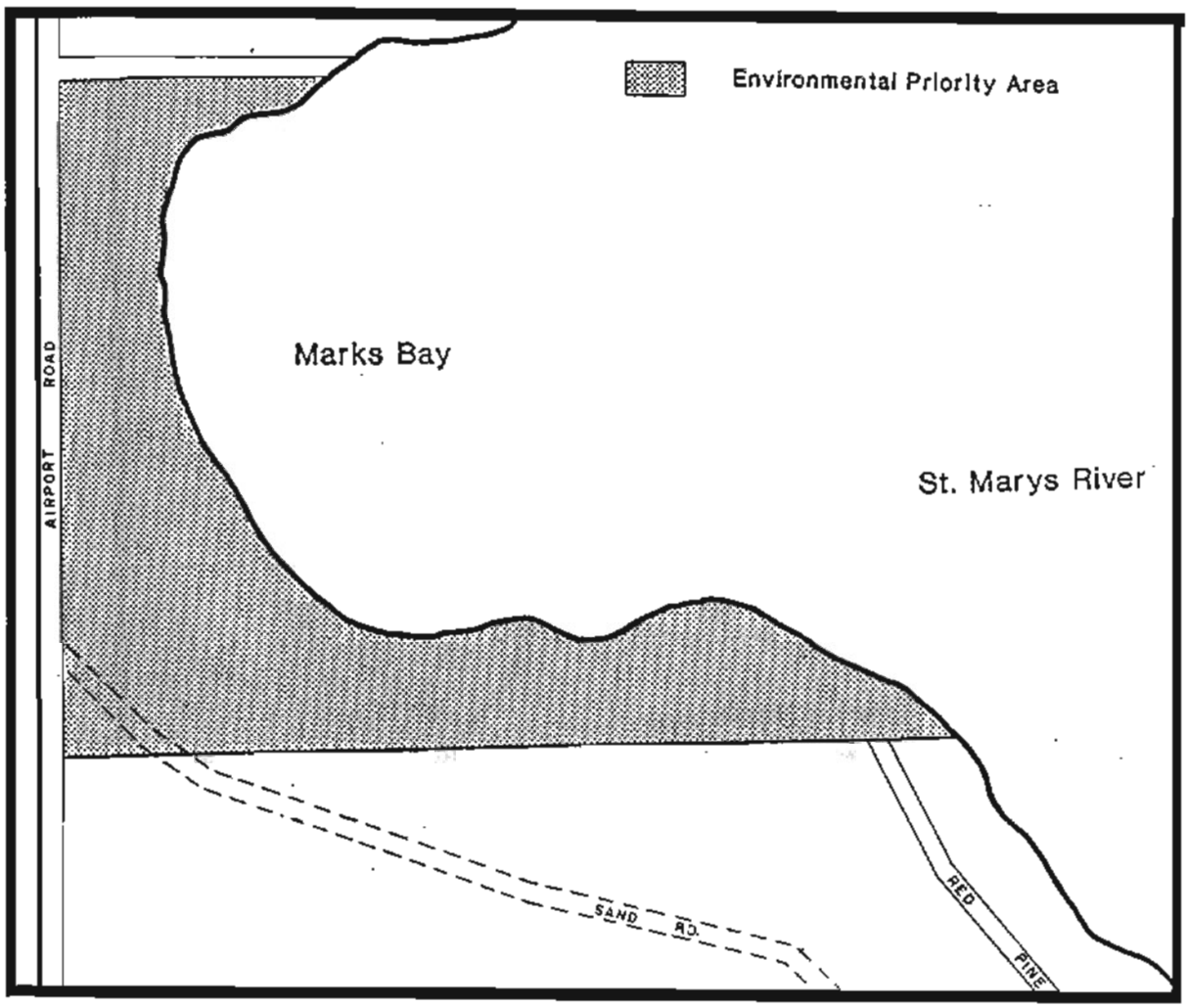
PROPOSED ZONING CHANGES

1. The mouth of Big and Little Carp Rivers - Presently zoned M-4 (Heavy Industrial), The area is entirely within the flood plain. Critical *wetland* areas are located adjacent to the St. Marys River. The property south of Herkimer on both sides of Carpin Beach Road is owned by the City of Sault Ste. Marie. the property north of Herkimer and east of carpin Beach Road is owner by Algoma Steel. It is proposed to change its zoning to Environmental Priority area.

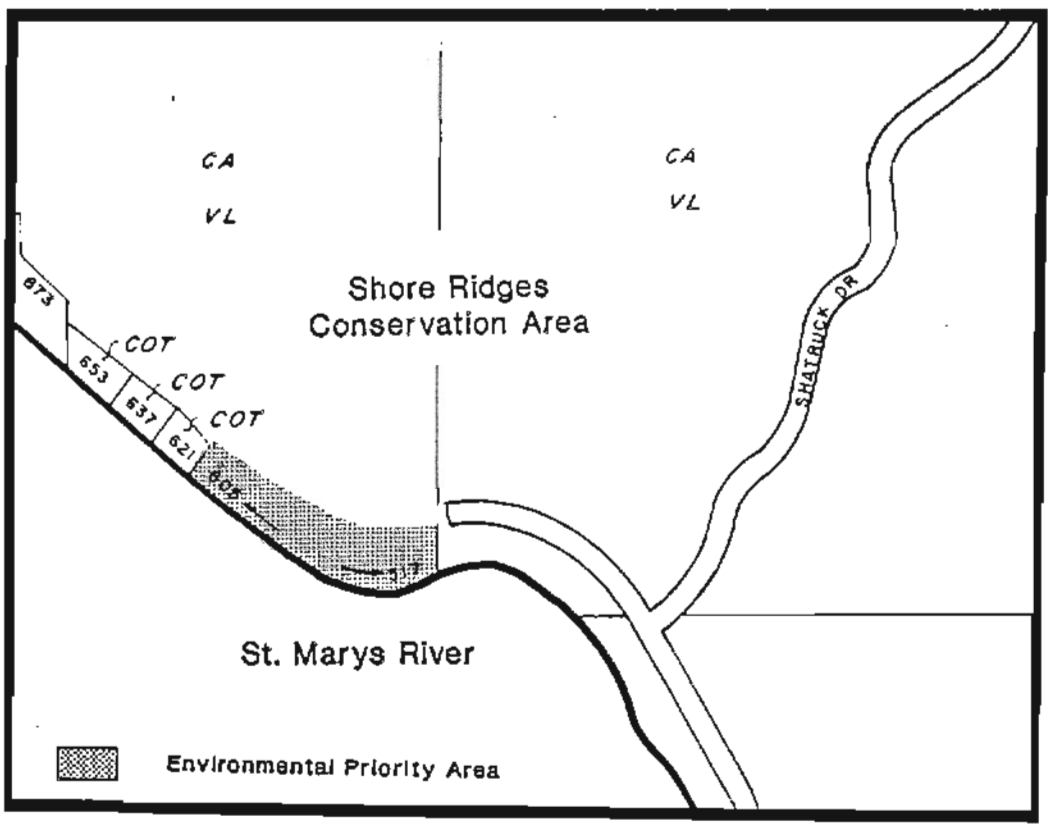


2. Marks Bay - Presently zoned R-2 S.C.H. (Residential Second Density, Summer Cottage, Holding Category). This is one of the most important areas in the region from a natural history viewpoint. The area contains several archaeological sites, and is also identified in the MNR Sensitive Areas and Features Report, as being one of two known locations for skunk cabbage in Algoma. Marks Bay also has the most mature stands of forest vegetation in the region.

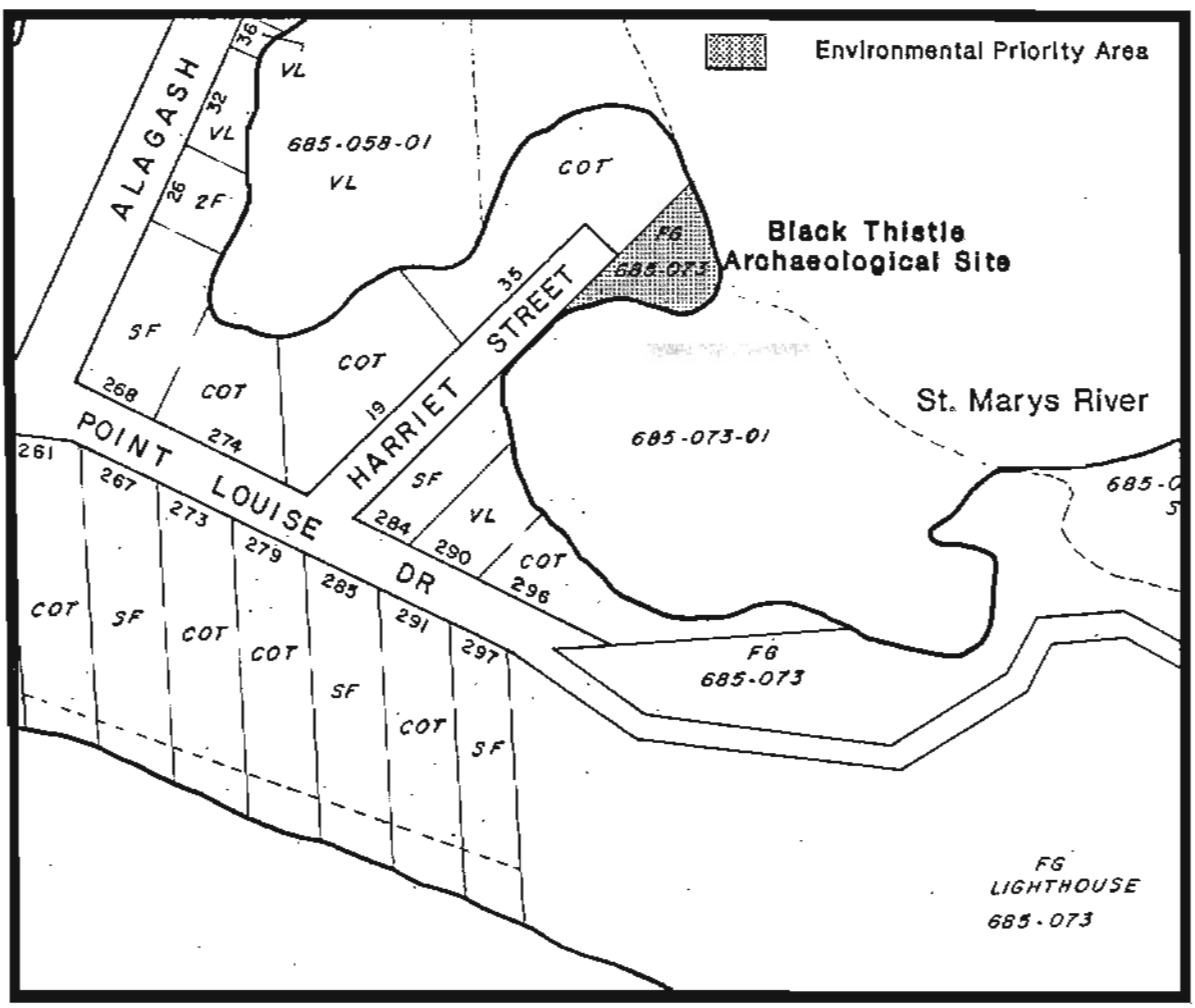
The site provides an excellent opportunity for expanded recreational use and conservation education and presently has a small public boat launch. The property is presently owned by the Provincial Government. It is proposed to change its zoning to Environmental Priority Area.



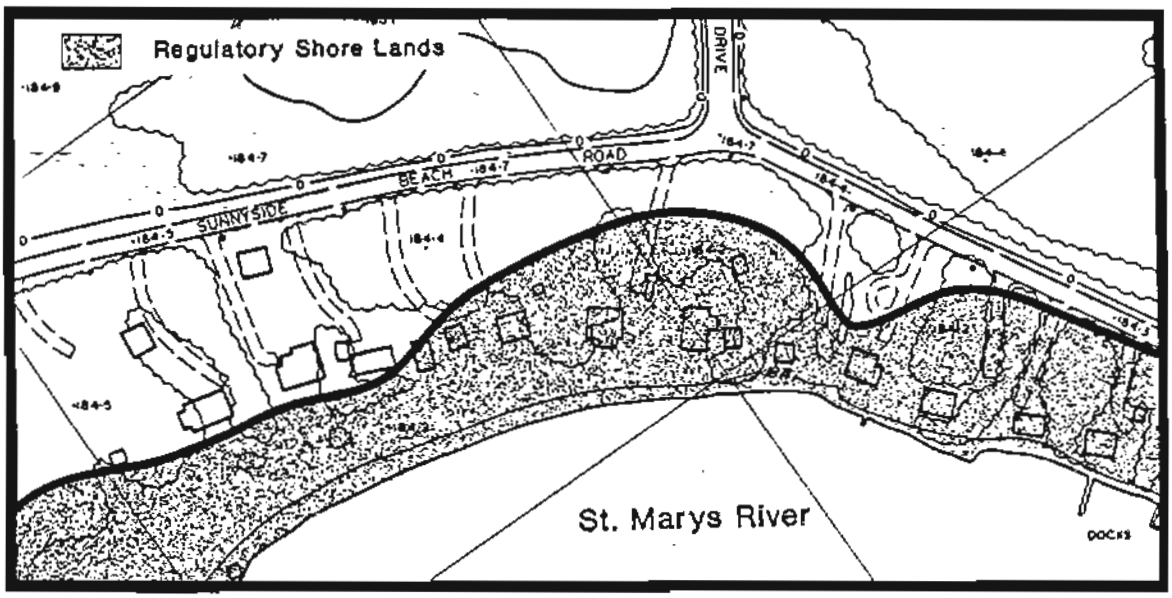
3. Shore Ridges - Presently zoned R-2 S.C.H., this site forms part of the Shore Ridges Conservation Area and is classified as *wetland*. This property is owned by the Sault Ste. Marie Region Conservation Authority. It is proposed to change its zoning to Environmental Priority Area.



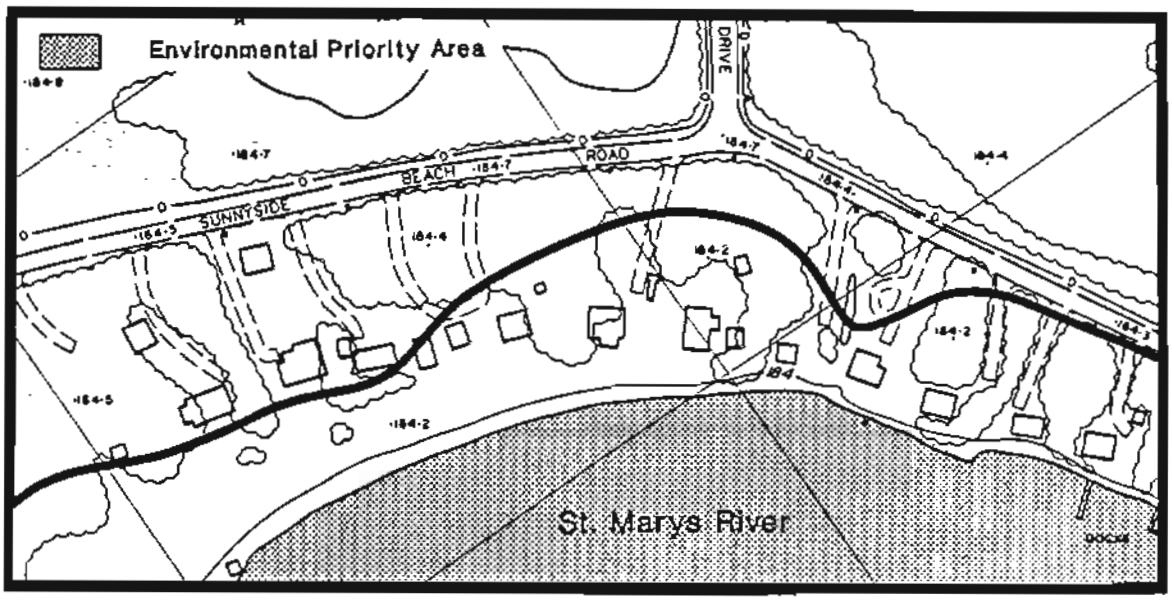
4. The Black Thistle Archaeological site is a prehistoric campsite dating to 2,000 B.C. and is identified in the MNR, Sensitive Areas and Features Report as having regional significance. It is proposed to zone this area as Environmental Priority Area.



5. Zone the entire remaining shoreline from the high water mark to the landward extent of the *regulatory shore lands* to appropriately reflect the regulatory shore land policy.



6. Zone all area from the high water mark to the International Border to Environmental Priority Area.



EMERGENCY RESPONSE

A comprehensive emergency measures strategy is in effect for the planning area. The administration of the Emergency Measures Plan is the responsibility of the City of Sault Ste. Marie's Emergency Measures Co-ordinator. The emergency measures strategy also applies to Prince Township through a mutual aid agreement between the Township and the City of Sault Ste. Marie.

Identified improvements to the emergency measures strategy are:

i) Improved weather forecast and dissemination of weather information. MNR is currently improving its weather forecasting and dissemination facility.

ii) Collaboration of all Initial Response Agencies, reaffirming their roles and assuring that channels for information dissemination will result in the quickest possible response time. This will be reviewed within the first year of the plan.

PUBLIC INVOLVEMENT/INFORMATION

Public involvement will continue to be an integral part of the plan during all major review and amendment stages. Implementation of the plan with respect to proposed zoning changes and official plan amendments will follow proper procedure which requires full public participation.

The Conservation Authority will function as a resource base and disseminate information regarding shoreline management issues.

IMPLEMENTATION

The entire planning area is within the *jurisdiction* of the Sault Ste. Marie Region Conservation Authority. The majority of strategies and policies fall within the existing mandate of the Authority and consequently can be implemented by the Authority under the Conservation Authorities Act and through regular programs and activities of the Authority such as:

i) plan input and review of, municipal official plan amendments, zoning by-laws, and development proposals;
ii) planning and approval of specific Authority projects;
iii) acquisition of land through dedications, purchases, transfers etc.;
iv) liaison and cooperation with other government agencies, such as the Ministry of the Environment, Natural Resources, Municipal Affairs, Environment Canada, and Public Works Canada;
v) education directed at private land owners, municipalities and interest groups; and,
vi) Fill and alterations to waterways regulations, made under the Conservation Authorities Act.

The Ministry of Natural Resources and Ministry of the Environment will continue to play a vital role in shoreline management through their normal management and jurisdictional responsibilities.

MNR's management responsibility include fisheries and provincial crown land. Their associated legislation includes the Fisheries Act, Public Lands Act, Lakes and Rivers Improvement Act, Beds of Navigable Waters Act and the Aggregates Act.

Strategies and policies beyond the mandate of the Authority such as the regulation of land use will require cooperation from the City of Sault Ste. Marie and the Township of Prince. It is our intent to pursue such Official Plan and zoning amendments as required, in order to fully implement this plan.

Due to the existing time-table it would not be appropriate to parallel approval of this plan with amendments to the Official Plans and zoning by-laws of the member Municipalities. We will however, initiate amendments with the cooperation of the Sault Ste. Marie planning department and Prince Township as soon as possible by the following procedure:

i) Report to Council
ii) Appropriate Public Notice
iii) Public meeting
iv) Approval of the by-law and Official Plan amendments
v) Possible OMB hearing

PLAN REVIEW AND AMENDMENTS

The plan will be reviewed at five year intervals or whenever major revisions or amendments are necessary. Major amendments are those which significantly affect one or more policies, affect plan objectives or are likely to result in significant public reaction either locally, regionally or provincially. Major amendments may result as provincial policy statements are released. The shoreline management plan will be required to conform to these policy statements. Major amendments will follow the same approval process as the original document namely, public review and approval by the Regional Director, MNR.

Minor amendments generally consist of housekeeping corrections or changes which do not alter the original intent of the plan. Minor amendments will require a note to file with the amendment being incorporated into the planning document at time of plan review.

APPENDIX A

Shoreline Management Reach Prescriptions

Introduction:

This section sets forth a format for management of the shoreline addressing issues on a localized basis. It accomplishes this by classifying the shoreline into 10 reaches for management purposes.

Prevention is the preferred approach to shoreline management and involves implementing both *development* controls and regulations governing new development. By regulating development within *regulatory shore lands*, you can prevent or minimize, property damage, social disruption, and the risk of loss of life. Preventative approaches are the most cost-effective means of ensuring that new buildings and structures safely establish along the shoreline and that new development does not adversely effect existing development or the environment.

The Ministry of Natural Resources has compiled shoreline structural standards to assist in planning and design of shoreline protection and recreational structures. The shoreline structural standards also give a more in depth description of the terms you will find in the reach prescriptions. The shoreline structural standards are available from the MNR or the CA under a separate cover titled shoreline structural standards.

Description:

The description briefly identifies the physical and biological amenities within the reach and forms the basis for setting the prescriptions.

Prescription:

The prescription has several purposes as listed below:

1. It identifies what the building requirements are for the reach including setbacks and lowest openings for dwellings or structures.

2. It lists the most common type of shoreline alterations and states the CA's position on that type of work in the reach. The CA's position is based on a four (4) tiered structure ranging from "recommended" to "prohibited". These are to serve as guidelines only. In all instances an approved Fill and Alterations to Waterways permit must be obtained before any work commences. The terms are defined below.

recommended - this is an accepted type of alteration and in most situations the CA will issue a Fill and Alteration To Waterways permit to do the work.

There may be situations where, although identified as acceptable, a permit may be refused based on site specific considerations.

not recommended - this type of alteration is not preferred, but a permit may be issued if it can be demonstrated that mitigating measures would alleviate any adverse affects that may result from such work.

restricted - this type of alteration is not acceptable. It may cause negative environmental impacts or damage adjacent properties. In addition, it may not be a logical choice in recognition of wave climate, fluctuating water levels, ice pile up, or design life. The CA may see this alteration however, as being the only choice a shoreline owner has. If this is determined the CA may approve the work with strict conditions and mitigation measures to be applied during and/or after construction.

prohibited - this type of alteration is completely unacceptable and a permit will be refused. In all cases where a permit is refused, and after a hearing with the CA, the CA shall give written reasons for its refusal to the applicant. An applicant who has been refused permission may, within thirty days of the receipt of the reasons for the decision, appeal to the Minister of Natural Resources who may dismiss the appeal or grant permission.

3. It identifies what is needed to be communicated to the public in this unit.

4. It identifies any unique areas or concerns within the reach.

5. It identifies any environmentally sensitive areas within the reach.

6. It recognizes additional considerations that must be reviewed.

7. It gives future direction to the way in which the unit should be managed to ensure natural resource values are protected and development is accommodated.

8. It identifies a time period (a work window) in which shoreline work including dredging will have the least effect on fish spawning and rearing. Not all shoreline alteration will be subject to a work window. The planning area will be subject to two work windows. The Superior Schedule for the upper river and the Huron Schedule for the lower river.

i) Superior Schedule - January 1st to March 31st and June 16th to September 15th
ii) Huron Schedule - January 1st to March 31st and from July 1st to August 31st

REACH # 1

Description This reach commences at the granite bluffs of Gros Cap and is the most susceptible reach to wind generated waves although off shore rock reefs assist in reducing this wave action. Large rocks near the shoreline and a breakwater at the Government dock assist in further reducing wave action.

Larger boulder revetments at the municipal water intake station have provided excellent shore protection.

Ice pile up is a major concern in this reach.

The Gros Cap bluffs are a popular spot for scenic hikes. Many examples of delicate peripheral communities of herbaceous plants can be found. Although the area is privately owned, it is heavily used with uncontrolled access. The Voyageur trail can be accessed at the Gros Cap bluffs.

PRESCRIPTION

Prevention

Regulatory Shore Lands
Regulatory flood standard - 184.2m C.G.D. + 15m
Regulatory erosion standard - An engineering study to determine the regulatory erosion standard has been proposed for this reach. See page 16, regulatory erosion standard.
Ice pile up is a concern at the northern end of this reach.

Protection

a) Groynes - prohibited
b) Revetments - recommended
c) Offshore Breakwaters - restricted
d) Shorewalls - not recommended

Recreation

a) Docks - not recommended (will require engineered design if permanent)
b) Beach clearing - prohibited
c) Beach nourishment - not recommended (will not remain due to wave climate)
d) Boat launches - restricted
e) Boat rails - recommended
f) Boat lifts - recommended
g) Boat Houses - restricted

Dredging

Dredging Channels/Boat Slips - restricted

Communications

Menominee (Round Whitefish) spawn very close to shoreline. Revetment most recommended shore protection.

Existing boulders along shoreline function as natural breakwaters and should not be removed.

Work Window

Superior Schedule

REACH # 2

Description Sand beaches which dominate most of the upper river begins to appear. Shallow offshore water and the Gros Cap reefs help to reduce the wave climate therefore lessening their effect on the sandy highly erodible shoreline.

PRESCRIPTION

Prevention

Regulatory Shore Lands
Regulatory flood standard - 184.2m C.G.D. + 15m
Regulatory erosion standard - An engineering study to determine the regulatory erosion standard is proposed for this reach. See page 16, regulatory erosion standard.

Protection

a) Groynes - not recommended
b) Revetments - recommended
c) Offshore Breakwaters - prohibited
d) Shorewalls - not recommended

Recreation

a) Docks - recommended
b) Beach clearing - prohibited
c) Beach nourishment - not recommended
d) Boat launches - restricted
e) Boat rails - recommended
f) Boat lifts - recommended
g) Boat Houses - restricted

Dredging

Dredging Channels/Boat Slips - prohibited

An erosion measuring station exists in this reach at the foot of Pinder Drive.

Communications

Menominee (Round Whitefish) spawn very close to shoreline. Much of the existing shoreline protection requires improvements or repairs. Revetment most recommended shore protection although low shorewall are widely used.

Work Window
Superior Schedule

REACH # 3

Description The area is extremely low and wet. Some cottages and permanent residences presently exist and development of a subdivision has commenced. Several natural features combine to minimize the wave climate including the Chene Islands, the Gros Cap Reefs and very shallow off shore waters. Presently no artificial erosion protection exists. Controlled access to the beach in order to prevent destruction of beach grass is recommended.

This reach is not presently experiencing active erosion therefore erosion protection structures will not be permitted unless values become threatened.

PRESCRIPTION

Prevention

Fanny Sole Beach Subdivision
184.7 ? In Eng. study ?

Regulatory Shore Lands

Regulatory flood standard - 184.2m C.G.D. + 15m
Regulatory erosion standard - An engineering study to determine the regulatory erosion standard is proposed for this reach. See page 16, regulatory erosion standard.

Protection

a) Groynes - prohibited
b) Revetments - restricted
c) Offshore Breakwaters - prohibited
d) Shorewalls - prohibited

Recreation

a) Docks - not recommended
b) Beach clearing - prohibited
c) Beach nourishment - recommended
d) Boat launches - restricted (shallow water will likely not permit boat access)
e) Boat rails - recommended
f) Boat lifts - recommended
g) Boat Houses - restricted

Dredging

a) Dredging Channels/Boat Slips - prohibited

Communications

No shoreline alterations unless values become threatened.

Work Window - Superior Schedule

REACH # 4

Description All existing structures are within regulatory shore lands. The existing groyne field has failed to capture any littoral drift except for one isolated "L" shape configuration. The failure to capture littoral drift is due to little long shore drift, poorly designed groynes, and the orientation the wave climate. Existing revetments have provided excellent erosion protection. Many of the existing concrete shorewalls sustained damage during the high water levels of 1985/86.

PRESCRIPTION

Prevention

Regulatory Shore Lands
Regulatory flood standard - 184.2m C.G.D. + 15m
Regulatory erosion standard - An engineering study to determine the regulatory erosion standard is proposed for this reach. See page 16, regulatory erosion standard.

Protection

a) Groynes - prohibited
b) Revetments - recommended
c) Offshore Breakwaters - prohibited
d) Shorewalls - restricted

Recreation

a) Docks - recommended
b) Beach clearing - prohibited
c) Beach nourishment - not recommended (will likely not remain unless accompanied with offshore breakwaters)
d) Boat launches - restricted (shallow water will likely not permit boat access)
e) Boat rails - recommended
f) Boat lifts - recommended
g) Boat Houses - prohibited

Dredging

Dredging Channels/Boat Slips - prohibited

Communications
Flood proofing methods for existing structures. Removal and replacement of damaged shorewalls with revetments.
Groynes to be removed through attrition, no repair to be authorized.

Work Window
Superior Schedule

REACH # 5

Description Many wide sand beaches dominate this reach. Existing shore protection, groyne fields and shorewall/revetments have provided adequate shore protection when use in combination. The use of groyne fields alone, has not provided adequate protection.
The groyne field in Pointe Des Chene Park experienced severe flanking during the high water levels of 1985/86. Additional study will be required to deal with this severe erosion problem.

PRESCRIPTION

Prevention

Regulatory Shore Lands
Regulatory flood standard - 184.2m C.G.D. + 15m
Regulatory erosion standard - An engineering study to determine the regulatory erosion standard is proposed for this reach. See page 16, regulatory erosion standard.

Protection

a) Groynes - recommended
b) Revetments - recommended
c) Offshore Breakwaters - prohibited
d) Shorewalls - recommended

Recreation

a) Docks - not recommended
b) Beach clearing - prohibited
c) Beach nourishment - recommended
d) Boat launches - prohibited
e) Boat rails - not recommended
f) Boat lifts - recommended
g) Boat Houses - restricted

Dredging

Dredging Channels/Boat Slips - prohibited

Erosion monitoring station exists in the reach at Pointe Des Chene Park.

Communications
Repair, modify, or add additional shore protection. Additional study of the Pointe Des Chene Park.

Work Window - Superior Schedule

REACH # 6

Description Many wide sand beaches dominate this reach. Existing shore protection, groyne field and shorewall/revetments have provided adequate shore protection when used in combination.

This reach of shoreline is highly erodible and some property owners with only groyne erosion protection experienced up to 2 metres of erosion during the high water levels of 1985/86.

There is a large volume of littoral drift within this reach. A *littoral transport* study will assist in determining appropriate groyne placement.

PRESCRIPTION

Prevention

Regulatory Shore Lands
Regulatory flood standard - 184.3m C.G.D. + 15m
Regulatory erosion standard - An engineering study to determine the regulatory erosion standard is proposed for this reach. See page 16, regulatory erosion standard.

Protection

a) Groynes - recommended
b) Revetments - recommended
c) Offshore Breakwaters - prohibited
d) Shorewalls - recommended

Recreation

a) Docks - not recommended (possibly floating of temporary)
b) Beach clearing - prohibited
c) Beach nourishment - recommended
d) Boat launches - prohibited
e) Boat rails - not recommended
f) Boat lifts - recommended
g) Boat Houses - prohibited

Dredging

a) Dredging Channels/Boat Slips - prohibited

Communications
Repair, modify, or add additional shore protection.
Work Window - Superior Schedule

REACH # 7

Description Narrow sand beaches dominate this reach. In some areas such as Pointe Aux Pins, shore protection structures are at the waters edge and no beach exists.

Archaeological sites are located at Pointe Louise and Marks Bay and Pointe Aux Pins is the site of Superior's first shipyard.

Waves generated by Great Lakes freighters are of more concern to the shoreline property owners in the Pte. Aux Pins area, than wind generated waves. Erosion has occurred in Marks Bay due to prolonged south east winds.

Remnants of the former log booming site at Marks Bay dot the shoreline and hundreds of pulp wood logs, now water logged and submerged create an almost eerie sight. Sediments in the northwest corner of the Bay are contaminated with wood particles from the log booming operations.

Two large sites, Marks Bay and the mouth of the Carp Rivers, are proposed for a change of zoning to environmental priority area.

PRESCRIPTION

Prevention

Regulatory Shore Lands
Regulatory flood standard - 184.4m C.G.D. + 15m
Regulatory erosion standard - An engineering study to determine the regulatory erosion standard is proposed for this reach. See page 16, regulatory erosion standard.

Protection

a) Groynes - restricted
b) Revetments - recommended
c) Offshore Breakwaters - restricted
d) Shorewalls - not recommended

Recreation

a) Docks - recommended (floating of temporary)
b) Beach clearing - prohibited
c) Beach nourishment - recommended
d) Boat launches - not recommended
e) Boat rails - recommended
f) Boat lifts - recommended
g) Boat Houses - not recommended

Dredging

a) Dredging Channels/Boat Slips - prohibited

Communications

Flood proofing existing structures in regulatory shore lands.

Work Window

Superior Schedule

REACH # 8

Description Heavily industrialized (A.B. McLean, Algoma Steel, St. Marys Paper, and Great Lakes Power are located here), this reach has shoreline protection along its entire length. Algoma Steel has carried out large scale filling in the past, as part of its slag dumping operations.

PRESCRIPTION

Prevention

Regulatory Shore Lands
Regulatory flood standard - 184.4m C.G.D. plus a freeboard for wave action.
Regulatory erosion standard - see section 10. regulatory shore land policy.

Protection

a) Groynes - prohibited
b) Revetments - recommended
c) Offshore Breakwaters - prohibited
d) Shorewalls - recommended

Recreation

a) Docks -
b) Beach clearing -
c) Beach nourishment -
d) Boat launches -
e) Boat rails -
f) Boat lifts -
g) Boat Houses -

This is an industrial zone and recreational uses are not applicable.

Dredging

a) Dredging Channels/Boat Slips - not recommended

Communications

No more infilling permitted. Reduction of non point source contaminates and sediment entering the water course.

Work Window

Superior Schedule

REACH # 9

Description The shoreline within this reach has been entirely altered except for Whitefish Island. Major shoreline protection works are in place and several areas are slated for repairs. Reach 8 and 9 have very deep shoreline water depths which facilitate Great Lakes shipping.

Whitefish Island and St. Marys Island are federal lands. Whitefish Island is subject to a Native land claim.

The entire area provides excellent fishing. During salmon runs, hundreds of anglers can be found fishing from the shoreline. A berm was constructed within the rapids to ensure sufficient water levels for fish spawning.

Public access to the shoreline is permitted throughout most of this reach. Recreation and tourism activities have a strong presence in this reach. These activities are provided by the Sault Locks, Municipal Fish Hatchery, St. Marys River Boardwalk, Holiday Inn, Norgoma Marine Park, Norgoma Marina, Civic Centre, Clergue Park, Sault Ste. Marie Library, Art Gallery of Algoma, and the Ontario Bush Plan Heritage.

The Waterfront Development Strategy which charts future development within this reach was approved by City Council in 1988.

PRESCRIPTION

Prevention

Regulatory Shore Lands
Regulatory flood standard - 178.2m C.G.D. plus a freeboard for wave action.
Regulatory erosion standard - see section 10. regulatory shore land policy.

Protection

a) Groynes - prohibited
b) Revetments - recommended
c) Offshore Breakwaters - prohibited
d) Shorewalls - recommended

Recreation

a) Docks - recommended
b) Beach clearing - prohibited
c) Beach nourishment - no infilling permitted unless to increase fish habitat.
d) Boat launches - recommended

e) Boat rails - recommended
f) Boat lifts - prohibited
g) Boat Houses - not recommended

Dredging

a) Dredging Channels/Boat Slips - not recommended

Communications

No more infilling permitted. Testing and disposal of dredge spoils to be determined on a case by case basis.

Work Window

Huron Schedule

REACH # 10

Description Shoreline use is mostly permanent residential and shoreline alterations have been extensive. Most properties have either a crib dock or boat slip and some form of shoreline protection. The few property owners that have left their shoreline in a natural state are not experiencing any serious erosion problems.

PRESCRIPTION

Prevention

Regulatory Shore Lands
Regulatory flood standard - 178.2m C.G.D. + 15 m.
Regulatory erosion standard - See page 16, regulatory erosion standard.

Protection

a) Groynes - prohibited
b) Revetments - recommended
c) Offshore Breakwaters - prohibited
d) Shorewalls - not recommended

Recreation

a) Docks - recommended
b) Beach clearing - prohibited
c) Beach nourishment - not recommended
d) Boat launches - recommended
e) Boat rails - recommended
f) Boat lifts - recommended
g) Boat Houses - restricted

Dredging

a) Dredging Channels/Boat Slips - restricted

Communications

No more infilling permitted. Testing and disposal of dredge spoils to be determined on a case by case basis.

Work Window

Huron Schedule

APPENDIX B

OPEN HOUSE RESULTS - NOVEMBER 1989, INFORMATION SESSION

COMMENT SHEET

MNR - Ministry of Natural Resources
CA - Conservation Authority

Note: Please refer question to number at display station.
Your comments are necessary to help us develop this plan.

1. Are the Goals and Components of the Shoreline Management Plan stated in the Terms of Reference appropriate?
   Yes or No

   Comments: _____
   _____
   _____

2. Do you think the coastal unit breakdown on the lands maps will enable us to better manage the shoreline resources?
   Yes or No

   Comments: _____
   _____
   _____

3. Do the pictures presented help you to understand the local situations thus the need for this plan?
   Yes or No

   Comments: _____
   _____
   _____

4. Of the shoreline works examples presented, please indicate which concern you the most?
   ___ Erosion
   ___ Navigation
   ___ Beach Improvement
   ___ Dock Development
   ___ All
   ___ Other _____

5. Are you aware that you are required, by law, to obtain approval from the MNR or the CA before working in or near any water course or water body?
   MNR - Yes or No CA - Yes or No

6. Did you watch the video? Yes or No

   Comments: _____
   _____

GENERAL QUESTIONS

7. Do you own shoreline property? Yes or No
   Approximately what location (eg. Sand Bay, Moffat Bay)
   _____

   If not, what do you use the shoreline for? (eg. swimming, boating, fishing)
   _____
   _____

8. Did you, before reviewing this information, feel that a shoreline management plan was necessary for the area?
   Yes or No
   Has your opinion changed now? Yes or No

9. How did you find out about this open house?
   ___ Newspaper
   ___ Television
   ___ Radio
   ___ Mail
   ___ Other explain _____

Name _____
Address _____
City _____
Postal Code _____
Affiliation _____

Do you wish to be put on the Shoreline Management Plan Mailing List? Yes or No

If yes, you will be notified as to future developments and information sessions in regards to the plan.

Do you wish your comments to remain private? Yes or No

You are not required to submit this comment sheet at the session, rather, if you wish to retain it and make comment at your leisure, please do so and return the sheet within

30 days to:

R.A. Lessard
District Manager,
Sault St. Marie District
Ministry of Natural Resources
Box 130, 875 Queen Street East,
Sault Ste. Marie, ON
P6A 5L5

Alan Harrison
Shoreline Coordinator
Sault Ste. Marie Region
Conservation Authority
Civic Centre,
99 Foster Drive,
Sault Ste. Marie, ON
P6A 5X6

RESULTS

Positive - 350 people attended in total over a 4 day - 3 location exercise. (These results are a total of the SSMRCA and MNR open house sessions)

In total, 90 comment sheets have been received to date. Some interesting statistics: (please note some comment sheets were incomplete)

QUESTION

1. Are the goals and components of the SMP stated in the terms of reference appropriate? 84% - yes, 4% - no, 12% - no response.

2. Coastal unit breakdown appropriate? 90% - yes, 1% - no, 9% -no response.

3. Do pictures explain need for plan? 92% - yes, 1% - no, 7% - no response.

4. Which shore works concern you the most?
   erosion - 65%
   navigation - 31%
   beach improvement - 31%
   dock improvement - 46%
   all - 15%
   other - 9%

5. Approval from MNR to work in water? 65% - yes, 19% - no, 16% -no response.

6. Did you watch video? 72% - yes, 19% - no, 10% - no response.

7. Own Shoreline property? 72% - yes, 28% - no.

8. Plan necessary - Before? 59% - yes, 24% - no, 14% - no response.
   After? 78% -yes, (19% changed mind), 6% - no.

9. How did you find out about SMP?
   - newspaper - 65%
   - television - 6%
   - radio - 13%
   - mail - 4%
   - word of mouth - 12%
   - posters - 2%

70% wanted to be put on mailing list! Between 60-65 names.

OPEN HOUSE RESULTS - AUGUST 15 & 16, 1990

Approximately 100 people attended the open house that was held at the Holiday Inn in Sault Ste. Marie, August 15 & 16, 1990. Only eight of the questionnaires were returned. The results from these were positive and all indicated that a shoreline management plan was necessary. Most feed back came in the form of letters, phone calls and office visits.

Underlined below, is a summary of the major concerns shoreline residents and other interested parties had in regard to the shoreline plan.

1. Of major concern was policy 5, of the shoreline hazard land policy: an existing residential structure within shoreline hazard lands, sustaining 50% or more in damages may not be reconstructed in whole or in part unless shoreline hazards can be overcome.

This policy has been removed.

2. Where was the information regarding shoreline hazards during recent rezoning and re-assessment of shoreline properties?

Coastal engineering is a relatively new science. It was not until the record high water levels of 1985/86 and the ensuing damage, that shoreline management was put on the priority list.

3. The policies of the shoreline management plan will threaten market value and as such will receive strong repercussions from property owners.

No doubt the SMP will be have some influence on the market value of shoreline property, but it would certainly be incorrect to imply that the influence will all be negative. The following must be considered when assessing any aspect of the shoreline management plan:

i) The primary objectives in dealing with shoreline matters are to prevent loss of life, to minimize property damage and social disruption, and to minimize detrimental environmental effects of development and preserve shore ecosystems;

ii) The Conservation Authority must adhere to provincial policies and directives and safeguard the provincial interests in shoreline management; and,

iii) Society should be protected, including all levels of government, from being forced to bear unreasonable social and economic burdens of unwise individual choices.

4. The shoreline management plan addresses problems that do not exist in this area ie. flooding and erosion.

As to the above comment, we have compiled the following points which indicate that flooding & erosion are a concern in our area:

i) [1] "... it was considered that the average property owner would not be cognizant of the estimated annual damage, and that his/her perception of the risk of flooding/erosion would be based on his/her memory of recent lake level maximums within the last 5 to 10 years."

ii) Parts of Sunnyside Beach Road have experienced flooding to depths of over a 1/2 metre.

iii) Shoreline erosion of three metres plus, was recorded during the recent high water levels of 1985/86.

iv) Many cottages were raised due to previous shoreline flooding. Historical records show that flooding to depths of one metre have occurred.

v) The following table compares the highest recorded water level with the 100 year flood level. A wind setup of 0.4m was calculated for 70 km/h wind (approximately the same magnitude of the storm that sunk the Edmund Fitzgerald). The 0.4m was added to the highest recorded water level. The comparison shows that the 100 year flood levels are appropriate.

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[1] O.M.N.R., Environment Canada. Lake Superior Shore Damage Survey Economic Evaluation & Social Impact Study. 1988.

Water Level Gauge	Highest Recorded Water Level/Date	100 Year Flood Level	Edmund Fitzgerald Storm +0.4m
Gros Cap	184.06m / Oct. 16/72	184.2m	184.46m
Compensating Works SSM	184.24m / Nov. 12/42	184.4m	184.64m

The policies in the Provincial draft Great Lakes - St. Lawrence River Flood and Erosion Policy Statement have been based on the entire Great Lakes - St. Lawrence experience. Consequently, these policies may not reflect local conditions. Provincial policy for shoreline management will have a significant effect on present and future development along our shoreline. Because of the unique situation we have in Sault Ste. Marie, we are soliciting the Provincial Government for amendments to better reflect local conditions with respect to the regulatory erosion standard.

5. Does shoreline protection satisfactorily overcome the erosion hazard.

Shoreline protection may provide a false sense of security, and may result in shoreline property owners developing dangerously close to the waters edge. The provincial experience has found that erosion will still occur lakeward of the protection. Should the erosion protection fail, the ensuing erosion would occur at an accelerated rate. This accelerated erosion would result in erosion equal to that of an unprotected shoreline.

Shoreline protection is a very costly and complex undertaking. Many factors must be taken into account such as:

i) are adjacent properties protected;
ii) will the protection interfered with the sediment budget;
iii) will the protection be properly designed and constructed;
iv) are environmental considerations accounted for;
v) will the protection be adequately maintained;
vi) will shoreline hazards be created or aggravated.

The Sault Ste. Marie Region Conservation Authority is proposing a shoreline erosion study that will take existing shoreline protection into account.

APPENDIX C

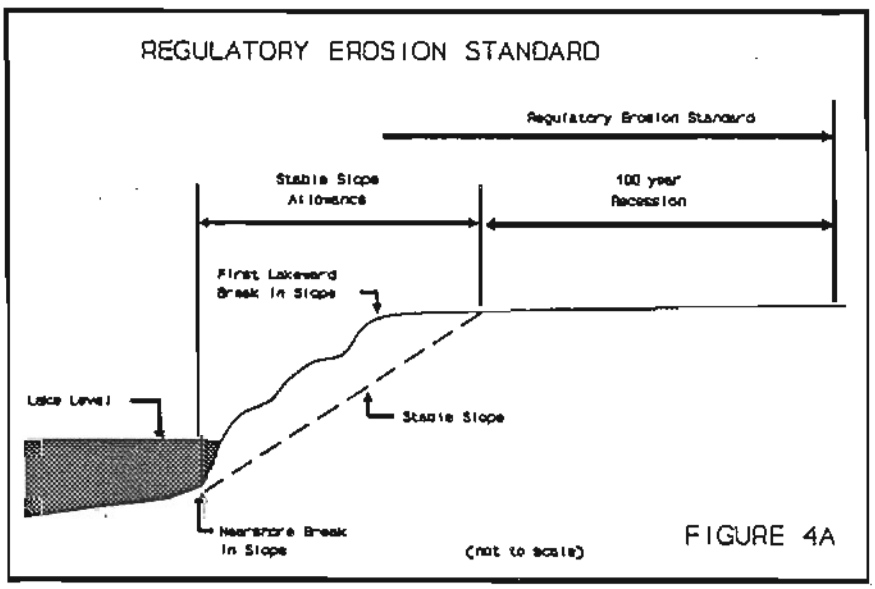
DRAFT PROVINCIAL REGULATORY EROSION STANDARD

(3) Regulatory Erosion Standard:

It is the policy of the Province of Ontario that:

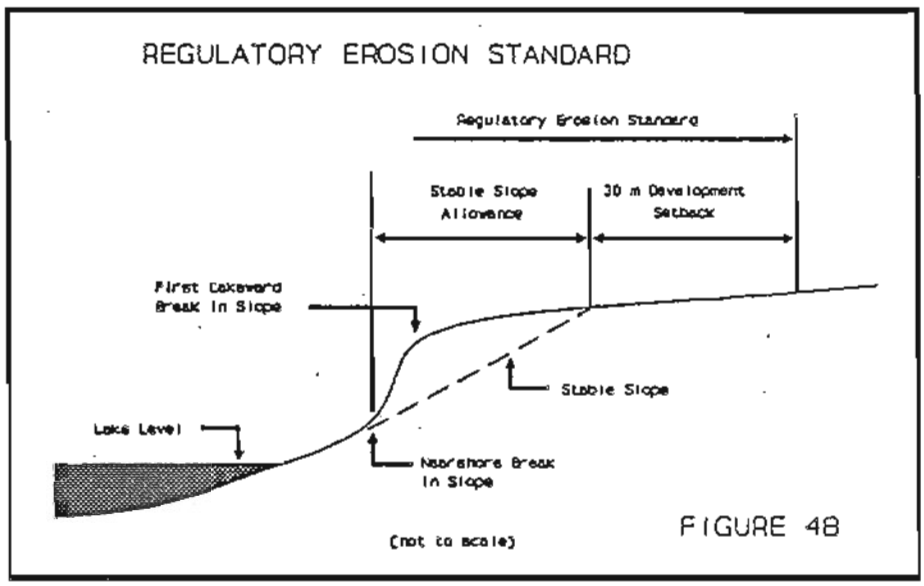
3.1 The erosion standard used to define the erosion limit for regulatory purposes on the Great Lakes - St. Lawrence River system, including the connecting channels, is the greater of:

(a) The sum of the stable slope allowance plus 100 times the average annual recession rate measured landward from the nearshore break in slope (Figure 4a);



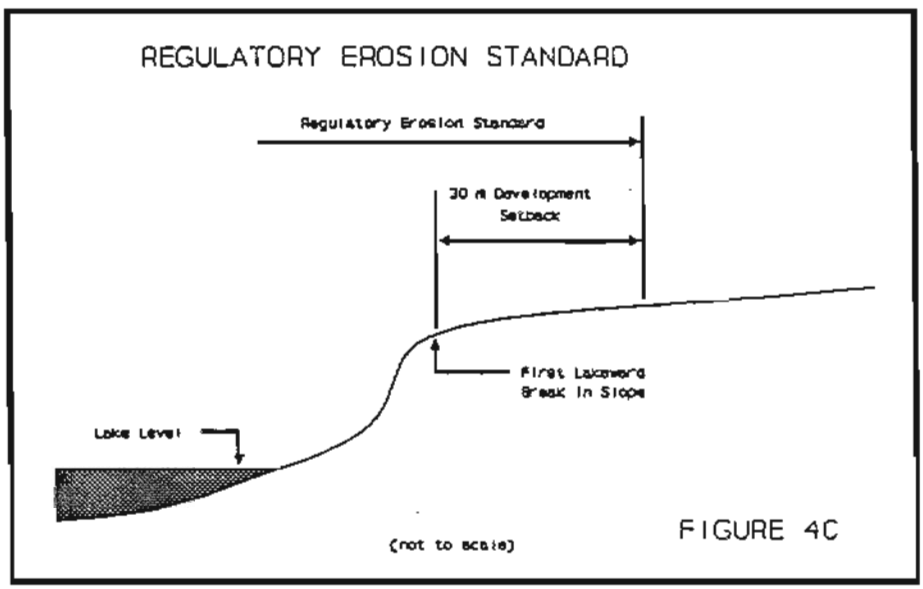
OR

(b) The sum of the stable slope allowance plus 30 metres measured landward from the nearshore break in slope (Figure 4b);

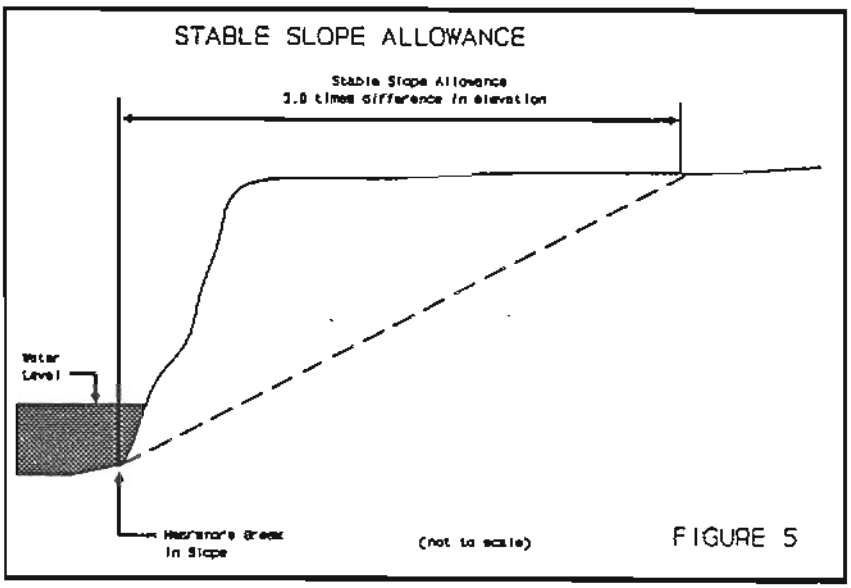


OR

(c) 30 metres measured landward from the top of bank or first lakeward break in slope (Figure 4c);



3.2 In the absence of studies using accepted geotechnical principles, the allowance to achieve stable slope shall be defined as a horizontal setback measured landward from the nearshore break in slope equivalent to 3.0 times the difference in elevation between the first lakeward break in slope and the nearshore break in slope, whether above or below the water level (Figure 5).



3.3 Where studies using accepted geotechnical principles are conducted to determine the stable slope allowance, the Conservation Authorities in Ontario, or where no Conservation Authority exists the Ministry of Natural Resources, in cooperation with municipalities and planning boards shall accept the stable slope allowance determined for the area studied.

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GLOSSARY

Accepted Engineering Principles: Principles, methods and procedures involving wave uprush and other water related hazards which are used and applied in current hydrotechnical engineering practice and have been approved by the Conservation Authority and/or the Ministry of Natural Resources.

Accepted Geotechnical Principles: Principles, methods and procedures involving slope stability analysis which are used and applied in current geotechnical practice and have been approved by the Conservation Authority and/or the Ministry of Natural Resources.

Average Annual Recession Rate: The average annual linear landward retreat of shore land.

Accretion: May be either NATURAL or ARTIFICIAL. Natural accretion is the build up of land, solely by the action of the forces of nature, on a BEACH by deposition of water- or airborne material. Artificial accretion is a similar build up of land by reason of an act of man, such as the accretion formed by a groyne, breakwater, or a beach fill deposited by mechanical means. Also AGGRADATION.

Aquatic Vegetation: Plants growing in or near the water.

Armourstone: A naturally occurring rock material that is used in the construction of shore protection devices. When used as shore protection it dissipates wave energy and reduces erosion. It has a long life span and is not highly susceptible to wave and ice action when properly constructed.

Average Long Term Water Levels: For the following gauges:

	Lake Huron at SSM	Lake Superior at SSM
January	176.72m C.G.D.	182.92m C.G.D.
February	176.75	182.85
March	176.73	182.82
April	176.65	182.85
May	176.70	182.96
June	176.78	183.04
July	176.86	183.11
August	176.89	183.14
September	176.87	183.14
October	176.80	183.12
November	176.73	183.08
December	176.66	183.08
Yearly Average	176.76	183.01

Bathymetry: The measure of depths of water in oceans, seas and lakes; also information derived from such measurements.

Beach: The zone of unconsolidated material that extends landward from the average annual low water level to either the place where there is marked change in material or physiographic form, the line of permanent vegetation, or the high water mark.

Beach Clearing: Refers to the removal of rock, vegetation or other natural beach material from the shore area.

Beach Nourishment: The process of replenishing a beach with material (usually sand) obtained from another location.

Benthic Region: The bottom of a body of water, supporting the benthos.

Benthos: The plant and animal life whose habitat is the bottom of a sea, lake or river.

Boat House: Are structures situated lakeward of the high water mark for the general purpose of providing boat shelter and storage.

Boat Lifts: Are structures, usually made from metal tubing, that sit on the lake or river bed and allow a boat to be raised out of the water for safe mooring.

Boat Rails: Usually constructed of a flat bed set on a pair of rails for the purpose of transferring a boat into or out of the water.

Breakwater: A structure protecting a shore area, harbour, anchorage, or basin from waves action.

cfs: Cubic feet per second

cms: Cubic metres per second

CAWMB: Conservation Authority Water Management Branch.

C.G.D.: Canadian Geodetic Datum.

Coast: A strip of land that extends from the shoreline inland to the first major change in terrain features.

Connecting Channels: A natural or artificial waterway of perceptible extent, which either periodically or continuously contains moving water, or which forms a connecting link between two bodies of water. The Detroit River, Lake St. Clair and the St. Clair River comprise the connecting channel between Lake Huron and Lake Erie. Between Lake Superior and Lake Huron, the connecting channel is the St. Mary's River.

Compensating Works/Control Works: Hydraulic structures (channel improvements, locks, powerhouses, or dams) built to control outflows and levels of a lake or lake system.

Crown Land: All land (including land under water) held by the Province, both land which has never been sold and land which has been reacquired.

Current, Longshore: The current in the breaker zone moving essentially parallel to the shore generated by waves breaking at an angle to the shoreline and by the normal movement of water through the lake to its outlet.

DNR: Michigan Department of Natural Resources.

Development: The construction, reconstruction, erection or placing of a building, structure, protection works and/or flood proofing measures of any kind or the making of an addition or alteration to a building or structure that has the effect of increasing the size or usability thereof, and such related activities as site grading, excavation and the placing or dumping of fill.

Downdrift: The direction of predominant movement of littoral materials.

Dredge Spoils: River or lake bottom sediment that has been excavated.

Dynamic Beach: The zone of accumulated unconsolidated sediment that is acted upon by waves and wind action.

Ecosystem: A subdivision of the Biosphere with boundaries arbitrarily defined according to particular purposes. An ecosystem is a dynamic totality comprised of interacting living and non-living components. The Great Lakes-St. Lawrence River Basin Ecosystem is an example which encompasses the interacting components of sunlight, air, water, soil, plants, and animals (including humans), within the Basin.

Environment: Air, land or water; plant and animal life including humans; and the social, economic, cultural, physical, biological and other conditions that may act on an organism or community to influence its development or existence.

Erosion: The wearing away of the shoreline and lake or river bed by the action of waves and currents, and other natural processes.

Fetch: The distance over which waves are generated by a wind having generally constant direction and speed.

Flood: A rise in the water level resulting in the inundation of areas adjacent to a lake or connecting channel not ordinarily covered by water.

Flood Proofing: A combination of structural changes and/or adjustments incorporated into the basic design and/or construction or alteration of individual buildings, structures or properties subject to flooding so as to reduce or eliminate flood damages.

Fluctuation: A period of rise and succeeding period of decline of water level. Fluctuations occur seasonally with higher levels in late spring to mid-summer and lower levels in winter. Fluctuations occur over the years due to precipitation and climatic variability. As well, fluctuations can occur on a short-term basis due to the effects of periodic events such as storms, surges, ice jams, etc.

Freeboard: The additional height of a structure above design high water level to prevent overflow.

Groyne: A shore protection structure built (usually perpendicular to the shoreline) to trap sand. The resulting beach provides shore protection.

Groyne Field (groyne system): A series of groynes acting together to protect a section of shore.

G.S.C.: Geodetic Survey of Canada.

Habitat: The place or site where an animal or plant community naturally or normally lives.

Hazardous Substances: Substances which individually, or in combination with other substances, are normally considered to pose a danger to public health, safety and the environment. These substances generally include a wide range of materials that are toxic, ignitable, corrosive, reactive, radioactive or pathological.

High Water Mark (H.W.M.): The high water mark usually determined by Professional Land Surveyor, is found by the consideration of all visible evidence including, the general edge of terrestrial vegetation, by changes in soil characteristics, and by the edge of some embankment particularly scored by the action of water. It is a variable line in characteristic indicators and distinctiveness.

IJC: International Joint Commission: A binational organization established in 1909 through which Canada and the United States cooperatively resolve water and air pollution, lake levels power generation and other issues of mutual concern.

Jurisdiction: The extent or territory over which authority may be legally exercised.

Lakeward: a perspective from the land towards the lake or river.

Landward: a perspective from the lake or river toward the land.

Littoral Cell: is a section of shoreline defined so that no input or outflow of sediments takes place across its boundaries.

Littoral Transport: The movement of littoral sediment in the littoral cell by waves and currents including movement parallel to the shore (longshore transport) and perpendicular to the shore (onshore-offshore transport).

Lower River: For the purpose of this SMP the lower river includes the St. Marys River and shore lands from the compensating works to the eastern boundary of the planning area.

MNR: Ontario Ministry of Natural Resources.

MOE: Ontario Ministry of the Environment/Environment Ontario.

No Net Loss: A working principle by which a department or agency strives to balance unavoidable habitat losses with habitat replacement on a project-by-project basis so that further reductions to Canada's fisheries may be prevented.

Official Plan: A document adopted by a municipal council pursuant to the provisions of the Planning Act which identifies the existing use of land, guides and directs potential land uses and establishes implementation policies within the boundaries of the municipality.

OMB: Ontario Municipal Board

Physiography: A descriptive study of the earth and its natural phenomena, such as climate, surface, etc.

Pier: A structure, usually of open construction, extending out into the water from the shore to serve as a landing place, a recreational facility or other use.

Pile: A long, heavy timber or section of concrete or metal to be driven into the ground or lakebed to provide support or protection.

Protection Works: Non-structural/structural works which are intended to reduce damages caused by flooding, erosion and/or other water related hazards

Reach: A stretch of shoreline having similar physiography, geologic composition, average annual recession rate, flooding characteristics and orientation or aspect to waves.

Regulations: Control of land and water use in accordance with rules designed to accomplish certain goals.

Regulatory Erosion Standard: The approved standard(s) used to define shore land erosion limits, based on recession rates, for regulatory purposes.

Regulatory Flood Standard: The approved standard(s) used to define shore land flood limits for regulatory purposes.

Regulatory Shore Lands: Land, including that covered by water, between the international boundary and the furthest landward limit of the regulatory flood standard, the regulatory erosion standard or the dynamic beach.

Recession Rate: The rate at which a shoreline moves landward, generally due to erosion.

Revetment: A sloped facing of stone, concrete, etc. built to protect an embankment or shore structure against erosion and failure by wave action or currents. The shore protection along St. Marys River Drive and at the Bellevue Marina are both revetments.

Riparian Owner: The owner of land containing or directly abutting a natural lake or water course.

Rip-rap: A protective layer or facing of quarrystone, usually well graded within wide size limit, randomly placed to prevent erosion, scour, or sloughing of an embankment of bluff; also the stone so used. The quarrystone is placed in a layer at least twice the thickness of the 50 percent size, or 1.25 times the thickness of the largest size stone in the gradation.

Sediment Budget: A system accounting for the quantities of littoral transport.

Seiche: An oscillatory motion resulting in alternate high and low levels at each end of a lake that continues after the originating force has ceased.

Sheet Pile: A pile with a generally slender flat cross section to be driven into the ground or lakebed and linked or interlocked with like members to form a vertical wall or bulkhead.

Shore: The area of interface between land and water extending from the lakeward limit of the littoral zone landward to the first major change in terrain.

Shore Reach/Shoreline Reach: Portions of the shoreline containing similar physiographic or biological characteristics and shore dynamics such as like erosion rates, similar flood elevations, etc., and include shore alignment, offshore bathymetry, fetch characteristics, sediment transport rates, flood susceptibility, land use suitability, and environmental similarity.

Shorewall: A structure separating land and water areas, primarily designed to prevent erosion and other damage due to wave action.

SMP: The Sault Ste. Marie Region Conservation Authority Shoreline Management Plan

SSMRCA: Sault Ste. Marie Region Conservation Authority.

Stable Slope: The angle a slope would achieve when toe erosion is absent.

Static Water Level: The elevation that the surface of the water would assume if wind and other atmospheric and/or tidal forces were absent.

Stillwater Level: The elevation that the surface of the water would assume if wind setup and other atmospheric and/or tidal displacements of the water body occurred, but wave action was absent.

Toe Erosion: The erosion which occurs at the toe of bluffs and shoreline protection structures, largely as a result of the continuous removal of earthen material by waves and currents.

Upper River: For the purpose of this SMP the upper river includes the St. Marys River, Lake Superior and shore lands from the compensating works to the northwestern boundary of the planning area at Gros Cap.

Watershed: The area drained by a river or lake system.

Water Table: The upper surface of the zone of soil saturation.

Wave: An oscillatory movement in a body of water which results in an alternate rise and fall of the surface.

Wave climate: The combination of all factors which determine wave characteristics. These factors include bathymetry, fetch distance, wind speed and direction etc.

Wave Uprush: The rush of water up onto the beach or shore following the breaking of a wave; for any given water level the limit of uprush is the point of farthest uprush.

Wetlands: Wetlands (marshes, swamps, bogs and fens) are defined as lands where the water table is at, near or above the land surface long enough each year to support the formation of hydric soils and to support the growth of hydrophytes, as long as other environmental variables are favourable.

100 Year Erosion Limit: 100 times the average annual recession rate measured landward from the first break in slope.

100 Year Flood Level: The peak stillwater level due to the combined occurrences of mean monthly lake levels and wind setup that is equalled or exceeded in 1% of all years. In connecting channels the 100 year flood level is the peak instantaneous stillwater level that is equalled or exceeded in 1% of all years.

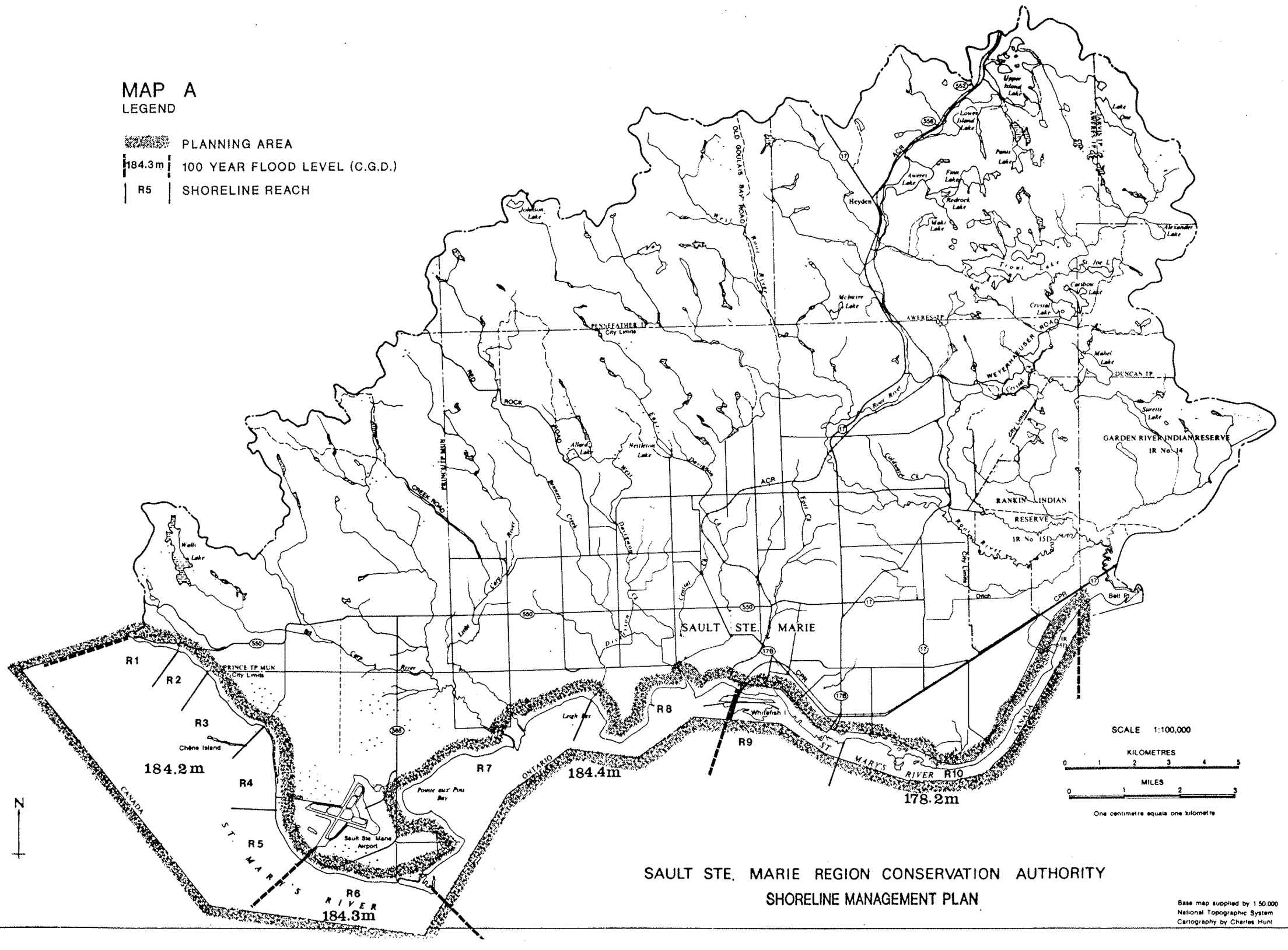
MAP A

LEGEND

PLANNING AREA

184.3m 100 YEAR FLOOD LEVEL (C.G.D.)

R5 SHORELINE REACH



SCALE 1:100,000

KILOMETRES 0 1 2 3 4 5

MILES 0 1 2 3

One centimetre equals one kilometre

N

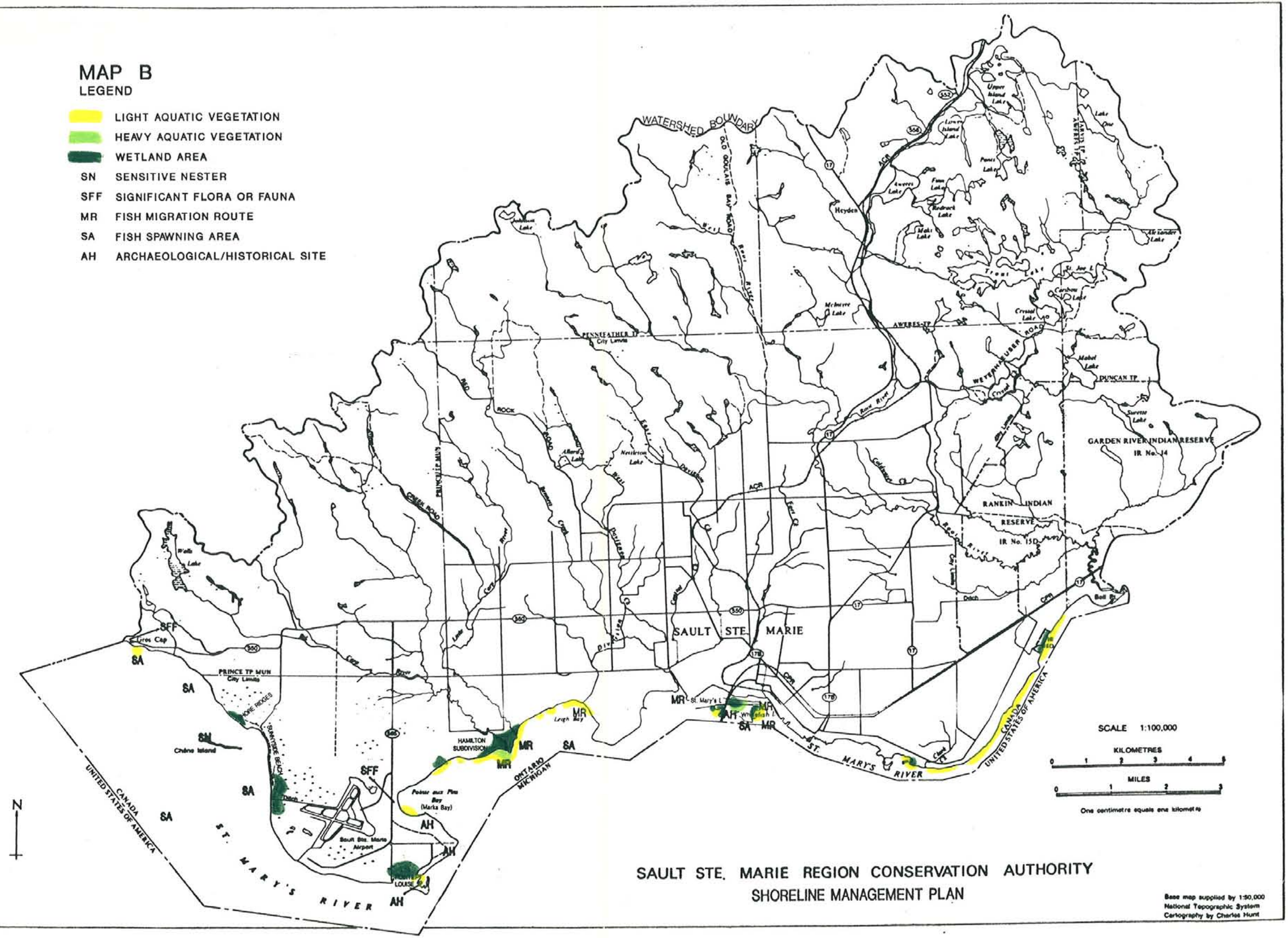
SAULT STE. MARIE REGION CONSERVATION AUTHORITY
SHORELINE MANAGEMENT PLAN

Base map supplied by 1:50,000
National Topographic System
Cartography by Charles Hunt

MAP B

LEGEND

- LIGHT AQUATIC VEGETATION
- HEAVY AQUATIC VEGETATION
- WETLAND AREA
- SN SENSITIVE NESTER
- SFF SIGNIFICANT FLORA OR FAUNA
- MR FISH MIGRATION ROUTE
- SA FISH SPAWNING AREA
- AH ARCHAEOLOGICAL/HISTORICAL SITE



SAULT STE. MARIE REGION CONSERVATION AUTHORITY

SHORELINE MANAGEMENT PLAN

Base map supplied by 1:50,000
National Topographic System
Cartography by Charles Hunt