

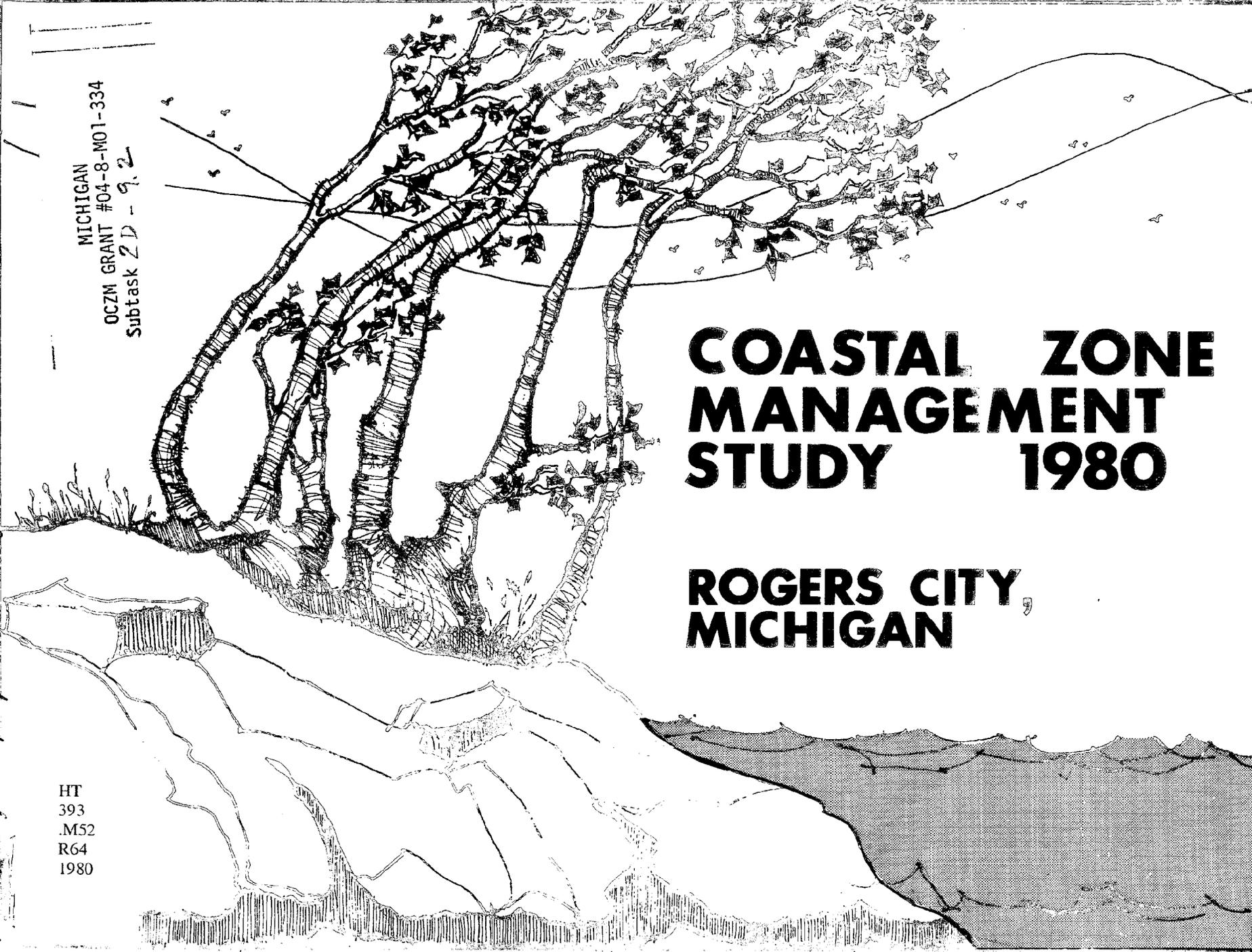
Michigan Department of Natural Resources

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COASTAL ZONE MANAGEMENT STUDY 1980

ROGERS CITY, MICHIGAN



Michigan Department of Natural Resources

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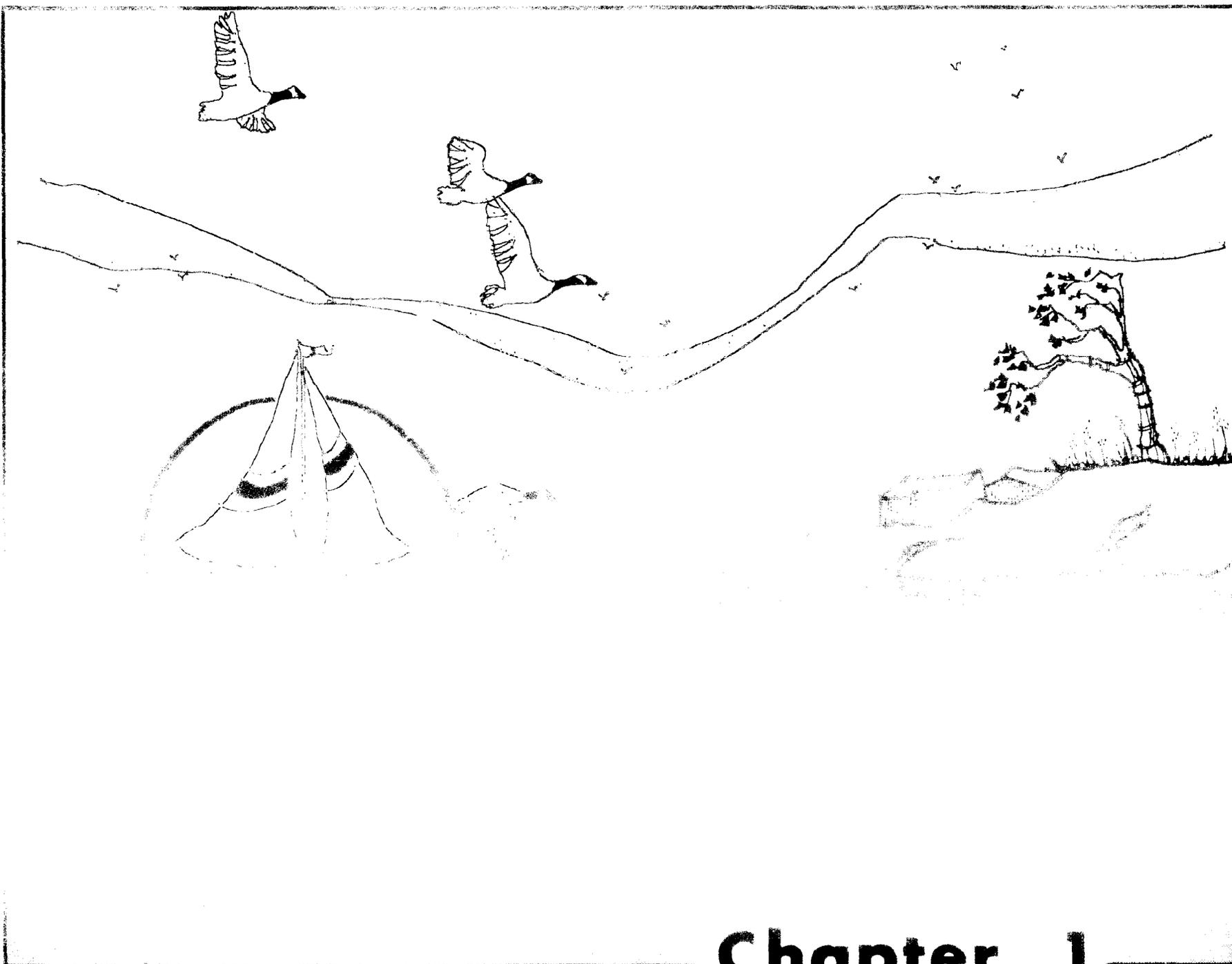
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Rogers City Planning Commission

David Nadolsky - Chairman
Leo Gapczynski
Kenneth Rasche
Edwin Mulka
Frank Copley
Ralph Przybyla

City Manager - James E. Leidlein
Past City Manager - Charles McKee
Mayor - James Stewart
Councilman - Gary Nowak

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Chapter 1

Introduction

THE FEDERAL COASTAL ZONE MANAGEMENT ACT (CZMA)

IN RESPONSE TO THE INTENSE PRESSURES UPON COASTAL AREAS OF THE UNITED STATES, CONGRESS PASSED THE COASTAL ZONE MANAGEMENT ACT (P.L. 92-583). THIS ACT WAS SIGNED INTO LAW IN OCTOBER, 1972. IN JULY OF 1976, THIS LAW WAS SUBSTANTIALLY AMENDED. THE ACT AND THE 1976 AMENDMENTS AFFIRM A NATIONAL INTEREST IN THE EFFECTIVE PROTECTION AND DEVELOPMENT OF COASTAL ZONES AND ENCOURAGE COASTAL ZONE STATES TO IMPLEMENT NATIONAL PROGRAMS FOR MANAGING THEIR COASTAL ZONES.

IN SUMMARY, THE REQUIREMENTS FOR THE PROGRAM ARE THAT A STATE DEVELOP A MANAGEMENT PLAN THAT:

- IDENTIFIES AND EVALUATES THOSE COASTAL RESOURCES RECOGNIZED IN THE ACT THAT REQUIRE MANAGEMENT OR PROTECTION BY THE STATE;
- REEXAMINES EXISTING POLICIES OR DEVELOPS NEW POLICIES FOR MANAGING THESE RESOURCES. THESE POLICIES MUST BE SPECIFIC, COMPREHENSIVE AND ENFORCEABLE, AND MUST PROVIDE AN ADEQUATE DEGREE OF PREDICTABILITY AS TO HOW COASTAL RESOURCES WILL BE MANAGED;

- DETERMINES SPECIFIC USES AND SPECIAL GEOGRAPHIC AREAS THAT ARE TO BE SUBJECT TO THE MANAGEMENT PROGRAM, BASED ON THE NATURE OF IDENTIFIED COASTAL CONCERNS.

THE BASIS FOR MANAGING USES (OR THEIR IMPACTS) AND AREAS SHOULD BE DETERMINED BY RESOURCE CAPABILITY AND SUITABILITY ANALYSES, SOCIO-ECONOMIC CONSIDERATIONS AND PUBLIC PREFERENCES;

- IDENTIFIES THE INLAND AND SEAWARD AREAS SUBJECT TO THE MANAGEMENT PROGRAM;
- PROVIDES FOR THE CONSIDERATION OF THE NATIONAL INTEREST IN THE PLANNING FOR AND SITING OF FACILITIES THAT MEET MORE THAN LOCAL REQUIREMENTS; AND
- INCLUDES SUFFICIENT LEGAL AUTHORITIES AND ORGANIZATIONAL ARRANGEMENTS TO IMPLEMENT THE PROGRAM AND TO INSURE CONFORMANCE TO IT. (U.S. DEPARTMENT OF COMMERCE, JULY, 1978)

IN ARRIVING AT THESE ASPECTS OF THE MANAGEMENT PLAN, STATES ARE OBLIGATED TO FOLLOW AN OPEN PROCESS, INVOLVING THE INTERESTS OF THE GENERAL PUBLIC AND OTHER GOVERNMENTAL AGENCIES AT THE LOCAL, STATE AND FEDERAL LEVELS. WHEN THIS PLAN IS APPROVED,

THE STATE IS THEN ELIGIBLE FOR ANNUAL GRANTS TO IMPLEMENT ITS MANAGEMENT PROGRAM. MICHIGAN IS ONE OF THESE STATES.

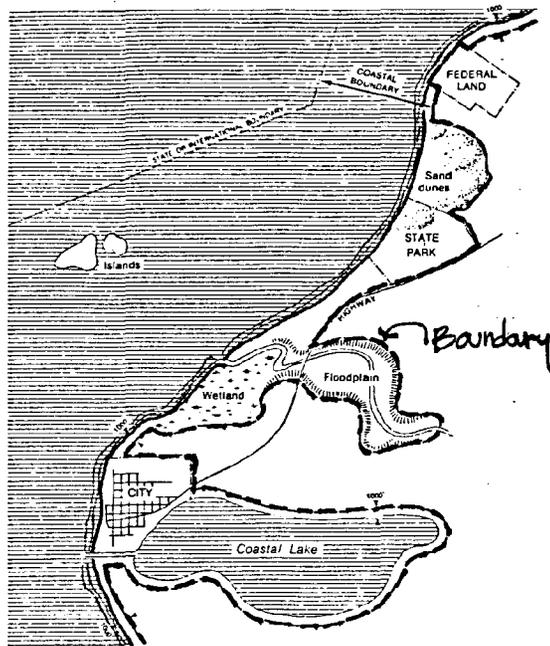
THE MICHIGAN COASTAL ZONE MANAGEMENT PROGRAM

OVER THE PAST FIVE (5) YEARS, WITH EXTENSIVE PUBLIC INVOLVEMENT, MICHIGAN HAS DEVELOPED A MANAGEMENT PROGRAM THAT RELIES ON SPECIFIC STATE STATUTES AND POLICIES DIRECTED TOWARD PROMOTING THE WISE USE AND PROTECTION OF THE RESOURCES CONTAINED WITHIN THE COASTAL AREA. IN ORDER TO IMPLEMENT THE STATE COASTAL POLICIES, THE GOVERNOR HAS DIRECTED THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES TO DEVELOP AND ADMINISTER THE VARIOUS ASPECTS OF THE PROGRAM.

MORE THAN 39,000 SQUARE MILES OF THE GREAT LAKES AND 3,200 MILES OF GREAT LAKES COASTLINE ARE WITHIN MICHIGAN'S BOUNDARIES -- GIVING THE STATE THE LONGEST FRESHWATER COAST IN THE WORLD.

THROUGHOUT HISTORY, THE GREAT LAKES AND THE RESOURCES THEY SUPPORT HAVE BEEN IMPORTANT TO MICHIGAN. FISH, FURS, FERTILE LAND AND LUMBER

EXAMPLE

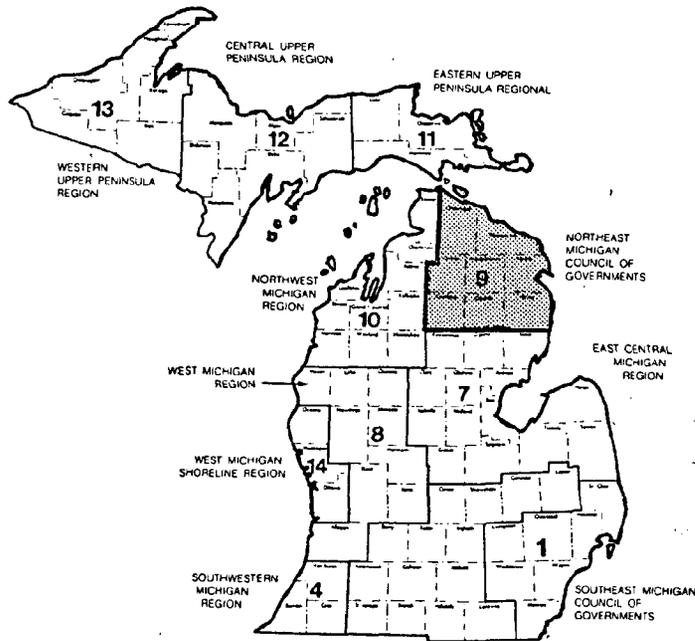


MICHIGAN COASTAL ZONE BOUNDARY

FIRST ATTRACTED SETTLERS WHO BUILT TOWNS ALONG THE COAST AND USED THE GREAT LAKES TO TRANSPORT THEIR HARVESTS TO OTHER PARTS OF THE GROWING NATION. A CENTURY LATER, LOGGERS CHOPPED THEIR WAY THROUGH VIRGIN TIMBER, FLOATING THEIR LOGS TO BOOM TOWNS ALONG THE COAST. LOGGING AND FISHING WERE SOON REPLACED BY MANUFACTURING INDUSTRIES WHICH CONCENTRATED ALONG THE COAST, TO USE THE LAKES FOR SHIPPING AND PROCESSING. AS THE AUTOMOBILE INDUSTRY FLOURISHED, WORKERS TRAVELED AWAY FROM CITIES TO VACATION AT COASTAL BEACHES AND RESORTS. IMPROVED ROADS AND FREEWAYS SHORTENED TRAVEL TIME BETWEEN INDUSTRIALIZED CITIES AND THE COAST, MAKING IT POSSIBLE FOR MORE PEOPLE TO ENJOY SEASONAL OR PERMANENT RESIDENCES ON THE GREAT LAKES.

TODAY, WE CONTINUE TO DEPEND ON THE COAST FOR OUR LIVELIHOOD AND RECREATION. COASTAL LANDS SUPPORT INDUSTRY, RECREATION, RESIDENTIAL AREAS, RESORTS, FORESTS, FARMS AND ORCHARDS, ENERGY AND MINING FACILITIES. COASTAL WATERS SUPPORT COMMERCIAL NAVIGATION, FISHERIES, RECREATION, BOATING, WASTE ASSIMILATION, INDUSTRIAL AND PUBLIC WATER SUPPLIES. (U.S. DEPARTMENT OF COMMERCE, JULY, 1978)

COASTAL CHARACTER OF THE ROGERS CITY REGION



COASTAL REGIONAL AGENCIES

THE FOUR LAKE HURON COUNTIES IN THE NORTHEAST MICHIGAN REGION CONSIST OF ALCONA, ALPENA, CHEBOYGAN AND PRESQUE ISLE. THE LARGER SHORELINE COMMUNITIES INCLUDE THE CITIES OF ALPENA, CHEBOYGAN, HARRISVILLE AND ROGERS CITY. THERE ARE 15 TOWNSHIPS AND ONE VILLAGE ALONG LAKE HURON IN THE REGION. THE NORTHEAST MICHIGAN COAST IS COMPRISED OF ABOUT ONE-THIRD SANDY BEACHES, ONE-THIRD MARSHY WETLANDS AND ONE-THIRD ROCKY OUTCROPS.

BEAUTIFUL SCENIC SITES CAN BE FOUND ALONG THE US-23 HIGHWAY WHICH FOLLOWS THE REGION'S SHORE. ATTRACTIONS IN THE COASTAL AREA INCLUDE THE OLD PRESQUE ISLE LIGHTHOUSE, BESSER NATURAL AREA, MISERY BAY, AND OF COURSE, THE MACKINAW BRIDGE.

NORTHEAST MICHIGAN HAS A STABLE INDUSTRIAL BASE IN SHORELINE QUARRY OPERATIONS AND CEMENT PRODUCTION. THE REGION HAS THE DISTINCTION OF HAVING THE WORLD'S LARGEST CEMENT PLANT, LOCATED NORTH OF ALPENA, AND THE WORLD'S LARGEST LIMESTONE QUARRY, AT ROGERS CITY. QUARRY OPERATIONS, UTILIZING HIGH QUALITY METALLURGICAL AND CHEMICAL GRADE LIMESTONE DEPOSITS,

ARE LOCATED AT THREE SITES ALONG THE COAST BETWEEN ALPENA AND ROGERS CITY. THERE IS CONSIDERABLE ACREAGE OF PROVEN LIMESTONE RESERVES OF SIMILAR QUALITY CONTIGUOUS TO THE SHORELINE WHICH ARE BEING HELD FOR FUTURE DEVELOPMENT. ALL OF THESE INDUSTRIAL ACTIVITIES ARE COMPLIMENTED BY GREAT LAKES SHIPPING AND PORT FACILITIES.

NORTHEAST MICHIGAN ALSO OFFERS MANY RECREATIONAL OPPORTUNITIES. TOURISM PLAYS AN IMPORTANT ROLE IN THE ECONOMIC STRUCTURE OF THE ENTIRE REGION. THE THREE STATE PARKS OF HARRISVILLE, P.H. HOEFT AND CHEBOYGAN ARE MAJOR RECREATIONAL FACILITIES LOCATED ALONG THE SHORES. IN ADDITION, THE THUNDER BAY BOTTOMLANDS, OFF ALPENA, HAVE ONE OF THE HIGHEST CONCENTRATIONS OF SHIPWRECKS ON THE GREAT LAKES BOTTOMLANDS.

NEARLY 50% OF LAKE HURON'S COAST IS IN FOREST LAND, AGRICULTURE OR UNDEVELOPED USE. THE OTHER TYPE OF PREDOMINANT USE IS RESIDENTIAL DEVELOPMENT ALONG THE LAKE'S 634 MILES OF COAST. SPECIAL SHORELAND AREAS, VALUABLE TO THE PRESERVATION OF GREAT LAKES FISH AND WILDLIFE SPECIES, COMPRISE MORE THAN 345 MILES OF SHORELINE. (STATE OF MICHIGAN COASTAL

MANAGEMENT PROGRAM AND FINAL ENVIRONMENTAL IMPACT STATEMENT, P. 22).

THIS REGION OF THE LAKE HURON COAST CAN BE CHARACTERIZED GENERALLY AS WETLANDS, ROCKY BEACHES AND LOW PLAINS. LOW PLAINS ARE THE MOST COMMON SHORELAND TYPE. THEY ARE DISTINGUISHED PRIMARILY BY RELATIVELY LOW ELEVATIONS ONLY A FEW FEET ABOVE LAKE LEVEL AND FLAT OR GENTLY ROLLING TOPOGRAPHY. LOW PLAINS MAY BE COMPOSED OF CLAY, LOOSE SAND, BEDROCK AND MANMADE LANDFILLS. THEY MAY, THEREFORE, BE DESCRIBED ACCORDING TO THEIR VARIABLE ERODIBILITY, DRAINAGE CAPACITY AND SUITABILITY FOR DEVELOPMENT AS EITHER ERODIBLE (SAND, CLAY, ETC) LOW PLAINS, UNERODIBLE (ROCKY) LOW PLAINS, OR MAN-MADE LOW PLAINS SUCH AS LANDFILLS.

THE COASTAL CHARACTER OF ROGERS CITY

ROGERS CITY IS LOCATED ON LAKE HURON IN PRESQUE ISLE COUNTY AND SERVES AS THE COUNTY SEAT. IT IS APPROXIMATELY 37 MILES NORTHWEST OF ALPENA AND 40 MILES SOUTHEAST OF CHEBOYGAN ON US-23,

A SCENIC LAKESHORE HIGHWAY. FURTHERMORE, ROGERS CITY IS WITHIN A 500-MILE RADIUS OF NEARLY 20% OF THE NATION'S POPULATION. NEITHER THE COUNTY NOR ITS SHORELINE, INCLUDING ROGERS CITY'S SHORELINE, HAS YET BEEN TAPPED WITH RESPECT TO ITS POTENTIAL USE DEVELOPMENT. THE FUTURE OF THIS AREA AND ITS SHORELINE IS DEPENDENT UPON CONSTRUCTIVE AND IMAGINATIVE PLANNING TO PRESERVE AND ACCENT THOSE NATURAL RESOURCES OF CLEAN WATER, PURE AIR AND NATURAL SCENIC ATTRACTIONS WHICH ARE SO MUCH A PART OF ROGERS CITY'S HERITAGE.

THE CITY DERIVES A CONSIDERABLE VALUE FROM THIS COASTAL RESOURCE. THERE ARE APPROXIMATELY THREE (3) MILES OF SHORELINE WITHIN THE CITY LIMITS OF ROGERS CITY AND ONE-THIRD OF THIS TOTAL SHORELINE HAS BEEN PURCHASED FOR THE GENERAL USE AND ENJOYMENT OF THE PUBLIC. THE CHARACTER OF THIS PUBLICLY OWNED SHORELINE IS QUITE DIVERSE. THE NORTHERLY PORTIONS OF THIS PUBLICLY OWNED LAND ARE RICH IN COARSE SANDY BEACHES OF THE LAKE HURON LOW PLAIN DUNES, IN ASSOCIATION WITH A WEALTH OF VEGETATION. THE VEGETATION VARIES FROM MATURE CANOPY HARDWOOD AND EVERGREEN SPECIES THROUGH THE VARIOUS STAGES OF TRANSITION OF INTERMEDIATE

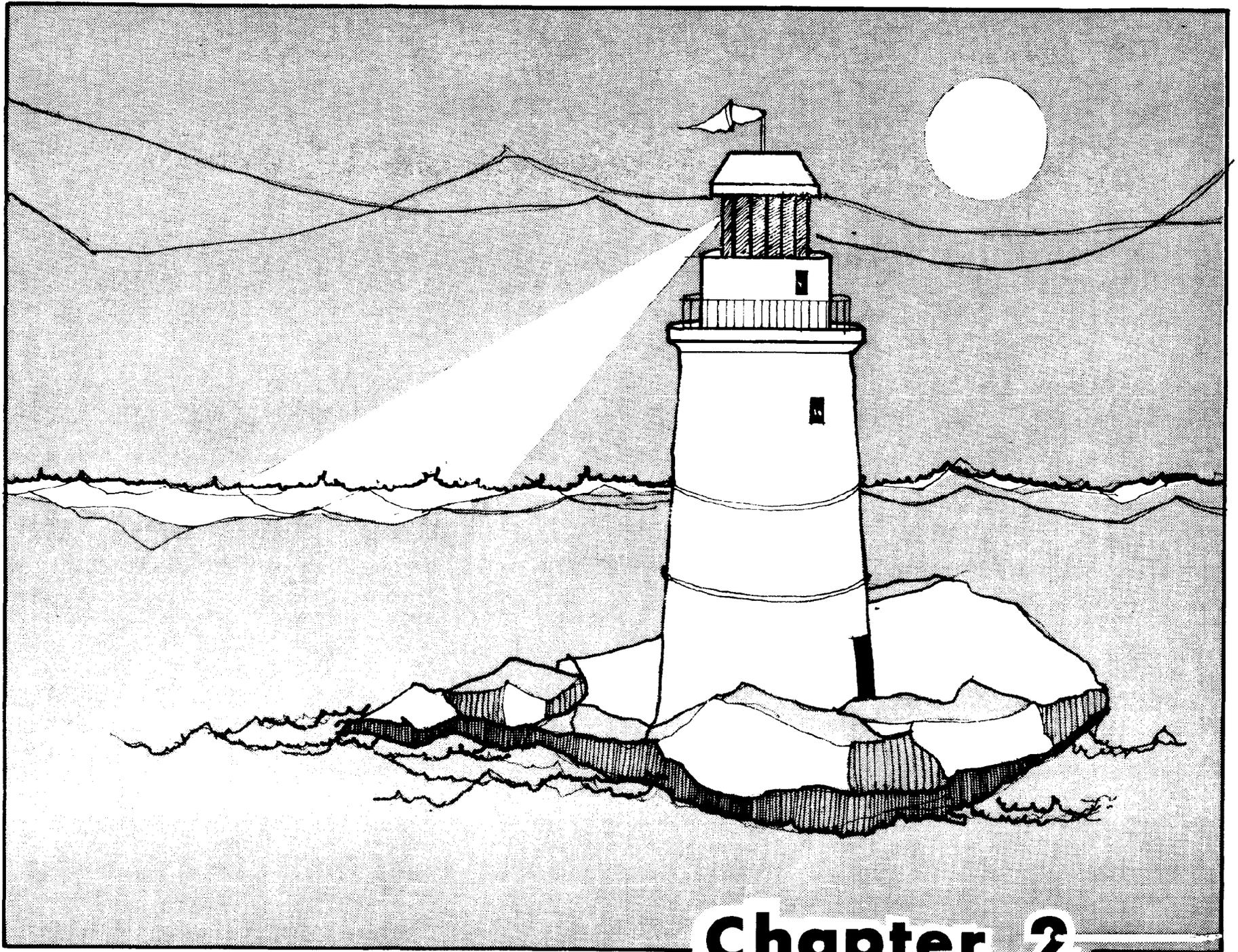
AND LOW LEVEL SPECIES TO THE NON-VEGETATED SHORELINE. THIS RESOURCE IS SELDOM FOUND IN SUCH A WELL-PRESERVED STATE WITHIN A CITY.

THE REMAINING PUBLICLY OWNED COASTAL EDGE RANGES FROM NONDEVELOPED, OPEN LOW PLAIN SPARSELY VEGETATED ROCKY BEACH TO A HIGHLY DEVELOPED MARINA AND LAKESIDE PARK. THERE IS ALSO MAN-MADE LAND WITH ONLY GROUND COVER VEGETATION AND TWO LIGHTLY DEVELOPED LITTLE LEAGUE BASEBALL FIELDS. THE REMAINING PORTION OF THIS PUBLICLY OWNED LAND SUPPORTS THE MUNICIPAL WASTEWATER TREATMENT FACILITY.

THESE PUBLICLY OWNED PARCELS OF ROGERS CITY'S COASTLINE HAVE BEEN DIVIDED INTO SEVEN SEPARATE SECTIONS FOR THE PURPOSES OF ANALYSIS, PLANNING, DESIGN AND DEVELOPMENT. EACH PARCEL HOLDS INDIVIDUAL SIGNIFICANCE FOR POTENTIAL USE. THERE WERE ORIGINALLY EIGHT PARCELS TO BE STUDIED; HOWEVER, BY MUTUAL AGREEMENT BETWEEN ROGERS CITY AND THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES, SITE 4 WAS OMITTED. SITE 4 WAS EXTREMELY SMALL AND HAD NO PHYSICAL CONTACT WITH THE SHORELINE OR THE COASTAL ZONE. IN ORDER NOT TO CONFUSE

THE PUBLIC AND INTERRUPT THE ORIGINAL APPLICATION AND STUDY PROCESS, THE SITES ARE STILL NUMBERED 1 THROUGH 8 WITH SITE 4 BEING OMITTED.

THE PURPOSE OF THIS PLANNING STUDY IS TO ASSIST ROGERS CITY AND ITS CITIZENS IN RECOGNIZING THEIR COASTAL POTENTIAL AND PLANNING FOR ITS PROPER USE. MOST IMPORTANTLY, HOWEVER, THIS DOCUMENT MAY BE USED AS A CAREFULLY STRUCTURED ACTION PLAN FOR THE PRESERVATION, PROTECTION AND DEVELOPMENT OF THEIR COASTAL ZONE RESOURCES.



Chapter 2

Inventory & Analysis

THIS CHAPTER WILL INCLUDE AN INVENTORY AND ANALYSIS OF THE REGION, OF ROGERS CITY, AND OF EACH SITE. THE SITES SELECTED FOR THIS STUDY ARE ALL PARCELS OF LAND OWNED BY THE CITY. THEY ARE NUMBERED 1 THROUGH 8 EXCEPT THAT SITE 4 HAS BEEN OMITTED FROM THE STUDY.

REGIONAL INVENTORY AND ANALYSIS

THIS SUMMARY OF THE 8-COUNTY REGION IN WHICH ROGERS CITY IS LOCATED HAS BEEN GREATLY FACILITATED BY A REPORT ENTITLED REGIONAL RECREATION RESOURCES STUDY, DEVELOPED BY THE NORTHEAST MICHIGAN COUNCIL OF GOVERNMENTS (NEMCOG) IN JUNE 1976. INFORMATION ON THE GENERAL REGIONAL CHARACTER, TOPOGRAPHY, HYDROLOGY, GEOLOGY AND NATURAL AND MAN-MADE FEATURES HAS BEEN DRAWN FROM THAT REPORT TO CREATE A BACKGROUND FOR THE FOLLOWING ANALYSIS.

REGIONAL CHARACTER

THE NORTHEAST REGION OF MICHIGAN'S LOWER PENINSULA INCLUDES THE EIGHT COUNTIES OF ALCONA, ALPENA, CHEBOYGAN, CRAWFORD, MONTMORENCY, OSCODA, OTSEGO AND PRESQUE ISLE. THE AREA'S LOW POPULATION DENSITY, EXTENSIVE NETWORK OF INLAND LAKES AND STREAMS, 192 MILES OF LAKE HURON SHORELINE AND EXTENSIVE (74% OF THE LAND AREA) FOREST COVER COMBINE TO OFFER A HIGH RECREATION POTENTIAL. SOUND MANAGEMENT WILL BE REQUIRED TO DEVELOP THIS POTENTIAL TO MEET FUTURE DEMANDS.

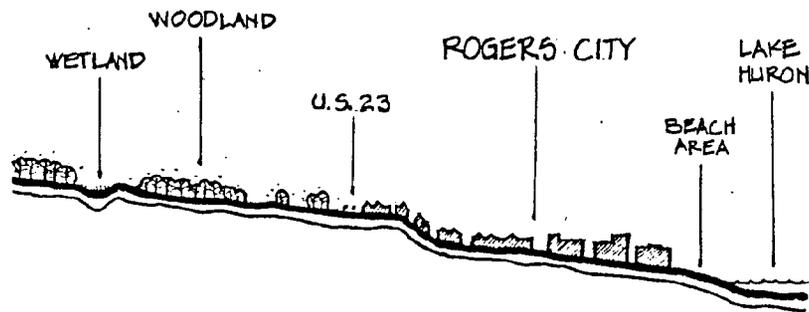
HISTORY

THE REGION FELL WITHIN THE SPHERE OF FRENCH INFLUENCE DURING THE FUR TRADING ERA AT FORT MICHILIMACKINAC. HOWEVER, THE AREA WAS NOT SETTLED DURING THAT PERIOD NOR UNDER THE SUBSEQUENT BRITISH CONTROL. THE LUMBERING INDUSTRY BROUGHT DEVELOPMENT AND THEN WAS REPLACED BY AGRICULTURE AND LIVESTOCK OPERATIONS IN THE EARLY 1900'S. THESE ACTIVITIES DECLINED IN THE 1930'S DUE TO SANDY SOILS AND SHORT GROWING SEASONS. WITH

FOREST RECLAIMING VACANT AGRICULTURAL LANDS AND ABUNDANT WATERWAYS AVAILABLE, THE WILDLIFE POPULATION EXPLODED. AS TRANSPORTATION TO THE AREA BECAME EASIER, NEW ECONOMIC INTERESTS DEVELOPED -- RECREATION AND TOURISM.

TOPOGRAPHY

THE REGION'S TOPOGRAPHY SHOWS A COMBINATION OF GLACIATED LAND FORMS. FLAT AND GENTLY ROLLING AREAS WERE FORMED AS OUTWASH, TILL, OR LAKE BED PLAINS, WHILE HILLS ARE MOSTLY MORAINIC DEPOSITS. ALONG THE LAKE HURON SHORELINE, TOPOGRAPHY IS NEARLY FLAT AND ABOUT 600 FEET ABOVE SEA LEVEL. THE ELEVATION RISES FURTHER INLAND, FORMING UN-DULATING SLOPES AND ROUNDED HILLS, WITH CONSIDER-ABLE RELIEF ALONG THE WESTERN EDGE OF THE REGION.



EXAGGERATED SECTION OF ROGERS CITY AREA

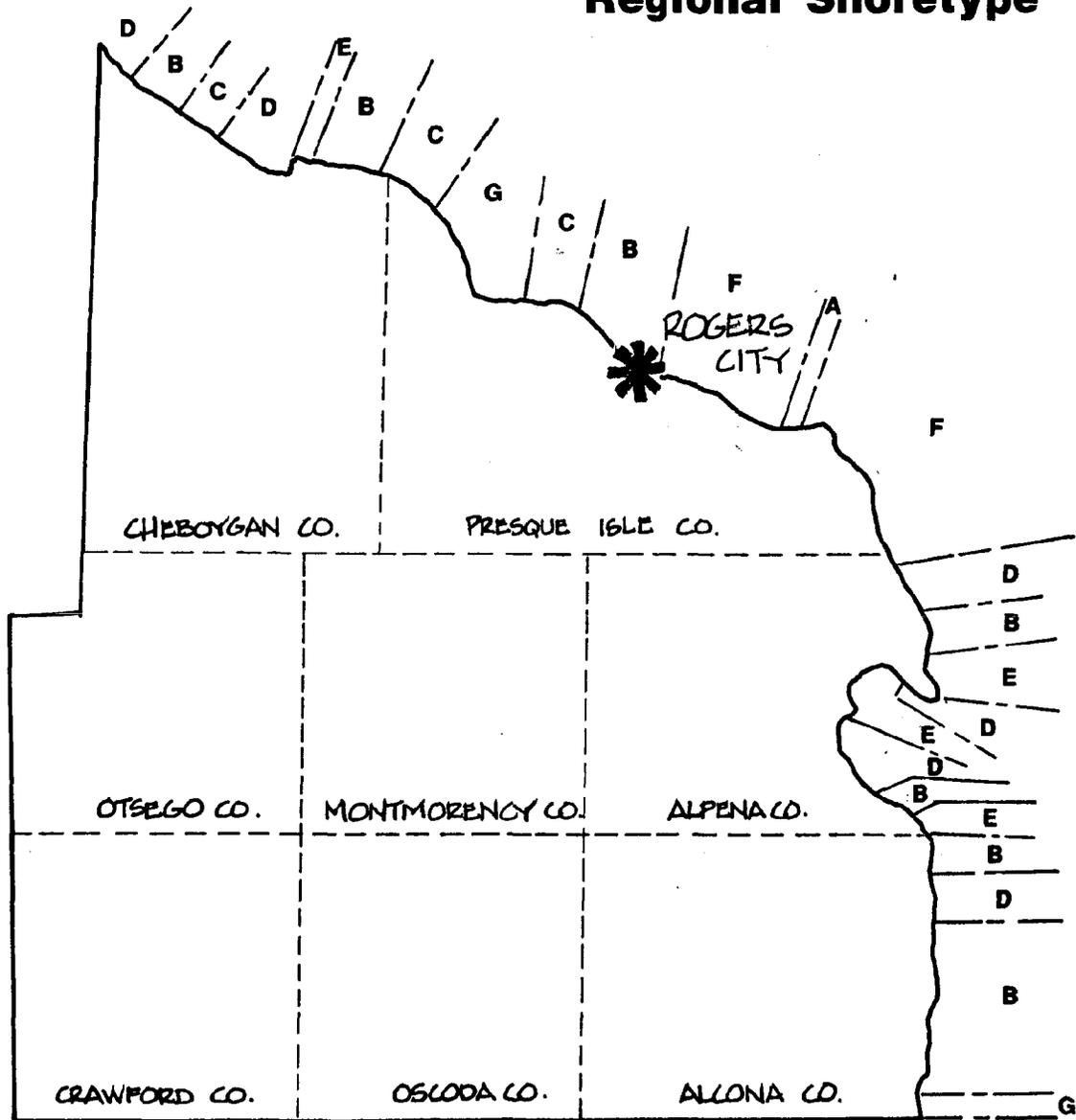
SHORELINE CHARACTERISTICS

THE REGION HAS A TOTAL OF 191.6 MILES OF LAKE HURON SHORELINE. THE VARIETY OF SHORE TYPES -- RANGING FROM SAND BEACHES AND DUNES TO MARSHES

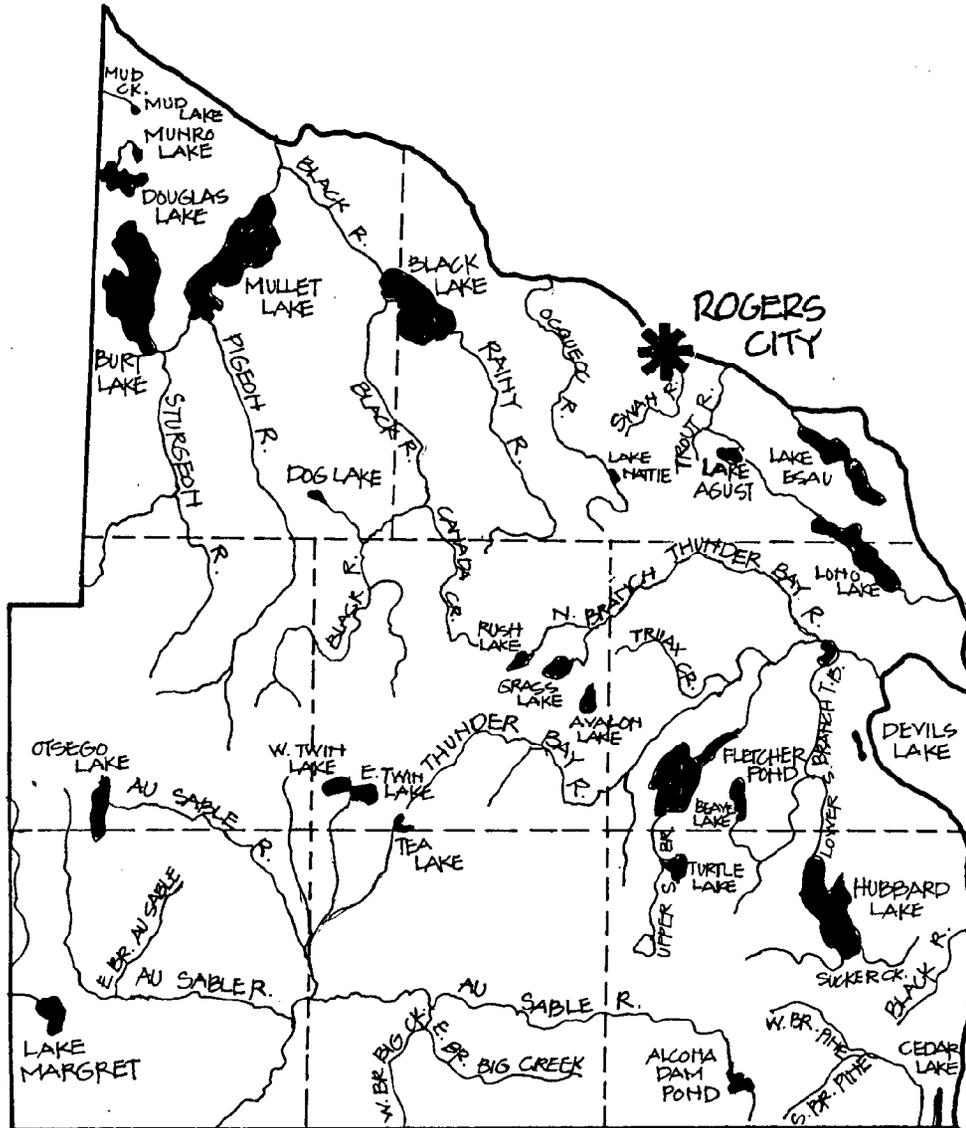
Regional Shoretype

Classification

- A - low sand dunes
- B - sandy beach ridge
- C - low bluff - sand and gravel
(under 30 feet high)
- D - swamp - low and wet
- E - marsh - wet sand
- F - rock outcrop
- G - low dry level sand plain
backland sand beach



Regional Lakes and Streams



AND ROCK OUTCROPS -- CREATES AESTHETIC AND RECREATIONAL INTEREST. HOWEVER, PUBLIC ACCESS IS MINIMAL. PRIVATE OWNERSHIP HAS CLAIMED 90% OF SHORELINE PROPERTY, EITHER IN THE FORM OF RESIDENTIAL DEVELOPMENTS OR QUARRY OPERATIONS.

AT PRESENT, LAKE HURON SERVES A VITAL FUNCTION AS AN EXCELLENT SOURCE OF MUNICIPAL WATER SUPPLY. THE NEXT 20 YEARS WILL BRING INTENSIVE PRESSURE TO UTILIZE THE UNDEVELOPED STRETCHES OF SHORE. THE STATE AND LOCAL REGULATIONS MUST BE FULLY EMPLOYED AS TOOLS TO PRESERVE THE QUALITY OF THE WATER.

THE AUSABLE, CHEBOYGAN AND THUNDER BAY RIVER BASINS ARE THE MAJOR DRAINAGE SYSTEMS FOR THE REGION. GENERALLY, WATER QUALITY IN THESE BASINS IS CLASSIFIED AS GOOD, WITH OCCASIONAL EXCEPTIONS DOWNSTREAM FROM MUNICIPAL DISCHARGES.

GEOLOGY

THE PREDOMINANT LAND FORM WITHIN THE REGION IS LEVEL TO GENTLY ROLLING RELIEF, WITH WELL-DEFINED,

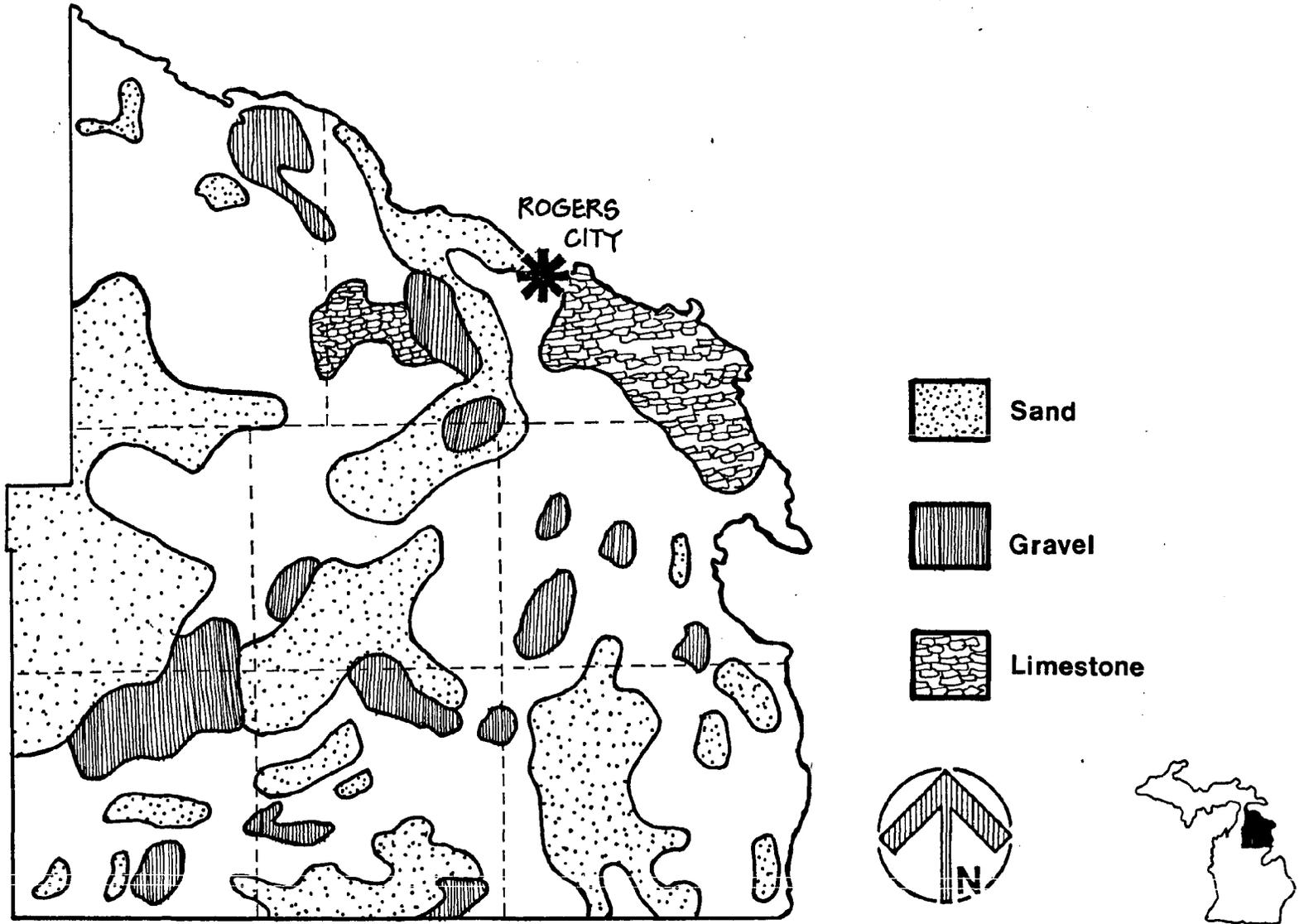
NEARLY FLAT PLAINS ADJACENT TO THE LAKESHORE. THE GEOLOGICAL SUBSTRUCTURE CONSISTS OF DEVONIAN ERA LIMESTONE BEDROCK, WITH OUTCROPS IN THE NORTHERN COUNTIES. THE SOUTHERN PORTION OF THE REGION IS COMPOSED OF MISSISSIPPIAN ERA ROCK WITH IRREGULAR BANDS OF BEDROCK DEPOSITS BURIED BENEATH GLACIAL DRIFT.

MINERAL RESOURCES

DUE TO ITS GLACIAL ORIGINS, THE AREA SHOWS A WIDE VARIETY OF MINERAL RESOURCES. SIZE AND TYPE OF SOIL PARTICLES AND TYPES AND QUANTITIES OF AVAILABLE COMPOUNDS OCCUR IN A WIDE RANGE.

LARGE SAND DEPOSITS AND LIMITED GRAVEL DEPOSITS OCCUR THROUGHOUT THE EIGHT COUNTIES. MAJOR LIMESTONE BEDS OCCUR IN THE EASTERN SIDE. THESE FORMATIONS PROVIDE AN IMPORTANT ECONOMIC RESOURCE FOR THE AREA, AND SHOULD CONTINUE TO DO SO FOR MANY YEARS. OIL AND GAS FIELDS ARE BEING INVESTIGATED AND MAY CONTRIBUTE TO THE REGIONAL ECONOMY IN THE FUTURE.

General Location of Mineral Deposits In Northeast Michigan



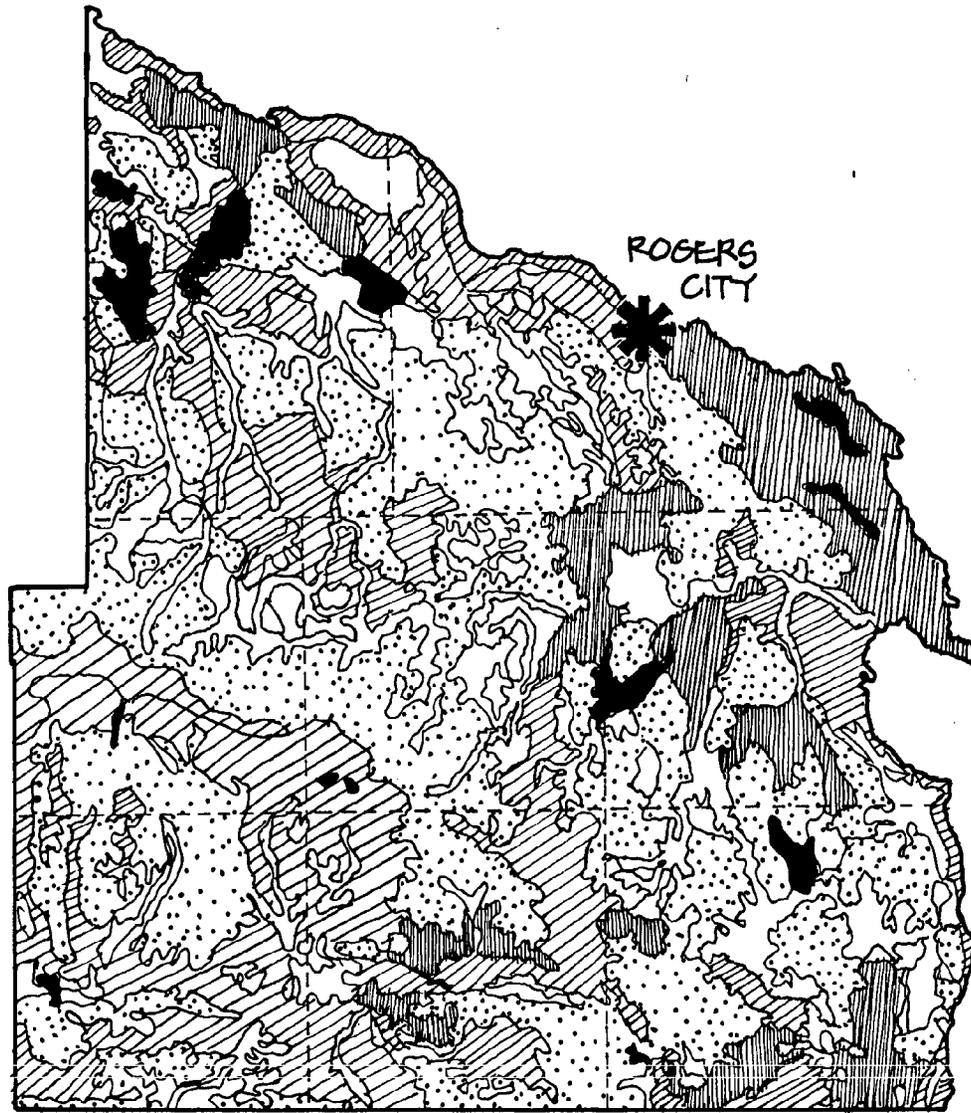
SOILS

THE GEOLOGICAL HISTORY OF GLACIAL DEPOSITS IN THE REGION GIVES RISE TO A PRONOUNCED DEMARCATION IN SOIL TYPES. THE EASTERN PORTION OF THE REGION EXHIBITS EXTENSIVE LIMESTONE BEDROCK DEPOSITS NEAR THE SURFACE, WITH AN OVERBURDEN OF COARSE, BOULDERY DRIFT. ALPENA-SUMMERVILLE-RUSE IS THE MOST PREVALENT SOIL ASSOCIATION. FARTHER INLAND, THE VARIABILITY IN TEXTURE AND DRAINAGE CHARACTERISTICS INCREASES. HEAVIER LOAMY SOILS ARE ABUNDANT, SUPPORTING AGRICULTURAL PRODUCTIVITY. THE LEELANAU-EMMET, ONAWAY-EMMET AND KALKASKA-LEELANAU ASSOCIATIONS OCCUR MOST FREQUENTLY.

THE SOIL CONSERVATION SERVICE HAS RATED SOILS ACCORDING TO THE DEGREE OF LIMITATION TO VARIOUS DEVELOPMENT TYPE USES. SOME OF THE ELEMENTS CONSIDERED IN MAKING THESE RATINGS WERE HIGH SEASONAL WATER TABLE, BEARING CAPACITY FOR SOILS IN MOIST OR WET CONDITIONS, SUITABILITY FOR ON-SITE DISPOSAL UNITS AND FLOODING HAZARDS.

FOUR DEGREES OF LIMITATIONS FOR URBAN USE WERE USED IN RATING EACH SOIL TYPE. THESE ARE DESCRIBED BELOW:

Limitations on Urban Development



-  Slight limitations - Relatively free from limitations. Those that exist can easily be overcome.
-  Moderate limitations - These need to be recognized, but can be overcome with wise management and site design.
-  Severe limitations - These are usually important enough to make urban-type questionable.
-  Very severe limitations - Extreme measures are required. Usage is generally unsound and impractical.



SLIGHT LIMITATIONS - RELATIVELY FREE FROM LIMITATIONS. THOSE THAT EXIST CAN EASILY BE OVERCOME.

MODERATE LIMITATIONS - THESE NEED TO BE RECOGNIZED BUT CAN BE OVERCOME WITH WISE MANAGEMENT AND SITE DESIGN.

SEVERE LIMITATIONS - THESE ARE USUALLY IMPORTANT ENOUGH TO MAKE URBAN-TYPE USE QUESTIONABLE.

VERY SEVERE LIMITATIONS - EXTREME MEASURES ARE REQUIRED. USAGE IS GENERALLY UNSOUND AND IMPRACTICAL.

FORESTS

FOREST LANDS COMPRISE 74% OF THE REGION, WITH ALMOST HALF OF THAT IN PUBLIC OWNERSHIP. MOST OF THE FORESTS ARE CLASSIFIED AS SECOND AND THIRD GROWTH WITH MAPLE-BEECH AND ASPEN-BIRCH AND PINE BEING THE PREDOMINANT TYPES. THE FOREST PRODUCTS INDUSTRY HARVESTS THIS LOCAL RESOURCE

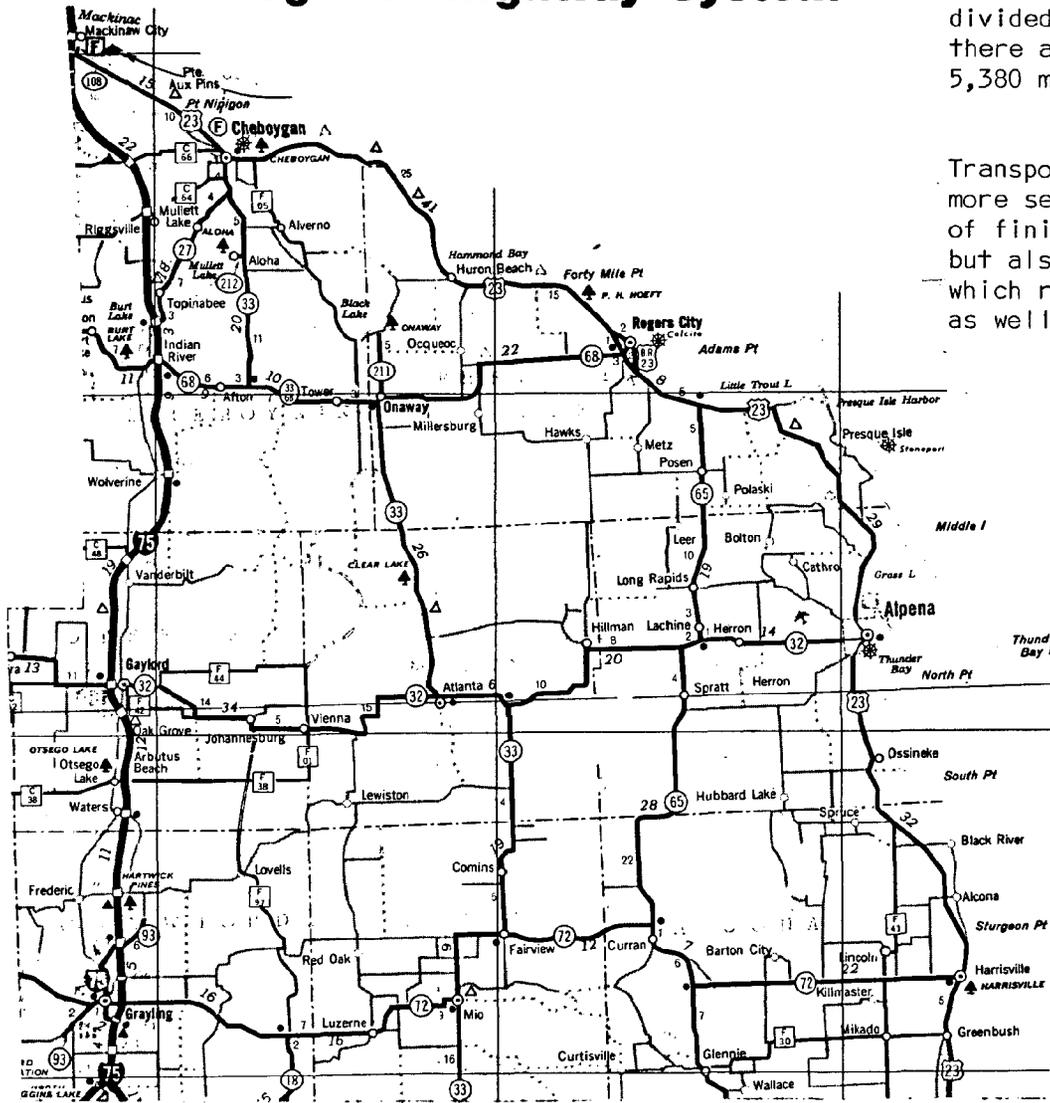
EXTENSIVELY, UTILIZING IT FOR LUMBER AND PLYWOOD PRODUCTION AND THE MANUFACTURE OF PAPER AND ALLIED PRODUCTS.

THIS LARGE ACREAGE AND WIDE VARIETY OF AREAS OFFERS EXCELLENT OPPORTUNITY FOR DEVELOPMENT OF RECREATIONAL FACILITIES TO MEET A GROWING DEMAND. CAMPING, HUNTING, SCENIC TOURS AND BUILDING OF VACATION HOMES ARE INCREASINGLY POPULAR FOREST-RELATED ACTIVITIES THAT WILL REQUIRE PLANNING AND MANAGEMENT TO PRESERVE THE REGION'S RESOURCES.

WILDLIFE

FOREST MANAGEMENT AND WILDLIFE BALANCE ARE PRACTICED BY THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES TO MAINTAIN A HEALTHY AND DIVERSE WILDLIFE POPULATION. WITH VARIED AND EXTENSIVE HABITATS AVAILABLE, THE REGION MAINTAINS THE USUAL WILDLIFE AS WELL AS A SIGNIFICANT NUMBER OF UNUSUAL SPECIES, INCLUDING THE KIRTLAND WARBLER, EAGLES, WILD TURKEYS AND SANDHILL CRANES. THE MANY STREAMS IN THE AREA SUPPORT SALMON OR TROUT, OR BOTH.

Regional Highway System



There are 94 miles of freeway and 4 miles of other divided highways in the region. In addition, there are 530 miles of non-divided highways and 5,380 miles of secondary roads.

Transportation has been identified as one of the more serious deficiencies, not only for shipping of finished goods to the southern urban markets but also for the recreation-tourism business which requires an expansion of freeway development as well as other major highways.



TRANSPORTATION

AIR TRANSPORTATION SERVES INDUSTRIAL AND COMMERCIAL NEEDS AS WELL AS THE RECREATION-TOURISM BUSINESS. ROGERS CITY, AS WELL AS SEVERAL OTHER CITIES IN THE REGION, HAS AN AIRPORT.

RAILROAD PASSENGER SERVICE IS NO LONGER MAINTAINED BUT FREIGHT SERVICE IS PROVIDED BY THE DETROIT AND MACKINAC RAILWAY. THE TWO LINES IN THE AREA SERVE THE REGION'S INDUSTRIES, BRINGING IN COAL AND CONSTRUCTION MATERIALS AND CARRYING OUT LIMESTONE, GRAVEL, CLAY, CEMENT AND FOREST PRODUCTS.

PRIMARY HIGHWAY ACCESS FROM THE MORE HEAVILY POPULATED AREAS OF THE STATE IS PROVIDED BY INTERSTATE 75 AND STATE ROUTE 68. U.S. ROUTE 23 PROVIDES A SCENIC COASTAL DRIVE.

WATERWAYS

THE REGION HAS GOOD PORT FACILITIES SERVICING BOTH COMMERCIAL AND PLEASURE BOATS. EXTENSIVE PRIVATELY OWNED FACILITIES ARE MAINTAINED FOR

SHIPPING LIMESTONE AND CEMENT PRODUCTS. A NUMBER OF HARBORS OF REFUGE SERVE RECREATIONAL BOATERS. BOTH TYPES OF FACILITIES SERVE PRESENT NEEDS SATISFACTORILY BUT ARE NOT ADEQUATE TO MEET INCREASED DEMAND IN THE FUTURE. INLAND WATER SYSTEMS SERVE A NUMBER OF RECREATIONAL PURPOSES BUT HAVE NOT BEEN USED FOR COMMERCIAL ACTIVITIES SINCE THE LUMBERING ERA.

THE COMMUNITY OF ROGERS CITY

HISTORY.

IN 1840, THE PRESQUE ISLE COUNTY AREA WAS SURVEYED AND A YEAR LATER THE AREA WAS ATTACHED TO MACKINAC COUNTY. IN 1853, IT WAS TRANSFERRED TO CHEBOYGAN COUNTY, AND THEN IN 1858 IT WAS ANNEXED TO ALPENA COUNTY. NOT UNTIL 1871 WAS PRESQUE ISLE COUNTY ITSELF ORGANIZED. PRESQUE ISLE IS FRENCH FOR "ALMOST AN ISLAND", REFERRING TO THE NARROW PENINSULA WHERE THE TOWN OF PRESQUE ISLE IS LOCATED.

LUMBERING BEGAN IN THE AREA ABOUT 1878 WITH THE CUTTING OF PINE FORESTS. ABOUT 1900, THE PINE FORESTS WERE EXHAUSTED AND THE NEXT THIRTY YEARS WERE SPENT LUMBERING THE HARDWOODS AND MARSH TIMBER. AGRICULTURAL SETTLEMENT BEGAN DURING THIS PERIOD, BEING PRIMARILY ON THE LANDS FORMERLY OCCUPIED BY THE HARDWOOD FORESTS. THE FIRST CROPS CONSISTED OF HAY, OATS, POTATOES, WHEAT, CORN AND LIVESTOCK.

ROGERS CITY WAS FIRST INCORPORATED AS A VILLAGE IN 1877. IN 1944, IT INCORPORATED AS A "HOME RULE" CITY.

POPULATION

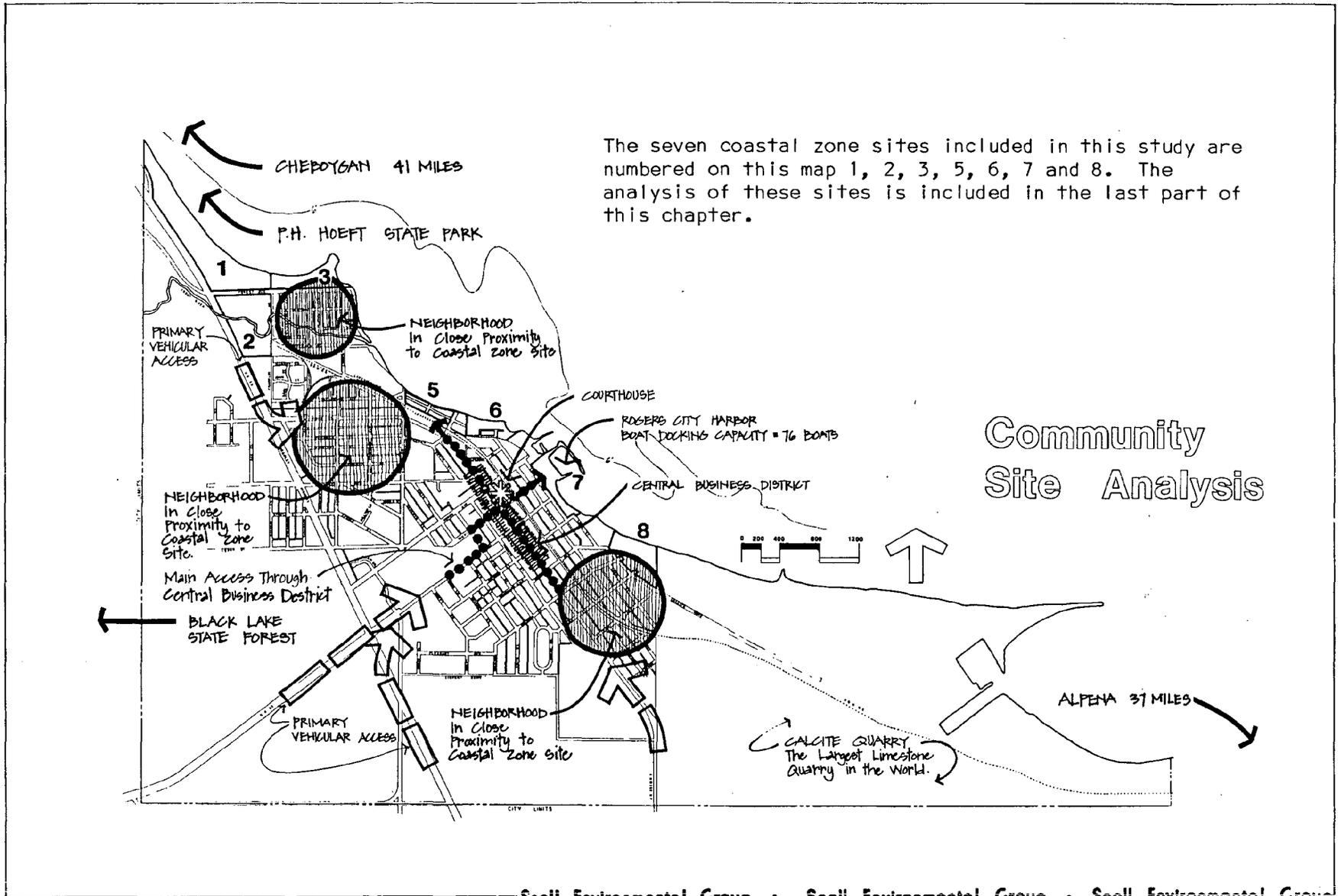
THE 1978 POPULATION OF ROGERS CITY WAS ESTIMATED TO BE 4,800 PERSONS. THIS IS A 12% INCREASE ABOVE THE 1970 POPULATION OF 4,275. THE POPULATION BY THE YEAR 2000 IS PROJECTED AT 6,000, A 40% INCREASE.

HOUSING FOR THE 4,800 PLUS RESIDENTS OF ROGERS CITY IS RELATIVELY OLDER AND OF LOWER VALUE THAN

THE STATE AVERAGE. HOWEVER, IT IS MORE GENERALLY OWNER-OCCUPIED THAN IS THE AVERAGE FOR THE REST OF THE STATE.

CLIMATE

THE CLIMATE OF ROGERS CITY IS MODERATED BY LAKE HURON. THE AVERAGE ANNUAL MEAN TEMPERATURE IS 42.5°F. THE JANUARY AVERAGE IS 20.6°F AND THE JULY AVERAGE IS 68.6°F. THE AVERAGE PRECIPITATION AT ROGERS CITY IS 31.52 INCHES. THE AVERAGE SNOWFALL IS 59.5 INCHES. THE DOMINANT WINDS ARE FROM THE EAST AND NORTHEAST IN THE SUMMER MONTHS AND FROM THE NORTHWEST AND WEST IN THE WINTER. THE GROWING SEASON IS ABOUT 100 DAYS INLAND AND 136 DAYS ALONG LAKE HURON WITH THE LAST KILLING FROST IN EARLY JUNE AND THE EARLIEST KILLING FROST IN THE MIDDLE OF SEPTEMBER. THE HIGHEST AND LOWEST TEMPERATURES RECORDED WERE 107°F AND MINUS 46°F. INLAND WEATHER BUREAU STATIONS SHOW WIDER VARIATION THAN DOES THE ROGERS CITY AREA.



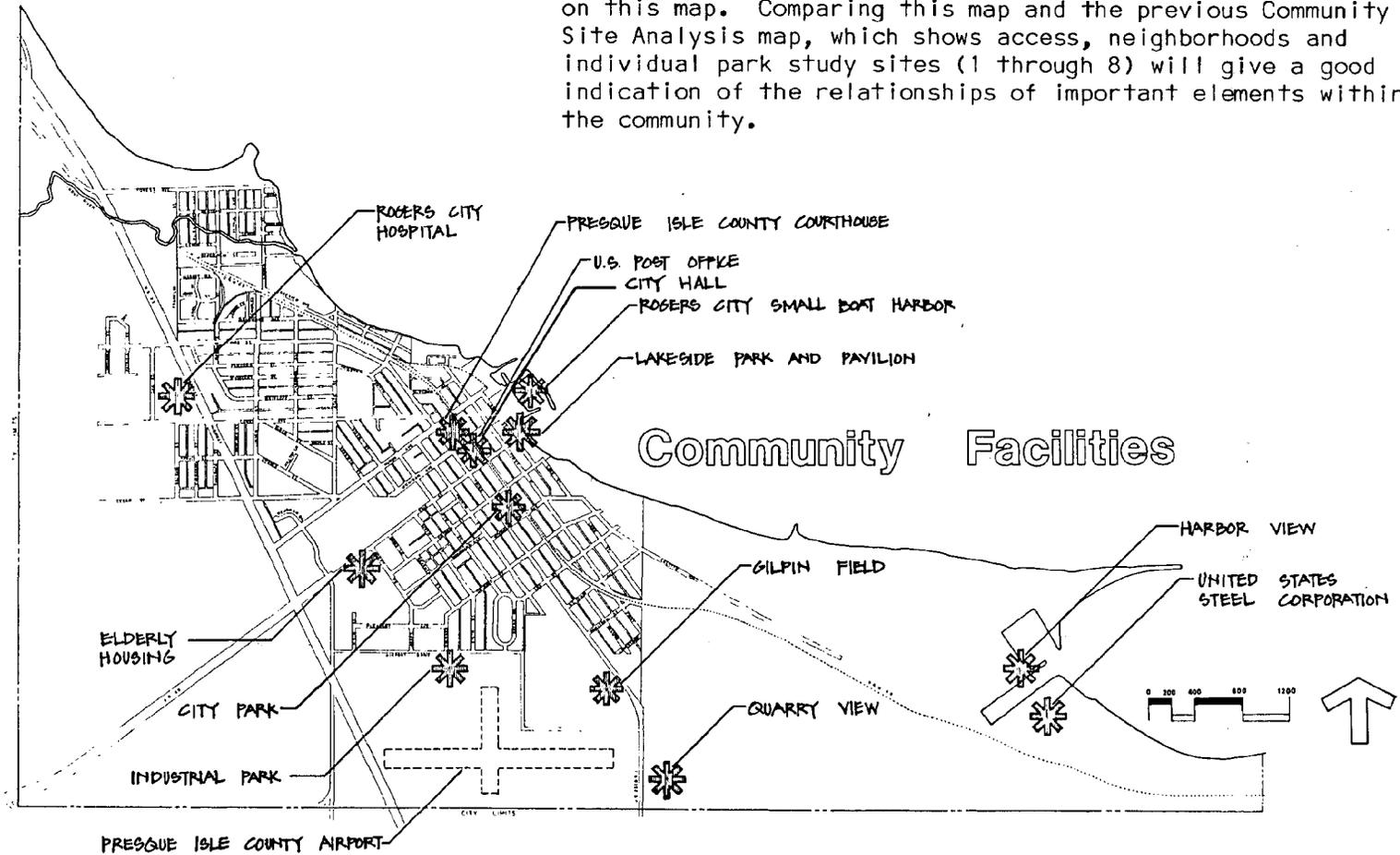
COMMUNITY SITE ANALYSIS

ROGERS CITY IS GENERALLY ORIENTED TOWARD LAKE HURON, MAKING THE SHORELINE AND MARINA AN IMPORTANT FOCAL POINT. A THIN STRIP OF RESIDENTIAL DEVELOPMENT SEPARATES LAKESIDE PARK FROM THE CENTRAL BUSINESS DISTRICT.

HIGHWAYS SERVING THE CITY INCLUDE US-23, FOLLOWING THE SHORE AND SPLITTING INTO A BYPASS AND A BUSINESS ROUTE AT ROGERS CITY; AND STATE ROUTE 68, ENTERING FROM THE WEST AND ENDING AT THE LAKE. GOVERNMENT, COMMERCIAL AND INDUSTRIAL FACILITIES ARE FOR THE MOST PART ORIENTED TO THESE TWO ARTERIES, AS SHOWN ON THE COMMUNITY FACILITIES MAP.

BECAUSE OF THE INFLUENCE OF THE SHORELINE ON THE PLATTING OF THE CITY, MOST STREETS DO NOT RUN TRUE TO THE COMPASS POINTS. THIS VARIATION FROM TRUE NORTH IS APPARENT ON THE SITE ANALYSIS MAP. HOWEVER, FOR PURPOSES OF DISCUSSION, WE WILL DESIGNATE STREETS AS RUNNING NORTH/SOUTH OR EAST/WEST.

The location of most community wide Facilities are shown on this map. Comparing this map and the previous Community Site Analysis map, which shows access, neighborhoods and individual park study sites (1 through 8) will give a good indication of the relationships of important elements within the community.



THE MAIN NORTH/SOUTH ARTERY THROUGH THE CITY IS BUSINESS ROUTE US-23, WHICH BECOMES THIRD STREET INSIDE THE CITY LIMITS. IMPORTANT EAST/WEST ROUTES ARE ERIE STREET (STATE ROUTE 68) AND MICHIGAN AVENUE, ONE BLOCK NORTH OF ERIE STREET. MICHIGAN AVENUE HAS BEEN DECORATED WITH A PROMENADE OF FLAGS, PROVIDING VISUAL INTEREST AND A LINK BETWEEN THE BUSINESS DISTRICT AND THE LAKESHORE.

RESIDENTIAL NEIGHBORHOODS SURROUNDING THE CENTRAL BUSINESS DISTRICT ON THE SOUTH AND WEST ARE BOUNDED BY THE CALCITE QUARRY, PRESQUE ISLE COUNTY AIRPORT, AN INDUSTRIAL PARK AND U.S. STEEL LAND HOLDINGS. NEIGHBORHOODS ON THE NORTH SIDE HAVE ROOM FOR FUTURE EXPANSION. MASTER PLANNING OF THE SEVEN COASTAL ZONE SITES MUST RECOGNIZE THE POSSIBILITY OF FUTURE CONFLICT BETWEEN THE NATURAL AND SENSITIVE CHARACTER OF THE NORTHERLY SITES AND THE EXPECTED URBAN GROWTH IN THAT DIRECTION.

DUE TO THE LAKE SHORE AS AN ORIENTING FEATURE, THE SEVEN COASTAL ZONE SITES IN ROGERS CITY FALL INTO A LINEAR ARRANGEMENT. THIS FORMATION EMPHASIZES THE IMPORTANCE OF WATERFRONT ACTIVITIES

IN RECREATION PLANNING AND SHOULD BE TAKEN NOTE OF. IT ALSO INVITES INVESTIGATION OF POSSIBILITIES FOR A PHYSICAL LINKING SYSTEM TO ENHANCE THE ENJOYMENT OF EXISTING FEATURES. TWO ELEMENTS LEND THEMSELVES TO SUCH A LINKAGE. PUBLIC STREETS CAN PROVIDE SPACE FOR BIKEWAYS OR WALKWAYS. THE ABANDONED RAILROAD RIGHT-OF-WAY, RUNNING FROM A POINT DIRECTLY NORTH OF LAKESIDE PARK AND THE END OF HURON AVENUE TO THE SOUTHEAST EDGE OF SITE 2, SHOULD BE INVESTIGATED AS A LINKING SYSTEM WITH ROOM FOR BIKE PATHS OR A PUBLIC CONVEYANCE.

COASTAL ZONE SITES

THE SEVEN SITES POINTED OUT IN THE COMMUNITY SITE ANALYSIS ARE STUDIED IN DETAIL IN THE FOLLOWING PAGES. ALL ANALYSIS MAPS ARE ORIENTED WITH NORTH AT THE TOP OF THE PAGE AND ALL ARE AT THE SAME SCALE TO ASSURE A CONSISTENT VALUE FOR COMPARING THE SITES.



SITE 1. WOODLAND CHARACTER

ANALYSIS OF SITE 1

SITE 1 IS A 33 ACRE PARK AT THE NORTHERN EDGE OF ROGERS CITY. IT IS BOUNDED ON THE SOUTH BY FOREST AVENUE, ON THE WEST BY US-23 AND ON THE NORTH BY LAKE HURON AND THE EAST BY SITE 3.

THE NATURAL QUALITY OF THE SITE IS ITS MOST OUTSTANDING ASPECT. ITS INDIGENOUS PLANT MATERIAL AND LOW PLAIN SAND DUNES SERVE AS A LIVING MUSEUM OF ECOLOGICAL INTERACTION AND THE PRINCIPLE OF NATURAL SUCCESSION. HIGHLY REPRESENTATIVE AND EASILY ACCESSIBLE, IT IS AN EDUCATIONAL RESOURCE THAT IS WELL WORTH PRESERVING.

THE VEGETATION, CONSISTING OF WHITE PINE, WHITE CEDAR, RED MAPLES AND RED OAKS, IS SO DENSE THAT LAKE HURON CAN SELDOM BE VIEWED FROM THE US-23 HIGHWAY. AT VARIOUS LOCATIONS ALONG FOREST AVENUE, THERE ARE PULL-OFF PARKING AREAS IN WHICH ACCESS TO THE BEACH CAN OCCUR. WOOD BOLLARDS WITH CHAINS RUN THE LENGTH OF THE SITE ALONG FOREST AVENUE. HOWEVER, THERE ARE AREAS WHERE THERE ARE NO BOLLARDS ALONG US-23 HIGHWAY. THE OPPORTUNITIES FOR ACCESS BY ALL-TERRAIN

VEHICLES SHOULD BE MINIMIZED BY CONTINUING THE BOLLARD AND CHAIN ALONG THIS ROUTE.

AT PRESENT, THE SITE IS USED BY PICNICKERS AND STROLLERS WHO ENJOY THE NATURAL QUALITIES OF THE BEACH AND THE EXISTING PATHS. UNFORTUNATELY, EROSION ALONG THE BEACH GIVES EVIDENCE THAT OWNERS OF FOUR-WHEEL DRIVE VEHICLES ALSO ENJOY THE SITE FOR THEIR PURPOSES.

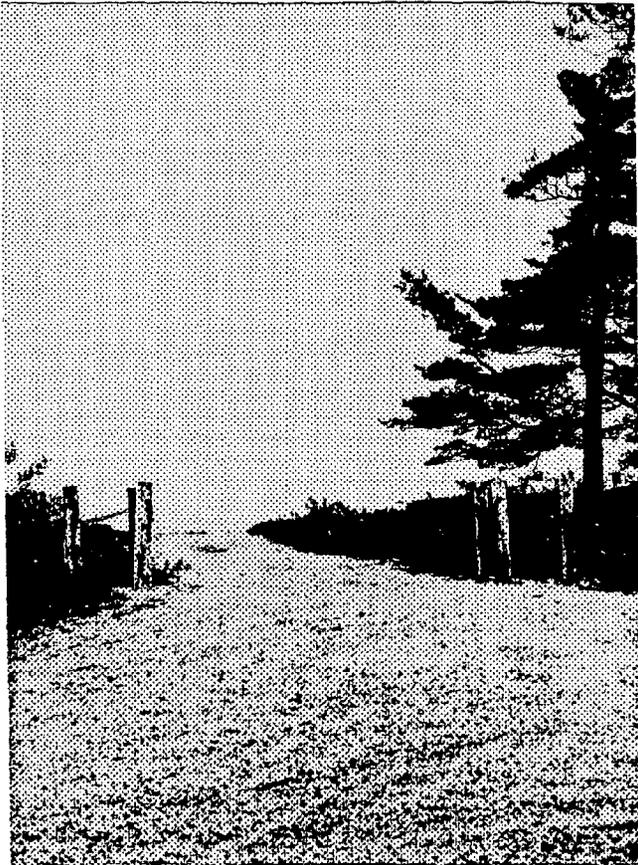
NATURAL EROSION ALONG THE WATER'S EDGE IS ALSO OCCURRING DUE TO WAVE ACTION (SEE LOCATION ON THE ANALYSIS SHEET). PREVENTING THE CONTINUATION OF OF THIS EROSION PROCESS WILL BE ADDRESSED IN THE MASTER PLAN SECTION FOR THIS PARCEL.

THE SITE RANGES IN CHARACTER FROM A DENSELY WOODED STRIP ALONG US-23 TO A FRAGILE DUNE ECOSYSTEM TO THE SHORELINE, WHICH HAS BEEN AFFECTED BY EROSION IN ONE AREA. PLANNING EFFORTS MUST FOCUS ON MAXIMIZING THE SITE'S POTENTIAL FOR USE WHILE PROTECTING ITS ENVIRONMENTAL QUALITY.

SURFACE DRAINAGE FLOWS GENERALLY NORTHEAST ACROSS THE SITE INTO LAKE HURON. THE LAKE BED SHELVES



SITES 1 AND 3. DUNE CHARACTER AND CHAIN AND BOLLARDS



SITE 1. PROPOSED HANDICAPPED ACCESS TO SHORELINE FROM FOREST AVENUE

GRADUALLY TO A DEPTH OF ABOUT SIX FEET.

GENERAL SOIL CHARACTER IS SANDY, WITH ENOUGH ORGANIC SOIL BUILDUP OVER THE YEARS IN THE SOUTHWEST PORTION OF THE SITE TO SUPPORT A FOREST OF WHITE PINES, MAPLES AND WHITE OAKS. SHIFTING SAND AREAS, WHERE DUNES HAVE FORMED, DISPLAY A VARIETY OF LOW-GROWING, HARDY BEACH PLANTS, SOME OF WHICH ARE RARE AND ON THE ENDANGERED SPECIES LIST. THE TWO AREAS COMBINE TO PROVIDE AN EDUCATIONAL EXAMPLE OF SUCCESSION -- THE PROCESS OF CHANGE IN VEGETATION OVER TIME.

WILDLIFE ON THE SITE INCLUDES RED SQUIRRELS, EASTERN CHIPMUNKS AND WHITETAIL DEER, WHICH DRINK AT THE LAKE'S EDGE AND FORAGE IN THE WOODED AREAS.

THE CHARACTER OF SITES 1, 2 AND 3 ARE VERY SIMILAR IN THEIR NATURAL CHARACTER; AND WHILE SITE 2 DOES NOT HAVE THE BEACH OR DUNE AREA, IT DOES HAVE THE MORE ADVANCED WOODLANDS RESULTING FROM SUCCESSION OF A PREVIOUSLY EXISTING DUNE.

ANALYSIS OF SITE 2

SITE 2 IS THE ONLY SITE OUT OF THE SEVEN COASTAL ZONE SITES WHICH DOES NOT HAVE LAKE FRONTAGE. HOWEVER, THE 22 ACRE PARK IS DIRECTLY SOUTH OF SITE 1, SEPARATED ONLY BY FOREST AVENUE. IT IS BOUNDED ON THE WEST BY US-23 AND THE SOUTH AND EAST BY RESIDENTIAL NEIGHBORHOODS.

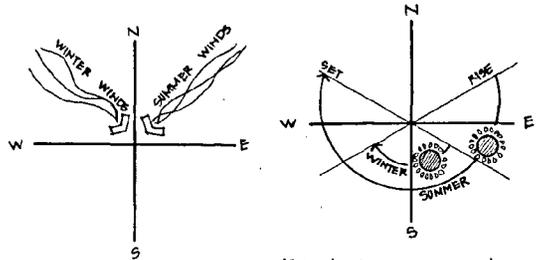


SITE 2. WOODLAND CHARACTER

THE PRIME CHARACTERISTIC OF SITE 2 IS THAT IT IS A HEAVILY WOODED AREA. VEGETATION SUCH AS WHITE PINE, WHITE CEDAR, RED MAPLE AND RED OAK IS ABUNDANT.

THE TROUT RIVER RUNS THROUGH THE CENTER OF THE SITE, DIVIDING IT INTO TWO PARTS, AN UPPER AND LOWER PORTION.

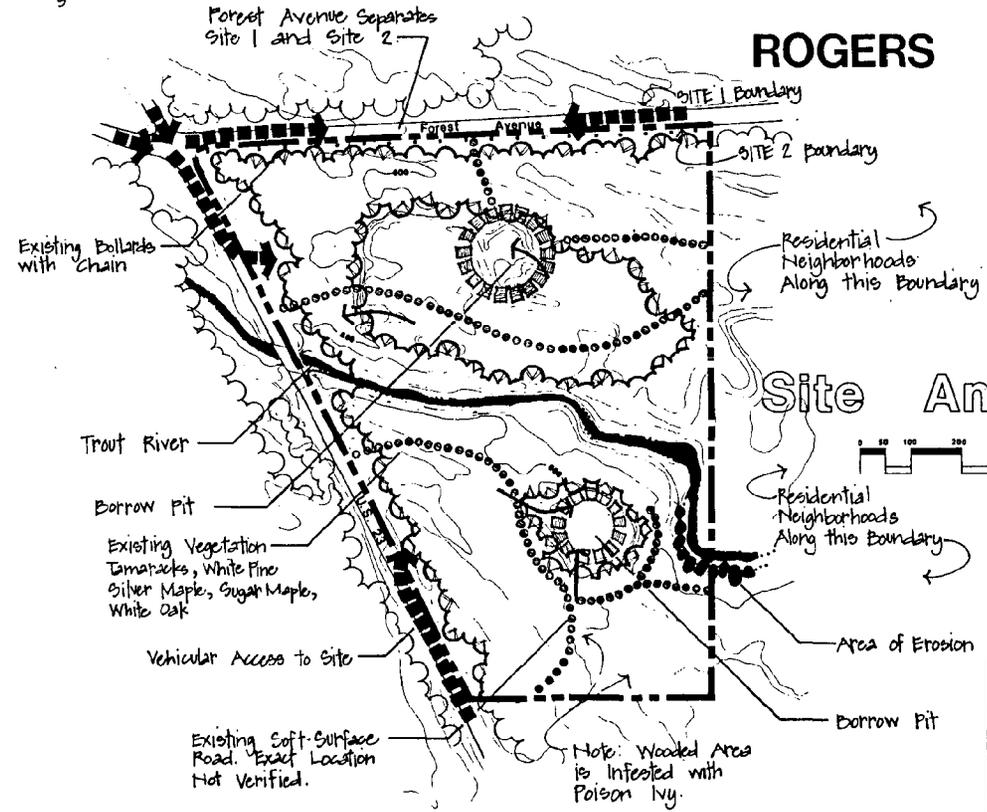
IN THE UPPER PORTION OF THE SITE THERE IS AN ABANDONED BORROW PIT, AN AREA WHERE EARTH HAS BEEN REMOVED TO USE AS FILL AT ANOTHER LOCATION, WHICH IS IN THE PROCESS OF NATURAL REVEGETATION. THERE ARE SEVERAL EXISTING PATHS WHICH RUN THROUGH THIS UPPER PORTION; ONE ENTERING FROM FOREST AVENUE AND ANOTHER FROM US-23.



COASTAL ZONE MANAGEMENT STUDY

ROGERS CITY, MICHIGAN

Forest Avenue Separates Site 1 and Site 2.

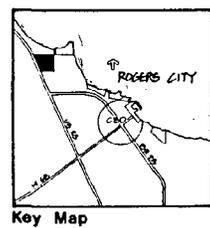


Site Analysis - Site 2



LEGEND

- Main Vehicular Access to Site
- Existing Soft-Surface Path or Road
- Existing Vegetation
- Sand
- Area of Erosion
- Direction of Surface Water Drainage
- Existing Bollards with Chain





SITE 2. BORROW EXCAVATION

THESE PATHS RUN THROUGH THE SITE AND CONTINUE PAST ITS EASTERN BOUNDARY.

THE LOWER PORTION OF THE SITE IS ALMOST A REFLECTION OF THE UPPER PORTION. IT CONTAINS A BORROW PIT IN WHICH REVEGETATION IS BEGINNING TO OCCUR, AND SEVERAL PATHS WHICH LOOP THROUGH THE SITE. THESE PATHS ALSO CONTINUE PAST THE SITE'S EASTERN AND SOUTHERN BOUNDARIES.

ALONG THIS LOWER PORTION OF THE SITE, NEXT TO ITS EASTERN BOUNDARY, AND FOR THE MOST PART BEYOND THE BOUNDARIES OF THE SITE, EXTENSIVE EROSION IS OCCURRING. THE SHARP BENDS IN THE RIVER AT THIS POINT, ALONG WITH THE CHARACTER OF THE BANK, WHICH IS MOSTLY GRAVEL AND UNCONSOLIDATED MATERIALS, LENDS ITSELF TO SUCH EROSION. IF THE NATURAL PROCESS WERE ALLOWED TO CONTINUE, AN OXBOW LAKE WILL EVENTUALLY BE CREATED. MUCH OF THIS EROSION IS CURRENTLY OCCURRING BEYOND THE SITE'S EASTERN BOUNDARY ON PRIVATELY HELD PROPERTY.

THE EROSION, WHICH IS A NATURAL PROCESS RESULTING FROM THE FORCES OF NATURE, QUITE OFTEN DOES NOT FIND AN ACCEPTABLE PLACE AMONG MAN'S DESIRES.



SITE 2. EROSION ON TROUT RIVER

IT IS OBVIOUS THAT IF LEFT UNCHECKED, THE COURSE OF THE RIVER WILL CONTINUE TO CHANGE AS EROSION EATS AWAY AT THE PRESENT BANKS. THE SHORT TERM EFFECTS INCLUDE INABILITY TO CONTROL SLOPE, LOSS OF VEGETATION AS IT SLIDES DOWN THE EMBANKMENT, AND QUITE POSSIBLY, THE CARRYING OF SILT MATERIAL TO THE LAKE.

EFFORTS TO CONTROL THIS MUST INCLUDE AREAS BEYOND THE EDGE OF SITE 2 SINCE THAT IS WHERE MOST OF THE EROSION IS TAKING PLACE. IF SUCH AN EFFORT IS MADE, THE INVOLVEMENT MUST INCLUDE ADJACENT LAND OWNERS AS WELL AS THE CITY.

ANALYSIS OF SITE 3

SITE 3 IS BASICALLY A CONTINUATION OF SITE 1 EXTENDING ALONG THE SHORE TO THE EAST. THE TWO SITES SHARE A COMMON BOUNDARY AND HAVE THE SAME QUALITY AND CHARACTER.

SITE 3, COMPRISED OF 10 ACRES, IS BOUNDED ON THE WEST BY SITE 1, THE SOUTH BY FOREST AVENUE AND THE NORTH AND EAST BY LAKE HURON.

SIMILAR TO SITE 1 IS THE SAND DUNE ECOSYSTEM WITH ITS INDIGENOUS PLANT MATERIALS. VEGETATION CONSISTS OF WHITE CEDAR, RED MAPLES, RED OAKS AND AN ABUNDANCE OF WHITE PINES. THIS VEGETATION, HOWEVER, IS NOT AS DENSE AS IN SITE 1, AND THUS A "FILTERED" VIEW OF THE LAKE CAN BE SEEN FROM FOREST AVENUE. DETAILED DESCRIPTIONS OF PLANTS AND PLANT ASSOCIATIONS ARE INCLUDED IN THE APPENDIX.

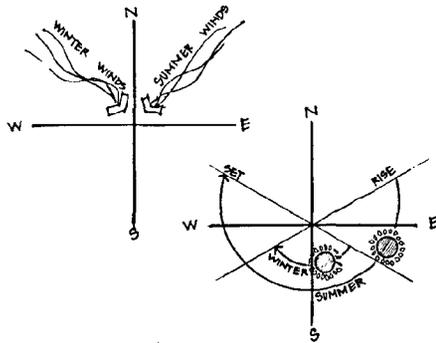
ACCESS INTO THE SITE IS BY A GRAVEL ROAD WHICH LEADS TO A GRAVEL PARKING LOT AND CAR TOP BOAT LAUNCH. A WELL HOUSE IS SITUATED NEXT TO THE PARKING LOT. BECAUSE OF ITS POSITIONING, THE



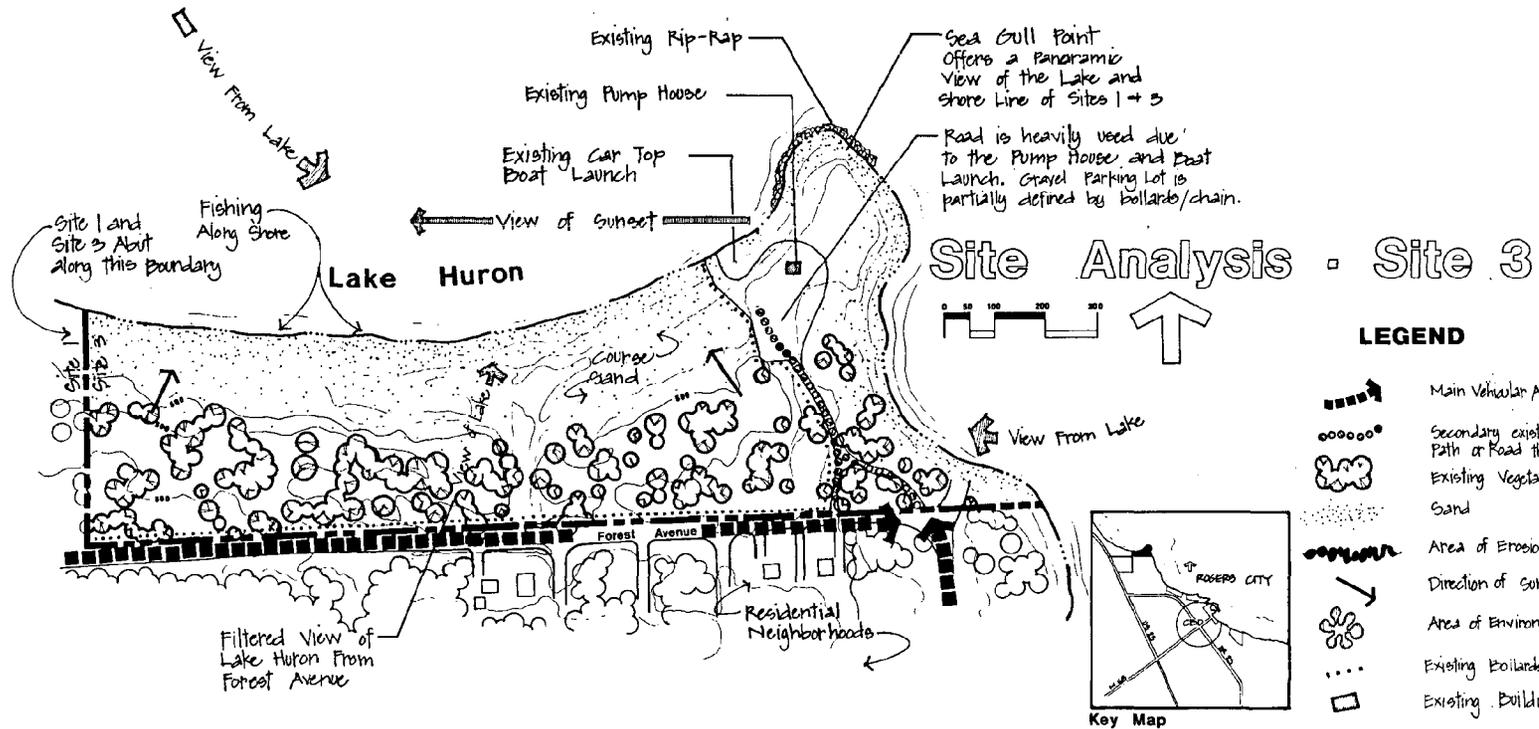
SITES 1 AND 3 FROM FOREST AVENUE
LOOKING WESTERLY

COASTAL ZONE MANAGEMENT STUDY

ROGERS CITY, MICHIGAN



1' Water Depth



LOWER BEACH

WASHED BY SUMMER STORMS

PLANTS: NONE

TYPICAL ANIMAL LIFE: BEACH TIGER BEETLE, BEACH GROUND BEETLE & SANDPIPERS.

MIDDLE BEACH

WASHED ONLY BY SEVERE WINTER STORMS; DRY IN SUMMER; UPPER LIMITS MARKED BY DRIFTWOOD AND DEBRIS; SCATTERED ANNUAL PLANTS ARE PRESENT.

PLANTS: SEA ROCKET, BUGSEED & COCKLEBUR.

TYPICAL ANIMAL LIFE: WHITE TIGER BEETLE, BURNING SPIDER, & PIPING PLOVER (NESTS)

UPPER BEACH

WHERE THE FOREDUNES ARE FORMED; PIONEER GRASSES ARE DOMINANT WITH BIENNIAL AND PERENNIAL HERBS APPEARING.

PLANTS: MARRAM GRASS; LITTLE BLUESTEM, CANADA WILD RTE, DUNES GOLDENROD

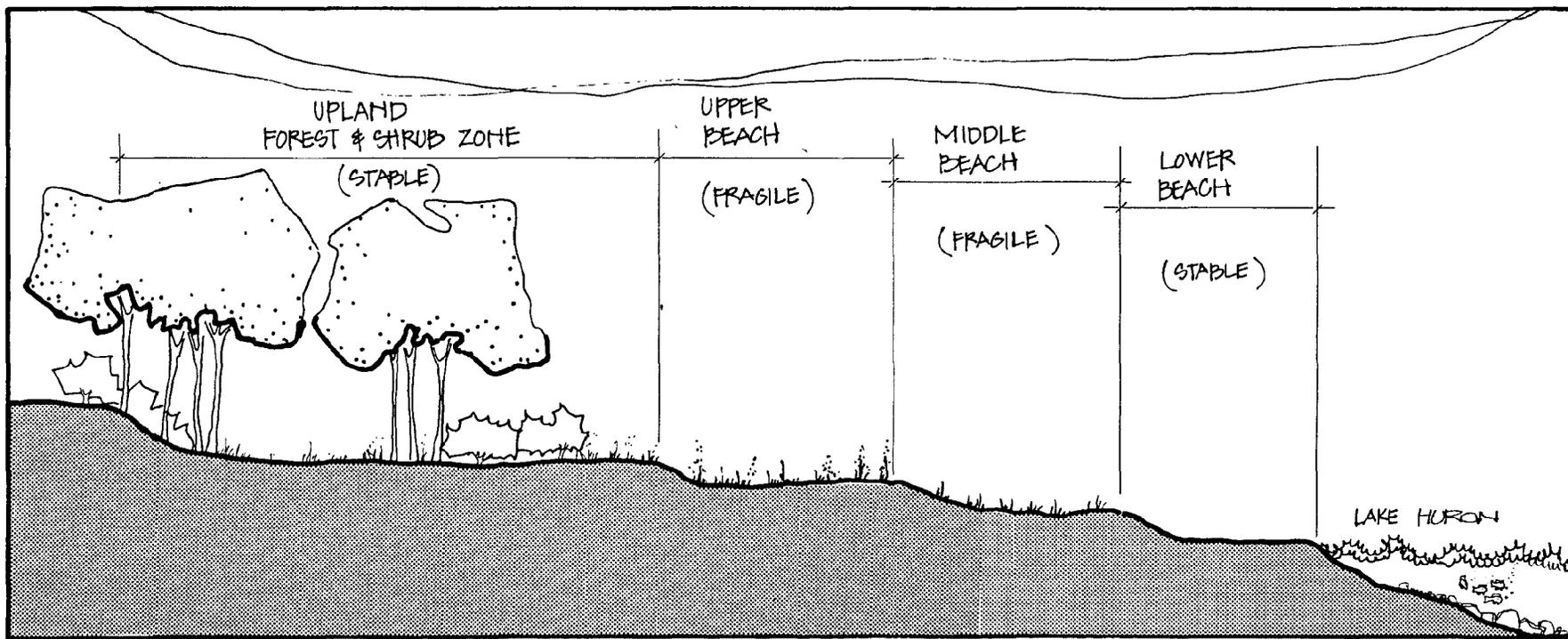
TYPICAL ANIMAL LIFE: WHITE TIGER BEETLE, MARITIME LOCUST.

UPLAND FOREST & SHRUB ZONE

THE SHRUB ZONE INVADES THE GRASSES BUT BECOMES MORE COMMON IN LATER TREE STAGES.

PLANTS: CHOKE CHERRY, RED OSIER DOGWOOD, COMMON JUNIPER.

THE UPLAND FOREST - IS MADE UP OF THE FOLLOWING SUCCESSION OF TREES:
COTTONWOOD ZONE, PINE ZONE, BLACK OAK ASSOCIATION, OAK-HICKORY FOREST, WHITE OAK-RED OAK-HICKORY AND THE BEECH-MAPLE FOREST.



TYPICAL DUNE AND PLANT SUCCESSION ON SITES 1 AND 3



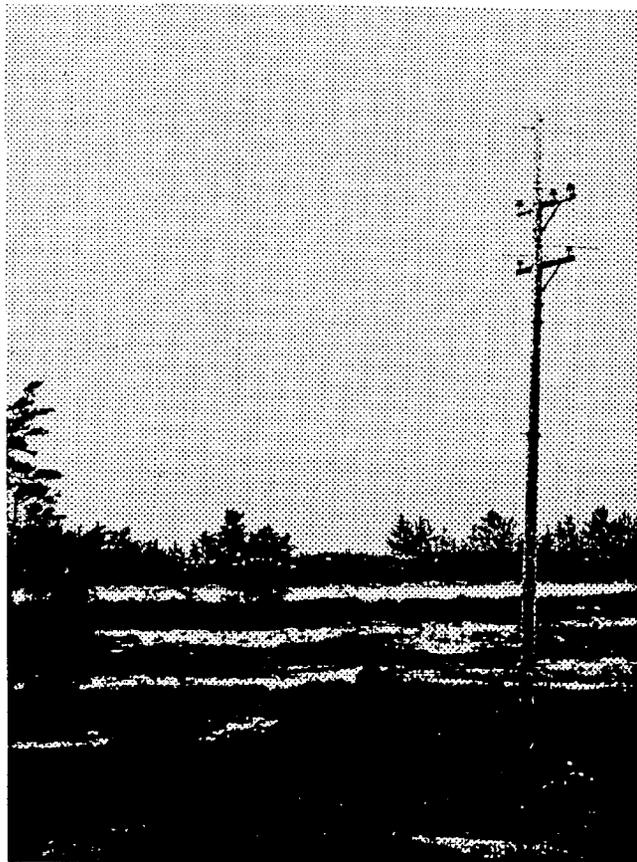
SITES 1 AND 3. SHORELINE CHARACTER

WELL HOUSE TENDS TO DOMINATE THIS PORTION OF THE SITE, INAPPROPRIATELY. DEPRESSING THE STRUCTURE AND SCREENING WITH INDIGENOUS PLANT MATERIAL WOULD MINIMIZE ITS IMPACT ON THE SITE. SIMILAR MEASURES SHOULD BE PLANNED FOR THREE PROPOSED WELL HOUSES.

SITE 3 INCLUDES SEA GULL POINT, WHICH PROTRUDES INTO LAKE HURON, PROVIDING A POPULAR POINT OF INTEREST FOR VIEWING SUNSETS AND GETTING A PANORAMIC VIEW OF THE LAKE AND SHORELINE OF SITES 1 AND 3.

SITE 3 WAS PURCHASED BY ROGERS CITY FOR THE LOCATION OF ADDITIONAL WELLS TO SUPPLY THE CITY WITH DRINKING WATER. FUTURE CONFLICTS BETWEEN THIS PURPOSE AND RECREATIONAL USES MUST BE CONSIDERED.

IF THE SITE IS LEFT IN ITS PRESENT NATURAL STATE, PASSIVE RECREATIONAL USE, TO WHICH IT IS NOW ADAPTED, AND USE AS A LOCATION FOR CITY WELLS, SHOULD BE EASY TO COORDINATE. HOWEVER, SHOULD THERE BE, IN THE FUTURE, A DEMAND FOR MORE ACTIVE RECREATIONAL USE, PROPER PLANNING AND MANAGEMENT WILL BE REQUIRED TO FIT THE SITE FOR MULTIPLE USAGE.



SITE 5. GENERAL CHARACTER

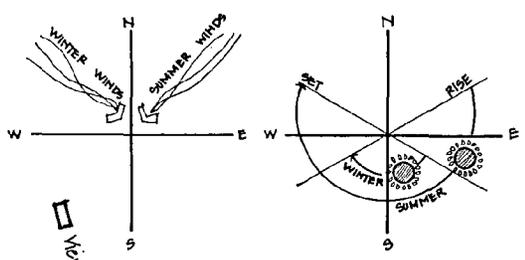
ANALYSIS OF SITE 5

SITE 5 IS A NARROW SITE ABOUT $1/3$ MILE SOUTH ALONG THE COAST FROM SITE 3. CONTAINING 3 ACRES, IT IS BOUNDED ON THE NORTH BY LAKE HURON AND APPROXIMATELY 300 FEET FROM ITS SOUTHERN BORDER BY THIRD STREET (US-23).

THE SITE IS DIVIDED INTO TWO SMALL PARCELS OF LAND BY A GRAVEL ROAD WHICH RUNS THROUGH THE CENTER OF THE SITE.

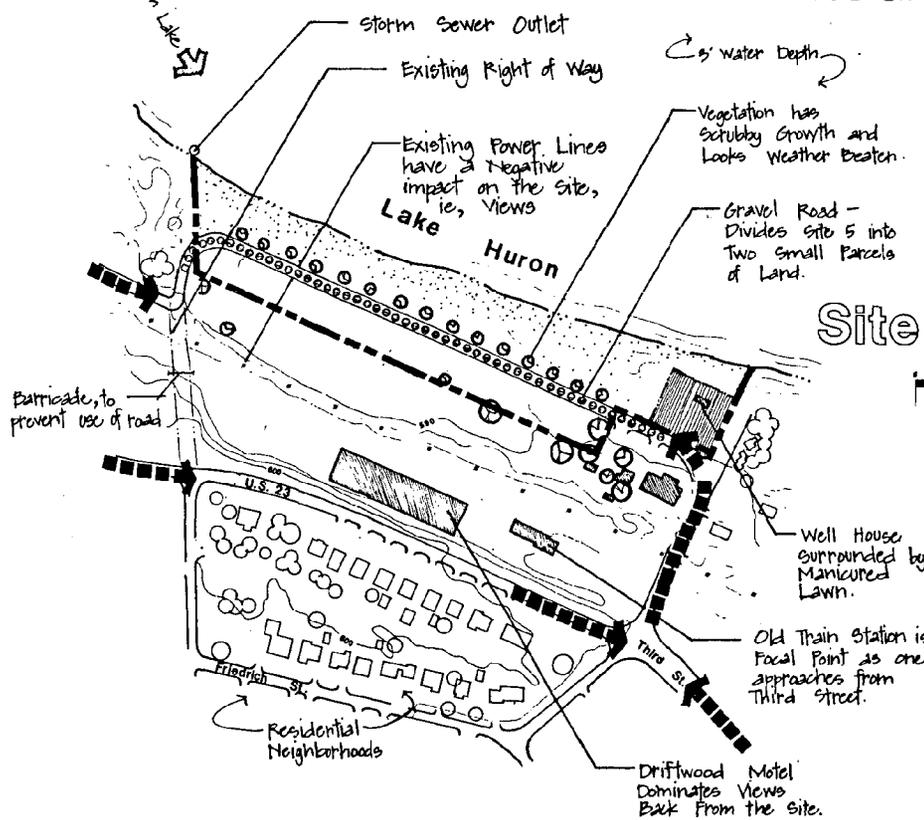
THE SOUTH OF THE SITE IS DOMINATED BY A VIEW OF THE DRIFTWOOD MOTEL. THE OLD TRAIN STATION CLOSE TO THE MOTEL BECOMES A FOCAL POINT OF INTEREST AS ONE APPROACHES THE SITE FROM THIRD STREET. ON THE OTHER SIDE OF THE STREET ARE RESIDENTIAL NEIGHBORHOODS.

THE SITE IS MADE UP OF COARSE SAND AND INDIGENOUS PLANTS; HOWEVER, ALONG ITS EASTERN BOUNDARY, A WELL HOUSE IS LOCATED WHICH IS SURROUNDED BY A MANICURED LAWN. THIS TENDS TO DRAW ATTENTION TO THE WELL HOUSE AND SET IT APART FROM THE REST OF THE SITE.



COASTAL ZONE MANAGEMENT STUDY

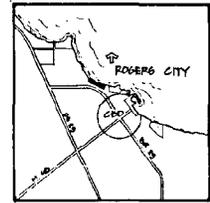
ROGERS CITY, MICHIGAN



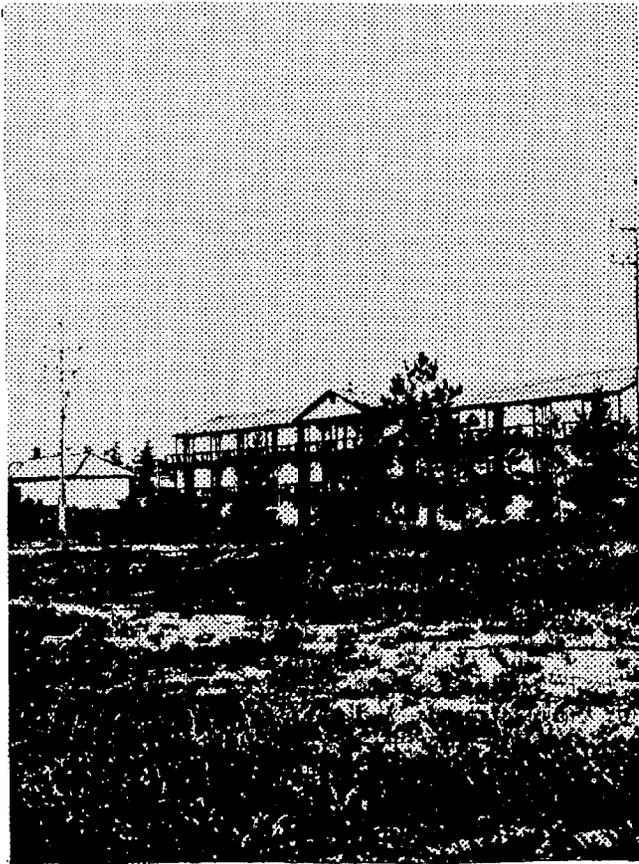
Site Analysis - Site 5

LEGEND

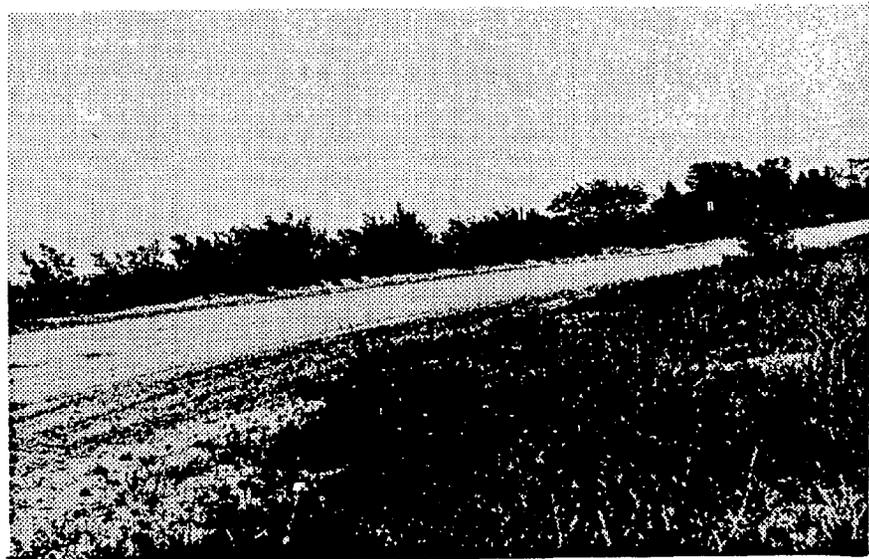
- Main Vehicular Access to Site
- Secondary Existing Soft-Surface Path or Road through the site
- Existing Vegetation
- Sand
- Area of Erosion
- Direction of Surface Water Drainage
- Area of Environmental Significance
- Existing Building
- Existing Power Lines



THE SITE'S NARROW SHAPE AND PROXIMITY TO THE LAKE LIMIT THE TYPES OF RECREATIONAL USES THIS SITE CAN SUSTAIN. AS IT EXISTS, THE SITE IS NEITHER NATURAL NOR REFINED. IT COULD, HOWEVER, BE DEVELOPED INTO A MORE HIGHLY MAINTAINED STATE WITH LAWN, SHADE TREES AND BEACH AREAS. ALSO NOTEWORTHY IS THE FACT THAT THE ROAD THROUGH THE SITE IS NOT ESSENTIAL OR EVEN NECESSARY FOR MOVING LOCAL TRAFFIC. THE REQUIRED ACCESS TO THE LAUNDRY AND PUMP HOUSE AT THE SOUTH END OF THE SITE CAN BE MAINTAINED THROUGH THE EXISTING NORTH/SOUTH STREET, AND THE ON-SITE STREET CAN BE REMOVED.

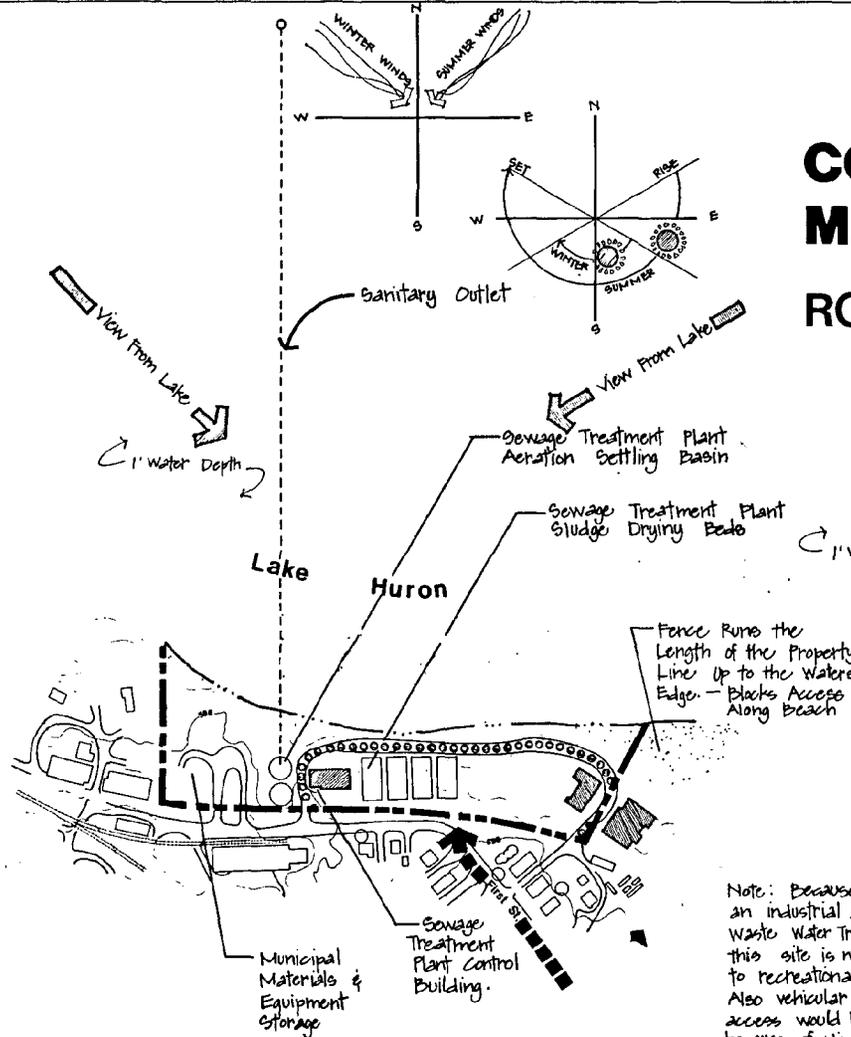


SITE 5. DRIFTWOOD MOTEL, LOOKING SOUTH



SITE 5. EXISTING ROAD AND CHARACTER

COASTAL ZONE MANAGEMENT STUDY ROGERS CITY, MICHIGAN



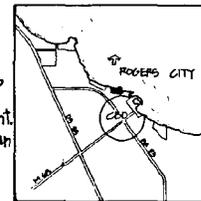
Site Analysis - Site 6



LEGEND

- Main Vehicular Access to Site
- Secondary Existing Soft-Surface Path or Road through the Site.
- Existing Vegetation
- Sand
- Area of Erosion
- Direction of Surface Water Drainage
- Area of Environmental Significance
- Existing Buildings

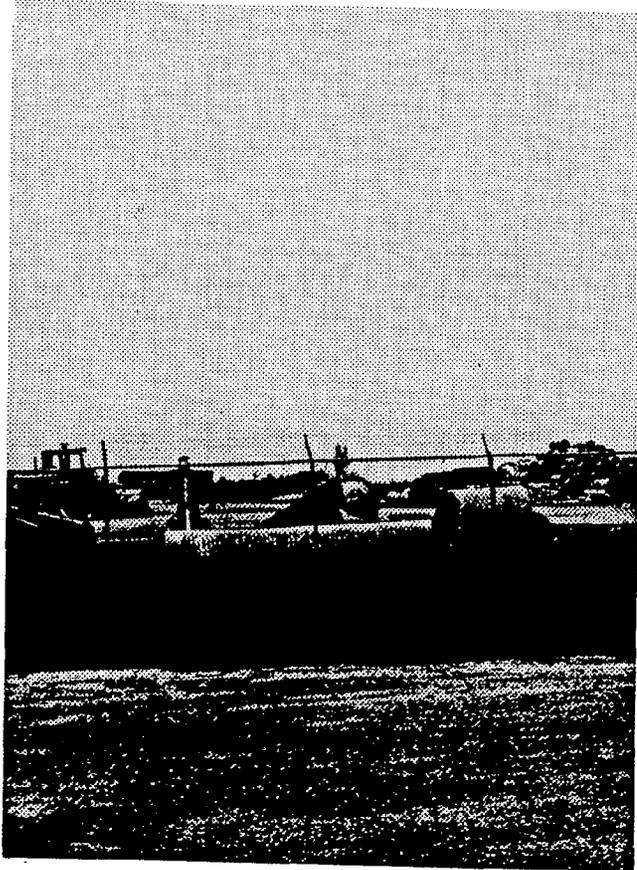
Note: Because this is an industrial area with a waste water treatment plant, this site is not conducive to recreational development. Also vehicular and pedestrian access would be a problem because of limitations in the size of the site.



Key Map

ANALYSIS OF SITE 6

SITE 6 CONTAINS 10 ACRES AND IS LOCATED ABOUT 700 FEET EAST AND SOUTH OF SITE 5, BOUNDED ON THE NORTH BY LAKE HURON AND ON THE SOUTH BY FIRST STREET.



SITE 6. EQUIPMENT AND MATERIALS STORAGE

ON THE SITE AND IN OPERATION IS THE CITY'S SEWAGE TREATMENT PLANT. THE SITE IS ALSO USED FOR STORAGE OF MUNICIPAL MATERIALS AND EQUIPMENT (SEE PHOTOGRAPH TO LEFT). A SANITARY OUTLET RUNS FROM THE SEWAGE PLANT'S SETTLING TANKS 1500 FEET OUT INTO LAKE HURON.

IN THE PAST, EROSION HAS OCCURRED ALONG THE SHORELINE BUT HAS BEEN BROUGHT UNDER CONTROL BY THE INSTALLATION OF GABIONS (LARGE WIRE BASKETS FILLED WITH ROCKS). HOWEVER, INVESTIGATIONS OF OLDER AIR PHOTOS INDICATE THAT THE SHORELINE WAS MUCH FARTHER OUT, PERHAPS AS MUCH AS 100 FEET THIRTY YEARS AGO.

BECAUSE THIS SITE IS DOMINATED BY THE SEWAGE TREATMENT PLANT AND IS AN INDUSTRIAL AREA, IT IS UNSUITABLE FOR CERTAIN TYPES OF ACTIVE RECREATIONAL

PURPOSES. HOWEVER, IT DOES AFFORD ACCESS TO THE BEACH AND IS CAPABLE OF BEING DEVELOPED FOR THAT PURPOSE.

THE FACT REMAINS, HOWEVER, THAT THE SITE'S LOCATION MAKES IT A PART OF THE COASTAL ZONE ENVIRONMENT OF ROGERS CITY, AND AS SUCH, IT IS VISIBLE FROM BOTH THE LAKE AND FROM INLAND. THE AESTHETIC APPEARANCE OF THIS SITE IS IN NEED OF IMPROVEMENT. WHILE THE SEWAGE PLANT CANNOT FEASIBLY BE RELOCATED, THE USE OF THE SITE FOR STORAGE OF CITY MATERIALS AND EQUIPMENT IS A CONTROLLABLE ELEMENT.

ANALYSIS OF SITE 7

SITE 7, BETTER KNOWN AS LAKESIDE PARK, IS BOUNDED ON THE NORTH, NORTHEAST AND NORTHWEST BY LAKE HURON AND THE SOUTHWEST BY LAKE STREET. A 10 ACRE PARK, IT IS CENTRALLY LOCATED CLOSE TO THE BUSINESS DISTRICT.

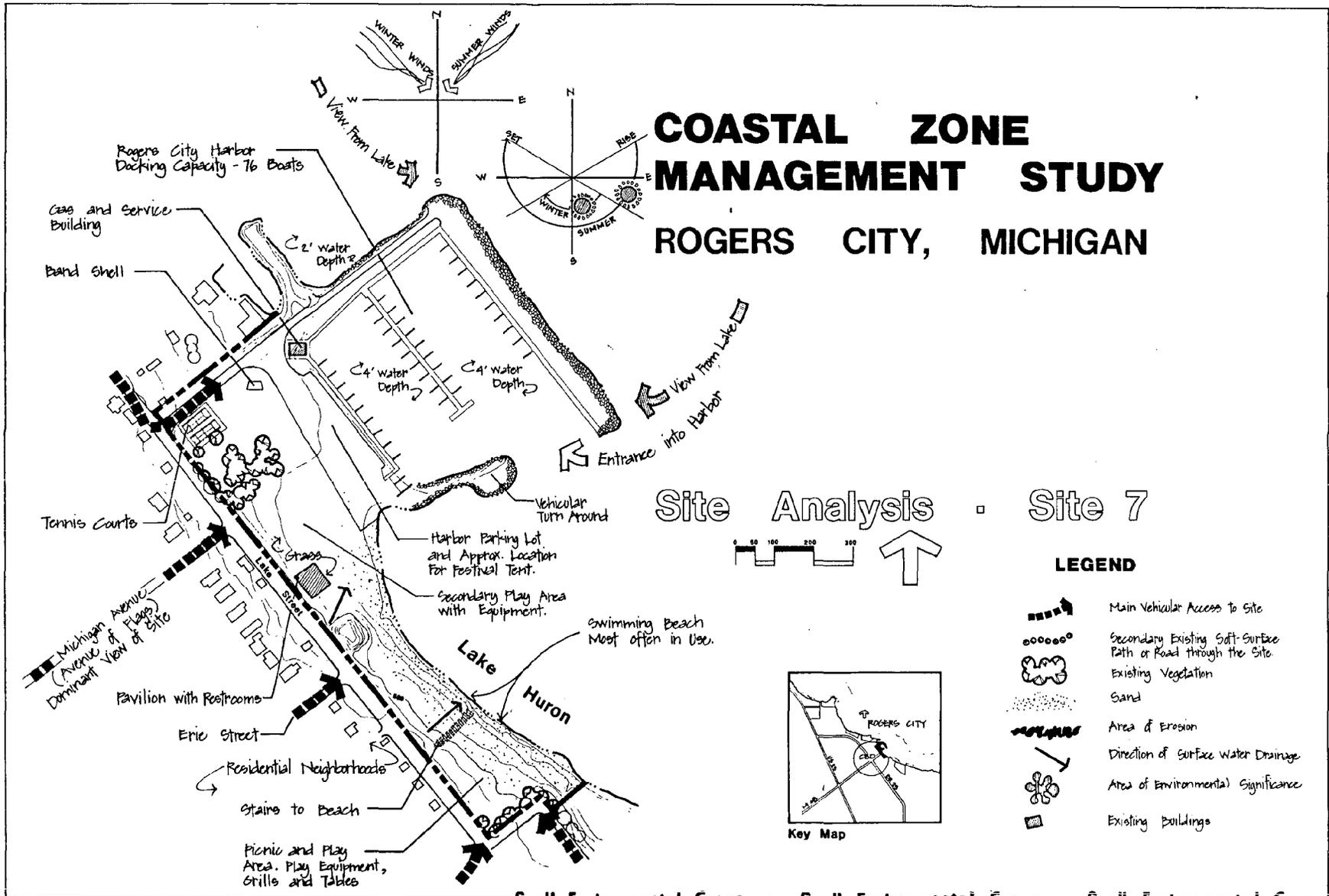
THE PARK INCLUDES THE ROGERS CITY HARBOR, WITH A BOAT DOCKING CAPACITY OF 76 BOATS. THE MARINA OFFERS SUPPORT FACILITIES, INCLUDING A GAS AND SERVICE BUILDING, TWO BOAT RAMPS AND A LARGE PARKING LOT.

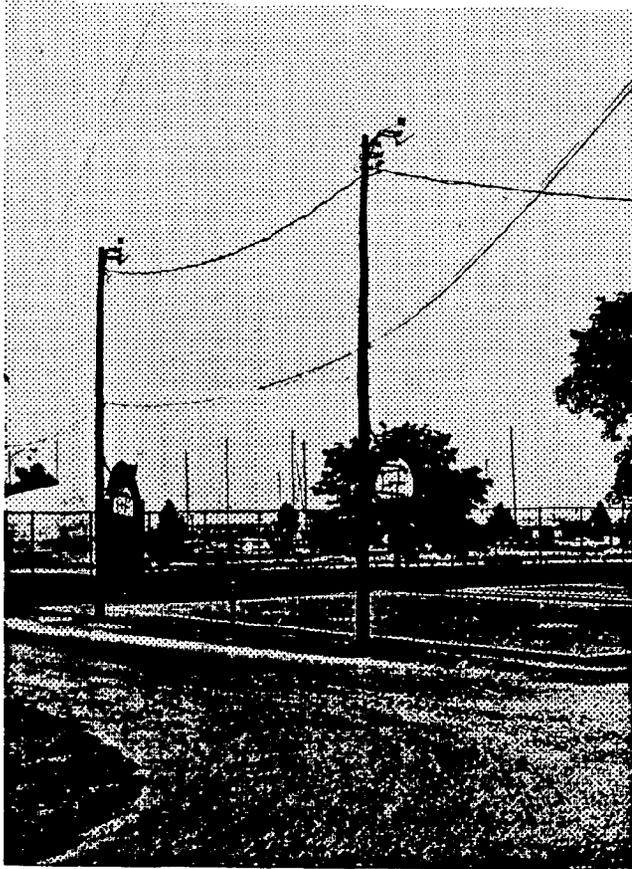
IN THE PARK IS A CONCRETE BAND SHELL WHICH IS USED IN THE WARMER MONTHS, TWO TENNIS COURTS AND A PARK PAVILION WITH RESTROOMS. A LAWN AREA NEXT TO THE PAVILION IS FREQUENTLY USED BY SUNBATHERS. THE SAND BEACH LOCATED ALONG THE NORTHEASTERN EDGE OF THE SITE IS MOST OFTEN IN USE AS A SWIMMING BEACH. NEXT TO THE SWIMMING BEACH IS ALSO A PICNIC AND PLAY AREA WHICH PROVIDES PICNIC TABLES, GRILLS AND PLAY EQUIPMENT.



SITE 7. PARK CHARACTER LOOKING SOUTHERLY

COASTAL ZONE MANAGEMENT STUDY ROGERS CITY, MICHIGAN





SITE 7. EXISTING BANDSHELL AND TENNIS COURTS

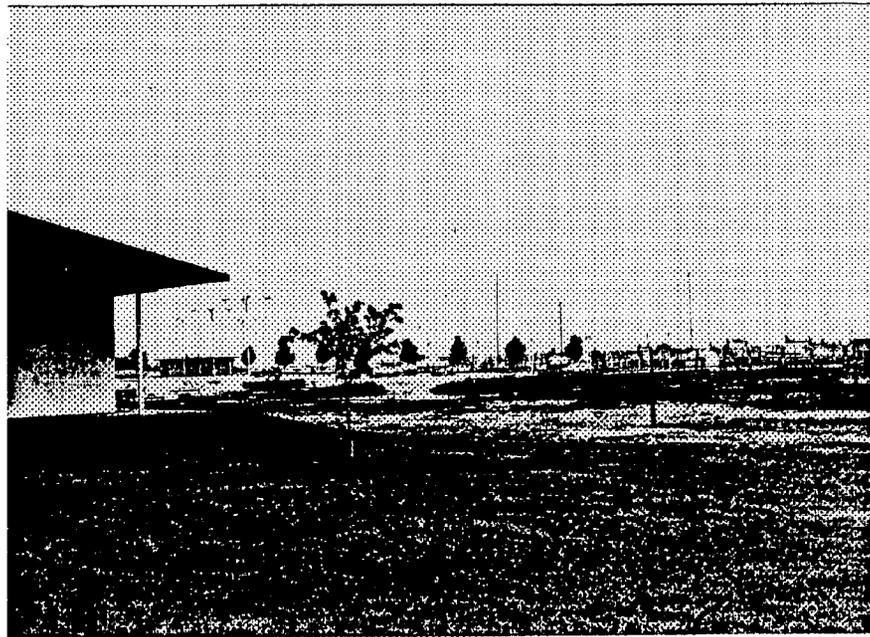
THE MAJOR ACCESS TO THE SITE IS MICHIGAN AVENUE. ALSO KNOWN AS THE "AVENUE OF FLAGS", IT RUNS THROUGH THE CENTER OF TOWN AND PROVIDES A DOMINANT VIEW OF THE SITE. AT THE TERMINUS OF MICHIGAN AVENUE A PLAQUE IS LOCATED, A MEMORIAL TO LOCAL SAILORS WHO WORKED OUT OF CALCITE PORT AND DIED ON THE GREAT LAKES.

LIKE MICHIGAN AVENUE, ERIE AVENUE (STATE ROUTE 68) ALSO TERMINATES AT LAKESIDE PARK. THE VIEW OF THE SITE AND THE LAKE AS MOTORISTS APPROACH THE LAKE FROM THIS DIRECTION IS VERY INVITING.

LAKESIDE PARK IS MOST SIGNIFICANT TO THE CITY. THE LIST OF ACTIVITIES WHICH TAKE PLACE THERE REVEALS THE POPULARITY OF THE SITE. THE GRASSY AREA ALONG THE BEACH MAKES IT IDEAL FOR SUNBATHING AND FOR OTHER LEISURE ACTIVITIES NORMALLY ASSOCIATED WITH A BEACH. IN FACT, LAKESIDE IS THE ONLY PARCEL IN THIS STUDY THAT OFFERS LAWN AREAS.

THE MULTIPLE USES MAKE THIS PARK A TRULY COMMUNITY-WIDE FACILITY. IT FILLS THE NEEDS OF LOCAL CITIZENS AND ALSO SERVES THE TRANSIENT BOATERS THAT VISIT ROGERS CITY; ITS LOCATION IS IDEAL TO FILL THIS TWO-FOLD FUNCTION.

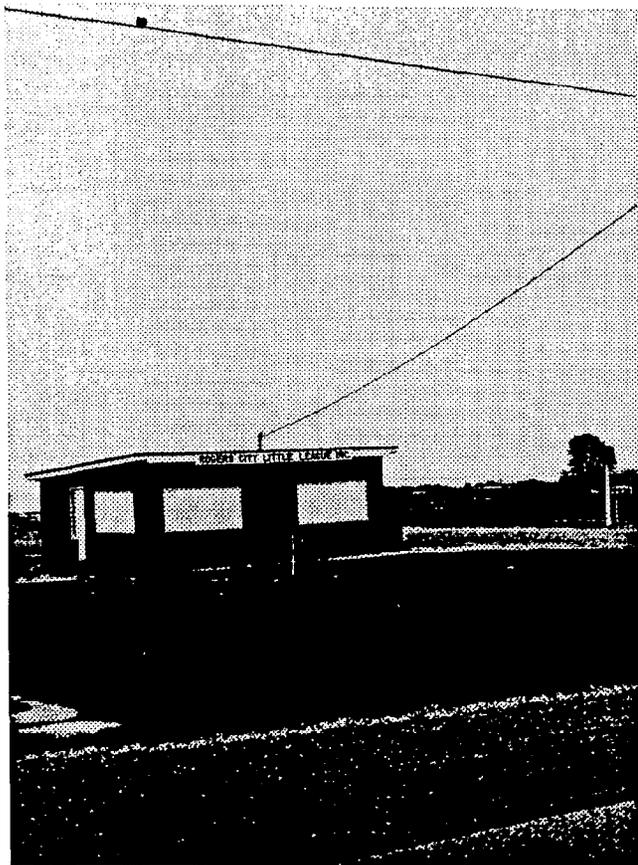
SAND DEPOSITED BY THE LITTORAL DRIFT CREATES A CONTINUED MAINTENANCE PROBLEM. THE HARBOR AND ITS ENTRANCE MUST BE DREDGED AT REGULAR INTERVALS. WHILE THESE SAND DEPOSITS DO CREATE A HARBOR MAINTENANCE PROBLEM, AT THE SAME TIME, THEY ENHANCE THE BEACH AREA TO THE SOUTH.



SITE 7. PARK CHARACTER/MARINA, LOOKING NORTHERLY

ANALYSIS OF SITE 8

SITE 8 IS A 17 ACRE PARCEL OF LAND ABOUT 400 FEET SOUTH OF SITE 7. IT IS BOUNDED ON THE NORTH BY LAKE HURON, ON THE SOUTH BY CALCITE ROAD AND, FAR FROM ITS EASTERN BOUNDARY, THE CALCITE STONE QUARRY.



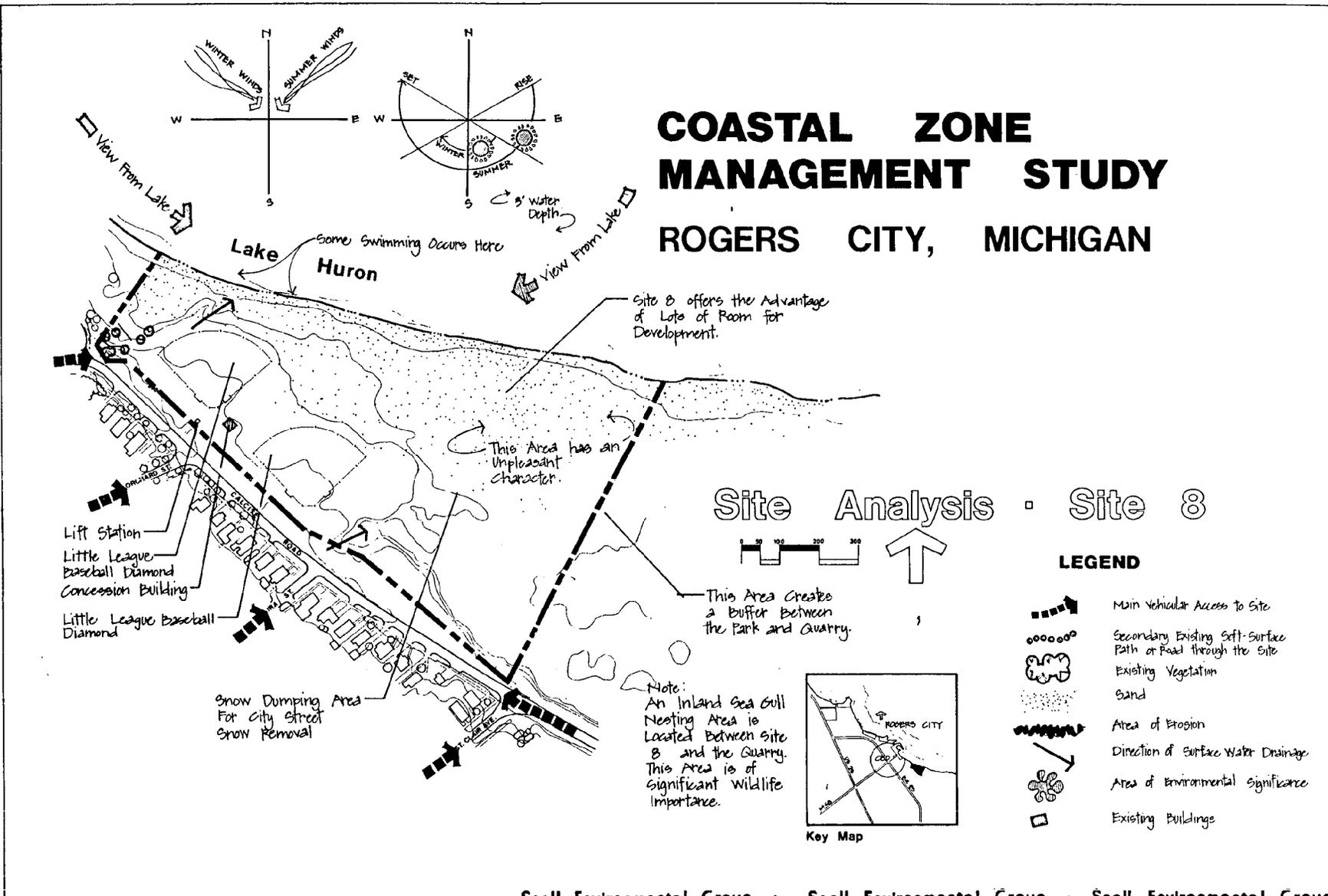
SITE 8. LITTLE LEAGUE CONCESSIONS

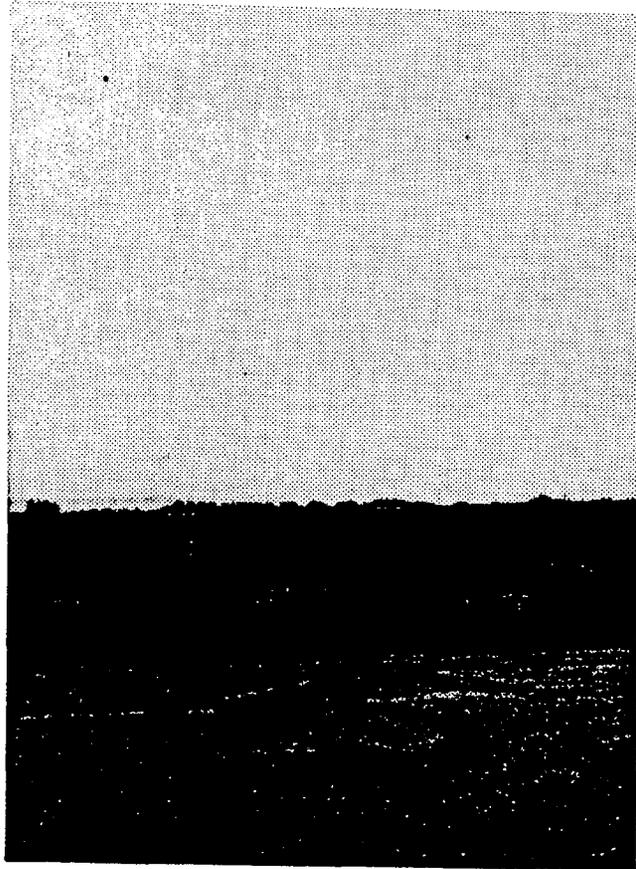
LOCATED ON THE WESTERN PORTION OF THE SITE ARE TWO LITTLE LEAGUE BASEBALL FIELDS AND A CONCESSION BUILDING. A PUMP STATION IS ALSO LOCATED CLOSE TO THE CONCESSION BUILDING. THERE ARE NO DEFINED PARKING AREAS FOR THE BALL FIELDS, SO PARKING OCCURS AT VARIOUS AREAS AROUND THE BALL FIELDS. THE BEACH IS ONLY OCCASIONALLY USED FOR SWIMMING SINCE ITS ROCKINESS AND QUICK DROP-OFF MAKE IT INFERIOR TO THE BEACH AT LAKESIDE PARK.

THE EASTERN HALF OF THE SITE IS UNDEVELOPED LAND WHICH THE CITY UTILIZES FOR A DUMPING AREA FOR SNOW REMOVAL. THIS PORTION OF THE SITE IS AN UNATTRACTIVE OPEN AREA WITH PLANTS OF SCRUBBY CHARACTER.

A MAJOR ADVANTAGE OF SITE 8 IS THAT IT OFFERS ROOM FOR DEVELOPMENT. IT OFFERS GOOD ACCESSIBILITY

COASTAL ZONE MANAGEMENT STUDY ROGERS CITY, MICHIGAN





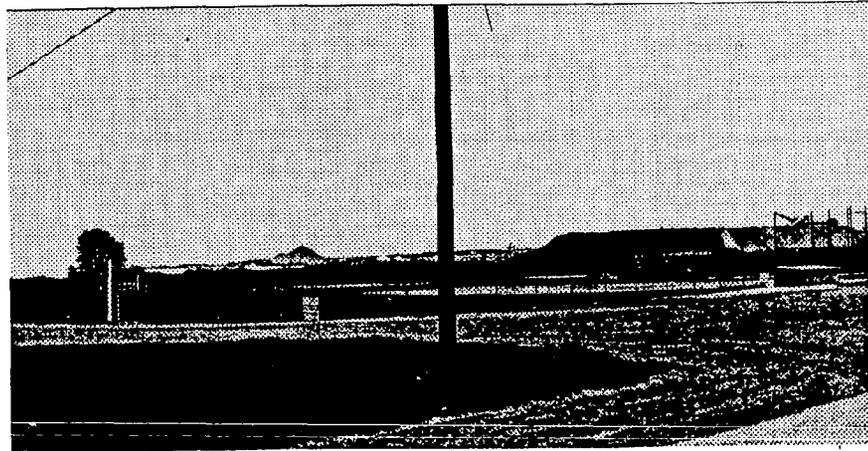
SITE 8. CHARACTER OF SOUTH PORTION

FOR VEHICULAR TRAFFIC AND, BECAUSE OF THE SURROUNDING NEIGHBORHOODS, IT ALSO HAS GOOD PEDESTRIAN ACCESS.

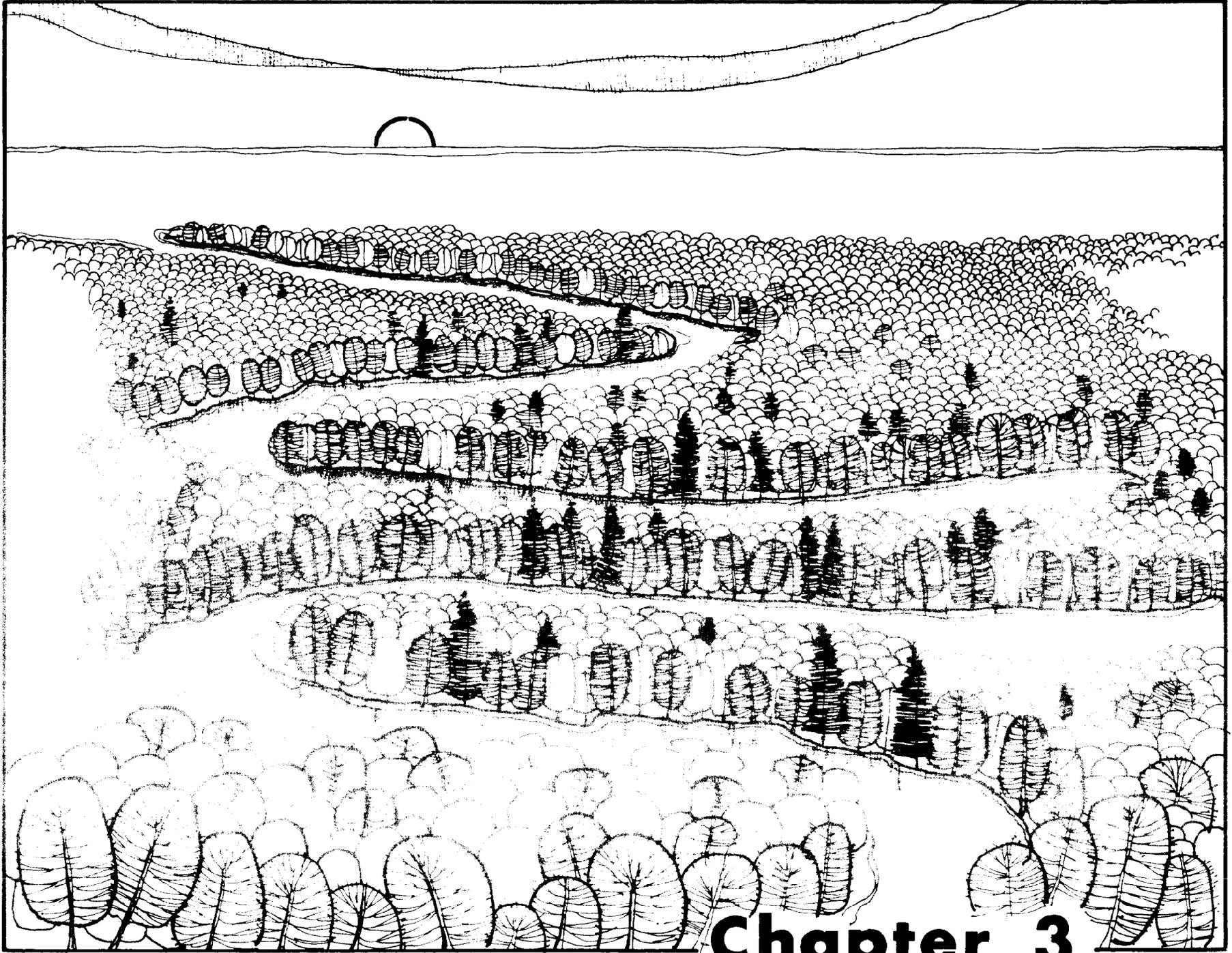
THIS PARCEL IS CURRENTLY IN DEMAND FOR LOCATION OF TWO ADDITIONAL BALL FIELDS. IT IS NOT AN IDEAL LOCATION FOR BALL FIELDS BECAUSE OF THE STRONG, OFTEN COLD, BREEZES THAT BLOW IN FROM THE LAKE. ON THE OTHER HAND, THERE HAVE BEEN SOME RESIDENTS WHO HAVE MENTIONED THEY LIKE THE LOCATION BECAUSE OF THE VIEW OF THE LAKE. THERE IS OBVIOUSLY NO STRAIGHT-FORWARD AND CLEAR-CUT ANSWER. THE PHILOSOPHICAL POSITION OF THE COASTAL ZONE MANAGEMENT PROGRAM IS: THE LOCATION OF FACILITIES IN A COASTAL ZONE WHICH CAN FUNCTION EQUALLY WELL AT ANOTHER SITE SHOULD BE AVOIDED. THIS POSITION HAS VALIDITY, BUT THEN A CONFLICT ARISES BECAUSE THE CITY DOES NOT OWN OTHER LAND OF SUFFICIENT SIZE TO HOUSE THESE RECREATIONAL FACILITIES. GILPIN FIELD, THE HIGH SCHOOL ATHLETIC FIELD LOCATED 1/4 MILE SOUTH OF SITE 8, HAS BEEN PROPOSED AS AN ALTERNATIVE LOCATION FOR ORGANIZED SPORTS FACILITIES, BUT THE CITY'S COMPREHENSIVE MASTER PLAN DOES NOT RECOGNIZE THIS USE BECAUSE OF THE INDUSTRIAL PARK AND PROPOSED TRANSPORTATION CORRIDORS.

RECREATION FACILITIES INVENTORY

IN ASSESSING THE RECREATIONAL NEEDS OF THE COMMUNITY AND SEARCHING FOR MEANS TO SATISFY THOSE NEEDS, IT MUST BE NOTED THAT RECREATIONAL OPPORTUNITIES ARE NOT CONFINED TO PARKS ALONE. IN INSTANCES WHERE IT MAY NOT BE POSSIBLE TO DEVELOP A PARTICULAR PROPERTY TO FULFILL AN IDEAL CONCEPT, SOME OF THE SHORTCOMINGS MAY BE EASED IF NEARBY FACILITIES ARE TAKEN INTO CONSIDERATION AND EXPLOITED, THROUGH CAREFUL PLANNING, TO CONTRIBUTE TO THE OVERALL PLAN. IN ORDER TO OBTAIN A BROADER VIEW OF THE RESOURCES AVAILABLE TO THE PEOPLE OF ROGERS CITY, THE FOLLOWING CHART LISTS ALL OF THE SITES THAT AFFORD RECREATIONAL OPPORTUNITIES AND THE FACILITIES LOCATED AT EACH OF THESE SITES.



SITE 8. LITTLE LEAGUE FIELDS WITH LIMESTONE STORAGE IN BACKGROUND



Chapter 3

Needs & Opportunities

IN THE PROCESS OF ASSESSING THE NEEDS FOR ROGERS CITY WE HAVE CONSIDERED MORE THAN JUST THE PURELY RECREATIONAL ASPECTS. IN ADDITION, WE ARE LOOKING AT ECONOMIC, TOURISM AND FESTIVAL REQUIREMENTS. ALL OF THESE ARE CLOSELY INTERRELATED; THE SUCCESS OR FAILURE OF ONE HAS DIRECT IMPACT ON THE OTHERS.

IN THE FOLLOWING ANALYSIS WE FIRST DISCUSS THE NEEDS AND OPPORTUNITIES OF THE TOTAL COMMUNITY AND THEN THE SPECIFIC NEEDS AND OPPORTUNITIES WHICH RELATE TO EACH OF THE SEVEN SITES IN THIS STUDY.

ESTABLISHMENT OF NEEDS

ONE METHOD FOR IDENTIFYING RECREATIONAL NEEDS OF A COMMUNITY IS TO COMPARE EXISTING FACILITIES, ACREAGES AND PROGRAMS TO A STANDARD AND THEN TO PROPORTION THEM TO THE POPULATION OF THE COMMUNITY. THIS TEXTBOOK METHOD IS QUITE OFTEN USED AND IS OFTEN SUCCESSFUL; HOWEVER, WE DO NOT FEEL IT IS APPLICABLE TO ROGERS CITY. THE HIGH DEGREE OF COMMUNITY PARTICIPATION AND CONTRIBUTION OF IDEAS, BOTH THROUGH CITY OFFICIALS AND IN PUBLIC MEETINGS, HAS PROVIDED SPECIFIC INPUT FOR THE PLANNING PROCESS

THAT IS MUCH MORE VALUABLE THAN A THEORETICAL MODEL.

AT ONE OF THE FIRST MEETINGS HELD WITH RESPECT TO THIS PROJECT, CITY OFFICIALS, REPRESENTATIVES OF THE FESTIVAL COMMITTEE AND MEMBERS OF THE CHAMBER OF COMMERCE CONTRIBUTED THEIR VIEWPOINTS. AT A MEETING IN JANUARY THERE WERE APPROXIMATELY 70 PERSONS WHO SHOWED UP TO DISCUSS THE FUTURE OF THEIR COASTAL ZONE AND EXPRESS THEIR NEEDS AND DESIRES. PUBLIC PARTICIPATION HAS BEEN VERY MUCH A PART OF ESTABLISHMENT OF THE NEEDS. MOST OF THE DISCUSSION IN THIS CHAPTER IS BACKED BY DIRECT INPUT FROM THE COMMUNITY. INCLUDED IN THE APPENDIX OF THIS REPORT ARE THE PUBLIC COMMENTS TAKEN AT THE JANUARY 14TH MEETING. THROUGHOUT THE PROJECT, MONTHLY MEETINGS WERE HELD WITH THE PLANNING COMMISSION AND VARIOUS INTEREST GROUPS ATTENDED, GIVING INPUT AS TO THEIR NEEDS AND DESIRES.

COMMUNITY WIDE RECREATIONAL NEEDS

THUS FAR, ATTENTION TO RECREATION NEEDS HAS BEEN FOCUSED ON PRESERVING THE STATUS QUO RATHER THAN

PLANNING FOR FURTHER DEVELOPMENT. THE ONE SIGNIFICANT EXCEPTION IS THE NEED TO EXPAND THE NUMBER OF SOFTBALL/BASEBALL FIELDS TO ACCOMMODATE THE DEMAND FOR THIS HIGHLY ORGANIZED ACTIVITY.

AS PREVIOUSLY MENTIONED, ECONOMIC NEEDS AND THE BENEFITS TO BE DERIVED FROM THE TOURIST INDUSTRY, PARTICULARLY THE NAUTICAL FESTIVAL, ARE CLOSELY RELATED TO THE RECREATIONAL NEEDS OF THE COMMUNITY. THE NAUTICAL FESTIVAL, A FOUR DAY CELEBRATION OF THE CITY'S NAUTICAL HERITAGE, HAS BEEN HELD EVERY AUGUST SINCE 1976. EACH YEAR IT HAS DRAWN INCREASINGLY LARGER NUMBERS OF PEOPLE, NOT ONLY LOCAL RESIDENTS, BUT PREVIOUS RESIDENTS OF THE AREA WHO RETURN TO ADD A SPIRIT OF REUNION TO THE OCCASION. THE GROWING POPULARITY OF THE NAUTICAL FESTIVAL HAS INSPIRED THE CITY TO ANTICIPATE AND PLAN FOR AN ANNUAL EVENT THAT WILL EVENTUALLY REACH THE CHARACTER OF OTHER NORTHERN FESTIVALS SUCH AS TRAVERSE CITY'S CHERRY FESTIVAL.

IN COMPARISON TO STATE AND NATIONAL ECONOMIC STANDARDS, ROGERS CITY SHOWS A LOW OVERALL GROWTH RATE. POPULATION AND EMPLOYMENT GROWTH IS STABLE BUT SLOW -- 6% AS COMPARED TO 30% TO 60% IN ADJACENT

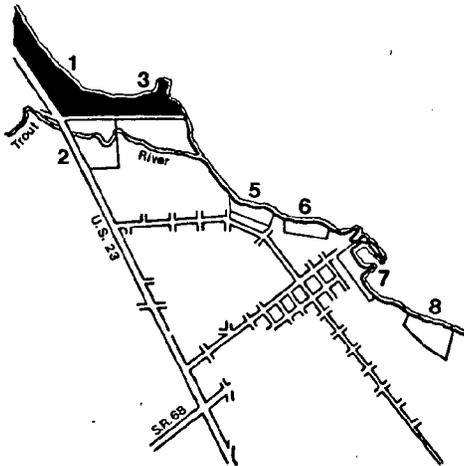
COUNTIES. TOTAL PERSONAL INCOME FIGURES ARE LOWER THAN FOR SURROUNDING COMMUNITIES, BUT SHOWED A HIGH RATE OF INCREASE -- OVER 50% -- IN THE FIRST HALF OF THE 1970'S. UNEMPLOYMENT RATES ARE APPROXIMATELY DOUBLE THE NATIONAL FIGURES, ALTHOUGH THEY ARE LOWER THAN THOSE FOR THE SURROUNDING REGION. OF THE ALREADY-EXISTING AREA INDUSTRIES, THE ONE THAT HAS THE POTENTIAL TO BRING ABOUT SIGNIFICANT CHANGE IN THE ECONOMIC/ EMPLOYMENT PICTURE IS TOURISM. MANY PEOPLE IN THE CITY RECOGNIZE THIS POTENTIAL AND ARE BEGINNING TO CONSIDER DEVELOPING IT. ROGERS CITY'S NAUTICAL HERITAGE, AND ITS YEARLY CELEBRATION OF IT, PROVIDE A THEME WITH WHICH TO WORK.

A PREVIOUS REPORT STATED THAT THE LOCAL MERCHANTS ATTRIBUTED 10% OF THEIR GROSS SALES TO TOURISM. RECENT DISCUSSION HAS BROUGHT OUT THE FACT THAT THE FIGURE IS NOW HIGHER THAN THAT. IN SUMMARY, THERE IS A NEED FOR ECONOMIC IMPROVEMENT AND IT IS FAIRLY CLEAR THAT TOURISM IS ONE OF THE WAYS TO HELP MEET THIS NEED, VIA THE NAUTICAL FESTIVAL, THE NAUTICAL THEME, THE HARBOR MARINA AND OTHER RECREATIONAL FACILITIES. SOME SPECIFIC NEEDS RELATIVE TO THIS INCLUDE A PERMANENT LOCATION TO

HOUSE THE NAUTICAL FESTIVAL AND ESTABLISHMENT OF A MORE IDENTIFIABLE CONNECTION BETWEEN THE CENTRAL BUSINESS DISTRICT AND THE HARBOR (LAKE HURON). AS CAN BE SEEN, THE TOPIC OF RECREATIONAL NEEDS AND OPPORTUNITIES IS COMPLEX, INVOLVING THE ECONOMY, TOURISM AND THE NAUTICAL FESTIVAL. TO ADDRESS THIS REQUIRES A BROAD UNDERSTANDING OF ALL ELEMENTS.

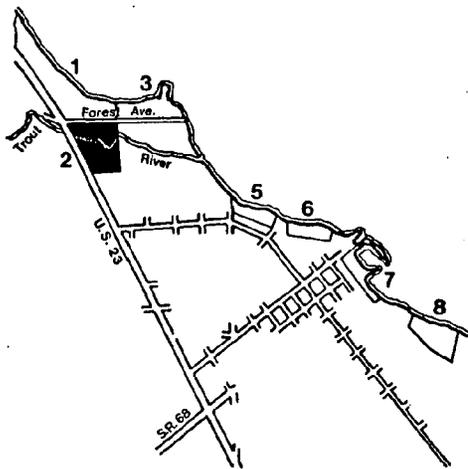
SITE SPECIFIC NEEDS AND OPPORTUNITIES

PARCELS 1 AND 3, ALSO KNOWN AS SEA GULL POINT, MAKE UP THE MOST SUBSTANTIAL LAKE FRONT PROPERTY OWNED BY THE CITY. THE VERY SENSITIVE COASTAL ENVIRONMENT IS WELL RECOGNIZED AND APPRECIATED BY THE PEOPLE OF ROGERS CITY. THE "NEED TO PRESERVE" IS A VITAL CONSIDERATION. THE SITE, REPORTED TO BE ESSENTIALLY OF THE SAME CHARACTER AS IT WAS FORTY YEARS AGO, MUST RETAIN THAT CHARACTER AND ITS NATURAL PROCESS OF SUCCESSION. WITH PLANNING, THIS CAN BE ACHIEVED IN CONJUNCTION WITH INTRODUCTION OF VERY LOW INTENSITY ACTIVITIES AND APPROPRIATE DEVELOPMENT AT CONTROLLED AND DESIGNATED POINTS.



IN CONFLICT WITH MAINTAINING THE SITE IN ITS NATURAL STATE ARE PRESSURES TO INCLUDE SOME OF THE FOLLOWING: EXPANDED BOAT LAUNCH FACILITIES NEAR THE PUMPHOUSE ACCESS, MORE ACCESS TO THE LAKE, A NEIGHBORHOOD PARK TO SERVE EXPANDING RESIDENTIAL AREAS TO THE NORTH, AND RESTROOMS TO SERVE THE PARK. POSSIBILITIES FOR DEVELOPMENT ARE SOMEWHAT LIMITED BECAUSE OF THE SENSITIVE CHARACTER OF THE SITE. HOWEVER, SOME OF THESE NEEDS CAN BE MET WHILE STAYING WITHIN THE PARAMETERS OF THE MOST PRESSING "NEED TO PRESERVE". THE CHARACTER AND LOCATION OF THE SITE OFFER AN EXCEPTIONAL RESOURCE FOR THE PEOPLE OF ROGERS CITY. THE OPPORTUNITY TO PRESERVE A BEAUTIFUL, NATURAL AND QUIET SETTING THAT CAN SUPPORT PASSIVE RECREATIONAL ACTIVITIES AND DEMONSTRATE THE INTIMATE INTERRELATIONSHIPS OF LAKE, BEACH, SHIFTING SAND AND VEGETATION, ALL WITHIN WALKING DISTANCE OF THE MAIN POPULATION CENTER, IS UNUSUAL AND WORTHY OF ATTENTION.

PARCEL 2 WAS PREDESIGNATED FOR CAMPING IN THE GRANT APPLICATION FOR LAND AND WATER CONSERVATION FUNDS WITH WHICH TO PURCHASE THE PARCEL. HOWEVER, THE NEED FOR SUCH AN ACTIVITY IS SEASONAL.



AT PRESENT THERE IS A STATE CAMPGROUND LESS THAN TWO MILES NORTH OF THE CITY WHICH IS UNDERUTILIZED. IT IS SELDOM FILLED TO CAPACITY, EXCEPT DURING THE NAUTICAL FESTIVAL. FOR THE PERIOD OF THE FESTIVAL, WHEN OTHER CAMP SITES ARE FILLED, SITE 2 COULD ACCOMMODATE THE OVERFLOW. HOWEVER, THE DEVELOPMENT OF THIS SITE INTO A CITY OWNED AND OPERATED CAMPGROUND IS NOT SEEN AS A PRIORITY NOR AN ESSENTIAL NECESSITY IN THE CITY'S OVERALL RECREATIONAL NEEDS.

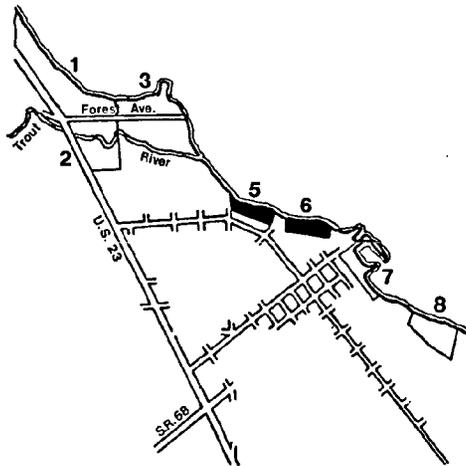
THE SITE AS IT NOW EXISTS CAN BE USED FOR PRIMITIVE CAMPING. SHORT TERM NEEDS DO NOT DICTATE FURTHER DEVELOPMENT OF THE SITE FOR CAMPING EVEN THOUGH PREVIOUS LONG RANGE PLANS INDICATED SUCH. HOWEVER, THERE ARE SHORT TERM NEEDS FOR IMPROVING THE PRESENT CHARACTER OF THE SITE. THERE ARE TWO BORROW PITS ON THIS SITE WHICH ARE IN UNATTRACTIVE STAGES OF NATURAL SUCCESSION. MANY LOCAL CITIZENS WOULD LIKE TO IMPROVE THE AESTHETIC QUALITY OF THESE TWO FEATURES. THE OTHER SPECIFIC NEED IS FOR MEASURES TO STOP EROSION ALONG THE TROUT RIVER AT A COUPLE OF LOCATIONS.

LIKE SEA GULL POINT, THIS SITE OFFERS A UNIQUE RESOURCE TO A SEMI-URBAN ENVIRONMENT. THE TROUT RIVER, THE QUIET, WOODED, SECLUDED QUALITY OF THE SITE, THE EXISTING BORROW PITS AND EXISTING TRAILS AND ROADWAYS ARE SPECIAL FEATURES. THE POTENTIAL IS EXCELLENT FOR OVERFLOW CAMPING AND HAS BEEN ADDRESSED IN THE MASTER PLAN PREPARATION.

PARCEL 5 HAS POTENTIAL FOR DEVELOPMENT AS A NEIGHBORHOOD PARK AND LOCAL RESIDENTS HAVE EXPRESSED INTEREST IN SUCH A USE, AS IT IS FAIRLY ACCESSIBLE. RECREATIONAL DEVELOPMENT WOULD ENHANCE THE PRESENT APPEARANCE OF THE SITE AND PROVIDE AN IMPROVED SETTING FOR THE EXISTING RESORT MOTEL AND PROPOSED RESTAURANT.

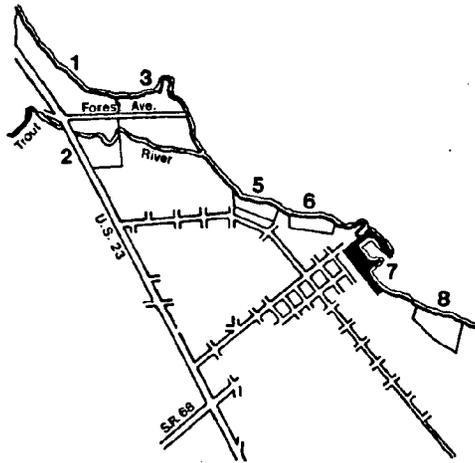
PARCEL 6 IS THE PRESENT LOCATION OF THE SEWAGE TREATMENT PLANT. AS DESCRIBED IN THE ANALYSIS, THIS SITE IS SURROUNDED BY A SOMEWHAT OLDER NEIGHBORHOOD MOSTLY OF COMMERCIAL AND SEMI-INDUSTRIAL CHARACTER.

AN INVESTIGATION OF THE POSSIBILITIES FOR DEVELOPING RECREATION ON THIS SITE SHOWS A LIMITED POTENTIAL. THIS WOULD CONSIST OF SEPARATING AND



SCREENING THE AREAS AT EACH END OF THE SITE THAT ARE NOT OCCUPIED BY THE TREATMENT PLANT. A FEW HUNDRED FEET OF BEACH COULD BE MADE ACCESSIBLE AT EITHER SIDE OF THE PLANT. THIS POTENTIAL HAS NOT BEEN HIGHLIGHTED AS THERE IS NO PUBLIC INTEREST IN UTILIZING THIS SITE FOR ORGANIZED RECREATION. HOWEVER, THE NEED DOES EXIST TO UPGRADE THE AESTHETIC QUALITY OF THE AREA, BOTH FROM WATER AND LAND ORIENTATIONS.

THE OPPORTUNITY WHICH THIS SITE OFFERS IS ONE OF LIMITED OPTIMISM. FIRST THE SEWAGE TREATMENT FACILITY WILL REMAIN ON THE SITE AND, SECOND, THE SURROUNDING AREA MAY NOT CHANGE FOR SOME TIME. HOWEVER, THE AESTHETIC APPEARANCE COULD BE ENHANCED SUBSTANTIALLY BY A TIDYING UP OF THE PARCEL AND THE ADDITION OF VEGETATIVE SCREENING. THIS ALSO OFFERS THE CITY AN OPPORTUNITY TO SET AN EXAMPLE FOR THE ADJACENT LAND OWNERS TO IMPROVE THE APPEARANCE OF THEIR PROPERTIES.



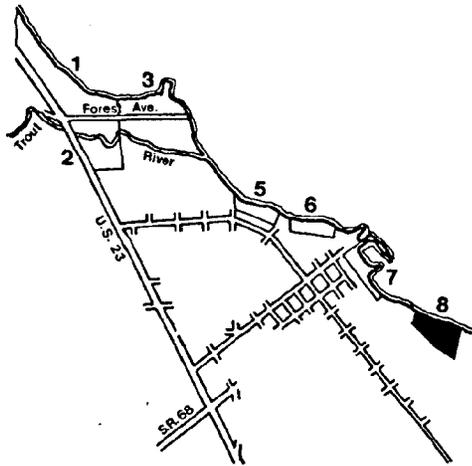
PARCEL 7, THE MOST INTENSIVELY USED SITE, OFFERS THE GREATEST POTENTIAL. YET IT IS CONSIDERED BY MANY RESIDENTS TO BE SERVING ITS NEEDS MOST EFFECTIVELY. THE PRESENT USES INCLUDE BOAT LAUNCH,

MARINA, BANDSHELL FOR CONCERTS, SWIMMING AND SUNNING BEACH, PAVILION, LOCATION FOR NAUTICAL FESTIVAL, PLAY AREA, TENNIS, OPEN LAWN AREAS AND A MONUMENT. BECAUSE OF THE MULTIPLE USES OF THE SITE, RECREATIONAL, ECONOMIC, TOURISM AND FESTIVAL REQUIREMENTS MUST BE CONSIDERED JOINTLY.

THE EXISTING FEATURES OF THE SITE WOULD BE ENHANCED BY ADDITIONAL FACILITIES FOR THE NAUTICAL FESTIVAL (POSSIBLY A PERMANENT STRUCTURE), A TERMINUS FOR THE AVENUE OF FLAGS AND SAILORS MONUMENT, AND MORE PARKING DURING THE FESTIVAL. A NEED HAS BEEN EXPRESSED FOR A COMMUNITY CENTER, WHICH COULD BE COMBINED WITH THE NAUTICAL FESTIVAL FACILITIES. A VISITOR INFORMATION CENTER WOULD CONTRIBUTE TO THE DEVELOPMENT OF TOURISM. STRONGER VISUAL AND PHYSICAL LINKS BETWEEN THE CENTRAL BUSINESS DISTRICT AND LAKESIDE PARK WOULD MAKE THE PARK MORE INTEGRATED AND ACCESSIBLE.

THE OPPORTUNITIES WHICH THIS SITE OFFERS ARE GREAT. HOWEVER, THERE MAY BE SOME CONFLICT IN TRYING TO MAINTAIN THE SITE FOR PASSIVE ACTIVITIES SUCH AS PICNICKING, AND SUNBATHING/SWIMMING AND, AT THE SAME TIME, TRYING TO MEET THE NEEDS OF THE

NAUTICAL FESTIVAL, A COMMUNITY CENTER, AND A TOURIST INFORMATION CENTER. THIS CONFLICT MUST BE ADDRESSED IN THE CONCEPT AND PROGRAM DEVELOPMENT OF THIS PARCEL.



PARCEL 8 HAS A TWOFOLD FUNCTION. THERE ARE TWO BALL DIAMONDS LOCATED HERE WHICH ARE USED FOR SOFTBALL AND LITTLE LEAGUE PLAY. THE OTHER SEASONAL USE IS FOR STORAGE OF SNOW WHICH IS REMOVED FROM THE CITY STREETS.

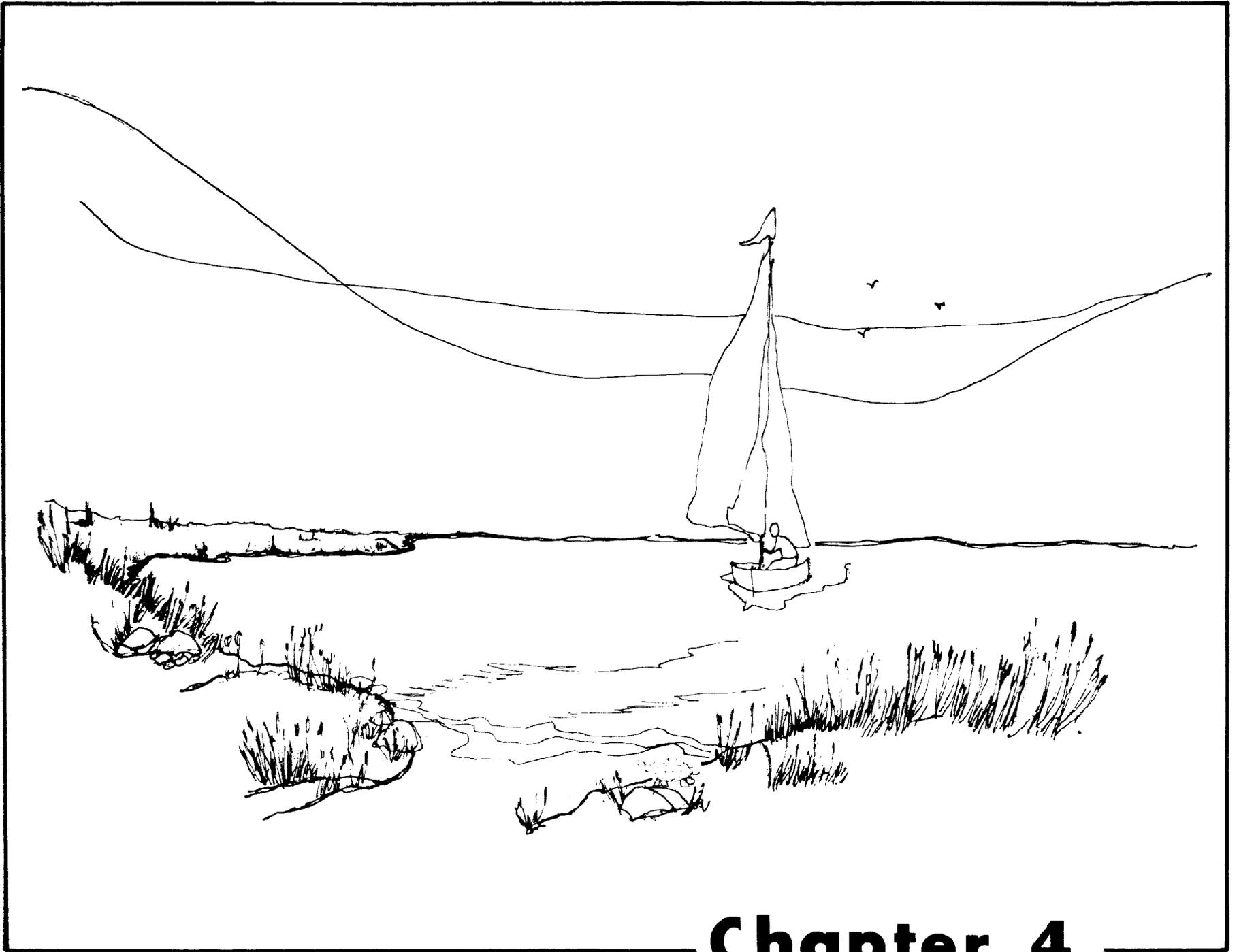
THE MOST DOMINANT NEED IS FOR THE ADDITION OF TWO BALLFIELDS. THE PEOPLE ASSOCIATED WITH THE BALL LEAGUES HAVE DONE EXTENSIVE INVESTIGATION INTO SUCH A PROJECT. WITH APPROVAL AND SOME FINANCIAL ASSISTANCE THEY COULD HAVE THESE TWO ADDITIONAL FIELDS IN OPERATION BY 1981. (REFER TO THE APPENDIX AND TO THE NOTES OF THE JANUARY PUBLIC MEETING).

NOTE THAT WHILE THE IMMEDIATE NEED FOR BALLFIELDS HAS BEEN ESTABLISHED THERE ARE OTHER ISSUES TO CONSIDER. FIRST OF ALL THERE ARE SOME OBJECTIONS TO DEVELOPMENT OF BALLFIELDS AT THIS SITE BECAUSE OF THE COLD WIND FROM THE LAKE AND THE INAPPROPRIATE

USE OF LAKESIDE PROPERTY FOR ACTIVITIES WHICH COULD TAKE PLACE ELSEWHERE. THE PROPOSED ALTERNATIVE LOCATION FOR BALLFIELDS, GILPIN FIELD, IS IN THE PATH OF A FUTURE TRUCK ROUTE AND NO OTHER SITES HAVE BEEN PROPOSED AT THIS TIME. THEREFORE, THE POSSIBILITY OF MOVING THE SPORT ACTIVITIES FROM SITE NUMBER EIGHT IS NOT OPTIMISTIC. THE LONG RANGE PROJECTED NEED FOR THIS PARCEL IS TO BECOME A LAKE FRONT PASSIVE OPEN PARK WHICH CAN EVENTUALLY MEET THE DEMAND FOR PICNICKING, SUNBATHING AND SWIMMING.

THE OPPORTUNITY WHICH THIS SITE OFFERS FOR BECOMING AN ATTRACTIVE AND INTEGRAL PART OF THE ROGERS CITY PARK AND RECREATIONAL SYSTEM IS VERY PROMISING. FOR ONE THING IT IS THE LARGEST OPEN SITE THE CITY HAS AVAILABLE (SEAGULL POINT IS LARGER BUT IT IS VEGETATED AND IS NOT CONSIDERED APPROPRIATE FOR DEVELOPMENT). THE OTHER POSITIVE ASPECT IS ITS JUXTAPOSITION TO A LARGE RESIDENTIAL NEIGHBORHOOD, TO THE CENTRAL BUSINESS DISTRICT, TO THE HARBOR AREA AND TO THE CALCITE QUARRY. CLOSE ACCESS TO RESIDENTIAL AREAS RENDERS THE SITE WELL SUITED TO SERVE AS A NEIGHBORHOOD PARK. ITS LOCATION CLOSE TO THE CENTRAL BUSINESS

DISTRICT ALSO INCREASES ITS ACCESSIBILITY. ITS PROXIMITY TO THE HARBOR MAKES IT AVAILABLE FOR PEOPLE USING THE MARINA. BECAUSE IT IS CLOSE TO THE QUARRY AREA IT COULD SERVE AS AN INFORMATION AND INTRODUCTION POINT DIRECTING PEOPLE TO THE QUARRY VIEWING AREA.



Chapter 4



Concepts & Program Development

CONCEPT

THE DEVELOPMENT OF A MASTER PLAN CONCEPT WHICH CAN BE EASILY UNDERSTOOD AND EASILY DEFINED IS VERY IMPORTANT. THE DEVELOPMENT OF A CONCEPTUAL ARRANGEMENT OF RECREATIONAL FUNCTIONS WHICH ARE RELATED TO THE PHYSICAL LAYOUT AND PLACEMENT OF ALL THE INDIVIDUAL COMPONENTS WHICH MAKE UP ROGERS CITY IS THE PRIMARY OBJECTIVE HERE.

IN THIS CASE, THE HISTORICAL ELEMENTS WHICH HAVE PLAYED A PART IN THE ORGANIZATION ARE LAKE HURON, THE NATURAL HARBOR, THE LOCATION OF COUNTY GOVERNMENTAL OFFICES, THE LOCATION OF HIGHWAYS AND RAILROADS, NATURAL RESOURCES SUCH AS TIMBER AND LIMESTONE, AND THE PEOPLE. A TYPICAL PLAN FOR A COMMUNITY IS ONE WITH THE DEVELOPMENT OF A CENTRAL CORE (EITHER GOVERNMENTAL OR COMMERCIAL OR BOTH). FROM THIS CORE, DEVELOPMENT RADIATES OUT IN ALL DIRECTIONS EITHER BY PLAN OR BY THE PATH OF LEAST RESISTANCE. THE GENERAL DEVELOPMENT OF ROGERS CITY HAS BEEN SIMILAR EXCEPT THAT ITS LOCATION WITH THE CENTRAL CORE CLOSE TO THE LAKE RESULTED IN A PLAN THAT RADIATES ONLY LANDWARD -- THUS A SEMI-CIRCLE IS DEVELOPED INSTEAD OF A FULL CIRCLE.



AVENUE OF FLAGS

KEEPING IN MIND THE VARIOUS ASPECTS OF THE COMMUNITY, IT MUST BE NOTED THAT THERE IS A CLOSE RELATIONSHIP OF RECREATION TO ECONOMIC, TOURISM AND THE NAUTICAL FESTIVAL NEEDS. THE ONE COMMON ELEMENT THAT ALL OF THESE HAVE TOGETHER IS THE HARBOR MARINA, LAKESIDE PARK AND THE CENTRAL BUSINESS DISTRICT. AT PRESENT THEY ARE SEPARATED BY A THIN BAND OF RESIDENTIAL DEVELOPMENT. THE CONNECTION IS VIA THREE CITY STREETS, ONE OF WHICH HAS AN AVENUE OF FLAGS. THIS AVENUE OF FLAGS IS PLANNED TO EXTEND NORTHWARD SO THAT IT JOINS THE LAKE FRONT AND THE CENTRAL BUSINESS DISTRICT. THIS LINKAGE WILL STRENGTHEN THE CENTRAL CORE, CREATING A MORE INTENSE, COMMERCIAL, SEMI-URBAN ATMOSPHERE, AND CONTRIBUTING TO THE CONCEPT OF DEFINING SEPARATE AREAS FOR THREE LEVELS OF RECREATIONAL INTENSITY.

THE FIRST AREA, LOCATED IN THE CORE OR HUB OF THE SYSTEM, IS THE MOST INTENSE AND RELATES MOST DIRECTLY TO THE PROMOTION OF TOURISM, COMMERCIAL ASPECTS, THE ECONOMY AND THE NAUTICAL FESTIVAL. THE SECOND ZONE OUT FROM THIS CORE IS FOR ACTIVE RECREATION INCLUDING NEIGHBORHOOD PARKS, SPORTS FACILITIES AND BEACHES. THE THIRD ZONE IS FOR

PASSIVE RECREATION AREAS SUCH AS NATURE TRAILS, WOODS, AND NATURAL AREAS.

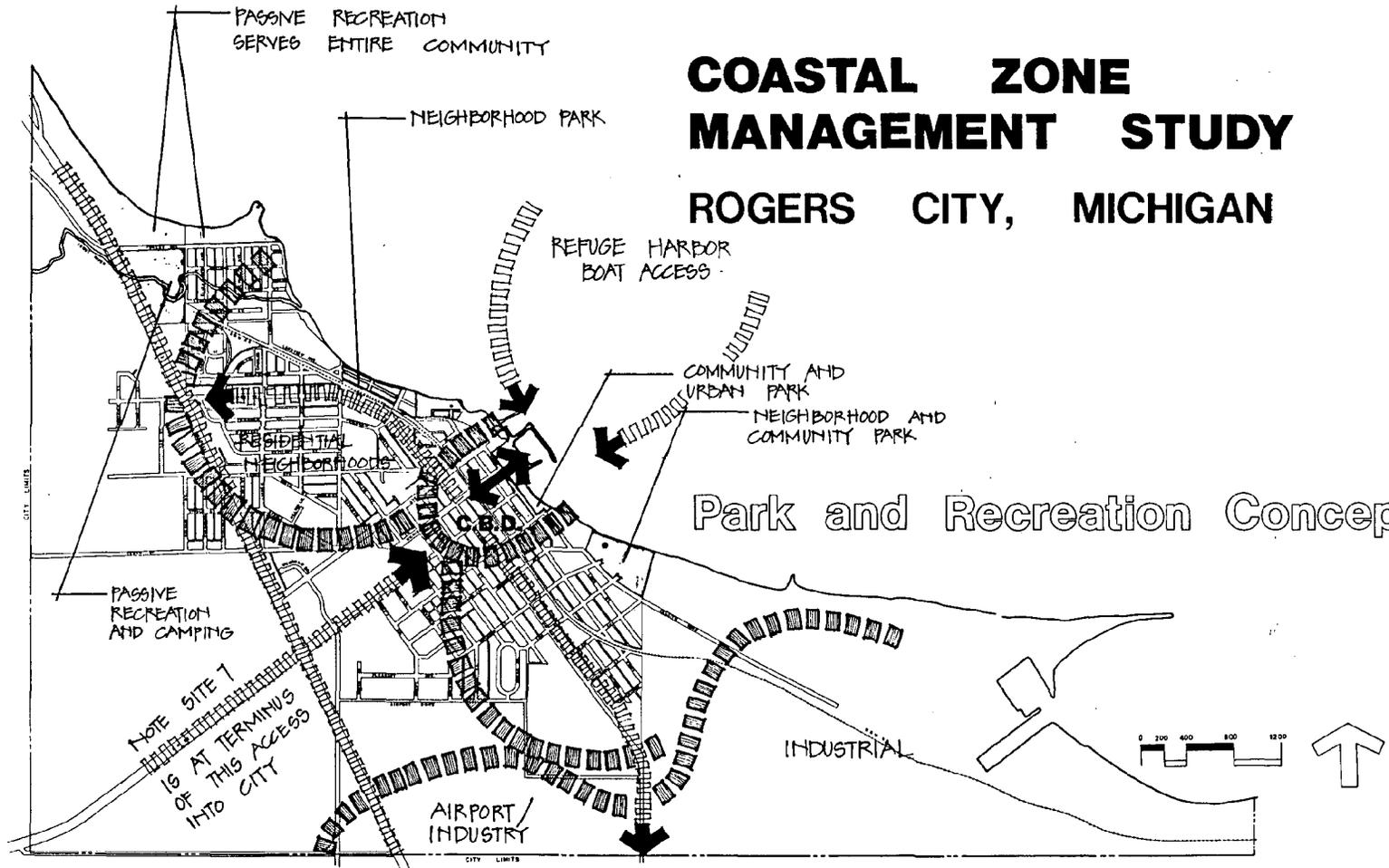
MOST OF ROGERS CITY'S RECREATIONAL PROPERTIES ARE LOCATED ALONG THE THIN LAKE EDGE. BECAUSE OF THIS, THE HIERARCHY OF CENTRALLY-LOCATED, INTENSELY USED AREAS GRADUATING TO PASSIVE RECREATIONAL AREAS FARTHER FROM THE POPULATION CENTER FALLS INTO A LINEAR ARRANGEMENT. THIS ARRANGEMENT OFFERS THE POTENTIAL FOR LINKING THE PROPERTIES AND CREATING A BUFFER OR GREEN SPACE BETWEEN THE CITY AND THE LAKE.

REALIZATION OF THIS CONCEPT REQUIRES STRENGTHENING THE CENTRAL CORE BY PHYSICALLY JOINING THE CENTRAL BUSINESS DISTRICT WITH THE LAKE FRONT. THIS AREA IS THE LOCATION OF THE MOST INTENSE COMMERCIAL/URBAN TYPES OF RECREATIONAL ACTIVITIES. MOVING OUTWARD ALONG THE LAKE FROM THE CORE, SUCCEEDING ZONES OFFER PROGRESSIVELY LESS STRUCTURED FACILITIES FOR PASSIVE USE.

COASTAL ZONE MANAGEMENT STUDY

ROGERS CITY, MICHIGAN

Park and Recreation Concept



PROGRAM DEVELOPMENT

ESTABLISHING A PROGRAM OF RECREATIONAL DEVELOPMENT FOR ROGERS CITY BEGINS WITH DETERMINING THE NEEDS OF THE COMMUNITY. ONCE THIS IS ACCOMPLISHED, AN UNDERSTANDING OF EXISTING NEEDS LEADS TO THE DEVELOPMENT OF A CONCEPT OR MASTER PLAN. THE MASTER PLAN OUTLINES THE COORDINATION OF THE MANY ASPECTS OF DEVELOPMENT INCLUDING ACTIVE AND PASSIVE RECREATION, PROMOTION OF THE TOURISM INDUSTRY, AND DEVELOPMENT OF THE NAUTICAL FESTIVAL.

THE PROGRAM INCLUDES FUNCTIONAL AND POLICY RECOMMENDATIONS, AND IDENTIFICATION OF PHYSICAL ELEMENTS. IT IS BROKEN DOWN INTO POLICY STATEMENTS, EITHER DEFINED OR IMPLIED, AND SHORT AND LONG RANGE GOALS.



SITE 1

POLICY:

THE POLICY OF THE CITY IN THE PAST HAS BEEN TO CONTROL ACCESS OF MOTOR VEHICLES ONTO THE SITE AND TO RESTRAIN THE DEVELOPMENT OF ACTIVE TYPES OF FACILITIES IN ORDER TO PRESERVE THE NATURAL AND PASSIVE CHARACTER OF THE SITE. THIS POLICY HAS BEEN MAINTAINED THROUGHOUT THE COMMUNITY PLANNING PROCESS.

SHORT RANGE GOALS:

CONSTRUCTION OF ADDITIONAL TRAILS - LIKE THE EXISTING TRAILS ON THIS SITE, THESE ARE TO BE SOFT SURFACED AND CONSTRUCTED IN A MANNER TO MINIMIZE DISTURBANCE OF THE SITE.

SIGNAGE ALONG TRAILS - TO HELP IDENTIFY SITE CHARACTERISTICS AND PLANT ASSOCIATIONS.

FOOTBRIDGE OVER CREEK - TO ENHANCE THE TRAILWAY AND TO KEEP USERS FROM AGGRAVATING THE HIGHLY ERODABLE CONDITION AT THE CREEK.

LONG RANGE GOALS:

CONTINUED PROTECTION OF THIS SITE THROUGH APPROPRIATE ZONING, CONTINUED MAINTENANCE OF THE BOLLARD AND CHAIN BARRIER AND CAREFUL POLICING OF THE AREA.

SITE 2

POLICY:

THE ORIGINAL INTENT FOR PURCHASE OF THIS PROPERTY WAS TO DEVELOP IT INTO A GROUP CAMPGROUND. THAT REMAINS THE POLICY OF THE CITY, HOWEVER, IMMEDIATE DEVELOPMENT IS NOT ANTICIPATED. IT IS NOT THE CITY'S INTENT TO ENCOURAGE DAILY COMMERCIAL CAMPING YEAR AROUND.

SHORT RANGE GOALS:

RESHAPING AND REVEGETATION OF BORROW PIT AREAS.

CONTAINMENT OF EROSION ALONG THE RIVERBANK.

LONG RANGE GOALS:

CONSTRUCTION OF TRAILS.

CAMPSITE CLEARING.

FOOTBRIDGE OVER THE TROUT RIVER.

ADDITIONAL VEHICULAR ACCESS CONTROL BY INSTALLING
BOLLARDS AND CHAIN.

VAULT TOILET INSTALLATIONS.

WELL FOR DRINKING WATER.

PRIMITIVE AMPHITHEATRE WITH TIMBERS AND GRASS.

CONSTRUCTION OF A LOOP ROAD.

SITE 3

POLICY:

THE ORIGINAL PURCHASE OF THIS SITE WAS FOR LOCATION OF ADDITIONAL WATER WELLS TO SERVE ROGERS CITY. THE POLICY DESIGNATING THIS SITE FOR THAT PURPOSE REMAINS THE SAME.

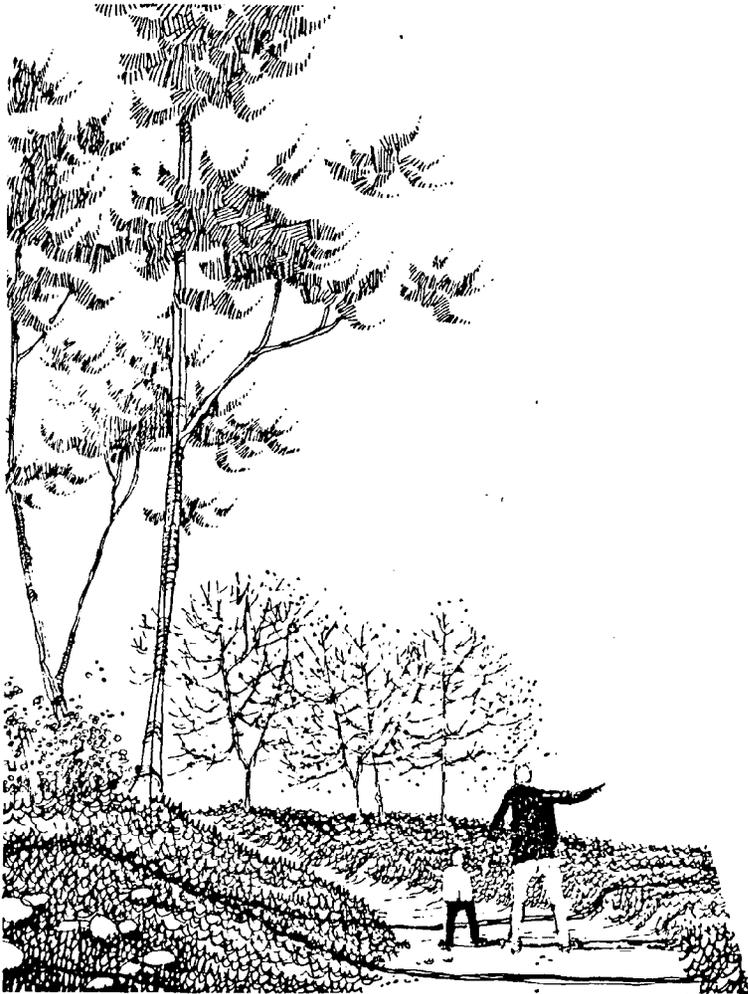
SHORT RANGE GOALS:

CONSTRUCTION OF TRAILS - THESE ARE OF THE SAME CHARACTER AS IN SITE 1.

SIGNAGE ALONG TRAILS - THESE ARE TO SERVE THE SAME PURPOSE AND TO BE OF THE SAME CHARACTER AS IN SITE 1.

VAULT TOILETS - TO SERVE THE ACCESS AREA TO THE FAR EAST END OF THE SITE.

PLAY STRUCTURE - LOCATED AT THE FAR EAST END AND INTENDED TO SERVE THE ACCESS AREA AND THE RESIDENTS ACROSS THE STREET FROM THIS SITE. THIS STRUCTURE SHOULD BE CONSTRUCTED FROM WOOD TIMBERS TO MAINTAIN A NATURAL APPEARANCE.



LONG RANGE GOALS:

TO MAINTAIN THE SITE FOR ADDITIONAL CITY WATER WELLS
AND CONTINUED PROTECTION OF THE SITE'S SENSITIVE
ENVIRONMENT.

SITE 5

POLICY:

TO DEVELOP THIS SITE INTO A NEIGHBORHOOD PARK
WITH PICNICKING, PLANT MATERIALS, BATHING BEACH,
SHELTER AND TOILET FACILITIES.

SHORT RANGE GOALS:

REMOVE EXISTING ROAD, AND CLEAR AND GRADE A
PORTION OF THE SITE.

LONG RANGE GOALS:

TO DEVELOP A NEIGHBORHOOD PARK WITH THE FOLLOWING FACILITIES:

TWO (2) PARKING LOTS TO PROVIDE ACCESS AT EACH END.

TOT LOT, INCLUDING WOOD PLAY EQUIPMENT AND SAND AREA.

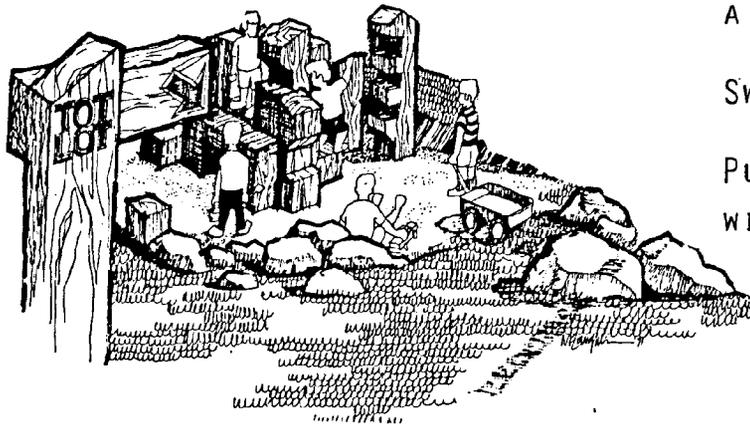
VAULT TOILETS.

PICNIC SHELTER MADE OF WOOD TIMBERS, CEDAR SHAKE ROOF AND CONCRETE FLOOR.

PLANT MATERIALS AND SEEDING TO CREATE SHADE AND A PARK-LIKE LAWN CONDITION.

SWIMMING BEACH AND SUNBATHING AREA.

PURCHASE ADDITIONAL LAND SOUTHEAST TO CONNECT WITH SITE 6.



SITE 6

POLICY:

THE FACT THAT THIS SITE IS THE LOCATION OF THE SEWAGE TREATMENT PLANT AND IS ALSO USED FOR STORAGE OF THE CITY'S CONSTRUCTION MATERIALS AND EQUIPMENT INDICATES THE POLICY WHICH HAS PREVAILED IN THE PAST. THERE HAS BEEN NO CHANGE IN THE POLICY WITH RESPECT TO THE SEWAGE TREATMENT PLANT (IT WOULD BE UNFEASIBLE TO CHANGE EVEN IF IT WERE DESIRABLE). THE REVISED POLICY DOES, HOWEVER, INCLUDE REMOVAL OF MATERIALS AND EQUIPMENT FROM THIS SITE TO ANOTHER CITY-OWNED PROPERTY.

SHORT RANGE GOALS:

PLANT MATERIALS FOR SHADE AND SCREENING, AND SEEDING OF LAWN.

GENERAL CLEANUP.

LONG RANGE GOALS:

RELOCATION OF A PORTION OF THE ACCESS ROAD.

RELOCATION OF EXISTING FENCE.

SITE 7

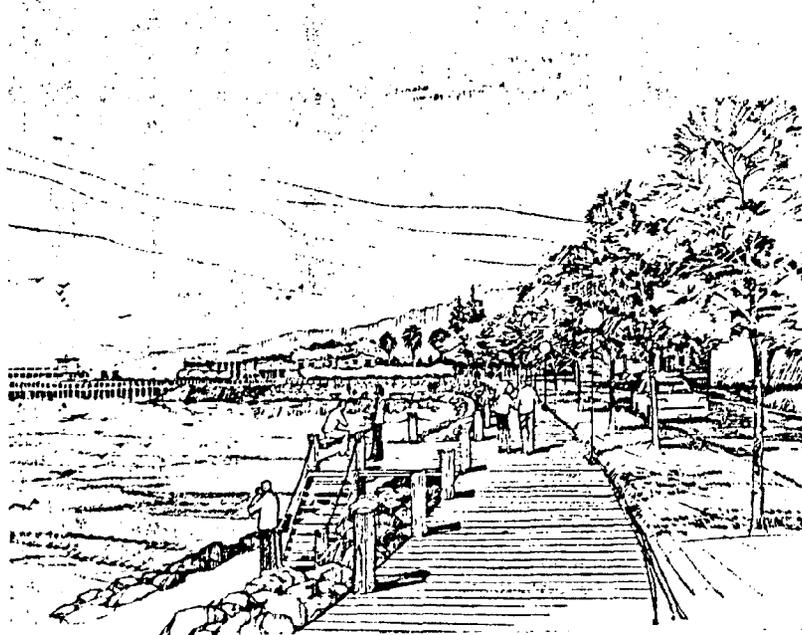
POLICY:

THE PAST POLICY HAS BEEN TO MAINTAIN THIS AS A COMMUNITY WIDE PARK TO SERVE MULTIPURPOSE NEEDS. SITE FACILITIES INCLUDE A MARINA, BOAT LAUNCH, BAND SHELL, THE NAUTICAL FESTIVAL, BEACH FOR SWIMMING, PICNICKING, AND NEIGHBORHOOD PARK.

THE POLICY IS TO MAINTAIN THE PRESENT MULTIPURPOSE USAGE AND TO FURTHER ENHANCE THOSE ACTIVITIES BY IMPROVING FACILITIES.

SHORT RANGE GOALS:

EXPAND THE PARKING LOT.



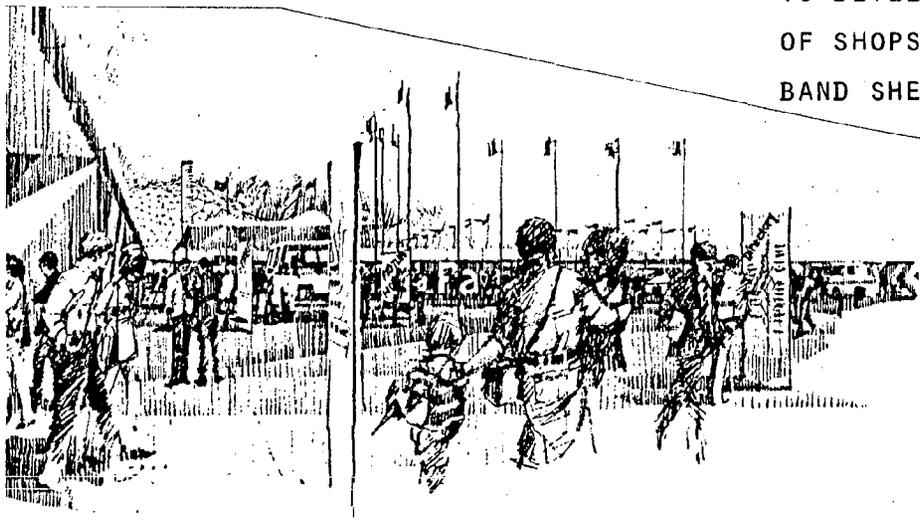
DEVELOP THE SAILORS MONUMENT INTO A PLAZA.

REFURBISH THE TENNIS COURTS (NOW UNDERWAY).

PLANT MATERIALS AND SEEDING.

LONG RANGE GOALS:

THESE GOALS DEPEND SOMEWHAT ON THE SUCCESS OF DEVELOPING TOURISM, THE NAUTICAL FESTIVAL AND OTHER ACTIVITIES AT THIS PARK. WHILE SEVERAL SUGGESTIONS HAVE BEEN MADE IN THE SPIRIT OF CREATIVE THINKING THE LONG RANGE GOALS HAVE NOT BEEN EXPANDED BEYOND THOSE IDEAS REFLECTED IN THE MASTER PLAN FOR THIS SITE, WHICH ARE TO DEVELOP A LAKESIDE DECK AREA FOR INCLUSION OF SHOPS, FOOD CONCESSION AND THE RELOCATED BAND SHELL.



SITE 8

POLICY:

THE PAST POLICY OF USING THIS SITE FOR LOCATION OF BALLFIELDS AND AS A DISPOSAL SITE FOR SNOW REMOVED FROM CITY STREETS HAS CHANGED TO ELIMINATE THE SITE AS A SNOW DISPOSAL AREA.

SHORT RANGE GOALS:

LIGHTED LITTLE LEAGUE FIELD.

SOFTBALL AND BASEBALL FIELD.

PARKING LOT.

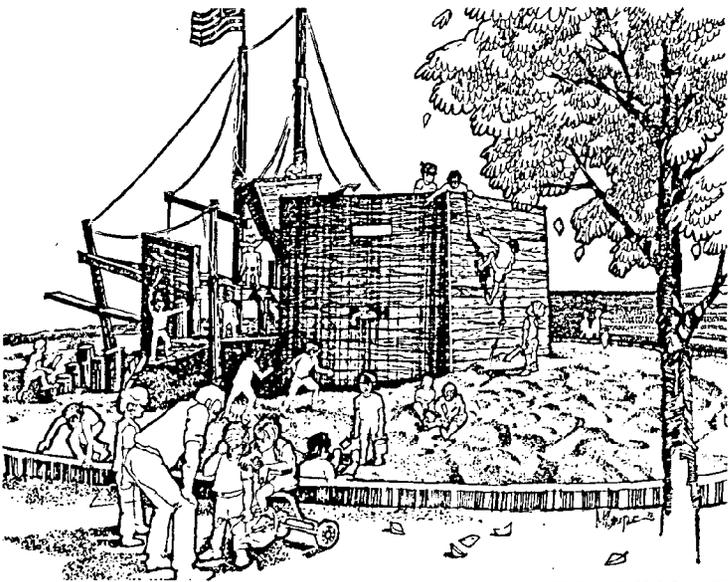
TOT LOT, INCLUDING WOODEN PLAY STRUCTURE AND SAND AREA.

RESTROOM FACILITIES.

ADDITIONAL BOLLARDS AND CHAINS.

CONCESSION STAND.

PLANT MATERIALS AND SEEDING.



LONG RANGE GOALS:

POSSIBLE RELOCATION OF THE BALLFIELDS FROM THE SITE. THE INTERIM USE AS A RECREATION COMPLEX IS NECESSARY BECAUSE THE CITY DOES NOT AT THE PRESENT TIME HAVE AN ALTERNATE SITE. IT SHOULD BE NOTED THAT ALL FACILITIES SO PROPOSED AS SHORT RANGE GOALS, EXCEPT FOR THE BALLFIELDS, HAVE BEEN PLANNED TO REMAIN AND TO BECOME AN INTEGRATED PART OF THE LONG RANGE GOALS AS WELL.

INLAND LAKE FOR SKATING IN THE WINTER, SAILING MINIATURE SAIL BOATS IN THE SUMMER AND ALSO TO INCLUDE MUSICAL FOUNTAINS.

PARK PAVILION TO OVERLOOK THE LAKE.

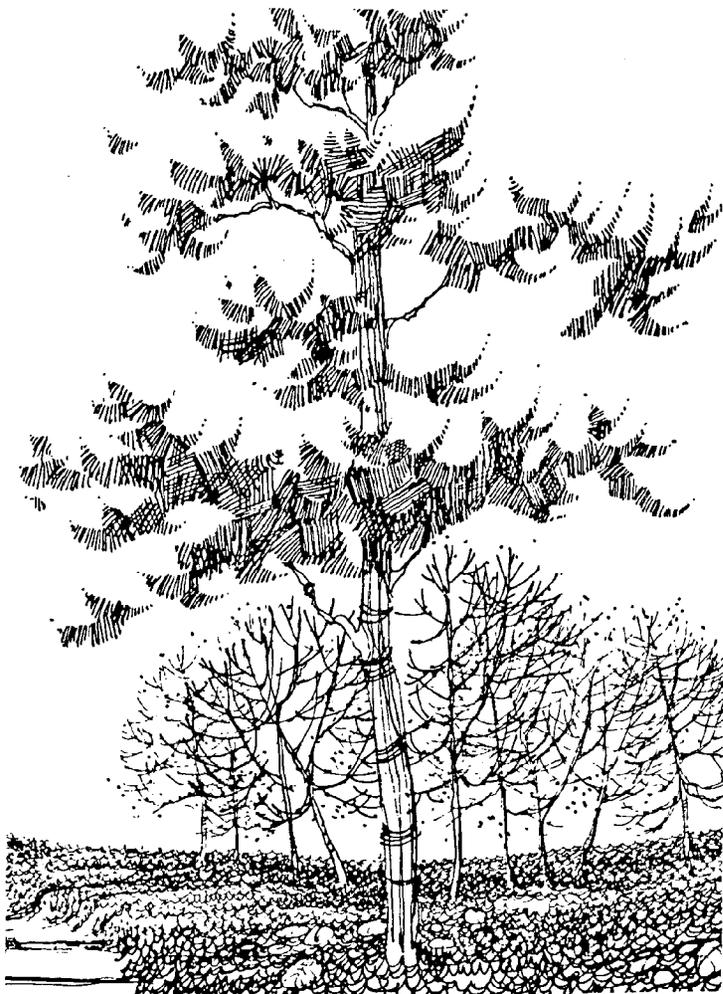
BOARDWALK AND FISHING PIER.

ADDITIONAL MOORING SPACES FOR VISITORS.

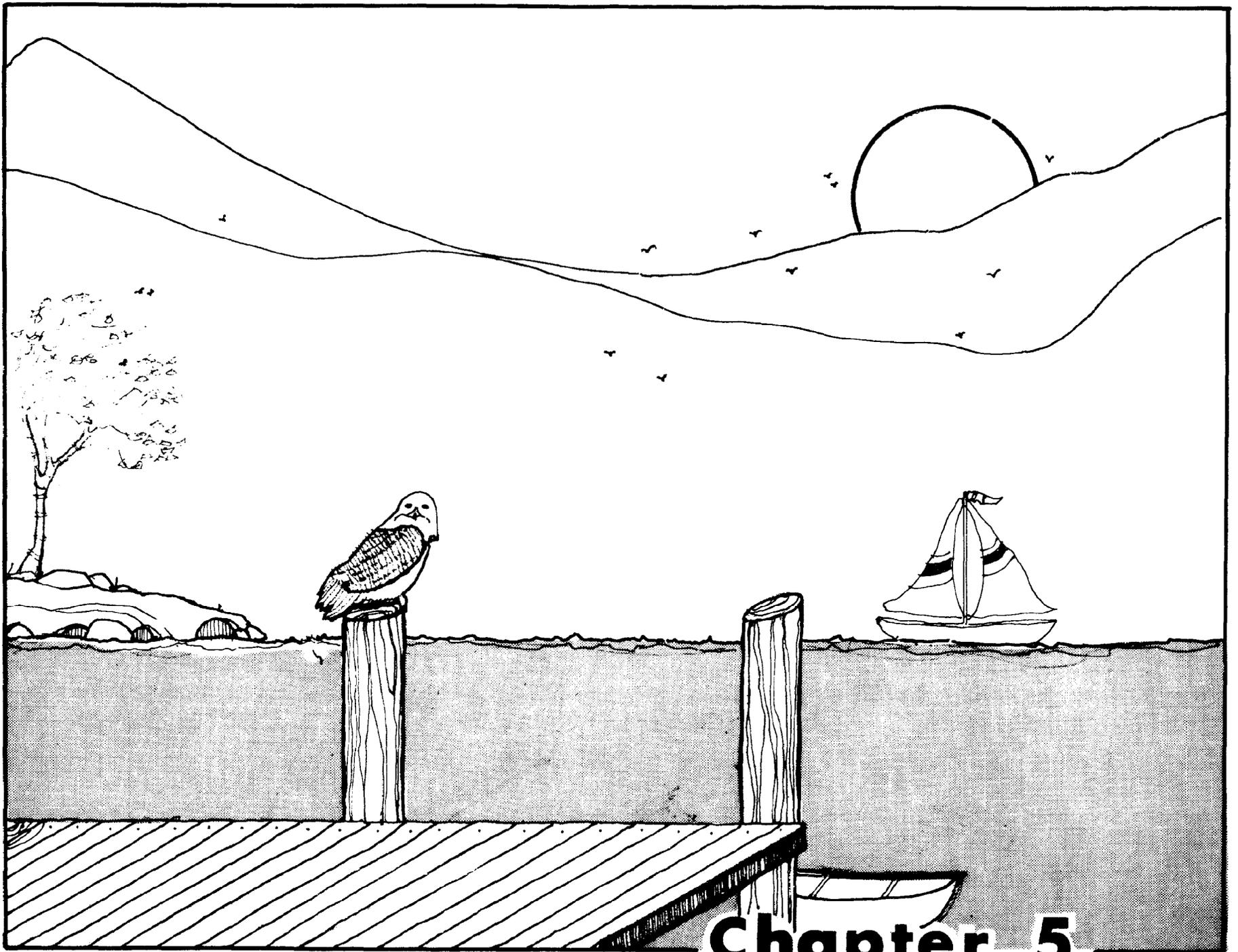
PLAZA AREA FOR EVENTS SUCH AS CRAFT FAIRS, ART EXHIBITS AND FESTIVAL ACTIVITIES. ALSO COULD INCLUDE BENCHES AND GAME TABLES.

WARMING SHELTER FOR ICE SKATERS.

PICNIC SHELTERS.



THE PROGRAM DEVELOPMENT INCLUDED HERE HAS BEEN A DIRECT RESULT OF THE PLANNING PROCESS. LOCAL CITIZENS, CITY OFFICIALS, REPRESENTATIVES OF THE CHAMBER OF COMMERCE, SPECIAL INTEREST GROUPS AND THE CONSULTANTS PRESENTED AND CAREFULLY CONSIDERED MANY IDEAS. THESE CONSIDERATIONS HAVE LED TO THE ESTABLISHMENT OF A PROGRAM AND A RECOGNITION OF PRIORITIES. IN DOING THIS, THE CONCERNED PARTIES HAVE EMBARKED ON A DECISION-MAKING PROCESS THAT WILL CONTINUE AS THE COMMUNITY'S NEEDS AND POTENTIALS CHANGE. IN BRINGING THE COMMUNITY TO FOCUS ON ITS DEVELOPMENT NEEDS, THE PROGRAM SERVES AS A TOOL FOR PLANNING. ONCE ESTABLISHED, IT SERVES AS A FRAMEWORK FOR ACTION AND IMPLEMENTATION.



Chapter 5

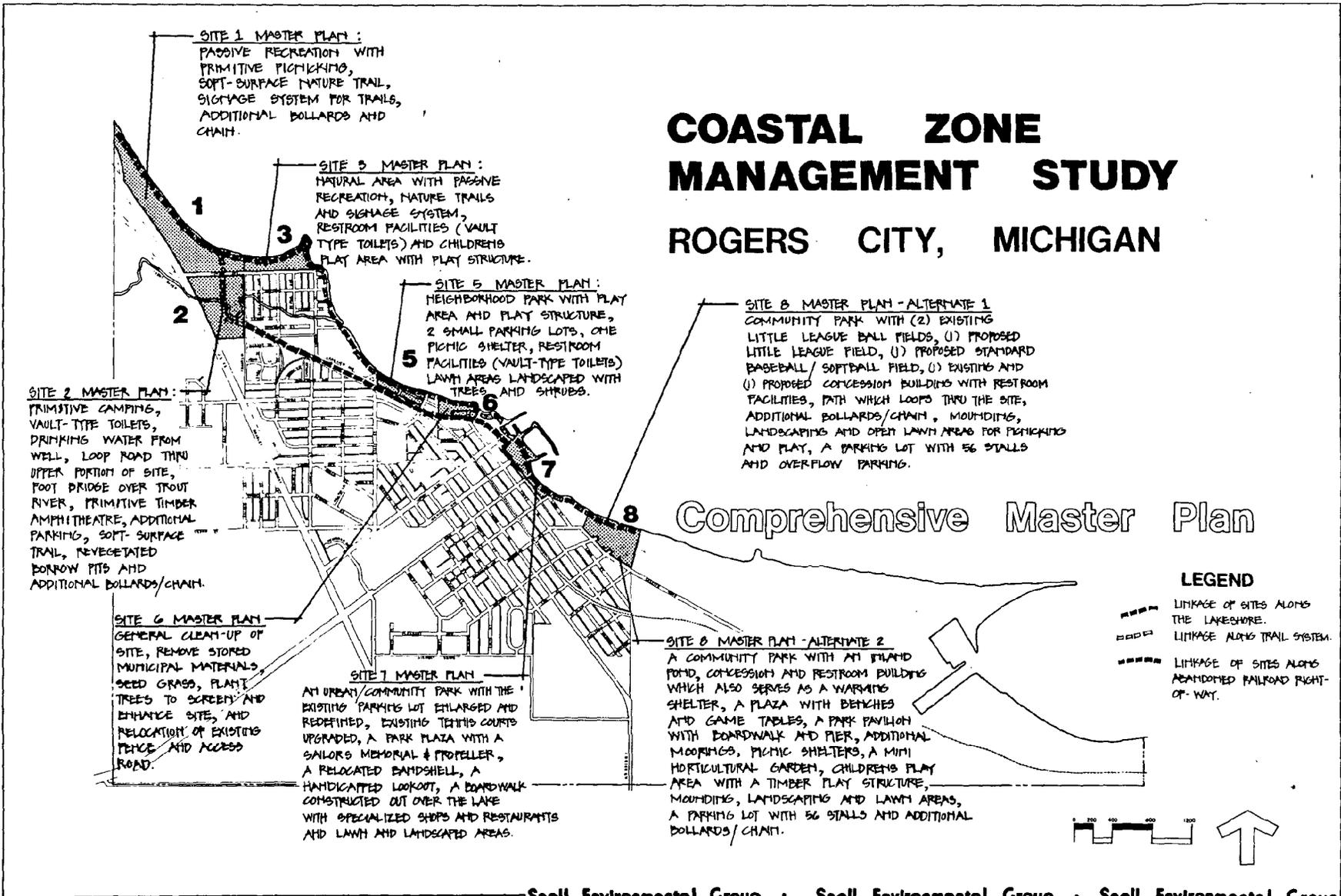


Master Plans & Cost Estimates

THIS CHAPTER ENLARGES, BY MEANS OF VERBAL DESCRIPTION, ON THE INFORMATION CONVEYED GRAPHICALLY IN THE INDIVIDUAL MASTER PLANS FOR THE SEVEN COASTAL PARK SITES. THE TEXT INCLUDES A DESCRIPTION OF PROPOSED CONSTRUCTION AND IMPROVEMENTS. SIMILAR OR COMMON ELEMENTS, SUCH AS SIGNS, BOLLARDS, FOOTBRIDGES, PATHWAYS AND RESTROOM FACILITIES ARE REPEATED FROM SITE TO SITE. IN ADDITION TO BEING REQUIRED SITE AMENITIES, THESE ITEMS OFFER THE OPPORTUNITY TO UNIFY AND ENHANCE ROGERS CITY'S RECREATIONAL SYSTEM. THE USE OF MATERIALS SUCH AS TREATED TIMBER, ROPE, CHAIN AND APPROPRIATELY DESIGNED SIGNAGE CAN COMPLIMENT THE AREA'S NAUTICAL HERITAGE, CREATING A UNIFYING AND ATTRACTIVE MOTIF. SPECIFIC SITE STRUCTURES SUCH AS THE PARK PAVILION, BOARDWALK, AND CONCESSION STANDS CAN CARRY THE THEME FURTHER, WHILE AT THE SAME TIME CREATING AN INDIVIDUAL IDENTITY FOR THE SITE. A DISCUSSION OF THE PROJECTED NET EFFECT OF THE MASTER PLAN FOR EACH SITE IDENTIFIES THE WAYS IN WHICH THESE ELEMENTS CONTRIBUTE TO MAKE THE SITE FUNCTION UNIQUELY ACCORDING TO ITS INDIVIDUAL CIRCUMSTANCES. ANTICIPATED 1980 LABOR AND MATERIAL COSTS ARE INCLUDED WITH EACH MASTER PLAN DESCRIPTION. THE

COST ESTIMATES FOR PARCELS 1 AND 3, AND 7 AND 8
ARE MORE DETAILED THAN FOR THE OTHER SITES DUE
TO THE GREATER DETAIL FOUND IN THE PRELIMINARY
ENGINEERING DRAWINGS FOR THESE THREE AREAS.

COASTAL ZONE MANAGEMENT STUDY ROGERS CITY, MICHIGAN



COASTAL ZONE MANAGEMENT STUDY

ROGERS CITY, MICHIGAN

Master Plan • Site 1

NOTE:

SITE 1 SHOULD REMAIN
PASSIVE IN CHARACTER IN
ORDER TO PRESERVE THE
EXISTING SAND DUNE ECOLOGY
AND ITS NATURAL STATE.

LAKE
HURON

WOOD BENCHES ARE
LOCATED AT VARIOUS
INTERVALS ALONG THE
PATH SYSTEM.

BRIDGE OVER
SWALE

ADDITIONAL BOLLARDS
AND CHAIN EXPANDED
IN THE SAME FASHION
AS EXISTS. THE ADDITIONAL
BOLLARDS SHOULD RUN THE
LENGTH OF THE SITE ON U.S. 23.

SAND DUNE AREA COVERED
WITH INDIGENOUS PLANT
MATERIAL SHOULD BE LEFT UNDISTURBED.

SOFT-SURFACE TRAIL, UTILIZED
AS HIKING AND NATURE TRAIL.

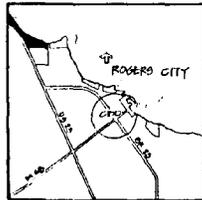
NOTE:

A SIGNAGE SYSTEM SHOULD BE
DEVELOPED ALONG THE NATURE TRAIL WHICH
CORRESPONDS WITH A SELF-GUIDING TEXT
WHICH INFORMS USERS OF THE AREAS
NATURAL HISTORY.



LEGEND

- EXISTING VEGETATION
- SOFT-SURFACE PATH
- SAND BEACH - NO PLANTS
- SAND AREA WITH INDIGENOUS PLANTS.
- BOLLARDS WITH CHAIN



Key Map

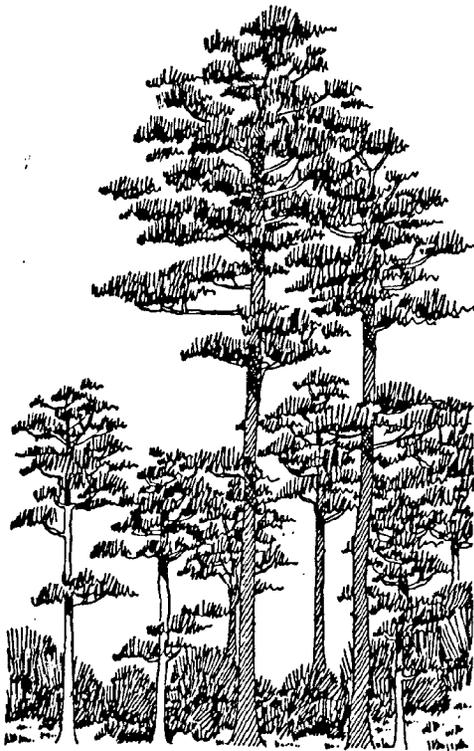
SITE 1 MASTER PLAN

AS EXPRESSED IN THE PREVIOUS SECTION TITLED "NEEDS AND OPPORTUNITIES," THE COMMUNITY OF ROGERS CITY RECOGNIZES THE NEED TO PRESERVE THIS ENVIRONMENTALLY SENSITIVE PARCEL OF LAND. THUS, AS LITTLE AS POSSIBLE HAS BEEN DONE TO DISTURB THE ECOLOGY OF THE SITE.

PASSIVE AND ACTIVE RECREATION

PASSIVE RECREATION - TO RETAIN AS BEST POSSIBLE, THE NATURAL QUALITY OF THE SITE, ONLY PASSIVE RECREATION IS DESIGNATED. ACTIVITIES SHALL INCLUDE NATURE STUDY AND HIKING ALONG A PROPOSED TRAIL SYSTEM, FISHING ALONG THE SHORE AND PRIMITIVE PICNICKING, THAT IS PICNICKING WITHOUT THE USE OF PICNIC TABLES, SHELTERS OR GRILLS.

IT IS PROPOSED THAT A SIGNAGE PROGRAM BE DEVELOPED ALONG THE TRAIL SYSTEM WHICH CORRESPONDS WITH A SELF-GUIDING NATURE STUDY PROGRAM, INFORMING USERS OF THE NATURAL HISTORY OF THE AREA.



SERVICE AND SUPPORT FACILITIES

WOOD BOLLARDS - ADDITIONAL BOLLARDS AND CHAIN ARE EXPANDED ALONG THE LENGTH OF THE SITE ON US-23 IN THE SAME FASHION AS THE EXISTING BOLLARDS ALONG FOREST AVENUE.

THROUGH THE USE OF THESE ADDITIONAL BOLLARDS, VEHICULAR TRAFFIC WILL BE DISCOURAGED FROM ENTERING THE SITE THUS PROTECTING THE PLANT MATERIAL AND SAND DUNES FROM DESTRUCTION.

SOFT-SURFACE TRAIL - THE PATH SYSTEM OFFERS ACCESS TO EVERY PART OF THE PARCEL AND HELPS GUIDE USERS THROUGH AREAS THAT MIGHT OTHERWISE BE DISTURBED.

THE MATERIAL USED TO MAKE THE PATH SHOULD BE OF A NATURAL QUALITY, SO AS TO BLEND INTO THE SURROUNDINGS. TWO COMPATIBLE MATERIALS WOULD BE CRUSHED STONE OR SHREDDED BARK CHIPS.

FOOTBRIDGE - THIS FOOTBRIDGE SPANS A SWALE WHICH RUNS THROUGH THE UPPER PORTION OF THE SITE. CONSTRUCTION OF THE FOOTBRIDGE WILL PROMOTE EASY ACCESS TO THE NORTHWESTERN CORNER OF THE SITE AND HELP PREVENT A POTENTIAL EROSION PROBLEM.

PARKING - ADDITIONAL AREAS FOR PULL-OFF PARKING HAVE BEEN DESIGNATED ALONG FOREST AVENUE. EXISTING PARKING SPACES LOCATED ALONG US-23 ARE PROPOSED TO BE ELIMINATED IN ORDER TO CONCENTRATE THE PARKING ALONG FOREST AVENUE ONLY. THIS WILL LIMIT ACCESS POINTS ONTO THE SITE AND THUS LESSEN THE CHANCES OF DISTURBING THE AREA.

(NOTE: BECAUSE SITE 3 IS BASICALLY AN EXTENSION OF SITE 1, COST ESTIMATES HAVE BEEN FIGURED AS A SINGLE PROJECT, BELOW. DISCUSSION OF DEVELOPMENT PLANS FOR SITE 3 FOLLOW LATER IN THE TEXT.)

<u>PARCELS 1 & 3</u>	<u>QUANTITY</u>	<u>TOTAL</u>
ASPHALT TRAILS 6' WIDTH	(SEE SITE 3 DESCRIPTION)	
No. 11 BITUMINOUS MIX @ 170# S.Y.	23 TONS	\$ 874.00
No. 5 BITUMINOUS MIX @ 230# S.Y.	31 TONS	1,023.00
WOODCHIP TRAILS	12,100 L.F.	14,520.00
BOLLARDS AND CHAIN	2,280 L.F.	15,686.00
TOILETS	2 EA	14,640.00
TREE I.D. TAGS	50 EA	576.00
OTHER TRAIL SIGNS	30 EA	2,460.00
WASTE RECEPTACLES	7 EA	1,344.00
BENCHES	17 EA	3,176.62
ENTRANCE SIGN	1 EA	1,080.00
FOOTBRIDGE	1 EA	<u>9,000.00</u>
TOTAL		\$64,379.62

COASTAL ZONE MANAGEMENT STUDY ROGERS CITY, MICHIGAN

NOTE: ALTHOUGH SITES 1 AND 2 ARE DIVIDED BY FOREST AVENUE, THERE IS STILL FREE ACCESS FROM ONE SITE TO ANOTHER.

UNPAVED LOOP ROAD ON NORTHERN HALF OF SITE WITH CLEARINGS OFF OF ROAD FOR PRIMITIVE CAMPING.

SOFT-SURFACE PATH UTILIZED AS HIKING AND NATURE TRAIL.

ADDITIONAL PARKING

PRIMITIVE AMPHITHEATRE, SEATING MADE OF HEAVY TIMBERS. REVEGETATE BORROW PIT AND UTILIZE AS PART OF THE NATURAL LANDSCAPE.

SITE 1 ON THIS SIDE OF FOREST AVE.

MAINTAIN ANY TREES THAT EXIST IN THIS OPEN AREA AND CLEAR ANY UNDERSTORY

ADDITIONAL BOLLARDS WITH CHAIN, EXPANDED IN THE SAME FASHION AS EXISTS, ALONG LENGTH OF SITE ON U.S. 23.

TROUT RIVER

FOOT BRIDGE OVER TROUT RIVER ALLOWS ONLY PEDESTRIAN ACCESS TO LOWER HALF OF SITE.

SOFT-SURFACE PATH UTILIZED AS HIKING AND NATURE TRAIL

REVEGETATE BORROW PIT AND UTILIZE AS PART OF THE NATURAL LANDSCAPE.

SELECTIVE SPRAYING OF POISON IVY SHOULD OCCUR, HOWEVER, CARE SHOULD BE TAKEN IN ORDER TO PREVENT KILLING OFF OF OTHER PLANTS.

AREA OF EROSION, APPROPRIATE STEPS SHOULD BE TAKEN IN ORDER TO CONTROL THIS PROBLEM.

Master Plan - Site 2



LEGEND

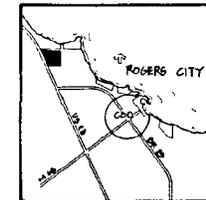
- SOFT-SURFACE PATH
- EXISTING VEGETATION
- RIVER
- BOLLARDS AND CHAIN

NOTE:

IN THE FUTURE WHEN DEMAND MAKES IT NECESSARY TO DEVELOP CAMPING ON THE LOWER HALF OF SITE 2, THE FOOT BRIDGE COULD BE EXPANDED IN ORDER TO ACCOMMODATE VEHICULAR TRAFFIC.

NOTE:

PRIMITIVE CAMPING ON THE SITE SHALL CONSIST OF: CAMP SITES, RESTROOM FACILITY CONSISTING OF VAULT-TYPE TOILETS TO SERVE THE ENTIRE CAMP GROUND AND ONE WELL FOR DRINKING WATER.



Key Map

SITE 2 MASTER PLAN

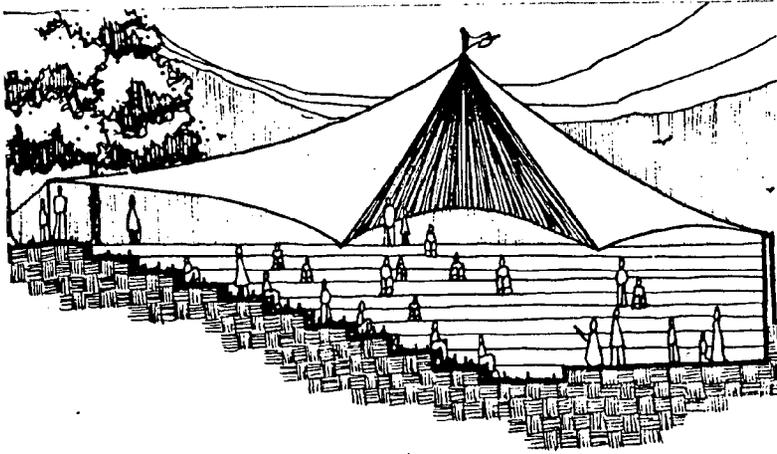
SITE 2 OFFERS SEVERAL POSITIVE ASPECTS WHICH MAKE IT A GOOD LOCATION FOR DEVELOPING A PRIMITIVE CAMP- GROUND. THEY INCLUDE, A BEAUTIFULLY WOODED, SEMI- SECLUDED AREA, EXISTING TRAILS, AND THE TROUT RIVER WHICH DIVIDES THE PARCEL INTO TWO PORTIONS.

AS STATED PREVIOUSLY, THE REAL NEED FOR ADDITIONAL CAMPING WOULD ONLY COME DURING THE NAUTICAL FESTIVAL, THUS THE SITE HAS TO PROVIDE SERVICES TO THE COMMUNITY OTHER THAN CAMPING.

PASSIVE AND ACTIVE RECREATION

PRIMITIVE GROUP CAMPING - CAMPING WHICH HAS ALREADY BEEN PRE-DESIGNATED FOR THE SITE IS, AT PRESENT, OCCURRING ONLY ON THE NORTHERN PORTION OF SITE 2. IF, HOWEVER, IN THE FUTURE WHEN DEMAND MAKES IT NECESSARY TO EXPAND CAMPING FACILITIES, THE REMAINING AREA COULD THEN BE DEVELOPED, BUT ONLY AS A GROUP CAMPING AREA. THIS SITE IS NOT INTENDED TO BE USED AS A YEAR AROUND COMMERCIAL OR CITY SUPPORTED CAMPING AREA.

IT IS PROPOSED THAT PRIMITIVE CAMPING CONSIST OF CAMPSITES CLEARED OF UNDERSTORY, A CENTRALIZED REST-



ROOM FACILITY WITH VAULT TYPE TOILETS FOR BOTH MEN AND WOMEN, ONE WELL FOR DRINKING WATER, AND TRASH RECEPTACLES.

AMPHITHEATRE - A PRIMITIVE AMPHITHEATRE MADE OF HEAVY TIMBERS IS TO BE CONSTRUCTED IN A PORTION OF THE EXISTING BORROW PIT JUST SOUTH OF FOREST AVENUE. THIS FACILITY COULD SERVICE A VARIETY OF SPECIAL GROUPS, SUCH AS HIGH SCHOOL DRAMA CLASSES, GIRL SCOUT OR BOY SCOUT SPECIAL EVENTS OR AWARD CEREMONIES, NATURE STUDY CLASSES AND OTHERS.

NATURE TRAIL - THE NATURE TRAIL WOULD BECOME PART OF THE PATH SYSTEM THAT WINDS THROUGHOUT THE SITE. SIGNS ALONG THE PATHWAY WOULD IDENTIFY AND DESCRIBE THE NATURAL HISTORY OF THE LOCALE. TREES COULD ALSO BE TAGGED WITH THEIR NAMES, FAMILY AND SPECIES DESIGNATIONS.

OPEN SPACE - A LARGE NON-DEVELOPED OPEN SPACE IS PROPOSED ON THE INTERIOR OF THE LOOP ROAD ON THE NORTHERN HALF OF THE SITE. THIS AREA COULD BE UTILIZED FOR ACTIVE PLAY, PICNICKING, SPECIAL EVENTS, SUCH AS CRAFT FAIRS.

SERVICE AND SUPPORT FACILITIES

LOOP ROAD - TO PROVIDE ACCESS TO THE PRIMITIVE CAMPING AREA AND THE CLEARINGS ON THE INLAND PORTION OF SITE 2, AN UNPAVED LOOP ROAD IS PROPOSED. THIS ROAD IS INTENDED TO BE THE ONLY VEHICULAR DRIVE CONSTRUCTED. AUTOMOBILE INGRESS WOULD BE LIMITED TO FOREST AVENUE ONLY.

PARKING - ADDITIONAL PULL-OFF PARKING WOULD BE PROVIDED ALONG FOREST AVENUE.

RESTROOM FACILITIES - PROPOSED ARE VAULT TYPE TOILETS TO BE LOCATED IN A CENTRALIZED AREA IN RELATIONSHIP TO THE CAMP CLEARINGS. THEY WOULD NEED TO BE LOCATED WHERE THEY CAN EASILY BE SEEN.

WELL - A WELL WOULD BE SITUATED CLOSE TO THE RESTROOM FACILITIES, PROVIDING DRINKING WATER FOR CAMPERS OR OTHER PARK USERS.

FOOTBRIDGE - A FOOTBRIDGE IS TO BE CONSTRUCTED OVER THE TROUT RIVER WHICH WILL ALLOW ONLY PEDESTRIAN ACCESS TO THE SOUTHERN HALF OF THE SITE. BY LIMITING ACCESS TO PEDESTRIANS ONLY, THIS PORTION OF LAND WILL BE PROTECTED AGAINST ANY DESTRUCTION WHICH COULD BE CAUSED BY MOTORIZED VEHICLES.

WOOD BOLLARDS - ADDITIONAL WOOD BOLLARDS AND CHAIN WOULD BE EXTENDED ALONG THE LENGTH OF THE SITE ON US-23. SUCH BOLLARDS WOULD BE OF THE SAME MATERIAL AND TYPE AS EXIST ON FOREST AVENUE.

BOLLARDS ARE ALSO PROPOSED FOR THE INSIDE EDGE OF THE LOOP ROAD PLANNED FOR THE NORTHERN HALF OF THIS PARCEL. VEHICULAR TRAFFIC WOULD THEN BE RESTRICTED TO THE LOOP ROAD AND THE CAMPGROUND CLEARINGS.

SITE AMENITIES

LANDSCAPING - IN ORDER TO PROVIDE AN ATTRACTIVE SPACE FOR GROUP ACTIVITIES AND PLAY TO OCCUR, THE AREA WITHIN THE LOOP ROAD IS TO BE SEEDED WITH GRASS. ANY TREES WHICH EXIST IN THIS AREA SHOULD BE MAINTAINED AND CLEARED OF ANY UNDERSTORY.

THE BORROW PITS, ONE LOCATED IN THE UPPER PORTION OF THE SITE AND THE OTHER IN THE LOWER PORTION,

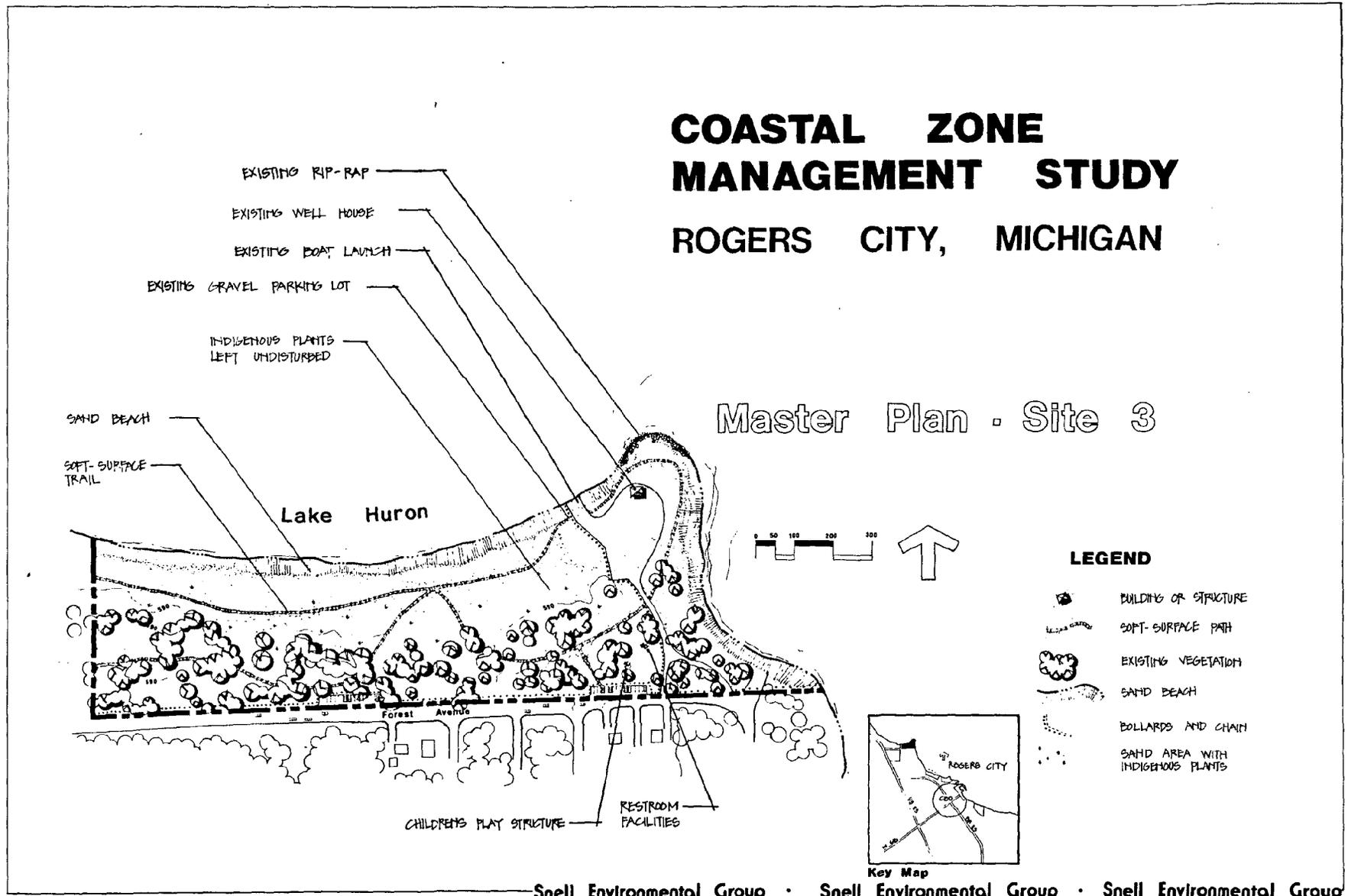
ARE BOTH IN A STAGE OF NATURAL PROGRESSION. THEREFORE, CLEARING EXISTING SCRUB GROWTH AND SEEDING WITH GRASS IS PROPOSED. IT IS HOPED THAT BY DOING THIS, THE BORROW PITS CAN ONCE AGAIN BE UTILIZED AS PART OF THE LANDSCAPE.

EROSION - AS MENTIONED EARLIER, EROSION IS OCCURRING ALONG THE TROUT RIVER NEAR THE EASTERN BOUNDARY OF SITE 2. THIS PROBLEM SHOULD BE TREATED AS SOON AS POSSIBLE. THERE ARE VARIOUS FORMS OF EROSION CONTROL DEVICES THAT COULD BE USED SUCH AS GABIONS, RIPRAP, OR EROSION CONTROL FABRIC. IN THIS CASE, IT WOULD BE ADVISABLE TO USE GABIONS BECAUSE OF THE STEEPNESS OF THE RIVER BANK AT THE EROSION SITE. GABIONS CAN BE INSTALLED WITHOUT EXTENSIVE GRADING AND PREPARATION OF THE ERODED AREA, AS OPPOSED TO RIPRAP AND EROSION CONTROL FABRIC. GABIONS ARE ROCK FILLED WIRE BASKETS WHICH STACK ON TOP OF EACH OTHER TO FORM A NON-EROSABLE FACE ALONG THE BANK.

<u>PARCEL 2</u>	<u>QUANTITY</u>	<u>TOTAL COST</u>
CONSTRUCTION OF TRAILS	4,800 L.F.	\$ 5,760.00
CAMPSITE CLEARING	30 EA.	15,000.00
FOOTBRIDGE OVER TROUT RIVER	1 EA.	9,000.00
ADDITIONAL BOLLARDS & CHAIN	3,800 L.F.	26,106.00
VAULT TOILETS	2 EA.	14,640.00
WELL FOR DRINKING WATER	1 EA.	2,000.00
PRIMITIVE AMPHITHEATER	LUMP SUM	3,000.00
REVEGETATION OF BORROW PITS	LUMP SUM	5,333.00
CONTAINMENT OF RIVERBANK	177.7 C.Y.	12,500.00
CONSTRUCTION OF LOOP ROAD	1,800 L.F.	<u>15,000.00</u>
TOTAL		\$108,339.00

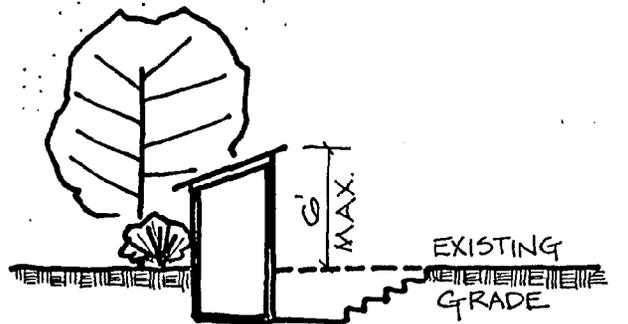
COASTAL ZONE MANAGEMENT STUDY ROGERS CITY, MICHIGAN

Master Plan - Site 3



LEGEND

-  BUILDING OR STRUCTURE
-  SOFT-SURFACE PATH
-  EXISTING VEGETATION
-  SAND BEACH
-  BOLLARDS AND CHAIN
-  SAND AREA WITH INDIGENOUS PLANTS



SECTION OF
PROPOSED DEPRESSED WELLHOUSE

SITE 3 MASTER PLAN

SITE 3 IS BASICALLY AN EXTENSION OF SITE 1 NOT ONLY BECAUSE THEY SHARE A COMMON BORDER, BUT BECAUSE THE CHARACTER AND SENSITIVE ECOLOGY OF THE SITE ARE THE SAME. AS WITH SITE 1, THE INTENT IS THAT SPECIAL CARE BE GIVEN TO PRESERVE THIS FRAGILE SITUATION.

SITE 3 DIFFERS FROM SITE 1 IN THAT LIMITED, SMALL-SCALE DEVELOPMENT IS PROPOSED AT THE EASTERN END OF THE PARCEL; WHEREAS SITE 1 IS SUGGESTED TO REMAIN IN ITS PRESENTLY UNDEVELOPED STATE. BECAUSE OF AN EXISTING PUMP HOUSE, A BOAT LAUNCH AND THE VANTAGE POINT AFFORDED BY THE PARCEL FOR VIEWING SUNSETS, THIS EASTERN END OF SEA GULL POINT HAS BECOME A SEMI-ACTIVE AREA.

PASSIVE AND ACTIVE RECREATION

RECREATION - IN ORDER TO PRESERVE THE DELICATE ECOLOGY OF SITE 3, PASSIVE RECREATION IS SUGGESTED FOR THE MAJORITY OF THE SITE. ACTIVITIES TO BE INCLUDED WOULD BE HIKING ALONG THE TRAIL SYSTEM, FISHING FROM THE SHORE, SUNBATHING, OR VIEWING THE LAKE AND SUNSET.

SEMI-ACTIVE RECREATION IS PROPOSED FOR A SMALL PORTION OF THE SITE CLOSE TO THE ENTRANCE ROAD AND PULL-OFF PARKING ON FOREST AVENUE. A PICNIC SHELTER AND RESTROOM FACILITIES COULD BE PROVIDED HERE.

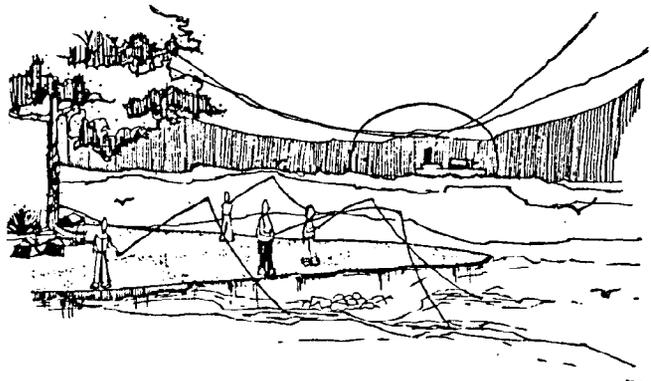
A HARD SURFACED WALKWAY IS PROPOSED FROM A PULL-OFF PARKING AREA ON FOREST AVENUE TO THE BEACH AREA TO ALLOW OLDER CITIZENS AND HANDICAPPED A MORE CONVENIENT ACCESS TO THE WATER'S EDGE.

SERVICE AND SUPPORT FACILITIES

PARKING - ADDITIONAL PULL-OFF PARKING IS SUGGESTED FOR THE FOREST AVENUE FRONTAGE. A PATH SYSTEM WOULD THEN LINK UP TO THESE PARKING AREAS SO THAT ACCESS CAN EASILY BE MADE THROUGH THE DUNES TO THE BEACH.

THE EXISTING GRAVEL PARKING LOT NEAR THE BEACH CAN HANDLE ONSITE PARKING, AND POSSIBLY BE UPGRADED IN THE FUTURE.

RESTROOM FACILITIES - VAULT TYPE RESTROOM FACILITIES WOULD BE MADE AVAILABLE IN THE SEMI-ACTIVE AREA WHERE PICNICKING IS DESIGNATED.



View of Fishing Area

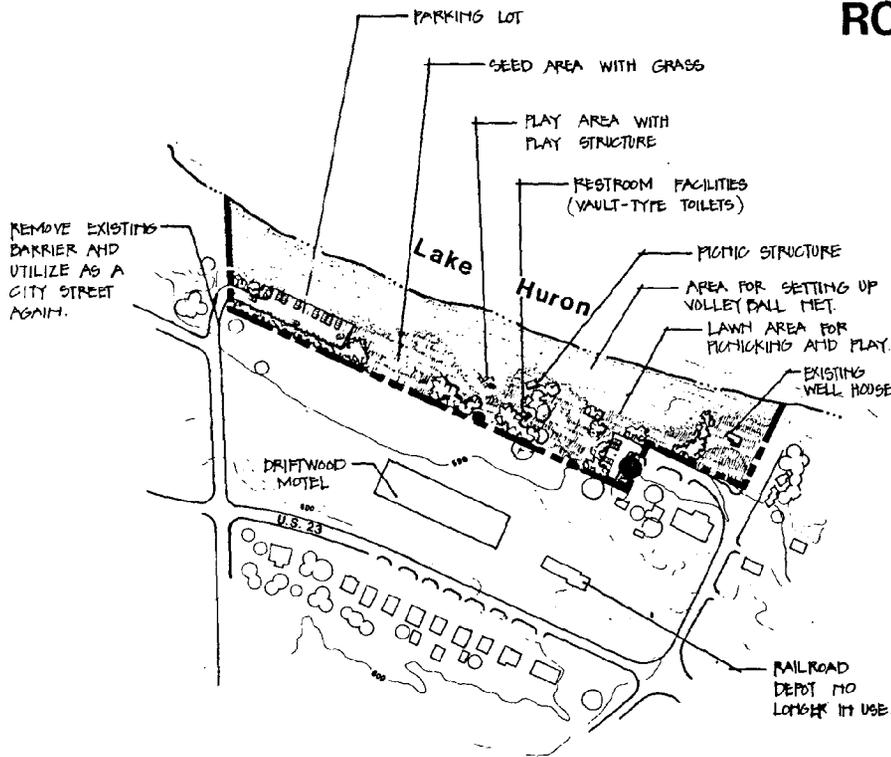
ACCESS - THE ONLY VEHICULAR ACCESS ONTO THE SITE IS VIA AN EXISTING GRAVEL ROAD WHICH LEADS BACK TO THE EXISTING GRAVEL PARKING LOT AND BOAT LAUNCH.

SOFT-SURFACE TRAIL - THE PATH SYSTEM IN SITE 3 IS A CONTINUATION OF THE PATHWAY FROM SITE 1 AND THUS PROVIDES LINKAGE BETWEEN AREAS. THE TRAIL SHOULD BE CONSTRUCTED IN SUCH A FASHION THAT HIKERS CAN SAFELY TRAVERSE THE VARIOUS AREAS WITHOUT DAMAGING SENSITIVE PLANT MATERIALS.

(SEE SITE 1 FOR FACILITIES AND COST ESTIMATES.)

COASTAL ZONE MANAGEMENT STUDY

ROGERS CITY, MICHIGAN

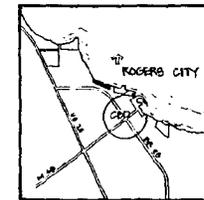


Master Plan - Site 5



LEGEND

- PROPOSED TREES
- EXISTING VEGETATION
- BUILDING OR STRUCTURE
- SAND BEACH
- LAWN AREA



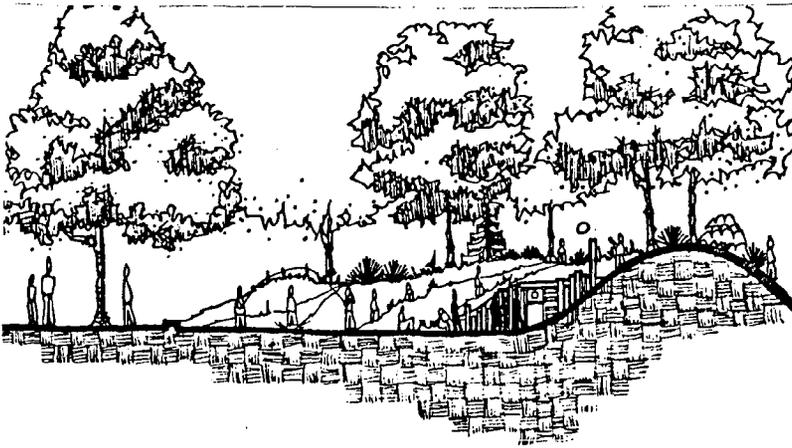
Key Map

SITE 5 MASTER PLAN

SITE 5 IS THE MOST CENTRALIZED OF THE PARKS IN RELATIONSHIP TO THE TOTAL COMMUNITY AND ENJOYS GOOD ACCESSIBILITY FROM MAJOR CITY STREETS. THE LOCATION OF THIS PARCEL WITH REGARD TO SURROUNDING RESIDENTIAL AREAS COULD CERTAINLY QUALIFY IT AS A "NEIGHBORHOOD PARK".

PASSIVE AND ACTIVE RECREATION

RECREATION - BOTH PASSIVE AND ACTIVE RECREATIONAL PURSUITS ARE TO BE PROVIDED, INCLUDING PICNICKING, SUNBATHING, SWIMMING, FISHING ALONG THE SHORE AS WELL AS OPEN PLAY.



A PROPOSED TOT LOT SITUATED IN THE CENTER OF THE PARK WOULD INCLUDE A TIMBER PLAY STRUCTURE TYPICAL OF THE NAUTICAL THEME OF ROGERS CITY.

SERVICE AND SUPPORT FACILITIES

PARKING LOT - TWO PARKING LOTS ARE DESIGNATED FOR THE SITE. THE LARGER ONE IS LOCATED ON THE FAR WESTERN EDGE WITH ACCESS VIA AN EXISTING ENTRANCE.

THE SMALLER PARKING LOT IS PROPOSED FOR THE SOUTH-
WESTERN CORNER OF THE PARCEL WITH ACCESS TO THE
LOT ALSO PROVIDED VIA AN EXISTING ENTRANCE DRIVE.
THE PRESENT VEHICULAR DRIVE BISECTING THE SITE WOULD
BE ELIMINATED.

RESTROOM FACILITIES - SHALL BE VAULT TYPE TOILETS,
AND CENTRALLY LOCATED TO BE EASILY ACCESSIBLE TO
ALL PARK USERS.

PICNIC SHELTER - IT IS SUGGESTED THAT THIS SHELTER
BE LOCATED IN CLOSE PROXIMITY TO THE CHILDRENS'
PLAY STRUCTURE AND RESTROOM FACILITIES. IT WOULD
PROVIDE TABLES AND GRILLS FOR PICNICKING AND ALSO
PROTECTION FROM HARSH WEATHER OR SUDDEN STORMS.

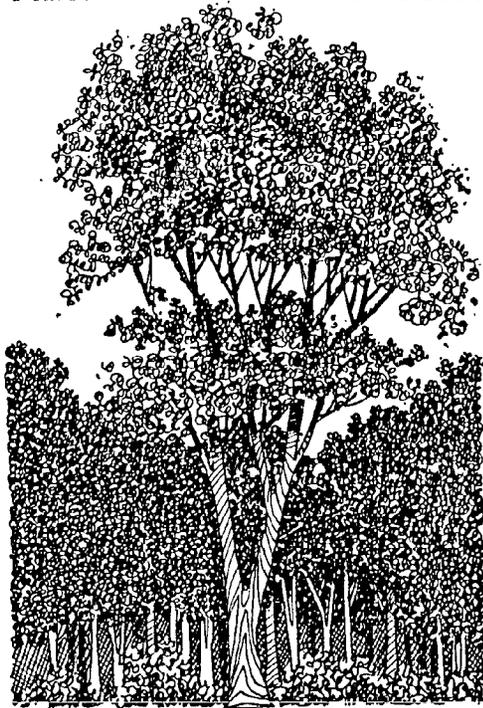
ACCESS - IN ORDER TO FACILITATE MORE DIRECT ACCESS
TO THE PARK, IT IS PROPOSED THAT THE BARRIER WHICH
BLOCKS ACCESS ON THE ABANDONED PORTION OF STATE
STREET BE REMOVED SO AS TO AGAIN UTILIZE IT AS A
CITY STREET. THUS, RESIDENTS IN THE NEARBY NEIGHBOR-
HOODS WOULD HAVE AN EVEN MORE DIRECT ROUTE TO THE
PARK SITE.

SITE AMENITIES

LANDSCAPING - SITE 5 SHOULD BE PLANTED WITH TREES TO PROVIDE BOTH BEAUTY AND SHADE FOR THE PARK USERS. THESE TREES WILL ALSO BE USED TO SCREEN OUT VIEWS OF VARIOUS ELEMENTS, SUCH AS THE WELL HOUSE.

IN ORDER TO CREATE A PARK ATMOSPHERE AND PROVIDE A SOFT NATURAL SURFACE FOR SUNBATHING, PLAY OR PICNICKING, OPEN AREAS AWAY FROM THE BEACH SHOULD BE SEEDED TO GRASS.

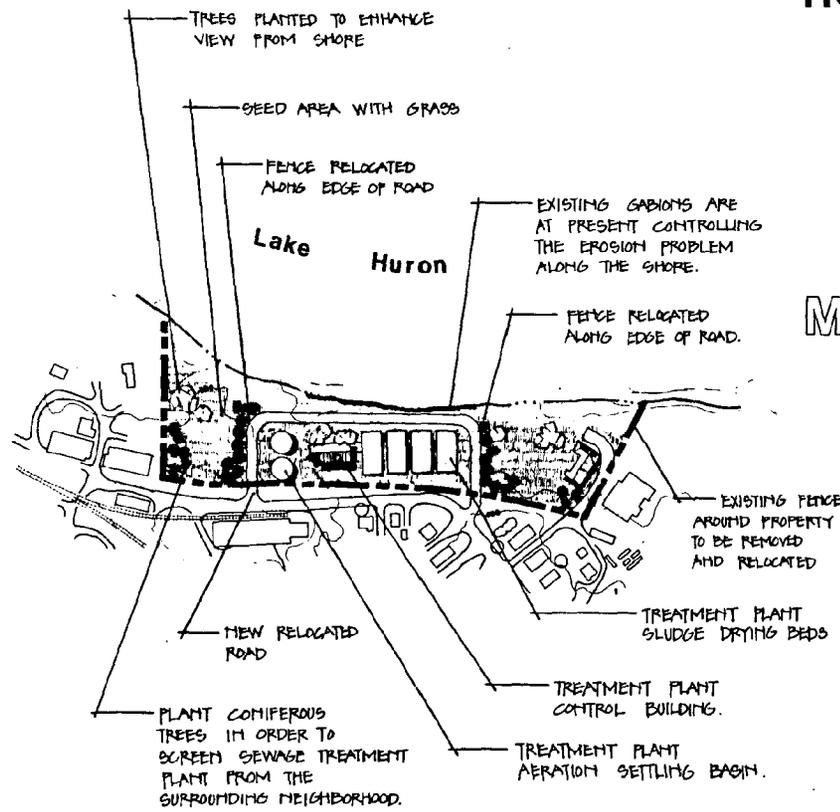
CAREFUL CONSIDERATION SHOULD BE GIVEN TO CHOOSE APPROPRIATE PLANT MATERIALS WHICH WILL WITHSTAND THE MORE DEMANDING CLIMATIC CONDITIONS ALONG LAKE HURON.



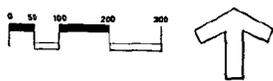
<u>PARCEL 5</u>	<u>QUANTITY</u>	<u>TOTAL COST</u>
GRADE SITE	LUMP SUM	\$ 12,466.00
ASPHALT PARKING LOTS	LUMP SUM	10,265.00
TOT LOT	LUMP SUM	3,000.00
VAULT TOILET	2 EA	14,640.00
PICNIC SHELTER	1 EA	5,000.00
PLANT MATERIAL & SEEDING	LUMP SUM	<u>10,000.00</u>
TOTAL		\$ 55,371.00

COASTAL ZONE MANAGEMENT STUDY

ROGERS CITY, MICHIGAN

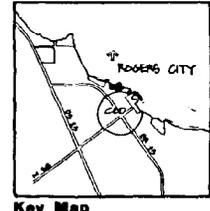


Master Plan • Site 6



- LEGEND**
- PROPOSED DECIDUOUS TREES
 - PROPOSED CONIFEROUS TREES
 - SAND BEACH
 - LAWN AREA

NOTE:
SINCE 6 IS THE SITE OF THE SEWAGE TREATMENT PLANT, IT IS NOT FEASIBLE TO DEVELOP RECREATION ON THE SITE. IT CAN, HOWEVER, BE IMPROVED UPON BY PROVIDING VEGETATIVE SCREENING, REMOVAL OF STORED EQUIPMENT, CREATING LAWN AREAS AND GENERAL CLEAN UP. IT IS HOPED THAT BECAUSE OF THESE POSITIVE ACTIONS THE SURROUNDING PROPERTIES WILL BEGIN TO BE IMPROVED UPON.



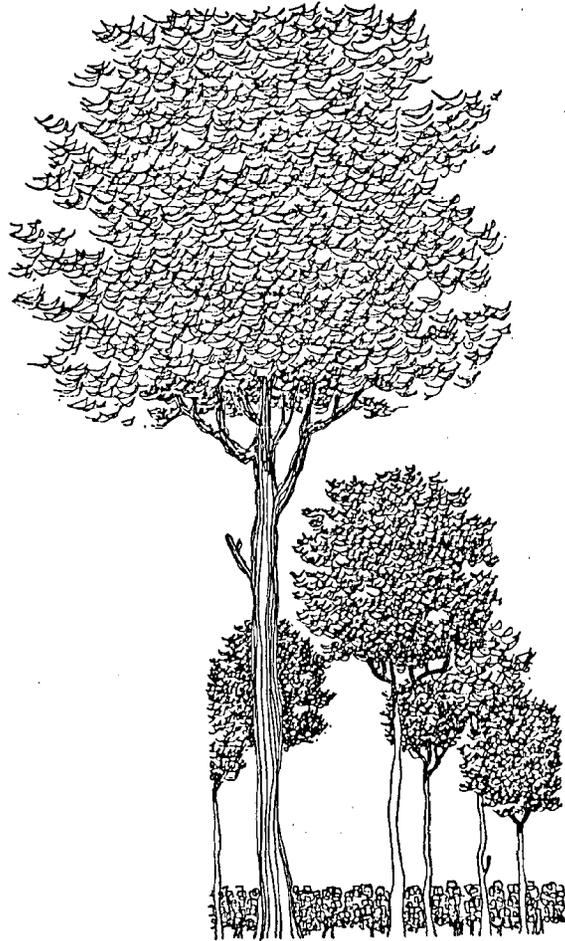
SITE 6 MASTER PLAN

WHILE THERE HAS NOT BEEN AN EXPRESSED NEED TO UTILIZE THIS SITE FOR RECREATIONAL PURPOSES, IT IS, HOWEVER, CONSIDERED AS AN IMPORTANT PART OF THE ROGERS CITY LAKESHORE AND COASTAL ZONE EXPERIENCE. BECAUSE OF THIS CONCERN, BOTH AS AN INFLUENCING FACTOR FOR THE SURROUNDING NEIGHBORHOOD AND AS A FACILITY WHICH IS VIEWED FROM THE LAKE, IT IS IMPORTANT TO IMPROVE THE AESTHETIC CHARACTER OF THE SITE.

ANY UPGRADING SHOULD INCLUDE A PROGRAM OF GENERAL CLEANUP AND VEGETATIVE SCREENING. REMOVAL OF ALL STORED MUNICIPAL EQUIPMENT AND MATERIALS ON THE GROUNDS WILL LESSEN THE SEMI-INDUSTRIAL IMAGE OF SITE 6 AND MAKE IT A MORE PLEASANT AREA FOR THOSE LIVING NEAR THE SEWAGE TREATMENT PLANT.

LANDSCAPING - BY PLANTING DECIDUOUS AND CONIFEROUS TREES, IT IS POSSIBLE TO ENHANCE THE VIEWS FROM THE LAKE AND ALSO SCREEN OUT LESS POSITIVE ONES.

RESEEDING THE AREA WITH GRASS, ESPECIALLY IN AREAS NOW BEING USED FOR EQUIPMENT STORAGE, WOULD COMPLETE THE SITE IMPROVEMENT PACKAGE.



SERVICE AND SUPPORT FACILITIES

ACCESS ROAD - REALIGNMENT OF THE PRESENT ACCESS DRIVE TO ENCIRCLE THE SEWAGE TREATMENT PLANT AND SLUDGE DRYING BEDS WOULD PROVIDE A DEFINABLE BARRIER BETWEEN USABLE OPEN AREAS AT BOTH THE EASTERN AND WESTERN EXTREMES OF SITE 6, AND THOSE NON-RECREATIONAL ELEMENTS OF THE PARCEL.

MOVING THE ROAD CLOSER TO THE INTERIOR OF THE SITE MAKES MORE BEACH AVAILABLE AND CREATES A MORE INTERESTING VIEW FROM LAKEVIEW AVENUE TO THE LAKE.

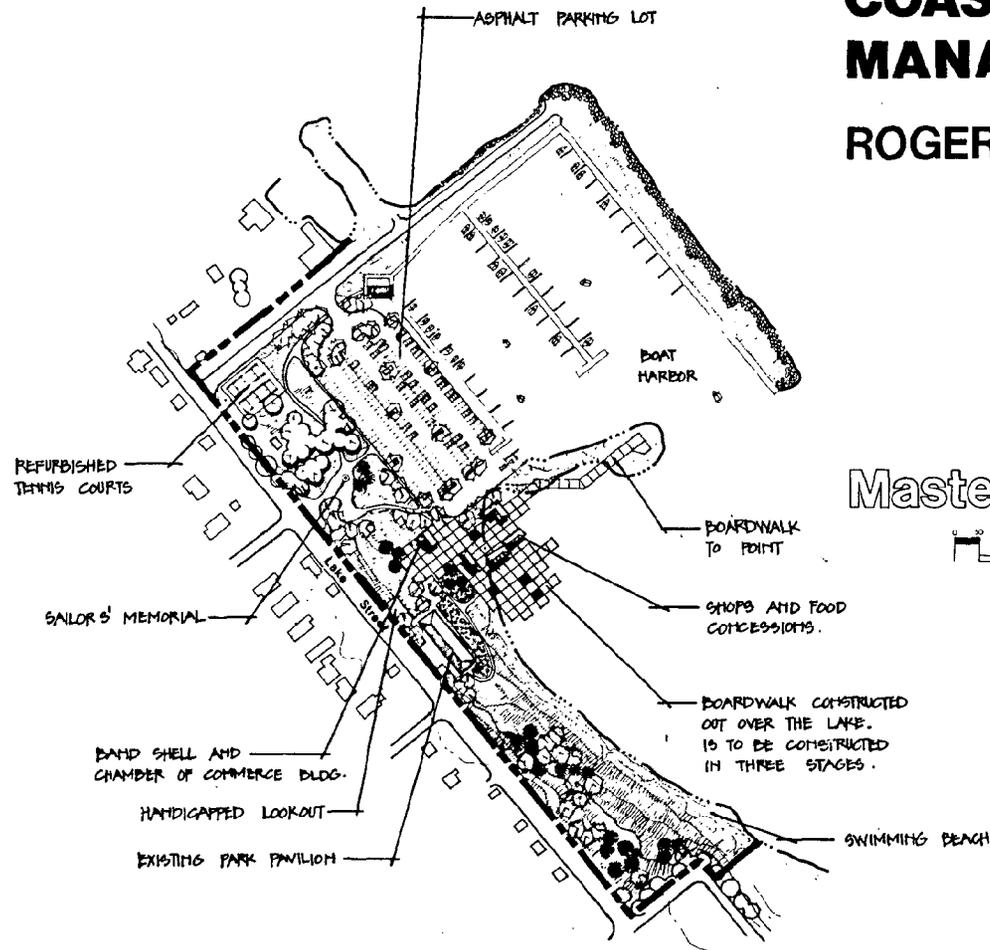
FENCE - THE EXISTING FENCE WHICH RUNS ALONG THE EAST AND WEST BOUNDARIES OF THE PROPERTY IS PROPOSED TO BE RELOCATED IN CONJUNCTION WITH THE REDESIGNED ACCESS DRIVE. BY SHIFTING THE FENCE TO THE OUTSIDE EDGE OF THE PROPOSED ROADWAY, BOTH PRIVACY AND PROTECTION CAN BE AFFORDED THE SEWAGE TREATMENT FACILITY.

<u>PARCEL 6</u>	<u>QUANTITY</u>	<u>TOTAL COST</u>
PLANT MATERIAL & SEEDING	LUMP SUM	\$ 7,600.00
GENERAL CLEANUP	LUMP SUM	2,000.00
RELOCATION OF A PORTION OF THE ACCESS ROAD	75 C.Y.	500.00
RELOCATION OF EXISTING FENCE	900 L.F.	<u>7,695.00</u>
TOTAL		\$17,795.00

COASTAL ZONE MANAGEMENT STUDY

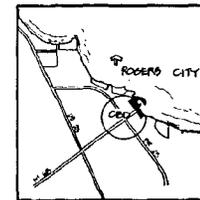
ROGERS CITY, MICHIGAN

Master Plan - Site 7



LEGEND

- PROPOSED DECIDUOUS TREES
- PROPOSED CONIFEROUS TREES
- PROPOSED BOARDWALK
- EXISTING TREES
- LAWN AREA
- SAND BEACH



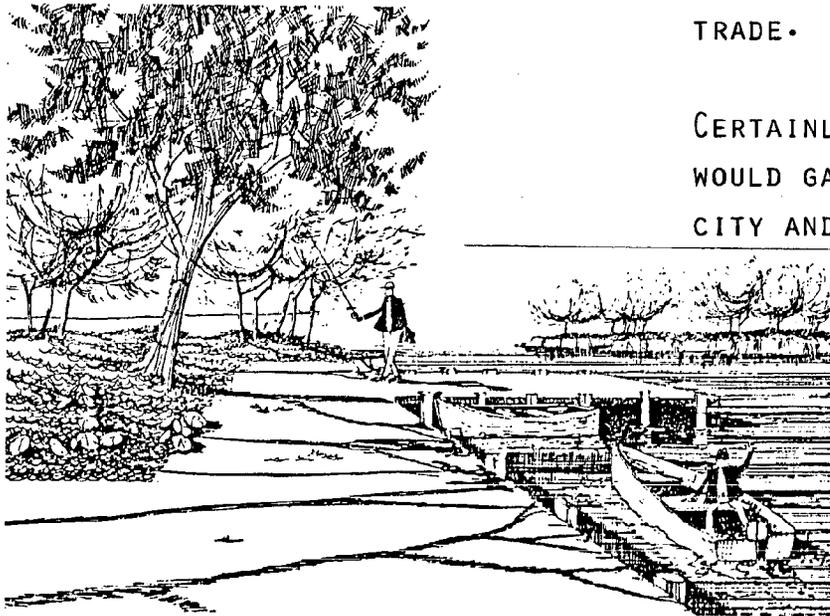
Key Map

SITE 7 MASTER PLAN

SITE 7 PROVIDES AN ARRAY OF OUTSTANDING OPPORTUNITIES THAT SHOULD BE UTILIZED TO THEIR FULLEST. THE PARK ENJOYS AN EXCELLENT LAKESHORE LOCATION, A BOAT HARBOR AND DIRECT ACCESS FROM THE DOWNTOWN AREA ALONG THE AVENUE OF FLAGS. THIS DIRECT ACCESS CREATES A STRONG CONNECTING BOND BETWEEN THE DOWNTOWN AREA AND THE HARBOR SITE.

THIS DIRECT LINK BETWEEN THE HARBOR SITE (AS THE WATER-BASED ENTRYWAY TO ROGERS CITY) AND THE AVENUE OF FLAGS, WHICH LEADS DOWNTOWN TO THE CENTRAL BUSINESS DISTRICT, COULD HELP BROADEN THE COMMUNITY'S ECONOMIC BASE BY REVITALIZING GROWTH IN THE TOURIST TRADE.

CERTAINLY, IMAGINATIVE UTILIZATION OF THIS PARCEL WOULD GAIN VISIBILITY FOR ROGERS CITY AS A COASTAL CITY AND IN TURN WILL BENEFIT THE RESIDENTS.



PASSIVE AND ACTIVE RECREATION

PASSIVE RECREATION - VARIOUS FORMS OF PASSIVE RECREATION OCCURRING HERE ARE PICNICKING, SUNBATHING, CONCERTS, FISHING OR JUST STROLLING ALONG THE BOARDWALK. SITE USAGE PROPOSED IN THE MASTER PLAN FOR SITE 7 WOULD ENCOURAGE A CONTINUATION OF SUCH ACTIVITIES.

ACTIVE RECREATION - CONSISTS OF PLAYING TENNIS ON THE EXISTING TENNIS COURTS WHICH ARE TO BE UPGRADED FROM THEIR PRESENT CONDITION, SWIMMING ALONG THE BEACH, AND VOLLEYBALL AND BOATING FACILITIES.

SERVICE AND SUPPORT FACILITIES

EXPANDED PARKING LOT - THE EXISTING PARKING LOT IS PROPOSED TO BE UPGRADED AND EXPANDED IN ORDER TO ACCOMMODATE MORE PARKING.

PARK PAVILION - THE EXISTING PARK PAVILION IS TO REMAIN; HOWEVER, IT IS SUGGESTED THAT IT BE ENHANCED WITH A NEW ENTRANCE WHICH PROVIDES ACCESS FOR THE HANDICAPPED. IT SHOULD BE LINED WITH BOLLARDS AND ROPE OR CHAIN IN ORDER TO COMPLIMENT THE CITY'S NAUTICAL THEME.

SHOPS AND FOOD CONCESSIONS - THESE WOULD BE LOCATED ON THE BOARDWALK AND LAKESIDE DECK WHICH EXTENDS OUT OVER LAKE HURON. THESE SHOPS COULD PROVIDE ITEMS WHICH PROMOTE MATERIALS, CRAFTS AND PRODUCTS THAT WOULD EXEMPLIFY THE HISTORY AND CHARACTER OF THIS REGION OF THE GREAT LAKES. CARE SHOULD BE TAKEN TO GUIDE THE CHARACTER OF FACADES AND BUILDING MATERIALS OF THESE SHOPS THAT ARE TO BE LOCATED ON THE BOARDWALK.

CHAMBER OF COMMERCE BUILDING - THE CHAMBER OF COMMERCE BUILDING IS ALSO PROPOSED TO BE LOCATED ON THE BOARDWALK AND LAKESIDE DECK. LOCATING SUCH A FACILITY HERE WOULD ALLOW VISITORS TO EASILY OBTAIN INFORMATION ABOUT THE COMMUNITY, SUCH AS ITS NATURAL HISTORY, PAST HISTORICAL EVENTS, MAPS AND POINTS OF INTEREST AS WELL AS INFORMATION ON LODGING AND RESTAURANTS.

BAND SHELL - ONE CONSIDERATION IS TO REMOVE THE EXISTING BAND SHELL TO PROVIDE ADDITIONAL SPACE FOR PARKING. A NEW BAND SHELL, HOWEVER, WOULD BE CONSTRUCTED AS A PORTION OF THE NEW DECKING AND ADJACENT TO THE EXISTING PAVILION FACING THE DOWNTOWN AREA.

BOARDWALK AND DECK - IT IS SUGGESTED THAT THE BOARDWALK AND LAKESIDE DECK INDICATED ON THE MASTER PLAN BE CONSTRUCTED IN THREE STAGES. RATIONALE FOR THIS PHASED APPROACH IS BASED UPON THE SUBSTANTIAL COSTS OF THIS FORM OF CONSTRUCTION AS WELL AS ANTICIPATED PROCEDURAL REQUIREMENTS FOR SHORELINE DEVELOPMENT. BECAUSE OF THE APPEALING ELEMENTS OF THE BOARDWALK, SMALL SHOPS AND LAKE FRONTAGE, THIS AREA SHOULD BE ONE OF HIGH ACTIVITY DURING THE PEAK TOURIST SEASONS.

SITE AMENITIES

LANDSCAPING - ADDITIONAL DECIDUOUS AND CONIFEROUS TREES ARE NECESSARY SO AS TO PROVIDE BEAUTY, SHADE AND SCREEN VARIOUS VIEWS ON THE SITE. CREATING A LUSH, GREEN TURF IS ALSO NECESSARY TO PROMOTE A PARK-LIKE ATMOSPHERE.

SAILORS' MONUMENT - LOCATING THIS MONUMENT IN THE CENTER OF THE ENTRANCE PLAZA WILL PROMOTE IT AS THE FOCAL POINT AND TERMINUS OF THE AVENUE OF FLAGS.



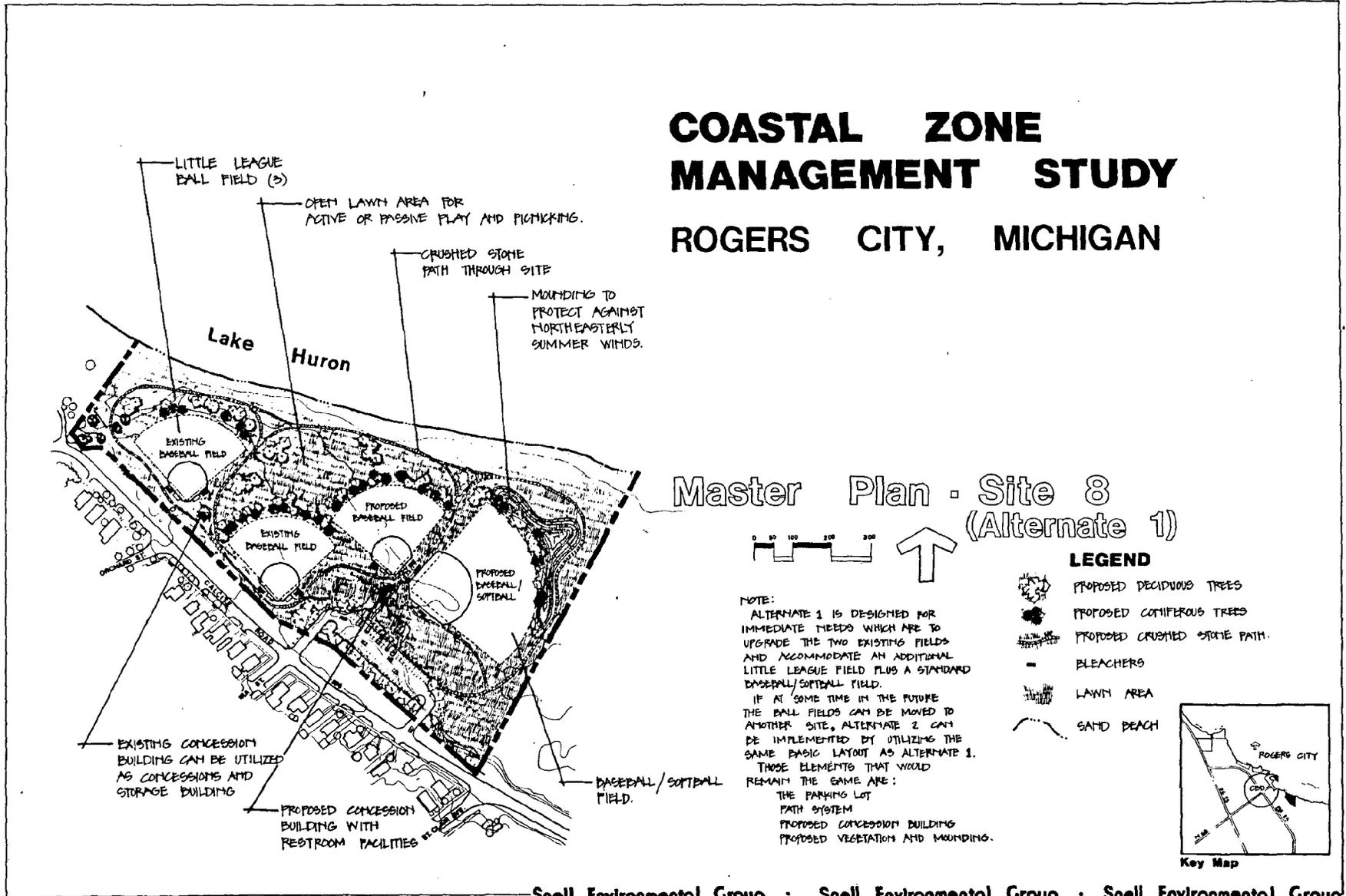
<u>PARCEL 7</u>	<u>QUANTITY</u>	<u>TOTAL COST</u>
REMOVE EXISTING TREE	1 EACH	\$ 75.00
NEW BANDSHELL	1 EACH	90,000.00
PLAY EQUIPMENT	5 EACH	5,500.00
STRIP AND REMOVE TOP SOIL	628 C.Y.	3,956.00
CUT, PARKING LOT	305 C.Y.	375.15
FILL, PARKING LOT	325 C.Y.	975.00
MONUMENT AREA	30 C.Y.	90.00
BANK SAND BASE FOR SIDEWALK	153 C.Y.	459.00
SIDEWALK 4"	12,575 S.F.	50,928.00
ASPHALT		
No. 11 BITUMINOUS MIX	623 TONS	23,674.00
No. 5 BITUMINOUS MIX	1,466 TONS	48,378.00
TOP SOIL FOR PLANTING AREA IN PARKING LOT	50 C.Y.	150.00
HYDROMULCHING	3,733 S.Y.	<u>1,493.00</u>
TOTAL		\$226,053.15

NOTE: THE COST OF THE PROPOSED 3 PHASE DECK PLATFORMS OR BOARDWALKS ARE, AT THIS POINT IN THE DESIGN PROCESS, DIFFICULT TO ESTIMATE. HOWEVER, A COMPARISON OF A SIMILIAR CONSTRUCTION TYPE WOULD BE T-DOCKS AS BUILT IN MARINAS. USING THIS AS A ROUGH ESTIMATING TOOL AT A COST OF \$20.00 PER SQUARE FOOT, THE FOLLOWING PHASED COSTS COULD BE USED AS GUIDELINES:

PHASE I - 15,000 S.F. = \$300,000.00
PHASE II - 10,000 S.F. = 200,000.00
PHASE III - 10,000 S.F. = 200,000.00

COASTAL ZONE MANAGEMENT STUDY

ROGERS CITY, MICHIGAN



SITE 8 MASTER PLANS

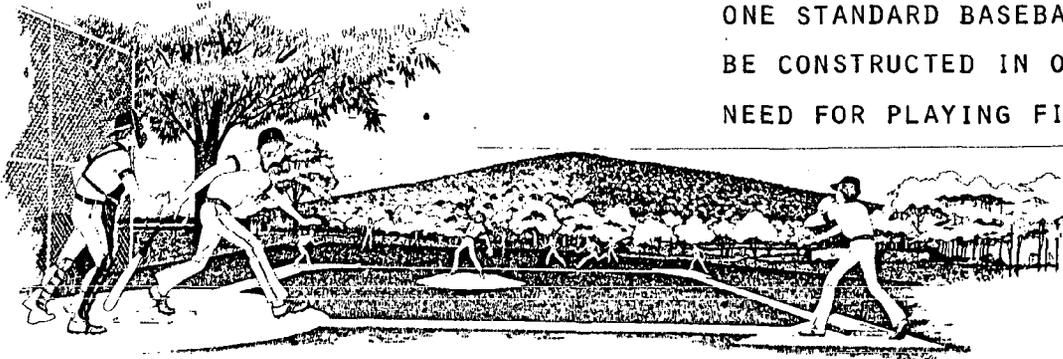
AS EXPRESSED IN THE "NEEDS AND OPPORTUNITIES" SECTION, THERE IS AN IMMEDIATE DEMAND FOR ADDITIONAL BALL FIELDS IN THE COMMUNITY AND SITE 8 PRESENTLY CONTAINS TWO BALL FIELDS, WITH MORE THAN SUFFICIENT LAND TO ACCOMMODATE ADDITIONAL BALL DIAMONDS.

HOWEVER, SINCE THERE ARE OTHER LONG TERM NEEDS AND CONSIDERATIONS FOR THIS PARK, TWO DESIGN ALTERNATIVES HAVE BEEN PRESENTED.

SITE 8 (ALTERNATE 1)

PASSIVE AND ACTIVE RECREATION

BALL FIELDS - IN DESIGN ALTERNATE 1, UPGRADING OF THE TWO EXISTING LITTLE LEAGUE FIELDS WOULD OCCUR. ONE ADDITIONAL LITTLE LEAGUE FIELD TOGETHER WITH ONE STANDARD BASEBALL/SOFTBALL FIELD WOULD ALSO BE CONSTRUCTED IN ORDER TO ALLEVIATE THE PRESENT NEED FOR PLAYING FIELDS.

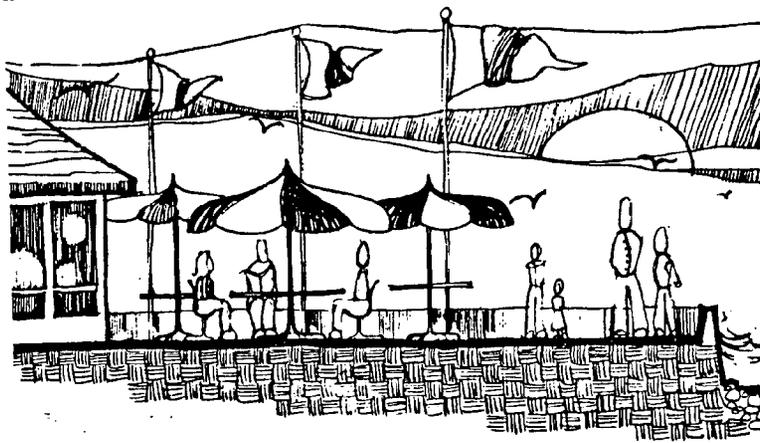


OPEN PLAY AREA - AN AREA SITUATED BETWEEN THE THREE LITTLE LEAGUE FIELDS WOULD BE RETAINED AS A LAWN AREA FOR ACTIVE PLAY OR PASSIVE RECREATION, SUCH AS PICNICKING AND SUNBATHING.

SERVICE AND SUPPORT FACILITIES

PARKING LOT - A PROPOSED PARKING AREA WITH ACCESS TO CALCITE ROAD WOULD SERVICE THE MAJOR ACTIVITY AREAS OF THE PARK -- THE FOUR BALL FIELDS AND CONCESSION BUILDING. SOME 56 PARKING STALLS WOULD BE PROVIDED AND, IF NECESSARY, OVERFLOW PARKING COULD OCCUR ON THE OPEN LAWN AREA TO THE IMMEDIATE EAST OF THE DESIGNATED PARKING SPACES.

CONCESSION BUILDING - AN EXISTING CONCESSION BUILDING IS LOCATED ON THE SITE AND CAN BE UTILIZED FOR BOTH CONCESSIONS AND STORAGE. SINCE, HOWEVER, THE EXISTING BUILDING WOULD NOT ENJOY A CENTRALIZED LOCATION TO ALL THE BALL FIELDS IN THE PROPOSED PLAN, CONSTRUCTION OF ANOTHER CONCESSION BUILDING IS SUGGESTED.



THIS CONCESSION BUILDING WOULD BE SITUATED BETWEEN THE PARKING LOT AND THE TWO PROPOSED BALL FIELDS AND THUS CENTRALLY LOCATED WITH RESPECT TO THE HIGH ACTIVITY AREAS. RESTROOM FACILITIES COULD BECOME A PART OF THE BUILDING.

PATH SYSTEM - THE TRAIL SYSTEM IN THIS AREA IS SUGGESTED TO BE OF A CRUSHED STONE SURFACE SO THAT HANDICAPPED INDIVIDUALS OR THOSE IN WHEELCHAIRS CAN MANUEUVER MORE EASILY ON THIS TYPE OF SOFT SURFACE MATERIAL.

THE PATHWAY WOULD PROVIDE EASY ACCESS TO ALL AREAS OF THE PARK, FROM THE PARKING LOT TO THE BALL FIELDS AND CONCESSION BUILDINGS AS WELL AS ALONG THE BEACH.

BOLLARDS - TO PROVIDE DEFINITION OF THE SITE LIMITS, BOLLARDS AND CHAINS WOULD EXTEND ALONG THE OUTER EDGE OF THE WEST ENTRANCE TO THE PARKING LOT. IT IS SUGGESTED THAT THEY ALSO BE LOCATED ALONG THE NORTHERN EDGE OF THE PARKING LOT AND THEN TERMINATE AT THE PARK'S EASTERN BOUNDARY. ACCESS COULD BE PROVIDED ONTO THE LAWN AREA NEXT TO THE EAST ENTRANCE OF THE PARKING LOT WHEN THERE IS NEED FOR OVERFLOW PARKING.

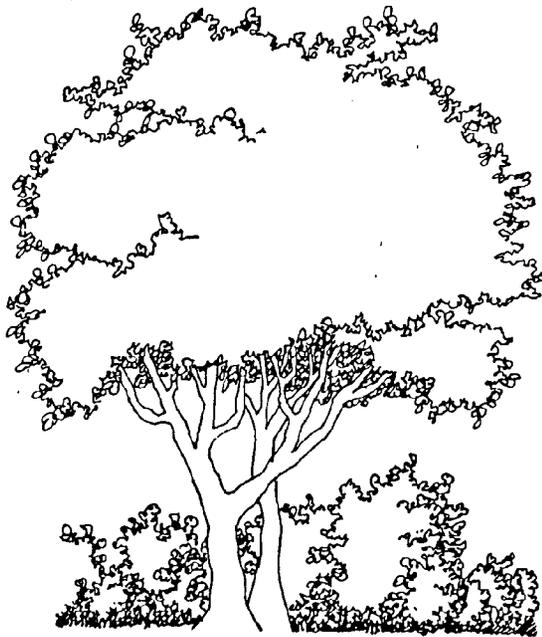
SITE AMENITIES

LANDSCAPING - BECAUSE OF THE ON-SHORE WINDS, IT IS NECESSARY TO SCREEN THE BALL FIELDS AS MUCH AS POSSIBLE. THIS COULD BE DONE BY PLANTING EVERGREEN AND DECIDUOUS TREES WHICH CAN ACT AS WINDBREAKS.

MOUNDING OR BERMING ALONG THE PERIPHERY OF THE BASEBALL/SOFTBALL FIELDS WOULD ALSO HELP TO DIMINISH SOME OF THE NORTHEASTERLY WINDS.

WHILE THESE TWO METHODS WILL HELP TO DIVERT AND DIFFUSE SOME OF THE WINDS' IMPACT, THEY OBVIOUSLY DO NOT PROVIDE A SOLID BARRIER AND THUS SOME WIND DISTURBANCE WILL STILL OCCUR.

SEEDING OF THE LAWN AREA WILL CREATE A LUSH GREEN PARK-LIKE ATMOSPHERE. WHERE GRASS AND SAND MEET, A STRONG CONTRAST WILL OCCUR. THIS CONTRAST WILL PROVIDE AESTHETIC AS WELL AS TACTILE PLEASURE TO THOSE WHO FLUCTUATE BETWEEN THE TWO SURFACES. FOR THIS REASON, THIS BEACH COULD BECOME A POPULAR SPOT FOR SWIMMING.



<u>PARCEL 8 (ALT. #1)</u>	<u>QUANTITY</u>	<u>TOTAL COST</u>
CUT AND FILL, BALANCED	9,982 C.Y.	\$19,664.54
TOP SOIL		
190' FIELD	621 C.Y.	8,073.00
300' FIELD	1,037 C.Y.	13,481.00
INFIELD MIX		
190' FIELD	94 C.Y.	2,256.00
300' FIELD	189 C.Y.	4,536.00
ASPHALT PARKING LOT AND DRIVEWAYS		
No. 11 BITUMINOUS MIX @ 170# S.Y.	303 TONS	11,514.00
No. 5 BITUMINOUS MIX @ 400# S.Y.	712 TONS	23,496.00
ASPHALT TRAILS 6' WIDTH		
No. 11 BITUMINOUS MIX @ 170# S.Y.	374 TONS	14,212.00
No. 5 BITUMINOUS MIX @ 230# S.Y.	506 TONS	16,698.00
BOLLARDS AND CHAIN		
REMOVABLE BOLLARDS	1,811 L.F.	12,446.64
BEACH SAND FOR PLAY AREAS	47 C.Y.	141.00
PLAY STRUCTURE	1 EACH	4,660.00
TOILETS	2 EACH	14,640.00
BENCHES (PARK)	5 EACH	934.26
TRASH CONTAINERS	5 EACH	960.00
WHEEL STOPS	71 EACH	2,275.00
HANDICAP SYMBOLS - PAINTED ON ASPHALT	2 EACH	150.00

<u>PARCEL 8 (ALT. #1, CONT.)</u>	<u>QUANTITY</u>	<u>TOTAL COST</u>
DUG-OUTS	4 EACH	\$36,000.00
BASEBALL BACKSTOP	2 EACH	13,200.00
10' GA. CHAIN LINK FENCE	80 L.F.	1,440.00
4' 9 GA. CHAIN LINK FENCE	1,810 L.F.	15,204.00
GATES		
4' WIDE, 4' HIGH	8 EACH	1,440.00
6' WIDE, 4' HIGH	6 EACH	1,800.00
BLEACHERS, FOOTINGS AND ANCHORS		
	4 EACH	7,200.00
PLAYERS BENCH	8 EACH	2,800.00
LAYOUT EQUIPMENT INCLUDING ANCHORS		
	SETS	3,840.00
ADDITIONAL BASE ANCHORS	3 EACH	225.00
ADDITIONAL MOUND ANCHOR	1 EACH	75.00
DRINKING FOUNTAIN AND YARD HYDRANT DRYWELL		
	1 EACH	3,000.00
WATER SERVICE 1/2"	600 L.F.	3,000.00
TREES, B&B PLANTED WITH SOIL MIX AND GUYED		
ACER PLATANOIDES	51 EACH	10,812.00
GLEDITSIA TRIACANTHOS		
INERMIS	83 EACH	19,229.00
TILIA CORDATA	48 EACH	8,400.00
AMELANCHIER CANADENSIS	37 EACH	5,587.00
ELEAGNUS CANADENSIS	33 EACH	2,679.00
PINUS NIGRA	55 EACH	12,145.00
PINUS SYLVESTRIS	64 EACH	25,296.00

<u>PARCEL 8 (ALT. #1, CONT.)</u>	<u>QUANTITY</u>	<u>TOTAL COST</u>
PARK TURF	30,098 S.Y.	\$12,039.20
LIGHTING* - COST OF EQUIPMENT (PURCHASED BY THE CITY)		
1500 W METAL HALIDE W/ POWER MATE BALLAST	46 EACH	25,520.00
POLE TOP SLIPFITTER	46 EACH	1,150.00
4' 3 CONDUCTOR #1450 CORD	46 EACH	253.00
40' STEEL POLE PS 4105	4 EACH	2,800.00
40' STEEL POLE PS 4113	2 EACH	2,100.00
50' STEEL POLE PS 50095	2 EACH	2,700.00
50' STEEL POLE PS 4109	2 EACH	2,575.00
THREE TENON BULLHORN	2 EACH	190.00
TWO TENON BULHORN	6 EACH	420.00
FIVE TENON BULLHORN	4 EACH	620.00
FOUR TENON BULLHORN	2 EACH	250.00
TOTAL		\$362,736.00

*LIGHTING DOES NOT COVER COST OF HOOKUP, RUNNING WIRE FROM POINT OF HOOKUP, CIRCUIT BOXES OR WIRE FROM CIRCUIT BOX TO LIGHTS.

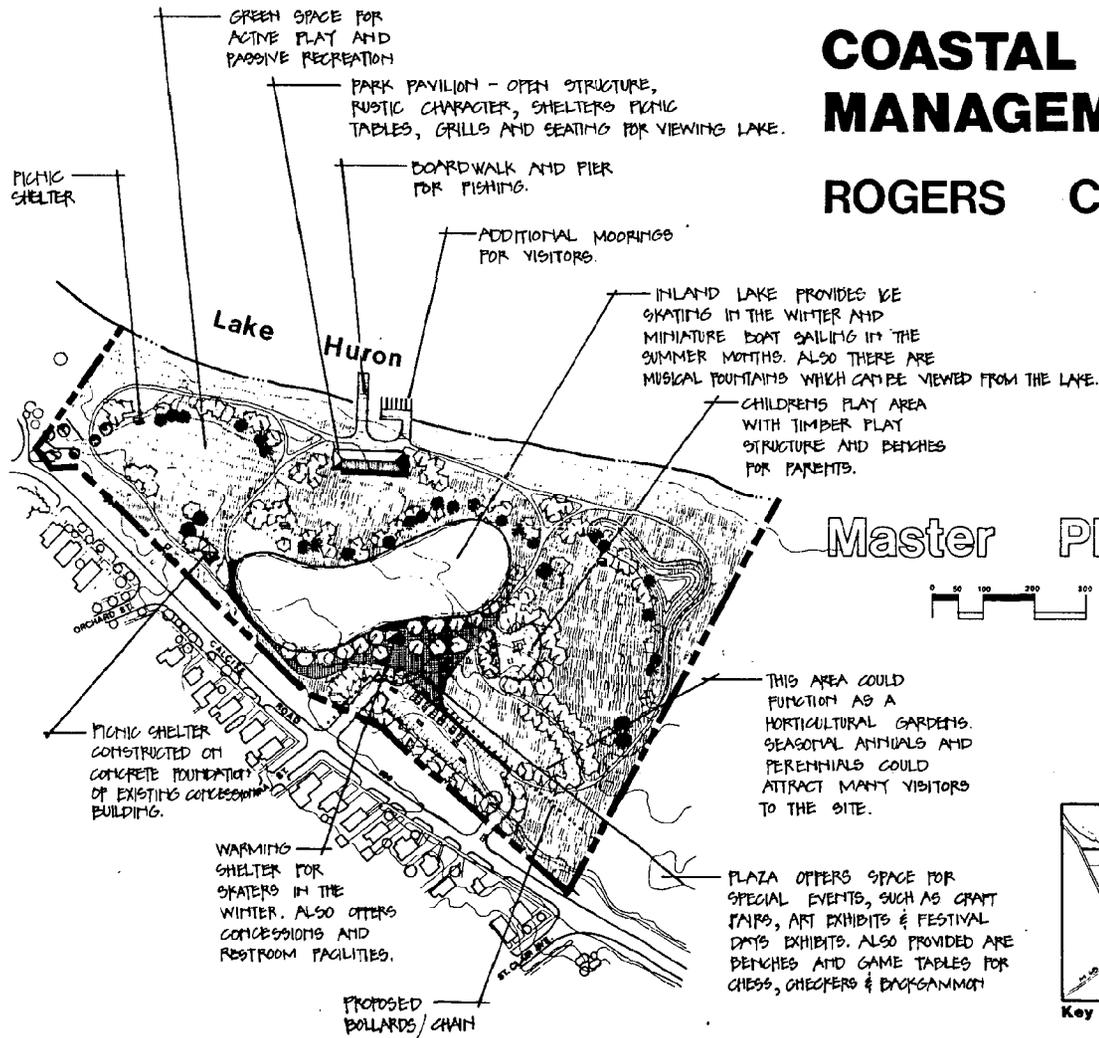
SITE 8 (ALTERNATE 2)

DESIGN ALTERNATE 2 IS ORIENTED TOWARDS RECREATIONAL GOALS FOR FUTURE DEVELOPMENT. IF, IN THE FUTURE, THE BALL FIELDS CAN BE LOCATED ELSEWHERE, THIS SITE WOULD PROVIDE A LARGE PARCEL OF LAND IN WHICH OTHER FORMS OF RECREATION COULD OCCUR.

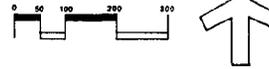
POSSIBILITIES INCLUDE A PASSIVE OPEN LAKE FRONT PARK WHICH COULD EVENTUALLY DRAW SOME OF THE DEMAND AWAY FROM SITE 7. THEREFORE, THE PROPOSED OPTION USES A LAYOUT SIMILAR TO ALTERNATE 1, MINUS THE BALL FIELDS.

BY UTILIZING A SIMILAR LAYOUT, THAT IS, THE SAME PROPOSED PARKING LOT DESIGN, PATH SYSTEM, CONCESSION BUILDING AND VEGETATION AND MOUNDING, IT IS POSSIBLE TO SUPERIMPOSE NEW FACILITIES AND ELEMENTS ONTO THE SITE WITHOUT MAJOR DESIGN REORGANIZATION. AT THE SAME TIME, THIS WILL ALSO HELP TO KEEP DOWN DEVELOPMENT COSTS.

COASTAL ZONE MANAGEMENT STUDY ROGERS CITY, MICHIGAN

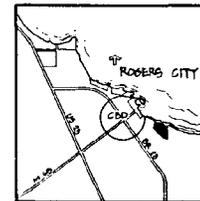


Master Plan - Site 8 (Alternate 2)



LEGEND

-  PROPOSED DECIDUOUS TREES
-  PROPOSED CONIFEROUS TREES
-  PATH THRU SITE
-  EXISTING TREES
-  LAWN AREA
-  SAND BEACH



Key Map

PASSIVE AND ACTIVE RECREATION

BECAUSE OF THE SIZE OF THIS PARK, IT OFFERS THE OPPORTUNITY TO DEVELOP A WIDE VARIETY OF BOTH PASSIVE AND ACTIVE RECREATION.

PASSIVE RECREATION - COULD CONSIST OF FISHING ALONG THE SHORE OR PIER, SUNBATHING, PICNICKING, SAILING MINIATURE BOATS IN THE INLAND LAKE, ENJOYING THE BEAUTY OF THE HORTICULTURAL GARDENS OR PLAYING A GAME OF CHECKERS OR CHESS ON THE OUTDOOR GAME TABLES.

ACTIVE RECREATION - MIGHT TAKE THE FORM OF ORGANIZED TEAM GAMES, SUCH AS VOLLEYBALL, FOOTBALL OR SOCCER, WHICH CAN BE PLAYED IN SEVERAL OPEN GREEN SPACES. ICE SKATING IN THE WINTER COULD OCCUR WHEN THE INLAND POND IS FROZEN AND SWIMMING WOULD TAKE PLACE ALONG THE SHORE IN THE SUMMER MONTHS. A CHILDRENS' PLAY AREA WITH TIMBER PLAY STRUCTURE IS ALSO PROPOSED AS ANOTHER FORM OF ACTIVE PLAY.

SERVICE AND SUPPORT FACILITIES

AS PREVIOUSLY STATED, THERE ARE SEVERAL FACILITIES THAT ARE ALSO COMPONENTS OF THE FIRST OPTION. THESE FACILITIES INCLUDE THE PARKING LOT, PATH SYSTEM

AND THE PROPOSED CONCESSION BUILDING. THE DESCRIPTION OF THESE FACILITIES REMAINS THE SAME AS PREVIOUSLY PRESENTED WITH THE EXCEPTION OF THE CONCESSION BUILDING. WITH THE INLAND POND USED FOR ICE SKATING IN THE WINTER, THE CONCESSION BUILDING COULD SERVE AN ADDITIONAL FUNCTION -- THAT OF A WARMING SHELTER.

PARK PAVILION - ALSO PROPOSED IS A NEW PARK PAVILION TO BE CONSTRUCTED CLOSE TO THE LAKESHORE. IT SHOULD BE AN OPEN STRUCTURE, RUSTIC IN CHARACTER, WHICH CAN SHELTER PICNIC TABLES, GRILLS AND PROVIDE SEATING FOR THOSE WHO WISH TO VIEW THE LAKE.

THIS STRUCTURE SHOULD NOT ONLY BE A FOCAL POINT IN THE SITE, BUT ALSO DOMINATE VIEWS FROM THE LAKE.

BOARDWALK AND PIER - A BOARDWALK IS TO BE DESIGNED FOR CONSTRUCTION ALONG THE LENGTH OF THE PAVILION, ON THE LAKESIDE AND EXTENDED OUT INTO THE LAKE TO CREATE A FISHING PIER.

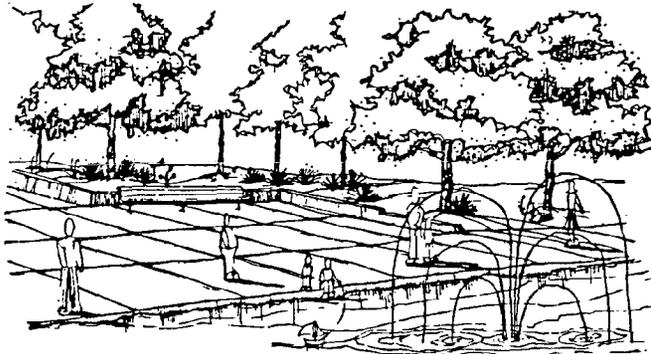
ADDITIONAL MOORINGS - WOULD ALSO BE CONSTRUCTED ADJACENT TO THE BOARDWALK IN ORDER TO PROVIDE DOCKING FOR TRANSIENT BOATERS WHO WOULD BE DRAWN INTO THE PARK.

PICNIC SHELTERS - COULD BE PROVIDED AT SEVERAL LOCATIONS THROUGHOUT THE PARK. THESE SERVE A MORE FORMALIZED STYLE OF PICNICKING AND OFFER SOME PROTECTION FROM SUDDEN STORMS.

BOLLARDS AND CHAIN - REMAIN THE SAME AS IN ALTERNATE 1.

SITE AMENITIES

INLAND LAKE - A SMALL LAKE WOULD BE CONSTRUCTED IN THE CENTER OF THE SITE AND SHOULD BECOME A MAJOR ATTRACTOR TO THE PARK. ACTIVITIES SUCH AS ICE SKATING AND MINIATURE BOAT SAILING CAN OCCUR HERE. MUSICAL FOUNTAINS, WHICH CAN ALSO BE VIEWED FROM THE LAKE, WILL ADD INTEREST AND CHARM TO THE SURROUNDINGS. THE LAKE IS TO BE SURROUNDED BY BOTH SOFT AND HARD SURFACE MATERIALS.



Typical View of Fountain Area

PLAZA - A FORMAL PAVED PLAZA IS PLANNED FOR DEVELOPMENT AT THE ENTRANCE OF THE PARK. THIS PLAZA WOULD PROVIDE A HARD "EDGE" FOR A PORTION OF THE INLAND LAKE SHORELINE AND IS INTENDED TO CREATE AN "URBAN" QUALITY TO THE ENTRANCE OF THE PARK. THE PLAZA WOULD ALLOW SPACE FOR SPECIAL EVENTS, EXHIBITS, OUTDOOR EATING, SEATING AND GAME TABLES AS WELL AS CIRCULATION AREAS.

HORTICULTURAL GARDENS - SUCH GARDENS COULD BE LOCATED ACROSS FROM THE PLAZA AND INLAND LAKE AT THE ENTRANCE OF THE PARK. PLANTINGS OF ANNUALS AND PERENNIALS WOULD REINFORCE THE URBAN QUALITY OF THE PARK ENTRANCE AS WELL AS PROVIDE ANOTHER ELEMENT TO DRAW VISITORS INTO THE PARK.

LANDSCAPING - THE BULK OF THE LANDSCAPING PROPOSED IN ALTERNATE 1, THAT IS THE SEEDING OF GRASS, MOUNDING AND TREE PLANTING, REMAINS THE SAME. IT IS SUGGESTED, HOWEVER, THAT ADDITIONAL TREES BE PLANTED IN THE PLAZA, AROUND THE CHILDRENS' PLAY AREA AND HORTICULTURAL GARDENS.

PARCEL 8 (ALT. #2)

QUANTITY

TOTAL COST

FACILITIES

DEMOLITION OR REMOVAL OF
BASEBALL FACILITIES

LUMP SUM

\$ 25,000.00

PARK PAVILION

5,200 S.F.

104,000.00

BOARDWALK, PIER AND
ADDITIONAL MOORINGS

8,000 S.F.

47,000.00

PICNIC SHELTER AND
WARMING SHELTER

600 S.F.

18,000.00

INLAND LAKE

LUMP SUM

14,222.00

TOTAL

\$208,222.00

CAPITAL IMPROVEMENT PROGRAM

THIS PROGRAM WILL BE USED TO ESTABLISH DOLLAR BUDGET GUIDELINES FOR THE ORDERLY DEVELOPMENT OF THE SEVEN PARK SITES. RESPONDING TO CITIZEN INPUT, THE SEQUENCE OF DEVELOPMENT PRIORITY WAS ESTABLISHED BY THE PLANNING COMMISSION, ON A PARCEL BY PARCEL BASIS. THESE PARCEL BY PARCEL PRIORITIES ARE AS FOLLOWS:

<u>PARCEL</u>	<u>PRIORITY FOR DEVELOPMENT</u>
SITE 8	#1 PRIORITY
SITE 7	#2 PRIORITY
SITES 1 AND 3	#3 PRIORITY
SITE 5	#4 PRIORITY
SITE 6	#5 PRIORITY
SITE 2	#6 PRIORITY

WHILE THIS IDENTIFIES THE SITE BY SITE PRIORITIES OF THE CITY, IT DOES NOT REFLECT WHAT COULD LOGICALLY OCCUR ON A YEAR-TO-YEAR BASIS RESPECTING CITY BUDGETARY CONSTRAINTS, AVAILABILITY OF STATE OR FEDERAL FUNDING ASSISTANCE AND THEIR PROGRAM REQUIREMENTS AND CONSTRUCTION COSTS.

THE FOLLOWING PROGRAM, IDENTIFIED BY YEARS, IS ESTABLISHED FOR ROGERS CITY'S PLANNING PROCESS. IT IDENTIFIES ESTIMATED CONSTRUCTION COSTS FOR BOTH MATERIAL AND LABOR AT 1980 DOLLARS. ALSO, IT IDENTIFIES OUTSIDE FUNDING ASSISTANCE AND ESTIMATES OF THEIR SHARED PERCENTAGES OF TOTAL COST.

WHERE LAND AND WATER CONSERVATION FUNDS HAVE BEEN INDICATED, IT IS PRESUMED THAT THE CITY HAS MET THE COMPREHENSIVE RECREATION MASTER PLAN OBLIGATIONS SET FORTH BY THE DEPARTMENT OF NATURAL RESOURCES, RECREATION SERVICES DIVISION. (SEE CHAPTER 6.)

YEAR ONE (1980-1981)

ITEMIZED ESTIMATE OF PROJECT COSTS:

SITES 1 AND 3

BOLLARDS AND CHAIN - (2,280 L.F.)	\$ 13,060.
NATURE TRAILS - (6,000 L.F.)	6,000.
INTERPRETIVE SIGNAGE - TREES (50)	480.
INTERPRETIVE SIGNAGE - OTHER (35)	2,050.
BENCHES - (14)	2,180.
WASTE RECEPTACLES - (6)	960.
ENTRANCE SIGN - (1)	900.

SITE 5

REMOVAL OF ROADWAY AND SITE IMPROVEMENTS (L.S.)	<u>6,600.</u>
	\$ 32,230.
CONTRACTOR'S OVERHEAD AND PROFIT (20%)	<u>6,450.</u>
TOTAL ESTIMATED PROJECT COST	<u>\$ 38,680.</u>

FUNDING ASSISTANCE:

COASTAL ZONE MANAGEMENT (80%) \$30,944.

CITY OF ROGERS CITY (20%) \$7,736.

YEAR TWO (1981-1982)

ITEMIZED ESTIMATE OF PROJECT COSTS:

SITE 8

LITTLE LEAGUE FIELD (NO LIGHTING)	\$ 60,200.
SOFTBALL/BASEBALL FIELD	<u>66,500.</u>
 TOTAL ESTIMATED COST	 <u>\$126,700.</u>

FUNDING ASSISTANCE:

LAND AND WATER CONSERVATION FUNDS (50%) \$63,350.
SOIL CONSERVATION SERVICE/RESOURCE CONSERVATION
AND DEVELOPMENT (25%) \$31,675.

OR

UPPER GREAT LAKES REGIONAL COMMISSION (25%)

GIFTS AND DONATIONS:

LABOR AND MATERIALS (7.9%) \$10,000.

CITY OF ROGERS CITY FINANCIAL SHARE (17%) \$21,675.

YEAR THREE (1982-1983)

ITEMIZED ESTIMATE OF PROJECT COSTS:

SITE 7

NEW BANDSHELL	\$ 90,000.
PLAY EQUIPMENT	5,500.
PARKING LOT	<u>73,800.</u>

TOTAL ESTIMATED COST	<u>\$169,300.</u>
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FUNDING ASSISTANCE:

SOIL CONSERVATION SERVICE/RESOURCE CONSERVATION
AND DEVELOPMENT (50%) \$84,650.

UPPER GREAT LAKES REGIONAL COMMISSION (30%) \$50,790.

GIFTS AND DONATIONS:

LABOR AND MATERIALS (10%) \$17,000.

CITY OF ROGERS CITY FINANCIAL SHARE (10%) \$17,000.

YEAR FOUR (1983-1984)

ITEMIZED ESTIMATE OF PROJECT COSTS:

SITE 8

PARKING LOT	\$ 42,300.
BOLLARD AND CHAIN (TRAFFIC CONTROL)	12,500.
TOILETS	14,650.

SITE 5

PICNIC SHELTER	5,000.
PLAY LOT (WOOD STRUCTURE)	3,000.
PLANT MATERIAL	<u>10,000.</u>

TOTAL ESTIMATED COST	<u>\$ 87,450.</u>
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FUNDING ASSISTANCE:

LAND AND WATER CONSERVATION FUNDS (50%)	\$43,725.
SOIL CONSERVATION SERVICE/RESOURCE CONSERVATION AND DEVELOPMENT (30%)	\$26,235.

CITY OF ROGERS CITY FINANCIAL SHARE (20%) \$17,490.

YEAR FIVE (1984-1985)

ITEMIZED ESTIMATE OF PROJECT COSTS:

SITE 6

TOILETS \$ 14,650.

SITE 6

PLANT MATERIAL (SCREENING) 7,600.
RELOCATE FENCING 7,695.

SITE 2

CONTAINMENT OF RIVERBANK EROSION 12,500.

SITE 8

PLAY LOT (WOODEN STRUCTURE) 4,600.
DRINKING FOUNTAIN AND YARD HYDRANT 6,000.
PLANT MATERIAL (PORTION) 12,000.

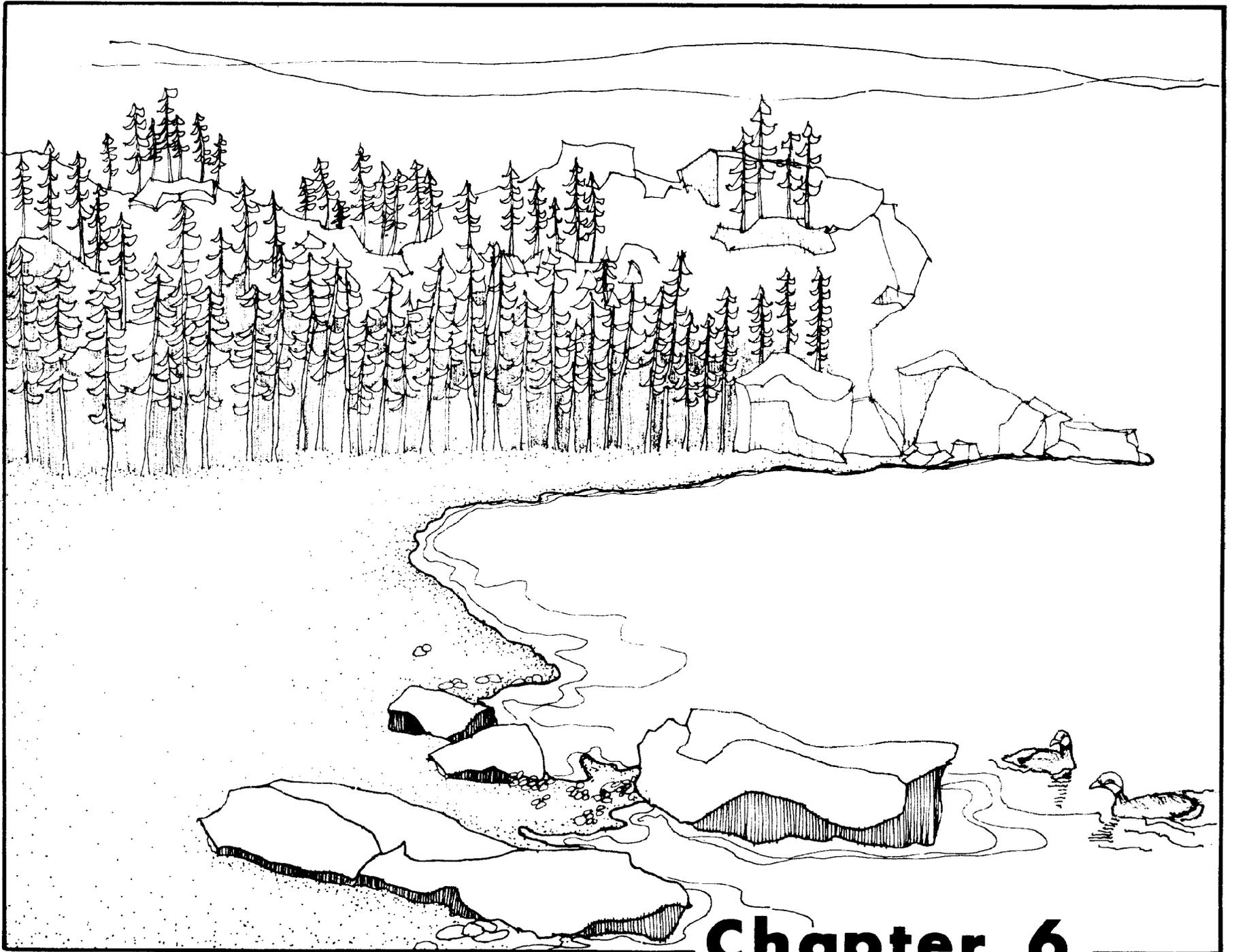
TOTAL ESTIMATED COST \$ 65,045.

FUNDING ASSISTANCE:

LAND AND WATER CONSERVATION FUNDS (50%) \$32,522.

SOIL CONSERVATION SERVICE/RESOURCE CONSERVATION
AND DEVELOPMENT (30%) \$19,513.

CITY OF ROGERS CITY FINANCIAL SHARE \$13,009.



Chapter 6

Funding Assistance

THERE ARE NUMEROUS AGENCIES AND SOURCES WHICH CAN LEND ASSISTANCE IN EITHER TECHNICAL SERVICES, GRANTS OR MATCHING GRANTS IN IMPLEMENTING THESE MASTER PLANS. THE FOLLOWING LIST OF FEDERAL, STATE AND LOCAL AGENCIES, ALONG WITH THEIR "TARGET PROJECT TYPES" ARE THE MAJOR SOURCES OF ASSISTANCE. THESE PROGRAMS OR AGENCIES ARE NOT LISTED IN ANY ORDER OF PRIORITY.

PROGRAM SOURCE: LAND AND WATER CONSERVATION FUNDS

FUNDING AGENCY: HERITAGE CONSERVATION AND
RECREATION SERVICE (HCRS)
U.S. DEPARTMENT OF INTERIOR

ADMINISTERED BY: MICHIGAN DEPARTMENT OF
NATURAL RESOURCES
RECREATION SERVICES DIVISION
P.O. Box 30028
LANSING, MICHIGAN 48909

CONTACT: RECREATION SERVICES DIVISION
STAFF:
BILL PIERCE
HECTOR CHIUNTI
AL ALMY
ROD STOKES
PHONE: (517) 373-1660

OR CONTACT: MICHIGAN DEPARTMENT OF
NATURAL RESOURCES
OFFICE OF BUDGET AND
FEDERAL AID
P.O. Box 30028
LANSING, MICHIGAN 48909
STAFF:
JEAN POWERS
MIKE McDONALD
PHONE: (517) 373-1750

THIS FEDERAL FUNDING PROGRAM IS ADMINISTERED THROUGH THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES AND PROVIDES A 50% MATCHING GRANT FOR PROJECTS THAT MEET THE OUTDOOR RECREATIONAL NEEDS OF THE COMMUNITY, AS IDENTIFIED IN THE COMPREHENSIVE PARK AND RECREATION PLAN. THE FUNDS CAN BE USED FOR ACQUISITION, DESIGN AND DEVELOPMENT OF LAND AND OUTDOOR RECREATION FACILITIES, SUCH AS REST-ROOMS, SHELTERS, SIGNS, TRAILS, PARKING LOTS, TENNIS COURTS, SWIMMING POOLS, GOLF COURSES, ETC. MAJOR BUILDING COMPLEXES SUCH AS INDOOR TENNIS COURTS, ARE PRESENTLY NOT ELIGIBLE, ALTHOUGH SUCH FACILITIES MAY RECEIVE PARTIAL MATCH IN THE NEAR FUTURE. IN ADDITION, THE FOLLOWING REQUIREMENTS MUST BE CONSIDERED:

1. THE MINIMUM PROJECT COST ELIGIBILITY FOR MATCHING GRANTS OF \$5,000.00.
2. ALL LANDS MUST BE EITHER OWNED OR CONTROLLED BY THE CITY UNDER A LONG-TERM ARRANGEMENT.
3. PRELIMINARY PLANS AND COST ESTIMATES MUST BE SUBMITTED WITH THE PRE-APPLICATION FOR FUNDS.
4. NO LAND CAN BE ACQUIRED, CONTRACT SIGNED, OR DEVELOPMENT STARTED UNTIL THE PROJECT HAS BEEN APPROVED BY THE HERITAGE CONSERVATION AND RECREATION SERVICE.
5. THE COMMUNITY MUST HAVE THE AMOUNT OF MONEY IN THEIR BUDGET EQUAL TO THE AMOUNT REQUESTED FROM THE FUND.
6. PLANS MUST INCLUDE DETAILS FOR THE HANDICAPPED.

ANOTHER FEATURE OF THIS PROGRAM IS THAT THE CITY CAN RECEIVE FROM THE FUNDS, THE AMOUNT EQUAL TO 100% OF APPRAISED VALUATION OF A LAND GIFT TO THE PARK AND RECREATION DEPARTMENT. THE MONEY RECEIVED FOR THIS GIFT MUST BE SPENT ON THE DESIGN AND DEVELOPMENT OF THE LAND, AND/OR ON THE ACQUISITION OR DEVELOPMENT OF AN ADJACENT PIECE OF LAND. THE FOLLOWING REQUIREMENTS MUST BE CONSIDERED IN THE CASE OF A LAND GIFT:

1. LAND TRANSFERRED FROM ONE PUBLIC AGENCY TO ANOTHER IS NOT ELIGIBLE.
2. LAND MUST MEET THE OUTDOOR RECREATION NEEDS OF THE COMMUNITY.
3. THE PARK AND RECREATION DEPARTMENT CANNOT ACCEPT TITLE FOR THE LAND UNTIL IT IS APPROVED BY THE HERITAGE CONSERVATION AND RECREATION SERVICE.

THE LAND AND WATER CONSERVATION FUND PROGRAM IS THE PRIMARY SOURCE OF FEDERAL GRANT MONIES IN THE STATE OF MICHIGAN FOR THE ACQUISITION AND DEVELOPMENT OF PARKS.

PROGRAM SOURCE: UPPER GREAT LAKES
REGIONAL COMMISSION

U.S. DEPARTMENT OF COMMERCE

ADMINISTERED BY: ALEX LAGGIS, DIRECTOR
MICHIGAN PROGRAM
P.O. Box 30225
LANSING, MICHIGAN 48909
PHONE: (517) 373-3533

REGION

ADMINISTRATION: ROGER REHBERG,
REGIONAL DIRECTOR
NORTHEAST MICHIGAN REGION
ECONOMIC CENTER
RT. 4, Box 59A
ROSCOMMON, MICHIGAN 48653
PHONE: (517) 275-5121

THE PRIMARY TARGET PROJECTS THAT THIS AGENCY WILL
LIKELY FUND ARE JOB OR EMPLOYMENT RELATED OR IN-
CREASING ECONOMIC VIABILITY OF THE AREA. THEY
OFFER SUPPLEMENTAL GRANT ASSISTANCE AND USUALLY

DON'T INITIATE TOTAL FUNDING ON THEIR OWN. AS AN EXAMPLE, LAND AND WATER CONSERVATION FUND APPROVED A PROJECT WITH 50% SUPPORT THEN UPPER GREAT LAKES REGIONAL COMMISSION MAY OFFER AN ADDITIONAL 30%, LEAVING THE CITY TO COME UP WITH ONLY A 20% MATCH.

PROGRAM SOURCE: COASTAL ZONE MANAGEMENT PROGRAM

U.S. DEPARTMENT OF COMMERCE

ADMINISTERED BY: MICHIGAN DEPARTMENT OF
NATURAL RESOURCES
LAND RESOURCE PROGRAM
DIVISION
P.O. Box 30028
LANSING, MICHIGAN 48909
CONTACT: CHRIS SCHAFER,
PROGRAM DIRECTOR
PHONE: (517) 373-1660

REGARDING THE IMPLEMENTATION OF THESE MASTER PLANTS, THIS PROGRAM PRIMARILY DEALS WITH "LOW COST CONSTRUCTION" ITEMS, USUALLY ELEMENTS OF "SOFT" MATERIAL, I.E., SOFT SURFACE, NATURE WALKWAYS,

OUTDOOR ENVIRONMENTAL EDUCATION PROGRAMS INCLUDING SIGNAGE AND LABELING, ELEVATED BOARDWALKS BRIDGING FRAGILE ECOSYSTEMS AND THE LIKE. THIS PROGRAM HAS NOT, HISTORICALLY, FUNDED ACTIVE RECREATIONAL FACILITIES OR ELEMENTS MADE OF CONCRETE OR STEEL.

PROGRAM SOURCE: MICHIGAN LAND TRUST FUND

ADMINISTERED BY: MICHIGAN DEPARTMENT OF
NATURAL RESOURCES
OFFICE OF BUDGET AND
FEDERAL AID
P.O. Box 30028
LANSING, MICHIGAN 48909
CONTACT: ED HOGAN,
STAFF ASSISTANT
PHONE: (517) 373-1750

THE PURPOSE OF THE MICHIGAN LAND TRUST FUND IS TO PROVIDE A NEW SOURCE OF FUNDS FOR PUBLIC ACQUISITION OF RECREATIONAL LANDS. THE PROGRAM IS ADMINISTERED BY A BOARD OF TRUSTEES, AND STAFFED THROUGH THE OFFICE OF BUDGET AND FEDERAL AID OF THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES.

TO BE REVIEWED, THE LANDS IN QUESTION MUST CONFORM TO THE GOALS OF THE BOARD. PRIORITY FOR FUNDING IS BASED ON QUANTIFIED CRITERIA WHICH FULFILL THE BOARDS GOALS. GENERALLY, THE EVALUATIVE FACTORS INCLUDE:

- . NEARNESS TO URBAN AREAS.
- . ACCESS TO OR USE OF WATER FRONTAGE, FLOODPLAINS, GREAT LAKES, OR CONNECTING WATERS.
- . PRESERVATION OF A RARE, FRAGILE, SCENIC OR IRRETRIEVABLE AREA OR RESOURCE.
- . PROTECTION OF ENDANGERED AND THREATENED SPECIES.
- . POTENTIAL FOR INNOVATIVE OR EDUCATIONAL RECREATIONAL OPPORTUNITIES.
- . ACQUISITION OR IMPROVEMENT OF LAND FOR THE PIGEON RIVER COUNTY STATE FOREST.
- . OPPORTUNITIES FOR HUNTING AND/OR FISHING.
- . RECREATION USE POTENTIAL, SUITABILITY AND NEED.
- . POTENTIAL FOR ENHANCEMENT OF EXISTING PUBLIC LANDS.
- . ENCOURAGE PERCENTAGE OF FUNDING TO BE PROVIDED BY LOCAL GOVERNING AGENCY.

CONSIDERATION IS ALSO GIVEN TO THE GRANT APPLICATIONS HISTORY OF THE APPLICANT.

PROGRAM SOURCE: HURON PINES RESOURCE, CONSERVATION
AND DEVELOPMENT PROJECT

FUNDING SOURCE: SOIL CONSERVATION SERVICE (SCS)
U.S. DEPARTMENT OF AGRICULTURE

ADMINISTERED BY: PRESQUE ISLE COUNTY DISTRICT
1009 WEST 3RD STREET
ROGERS CITY, MICHIGAN 49779

CONTACT: CARLA GREGORY,
DISTRICT CONSERVATIONIST
PHONE: (517) 734-4000

THE HURON PINES RESOURCE, CONSERVATION AND DEVELOPMENT PROJECT WILL FUND 75% OF EROSION PREVENTION AND CONTROL PROJECTS WHICH ARE NOT ON LAKE HURON. IT WILL ALSO FUND 50% OF ANY PUBLIC WATER BASED RECREATIONAL FACILITY. THE SOIL CONSERVATION SERVICE WILL ALSO PROVIDE TECHNICAL SERVICES SUPPORT AND THE ROGERS CITY PORTION CAN BE MATCHED BY OTHER AGENCY DOLLARS OR BY IN-KIND SERVICES PROVIDED BY THE CITY.

AS DISTRICT CONSERVATIONIST, CARLA CAN ALSO HELP IN OBTAINING TREES FOR SCREENING AND SHADE PURPOSES THROUGH THE SCS DISTRICT.

GENERAL OBLIGATION BONDS

UNDER MICHIGAN STATE LAW, CITY GOVERNMENTS CAN ISSUE GENERAL OBLIGATION BONDS AGAINST ANTICIPATED TAX RECEIPTS. THE ADVANTAGE TO ISSUING GENERAL OBLIGATION BONDS FOR PARK AND RECREATION DEVELOPMENT IS THAT LARGER BLOCK AMOUNTS OF FUNDS CAN BE COMMITTED TO THE DEVELOPMENT OF A MAJOR FACILITY.

A WIDE VARIETY AND NUMBER OF NEEDS CAN BE ADDRESSED IMMEDIATELY AND ANTICIPATED INCREASES IN THE COST OF ACQUISITION AND DEVELOPMENT CAN BE CIRCUMVENTED BY BUILDING NOW. THE DISADVANTAGES TO ISSUING GENERAL OBLIGATION BONDS ARE THAT THEY COMMIT THE CITY TO PAYING BACK THESE BONDS OVER A PERIOD OF TIME (USUALLY 15 TO 20 YEARS). THIS INVOLVES INTEREST CHARGES AND PLACES FINANCIAL OBLIGATIONS ON FUTURE GENERATIONS.

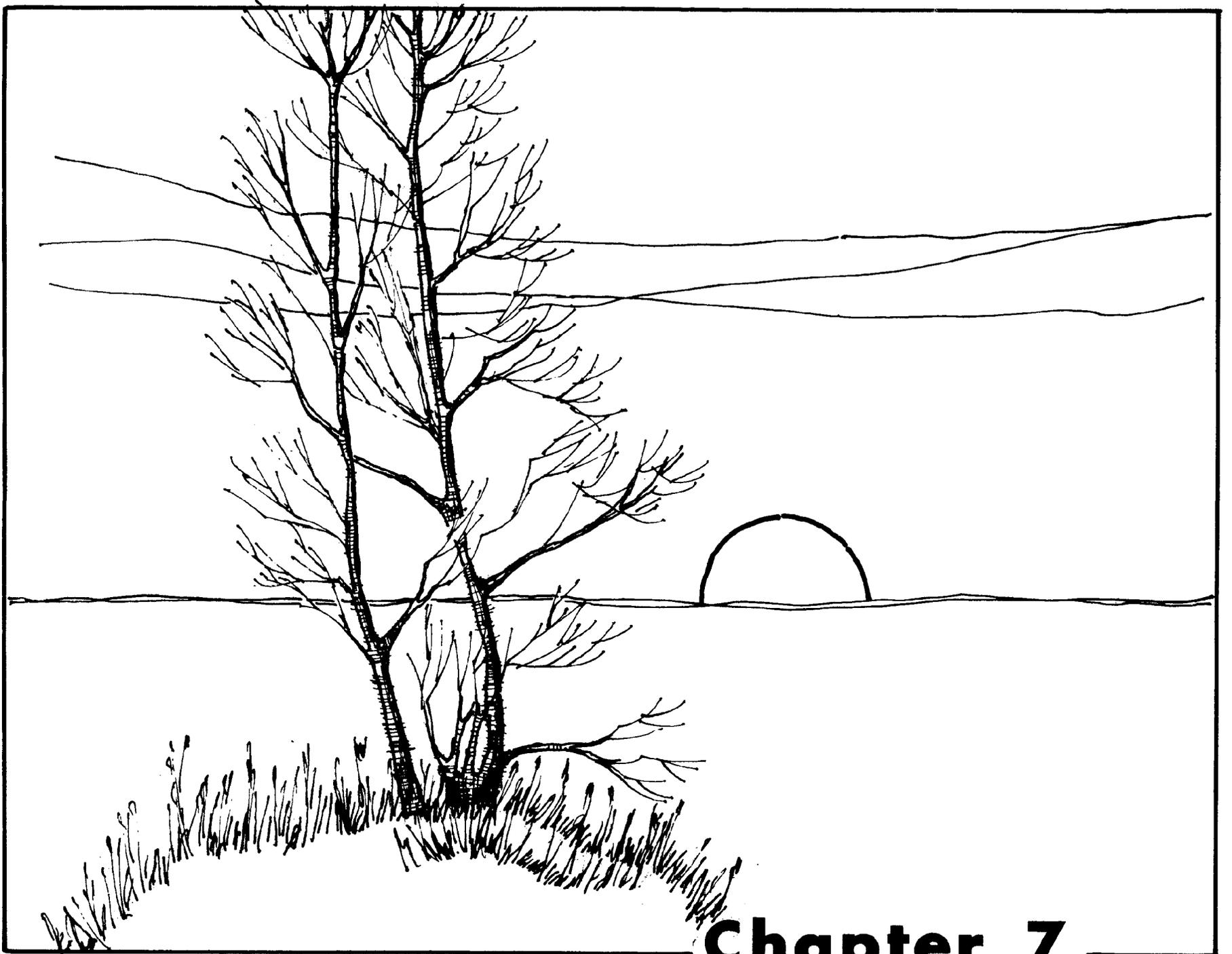
REVENUE BONDS

IN SOME INSTANCES, A CERTAIN RECREATION FACILITY WILL GENERATE ENOUGH REVENUE TO PAY BOTH ITS OPERATION AND MAINTENANCE COSTS AND GENERATE ENOUGH EXTRA INCOME TO PAY BACK PRINCIPAL AND INTEREST ON A REVENUE BOND THAT HAS BEEN SOLD TO BUILD THE FACILITY. BEFORE THIS METHOD OF GENERATING REVENUE IS CHOSEN, IT IS ESSENTIAL TO DEVELOP A DETAILED ANALYSIS OF THE ESTIMATED COST AND INCOME OF SUCH A FACILITY. SPECIFICALLY, THE LAKESIDE PARK (SITE 7) BOARDWALK OR ELEVATED DECKING COULD BE ATTACHED TO A MARINA/HARBOR EXPANSION PROGRAM AND UTILIZE THE REVENUE FROM THE MARINA AS A MEANS OF PAYING OFF THE BONDS.

GIFTS AND DONATIONS

ALTHOUGH GIFTS TO THE CITY ARE AN UNPREDICTABLE SOURCE OF FUNDS, THEY CAN PLAY A VITAL ROLE IN THE DEVELOPMENT OF LAND, MONEY, MATERIALS AND TALENT FROM LOCAL RESIDENTS, SERVICE ORGANIZATIONS, BUSINESSES AND INDUSTRIES. PART OF THE BOARD'S JOB SHOULD INCLUDE THE COORDINATION OF GIFTS AND PRIVATELY SPONSORED PROJECTS WITH THE MASTER PLAN DEVELOPED HERE. THIS EFFORT WILL AID ORDERLY DEVELOPMENT OF THE PLAN. ANOTHER IMPORTANT CONSIDERATION IS THE MATCHING OF LAND AND FINANCIAL GIFTS WITH THE VARIOUS FEDERAL GRANT PROGRAMS. IN EFFECT, THE COMMUNITY CAN MORE THAN DOUBLE ITS CONTRIBUTION THROUGH THE USE OF A GRANT PROGRAM SUCH AS THE LAND AND WATER CONSERVATION FUND, WITH NO FINANCIAL CONTRIBUTION FROM THE CITY.

FOUNDATIONS AND ENDOWMENTS ARE ANOTHER POTENTIAL SOURCE OF FUNDS FOR SPECIAL PROJECTS IN PARK AND RECREATION DEVELOPMENT. THEY ARE ESPECIALLY APPLICABLE FOR PROPOSALS WITH SIGNIFICANT CULTURAL AND SOCIAL BENEFITS. SOME SOURCES TO CONSIDER ARE THE KELLOGG, CARNEGIE, MOTT, FORD AND ROCKEFELLER FOUNDATIONS, AND THE NATIONAL ENDOWMENT FOR THE ARTS.



Chapter 7

APPENDIX A

PUBLIC MEETING

Rogers City residents are invited, by the City Council and the Planning Commission, to express their desires for activities and facilities to be incorporated in plans for all the City's shoreline parks. The opportunity for such expression will be available at a 7:30 PM, Monday, January 14, 1980 meeting at the High School study hall.

Mr. Paul Baerman and Mr. Lloyd Trump of Snell Environmental Group will be present to record the public's desires and to explain work their firm has done on the planning project to date.

Charles R. McKee
City Manager

Planning Commission Chairman David Nadolsky will open the meeting and introduce City Manager James Leidlein and the Snell Environmental Group Representatives. Charles McKee will give a summary of the project inception and progress to date. Mr. Baerman and Mr. Trump will then make their presentation which will be followed by comments and suggestions from citizens in attendance.

Appendix

2

NOTES OF THE JANUARY 14th, 1980
COMMUNITY INPUT MEETING.

This meeting was held at the High School in Rogers City and was attended by City officials and about 45 citizens.

Reason for meeting: was to present analysis and preliminary drawings for solicitation of community input.

Success of Meeting: There were a significant number of persons attending but more importantly they were very vocal and willing to discuss their needs and desires. The meeting lasted from 7:30 PM to about 11:30 PM. There was a vast amount of material to be discussed and response was often lengthy. Hence because of the length of the meeting many persons left before all the material had been discussed.

The following notes were taken in the same sequence as material was presented. This sequence was (1) an overview (2) analysis of sites and (3) preliminary design, parcel by parcel.

Meeting Notes:

A plea went out for all persons attending the meeting, to feel free to make additional comments at a later date, written or verbal, to any and all city officials which were at the meeting. Hence, some comments may have been submitted since the meeting.

General:

- Merchants have courtesy cards available at the marina for distribution to visitors wanting to know of services available to them.
- There is a State Park with camping located 2 miles north of the city. This facility is not totally utilized. (Hoeft State Park).
- Some person commented that swimming of lakeside park is mostly by children.

- 3.
- There is also swimming at Nagels creek north of the city.

SITE #1

- There is some erosion, thought to be natural but could have been aggravated by some 4' x 4's on the site. Length of erosion along the beach could be several hundred feet. (comment by one man).
- Fishing pier does not seem feasible
- Sand bar out 50' or so?(comment)
- This site has been essentially the same for many years
 - one man commented he has been walking the site for 40 years and feels it is essentially of the same character.
- Most people said, take steps to preserve the site but do not add "improvements".
- Chain off the rest of the site - along U.S. 23.
- One man noted that a shift of the population center to the north side of the city and wondered about future needs for this area.
- There was a comment that since this site is visible from U.S. 23 that it should provide some welcoming feature - however, most felt this could be facilitated with signage.
- There was concern for adding any parking along the U.S. 23 side of this parcel - reason that plenty of access can be provided without risking the entire site to human impact (also preservation of a secluded area).
- They are not keen on the idea of picnicking (at least formal or even to the extent of adding tables). Reason was lack of ability to maintain and police the areas.
- The trail system is fine and could be expanded upon (especially for signage and delineation as a nature trail)
 - however, one man did not feel there were enough joggers to warrant the exercise stations. (only 15 to 20 who jog on a regular basis).

Summary Site 1

That we should concentrate on the mechanics of preserving the site without exploiting its' natural character and quietness.

SITE #3

Since site 1 and site 3 are essentially one site we continued discussion of 3 before discussing #2.

- This site should be a transition zone between the most active and the least active.
- However site 3 is really just as fragile as site 1. Therefore, the uses should be carefully considered.
- At one time this was a swimming beach - is actually too deep though.
- They view the sunset - and perhaps benches or some structure to do so would be beneficial.
- The well in this area and the wells proposed for this area are about 35 to 40 feet deep. The aquifer depends on Lake Huron for recharge.
- Future wells on this site would not require a structure the size of the one there presently.
- There are some who would like to see a boat launch here as opposed to the access provided now which is intended only for car top sized boats. This was opposed because the launch at Lakeside park can serve these needs.
- Fishing at this area has improved in recent years.
- If a pier were to be placed in this area it was felt that the area closest to the access point, near the well house would be the best. (300')

- The improvements we should consider are small shelter house, a few picnic tables and grills; (source for wood was concern for having fire pits, grills suggest that people bring their charcoal). We should also include a vault type toilet; some benches or viewing structures; some definition to vehicular circulation and parking, screening of well house to reduce it's dominance of the point area; there should also be the improvements to the trail system as was suggested for #1. For the future we should be considering a possible playground and maybe some volleyball, basketball types of activities, but with emphasis toward the access end of the site. Additional parking along the road should be in same manner which has been started and should be as the needs arise.

Summary #3

It is much the same as site #1 and should receive the same sensitive treatment. However, it is recognized the neighborhood adjacent to the east end of the site and the desire for the citizens to have lake access; therefore some improvements should be permitted to the east end but should be sensitively placed.

Site #2

- Note that this site is intended for camping and is to some extent committed to that use.
- Major objection is that a state camp ground is located 2 miles north at Hoefft State Park, hence one is not needed at this site except for a week or two during the Nautical Festival.
- Concensus would be to develop some primitive camping for overflow this would be served by well and vault toilets. Extent of development initially would be loop road on north half with clearings for camping. The only access would be along Forest Avenue and camping would be restricted to the north side of the Trout River. The chain and bollards should be continued along U.S. 23.

- The access by pedestrians should be enhanced with continuing paths to link site #1 and 3. This should include a link across the river -- bridge or stepping stones; as well as consideration for linking to the old RR R.O.W. at the southeast corner of the site. This would require a determination as to the status of that R.O.W.
- The other consideration should be to halt the erosion of the river and changing character of borrow pits.

Summary #2

Should be considered for overflow camping; it is a beautiful site and therefore should be accessible for pedestrians but some control should be enacted for access by motor vehicles. And the erosion of the river and appearance of borrow pits should be addressed.

Site #5

- Not felt suitable for community center.
- Good fishing - could be enhanced with pier.
- Swimming could be considered (may require some shoreline modifications).
- Elimination of road thru the site would not be out of the question.

Summary Site 5

Would best serve as a neighborhood park. Should consider changing the character to include lawns.

Site #6

- There was concern about the entire area. Our comment was that if they expect the area to change the city must first clean up the site and begin a vegetative screening program. Then perhaps those adjacent to the site will do something to improve the appearance of their properties.

- Most thought that there was a psychological barrier to ever using it as a park site.
- Access along the lake edge should still be considered.

Summary Site 6

Clean up and begin vegetative screening.

Site #7

- One of the biggest concerns for implementing our concept which was presented would be the future of the swimming beach.
- Other concerns regardless of validity were:
 - expansion into the lake
 - cost
 - loss of view

Since there was not a general concensus with respect to this site we will not try to finalize the concept.

Site #8

- Strong need to expand little league. Expansion to Gilpin field is not without problems (cost of field).
- Concensus was that we should strongly consider expansion of little league ball fields even though it is possible that another location may be considered at a later date (Gilpin field).
- Demand for sports fields
 - 23 little league teams
 - womens softball
 - district tournament

- Important to consider is that they can get much of the materials and labor donated to erect the additional two fields - hence cost would be minimal and return would be great, considering the number of children who could benefit.

Summary Site #8

We will do some preliminary studies to show placement of additional ballfields and at the same time begin to look to the future with some other activities along the lake. (swimming, picnicking, passive viewing and etc.).

APPENDIX B

THE GREAT LAKE SUBMERGED LAND ACT 247

Title

An act to authorize the department of conservation of the state of Michigan to grant, convey or lease certain unpatented lake bottom lands and unpatented made lands in the Great Lakes, including the bays and harbors thereof, belonging to the state of Michigan or held in trust by it; to permit the private and public use of waters over submerged patented lands and the making of agreements limiting and regulating the use thereof; to provide for the disposition of revenue derived therefrom and to provide penalties for violation of this act.

Act 247 was established in 1955 and is applicable for state jurisdiction of all Great Lakes which border the State of Michigan.

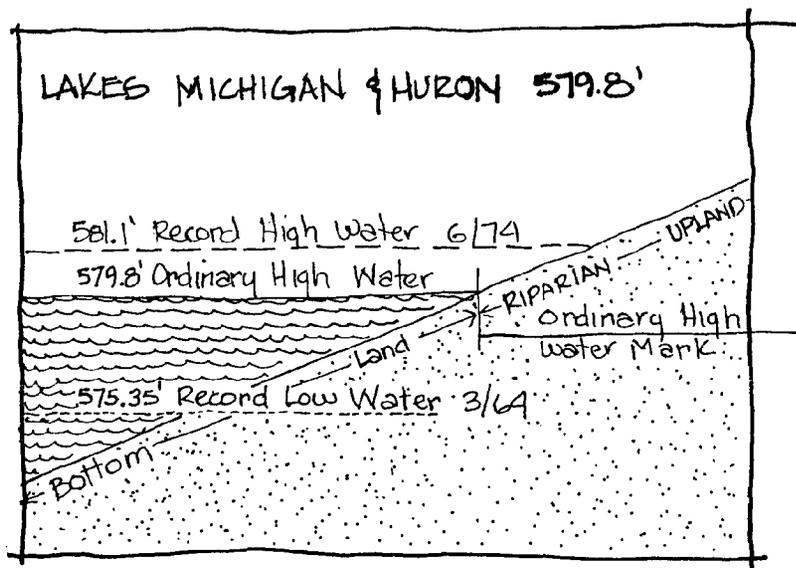
Seasonal Changes in Water Levels

Seasons bring changes in water levels to all Michigan Great Lakes. These changes periodically expose and cover up the shore frontage leaving many shoreline owners in doubt as to where their property ends and State controlled bottomlands begin. The ordinary high water mark is the legal boundary separating state controlled bottomlands and waters from private property. This mark means the line between upland and bottomland which persists through successive changes of water levels, below which the presence and action of water is common or recurrent so that the character of the land is marked distinctly from the upland and is apparent in the soil, the configuration of the surface of the soil, and the vegetation. The ordinary high water mark is permanently fixed by statute, the Great Lakes submerged land act, Act 247, P.A. 1955, as amended, for all Great Lakes. This boundary must not be trespassed when considering construction, dredging or filling activity without a proper permit under Act 247.

ORDINARY HIGH WATER MARK
AS SET BY ACT 247 PA. 1965
ON THE GREAT LAKES

ELEVATIONS ABOVE SEA LEVEL: INTERNATIONAL GREAT
 LAKES SEA DATUM

HIGH & LOW LEVELS APPROXIMATE



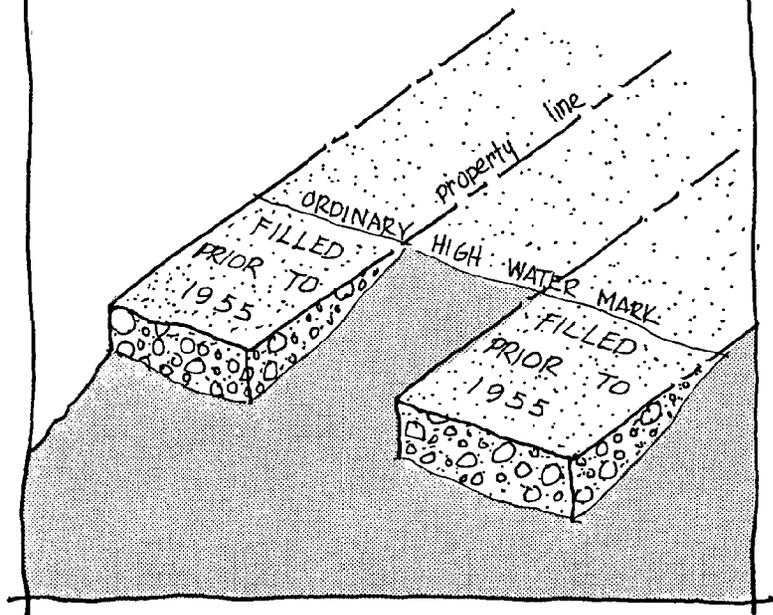
What You Need to Know About This Act

A permit and/or a lease, deed or agreement is required from the Department of Natural Resources for:

1. Dredging and filling bottomland below the ordinary high water mark.
 2. Placement or alteration of a structure on bottomland below the ordinary high water mark (this includes permanent docks and boathouses.)
 3. Erection and operation of a marina.
 4. Interference with the natural littoral flow in any way of the Great Lakes.
 5. Construction, alteration or connection of any artificial waterway (i.e. upland channel, lagoon, artificial harbor, etc.)
 6. Any artificially made lands below the ordinary high water mark filled prior to 1955.*
 7. Any artificially made lands below the ordinary high water mark filled past 1955 to present.*
- * Swampland patents, private claims, and government issued patents are exempt from deed requirements (item 6 and 7). Items 1 - 5 require permits regardless of title status.

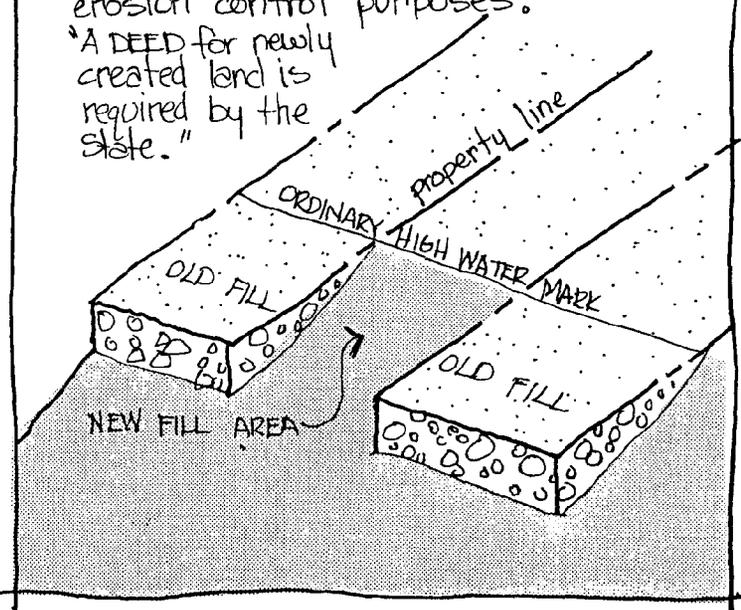
MAJOR STATUTORY REQUIREMENTS REGARDING FILLING UNDER THE GREAT LAKES SUBMERGED LANDS ACT.

The statute requires that a Lease or Deed MUST be obtained from the State of Michigan for any Great Lakes Bottomland filled below the Ordinary High Water Mark prior to 1955.

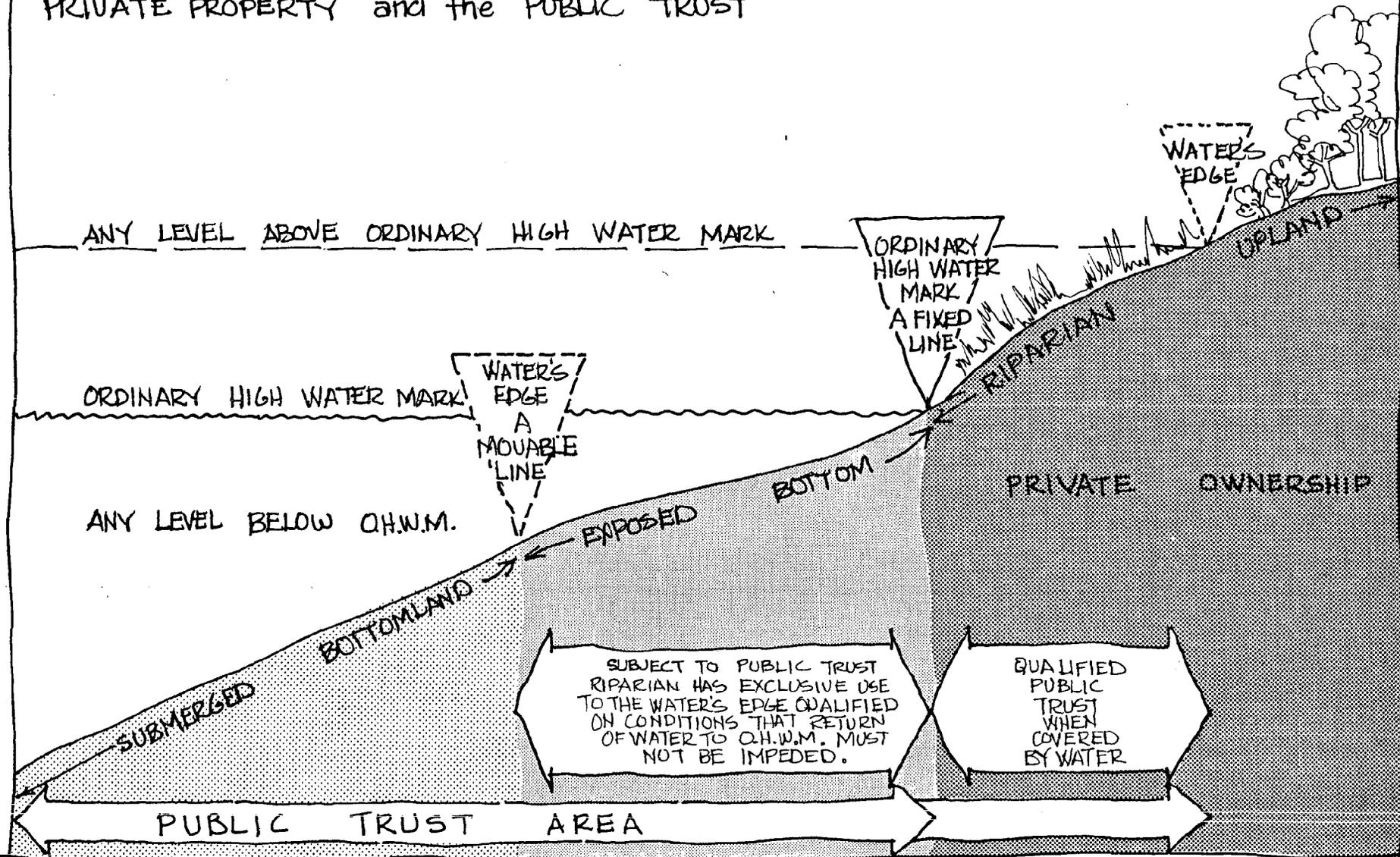


The statute requires that a State Permit for new fills, below OHWM, may be granted under limited circumstances, such as, straightening shoreline irregularities caused by adjacent old fill placement or for sanitation, flood, drainage and erosion control purposes.

"A DEED for newly created land is required by the State."

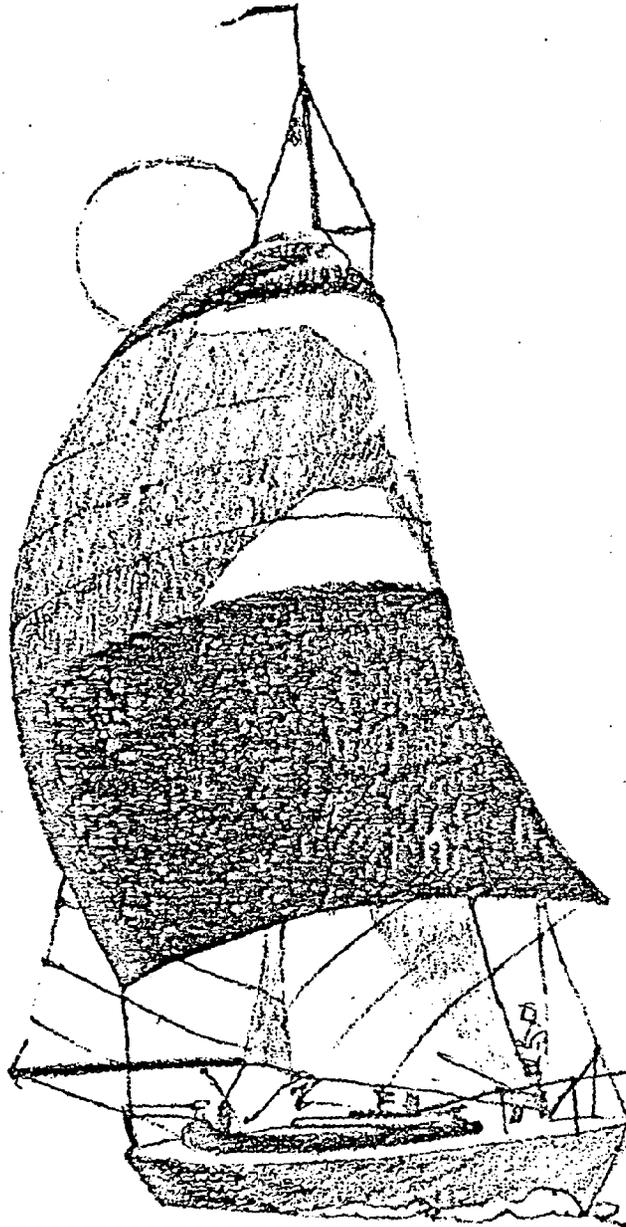


"WATER'S EDGE" and "ORDINARY HIGH"
 on the GREAT LAKES as related to
 PRIVATE PROPERTY and the PUBLIC TRUST



THE PUBLIC RIGHT TO HUNT, FISH AND NAVIGATE ALONG THE SHORLINE OF THE GREAT LAKES IS CONTINGENT UPON THE WATER'S EDGE REGARDLESS OF THE ORDINARY HIGH WATER MARK.

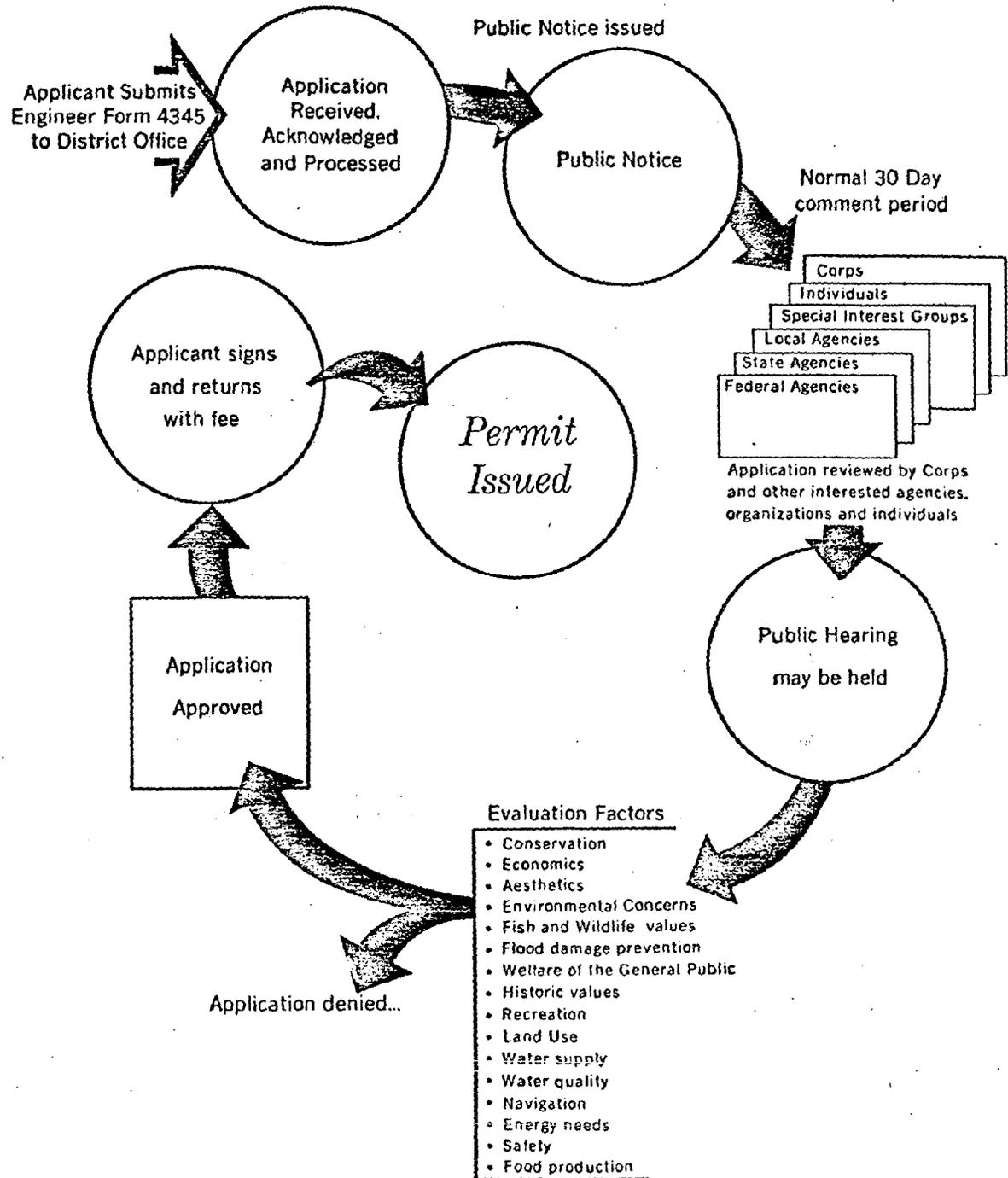
APPENDIX C



**some
typical
activities
requiring
permits**

Artificial canals
Artificial islands
Beach nourishment
Boat ramps
Breakwaters
Bulkheads
Dams, dikes, weirs
Discharging:
 Sand
 Gravel
 Dirt
 Clay
 Stone
Dolphins
Dredging
Filling
Groins and jetties
Intake pipes
Levees
Mooring Buoys
Ocean dumping
Outfall pipes
Pipes and cables
Piers and wharves
Riprap
Road fills
Signs
Tunnels

*typical corps
permit review
process*



*what information
is required
in a permit
application?*

Applicants are expected to furnish the Corps of Engineers:

- A detailed description of the proposed activity, including the purpose, use, type of structures, types of vessels that will use the facility, facilities for handling wastes and the type, composition and quantity of dredged or fill material.
- Names and addresses of adjoining property owners and others, on the opposite side of streams or lakes or whose property fronts on a cove, who may have a direct interest because they could possibly be affected by your project.
- Complete information about the location, including street number, tax assessors description, political jurisdiction and name of waterway in enough detail so that the site can be easily located during a field visit.
- A list of the status of all approvals and certifications required by other federal, state, and local governmental agencies. This information is important because review time is often reduced by joint or simultaneous processing.
- Reasons that explain denial of any approvals or certifications required by other government agencies. When other approvals or authorizations are denied, application for a Corps permit may not be approved.

If ENG Form 4345 is not signed by the applicant, attach a statement designating the duly authorized agent who is acting on your behalf.

For most projects little or no additional information is required. What you provide on ENG Form 4345 and the drawings is usually all that is needed to review your application.

Yet, when wetlands, historic or archeological sites, dredging, filling, or ocean dumping are involved, you may be asked to furnish additional information or drawings that will assist in evaluating your application.

*when an
application
is
disapproved*

caution . . .

*do not become
a violator*

There are times during the evaluation process when the Corps finds that a project and its intended use will have an adverse impact on the public interest. If you are notified by the Corps that it is concerned about your project, you may

- Discuss with the Corps the reasons that make your application unacceptable
- Reconsider your plan and examine alternatives
- Modify the original project design to eliminate the objectionable features

Do not begin any work that requires a Corps permit before you have received official authorization. Case-by-case consideration is given to known violations.

Violators may be subject to:

- Civil and/or criminal court action
- Fines of \$500 to \$50,000 per day
- Imprisonment for up to 2 years
- Removal of structures and materials

*some
special
terms*

Definitions of several special terms are summarized on this page. Complete information about technical terminology may be obtained by referring to the permit regulations, 33 Code of Federal Regulations 320 through 329.

***Navigable Waters
of the United States***

Waters of the United States that are subject to the ebb and flow of the tide, and/or are presently used, or have been used in the past, or may be susceptible to use to transport interstate or foreign commerce.

Waters of the United States

The territorial seas.

Coastal and inland waters, lakes, rivers, and streams that are navigable waters of the United States, including adjacent wetlands.

Tributaries to navigable waters of the United States, including adjacent wetlands. Manmade nontidal drainage and irrigation ditches excavated on dry land are not considered to be tributaries.

Interstate waters and their tributaries, including adjacent wetlands.

All other waters of the United States such as isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable waters of the United States, the degradation or destruction of which could effect interstate commerce.

Wetlands

Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Dredge Material

Material that is excavated or dredged from waters of the United States.

Fill Material

Any material used for the primary purpose of replacing an aquatic area with dry land or of changing the bottom elevation of a waterbody.

APPLICATION FOR A DEPARTMENT OF THE ARMY PERMIT

For use of this form, see EP 1145-2-1

The Department of the Army permit program is authorized by Section 10 of the River and Harbor Act of 1899, Section 404 of P. L. 92-500 and Section 103 of P. L. 92-532. These laws require permits authorizing structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Information provided in ENG Form 4345 will be used in evaluating the application for a permit. Information in the application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary; however, the data requested are necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and checklist) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

<p>1. Application number (To be assigned by Corps)</p>	<p>2. Date</p> <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Day</td> <td style="border: none;">No.</td> <td style="border: none;">Yr.</td> </tr> <tr> <td style="border: none;">_____</td> <td style="border: none;">_____</td> <td style="border: none;">_____</td> </tr> </table>	Day	No.	Yr.	_____	_____	_____	<p>3. For Corps use only.</p>
Day	No.	Yr.						
_____	_____	_____						
<p>4. Name and address of applicant.</p> <p>Telephone no. during business hours</p> <p>A/C () _____</p> <p>A/C () _____</p>	<p>5. Name, address and title of authorized agent.</p> <p>Telephone no. during business hours</p> <p>A/C () _____</p> <p>A/C () _____</p>							
<p>6. Describe in detail the proposed activity, its purpose and intended use (private, public, commercial or other) including description of the type of structures, if any to be erected on fills, or pile or float-supported platforms, the type, composition and quantity of materials to be discharged or dumped and means of conveyance, and the source of discharge or fill material, if additional space is needed, use Block 14.</p>								
<p>7. Names, addresses and telephone numbers of adjoining property owners, lessees, etc., whose property also adjoins the waterway.</p>								
<p>8. Location where proposed activity exists or will occur.</p> <p>Address:</p> <p>Street, road or other descriptive location _____</p> <p>In or near city or town _____</p> <p>County _____ State _____ Zip Code _____</p> <p style="text-align: right;">Tax Assessors Description: (If known)</p> <p>Map No. _____ Subdiv. No. _____ Lot No. _____</p> <p>Sec. _____ Twp. _____ Rge. _____</p>								
<p>9. Name of waterway at location of the activity.</p>								

SAMPLE

10. Date activity is proposed to commence. _____

Date activity is expected to be completed _____

11. Is any portion of the activity for which authorization is sought now complete? YES NO
If answer is "Yes" give reasons in the remark section. Month and year the activity was completed _____
Indicate the existing work on the drawings. _____

12. List all approvals or certifications required by other federal, interstate, state or local agencies for any structures, construction, discharges, deposits or other activities described in this application.

Issuing Agency _____ Type Approval _____ Identification No. _____ Date of Application _____ Date of Approval _____

13. Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein?

Yes No (If "Yes" explain in remarks)

14. Remarks or additional information.

SAMPLE

15. Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Signature of Applicant or Authorized Agent

The application must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 5) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application.

18 U. S. C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of The United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false fictitious or fraudulent statement or entry, shall be fined not more than \$10,000 or imprisoned not more than five years, or both. Do not send a permit processing fee with this application. The appropriate fee will be assessed when a permit is issued.

APPENDIX D

The following report is based on the initial work done by Chris and Cathey Newhouse in Bicentennial Park, Rogers City. As a natural area, and as an outdoor recreation area, the park is ideal. The suggestions which follow are intended to maximize the potential for its use while minimizing the possibilities of stressing or damaging the area.

At least on the basis of the initial survey, there are no endangered species of plants or animals living within the boundaries of the park. There is, however, a very fragile area - that of the dune/beach ecosystem. While foot traffic is not damaging to this area (except in extremely heavy use areas), any type of vehicle traffic should be prohibited.

The following parts of the report should be read with reference to the map of the area. The first part deals with the northern tract, the area of the park north of Forest Avenue. The second part deals with the tract south of Forest Avenue.

The northern tract is an area showing succession from the beach/dune habitat to a hardwood forest.

The southern tract is an area very different from the other. Including Trout River with some flood-plain areas, it is mainly a pine and hardwood forest.

The following text which was prepared as a self guide tour includes extensive descriptions of the plant life, animal life eco-systems and natural processes.

This is a self-guiding nature trail, an easy-to-walk loop that is about 1/2 mile in length. The trail will take you through different areas and will tell you about various aspects of the area's natural history. Go at your own pace (there are benches at a point about half-way around the loop) and enjoy yourself.

As you walk through this or other hiking trails here, please keep in mind that this is a fragile, easily-damaged habitat. A little caution on your part (staying on trails, not picking flowers, not peeling bark from trees, and carrying out your own litter) will help insure that this beauty will remain for others to enjoy.

Take only pictures and memories; leave only footprints and frustrations.

1. Poison Ivy (Toxicodendron radicans)

Watch out for this plant! It is poison ivy. There are oils on all parts of this plant which cause a very itchy skin rash if you touch the plant. Especially sensitive individuals can even get the rash from later handling clothing, shoes, or a dog that has been in contact with the plant. If you happen to touch this plant, washing with generous amounts of soap and water within 1/2 hour of contact will usually prevent the rash.

2. Horsetail or Scouring Rush (Equisetum arvense)

Because of the very high mineral content in the stems of this plant it has an abrasive nature. The Indians made use of this abrasiveness; by binding a number of the stiff stems together they could create a scouring brush. The stems were also often used as we use sandpaper. Watch out for poison ivy here also!

3. Two Junipers (Juniperus communis and Juniperus horizontalis)

In front of you now are two different kinds of juniper - one an upright plant growing in a more or less circular group, and the second a very low plant creeping along the ground. Junipers have proved to be extremely useful plants through the years. The green or blue "berries" (actually they are cones) have been the flavoring for gin, have been used medicinally to cure internal diseases, and have been roasted and used as a coffee substitute. In fact, it was these "berries" that provided the gray color for the uniforms of the confederate army during the American Civil War.

4. Dune Line

You are now standing on the line of dunes which separates the beach area from the more sheltered inland area. With the exception of the poplar (which will be discussed later),

the beach plants are low-growing and very hardy. They can survive the hot dry beach climate in the summer as well as the cold, blowing, icy winter weather.

Behind the shelter of the dunes, there are bushes and trees. As the lake level has gradually receded over the last several hundreds of years, these higher areas have been dry and sheltered for a longer time- this has allowed more soil buildup in addition to time for trees to become established and grow.

5. Seagull Point

The point of land on your right is known as "Seagull Point". If you look around on nearly any day of the year, you will see gulls soaring overhead. These are Herring Gulls and Ring-billed Gulls. You can distinguish them by looking for a dark ring around the tip of the bill. Only the Ring-billed Gulls have this marking.

Gulls are mainly opportunists, scavenging dead fish and animals from the shoreline. Though you may notice that some of the birds have white heads and tails, while others are uniformly gray, remember that they are all gulls. The birds are one or two year-old "youngsters".

6. Pitcher's thistle (Cirsium pitcheri)

Notice the plant with whitish-green leaves and creamy white flowers in front of you. This is an unusual plant for two reasons. First, it's one of the very few white-flowered thistles; its distribution is even more unusual: the only places in the world where this plant grows are along the shores of Lakes Michigan, Huron, and Superior.

7. Poplar (Populus balsamifera)

Trees of this poplar or aspen group are very important in paper manufacture, but on sites like this one they are also very important ecologically. The young poplar trees are one of the first kinds of wood plants to grow on newly formed dunes. They help to stabilize the sand, and can continue growing despite being nearly buried. These "shrubs" of poplar may possibly be tops of larger trees that have been buried by the sand.

8. Bearberry (Arctostaphylos uva-ursi)

This evergreen plant that creeps over the sand is useful in helping stabilize sand, and it provides a very important food for many wild animals. Various American Indians used this plant rather extensively too. They smoked dried parts of the plant like tobacco; they dried and powdered the leaves to treat diseases of the intestinal tract, and they obtained some beautiful yellow and green dyes from other parts of the plant.

9. Wind Effects

Look at the very top of this lone white pine tree. The branches all grow in one direction - away from you. Since this tree is so tall and so far from the shelter of the forest, the prevailing westerly winds have forced all the top branches to grow in the other direction. In fact, the top branches are a perfect indicator of "which way is east?".

10. Environmental Damage

This immediate area shows very clearly the effects that man can have on his environment. Vehicles have been driven here occasionally over the last several years; this has destroyed the vegetation and disturbed the ground. Now very few plants grow here. It will be many years before this area "recovers". This beach/dune environment is especially fragile.

11. Paper Birch (Betula papyrifera)

This tree with its characteristic white papery bark is, of course, the paper birch. Remember that stripping the bark from a birch will kill the tree - please leave the trees intact for others to enjoy. The birch is worthy of attention just for its beauty alone, but to many of the Indian tribes that lived in the north it was perhaps the most valuable of all plants. In fact, the Ojibwe Indians regarded the paper birch as a sacred tree and would not gather its parts without first making an offering to Grandmother Earth. The bark was used to make waterproof coverings for wigwams and canoes, to make all sorts of

buckets and baskets, to provide fire kindling, as paper for record keeping, and even to keep food from spoiling. The twigs and roots of the tree were gathered to extract a fragrant oil which was used to mask disagreeable flavors in medicines. The inner bark provided a reddish-brown dye, the outer layers of bark gave a gray color, and the leaves a yellow dye. From the sap, they made a vinegar-like substance. Finally, after all other parts of the tree were used, the wood was salvaged for firewood.

12. Succession

Notice how different the plant types and amounts are here from those on the beach. This site is of course further from the wind and temperature effects of the lake. The topsoil is not blown away here. A minor change in lake level would probably not reach this far. A winter ice storm off the lake would be mostly blocked by the first row of dunes. Because of all of the above reasons and many more, plants here have had a longer time to grow and have had better growing conditions. This has resulted in a forest with red oak trees as the largest life form. Unless the environment is drastically changed, the oak trees will remain the dominant or "climax" species. The process of change in vegetation over time leading to the establishment of a climax species is known as "succession".

13. Red Oak (Quercus rubra)

You are standing in front of two red oak trees. Besides the wood which is valued for various kinds of carpentry, oaks also provide a rich source of tannins (the substance used for "tanning" or treating leather), and a brown-colored natural dye source. In addition, these oaks with their acorns provide a "grocery store" for the deer, squirrels, chipmunks, and other animals which live in this area.

14. Beach Ridge

This small ridge in front of you probably marks the shoreline of the lake in some time past, several hundreds of years ago. Notice how far succession has proceeded on this former beach; it is completely forested.

15. Reindeer Moss

This gray-green plant along the ground is not a moss at all, but is actually a combination of two kinds of plants (a fungus and a type of algae) living together. The resulting plant is called a lichen. In parts of far northern Canada plants like this are the major type of vegetation and provide food for large animals such as caribou.

16. Three Native Pines (Pinus strobus, Pinus banksiana, and Pinus resinosa)

Within a few feet of you are all three of the pines that are native to Michigan. The large tree with the soft-looking branches (5 long needles per cluster) is a white pine; it has a white metal square attached to the trunk. To the left, in front of the white pine is a small jack pine (2 shorter needles per cluster) which has a blue metal square attached. The small tree with the red square, further to your left, is a red pine (2 long needles per cluster). There are more white and red pines behind you near the dunes.

17. White Pine (Pinus strobus)

American Indians frequently gathered the spicy seeds of this tree to use for flavoring meat. In the 1700's, British foresters marked the best American white pines to be used as masts for the Royal Navy. The severe penalty on any colonist who cut these trees was one of the many causes of the Revolutionary War. Many Northern Michigan communities like Rogers City were settled by men cutting and shipping the white pine. Even today the white pine is a very important lumber tree providing a soft, workable, very durable wood.

For the purposes of cataloging the plant species present, the area has been divided into 6 zones which follow the natural changes in vegetation and geography. It should be noted that there are not sharp transitions between these zones, nor is each zone necessarily homogeneous throughout its area. The 6 zones are as follows: 1.) dune and beach zone; 2.) the transition zone between dune and

forest (an area that is not forested, but covered with vegetation and appearing more stabilized than the dune zone; chiefly in the eastern part of the portion north of Forest Ave.); 3.) "forested dune" zone (i.e., the forested area north of Forest Ave. and south of the open dune area); 4.) calcareous wetlands zone immediately surrounding the small creek in the northwest section of the park; 5.) mixed zoned (chiefly forest) north of the small creek; 6.) "river forest" (the forest on the south side of Forest Ave. and along Trout River).

Within each zone the plants are listed in approximate order of abundance in that zone.

Plant Species List

1. Dune and Beach Zone

Plants marked with an asterisk are found exclusively on beach or first dune ridge (not found further back in the dune area).

<i>Juniperus horizontalis</i>	creeping juniper
<i>Juniperus communis</i>	common juniper
<i>Arctostaphylos uva-ursi</i>	bearberry
<i>Ammophila breviligulata</i>	dune grass
<i>Zigadenus glaucus</i>	white camas
<i>Smilacina stellata</i>	starry flase solomon's seal
<i>Lithospermum carolinense</i>	yellow puccoon
<i>Prunus virginiana</i>	choke cherry
<i>Pinus strobus</i>	white pine
<i>Solidago spathulata</i>	goldenrod
<i>Solidago houghtonii</i>	goldenrod
<i>Campanula rotundifolia</i>	hare bell
<i>Anemone multifida</i>	cleft anemone
* <i>Tanacetum huronense</i>	Huron tansy
* <i>Artemisia caudata</i>	wormwood
* <i>Cirsium pitcheri</i>	Pitcher's thistle
* <i>Agropyron dasystachium</i>	
* <i>Populus balsamifera</i>	balsam popular
* <i>Cakile edentula</i>	sea rocket
* <i>Lathyrus maritimus</i>	beach pea
* <i>Potentilla anserina</i>	silver weed
<i>Salix interior</i>	sandbar willow
<i>Calamovilfa longifolia</i>	
<i>Lilium philadelphicum</i>	wood lily
<i>Pinus resinosa</i>	red pine
<i>Picea glauca</i>	white spruce
<i>Oenothera biennis</i>	evening primrose
<i>Maianthemum canadense</i>	Canada mayflower
<i>Arabis lyrata</i>	rockcress
<i>Arabis holboellii</i>	rockcress
<i>Andropogon gerardi</i>	bluestem
<i>Quercus rubra</i> (seedling)	red oak

2. Transition Zone Between Dune and Forest

Plants marked with an asterisk are found along the roadside and are almost certainly introduced weeds.

<i>Juniperus communis</i>	common juniper
<i>Juniperus horizontalis</i>	creeping juniper
<i>Pinus resinosa</i>	red pine
<i>Pinus strobus</i>	white pine
<i>Arctostaphylos uva-ursi</i>	bearberry
<i>Smilacina stellata</i>	starry false solomon's seal
<i>Calamovilfa longifolia</i>	
<i>Lithospermum carolinense</i>	yellow puccoon
<i>Toxicodendron radicans</i>	poison ivy
<i>Fragaria virginiana</i>	wild strawberry
<i>Cornus stolonifera</i>	red-osier dogwood
<i>Shepherdia canadensis</i>	buffalo berry
<i>Coreopsis lanceolata</i>	yellow cosmos
<i>Prunus pumila</i>	sand cherry
<i>Campanula rotundifolia</i>	hare bell
<i>Lilium philadelphicum</i>	wood lily
<i>Hieracium florentinum</i>	hawkweed
<i>Solidago spathulata</i>	goldenrod
<i>Anemone multifida</i>	cleft anemone
<i>Rosa acicularis</i>	prickley wild rose
<i>Maianthemum canadense</i>	Canada mayflower
* <i>Equisetum hyemale</i>	scouring rush
<i>Linnaea borealis</i>	twin flower
<i>Pteridium aquilinum</i>	bracken fern
<i>Amelanchier spicata</i>	service berry
<i>Artemisia caudata</i>	wormwood
<i>Quercus rubra</i>	red oak
<i>Oenothera biennis</i>	evening primrose
* <i>Silene cucubalus</i>	bladder campion
* <i>Melilotus alba</i>	white sweet clover
* <i>Asclepias syriaca</i>	milkweed
<i>Prunus virginiana</i>	choke cherry
<i>Picea glauca</i>	white spruce
<i>Lonicera dioica</i>	wild honeysuckle
<i>Lonicera hirsuta</i>	hairy honeysuckle
<i>Melampyrum lineare</i>	cow wheat
<i>Senecio pauperculus</i>	ragwort
<i>Thuja occidentalis</i>	white cedar

2. Transition Zone, continued

<i>Arabis holboellii</i>	rockcress
<i>Salix glaucophylloides</i>	willow
<i>Salix cordata</i>	willow
<i>Populus balsamifera</i>	balsam poplar
<i>Lathyrus maritimus</i>	beach pea
<i>Aster macrophylla</i>	large-leaved aster
* <i>Centaurea maculosa</i>	knapweed
<i>Satureja vulgaris</i>	wildbasil
<i>Geocaulon lividum</i>	northern comandra
<i>Aralia nudicaulis</i>	wild sarsaparilla
<i>Alnus rugosa</i>	alder

3. "Forested Dune" Zone

<i>Quercus rubra</i>	red oak
<i>Betula papyrifera</i>	paper birch
<i>Pinus strobus</i>	white pine
<i>Pinus resinosa</i>	red pine
<i>Gaylussacia baccata</i>	huckleberry
<i>Pteridium aquilinum</i>	bracken fern
<i>Aster macrophylla</i>	large-leaved aster
<i>Acer rubrum</i>	red maple
<i>Cornus rugosa</i>	dogwood
<i>Abies balsamea</i>	balsam fir
<i>Juniperus communis</i>	common juniper
<i>Arctostaphylos uva-ursi</i>	bearberry
<i>Melampyrum lineare</i>	cow wheat
<i>Gaultheria procumbens</i>	wintergreen
<i>Vaccinium angustifolium</i>	blueberry
<i>Aralia nudicaulis</i>	wild sarsaparilla
<i>Epigaea repens</i>	trailing arbutus
<i>Linnaea borealis</i>	twinlinea
<i>Toxicodendron radicans</i>	poison ivy
<i>Trientalis borealis</i>	starflower
<i>Fragaria virginiana</i>	wild strawberry
<i>Maianthemum canadense</i>	Canada mayflower
<i>Prunus virginiana</i>	choke cherry
<i>Rosa acicularis</i>	prickly wild rose
<i>Campanula rotundifolia</i>	hare bell
<i>Amelanchier sanguinea</i>	service berry
<i>Pyrola asarifolia</i>	shinleaf

3. "Forested Dune" Zone, continued

<i>Pyrola rotundifolia</i>	shinleaf
<i>Smilacina stellata</i>	starry false solomon's seal
<i>Diervilla lonicera</i>	fly honeysuckle
<i>Lithospermum caroliniense</i>	yellow puccoon
<i>Clintonia borealis</i>	blue bead lily
<i>Viola papilionacea</i>	violet

4. Wetlands Zone Along Creek

<i>Triglochin palustre</i>	arrow grass
<i>Juncus balticus</i>	rush
<i>Potentilla anserina</i>	silver weed
<i>Cares spp.</i>	sedges
<i>Salix interior</i>	sandbar willow
<i>Equisetum variegatum</i>	scouring rush
<i>Primula mistassinica</i>	bird's eye primrose
<i>Nasturtium officinale</i>	water cress
<i>Lobelia kalmii</i>	lobelia
<i>Cladium mariscoides</i>	twig rush
<i>Thuja occidentalis</i>	white cedar
<i>Populus balsamifera</i>	balsam poplar
<i>Equisetum hyemale</i>	scouring rush
<i>Carex comosa</i>	sedge
<i>Parnassia parviflora</i>	grass-of-Parnassus
<i>Pyrola asarifolia</i>	shinleaf
<i>Eupatorium purpureum</i>	joe-pye weed
<i>Carex aurea</i>	sedge
<i>Juncus alpinus</i>	rush
<i>Salix pellita</i>	willow
<i>Equisetum pratense</i>	scouring rush
<i>Prunella vulgaris</i>	self heal
<i>Solidago canadensis</i>	Canada goldenrod

5. Mixed Zone north of small creek

The plants marked with asterisks are found growing on the open beach of this section of the park.

<i>Pteridium aquilinum</i>	bracken fern
<i>Arctostaphylos uva-ursi</i>	bearberry
<i>Smilacina stellate</i>	starry false solomon's seal

5. Mixed Zone north of creek, continued

<i>Shepherdia canadensis</i>	buffalo berry
<i>Coreopsis lanceolata</i>	yellow cosmos
<i>Juniperus communis</i>	common juniper
<i>Juniperus horizontalis</i>	creeping juniper
<i>Toxicodendron radicans</i>	poison ivy
* <i>Ammophila breviligulata</i>	dune grass
<i>Betula papyrifera</i>	paper birch
<i>Pinus resinosa</i>	redpine
<i>Pinus strobus</i>	white pine
<i>Abies balsamea</i>	balsam fir
<i>Prunus pumila</i>	sand cherry
<i>Campanula rotundifolia</i>	hare bell
<i>Calamovilfa longifolia</i>	
<i>Artemisia caudata</i>	worm wood
<i>Fragaria virginiana</i>	wild strawberry
<i>Aster Macrophylla</i>	large-leaved aster
<i>Quercus rubra</i>	red oak
<i>Rosa blanda</i>	smooth wild rose
<i>Satureja vulgaris</i>	wildbasil
<i>Zigadenus glaucus</i>	white camas
<i>Populus tremuloides</i>	quaking aspen
<i>Lathyrus maritimus</i>	beach pea
<i>Linnaea borealis</i>	twin flower
<i>Achillea millefolium</i>	yarrow
<i>Thuja occidentalis</i>	white cedar
<i>Oenothera biennis</i>	evening primrose
<i>Aquilegia canadensis</i>	columbine
<i>Cornus stolonifera</i>	red-osier dogwood
<i>Anemone canadensis</i>	Canada anemone
<i>Cornus rugosa</i>	dogwood
<i>Aralia nudicaulis</i>	wild sarsparilla
<i>Cornus canadensis</i>	dwarf dogwood
* <i>Populus balsamifera</i>	balsam poplar
* <i>Solidago spathulata</i>	goldenrod
* <i>Agropyron dasystachium</i>	
* <i>Cakile edentula</i>	sea rocket
* <i>Cirsium pitcheri</i>	Pitcher's thistle
<i>Rhus typhina</i>	staghorn sumac
<i>Epilobium angustifolium</i>	fireweed
<i>Equisetum arvense</i>	scouring rush
<i>Botrichium virginianum</i>	grape fern

5. Mixed Zone north of creek, continued

<i>Agrimonia pubescens</i>	agrimony
<i>Potentilla recta</i>	cintquefoil
<i>Prunus virginiana</i>	choke cherry
<i>Apocynum androsaemifolium</i>	dogbane
<i>Melampyrum lineare</i>	cow wheat
<i>Maianthemum canadense</i>	Canada mayflower
<i>Lonicera dioica</i>	wild honeysuckle
<i>Pyrola rotundifolia</i>	shinleaf
<i>Picea glauca</i>	white spruce

6. "River Forest" Zone

The plants marked with an asterisk grow only immediately along the river (flood plain). Two asterisks indicate plants growing in especially disturbed areas such as the gravel pit area (these are almost certainly introduced weedy species).

<i>Betula papyrifera</i>	paper birch
<i>Quercus rubra</i>	red oak
<i>Gaylussacia baccata</i>	huckleberry
<i>Aster macrophylla</i>	large-leaved aster
<i>Pteridium aquilinum</i>	bracken fern
<i>Juniperus communis</i>	common juniper
<i>Gaultheria procumbens</i>	wintergreen
** <i>Melilotus alba</i>	white sweet clover
** <i>Asclepias syriaca</i>	milkweed
<i>Arctostaphylos uva-ursi</i>	bearberry
<i>Pinus strobus</i>	white pine
<i>Aralia nudicaulis</i>	wild sarsparilla
* <i>Matteucia struthiopteris</i>	ostrich fern
* <i>Cystopteris bulbifera</i>	bulblet-bearing bladder fern
<i>Toxicodendron radicans</i>	poison ivy
<i>Pinus resinosa</i>	red pine
<i>Maianthemum canadense</i>	Canada mayflower
<i>Shepherdia canadensis</i>	buffalo berry
<i>Diervilla lonicera</i>	fly honeysuckle
<i>Acer rubrum</i>	red maple
* <i>Abies balsamea</i>	balsam fir
* <i>Alnus rugosa</i>	alder
<i>Cornus stolonifera</i>	red-osier dogwood

6. "River Forest" Zone, continued

Cornus rugosa	dogwood
*Agrimonia pubescens	agrimony
*Acer spicatum	mountain maple
*Acer pensylvanicum	striped maple
*Actaea rubra	red baneberry
*Lysimachia ciliata	yellow loosestrife
*Thalictrum polygamum	tall meadow rue
Viola papilionacea	violet
Viburnum opulus	viburnum
Anemone virginiana	thimbleweed
*Arisaema atrorubens	jack-in-the-pulpit
**Oenothera biennis	evening primrose
**Prunus pumila	sand cherry
**Solidago canadensis	Canada goldenrod
**Saponaria officinalis	soapwort
Hypericum perforatum	St. John's wort
**Artemisia caudata	wormwood
**Trifolium pratense	red clover
**Tragopogon dubius	goat's beard
Prunus virginiana	choke cherry
Arabis holboellii	rock cress
Apocynum androsaemifolium	dogbane
Fragaria virginiana	wild strawberry
Smilacina stellata	starry false solomon's seal
Populus tremuloides	quaking aspen
Populus balsamifera	balsam poplar
Satureja vulgaris	wild basil
*Thuja occidentalis	white cedar
Aquilegia canadensis	columbine
Picea glauca	white spruce
Rubus strigosa	wild raspberry
Pinus banksiana	jack pine
Hieracium florentinum	hawkweed
Pyrola rotundifolia	shinleaf
Rubus pubescens	dwarf raspberry
*Onoclea sensibilis	sensitive fern
Galium concinnum	bedstraw
*Ranunculus sceleratus	curled buttercup
*Ranunculus septentrionalis	swamp buttercup
Prunella vulgaris	self-heal
Eupatorium purpureum	joe-pye weed

6. "River Forest" Zone, continued

Vitis sp.	grape
*Fraxinus americana	white ash
*Osmorhiza chilensis	sweet cicely
*Iris versicolor	blue flag
Berberis thunbergii	barberry
Smilax ecirrhata	greenbriar
Chimaphila umbellata	pipsissewa
Vaccinium angustifolium	blueberry
Vaccinium myrtilloides	blueberry

Other Common Plants and Animals in the Park

Whitetail Deer (Odocoileus virginianus)

The owner of these tracks is the largest animal (excluding man) which uses this park. The deer drink from the lake and browse on acorns and greens on the higher ground.

Red Squirrel (Tamiasciurus hudsonicus)

You may not see this animal, but walking in the woods you'll probably hear its ratchet-like call. If you do see it, it will be reddish-brown in color and about 8" long (not including the tail).

Eastern Chipmunk (Tamias striatus)

The chipmunk looks like a squirrel, but is smaller (5-6" long) and has black and white stripes on its face and body.

Sand Cherry (Prunus pumila)

If you look down at the ground in the dune area, you will see a low (1-2' high) shrub with white flowers in the spring or red to purple fruits in summer. This is sand cherry, a very common sand dune plant.

False Solomon's Seal (Smilacina stellata)

Another common plant in sandy areas is the starry false solomon's seal. It has small starry flowers in early

spring and beautiful gold or red striped berries later in the summer.

Goldenrod (Solidago, there are several species here)

Have you seen a yellow-flowered plant like this growing in the dunes? That is a goldenrod. Goldenrods are wrongly blamed for causing hayfever and allergies (the actual cause is ragweed or grasses).

Red Maple (Acer rubrum)

You may recognize the characteristic lobed leaves of maple trees also growing in the forest. This type is red maple.

Bracken Fern (Pteridium aquilinum)

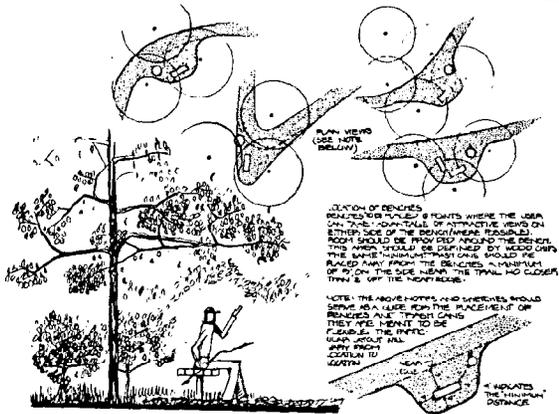
The very common fern growing under the trees in and along the edge of the forest is bracken fern. It is one of the most common plants in northern Michigan.

Conifers

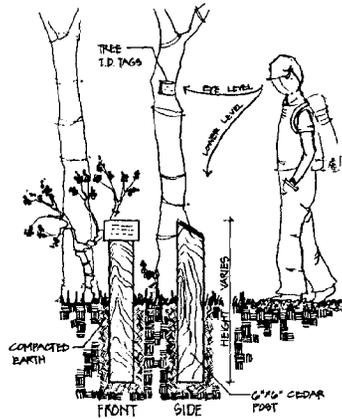
If you look closely at some of the evergreen trees (or "conifers", meaning cone-bearing trees) in the area you will notice that some of the trees have needles that are not in clusters as they are in pines. The conifer with the white stripes on the underside of the needles is a balsam fir (Abies balsamea). You may also see white spruce (Picea glauca) trees here. On this tree the needles do not have the white stripes beneath and the branches are very rough where the needles have fallen off.

APPENDIX E

PRELIMINARY ENGINEERING DRAWINGS



A SITTING AREA LAYOUT
NO SCALE



TREE I.D. SIGNS ARE 5\"/>

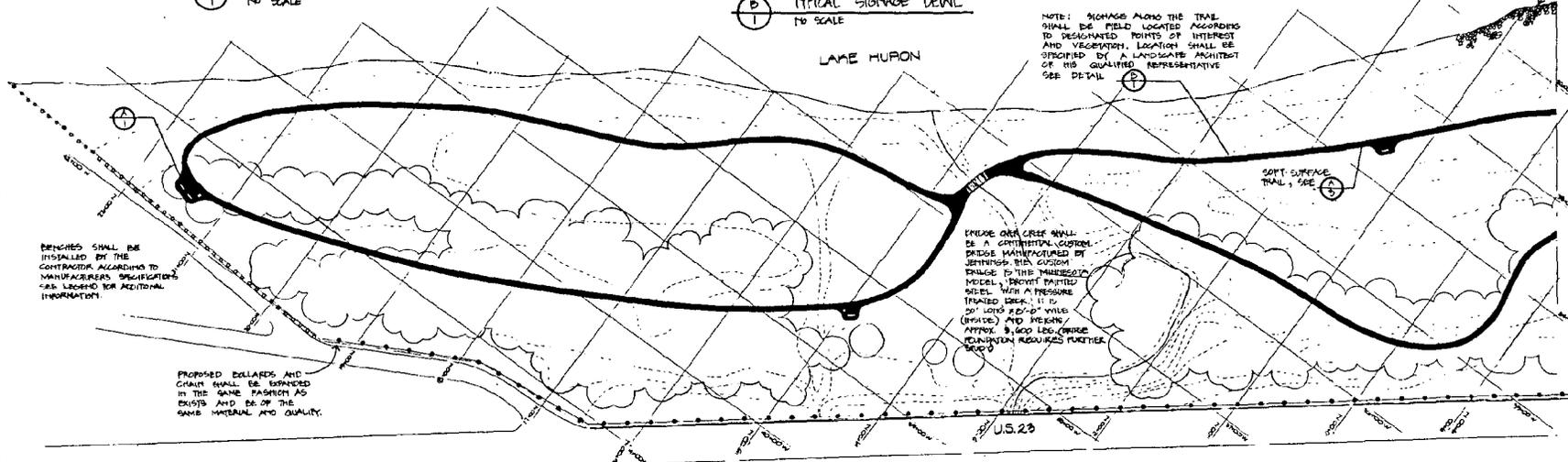
WITH SILVER LETTERS ON BLACK BACKGROUND, ROUND CORNERS AND TWO MOUNTING HOLES. THESE SIGNS SHALL BE TAGGED AT EYE LEVEL AND CONTAIN: HORTICULTURAL INFORMATION: FRUIT OF TREE, SCIENTIFIC NAME, COMMON NAME

TRAIL SIGNS ARE 5\"/>

CEGAR POSTS. THE SIGNS WILL VARY IN HEIGHT SO AS TO PROVIDE A BALANCE OF SCALE BETWEEN THE SIGN AND PLANT MATERIAL BEING REFERENCED. EXAMPLE: SHORT POST NEXT TO BEACH GRASSES. INFORMATION CONTAINED: FRUIT OF PLANT, SCIENTIFIC NAME, COMMON NAME, HISTORICAL INFORMATION, SUCH AS HOW IT GOT ITS NAME, USES OF PLANT, SEASONAL INTEREST.

AREA OF EXISTING EROSION SHALL BE CONTAINED WITH R.P. RAY AND REVEGETATED WITH INDIGENOUS PLANT MATERIAL. EXACT LOCATION OF EROSION SHALL BE VERIFIED IN THE FIELD.

B TYPICAL SIGNAGE DETAIL
NO SCALE

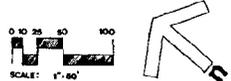


NOTE:
THE WOOD BENCH, TRAIL BOLLARDS AND CHAIN CAN BE ORDERED BY WRITING: JENNINGS 8150 SOUTH WINDY DR MAGAZINE, MICHIGAN 49834

LEGEND:
WOOD BENCH - SHALL BE JENNINGS MODEL # 74 - VEG. GRAB. THIS BENCH IS 6\"/>

TRAIL BOLLARDS AND CHAIN

SOFT SURFACE TRAIL



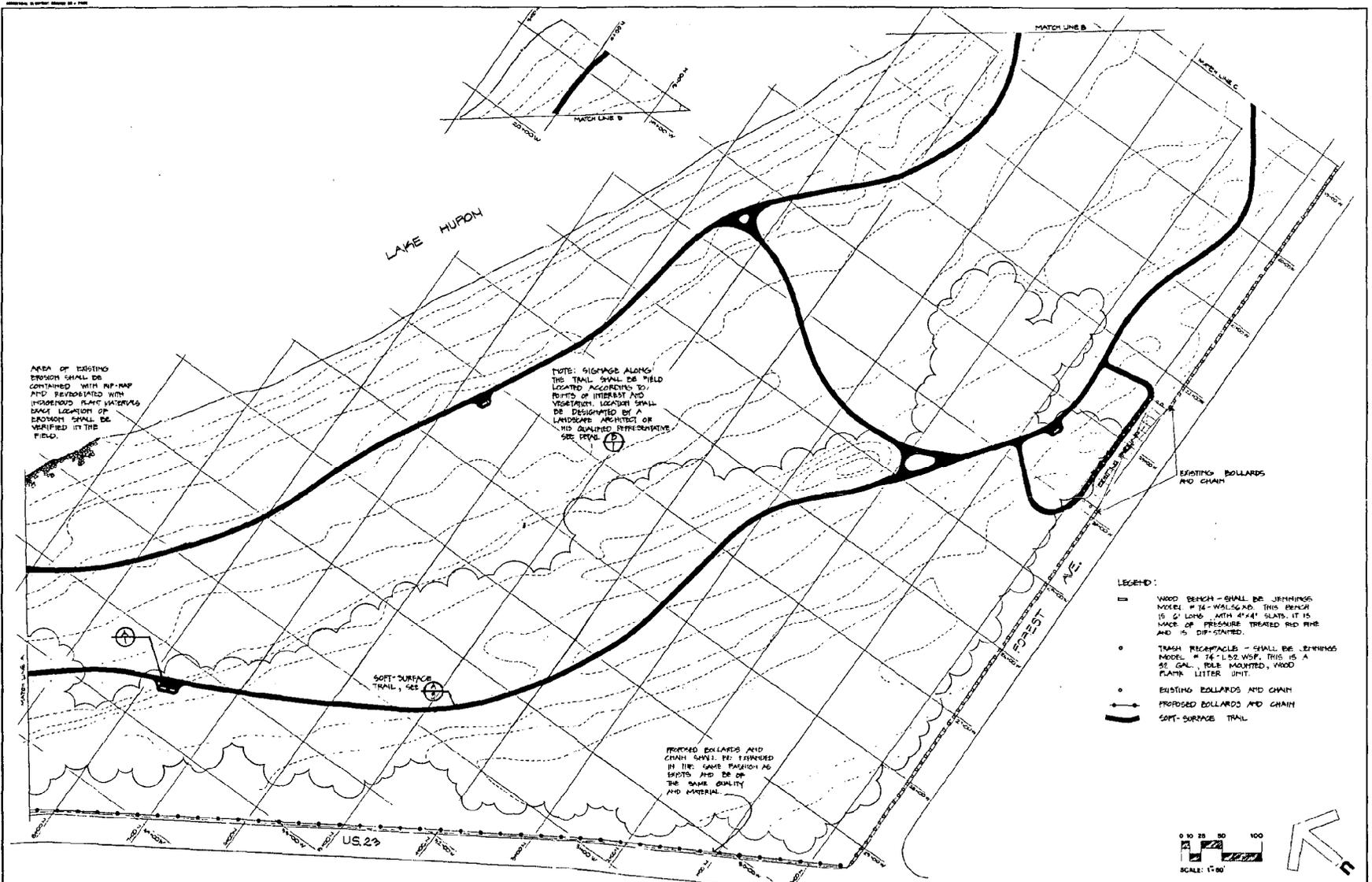
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CHECKED BY			
DATE			

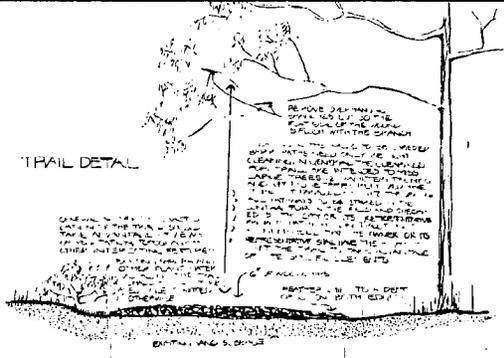
Snell Environmental Group
LANDSCAPE ARCHITECTS

ROGERS CITY COASTAL MANAGEMENT PROGRAM

LAYOUT PLAN SITE #1a

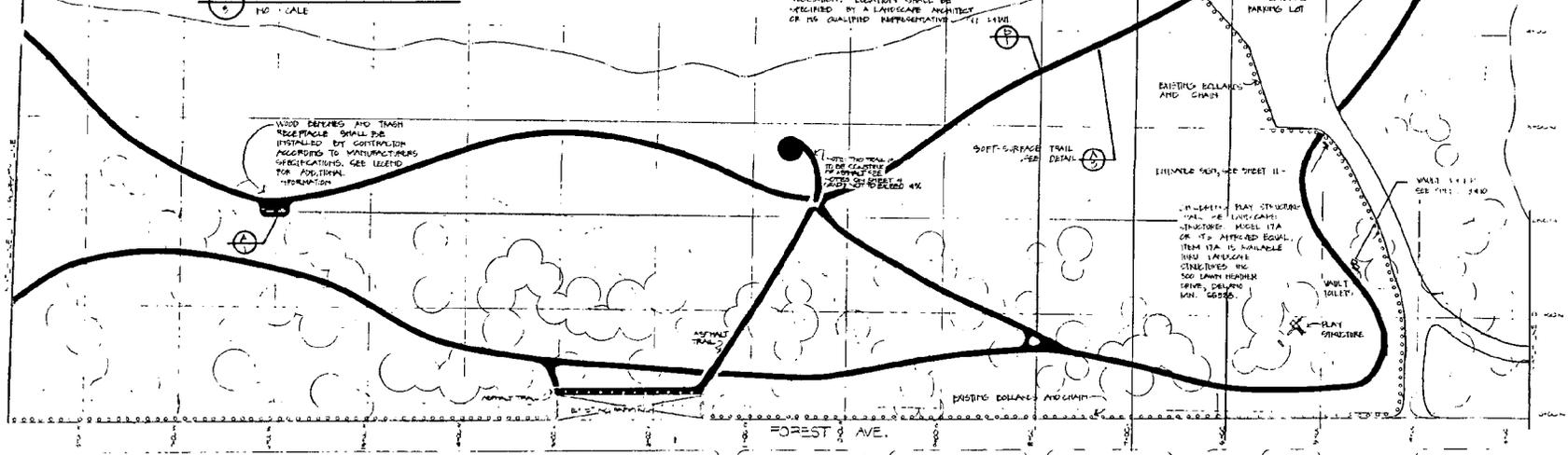
PROJECT NUMBER 11222
SHEET 1





TYPICAL TRAIL DETAIL
NO SCALE

LAKE HURON



WOOD BENCHES AND TRASH RECEPTACLE SHALL BE INSTALLED BY CONSTRUCTION ACCORDING TO MANUFACTURERS SPECIFICATIONS. SEE LEGEND FOR ADDITIONAL INFORMATION.

NOTE: SACRIFICE ALONG THE TRAIL SHALL BE FIELD LOCATED ACCORDING TO DESIGNATED FRONT OF STREET AND VORADON. LOCATIONS SHALL BE REQUIRED BY A LICENSED SURVEYOR OR HIS QUALIFIED REPRESENTATIVE.

WALK STRUCTURE - SHALL BE JUNCTION MODE OR ITS APPROX. EQUAL. TRAIL ITA IS SURVIVABLE TRAIL LAYOUTS CONSTRUCTED IN THE SOFT SURFACE TRAIL, DELIVER WITH GRASS.

LEGEND:

WOOD BENCH - SHALL BE JUNCTION MODE. # 74 INSECTICIDE TREATMENT. 12" x 12" x 6" WITH 4" RISE. SEE MAP OF PROJECT FOR THE AREA TO BE INSTALLED.

TRASH RECEPTACLE - SHALL BE JUNCTION MODE. # 74 INSECTICIDE TREATMENT. 12" x 12" x 6" WITH 4" RISE. SEE MAP OF PROJECT FOR THE AREA TO BE INSTALLED.

EXISTING BENCHES AND GRASS

SOFT-SURFACE TRAIL - SHALL CONSIST OF SUFFICIENT SAND CHIPS.

NOTES:

THE CONTRACTOR'S RESPONSIBILITY IS TO VERIFY THE LOCATION OF ALL UTILITIES AND TO PROTECT THEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

0 15 25 50 100
SCALE: 1"=50'

n

DATE	BY	REVISION



ROGERS CITY COASTAL MANAGEMENT PROGRAM

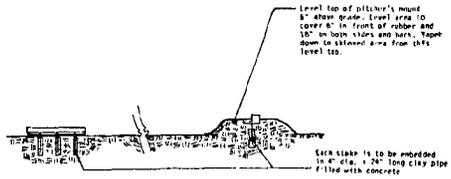
LAYOUT PLAN SITE #3

PROJECT NUMBER 11232 A

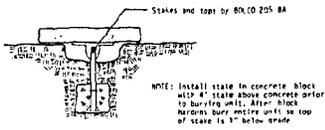
SHEET 3

PLANT LIST

KEY NO.	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
1	208 PALMADOES	HOLLY HAZEL	6" D	PLANT
2	209 BUSHES TO A PLANTING	THORNLESS HONEYLOCUST	1 1/2" D	PLANT
3	210	LAUREL	1 1/2" D	PLANT
4	211	REDBERRY	6" D	PLANT
5	212	REDBERRY	6" D	PLANT
6	213	REDBERRY	6" D	PLANT
7	214	REDBERRY	6" D	PLANT
8	215	REDBERRY	6" D	PLANT
9	216	REDBERRY	6" D	PLANT
10	217	REDBERRY	6" D	PLANT
11	218	REDBERRY	6" D	PLANT
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24	231	REDBERRY	6" D	PLANT
25	232	REDBERRY	6" D	PLANT
26	233	REDBERRY	6" D	PLANT
27	234	REDBERRY	6" D	PLANT
28	235	REDBERRY	6" D	PLANT
29	236	REDBERRY	6" D	PLANT
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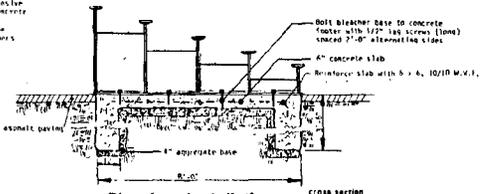
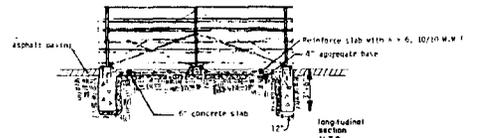
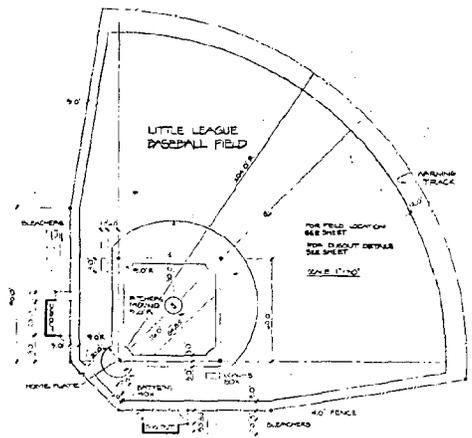


Homeplate & Pitcher's Mound Installation
N.T.S. section



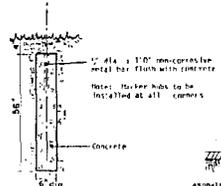
Base Installation
N.T.S. section

NOTE: LITTLE LEAGUE BASEBALL EQUIPMENT
Bases: set of three, Hollywood style
Inlra 300 M
Pitchers Plate: Balco 410 FG
Home Base: Balco 300 AS

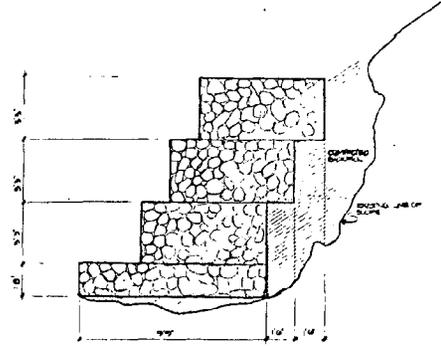


Bleacher Installation
Scale: 1/2\"/>

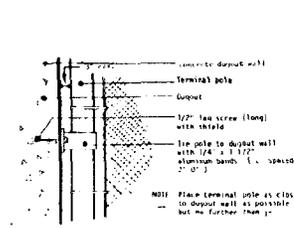
NOTE: Bleachers are to be 5 rows
8 1/2\"/>



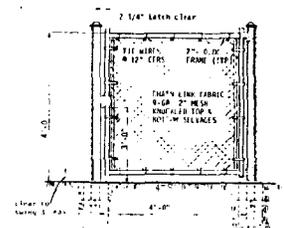
Permanent Marker Hub
N.T.S.



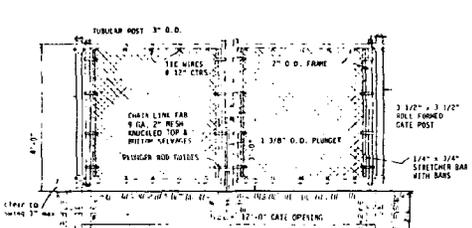
GABION DETAIL FOR TROUT RIVER EROSION AREA



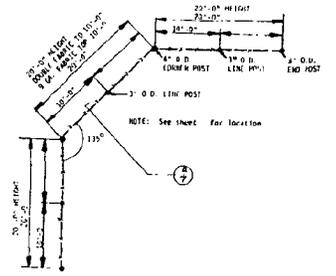
H
7
Dugout-Fence Connection
N.T.S.



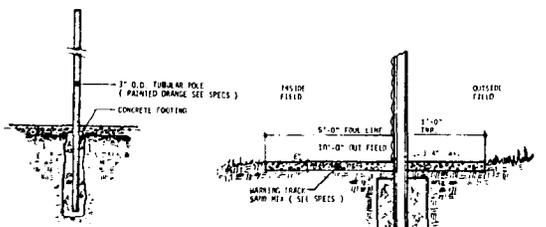
F
7
Infield Gate
N.T.S.



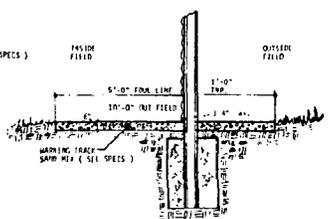
C
7
Maintenance Gate
N.T.S.



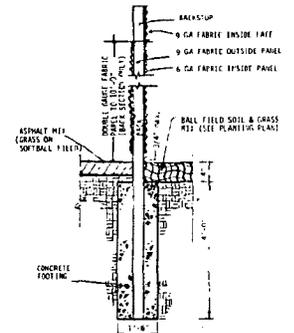
G
N.T.S.
Plan View & Layout of Softball Backstop



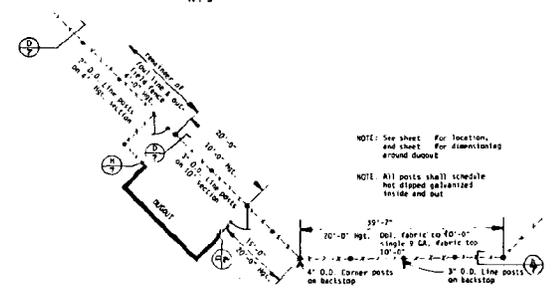
I
7
Foul Pole
N.T.S.



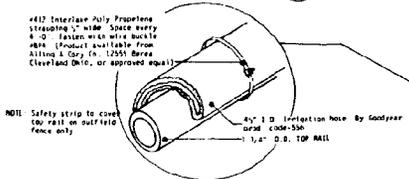
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7
Maintenance Strip
N.T.S.



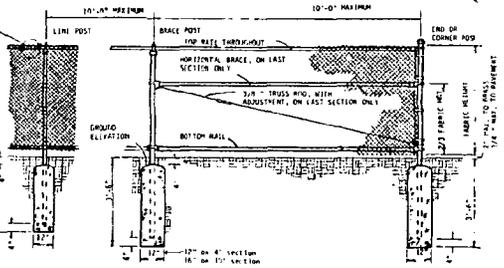
B
7
Backstop Footing
N.T.S.



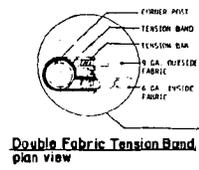
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Scale 1\"/>



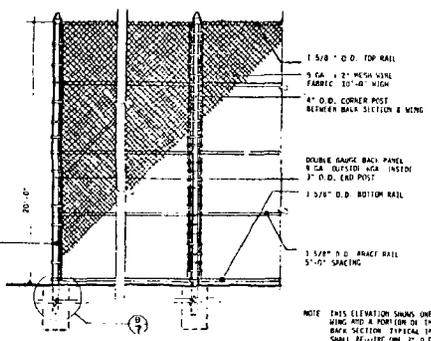
I
Outfield Fence Safety Strip



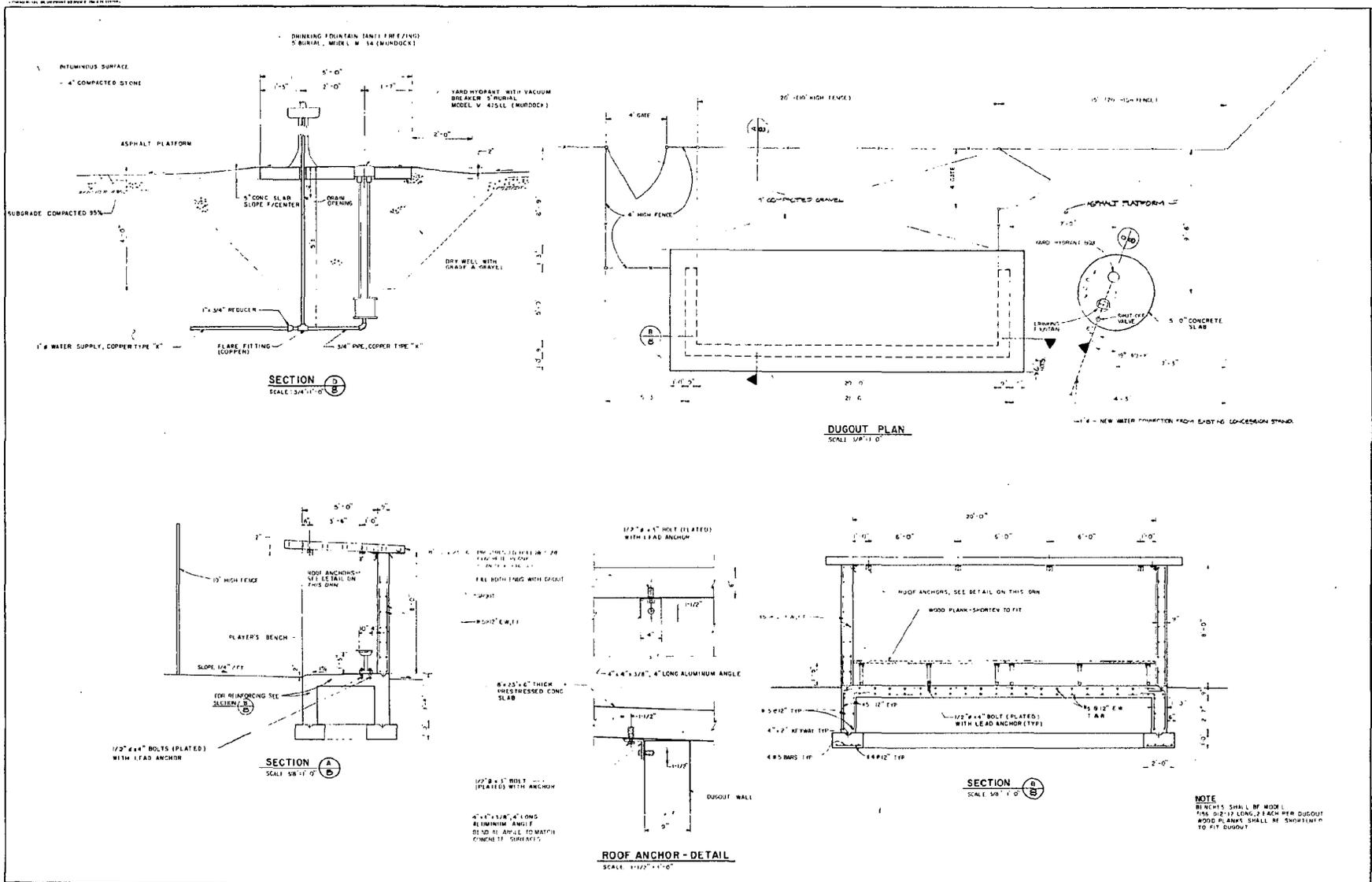
D
7
Fence (Typ.)
N.T.S.

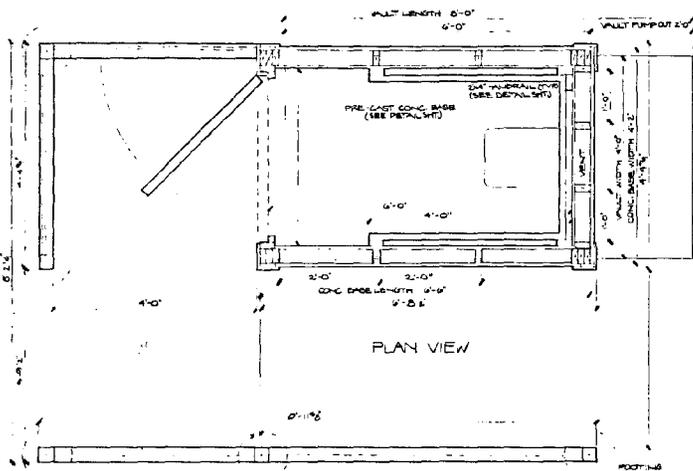


A
Double Fabric Tension Band, plan view

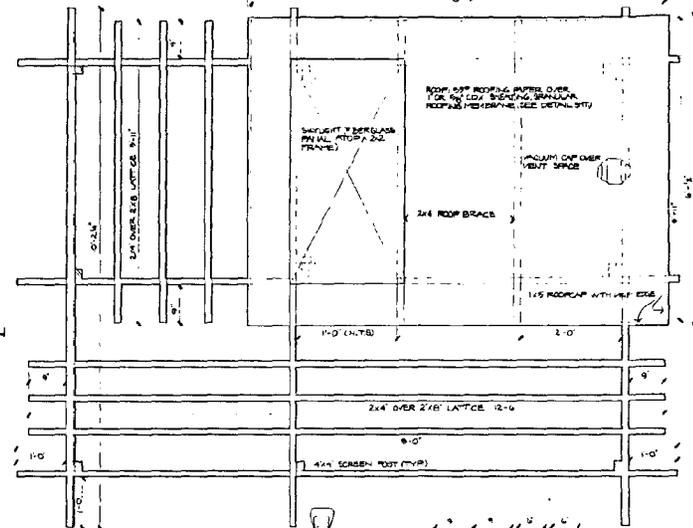


A
7
Backstop (Typ.)
N.T.S.

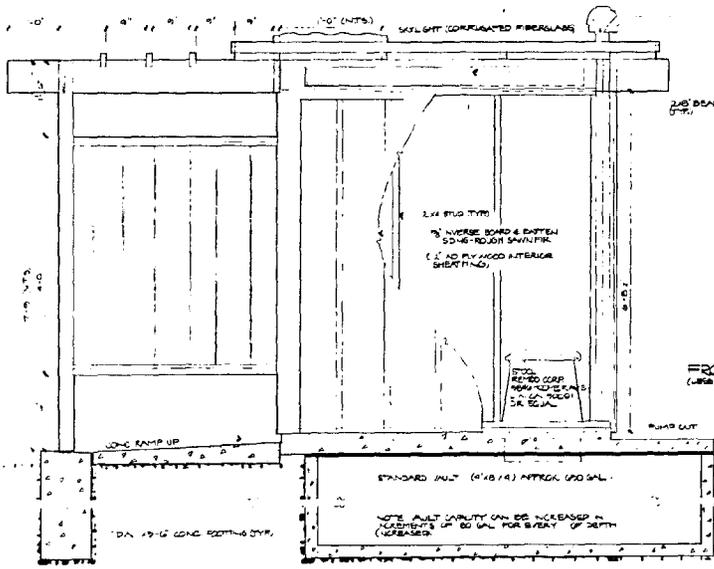




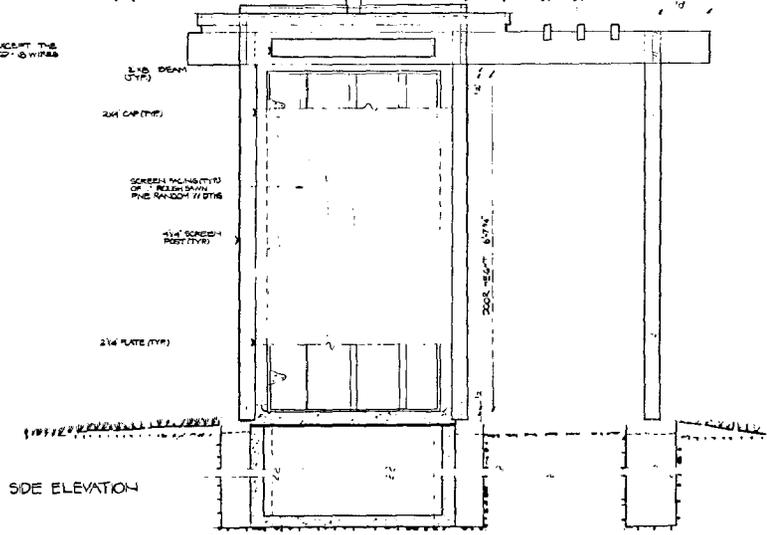
PLAN VIEW



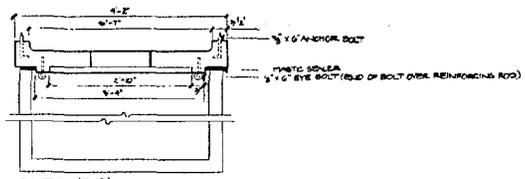
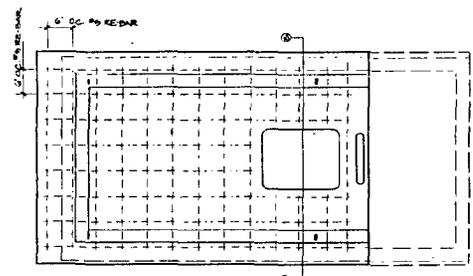
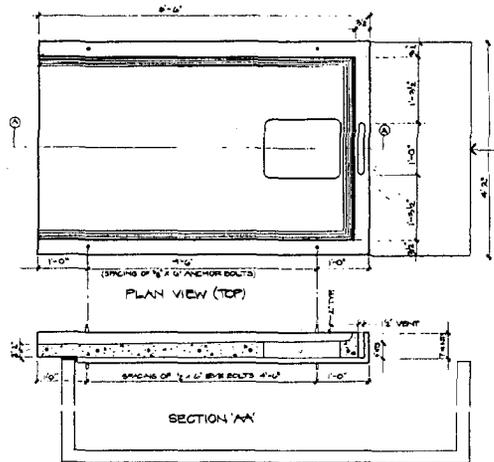
ROOF PLAN



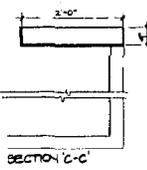
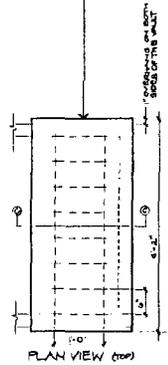
FRONT ELEVATION



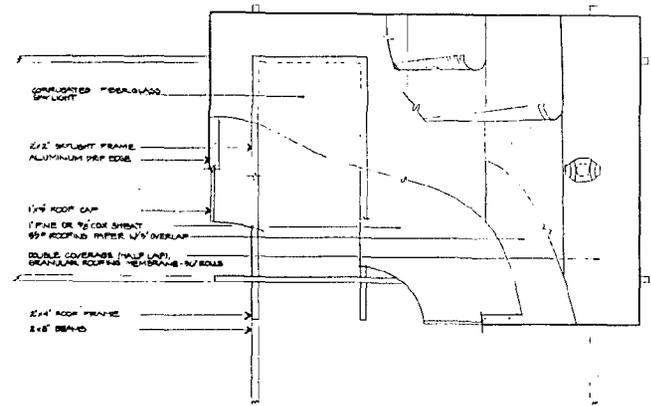
SIDE ELEVATION



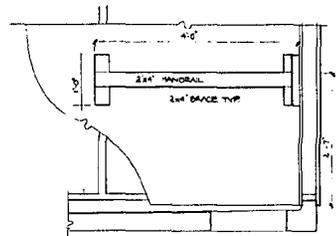
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PRECAST CONCRETE BASE-
PUMP OUT COVER



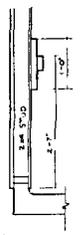
SECTION 'C-C'



HANDRAIL DETAIL



HANDRAIL DETAIL

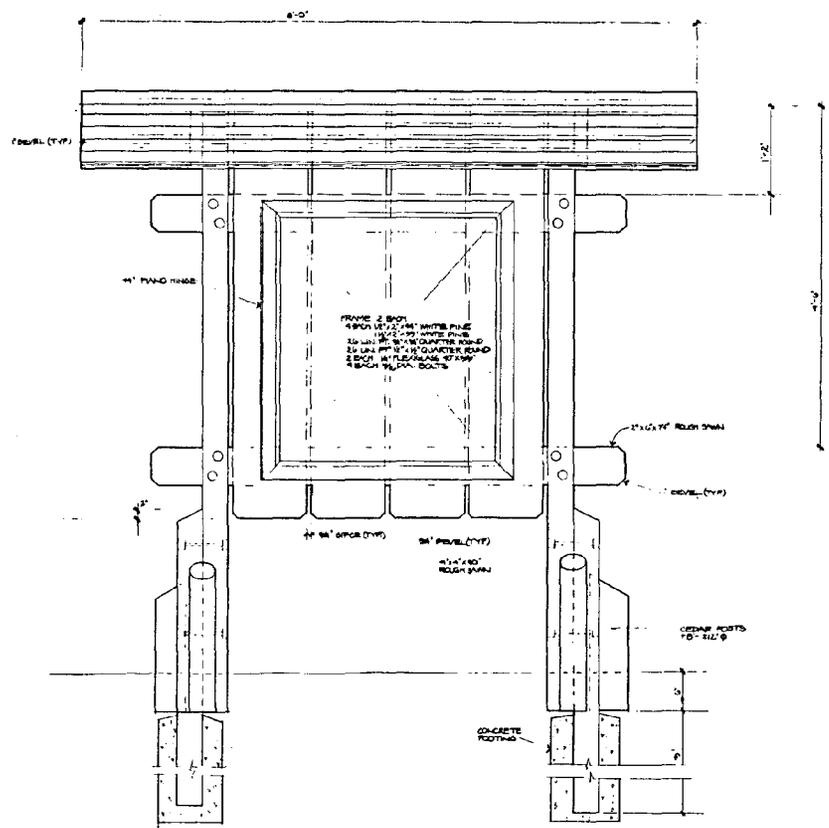


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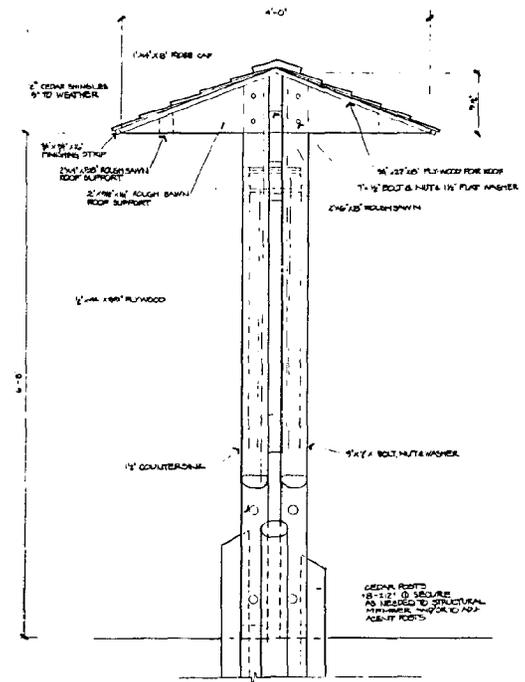


ROGERS CITY COASTAL
MANAGEMENT PROGRAM

PROJECT NUMBER	11313 A
SHEET	10



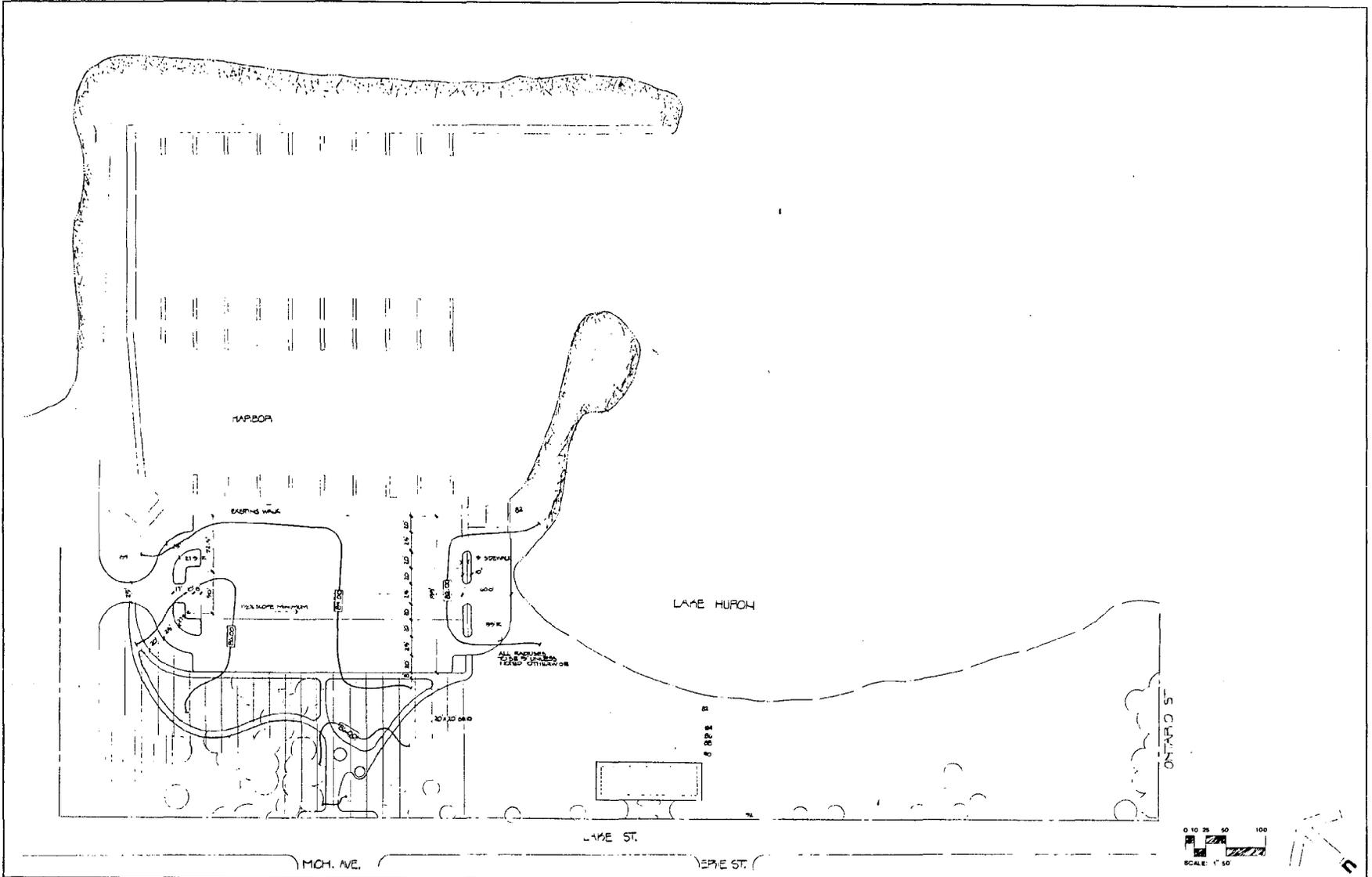
FRONT VIEW



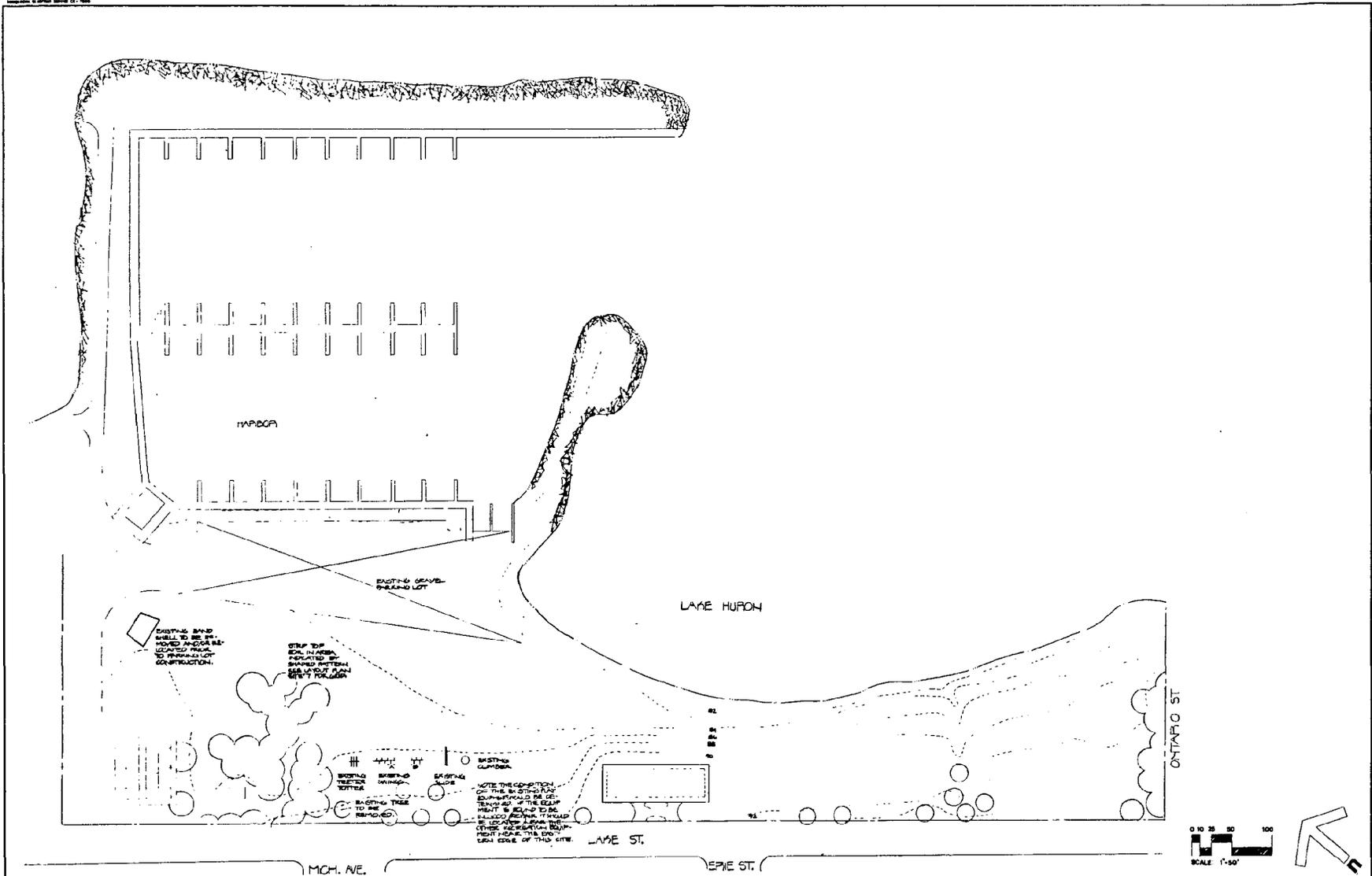
SIDE ELEVATION

DATE	BY	REVISION

11/20/04 11:58 AM 11/20/04



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DATE																						
REVISIONS																						



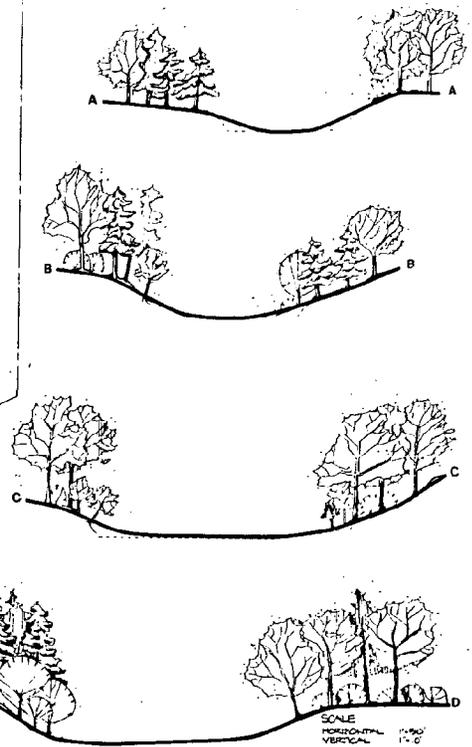
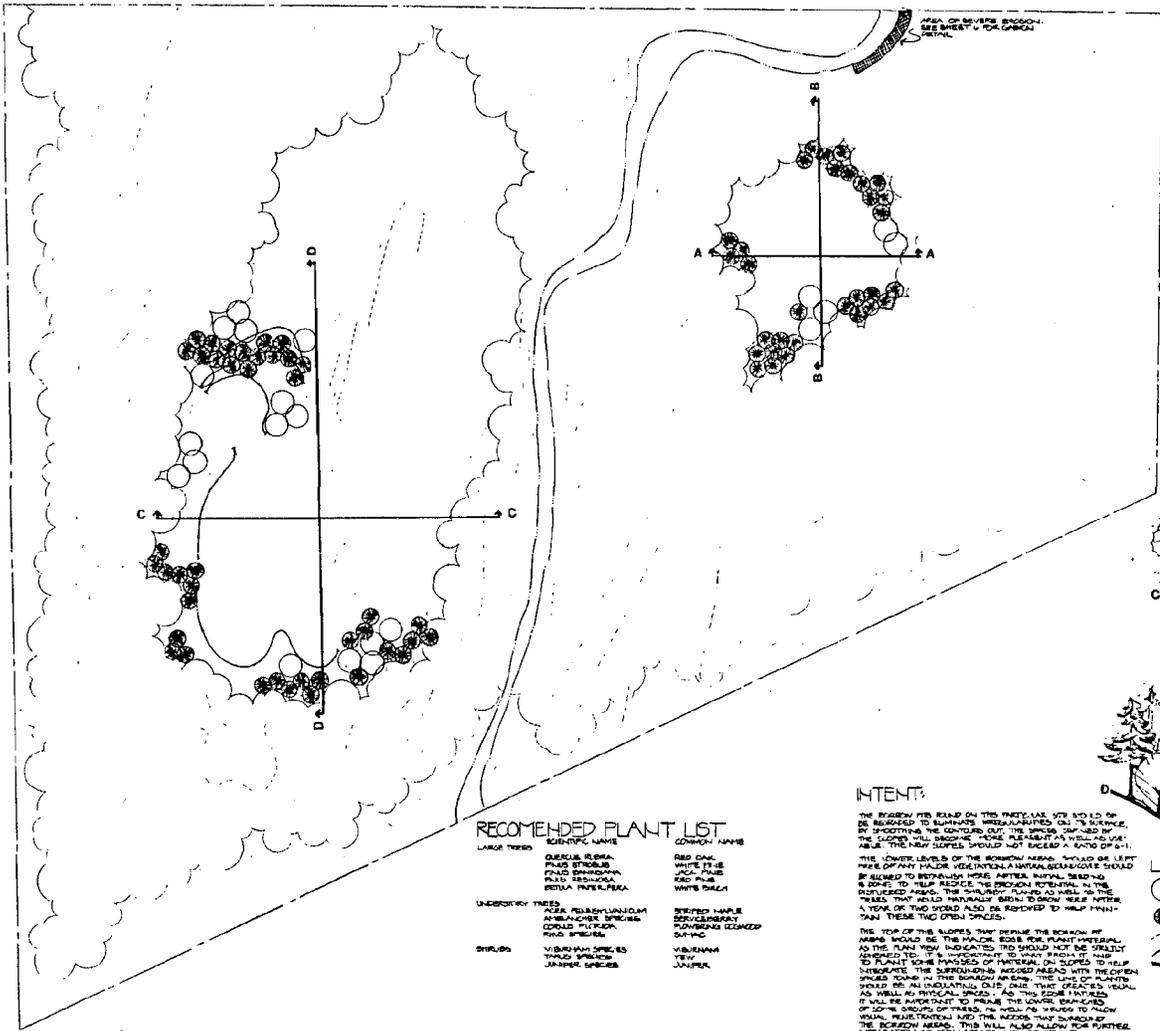
DATE	BY	REVISION



ROGERS CITY COASTAL MANAGEMENT PROGRAM

REMOVAL PLAN SITE #7

PROJECT NUMBER 11323.A SHEET 13



RECOMMENDED PLANT LIST

COMMON NAME	SCIENTIFIC NAME
LARGE TREES	<ul style="list-style-type: none"> QUERCUS BILINEATA FRAXINUS VIRGINIANA PLATANUS OCCIDENTALIS STYRACIA FLORIDANA
UNDERSTORY TREES	<ul style="list-style-type: none"> ALNUS INCANA AMELANORHYZON CORDON ROSEUM PAVIA SPECIOSA
SHRUBS	<ul style="list-style-type: none"> VIBURNUM SPECIOSUM TRIALIX SPECIOSA LIABRYUM SPECIOSUM
SMALL TREES	<ul style="list-style-type: none"> RED CHINESE WHITE PINE YAL RED PINE WHITE PINE
SHRUBS	<ul style="list-style-type: none"> SPYRIDAEUM SPYRIDAEUM SPYRIDAEUM SPYRIDAEUM
SHRUBS	<ul style="list-style-type: none"> VIBURNUM SPECIOSUM TRIALIX SPECIOSA LIABRYUM SPECIOSUM

INTENT:

THE DESIGN FOR THIS SITE IS TO BE REGRADED TO ELIMINATE WIND-CAUSED SOIL EROSION. THE SLOPES WILL BEGRASS FOR STABILIZATION. THE NEW SLOPES SHOULD NOT EXCEED A RATIO OF 3:1.

THE LOWER LEVELS OF THE SLOPES SHOULD BE LEFT AS OPEN SPACE. THE UPPER LEVELS SHOULD BE PLANTED WITH TREES AND SHRUBS. THE SLOPES SHOULD BE REGRADED TO ELIMINATE WIND-CAUSED SOIL EROSION. THE SLOPES WILL BEGRASS FOR STABILIZATION. THE NEW SLOPES SHOULD NOT EXCEED A RATIO OF 3:1.

THE TOP OF THE SLOPES THAT DEFINE THE SLOPES OF THE SITE SHOULD BE THE HIGHEST POINT FOR PLANT MATERIAL. AS THE PLANT MATERIAL IS PLANTED, THE SLOPES SHOULD NOT BE GRADIENTS TO BE 3:1. IT IS IMPORTANT TO KNOW THAT IT IS TO PLANT THE MATERIAL ON SLOPES TO HELP INTEGRATE THE SLOPES WITH THE OPEN SPACE. THE SLOPES SHOULD BE REGRADED TO ELIMINATE WIND-CAUSED SOIL EROSION. THE SLOPES WILL BEGRASS FOR STABILIZATION. THE NEW SLOPES SHOULD NOT EXCEED A RATIO OF 3:1.

- LEGEND:**
- TREES
 - EVERGREEN TREES
 - EXISTING CONTOUR
 - - - PROPOSED CONTOUR (PLAN VIEW)
 - - - PROPOSED CONTOUR (ELEVATION)

SCALE
HORIZONTAL 1"=50'
VERTICAL 1"=10'

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