1996

Hika Bay Park & Dam Impoundment Area

Park Site Master Plan

Village of Cleveland, Wisconsin

November, 1996

Prepared by: BAY-LAKE Regional Planning Commission, 1996

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Village of Cleveland, Wisconsin

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June 1, 1997

Mr. Kurt Kaiser
Village of Cleveland President
and Members of the Village Board
and Village Park Committee
Cleveland, WI

Ladies and Gentlemen:

The Bay-Lake Regional Planning Commission is pleased to present this *Hika Bay Park & Mill Dam Park Site Master Plan* to the Cleveland Village Board and the Village Park Committee. This park site master plan was prepared by Bay-Lake Commission staff in accordance with contract #55050.

This park site master plan represents the Village's continuted commitment to the long-term planning needs of the community. The information contained in the *Hika Bay Park & Mill Dam Park Site Master Plan* provides the Village a framework for which to guide future improvements in an orderly manner.

The delivery of this report constitutes the completion of Bay-Lake Regional Planning Commission's obligation regarding the Village of Cleveland's request for assistance in developing the *Hika Bay Park & Mill Dam Park Site Master Plan.* However, the Commission and Commission staff stand ready to assist the Village in additional planning activities.

We trust the information contained in this report will be helpful to the Village Board, and Village Park Committee in determining the future appearance and function of the Village of Cleveland.

Sincerely,

Martin W. Holden

Martin W. Holden
Executive Director

Table of Contents

SCOPE AND PURPOSE OF PARK MASTER PLAN 1

PUBLIC PARTICIPATION PROCESS 2

GENERAL SITE LOCATION AND CONTEXT 5

EXISTING SITE CHARACTERISTICS 9
- Topography And Surface Drainage 9
- Soils 9
- Wetlands And Water Features 11
- Existing Vegetation 13
- Wildlife Habitat 13
- Existing Man-Made Features And Facilities 13

SITE SUITABILITY ANALYSIS FOR RECREATIONAL USES 17
- Topography And Surface Drainage 17
- Soils 17
- Wetland/Water Features 21
- Vegetation / Wildlife Habitat 21

IDENTIFICATION OF PARK FACILITY NEEDS 23
- Additional Recreational Facilities 23
- Park Accessibility 23
- ADA Compliance Deadlines 24
- ADA Accessibility Recommendations 24
- ADA Transition Plan 24

RECOMMENDED MASTER PLAN LAYOUT 25
- Overall Description 25
- Hika Dam Area 29
- Municipal Area 32
- Hika Bay Park 33

PHASED DEVELOPMENT ACTION PLAN 35

POTENTIAL RECREATIONAL FUNDING SOURCES 37
- Wisconsin Department Of Natural Resources Programs 37
- Wisconsin Department Of Commerce 38
- Wisconsin Coastal Management Program 38
- National Recreational Trails Fund 38
- Intermodal Surface Transportation Efficiency Act - Enhancements Program 38
- Alternative Revenue Sources 38

INCLUSION IN COUNTY COMPREHENSIVE RECREATION PLAN 39

APPENDIX A - PLAN ADOPTION RESOLUTIONS A-1

APPENDIX B - NOMINAL GROUP SURVEY RESULTS B-1

APPENDIX C - WETLAND PERMIT INFORMATION C-1

APPENDIX D - ACCESSIBILITY DEFINITIONS / GUIDELINES D-1

APPENDIX E - TRAIL DESIGN STANDARDS E-1

APPENDIX F - DAM MEMORIAL EXAMPLE F-1

List of Tables

Table 1: General Soil Types and Characteristics 11
Table 2: Soil Suitability, Woodland Management 18
Table 3: Soil Suitability, Windbreaks and Environmental Plantings 18
Table 4: Soil Suitability, Water Management 19
Table 5: Soil Suitability, Recreational Development 19
Table 6: Soil Types / Wildlife Habitat Potential 20
Table 7: Estimated Capital Improvements Plan and Budget 36

List of Maps

Map 1 - General Location, Village Of Cleveland 6
Map 2 - General Location, Hika Bay Park 7
MAP 3 - Soils And FEMA Floodplain 10
Map 4 - Existing Natural Resource Features 12
Map 5 - Recreational Facilities/Utilities 15
Map 6 - Recommended Master Plan 27
Map 7 - ADA Trails 30

SCOPE AND PURPOSE OF PARK MASTER PLAN

The village of Cleveland, being aware of private and public concerns relating to the future development of public recreational sites, elected to prepare a "Park Site Master Plan" for the Hika Bay Park and its adjacent dam impoundment area. This document was prepared over an approximate seven month period by Bay-Lake Regional Planning Commission with input from the village of Cleveland. In preparing this *Park Site Master Plan*, the Bay-Lake Regional Planning Commission set forth the following objectives:

- To work with the village Park Committee, public and private organizations on the development of the master plan for Hika Bay Park and the dam impoundment area.
- To encourage citizen participation in the planning process by attending Park Committee meetings and scheduling and attending citizen participation meetings.
- To conduct an inventory and analysis of the existing outdoor recreation facilities at each site location.
- To determine the needs for new park facilities at each site location.
- To incorporate existing planning studies into the park master plans, such as the *Cleveland Waterfront Plan*, the *Manitowoc County Park and Open Space Plan*, and the results of the UWEX community visioning surveys.
- To provide recommendations and implementation activities for the park master plans.
- To encourage adoption of the individual park master plans by the Village Board.
- To provide a final printed document of each park master plan based on the material prepared by the village and the Commission.
- To establish a computerized database and related maps of the outdoor recreation facilities at each site, using the Commission's Geographic Information System (GIS).

The *Hika Bay Park Master Plan* was prepared to address the needs of the village's residents for improvements to existing recreational facilities within the park. This plan was developed as:

1. A sound working guide that will direct the acquisition and development of parks and recreation facilities needed or desired to satisfy the demand of the village's residents, and;
2. A "vision" for the future development which should be referenced by village officials and individuals when decisions are made regarding this park site.

PUBLIC PARTICIPATION PROCESS

The Bay-Lake Regional Planning Commission regards public participation as an essential part of the planning process for any project. Each meeting held with the Park Committee was done so in a public forum with posted agendas and time allowed for citizen input. Below is a summary of the meetings which Commission staff attended during the planning of Hika Bay Park and the dam impoundment area :

February 29, 1996 — Commission staff met with the Park Committee to "kick-off" the planning process and to gather information related to the existing park areas within the village.

March 21, 1996 — Commission staff conducted a "nominal group" exercise to identify current issues related to outdoor recreation facilities within the village of Cleveland. This exercise was conducted by the Commission at 6:30 p.m. at the Village Hall facility. The village of Cleveland Park Committee members invited approximately 30 persons from the community which represented various organizations, businesses, property owners and other interested parties. Of these 30 people, 17 attended the exercise. The attendees were split into two groups and were led through a process which identified issues and then prioritized them. The two groups were then brought together to form a consensus of opinion on the most prevalent issues. The following items were ranked as the top issues concerning future park development in the village of Cleveland. The complete results of the exercise are contained in Appendix B.

1. Develop a pond, trails, and wildlife areas at all parks (23 points)
2. Interconnection of parks (19 points)
3. Unattractiveness of dam area (12 points)
4. Upgrade electrical services at Dairyland park (8 points)
5. Better play area for children at Hika Bay (7 points)

April 10, 1996 — Commission staff presented the results of the nominal group survey exercise.

May 22, 1996 — Commission staff presented maps outlining the existing physical conditions of Hika Bay Park and the mill dam impoundment area. Specific issues related to the planning of these areas were identified and discussed as follows: coordination of park planning and dam removal, historical significance of mill dam, property ownership, adjacent land uses, ADA accessibility, trails and pathways, use of WWTF property, traffic safety, play equipment needs, and signage. The Commission will gather additional information as requested and prepare several site plan designs for presentation at a future meeting.

June 19, 1996 — Commission staff presented a series of maps which depicted the conceptual methods used as a basis for two preliminary development alternatives for the Hika Bay Park and dam impoundment. The Park Committee and public members reviewed the two development alternatives and came to consensus on many issues. The Park Committee directed Commission staff to gather additional information on several items, including potential funding for the dam removal, as well as re-drafting the alternatives for review at the next meeting.

July 24, 1996 — Commission staff presented a re-draft of the park site plan which incorporated all of the items agreed upon at the previous meeting. Several minor modifications were discussed and were incorporated into the next version of the plan.

August 5, 1996 — The Park Committee chair presented the draft development plan to the community's Fish & Game Club. The club members discussed the plan and proposed several minor modifications regarding placement of the boat launch and parking areas.

August 28, 1996 — The Park Committee met to discuss potential changes to the draft development plan based on information obtained from the August 5, 1996 meeting with the Fish & Game Club. After review by the Park Committee, the Commission was directed to make the changes in the above noted areas and a preliminary draft of the plan was prepared for distribution to the Park Committee.

October 10, 1996 — The Park Committee met to discuss and approve both the *Hika Bay Park* and *Veteran's Park Master Plans* in draft form for public review beginning in late November. It was decided that a public presentation and formal Park Committee approval would occur at a December, 1996 meeting. Draft plans and display maps will be available for review at the Village Hall and other public institutions throughout the village.

GENERAL SITE LOCATION AND CONTEXT

The village of Cleveland is located in the southern most portion of Manitowoc County along the shore of Lake Michigan. (Map 1) The village itself is located between two major urban areas, the cities of Manitowoc and Sheboygan, and is easily accessible from Interstate Highway 43 situated along its western edge. The focus areas of this study, Hika Bay Park and the dam impoundment area, are located in the eastern portion of the village along Centerville Creek, adjacent to Lake Michigan. More specifically, these areas are located in the SW 1/4 of Section 27 in T17N, R23E and encompass approximately 7.5 acres (including the adjacent village owned wastewater treatment plant property).

This site is bisected by CTH "LS" (Lakeshore Drive) and services the recreational needs of residents in the central and eastern portions of the village (Map 2). The current facilities also experience usage by individuals from outside the community due to the boat ramp which exists on the property. The park has the potential for being a major node in a village-wide parkway system in the future.

The entire site is relatively open and bounded by residential and commercial land uses. Public access to the sites is obtained either from an entrance on Franklin Street or by using one of three driveways located on CTH "LS".

The park site is composed of three major areas which will be addressed separately and as a whole. These areas will be referred to as follows throughout this document :

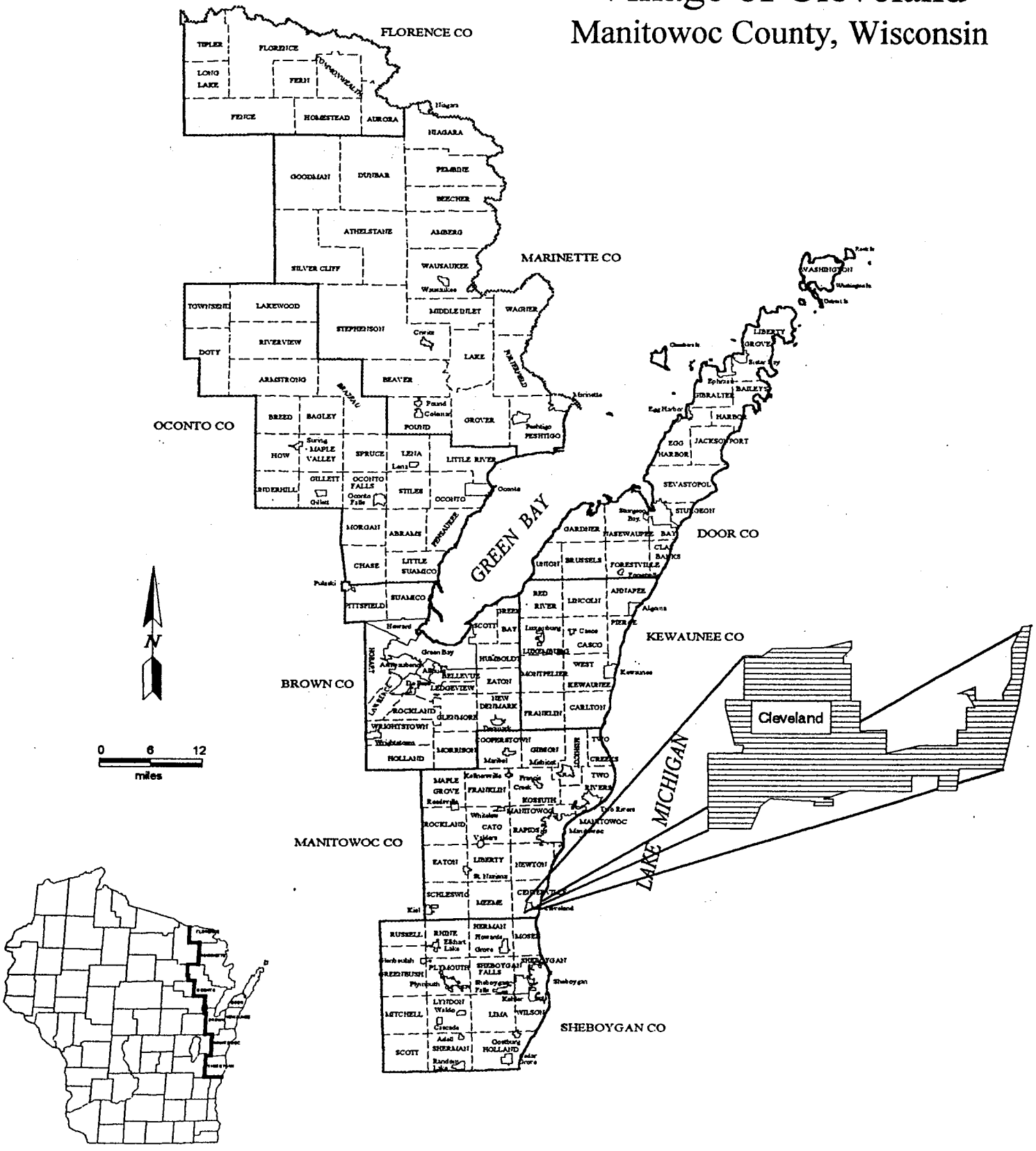
1. "Hika Dam Area" (2.6 acres) located west of CTH "LS", including the dam impoundment area;
2. "Hika Bay Park" (2.5 acres) located east of CTH "LS" and south of Centerville Creek, and;
3. "Municipal Area" (2.4 acres) located east of CTH "LS" and north of Centerville Creek.

Map 1

Location Map

Village of Cleveland

Manitowoc County, Wisconsin

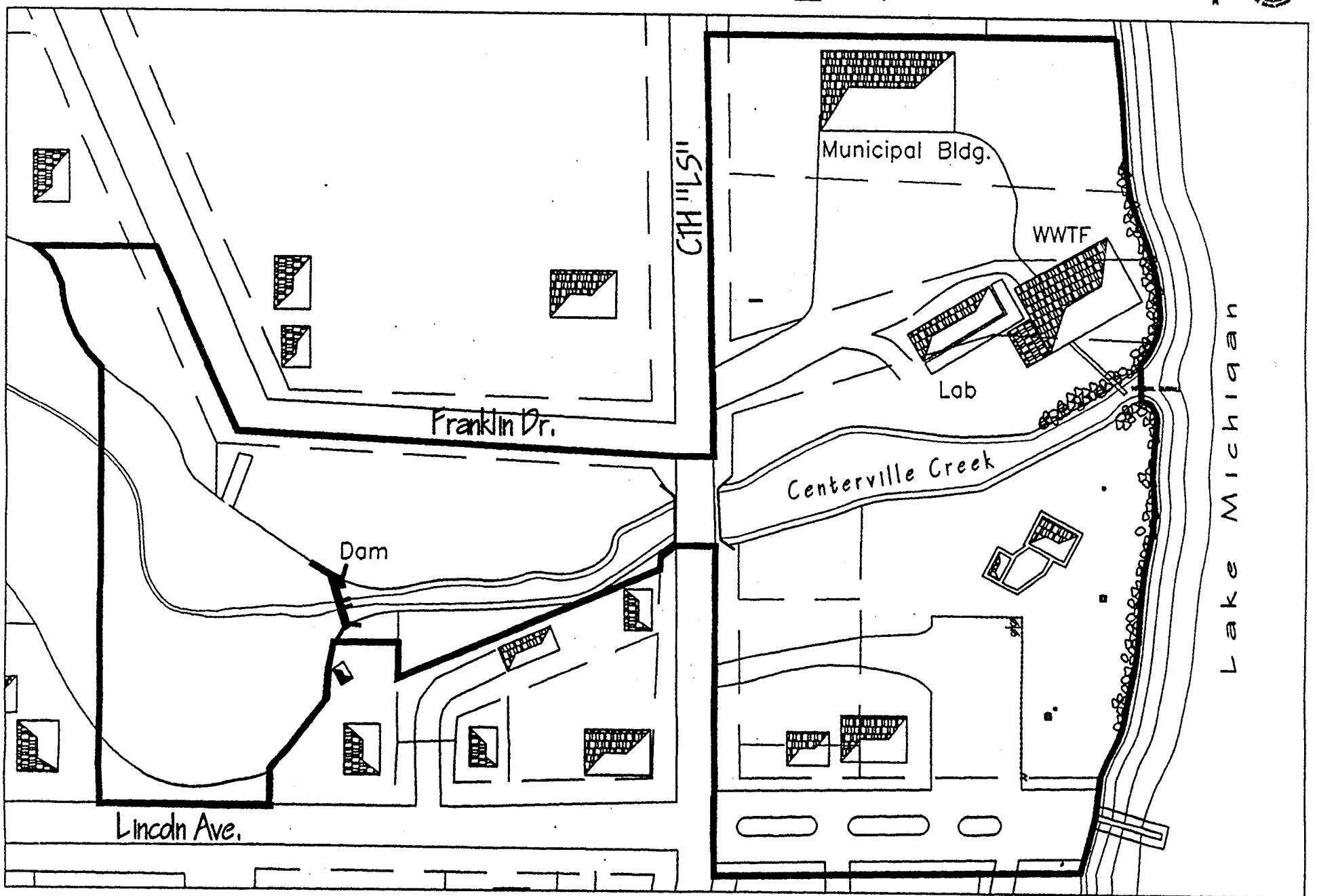


SOURCE: Bay-Lake Regional Planning Commission, 1996.

Village of Cleveland

Map 2 Study Area

Hika Bay Park & Dam Impoundment Area



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Source: Robert E. Lee & Associates, 1996; BAY-LAKE RPC, 1996.

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The Hika Bay Park and dam impoundment area is comprised of a variety of physical characteristics. The nature of these characteristics relate well to recreational development. As with any site-specific development plan, a detailed analysis of the existing physical characteristics proves to be invaluable in determining the final outcome of the site and its future usage.

TOPOGRAPHY AND SURFACE DRAINAGE

The park site can generally be described as being flat to gently rolling. Natural drainage generally occurs from the perimeters of the property toward Centerville Creek and eventually east, exiting the property into Lake Michigan. The western portion (Hika Dam Area) contains the highest elevations (approximately 600 feet above sea level) and steepest slopes, particularly near Centerville Creek between the dam and CTH "LS", while the lowest elevations occur at the shoreline of Lake Michigan (approximately 580 feet above sea level).

Portions of all three park areas are within the Federal Emergency Management Agency (FEMA) identified 100-year floodplain boundary (See Map 3). These areas are primarily adjacent to Centerville Creek and Lake Michigan.

SOILS

The study area contains a variety of soil types, according to the United States Department of Agriculture Soil Conservation Service *Soil Survey of Calumet and Manitowoc County* (See Map 3). Theses soils are of the Kewaunee-Boyer-Nichols Association and are characterized by gently sloping to steep, well drained and moderately well drained soils that are sandy, loamy, or clayey. Table 1 lists the specific soil types found on the site and contains information regarding the various properties for activities and uses of these lands. It should be noted that this information is base on general soils information and is not the result of any certified soil tests on the site. The following text contains a broad description of each general soil series:

Manawa (MbA) - Consists of somewhat poorly drained, slowly permeable soils in drainageways and depressions on till plains and in lacustrine basins. These soils formed in clayey glacial till or in clayey lacustrine deposits. Slopes range from 0 to 3 percent.

Fluvaquents (Fu) - These soils are nearly level and poorly drained and occur on floodplains that are dissected by watercourses and areas subject to frequent flooding. These soils consist of sediments recently deposited by floodwaters. They range from sand to silt loam and include thin layers of organic material. The slopes range from 0 to 2 percent.

Oakville Loamy Fine Sand (OaB) - These soils are gently sloping and well drained and occur on side slopes of beach ridges and lake plains. Permeability is rapid and available water capacity is low. The slopes range from 2 to 6 percent.

Oakville-Granby Complex (OgB) - These soils consist of nearly level to gently sloping soils on beach ridges and in drainageways. The soils are both well drained and poorly drained and subject to frequent flooding. Permeability is rapid and available water capacity is low. Slopes range from 0 to 4 percent.

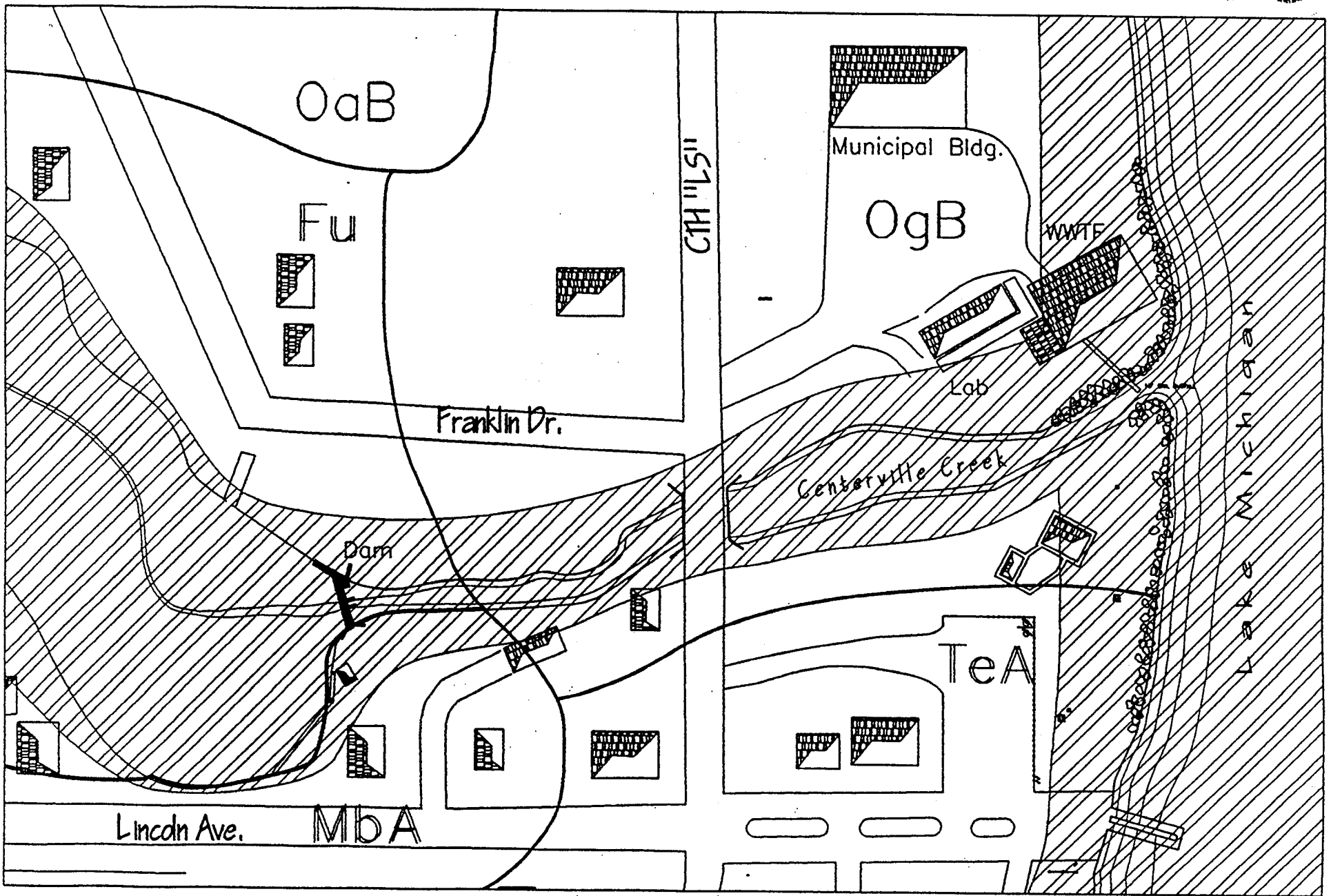
Tedrow Loamy Fine Sand (TeA) - This soil is nearly level to gently sloping and is somewhat poorly drained. It occurs in drainageways on lake plains and old beaches. Slopes range from 0 to 3 percent.

Village of Cleveland
Hika Bay Park & Dam Impoundment Area

Map 3 – Soil Types & Floodplains

— Soil Type Boundaries
TeA Soil Type
▨ FEMA Floodplain Limits

0 25' Feet



Prepared by: BAY-LAKE Regional Planning Commission, 1998

Sources: Robert E. Lee & Associates, 1998; FEMA, 1988; USDA Soil Conservation Service, 1998; BAY-LAKE RPC, 1998.

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Table 1: General Soil Types and Characteristics

Soil Type	Soil Name	Slope	Permeability	Water Capacity	Runoff
Fu	Fluvaquents	0-2%	varies	varies	varies
MbA	Manawa silt loam	0-3%	slow	moderate	slow
OaB	Oakville loamy fine sand	2-6%	rapid	low	slow
OgB	Oakville - Granby complex	0-4%	rapid	low	slow
TeA	Tedrow loamy fine sand	0-3%	rapid	low	slow

Soil Type	Soil Name	Building Suitability	Potential for Trees	On-Site Sanitary Suitability
Fu	Fluvaquents	poor	poor	poor
MbA	Manawa silt loam	poor	good	poor
OaB	Oakville loamy fine sand	good	fair	poor
OgB	Oakville - Granby complex	fair	poor	fair
TeA	Tedrow loamy fine sand	poor	fair	poor

Source: *Soil Survey of Calumet and Manitowoc Counties, Wisconsin*, USDA, Soil Conservation Service, 1980; and BLRPC, 1996.

WETLANDS AND WATER FEATURES

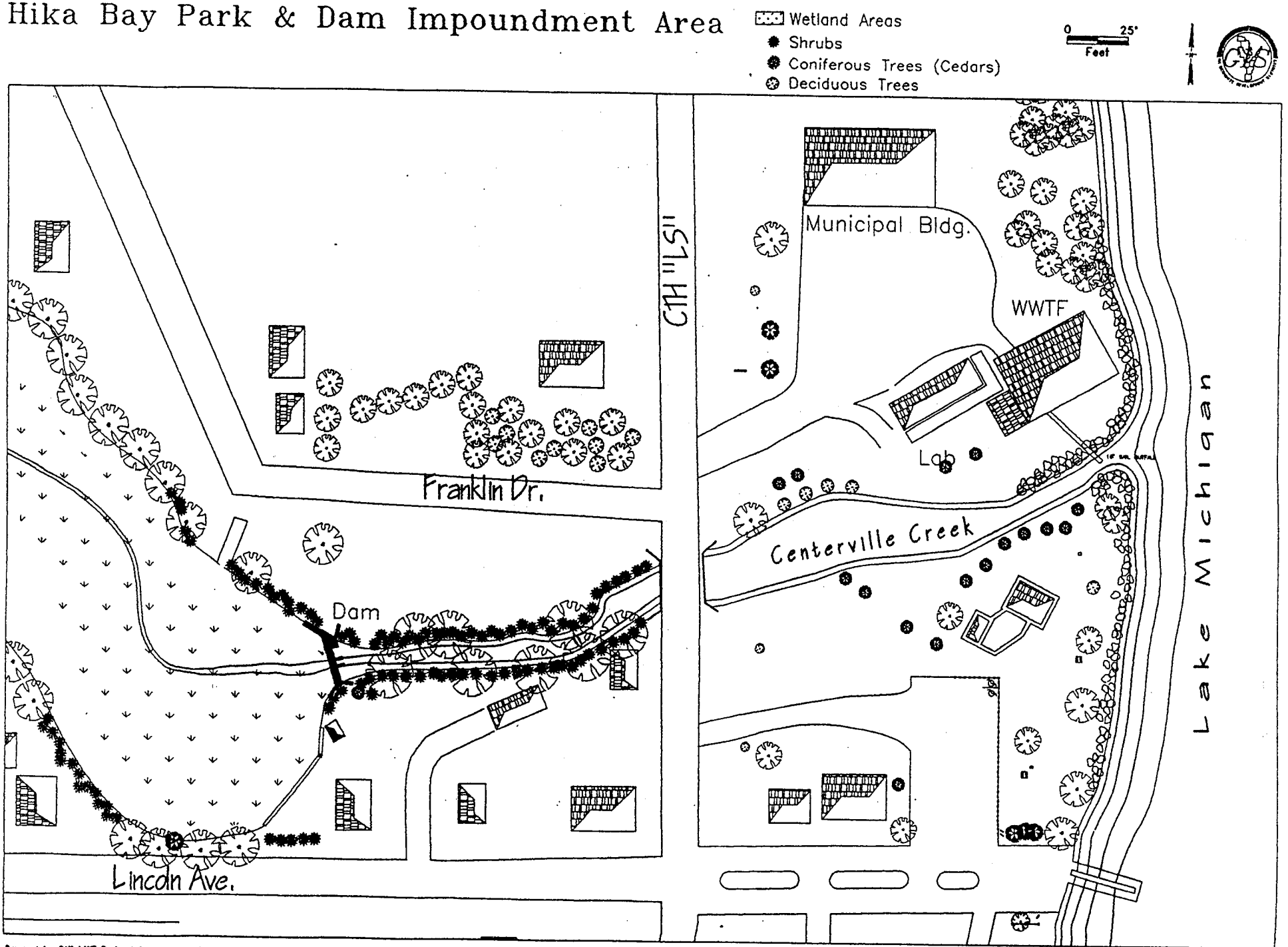
According to the 1989 WDNR Wisconsin Wetland Inventory Maps there are no "identified" wetland areas within any of the three park areas; however, since the draining of the dam impoundment several years ago, wetland vegetation has emerged in most of the area behind the dam structure. These wetlands are emergent and contain little "value" in terms of existing wildlife habitat or vegetation communities; however, as time progresses, new plant and animal life may emerge. These wetlands also serve to collect floodwaters in periods of heavy rain. These wetland areas are illustrated in a general manner on Map 4.

Centerville Creek, designated as an intermittent stream on USGS quadrangle maps, is the most prominent hydrological feature and forms an approximate 975-foot corridor that flows easterly through the central portion of the property, crosses CTH "LS" and exits into Lake Michigan. The creek is fairly shallow throughout the site and would require constant maintenance dredging to allow any boating activities or harbor uses near its entrance to Lake Michigan.

An additional water feature, in the form of natural springs, occurs within the wetlands of the mill dam impoundment area. The exact locations of these springs are not known or mapped. These natural springs feed into the wetland areas and eventually overflow into Centerville Creek.

Village of Cleveland
Hika Bay Park & Dam Impoundment Area

Map 4 – Existing Wetlands & Vegetation



Prepared by: BAY-LAKE Regional Planning Commission, 1996

Source: Robert E. Lee & Associates, 1996; BAY-LAKE RPC, 1996.

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EXISTING VEGETATION

The Hika Bay Park and dam impoundment contain a variety of vegetation types. A majority of the open areas are covered with mowed grass. Mature deciduous trees, including green ash, willow, and box elder, are present along the banks of Centerville Creek between the dam structure and CTH "LS" and also along the shores of Lake Michigan. Coniferous trees, primarily white and red cedar, are present in the areas east of CTH "LS" with most being planted by local groups over the past five to ten years. Red Osier dogwood and honeysuckle are the primary shrub-type plantings which occur along the Centerville Creek corridor. Additional vegetative features include numerous emergent plant and grass species contained within the emergent wetland areas as indicated previously. Map 4 illustrates the generalized locations of the vegetative features within the site boundaries.

WILDLIFE HABITAT

The existing site conditions, coupled by the fact that it is surrounded by an "urban" setting, keep the variety of wildlife at a minimal level. A site visit in June, 1996 revealed the following types of fauna present: wood ducks, crows, robins, garter snakes, rabbits and field mice. Other small mammals and a variety of bird species also visit different areas of the site periodically.

EXISTING MAN-MADE FEATURES AND FACILITIES

Public Utilities

The three areas of the park are serviced by various public utilities, including sanitary sewer, municipal water, and electricity. Map 5 illustrates the locations of these various service lines. This information was gathered from various village maps and discussions with the Public Works Director and is provided as a general location guide only. Local utility companies should be requested to specifically identify locations on-site for any future construction activities.

Recreational Facilities

In order to determine the current supply of recreation facilities at Hika Bay Park and the dam impoundment, it was necessary to inventory the existing facilities (See Map 5). This inventory was conducted through a field survey in May, 1996. The following is a detailed listing of the recreational and municipal facilities located within the study area:

Hika Dam Area
- 1 concrete boat ramp

Hika Bay Park
- 1 unpaved off street parking lot (approx. 15 spaces) with lighting
- 1 wooden identification sign
- 1 18' x 30' covered wooden picnic area w/ concrete floor & electrical service,
- 1 restroom facility building w/ concrete path to shelter
- 4 picnic tables
- 2 grills
- 4 garbage cans
- 1 boat launch w/ seasonal dock

Municipal Area
- 1 unpaved off street parking lot (approx. 15 spaces) with lighting
- 1 flag pole
- 1 wooden identification sign
- 1 village owned laboratory building w/ restroom facilities (40'x16')
- 1 village-owned wastewater treatment plant (30'x50')
- 1 village owned municipal garage building (40'x70')

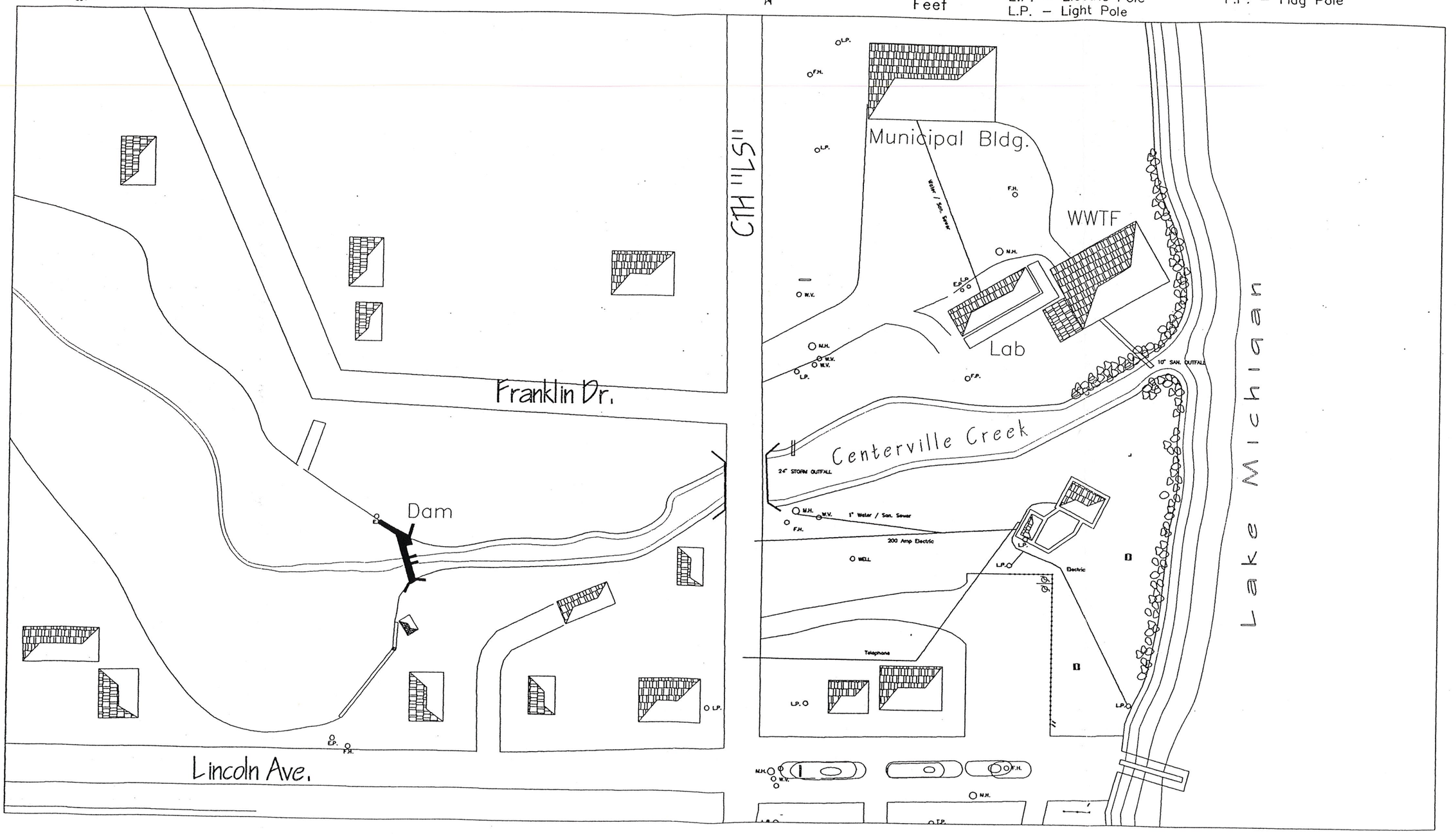
Village of Cleveland

Hika Bay Park & Dam Impoundment Area

Map 5 – Existing Facilities & Utilities

0 75' Feet

M.H. – San. Sewer Manhole
W.V. – Water Valve
E.P. – Electric Pole
L.P. – Light Pole
F.H. – Fire Hydrant
T.P. – Telephone Pole
F.P. – Flag Pole



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Source: Robert E. Lee & Associates, 1996; BAY-LAKE RPC, 1996.

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SITE SUITABILITY ANALYSIS FOR RECREATIONAL USES

Developing a site requires thorough knowledge of natural resource elements and systems, man made features and other relevant data. Only when this data has been collected and analyzed can possible end uses be determined. As part of the planning process for this site, all of the natural features and their associated characteristics were evaluated for limitations to recreational use. The analysis was undertaken for each physical characteristic previously discussed in the inventory portion of this plan.

TOPOGRAPHY AND SURFACE DRAINAGE

The topographic structure of a site is a visual resource that can strongly influence the location of various structures, facilities and recreational functions. Topography can be an asset or a limitation, depending on the type of recreational opportunity for which the site is being designed. For example, intensive play facilities, such as ballfields and court areas, require sites of generally flat topography, preferably less than a three percent slope and should not exceed a six percent slope. On the other hand, passive type recreational uses, such as hiking or nature trails, can utilize a changing topography to add variety to the hiking experience.

Most areas of the site are relatively flat and can accommodate intensive recreational uses with little to no grading. The larger areas of flatter grades associated with the Hika Bay Park and Municipal Areas offer the best opportunities for these activities. The wetland and stream corridor portions of the site in the Hika Dam Area which contain some of the greatest topographic relief, pose severe limitation to intensive-type uses. However, these areas can accommodate certain passive uses, such as trails and picnicking, if properly designed and maintained. Re-grading of these slopes may be necessary in terms of future bank stabilization but re-grading for intensive recreational uses should be kept to a minimum. In basic terms, areas currently containing a 6 percent slope or greater are not recommended for intensive recreational use.

SOILS

One of the primary considerations of any site analysis is soil types. A basic knowledge of soils is important in understanding engineering capabilities of a site to support buildings, roads, parking areas, etc. In addition, soil types provide insight to plant communities which can be supported on-site. The primary soil properties that affect recreational uses are depth, slope, texture, stoniness, natural drainage, percolation rate (permeability), hazard of overflow, and the ability of the soil to sustain weight. Intensive play areas, as defined by the USDA, are those areas suitable for use as playgrounds, athletic fields, or tennis courts, etc. Such uses require a level playing surface, good drainage, and suitability for foot traffic. Extensive play areas are defined as being suitable for picnic sites, parks, nature study and conservation education areas, and for other non-intensive uses that allow for the random movement of people. These uses require fair drainage, suitability for foot traffic, and good ground cover. These areas, as well as some severely limited areas may also be suitable for the development of hiking trails.

Utilizing the soils data obtained from the *USDA Soil Conservation Service Soil Survey of Calumet and Manitowoc Counties* in conjunction with the Commission's Geographic Information System, soils were categorized by the estimated amount of limitation each soil contained for recreational uses. These categories are listed in Tables 2 through 6.

Overall, intensive recreational development is not suitable for most of the areas within the site. However, there have been no problems in the past with the recreation areas within Hika Bay Park. Pond construction and wildlife habitat are suitable elements within the Hika Dam area and additional tree plantings should be kept limited in the Municipal Area.

Table 2: Soil Suitability, Woodland Management

Soil Type	Soil Name	Management Concerns				Potential Productivity	
		Equipment Limitation	Seedling Mortality	Windrow Hazard	Plant Competition	Important Trees	Trees to Plant
Fu	Fluvaquents	N/A	N/A	N/A	N/A	N/A	N/A
MbA	Manawa silt loam	slight	slight	slight	moderate	Sugar / Red Maple, Am. Beech, Green Ash,	Red Maple, Green / White Ash, White Spruce
OaB	Oakville loamy fine sand	slight	severe	slight	moderate	Northern Red Oak, White Oak, Red Pine, Quaking Aspen	Red Pine, Eastern White Pine, Jack Pine
OgB	Oakville-Granby complex	slight	severe	slight	moderate	Northern Pin Oak, White Oak, Red Pine, Quaking Aspen	Red Pine, Eastern White Pine, Jack Pine
TeA	Tedrow loamy fine sand	moderate	moderate	moderate	slight	White Ash, Silver Maple, Eastern White Pine	White Ash, Silver Maple, White Spruce

Source: *Soil Survey of Calumet and Manitowoc Counties, Wisconsin*, USDA, Soil Conservation Service, 1980; and BLRPC, 1996.

Table 3: Soil Suitability, Windbreaks and Environmental Plantings

Soil Type	Soil Name	Trees Having Predicted 20-Year Average Heights (feet)				
		< 8	8-15	16-25	26-35	>35
Fu	Fluvaquents	-	-	-	-	-
MbA	Manawa silt loam	-	N. White Cedar, Lilac, Common Ninebark, Silky Dogwood	White Spruce, Norway Spruce	Eastern White Pine, Red Pine	-
OaB	Oakville loamy fine sand	-	Lilac, Silky Dogwood	Norway Spruce	Eastern White Pine, Red Pine	-
OgB	Oakville-Granby complex	-	Lilac, Silky Dogwood	Norway Spruce	Eastern White Pine, Red Pine	
TeA	Tedrow loamy fine sand	-	Silky Dogwood, Gray Dogwood, Red Osier Dogwood, Am. Cranberry Bush	Northern White Cedar	Eastern White Pine	-

Source: *Soil Survey of Calumet and Manitowoc Counties, Wisconsin*, USDA, Soil Conservation Service, 1980; and BLRPC, 1996.

Table 4: Soil Suitability, Water Management

Soil Type	Soil Name	Pond Reservoir Areas	Embankments, Dikes, and Levees	Aquifer-fed Excavated Ponds	Drainage	Terraces and Diversions	Grassed Waterways
Fu	Fluvaquents	N/A	N/A	N/A	N/A	N/A	N/A
MbA	Manawa silt loam	favorable	hard to pack, wetness	slow refill	percs slowly, floods, frost action	wetness, percs slowly	wetness, percs slowly, erodes easily
OaB	Oakville loamy fine sand	seepage	piping, seepage	no water	not needed	too sandy, soil blowing	droughty
OgB	Oakville-Granby complex	seepage	piping, seepage,	deep to water	not needed	too sandy, soil blowing	droughty
TeA	Tedrow loamy fine sand	seepage	piping, seepage, wetness	favorable	cut banks cave	not needed	wetness, droughty

Source: *Soil Survey of Calumet and Manitowoc Counties, Wisconsin*, USDA, Soil Conservation Service, 1980; and BLRPC, 1996.

Table 5: Soil Suitability, Recreational Development

Soil Type	Soil Name	Camp Areas	Picnic Areas	Playgrounds	Paths and Trails
Fu	Fluvaquents	N/A	N/A	N/A	N/A
MbA	Manawa silt loam	severe: floods, wetness	moderate: wetness	severe: wetness	moderate: wetness
OaB	Oakville loamy fine sand	moderate; too sandy	moderate: too sandy	moderate: too sandy, slope	moderate: too sandy
OgB	Oakville-Granby complex	moderate; too sandy	moderate: too sandy	moderate: too sandy, slope	moderate: too sandy
TeA	Tedrow loamy fine sand	severe: wetness	severe: wetness	severe: wetness	moderate: too sandy, wetness

Source: *Soil Survey of Calumet and Manitowoc Counties, Wisconsin*, USDA, Soil Conservation Service, 1980; and BLRPC, 1996.

Table 6: Soil Types / Wildlife Habitat Potential

		Potential for Habitat Elements					Potential as Habitat For:		
Soil Type	Soil Name	Wild Herbaceous plants	Hardwood Trees	Coniferous Plants	Wetland Plants	Shallow Water Areas	Open Land Wildlife	Woodland Wildlife	Wetland Wildlife
Fu	Fluvaquents	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MbA	Manawa silt loam	good	good	good	fair	fair	good	good	fair
OaB	Oakville loamy fine sand	fair	fair	fair	poor	very poor	fair	fair	very poor
OgB	Oakville-Granby complex	fair	fair	fair	poor	very poor	fair	fair	very poor
TeA	Tedrow loamy fine sand	fair	fair	fair	poor	poor	fair	fair	poor

Source: ***Soil Survey of Calumet and Manitowoc Counties, Wisconsin***, USDA, Soil Conservation Service, 1980; and BLRPC, 1996.

WETLAND/WATER FEATURES

The abundant wetland and water features contained within the site boundaries are ideal for the development of passive recreational uses. A variety of plant life and water features are present which can be viewed by the public via a system of nature trails. There are no viable areas for additional wetland creation and/or expansion.

Trail construction within the wetland areas can be accomplished by developing a system of stream crossings, "boardwalks", and observation decks, the latter two which lay directly on top of the wetland vegetation and soil. Pond construction within the dam impoundment area may be feasible and allow for the enhancement of wildlife potential in this area. No permits may be necessary for these types of structures (See Appendix C), however if they are within floodplain areas, the village's Floodplain Zoning Ordinance should be adhered to. The ordinance states that temporary or permanent structures are not allowed within these areas if they will "adversely affect the loss of valley storage of the floodplain or affect the efficiency or the capacity of the floodway or increase flood heights.....". It is unlikely that this type of structure will cause such damage; however, the Park Committee should evaluate the structures and the floodplain ordinance prior to construction.

VEGETATION / WILDLIFE HABITAT

Vegetation types and patterns represent a significant recreational, visual and ecological resource. Native vegetation types are closely related to soils as well as topography and hydrology. The location of picnic sites, hiking or nature trails and perhaps, most important, wildlife habitats, are greatly influenced by vegetation types and densities.

All of the existing vegetation within the site should be preserved if possible, especially in those areas along steep slopes adjacent to Centerville Creek. These areas are prone to severe soil erosion if vegetative cover is removed. The larger trees present along the shores of Lake Michigan offer excellent canopy for picnicking activities.

Prior to developing a "master site plan" it is necessary to determine the types of active and passive recreational facilities which will be required to serve area residents.

ADDITIONAL RECREATIONAL FACILITIES

Hika Bay Park was initially developed as both a "Neighborhood Park" and a "Regional Park". Neighborhood parks are designed to accommodate all age groups, and are meant to provide a limited combination of intensive (active) and non-intensive (passive) facilities. Facilities commonly provided in neighborhood parks include picnic areas, simplistic playfields and game courts, play equipment, and some off-street parking. Neighborhood parks typically serve a population located within a maximum of one-half mile.

The park is considered "regional" only in the sense that it provides for activities (boating) which extend well beyond the corporate limits of the village. The boat launch facility is widely used and could stand to have some improvements in terms of traffic flow and parking requirements.

In order to determine the type of additional recreational facilities that Hika Bay Park should provide, the previous nominal group survey results (Appendix B), as well as the Cleveland Park Committee's and citizen's input was utilized. These exercises resulted in the identification of several activities and new structures including: trails, bridges, basketball, volleyball, picnic areas, new boat launch facility, fish cleaning station, and parking areas.

PARK ACCESSIBILITY

The Americans with Disabilities Act (ADA) of 1990 requires that "reasonable accommodation" be made to the needs of the estimated one in five people in this country who are disabled. That is, all public and private goods and service providers and employers must remove all structural and communication barriers from facilities, or that they provide alternative access where feasible. Currently, there are no "official" guidelines on making playgrounds and other outdoor recreation activities accessible to physically disadvantaged persons. However, precise guidelines have been developed for all public structures such as restrooms, information centers, and other public and private buildings.

Hika Bay Park is not completely accessible according to the ADA standards. Restrooms, pathways, parking, and general accessibility of all amenities should be addressed over the next few years to ensure that all people are given the same opportunities within the community. The following are basic issues which should be addressed in terms of park accessibility; Appendix D contains more detailed accessibility guidelines and definitions:

- All restroom facilities should be accessible by persons with disabilities. In some cases, this would require minimal remodeling, in others, it could require substantial modifications.
- At least one picnic table and one grill designed to accommodate persons in wheelchairs should be available at each park (if these types of facilities are not currently available).
- One in 25 parking stalls should be designated for disabled parking. These stalls should be the closest spaces to the park or facility entrance and have a direct route to and from the stall to a marked adjacent access aisle of 60 inches and must have an unobscured vertical sign that shows the universal symbol of accessibility. Slope of these spaces and aisles cannot exceed 1:50.
- Firm, slip resistant, barrier-free pathways linking park facilities within each park is recommended. They should be at least 36 inches wide, with a 60 inch by 60 inch passing space or turnaround provided every 200 feet. If a pathway level changes more than ½ inch, the pathway should be ramped. If the level change is between ½ inch and ¼ inch, the levels should be beveled.

- Where water fountains are available, spouts should be no more than 36 inches above the finished floor. If the fountain is freestanding or built-in and does not have a clear space underneath, a clear floor space of 30 to 48 inches alongside the fountain for a parallel approach should be provided. A wall or post of at least 27 inches high by 17 to 19 inches deep by 30 inches wide should be provided. Controls should be located at the front edge of the fountain and operable with one hand without twisting the wrist.

ADA COMPLIANCE DEADLINES

The Americans with Disabilities Act has set specific deadline dates for being in compliance. Those dates are as follows:

- Program Accessibility - as of January 26, 1992, all local government programs were to be accessible to individuals with disabilities.
- Existing Buildings and Facilities - Non-structural changes were to be made as soon as practical, but no later than January 26, 1992.
- Structural changes are to be made as soon as possible, but no later than January 26, 1995.
- New Construction - Any new construction or remodeling to buildings or facilities begun after January 26, 1992, must provide access for individuals with disabilities.

ADA ACCESSIBILITY RECOMMENDATIONS

The following specific recommendations related to improving ADA accessibility were made by Bay-Lake Regional Planning Commission during the on-site inventory of the Hika Bay Park facility:

- Identify ADA parking near bathrooms
- Install ADA accessible path from parking area to bathroom
- Increase bathroom doorway widths to 36 inches
- Increase bathroom stall widths to 60 inches and depth to minimum of 59 inches
- Install grab bars in stalls 33 to 36 inches above floor
- Install square or lever type sink faucet handles
- Increase height of sink aprons to 30 inches
- Increase height of toilet seats to 17 to 19 inches above floor

ADA TRANSITION PLAN

The Americans with Disabilities Act also requires that an ADA Transition Plan be prepared which outlines the costs, priorities, timeframes, and responsibilities for ADA improvements necessary to all public recreation facilities. The information is contained in the last portion of this plan regarding phased development of the entire park area and contains all the necessary information to meet the requirements of an ADA Transition Plan.

Map 6 illustrates the recommended development plan for Hika Bay Park and the dam impoundment. The master plan is a culmination of public and committee ideas, as well as professional recommendations, which has taken nearly seven months to develop. The plan represents a desired future vision for the park which includes areas for both passive and active forms of recreation in concert with habitat restoration and preservation and the continued use of property for municipal purposes. The plan has met the major objectives of the committee which were outlined early in the process.

OVERALL DESCRIPTION

The location of this park site in relation to the village and Lake Michigan makes it an important recreational area. With new residential growth occurring in this area, as well as it being along the "Lake Michigan Circle Tour" route, the park will need to satisfy increased demands for recreational opportunities in the future. Basically, the recommended master plan provides for all active forms of recreation (sports play facilities) to be contained within the Hika Park area to the south of Centerville Creek. Boat launch activities and all municipal operations would be contained in the municipal area to the north of Centerville Creek. The Hika Dam area would contain a majority of the passive recreational activities except for the extension of trails throughout both areas to the east of CTH "LS". Other issues addressed in the overall master plan include provisions for the following items:

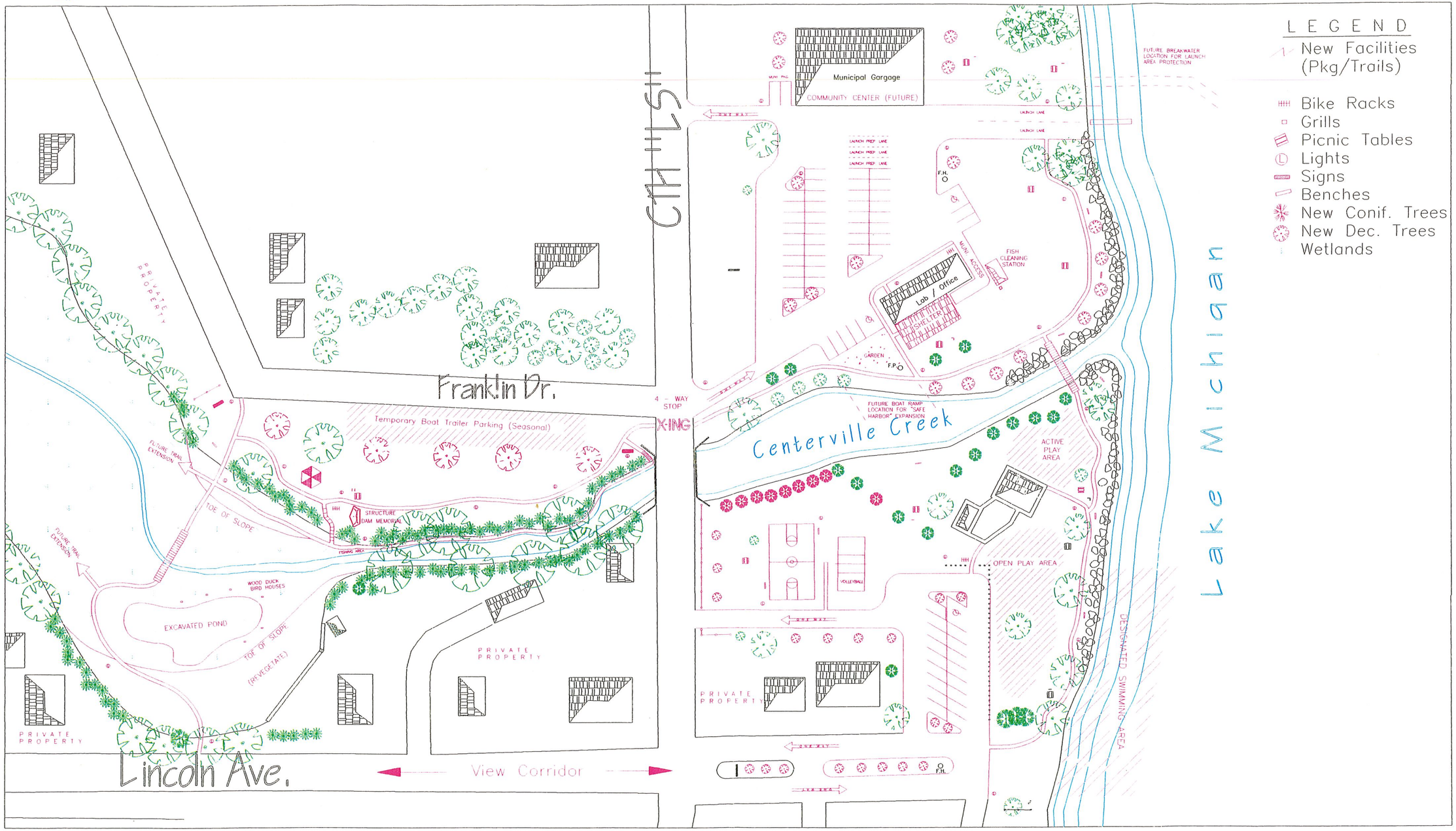
1. Multiple entrance / exit points to the various areas of the site;
2. The "connection" (both visual and physical) of the three park areas (via crosswalks and bridges);
3. Identification of the local/regional historical significance of the site;
4. Opportunities for local club/organization activities and involvement;
5. Buffering of adjacent land uses (minimizing impacts to adjacent property owners);
6. Inclusion of all *Manitowoc County Park and Recreation Plan* projects;
7. ADA accessibility and differing "challenge levels";
8. Improved safety / security (by means of redefining parking area with one-way traffic flows and adding addition signage, lighting, and fencing);
9. Improvements in environmental resources and the elimination of existing aesthetic problems;
10. Incorporation of the dam removal; and,
11. The addition of new passive recreational facilities (trails, picnic tables, benches, grills, bicycle racks, etc.).

Village of Cleveland
Hika Bay Park & Dam Impoundment Area

Map 6 – Recommended Master Plan

N

0 75'
Feet



LEGEND

- New Facilities (Pkg/Trails)
- Bike Racks
- Grills
- Picnic Tables
- Lights
- Signs
- Benches
- New Conif. Trees
- New Dec. Trees
- Wetlands

Prepared by: BAY-LAKE Regional Planning Commission, 1997.

Source: Robert E. Lee & Associates, 1996; BAY-LAKE RPC, 1997.

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Overall Trail System

An ADA accessible trail system will provide pedestrian and emergency access throughout the different areas of the site. This system should have railings placed along it as needed. The trail system minimizes disturbances to any major vegetation communities, while maximizing accessibility and connectivity of various site features with opportunities for future trail extensions. The trail system will be developed in three phases and totals approximately 2,392 linear feet (0.45 miles). These trails will address three different ADA "challenge" levels (See Map 7):

- Fully Accessible: approximately 1,032 feet of paved or hard surface trails which can be utilized by wheelchairs.
- Challenge Level 1: approximately 1,139 feet of hard packed (gravel) trails along steeper slopes (still accessible by wheelchairs)
- Challenge Level 2: approximately 221 feet of trails made of wood chips or other soft material including areas with steep slopes or stairways.

Appendix E contains additional information, recommendations, and standards for accessible trail development. Again, Appendix C should be referred to for wetland permits.

Trail heads located on all sides of the site provide access from various areas which could eventually link up with other village owned recreational sites. The main trail head is located at the western most point of the Hika Dam area at the point where Franklin Drive turns slightly northward. Picnic areas are interspersed throughout the trail system to offer resting spots and views of the surrounding landscape. Consistent signage is placed throughout the trail system both to guide users, and to offer educational information about some of the sites natural features.

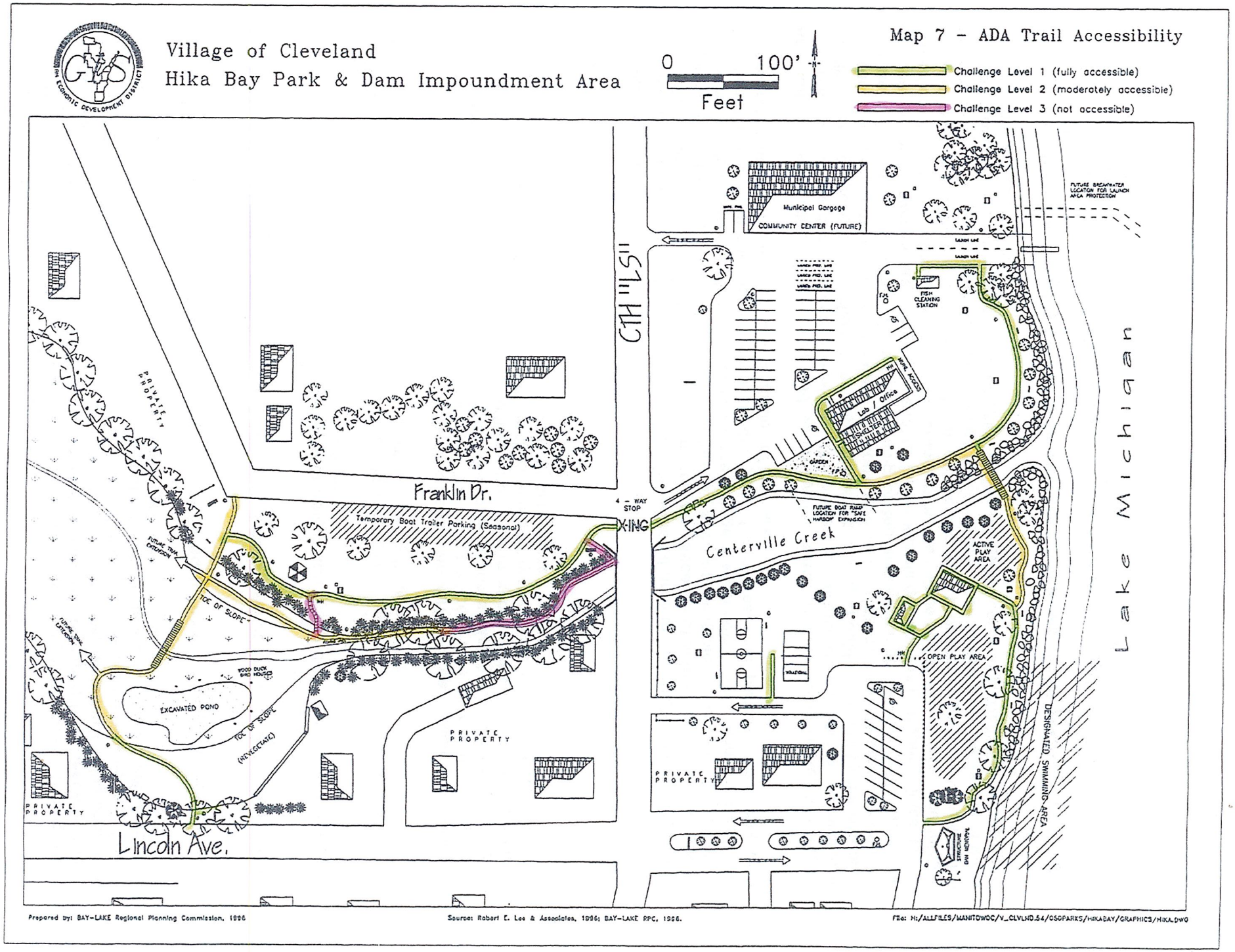
HIKA DAM AREA

General Description

The Hika Dam area is generally kept as a passive recreational area in the master development plan. The major issue within this area is that of the dam removal. Because of safety concerns, the WDNR is requiring the village to remove the dam structure as soon as possible. Currently, the WDNR is reviewing a "dam removal plan" prepared by the village's engineers. This plan does not have significant impacts on the development of this area for recreational purposes and has been incorporated into the master plan for this portion of the park.

An additional issue which needs to be addressed by the village in more detail relates to property ownership within the dam impoundment area. The ownership of this area is unclear according to existing property records. A portion of the impoundment property should be owned by the village as a result of acquiring ownership of the dam structure due to tax delinquency. However, traditional riparian rights may be in effect since the draining of the impoundment. These rights state that adjacent property owners may assume claim to land extending from their property lines to the centerline of a creek or river. A legal opinion obtained by the village states that due to uncertainties in ownership, the village has no authority in developing the property except for landscaping improvements. It is recommended that the village research this issue further and initiate one of three actions to resolve any ownership disputes prior to the construction of improvements in this area. These actions are as follows:

1. Allow adjacent property owners to file 'quit claim deeds' which will give ownership to the village;
2. Negotiate with adjacent property owners to purchase land outright; or
3. Negotiate with adjacent property owners to purchase or grant easements for use of the property.


Village of Cleveland
Hika Bay Park & Dam Impoundment Area
Map 7 - ADA Trail Accessibility
0
100'
Feet
Challenge Level 1 (fully accessible)
Challenge Level 2 (moderately accessible)
Challenge Level 3 (not accessible)
Municipal Garage
COMMUNITY CENTER (FUTURE)
FUTURE BREAKWATER LOCATION FOR LAUNCH AREA PROTECTION
CTH "LS"
FISH CLEANING STATION
Lab / Office
GARDEN
Franklin Dr.
Temporary Boat Trailer Parking (Seasonal)
4 - WAY STOP
X-ING
FUTURE BOAT RAMP LOCATION FOR "SAFE HARBOR" EXPANSION
Centerville Creek
ACTIVE PLAY AREA
OPEN PLAY AREA
Lake Michigan
DESIGNATED SWIMMING AREA
PRIVATE PROPERTY
FUTURE TRAIL EXTENSION
TOE OF SLOPE
WOOD DUCK BIRD HOUSES
EXCAVATED POND
TOE OF SLOPE (REVEGETATE)
Lincoln Ave.
Prepared by: BAY-LAKE Regional Planning Commission, 1996
Source: Robert E. Lee & Associates, 1996; BAY-LAKE RPC, 1996.
File: H:/ALLFILES/MANITOWOC/V_CLVLND.54/OSOPARKS/HIKABAY/GRAPHICS/HIKA.DWG

Additional improvements to the Hika Dam area fall into several categories and are described as follows:

Active Recreation Improvements

Active recreational activities within the Hika Dam area are kept to a minimum. The construction of trail system nearest the Centerville Creek corridor should provide areas and facilities to accommodate the needs of local fisherman. This portion of the creek has been utilized for fishing activities for many years. The construction of a pond (described below) can also offer winter ice skating as an activity. Depending on the activity level actually experienced, the village may wish to consider the construction of a temporary warming shelter.

Passive Recreation Improvements

In addition to the previously mentioned trail system, new passive recreational equipment (picnic tables, benches, gazebo) will be constructed as shown on the plan. These facilities should be distributed evenly throughout the property in locations most suitable for viewing the dam impoundment area and Centerville Creek corridor.

Wildlife / Habitat Enhancements

The Master Plan calls for the development of one wildlife pond within the dam impoundment area. This pond is excavated and placed to the south of Centerville Creek and will utilize some of the natural springs as a water source. Permits may be required for the construction of this pond and professional engineering services should be acquired to assist in this portion of the project. Preliminary discussions with the WDNR indicated a positive response for this type of project.

The master plan also calls for improvements to the impoundment area by placing fill in perimeter areas for slope reduction and stabilization purposes. The plan indicates where the final "toe of slope" should be and is consistent with the existing dam removal plan. These improvements will also assist in the stabilization of an existing private concrete retaining wall located at the southeastern end of the impoundment area. All soil movement activities should require the installation of appropriate erosion control practices to avoid degrading the water quality of Centerville Creek.

Additional habitat enhancements include the construction of habitat structures for wood ducks and other wildlife; the planting of new trees and vegetation throughout the park; and management of the wetland areas by performing occasional burns to reduce the overgrown vegetation.

Other Improvements

With the assumed increase in activity within the Hika Dam area, it will be necessary to construct additional items for safety and security purposes. It is recommended that additional signage be placed near CTH "LS", not only to identify the area as a village owned park, but for safety purposes as well. A crosswalk should be painted on CTH "LS" as indicated to improve pedestrian safety. The village should also contact the county to explore the creation of a four-way stop at the intersection of Franklin Drive and CTH "LS". Additional signage should be placed near park boundaries to identify where private property is located.

Additional lighting, of an appropriate historical style and scale, should be placed along the trails and near the entrance points to the park. This lighting will encourage pedestrian traffic to follow specific routes and eliminate security problems with adjacent property owners.

Additional boat ramp overflow parking is identified on the south side of Franklin Drive. This parking is considered temporary seasonal parking and should be identified as such. Parking areas are located on existing grassed areas which eliminates the need for expensive graveling or blacktopping.

MUNICIPAL AREA

General Description

The master development plan for the municipal area calls for major changes to occur during the planning period. The recommended park design for this portion assumes that the existing wastewater treatment facility will be removed from its current site, as it is being replaced by a new facility approximately one mile north of the park. Additional assumptions include the continued use of the lab building by the village as well as the municipal garage.

Active Recreation Improvements

The most prominent feature of the new park design is the creation of a new boat launch facility at the northern end of the municipal area. The new facility would contain two individual boat ramps plus a seasonal pier, similar to the existing facility. The new location improves the safety of this high traffic facility by placing it further from children's activities located at the southern end of the park. An additional option exists to construct a small groin or concrete breakwater to reduce northerly winds and wave action.

Additional blacktopped parking (approximately 17 boat-trailer or 51 car spaces) is provided in the municipal area to serve the boating community. This parking area institutes a one-way traffic flow to improve visibility and safety, and also provides separate car and municipal-only parking areas. The parking lot exit lines up with Franklin Drive to further improve traffic flow. Identified stalls serve as launch preparation areas and ample room is given in front of the municipal building for the movement of equipment. Minimal impacts to existing utilities are also a benefit of this design. The parking area is designed to accommodate the potential expansion of the boat launch area into a "safe harbor" by constructing a new ramp facility at the western end of the lab building in the area of the garden. This type of expansion would be very expensive and may not be feasible in the long-term; however, the master development plan allows for this modification, if necessary.

The master development plan also calls for the eventual construction of a fish cleaning station near the boat ramp. This station would be approximately 10 feet by 12 feet and be ADA accessible. Existing utilities are nearby and efforts should be taken to reduce any noxious odors associated with such a facility.

The area to the south of the new boat ramp will primarily be used for passive activities; however, during fishing derbies or other community festivals/events, the open space allows for the erection of display and food tents without interfering with other activities. This area should be free of trees and other plantings to keep it accessible.

Passive Recreational Improvements

In addition to the previously mentioned trail system, the master development plan illustrates a wooden bridge to be constructed across Centerville Creek. This bridge would serve to provide access to the Hika Bay Park area and eliminate the need for pedestrians to cross the narrow bridge on CTH "LS". Permits may be required for such a structure and design details should be researched well prior to construction. Picnic tables and grills should be placed throughout the area as necessary.

A new covered shelter is also planned for construction at the southern end of the existing lab building. The shelter may be attached to the building and its existing roofline extended. This shelter should have a concrete floor and picnic tables placed within it. The design of the shelter should allow for continued vehicle access to the rear of the lab building.

The village intends to utilize the municipal garage for at least the next several years; however, if a new location for this facility is chosen, the building itself could stay and be re-used as a "community center". This community center could offer village residents opportunities to gather for indoor events or activities (including indoor volleyball) in an appropriate location and setting.

Other Improvements

Additional improvements in this area include the installation of new lighting along the trail and in the parking areas; the erection of signage for traffic control and security, and; the addition of new vegetation (trees) and a flower garden as indicated. A public telephone may be useful as well.

HIKA BAY PARK

General Description

The Hika Bay Park portion of the site is utilized for most of the active recreational activities according to the master development plan. By separating the boat launch facility from the children's active areas, a greater level of safety is achieved as well as a reduction in usage conflicts. The original entrances and exits to the park are retained and many improvements are planned as follows.

Active Recreation Improvements

The two major active recreation facilities to be constructed in this portion of the park include a full size basketball court (this court should be oriented in a north - south manner for minimal distractions from sunlight angles) and a volleyball court. Fencing or additional tree plantings should be erected along the Centerville Creek corridor to minimize the possibility of stray balls landing in the creek. Additionally, benches and lighting may be added to these facilities to expand the recreational opportunities.

Additional intensive recreational uses include the designation of an "active play area" in the northeastern most corner of Hika Bay Park. This area should be developed with equipment such as swing sets, jungle gyms, teeter-totters, etc. All surface areas beneath this equipment should comply with ADA requirements and provide for a soft landing surface in case of falls. An "open active play area" is designated to the east of the parking lot along the shores of Lake Michigan.

Lastly, a swimming area is designated near the existing boat ramp (which will be removed). By designating it as such, swimmers will be out of the proximity of the boat launch; again, improving safety. The existing right-of-way for the boat launch should be vacated by the village at some point.

Passive Recreation Improvements

The previously mentioned trail and bridge system account for the passive recreational improvements in this section of the park site. The existing shelter and bathroom facilities are to remain with only some of the previously discussed ADA improvements made.

Other Improvements

Improved blacktopped parking (approximately eight boat-trailer overflow spaces or 17 car spaces) is provided in the same area as the existing lot. This parking area also institutes a one-way traffic flow to improve visibility and safety. Modifications to the existing entrance median are called for to eliminate one gap and simplify the design. Additional landscaping, lighting and signage should be constructed to improve the appearance and safety of the parking facilities as well as minimize the impacts to the adjacent commercial property.

Due to local concerns regarding the dam removal, the master development plan illustrates a dual-purpose historical memorial at the location of the existing boat ramp. This structure could contain a plaque or other media on which to place information regarding the history of the Hika Bay community and the dam impoundment. Appendix F gives an example of a design for such a structure. This example treats the structure as more of a sculptural element within the park. It is made of simple materials such as concrete to mimic the original dam. If the village wishes, an inexpensive pump and piping system could provide Lake Michigan water to the sculpture for a "waterfall" (which could also be used by bathers for washing sand off themselves). This project may be very suitable for a local club or organization.

Additional tree plantings and fencing should be installed to buffer the adjacent commercial property as well as limit any pedestrian access directly to CTH "LS".

Capital improvements to a recreation facility are the non-routine improvements or the new additions to the facility that would improve the overall value and usefulness of the park. For example, remodeling a restroom to meet ADA standards or buying a new jungle gym are both capital improvements. These improvements are identified and usually funded individually through municipal funds. Capital improvements come about for several reasons. A community may need to make improvements to modernize outdated facilities, upgrade deficient facilities to correct health and safety hazards, or to be in compliance with certain standards such as those set forth in the Americans with Disabilities Act of 1990.

Routine maintenance of existing facilities does not increase the facility's value or usefulness, therefore, routine maintenance expenses are usually funded through the city's recreation department operating and maintenance budget. When a project is considered both a major improvement and a form of maintenance, the cost will become the determinant of whether the project is a capital improvement or not.

Table 7 is a listing and general cost estimate of the proposed capital improvements and annual park maintenance costs that were put together by the village of Cleveland Park Committee and the Bay-Lake Regional Planning Commission based on the previous inventory, assessment, and recommended development plan. As shown, the majority of capital improvements for the next several years consists of many accessibility improvements and initial trail construction. This is due to the fact that the deadline for such improvements was to be January 26, 1995. It is assumed, at this point, that efforts would be made to acquire additional funding from other public and private sources to cover the balance of the project costs.

Table 7: Estimated Capital Improvements Plan and Budget.

Timeframe / Prioritization	Proposed Project	Unit Cost	Amount	Unit	Total Cost Estimate
Annual	Maintenance	$2,000.00	15	years	$30,000.00
Annual	Utilities	$500.00	15	years	$7,500.00
1997	ADA Accessibility Improvements	$2,500.00			$2,500.00
	Dam Impoundment Land Acquisition	$5,000.00			$5,000.00
	Trail Development (Phase 1)				
	Clearing/Grubbing	$1.75	700	lineal feet	$1,225.00
	Trail Construction	$15.00	700	lineal feet	$10,500.00
	Boardwalk Construction	$10.00	332	lineal feet	$3,320.00
	Trail Enhancements (benches, etc.) (Phase 1)	$1,000.00			$1,000.00
	Wildlife Habitat Enhancement (Phase 1)	$5,000.00			$5,000.00
	Park Signage / Lighting	$2,000.00			$2,000.00
	Municipal Area Parking Lot Improvements	$5.00	1112	sq. yds.	$5,560.00
	Trail Development (Phase 2)				
	Clearing/Grubbing	$1.75	1139	lineal feet	$1,993.25
	Trail Construction	$12.00	1139	lineal feet	$13,668.00
	Trail Enhancements (benches, etc.) (Phase 2)	$1,000.00			$1,000.00
	Basketball Court	$7,000.00			$7,000.00
	Volleyball Court	$1,000.00			$1,000.00
	Active Play Equipment	$7,500.00			$7,500.00
	Park Signage / Lighting	$2,000.00			$2,000.00
	Hika Bay Park Parking Lot Improvements	$5.00	473	sq. yds.	$2,365.00
	Landscaping / Tree Planting	$5,000.00			$5,000.00
	Bicycle Racks	$200.00			$200.00
	Trail Development (Phase 3)				
	Clearing/Grubbing	$1.75	221	lineal feet	$386.75
	Trail Construction	$7.00	221	lineal feet	$1,547.00
	Trail Enhancements (benches, etc.) (Phase 3)	$2,500.00			$2,500.00
	Hika Dam Area Gazebo	$3,000.00			$3,000.00
	Lab Building Shelter	$5,000.00			$5,000.00
	Fish Cleaning Station	$7,500.00			$7,500.00
	New Boat Launch Facility	$20,000.00			$20,000.00
2016	Dam Memorial Structure	$5,000.00			$5,000.00
	TOTAL CAPITAL IMPROVEMENT COST				$122,765.00
	TOTAL ANNUAL MAINTENANCE COST				$2,500.00
	Average annual cost over 15 year time-period				$10,684.33
	Average annual cost over 20 year time-period				$8,638.25
	Average annual cost over 25 year time-period				$7,410.60

Source: Foth & Van Dyke, 1994; and BLRPC, 1996

Note: These are estimates only and do not account for any donated materials or labor. Actual costs may vary.

POTENTIAL RECREATIONAL FUNDING SOURCES

Funding for recreational development can come from a number of sources both public and private. Most funding for this type of development, however, comes from public local funds. Primarily, local funds come from a number of sources including the sale of bonds, allocations from the local tax base, and donations from individuals and organizations. Non-local funding can come from a number of sources, either in the form of a grant or a loan.

WISCONSIN DEPARTMENT OF NATURAL RESOURCES PROGRAMS

The Wisconsin Department of Natural Resources is probably the main source of funds for outdoor recreation facilities. As a prerequisite to the following WDNR funding programs, applicants must first submit a comprehensive outdoor recreation plan such as this plan or a master plan which has been approved by resolution by a local governing unit or a plan of a higher unit of government. Applicants submitting qualifying comprehensive outdoor recreation plans or master plans may receive eligibility to apply for funding for up to five years. There are four major funding programs and one foundation established that help support the outdoor recreation needs and improvements in the state of Wisconsin. Administered by the Wisconsin Department of Natural Resources those programs include; 1) Land and Water Conservation Fund Act Program (LAWCON); 2) Aids for Acquisition and Development of Local Parks (ADLP); Urban Green Space Program (UGS); 4) Urban River Grants Program; and 5) The Natural Resources Foundation of Wisconsin (NRF). The first four programs have an annual application deadline of May 1, while the last has an annual deadline of February 2.

Land and Water Conservation Fund Act Program

LAWCON provides financial assistance to state agencies, counties, villages, towns, school districts, cities and Indian tribes for the acquisition and the development of public outdoor recreation areas and facilities. The program provides up to 50 percent reimbursement grants for approved state and local projects. Competition for LAWCON funds is on a statewide basis.

Aids for the Acquisition and Development of Local Parks (ADLP)

ADLP provides up to 50 percent matching grants to towns, villages, cities, counties or Indian tribes to acquire or develop public outdoor recreation areas. Funds are apportioned on a department district allocation system, with 70 percent of the funds distributed on the basis of each county's proportionate share of the state population and 30 percent distributed equally to each county. Qualified nonprofit conservation organizations may also be eligible for land acquisition grants through the ADLP program.

Urban Green Space Program (UGS)

UGS provides 50 percent matching grants to cities, villages, towns, counties, public inland lake protection and rehabilitation districts, and qualified nonprofit conservation organizations for the acquisition of land. The intent of the program is to provide natural space within or near urban areas, protect scenic or ecological features, and provide land for non-commercial gardening.

Urban River Grants Program

The Urban River Grants Program provides up to 50 percent of matching funds to towns, cities, villages, counties, and Indian tribes for the acquisition of land or rights in land on or adjacent to rivers that flow through urban areas that preserves or restores urban rivers or riverfronts for the purposes of economic revitalization and encouraging outdoor recreation activities.

Natural Resources Foundation

This small matching grants program provided six grants for trail projects in 1995 between $125 and $500 each. For an application, write to the Natural Resources Foundation, PO Box 129 Madison, WI 53701 or phone (608) 266-1430.

WISCONSIN DEPARTMENT OF COMMERCE

In addition to Wisconsin Department of Natural Resources programs, the following WDOC grant program may also provide a source of funding for recreational projects:

Community Development Block Grant (CDBG) - Public Facilities Grant Program

The Wisconsin Department of Commerce administers a program know as the Community Development Block Grant program. Under this program, up to 100 percent funding may be obtained in the form of a grant for improvements of recreational and open space projects when the projects are a part of an overall community development program for public facilities construction or housing improvements. Award of this grant is based on strong competition with other applicants.

WISCONSIN COASTAL MANAGEMENT PROGRAM

The Wisconsin Department of Administration, under its Coastal Management Program, has funds available for waterfront redevelopment or public access low cost construction grants. These funds are aimed at stimulating renovation of under used or deteriorated waterfronts (lakes and rivers) along the Great Lakes, to help boost the local economy and make waterfronts more accessible and enjoyable to the public. Examples of eligible projects include walkway construction, piers, viewing decks, and restoration of historic buildings. Funds may be used for land acquisition, labor costs, and material costs.

NATIONAL RECREATIONAL TRAILS FUND

The National Recreational Trails Fund (NRTF) was renewed as part of a highway bill by President Clinton. The bill provides $15 million a year for the next two years for the NRTF. The original NRTF "Symms Act" authorized up to $30 million a year, but only $7.5 million was appropriated the first year, and nothing since then. Although total NRTF funding is twice what it was, Wisconsin's share is expected to be only slightly more than the $237,503 it received in 1993. Local governments, counties, tribes, school districts, state and federal agencies, and incorporated organizations may apply for grants under the program in Wisconsin. The grants may be used for developing urban trail linkages, maintaining trails, restoring damaged areas of trails, developing trailside and trail head facilities, improving access to trails for people with disabilities, acquiring easements or corridors, or construction of new trails. Cash payments of donations of labor, material, service, or land may be used as the 50 percent non-federal share of the project costs. May 1 is the application deadline. For a copy of the program guidelines, application form or for more information, contact the WDNR regional office.

INTERMODAL SURFACE TRANSPORTATION EFFICIENCY ACT - ENHANCEMENTS PROGRAM

In the 1995-97 state transportation budget, the Legislature cut funding for the ISTEA program from $4.4 to $3.0 million a year. The budget cut means that no new projects will be approved for federal fiscal years 1996-98. The Wisconsin Department of Transportation will use the funds approved this year to honor commitments made to Enhancement Program projects approved in previous years. There is no funding to pay for any new projects. The DOT will not solicit applications for the Enhancements Program again until the next federal transportation bill is passed in the fall of 1997 and it's known whether funding for the program is renewed. Because the federal government will not fully fund ISTEA, states are going to receive less federal money than originally expected.

ALTERNATIVE REVENUE SOURCES

Numerous community groups and organizations may be able to assist the village in providing funds, materials, or labor and reduced costs for enhancements at Hika Bay Park or the impoundment area. These types of activities often assist in fostering community spirit and pride. Organizations present within the village include the: VFW Post, Cleveland Auxiliary Post 8974, the Cleveland PTA, Jaycee's, Fish & Game, Athletic Club, Lions Club, Chamber of Commerce, Boy/Girl Scouts, 4-H, and the East Wind Garden Club. Many of these activities could be expanded to become "family" events or fund-raisers. Another more non-traditional source of funding could include a user fee, or "usage tax" imposed by the village (this idea had somewhat favorable responses in the UW-Extension survey).

INCLUSION IN COUNTY COMPREHENSIVE RECREATION PLAN

This plan, once approved at the local level should be sent to the Manitowoc County Planning and Parks Department for its inclusion, or reference to, the *Manitowoc County Comprehensive Outdoor Recreation Plan* which is currently being updated. By doing so, it will improve the overall communication and coordination between the village and the county concerning recreational activities as well as keeping the village eligible for future funding opportunities through the Wisconsin Department of Natural Resources.

APPENDIX A - PLAN ADOPTION RESOLUTIONS

RESOLUTION No. 1

A RESOLUTION ADOPTING A PARK SITE DEVELOPMENT PLAN FOR THE VILLAGE OF CLEVELAND (HIKA BAY PARK & MILL DAM)

WHEREAS, the Village of Cleveland Park Committee has prepared a plan with the intent of guiding and accomplishing the coordinated, adjusted, and harmonious development of Hika Bay Park and the Mill Dam ;

AND WHEREAS, a Park Site Master Plan for Hika Bay Park and the adjacent Mill Dam has been prepared that contains maps, tables and descriptive material;

AND WHEREAS, the Park Site Master Plan has been reviewed by the public and recommended for approval by the Park Committee and Plan Commission;

NOW, THEREFORE BE IT RESOLVED that the Village of Cleveland Board hereby adopts a recreational development plan entitled: *Village of Cleveland Park Site Master Plan - Hika Bay Park & Mill Dam.*

Dated this 13th day of May, 1997.

Resolution introduced and adoption moved by Trustee Kirsch

Motion for adoption seconded by Trustee Bour

Voting Aye: 7 Nay: Ø

APPROVED:

Kurt R. Kaiser

Chairperson

ATTEST:

Pamela L Klabechek

Secretary

Nominal Group Exercise, Village of Cleveland, March 21, 1996

PARTICIPANTS

Name	Representing
Ray Gordon Jr.	Citizen
Cletus Wagner	Citizen
Andrew Deehr	Citizen
Mac Scroggins	Citizen
Nila Born	Village
Cheryl Kohl	Village
Steve Simons	Village
Ken Schnell	Citizen
John M. Kirsch	Village (Park Cmte. Chair)
Judith Perlman	East Wind Garden Club
Cindy J. Huhn	Citizen
Larry Huhn	Citizen
Dale Wagner	Cleveland Athletic Club
Dorothy Anderson	Citizen
Wally Leonhard	Cleveland Athletic Club
Linda Dassler	Citizen
Larry Dassler	Citizen
	Citizen

STEP 1: The following issues and concerns, regarding the future recreational development of the village of Cleveland, were identified from the nominal group process.

STEP 2: After the issues/concerns were generated, each person in the group chose the five issues which were deemed most important (in rank order) to them. The most important issue was given a score of five points, the second most important , four points and so on, with the least important issue scoring 1 point. These scores were tallied with the following results:

Score	Issue
Group 1	
41	Interconnection of parks
24	Create teen center
15	Restrooms at Dairyland
14	Ice-skating (Hika)
9	Soccer field at Dairyland
9	Play equipment at all parks (safety)
8	Improved lighting/security
8	Possibility for alternative rec activities (skateboards\rollerblades, etc.)
8	Central concession stand at V.M.
7	Beach maintenance \ swimming
7	Walkway restored at Hika - Lincoln & Franklin

Group 1, Continued

Score	Issue
7	Ski \ hiking trails at Henley
5	Nature trail signs on Henley \ Flora \ Fauna
5	Roller hockey in tennis courts (V.M.)
5	New volleyball court at Hika
5	Tree planting (landscaping at dairy. & Hika)
4	Manmade pond at Hika (no dam)
4	New seating for softball at V.M.
3	Expand parking (West lot) at VM
3	Develop wetlands at Henley
3	Uniform signage at all parks
3	Bike racks
2	Improve Dam Area (Visually)
1	Creation \ redesign of basketball courts (V.M.)
1	Consistent dredging at boat landing
	Plant hardwood trees on Henley
	Enhancement of picnic areas
	Shelters are good & used a lot
	Fish cleaning station at Hika
	ATV trails
	Improve parking surface at Hika
	Henley memorial (per agreement)
	More days for summer rec program
	Buffering of adj. land uses (noise \ lights)
	Band Shelter
	Bench type seating at Hika (lake)
	Alt. baseball diamond at Dairyland
	Swimming pool site
	Racquetball courts
	Lights on new baseball field (V.M.)

Score	Issue
<u>Group 2</u>	
30	Electrical upgrade at Dairyland Park
21	Preserve natural qualities of dam area
21	Better tree care (planting and maintenance)
17	Develop trails and wildlife areas at all parks-with trails connecting the parks
15	Control vandalism at all parks
14	H.B. - Better area for children (bugs, multiple use)
14	D.P. - Toilets and shelter
11	D.P. - Develop more recreational facilities
11	Modern playground equipment at any of the parks
11	Improve night lighting at Hika Park
10	Develop a pond at dam area

Group 2, Continued

Score	Issue
8	Develop a forestry plan at Henley area
7	Improve parking and access at Hika Bay Park
7	Remove v. maintenance shop from lake front
6	Develop a rec. trail system at Hika Bay
6	Permanent steel or fiberglass tables & benches at Hika & dam area
6	Landscaping stones removed from pavilion area at Hika Bay
6	Improve lighting and walking path at the dam area
6	Develop a decent ice skating area
5	Need more benches at Hika Bay Park and other parks
5	Develop a roller hockey - ice hockey area
5	Improve security at Hika Park
4	Improve east parking area at Vet. Park
4	Develop a pond at Veterans Park
4	Develop basketball court(s) at parks
3	Better snowmobile access to the county trail at Hika Bay
2	Develop a dog run area - encourage people to clean up after their dog
	Build permanent feeding stations and bird houses at D.P.
	Remove dam at Hika Bay
	Safer area for sledding at Vets Park
	New bleachers at the softball diamond
	Improve traffic control at Hika Bay - slow traffic speed
	Develop foot bridge at Hika Bay across Centerville creek
	Naturalized landscape at all parks
	Grandstand improvement at Vets. Park (safety)
	Another volleyball court at Hika Bay
	New concession stand by the volleyball courts at Vets Park

STEP 3: The top seven issues from each group were combined into one set and fleshed out to remove issues which were similar. Then, all of the participants were asked to choose the top five issues, in order of importance. These issues were ranked with a score of 5,4,3,2, or 1 depending on their relative importance. The scores were tallied with the following results:

Score	Issue
23	Develop a pond, trails, and wildlife areas at all parks
19	Interconnection of parks
12	Unattractiveness of dam area
8	Upgrade electrical services at Dairyland park
7	Better play area for children at Hika Bay
7	Restrooms at Dairyland
6	Control vandalism at all parks
6	Manmade pond at Hika
4	Create teen center
3	Shelter at Dairyland Park

Group 3, Continued

Score	Issue
3	Develop more modern recreational facilities-playground equipment at all parks particularly Dairyland Park
3	Walkway at Hika (Lincoln \ Franklin)
1	Need electric \ water at V.M.

RESULTS: As can be seen from the final rankings, the most important issues related to the future development of a village wide trail system which connects most of, or all of the park facilities. Other concerns of importance relate to general physical/equipment improvements at Hika Bay and Dairyland Park. These issues and concerns will be utilized in alternative park site plan designs to express the future recreational development needs for the village of Cleveland. A separate "community visioning" and needs analysis survey conducted by the Manitowoc County UW-Extension office in March, 1996 portrayed similar results. Issues identified in this survey as needing improvement included: park maintenance, additional youth activities, and additional hiking and biking trails.

**This information was taken from the manual entitled "Wisconsin's Forestry Best Management Practices for Water Quality - Field Manual for Loggers, Landowners and Land Managers" prepared by the Bureau of Forestry, Wisconsin Department of Natural Resources, March 1995 (Publication No. FR093). For more information, contact your county zoning office or a Wisconsin DNR water management specialist when conducting forest management activities near streams, lakes, or wetlands.*

Permits for Water Quality

Regulations state that certain operations in or near streams, lakes, floodplains or wetlands require a permit.

If you are planning an activity near a waterbody or a wetland, you should investigate the need for a permit at least *90 days* in advance of the activity.

Stream Crossings

A Chapter 30 (Wisconsin state statute) permit is required to construct a ford or install a culvert or bridge across a navigable perennial or intermittent stream. When planning to construct a stream crossing or modify, repair or expand an existing stream crossing, call a water management specialist at your Wisconsin DNR area office for information and to apply for a permit. For stream crossings that are not designed to pass the 100-year flood without causing backwater, you will need to obtain flooding easements from affected upstream property owners.

Grading

Grading and/or removal of top soil from the bank (defined in glossary) of any navigable stream, lake or other body of navigable water where the area exposed will exceed 10,000 square feet requires a Chapter 30 permit. Call a water management specialist at your Wisconsin DNR area office to apply for a permit. Also, check with your county zoning office for local grading and excavation permits that may be required; county zoning may require permits for exposed areas less than 10,000 square feet.

Wetlands and Floodplains

Activities in wetlands and floodplains are often subject to municipal, county, state and federal regulations and permit requirements. Your sequence of contact when you suspect your project may involve a wetland or floodplain and want to know what regulations apply is:

1. Your county zoning office;
2. A Wisconsin DNR water management specialist; and,
3. The U.S. Army Corps of Engineers.

Maps from the Wisconsin Wetland Inventory can help you make a preliminary determination as to whether your project will affect wetlands. Wisconsin Wetland Inventory maps may be reviewed at area or district DNR offices and county or municipal zoning offices or purchased from the Wisconsin Geological and Natural History Survey.

Timber Harvesting Near Water

All cutting practices near lakes and navigable streams (i.e. generally within 100 feet) must be consistent with local county shoreland zoning ordinances. A special exception permit or conditional use permit may be required. Contact your local county zoning office for more information before harvesting near shoreland.

Other Permits

Timber Harvesting

Before harvesting timber on private land, a cutting notice must be filed with the County Clerk in the county in which the harvesting occurs (§26.03 Wis. state Stats). In addition, if land is entered under the Forest Crop or Managed Forest Law, you must file a notice of intent to cut with the Wisconsin DNR prior to harvesting.

Before timber may be harvested on county forest land, the DNR must be notified (§28.11 (6)(b)2 Wis. Stats.). On municipal forests registered with the DNR, only trees marked for cutting by a Wisconsin DNR forester may be cut (§28.21 Wis. Stats.).

Burning Permits

If you plan to conduct any open burning (i.e., slash, bark, debris), contact the Wisconsin DNR or local municipal fire authorities to determine (1) if a burning permit is required, and (2) to apply for a permit, if necessary.

APPENDIX D - ACCESSIBILITY DEFINITIONS / GUIDELINES

The guidelines and definitions in this appendix are based on the federal requirements for the compliance with ADA. Local codes may vary and should be reviewed before any new construction or remodeling is undertaken. They contain only a portion of the accessibility guidelines necessary to be in compliance with ADA, and should not be used as the only source when analyzing accessibility needs. (Source: Accessible Design Handbook, Cash-Callahan & Company, 1991).

DEFINITIONS

Access Aisle
An accessible pedestrian space between elements such as parking spaces, seating, and desks that provides proper clearance to use the elements.

Accessible
Describes a site, building, facility or portion thereof that complies with these standards and that can be approached, entered and used by physically disabled people.

Accessible Route
A continuous unobstructed path connecting all accessible elements and spaces in a building or facility. Interior accessible routes may include corridors, floors, ramps, elevators, lifts and clear floor space at fixtures. Exterior accessible routes may include parking access aisles, curb ramps, walks, ramps and lifts.

Administrative Authority
A governmental agency that adopts or enforces regulations and standards for the design, construction, and alteration of buildings and facilities.

Area of Rescue Assistance
An area with direct access to an exit where people who are unable to use stairs may remain temporarily in safety to await instructions or assistance in an emergency. Such areas must meet all applicable code specifications of the regulatory building agency having jurisdiction over the building or facility.

Assembly Area
A room or space accommodating a group of individuals for recreational, educational, political, social, or amusement purposes, or for the consumption of food and drink.

Bevel (Threshold)
The slope between the floor surface and the top of the threshold.

Clear
Unobstructed.

Cross Slope
The slope that is perpendicular to the direction of travel.

Curb Ramp
A short ramp cutting through a curb or built up
to it.

Egress, Means of
A continuous exit route from any point in a building or facility to a public way. An accessible means of egress must comply with all regulations regarding accessibility. Areas of rescue assistance may be included as part of an accessible means of egress.

Element
An architectural or mechanical component of a building, facility, space, or site, e.g., telephone, curb ramp, door, drinking fountain, seating, water closet.

Entrance
An access point to a building or portion of a building or facility used for the purpose of entering. An entrance includes the approach walk; the vertical access leading to the entrance platform; vestibules, if provided; the entry door(s) or gate(s); and the hardware of the entry door(s) or gate(s). The principal entrance of a building or facility is the main door through which most people enter.

Facility
All or any portion of a building, structure, or area including the site on which such building, structure or area is located, where specific services are provided or activities performed.

Forward Approach
Where the approach to an object or element can be made from a forward position.

Nosing (Stair)
The prominent, usually rounded, horizontal edge which extends beyond the riser.

Parallel Approach
Where the approach to an object or element is from the side.

Physically Handicapped
An individual who has a physical impairment, including impaired sensory, manual, or speaking abilities, which results in a functional limitation in access to and use of a building or facility.

Ramp
A walking surface in an accessible space that has a running slope greater than 1:20.

Ramp Slope
The ratio of the rise to the run of the ramp.

Rise
The vertical distance measurement from top to bottom of a ramp.

Riser (Stair)
The vertical face of a stair step.

Run
The sloped horizontal distance covered by a ramp or flight of steps. See Ramp Slope.

Signage
Verbal, symbolic, tactile and pictorial information.

Site
A parcel of land bounded by a property line or a designated portion of a right-of-way.

Space
A definable area, e.g., toilet room, hall, assembly area, entrance, storage room, alcove, courtyard or lobby.

Tactile
Something that can be perceived using the sense of touch.

Tread (Stair)
The horizontal part of a step that also includes the nosing.

Walk
An exterior pathway with a prepared surface intended for pedestrian use, including general pedestrian areas such as plazas and courts.

GUIDELINES

SPACE ALLOWANCES & REACH RANGES

- The minimum clear width for single wheelchair passage must be 36 inches continuously and 32 inches at any one point (e.g., doorways).
- The minimum width required for two wheelchairs to pass each other is 60 inches.
- A wheelchair requires a 60 inch diameter space in order to make a 180 degree turn.
- Where the floor space allows only forward approach to an object, the maximum high forward reach allowed is 48 inches above the finished floor and the minimum low forward reach must be no less than 15 inches above the finished floor. There must be no obstructions.
- Where the clear floor space allows parallel approach by a person in a wheelchair, the maximum high side reach allowed is 54 inches above the finished floor and the low side reach must be no less than 9 inches above the finished floor. There must be no obstructions.
- Although people with walking aids (e.g., canes, crutches, walkers, guide dogs) can maneuver through a clear width opening of 32 inches, they require 36 inch wide passageways for comfortable gaits.
- Crutch tips extending down at a wide angle are a hazard in narrow passageways where they might not be seen by other pedestrians. A width of 36 inches provides a safety allowance for both the disabled person and for others.
- A person with a seeing eye dog or a semi-ambulatory person requires the same passing widths as a person in a wheelchair.

ACCESSIBLE ROUTES

- Accessible routes within the boundary of the site must be provided from public transportation stops, accessible parking, accessible passenger loading zones, and public streets or sidewalks to the accessible building entrance they serve.
- Accessible route(s) must connect buildings, facilities, and spaces that are on the same site.
- The minimum clear width of an accessible route must be 36 inches except at doors where the minimum clear width must be at least 32 inches.
- Where an accessible route has less than 60 inches clear width, passing spaces of at least 60 by 60 inches must be located at reasonable intervals that do not exceed 200 feet. The intersection of two corridors or walks is considered a passing space.
- Accessible routes serving any accessible space or element must also serve as a means of egress for emergencies or connect to an accessible place of rescue. These areas of rescue must comply with the requirements established by the administrative authority having local jurisdiction.
- Changes in levels along an accessible route which are greater than 1/2 inch must be ramped.
- Changes in levels along an accessible route which are between 1/4 and 1/2 inch must be sloped 1:2.
- Changes in levels along an accessible route 1/4 inch or less can remain.

PROTRUDING OBJECTS

- Protruding objects must not reduce the clear width required for an accessible route or maneuvering space.
- Objects protruding from walls (telephones, etc.) with their edges between 27 and 80 inches above the finished floor must protrude no more than 4 inches into walks, halls, corridors, passageways, or aisles.
- Objects protruding from walls with their leading edges at or below 27 inches above the finished floor may protrude any amount; provided the minimum requirements for accessible routes are met.
- Free standing objects mounted on posts between 27 and 80 inches above the finished floor may overhang a maximum of 12 inches.
- All walks, halls, corridors, passageways, aisles, or other circulation paths must have 80 inches clear headroom.
- Where vertical clearance of an area adjoining an accessible route is reduced to less than 80 inches, a guardrail or other barrier must be provided.

PARKING

- Each parking lot provided for employees or visitors is required to have accessible parking spaces.
- Accessible parking spaces must be the closest spaces to the building's accessible entrance.
- Check with the municipal zoning department for the total number of parking spaces required in your lot. The rule of thumb is as follows:

Total Parking in Lot	Minimum # of Accessible Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 and above	2 percent of total spaces
1001 and above	20 plus 1 for each 100 over 1000

- Accessible parking spaces must be at least 96 inches wide with a clearly marked adjacent access aisle of 60 inches. Two spaces may share a common aisle.
- The access aisle must connect directly to the accessible route.

- Spaces and aisles must be level with no slope greater than 1:50.
- All accessible parking spaces must have an unobscured vertical sign that shows the universal symbol of accessibility.
- Provide one in every eight accessible spaces, but not less than one, for van parking. This space(s) must have a minimum of a 96 inch wide access aisle and a minimum of 98 inches vertical clearance. Signage designating the space as "van accessible" must be provided.

PASSENGER LOADING ZONES

- Where passenger loading zones are provided, at least one must be accessible.
- The accessible passenger loading zone should be the closest to the accessible entrance and have a minimum vertical clearance of 114 inches.
- The international symbol of accessibility must be displayed at the passenger loading zone.
- The pull up space must be level with a slope no greater than 1:50.
- A pedestrian aisle must be adjacent to the passenger loading zone and it must be at least 5 feet wide and 20 feet long.
- A curb ramp must be provided where a curb occurs at the passenger loading zone.
- The pedestrian aisle and parking surface must be firm and slip resistant.
- The slope of the accessible route adjoining the ramp must be no greater than 1:20.
- The width of the curb ramp, not including the flared sides, must be at least 36 inches.
- The slope of the flared sides of the curb ramp must be 1:10 or less.
- Curb ramps must have flared sides or must be protected by a hand rail.
- Provide detectable warnings on curb ramps that contrast with the walkway. Material used must be an integral part of the surface and consist of raised domes with a diameter of 0.9 inches, a height of 0.2 inches and center to center nominal spacing of 2.36 inches.
- Where grate openings occur, openings must be 1/2 inch or less and openings must be placed perpendicular to the usual direction of travel.

RAMPS

- Any part of an accessible route with a slope greater than 1:20 will be considered a ramp.
- The maximum slope of a ramp in new construction should be 1:12 or less.
- The maximum rise of any run should be 30 inches or less.
- The cross slope of the ramp should be no greater than 1:50.
- The ramp surface must be non-slip.
- All grating openings must be 1/2 inch or smaller and must be placed perpendicular to the usual direction of travel.
- The clear width of the ramp must be at least 36 inches.
- A level landing must be provided at the top and bottom of each run.
- The landing must be at least as wide as the ramp and at least 60 inches long.
- Where ramps change direction, the landing must be at least 60 by 60 inches.
- A handrail on either side must be provided if the ramp rises more than 6 inches or is longer than 72 inches.
- The handrails must be continuous and fixed so they do not rotate or rack.
- The top of the handrails must be between 34 and 38 inches above the ramp surface.
- At the end of the handrails there must be at least 12 inches of level handrail beyond the top and bottom of the ramp segment.
- All handrail ends must be rounded and returned smoothly to the floor, wall or post.

- The diameter of the handrail must be between 1-1/4 and 1-1/2 inches.
- All wall-mounted handrails must be mounted with exactly 1-1/2 inches between handrail and wall.
- Where ramps or landings have drop-offs, provide a 2 inch curb, wall, railing or projecting surface to prevent people from falling off ramp.
- Design ramps with proper drainage so that water will not accumulate on surfaces.

STAIRS

- All steps must have uniform height and tread width in any one flight.
- All risers in accessible routes must be closed.
- Treads should be a minimum of 11 inches measured from nosing to nosing.
- Nosings must not project more than 1-1/2 inches.
- Where nosings project, bevel undersides to prevent tripping.
- Stairways must have continuous handrails on both sides of all steps.
- Handrails should continue at the top and bottom of stairs. At the top, the handrail must continue on a level for a minimum of 12 inches; at the bottom, the handrail must slope for a distance of at least the tread width and then continue on a level plane for a minimum of 12 inches.
- All wall-mounted handrails must be mounted with exactly 1-1/2 inches between the handrail and the wall.
- Gripping surfaces must be uninterrupted by posts or other obstructions.
- Mount top of handrails between 34 and 38 inches above nosing.
- All handrail ends must be rounded and returned smoothly to the floor, wall or post.
- Handrails must be secure and not rotate.
- The diameter of the handrail must be between 1-1/4 and 1-1/2 inches.
- Outdoor stairs must be designed so that water does not accumulate on walking surfaces.

DOORS AND GATES

- Where revolving doors occur along the accessible route, provide an accessible door or gate.
- A doorway with two independently operated door panels must have at least one active door panel with 32 inches clear opening maneuvering space.
- An accessible door must have a 32 inch clear opening measured between the face of the door and the door stop on the latch side.
- Provide 18 inches or more of clear space on the operable side of the door.
- Floor must be level at all doors in the accessible route.
- Where two doors occur in a series, provide a vestibule of at least 48 inches plus the width of the opened door swinging into the space.
- All thresholds should be level or have a bevel of not more than 1:2.
- All door handles, locks and latches must be operable with one hand and without twisting the wrist.
- Hardware should be mounted no higher than 48 inches above the finished floor.
- The door closer must take at least three seconds to move from 70 degrees open to a point 3 inches from the latch.
- Interior doors must have an opening force of 5 pounds or less.
- The opening force of exterior doors must be determined by the appropriate administrative authority.

ENTRANCES

- The accessible entrance must not be a service entrance unless the service entrance is the only entrance.
- The accessible entrance must be connected to accessible parking, passenger loading zones, and public streets or sidewalks.
- The accessible entrance should connect to an accessible route to all accessible elements or spaces within the building or facility.
- Where vertical level changes between 1/4 and 1/2 inches occur along the route, the edge must be beveled with a slope of 1:2 or less.
- Where vertical level changes at the entrance are greater than 1/2 inch, provide a ramp, curb ramp, or platform lift.

DRINKING FOUNTAINS

- Fountains that are free standing or built-in and do not have clear space underneath must have a clear floor space alongside the fountain for a parallel approach of at least 30 by 48 inches.
- Fountains that are wall or post mounted must have a clear knee space under the fountain apron of at least 27 inches high by 17 to 19 inches deep by 30 inches wide.
- The spout of the fountain must be no higher than 36 inches above the finished floor.
- The water stream must be at least 4 inches high to allow the insertion of a cup under the stream.
- Spout must be at the front of the unit with the water flow parallel or nearly parallel to the front edge of the fountain.
- Controls must be located at the front edge of the fountain.
- Controls must be operable with one hand and without twisting the wrist.

RESTROOMS

Toilet Stalls

- Accessible toilet stalls must be on an accessible route.
- The stall must be at least 60 inches wide.
- Where toilets are wall mounted, stall must be at least 56 inches deep.
- Where toilet stalls are floor mounted, stall must be at least 59 inches deep.
- A clear opening of 32 inches measured between the face of the door and the edge of the partition on the latch side must be provided when the stall door is open 90 degrees.
- Where the door swings into the stall, provide at least 36 additional inches in the depth of the stall.
- Where stall door opens out and at the end of an aisle, provide at least 18 inches of maneuvering space at the latch side of the stall door.
- Install grab bars 33 to 36 inches above the finished floor. Grab bars must be secure and not rotate in their fittings.
- Mount toilet paper dispenser no more than 36 inches from the back wall and at least 19 inches above the finished floor.
- Toilet paper dispenser must allow continuous paper delivery.
- The centerline of the toilet must be 18 inches from the wall or partition which has the grab bar location.
- The top of the toilet seat must be between 17 and 19 inches above the finished floor.
- Flush controls must be mounted no higher than 44 inches above the finished floor and on the wide side of the toilet area and be automatic or operable with one hand.

Urinals

- Urinals must have elongated rims mounted no more than 17 inches above the finished floor.
- Provide 30 by 48 inch clear space for forward approach to the urinal.

- Urinal shields which do not extend beyond the front of the urinal rim may be provided by 29 inches clearance between the two panels.
- Flush controls must be automatic or operable with one hand.
- Controls must not be mounted higher than 44 inches above the finished floor.

Lavatory

- The lavatory rim or counter surface must be no higher than 34 inches above the finished floor.
- A clearance of at least 29 inches from the finished floor to the bottom of the apron must be provided.
- Provide a clear floor space of at least 30 by 48 inches in front of the lavatory for a forward approach.
- Provide a clear floor space of at least 17 inches under the lavatory.
- Hot water and drain pipes must be insulated or covered.
- The faucet must be operable with one hand and without twisting the wrist; self closing type valves must remain open at least 10 seconds.
- Where valves are self closing, provide that the valve remain open for at least 10 seconds.

Mirrors

- Provide at least one mirror with the bottom edge of the reflecting surface no higher than 40 inches above the finished floor.

Dispensers

- Provide at least one of each dispenser type on an accessible route.
- Provide at least 30 by 48 inch clear space to allow either a forward or a parallel approach to the dispensers.
- Where a forward approach is provided, the highest operable part must be no higher than 48 inches above the finished floor.
- Where a side approach is provided, the highest operable part must be no higher than 54 inches above the finished floor.
- All dispensers must be operated with one hand and without twisting of the wrist.

Showers

- Provide a clear floor space of 36 by 48 inches outside the stall.
- Mount a seat between 17 and 19 inches above the finished floor.
- The seat should extend the full depth of the stall.
- The seat should be on the wall opposite the controls.
- Provide grab bars along the control wall and half of the return wall. Do not install grab bars behind seat.
- Curbs into shower should be no higher than 1/2 inch.
- Provide grab bars between 1-1/4 and 1-1/2 inches diameter.
- Mount grab bars exactly 1-1/2 inches from wall.
- Grab bars must be secure and not rotate within the fittings.
- Controls must be operable with one hand and without twisting the wrist.
- Shower spray unit should have a hose at least 60 inches long.
- Roll in shower must be at least 30 by 60 inches.
- Provide a clear space of 36 by 60 inches alongside the shower.
- Grab bar must extend around three sides of the shower.
- Provide grab bars between 1-1/4 and 1-1/2 inches in diameter.

- Mount grab bars exactly 1-1/2 inches from wall.
- Grab bars must be secure and not rotate within the fittings.
- Controls must be operable with one hand and without twisting the wrist.
- Shower spray unit should have a hose at least 60 inches long.
- If a seat is provided, it shall be a folding type and mounted on the wall adjacent to the controls.

ALARMS

Audible Alarms

- Audible emergency alarms must produce a sound that exceeds the prevailing equivalent sound level in the room by at least 15 decibels or exceeds any maximum sound level with a duration of 60 seconds by 5 decibels, whichever is louder. Sound levels shall not exceed 120 decibels.

Visual Alarms

- Visual alarms are electrically powered internally illuminated emergency exit signs that must flash as a visual emergency alarm in conjunction with the audible emergency alarms. The flash rate of the visual alarm devices must be a minimum of 1 hertz (Hz) and a maximum of 3 Hz. If alarms use electricity from the building as a power source, then they must be installed on the same system as the audible emergency alarms.
- Visual alarms must be installed in restrooms, hallways, lobbies and general usage areas (e.g., meeting rooms) and where deaf individuals may work to ensure they are warned when an emergency alarm is activated.
- Devices must be located and oriented so they can spread signals and reflections throughout a space or raise the overall light level sharply.

TELEPHONES

- Provide for at least one accessible phone in each bank of phones.
- Wall mounted phones with bottom edges between 27 and 80 inches from the floor must not project more than 4 inches into the pathway. An accessible pathway of at least 36 inches must be maintained.
- The accessible phone should have a 30 by 48 inch clear ground space around the phone that allows either a forward or parallel approach for a wheelchair.
- For areas with only a forward approach, the highest operable part of the phone must not be higher than 48 inches.
- For areas which only allow a parallel approach to the telephone, the highest operable part must be no higher than 54 inches.
- Telephone book must always be within reach ranges.
- Provide a volume control on the accessible phone.
- Push button controls must be provided unless such service is unavailable.
- The cord for the telephone handset should be at least 29 inches long.
- Text telephones (e.g., Telecommunications Devices for the Deaf (TDDs)) must be provided upon request.

PATHWAYS

- There must be an accessible route linking accessible parking and passenger loading zones with the accessible building entrance.
- The accessible pathway must be free of steps and stairs.
- The accessible pathway must be at least 36 inches wide.
- If the pathway is less than 60 inches wide, provide passing spaces at least 60 inches wide and 60 inches long at intervals not exceeding 200 feet.
- Provide at least 80 inches of clear head room along pathway.

- Objects mounted to the wall between 27 inches and 80 inches must not protrude more than 4 inches into the space. The accessible pathway must be 36 inches wide alongside the protruding object.
- Accessible pathways must be firm and slip resistant.
- The slope of the accessible pathway must be no greater than 1:20.
- Where walkway levels change, the vertical difference between them must be less than 1/4 inch.
- Changes in level between 1/4 inch and 1/2 inch anywhere on the accessible route must be beveled with a slope of 1:2.
- Changes greater than 1/2 inch must be ramped.
- The transition from the curb ramp to the walkway, road and gutter must be flush and free of abrupt changes.

APPENDIX E - TRAIL DESIGN STANDARDS

DRAFT

HIKING TRAILS

Hiking trails, like all recreation facilities, should accommodate a wide range of user preferences and abilities.

Accessibility guidelines being developed under the Americans with Disabilities Act of 1990 will require that newly constructed or altered recreation facilities be accessible and usable by individuals with disabilities. If "practicable and feasible", all new hiking trails constructed on Department properties will be accessible. The "highest degree of access practicable and feasible" is determined through a two-step process. The first step is identifying the recreation setting, analyzing the natural features, evaluating the amount of structural modification, describing the expected or desired recreation experience at a recreation site or facility, and consulting with interested persons with disabilities.

The second step is confirmation of the initial assessment by making sure that the project would not "threaten or destroy" the unique natural, cultural or religious character of the setting, or historic significance of the site.

For consideration of accessibility exceptions on a case-by-case basis, the federal guidelines provide options, alternatives, and methods of evaluating.

The following design specifications for constructing accessible hiking trails may be revised pending final approval of the federal accessibility guidelines.

Clearing and Grubbing

For trails to be accessible, objects should be removed from the trail tread to create a smooth level trail surface. Roots and rocks should be removed or filled around. Subsurface materials should be compacted to prevent settling.

Drainage

To assist drainage, the trail tread should be slightly crowned. If the tread can't be crowned and cross slope drainage is necessary, the cross slope may not exceed 2%.

Bridges

If pedestrian bridges are required, the width of the bridge must be compatible with the width of the trail tread. If maintenance or emergency vehicles have potential to use the pedestrian bridge, greater bridge widths and load capacity may be considered.

Railings shall be installed and have a minimum height of 42 inches. Tread materials on bridges should be wood decking, asphalt or concrete. Deck boards should run perpendicular or diagonally to the direction of travel and provide a smooth, level surface. Spacing of deck boards should not exceed 1/4 inch at construction and be no greater than 1/2 inch after full shrinkage. The elevation difference between the trail tread and the bridge deck should not exceed 1/2 inch.

Underpasses

An underpass must be compatible with the width of the trail tread and the height must be at least 8 feet. If maintenance or emergency vehicles have to use the underpass, it will be constructed at a minimum width of 12 feet with 12 feet of height.

The floor of the underpass may be concrete or asphalt, but may also be materials compatible with the trail tread surface. Slope requirements for the trail should also apply to the underpass floor.

Boardwalks and Cordwalks

Boardwalks or cordwalks may be appropriate to protect fragile areas, to control access, to cross wet areas, or to minimize environmental damage. The decking boards should run perpendicular or diagonally to the direction of travel and provide a smooth, level surface. Spacing of boards should not exceed 1/4 inch at construction and be

no greater than 1/2 inch after full shrinkage. The elevation difference between the trail tread and the decking may not exceed 1/2 inch. State (Water Regulation and Zoning) and Federal permits may be required.

Steps

Steps should not be used unless there are no other reasonable alternatives. If needed, they should have a handrail with a top rail 34 to 38 inches above the ground, with an intermediate rail not less than 27 inches. Railings should be provided on steps or stairs that exceed three steps. Steps should have not less than a 4 inch or more than a 7 inch rise and not less than a 11 inch tread. If an extended run of steps is necessary, no single run may exceed 22 steps. A smooth, level rest area must be provided between runs of 22 steps. The rest area must be at least as wide as the steps and at least 36 inches long.

Retaining Walls

Retaining walls may be used on steep bank cuts as an erosion control to prevent soil from washing onto the trail.

Surface Materials

The trail tread for accessible trails should be a smooth, level, slip-resistant, all-weather surface. Various bonded aggregates or finely crushed limestone are acceptable if all other design criteria is met. Materials which are not acceptable include: coarse gravel, wood chips, pea gravel, sand and mortared stone.

Grades or Slopes

To be accessible, the grade or slope of any segment of a hiking trail shall not exceed 1:20 (5%) end-to-end or 1:50 (2%) side-to-side. If it is essential to achieve an elevation greater than what 5% will gain, a ramp or series of ramps may be used. A ramp should not exceed 1:12 (8.33%) slope, may not exceed 30 feet in length and must have a five (5) feet long level rest area at the end of each 30 feet of ramp.

A series of ramps may be of any total length, but must have a five (5) feet long level rest area at the end of each 30 feet of ramp.

Difficulty

A trail difficulty information system is recommended so that trail users will know what to expect and can choose a trail based upon their own desire and ability.

Material posted at information areas and signage at trailheads should include data on average and maximum grade, maximum cross slope, minimum trail width, length, type of surface, and magnitude of obstacles such as rocks, roots, and ruts. A route map should also be provided when possible. The map should show the most demanding sections of trail so users with limited mobility or endurance can determine the direction and distance they wish to travel.

Length

A hiking trail can be of any length to link various park facilities and points of interest, or may be an abandoned rail corridor many miles in length.

Configuration

Hiking trails should be designed in loops, except for trail links, rail corridor trails, and the Ice Age trail, so that the hiker always returns to the point of beginning. Shorter trail loops of 1/4 to 1/2 mile should be designed into the trail system to provide options for either shorter or longer hiking distances. Intersections should be well marked.

The trail configuration should attempt to visit as wide a range of environmental communities as possible, but should be laid out in such a way as to minimize environmental damage or disturbance.

Unless the trail is a short, direct route between facilities, trail planners are encouraged to design trails to take advantage of and to emphasize the views and vistas of the property. Variety will also pique the interest of the user. Planners should also consider change in topography, diversity of vegetation, sounds, smells, sight sensations, sun and shade, seasonal factors, etc. when locating a trail. Archaeological, geological, historical and cultural interests should be integrated into the trail route.

Width

Tread width on abandoned rail corridor trails will be 10 feet.

The minimum tread width on all other trails will depend on the degree of access (difficulty). For easier trails in a highly developed setting, a 48" width is required. Moderate trails in a more natural setting will have a 36" tread width. The tread of more difficult trails in a minimally developed back country setting will be 28" wide.

Clearing Height

Vegetation shall be cleared to a minimum height of 10 feet from tread level. This will ensure that in wet or snowy conditions the trail will remain free of hanging branches.

Clearing Width

Trails shall be cleared of noxious weeds and woody vegetation two (2) feet on either side of the tread.

Road Crossings

Road crossings should be avoided if possible. If needed, the crossing should be at a right angle to the road and signed for both vehicular and pedestrian travel.

Sight distance requirements are in relation to the design speed of the road and should be measured from the point of intersection to a point on the road. The following are recommended sight distances based on the design speed of the road.

Design Speed	Minimum Sight Distance
15 mph	150 feet
25 mph	250 feet
35 mph	350 feet
45 mph	450 feet
55 mph	550 feet

Access Locations

Access locations depend on the type of trail. For the state trails on abandoned rail corridors, the developed access points are usually at each end of the trial and in various communities along the route. Access locations within the boundary of most state properties will vary greatly and will generally depend on facilities developed for other use areas (picnic area, campground, nature center, etc.)

Trail access locations should provide reserved accessible parking stalls at a rate of 4% of the first 100 stalls, plus 2% of those over 100 (see Chapter 90 (Roads and Parking) of this Handbook).

At major access points, picnic areas should be provided. If natural shade is not present, shelters should be provided.

Toilets may be provided and should be within 400 feet of the parking area. Drinking water and trash disposal may be considered at three to five mile increments along the length of the trail.

Signs

At a minimum, signing at trail access points should indicate trail length, slope, surface, and width.

Other sign categories are directional, informational, interpretive, and regulatory. Major access points should include a sign(s) of each category.

For additional sign specifications refer to Chapter 30 (Interpretive Handbook) and to Chapter 70 (Signing Standards).

Rest Area

Rest areas, which also serve as passing spaces, should be provided at 400-foot intervals. Each rest/passing area must be at least 5 feet by 5 feet in size. An accessible bench or other type of fixed seating should be provided as a matter of convenience and accommodation. These areas will be used by some to rest, but as important, many will use the area to observe wildlife, take photos, and simply reflect upon and enjoy nature.

The abandoned rail corridor trails typically have 10 feet of surfaced tread and would not require rest/passing areas.

Visitor Safety

Trail routes should avoid proximity to steep side grades, drop-offs, or to areas where potential hazards exist. Where there is potential for a pedestrian to inadvertently or accidentally leave the trail and be confronted with a hazard, safety barriers, rails, fences or vegetation should be installed.

Vehicle Access

Motorized vehicles, except those permitted for use by people with disabilities, are prohibited from most pedestrian trails. Where it is necessary to place restrictive barriers to prevent access by motor vehicles, a permanent opening of at least 32" must be provided.

The restrictive barrier must be capable of temporarily opening to the full width of the pedestrian trail to permit emergency vehicles or other permitted vehicles to access the trail.

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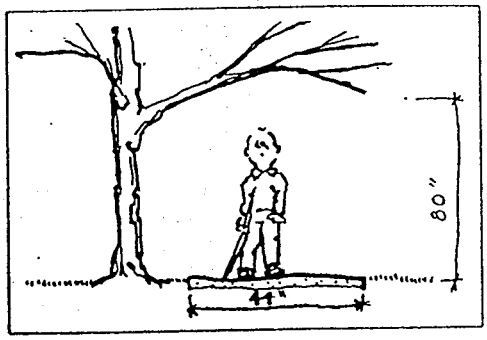
PLAY FOR ALL

Guidelines

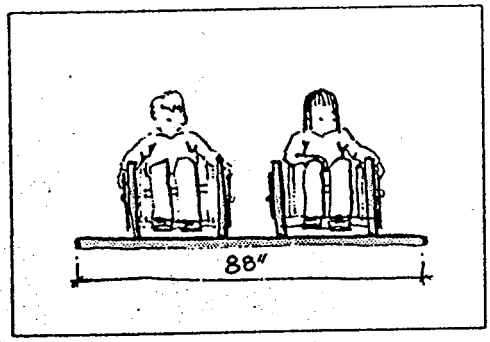
Planning, Design and Management
of Outdoor Play Settings for All Children

Second Edition

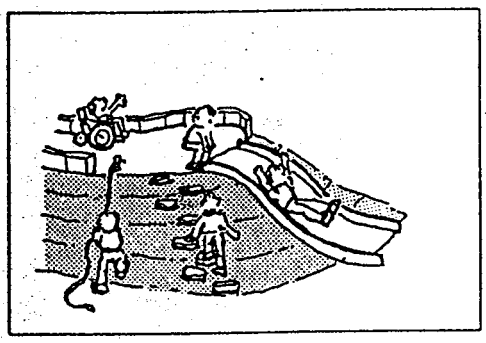
Responds to the Americans With Disabilities Act and the new Consumer Product Safety Commission Guidelines



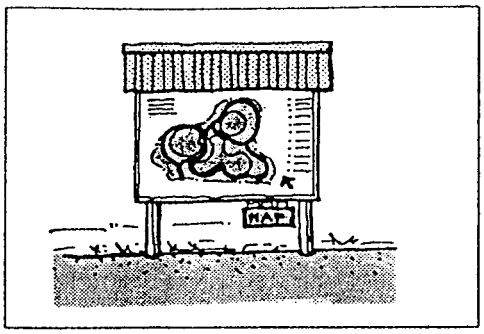
44 Paths must be 44 inches wide minimum, though wider paths are preferred.



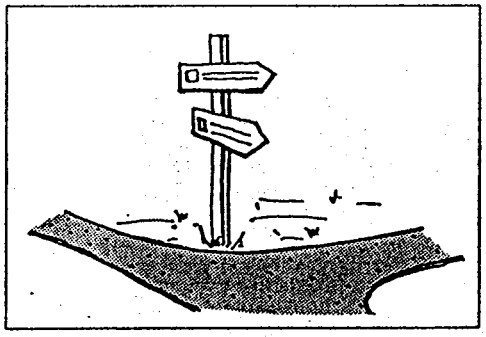
45 Paths that are 88 inches wide allow two children in wheelchairs to pass.



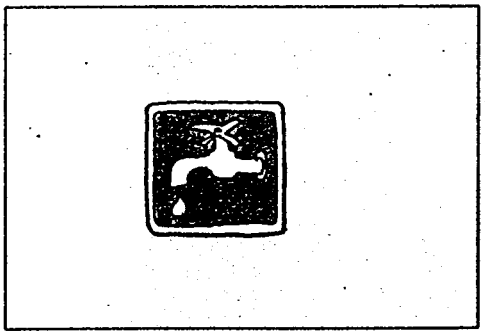
187 A slide can be incorporated into a slope to prevent injuries from falls and make the slide more accessible. Sand at the bottom cushions the landing.



81 Informational signs.



82 Directional signs.



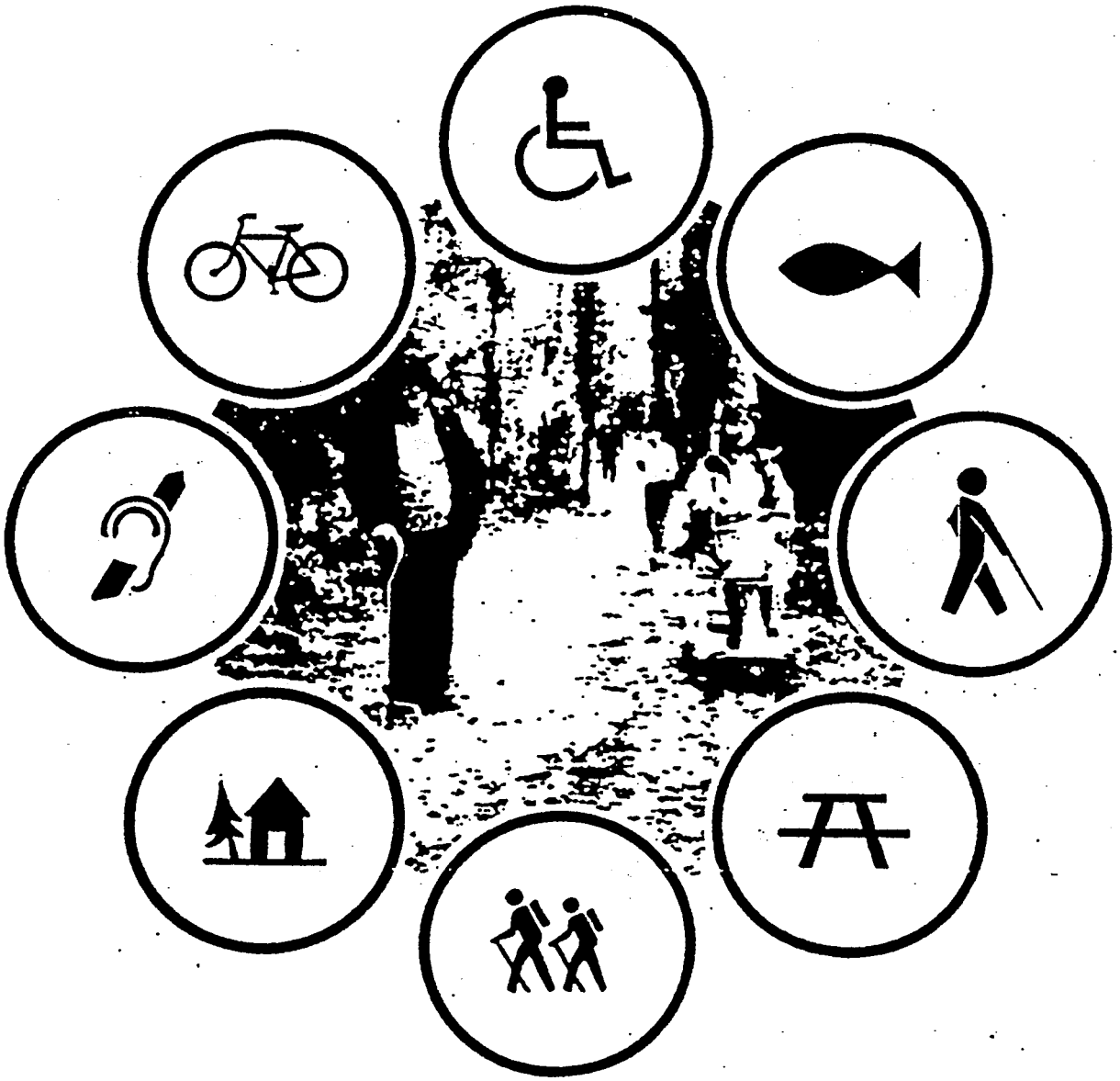
83 Identification signs.

United States
Department of
Agriculture

United States
Department of
Interior

2300—Recreation
September 1990
9023 1803

DESIGN GUIDE
for Accessible Outdoor Recreation

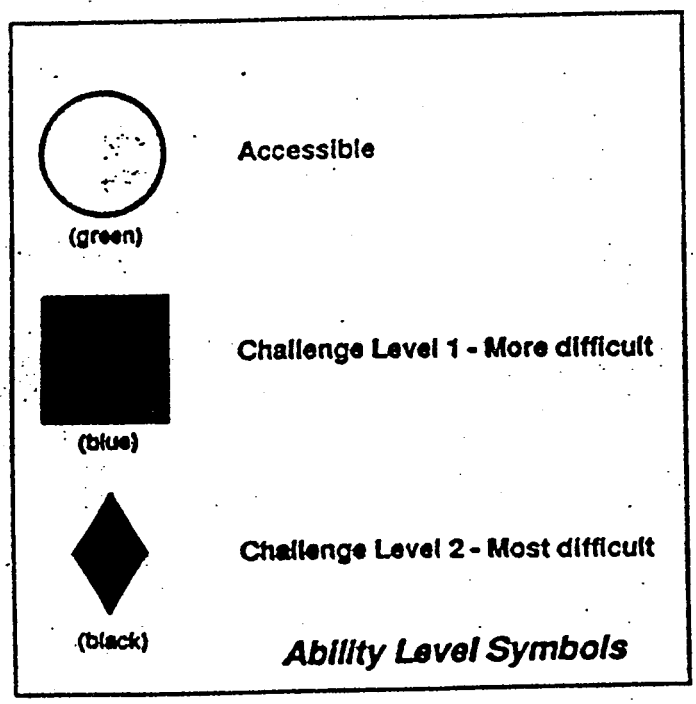


Interim Draft for Review

LEVELS OF ACCESSIBILITY

The concept of different ability levels can be understood within the context of the following guiding principle: We want to offer persons with disabilities the chance to experience a full range and variety of recreation opportunities. The variety of people's preferences and abilities can best be accommodated if a range of opportunities is available. Individuals who enjoy challenge should be accommodated, as well as those who prefer easier, non-strenuous outdoor recreation. This Design Guide uses three accessibility levels for outdoor recreation:

- **Accessible**—Meets or exceeds UFAS requirements.
- **Challenge Level 1**—More difficult than "Accessible;" generally meets UFAS requirements.
- **Challenge Level 2**—Most difficult; does not meet UFAS, but has safety features.



Ability Level Symbols

Persons with disabilities who are more venturesome should have the opportunity for a challenging recreational experience. This approach will increase outdoor recreational opportunities for *all people*, including those who are not traditionally classified as disabled—such as elderly people, parents with small children, very large or very small people, or those with temporary disabilities.

The ability levels for accessibility are briefly described below. *The most difficult component determines the level of ability for the entire network.*

ACCESSIBLE (Easy)

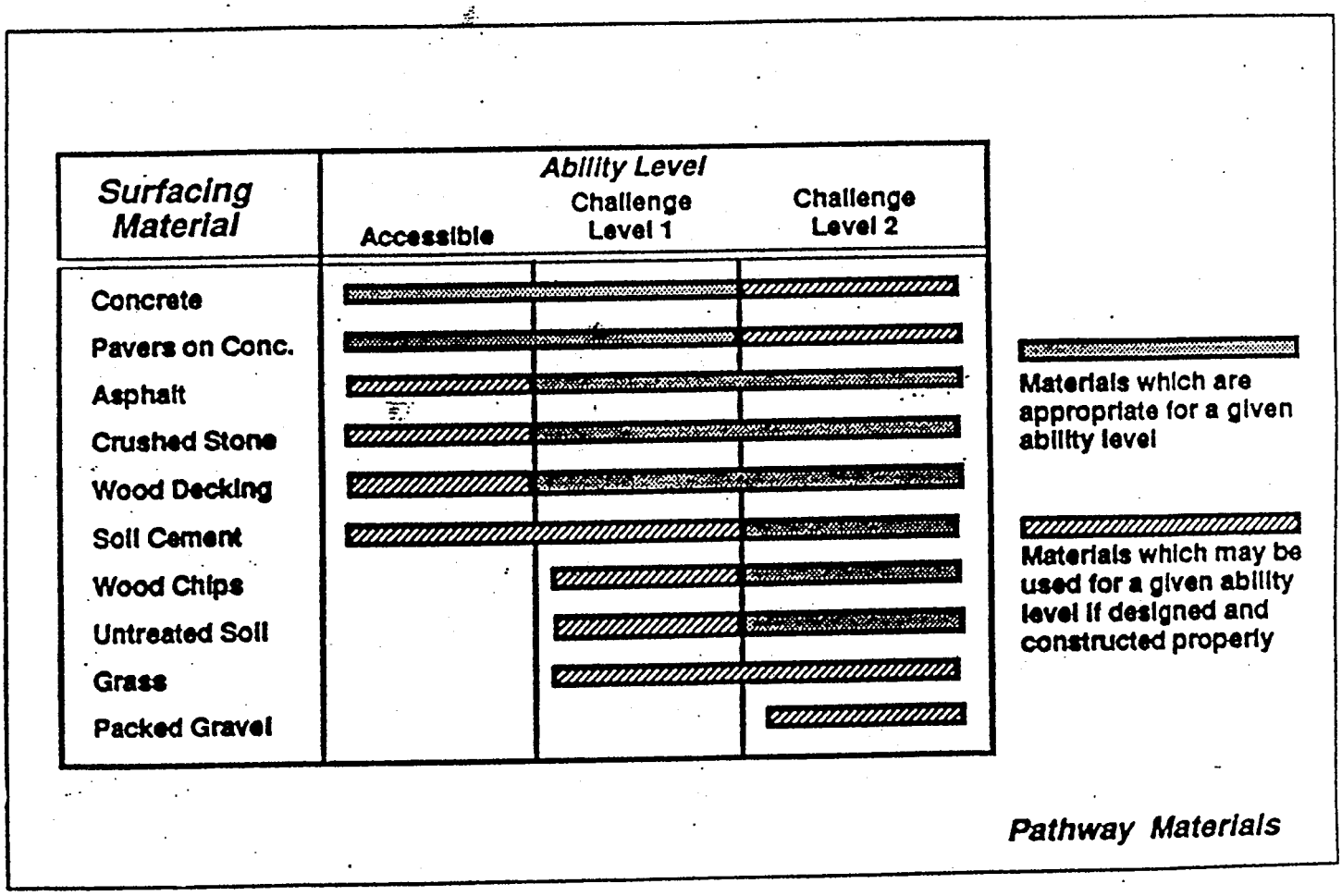
All programs, services, and facilities that are provided are fully accessible. These sites are designed for the most independent and easy use feasible for the majority of persons with disabilities. Generally, these sites are usable without assistance by all but the most severely disabled persons, and are in full compliance with all applicable UFAS provisions.

CHALLENGE LEVEL 1 (More Difficult)

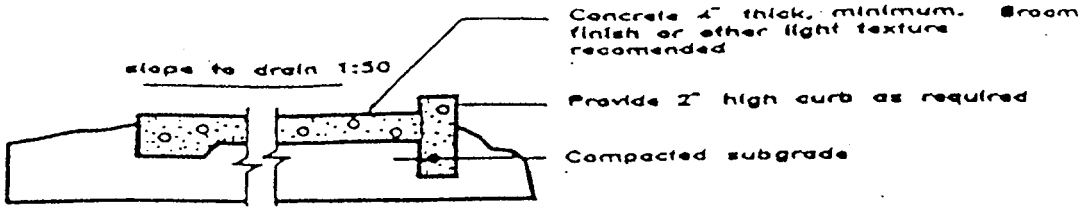
These sites have a greater degree of difficulty and are a more challenging experience than an Accessible site. Parking, restrooms, visitor centers, and interpretive exhibits are all fully accessible. Grades and surface materials may be more challenging to persons with limited mobility. Some disabled users may need assistance.

CHALLENGE LEVEL 2 (Most Difficult)

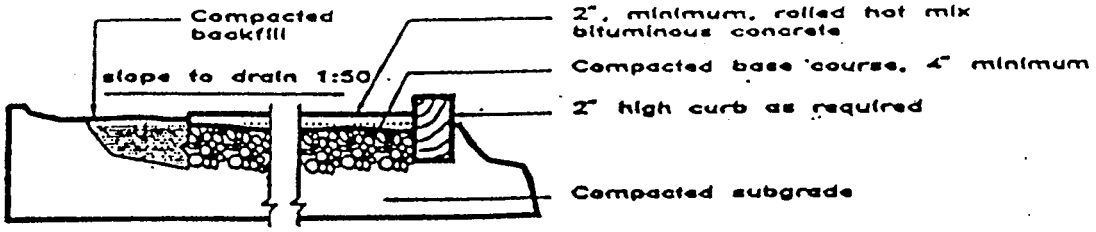
These sites are indeed most difficult and offer a higher level of risk and challenging experience to all those seeking such. They are usable by the more athletic person with a disability without assistance but, generally, a person with limited mobility would probably need assistance. Severely disabled users would not be encouraged to use these sites without assistance. Physical improvements such as the grades and surfacing materials on trails are limited to preserve the natural surroundings, but with safety considerations designed into the site. Buildings, such as restrooms, are accessible.



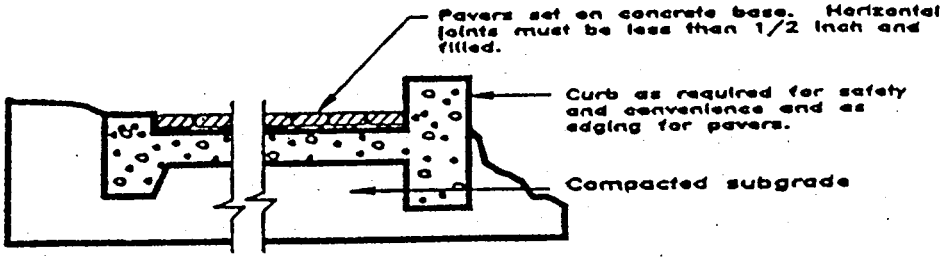
Pathway Materials



CONCRETE SURFACING



ASPHALT SURFACING



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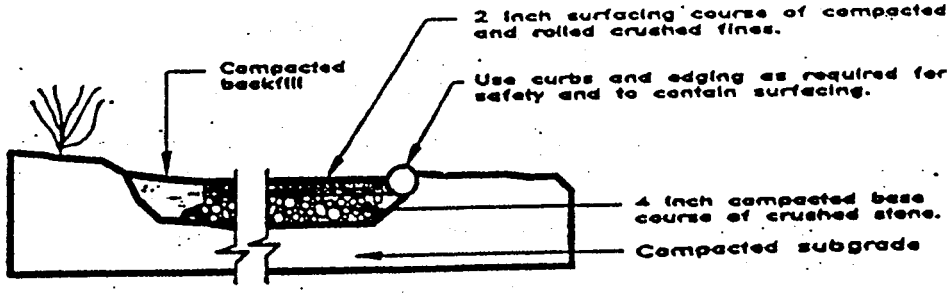
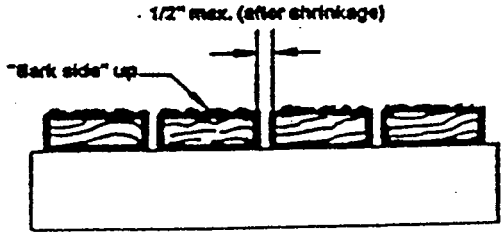


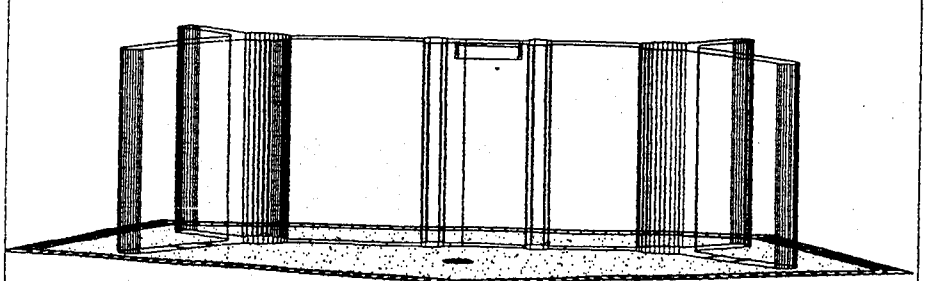
CRUSHED STONE



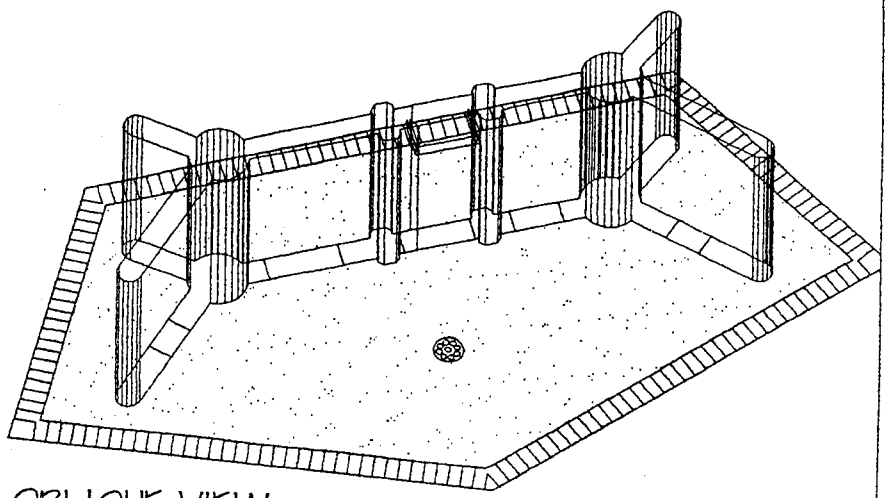
Wood planking may be used as a surfacing material, but joints between planks must not be more than 1/2 inch and planks must be securely fastened so they do not warp. Wood must be maintained and treated with an appropriate preservative to avoid decay or drying.

WOOD DECKING

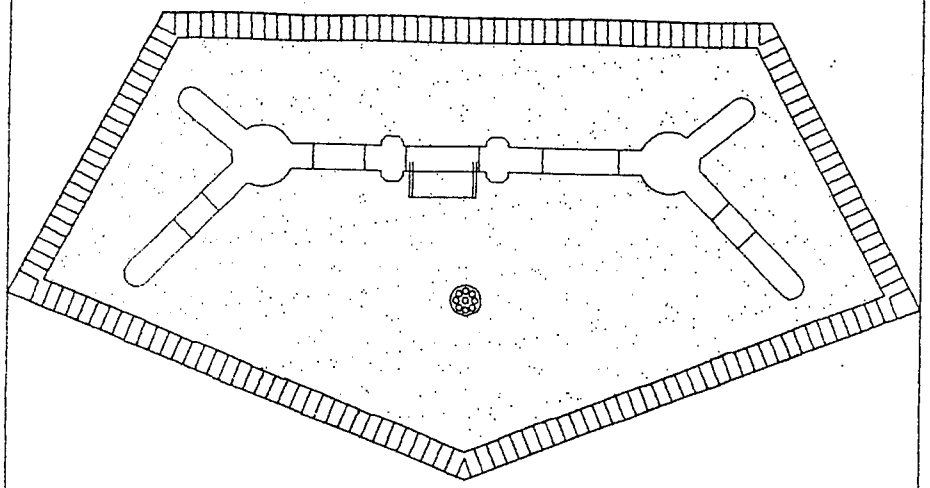
APPENDIX F - DAM MEMORIAL EXAMPLE



FRONT VIEW



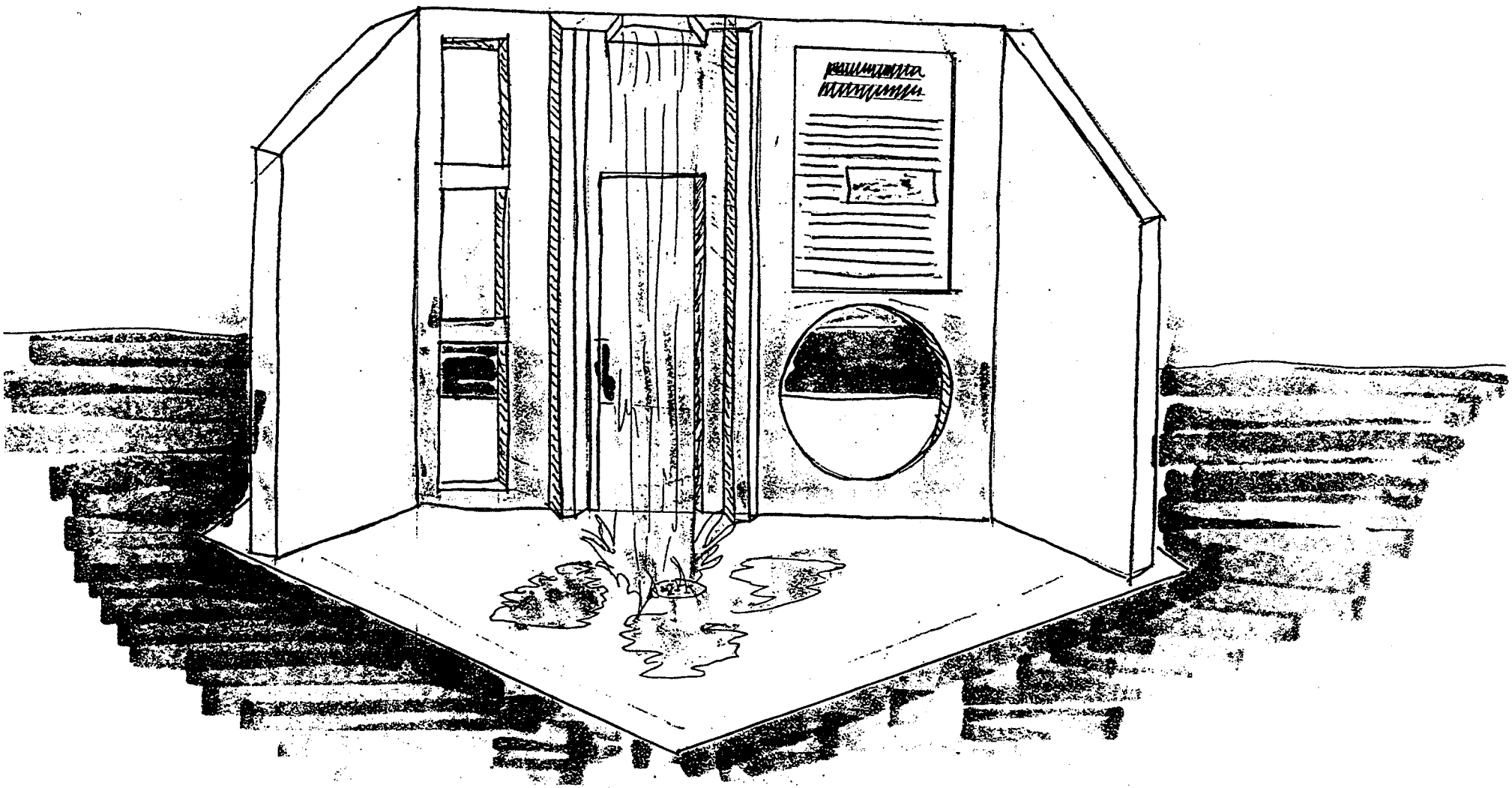
OBLIQUE VIEW



TOP VIEW

HIKA DAM MEMORIAL STRUCTURE

This sculptural structure is constructed of simple concrete materials and serves several purposes. It contains a plaque which serves to remember the existence of the dam structure (of which it emulates). It also contains a "waterfall" fountain to be used as a play structure and for bathers in Lake Michigan. Water could be pumped from the lake easily in this location.



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