

**COLUMBUS RECREATION AND PARKS DEPARTMENT
WATERWAYS MANAGEMENT TASK FORCE**

**CITY OF COLUMBUS
COMPREHENSIVE WATERWAYS
MANAGEMENT PLAN**

PHASE ONE....HOOVER RESERVOIR

MARCH 28, 1990

COLUMBUS RECREATION AND PARKS COMMISSION PROJECT

THOMAS M. STOCKDALE

, 4586 STARRET ROAD
COLUMBUS, OHIO 43214

March 13, 1990

James W. Barney, Director
Recreation and Parks Department
90 West Broad Street
Room 127, City Hall
Columbus, Ohio 43215

Dear Director Barney:

On behalf of the Waterways Management Task Force, I am pleased to submit the following document for the City of Columbus Comprehensive Waterways Management Plan Phase One, Hoover Reservoir. This project was done at the request of the Columbus Recreation and Parks Commission.

The following people served on the Waterways Task Force:

Kay Bonham	Cheryl Brown-Precario	Scott Turner
Miles Durfey	Tom Ryther	Donn Young
Ruth Yost	Thomas Stockdale	Lynn Kelly
Steve Kirby	Barbara Thomson	Lt. Alan Lashley
William McCauley	Russ Grice	David Johns

One of the first goals of the Task Force was to prepare a "Mission Statement" which would be carried throughout the Plan, beginning with Hoover Reservoir. The statement is as follows:

THE MISSION OF THE WATERWAYS MANAGEMENT TASK FORCE IS TO DEVELOP PLANS AND RECOMMENDATIONS FOR THE RECREATION AND PARKS COMMISSION DIRECTING THE COLUMBUS RECREATION AND PARKS DEPARTMENT TO TAKE APPROPRIATE STEPS TO PROTECT THE WATERWAY AND PARK RESOURCES IN CENTRAL OHIO, ENHANCE WATER QUALITY, AND MANAGE THE WATERWAYS FOR MULTIPLE USE RECREATION.

It is a pleasure to present this document to you for the Recreation and Parks Commission to approve. There have been numerous Task Force meetings and input from two public workshops that have gone into this plan. Once approval is received on this plan, the Task Force plans to begin work on Phase Two, O'Shaughnessy Reservoir, commencing June 1, 1990.

If there are any questions or comments, please notify the Task Force, otherwise, the Task Force is looking forward to the implementation of Phase One on May 1, 1990.

Director James W. Barney
March 13, 1990
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As chairman of the Task Force, it has been a pleasure to work with this group, the Recreation and Parks staff, and members of the Recreation and Parks Commission in preparing this document.

Sincerely,

A handwritten signature in cursive script, appearing to read "Thomas M. Stockdale". The signature is written in dark ink and is positioned above the printed name.

Thomas M. Stockdale, Chairman
Waterways Management Task Force

TWS/bl

Enclosure

**CITY OF COLUMBUS
COMPREHENSIVE WATERWAYS
MANAGEMENT PLAN
PHASE ONE - HOOVER RESERVOIR
MARCH 28, 1990**

Prepared for

**CITY OF COLUMBUS
RECREATION AND PARKS COMMISSION**

Prepared by

**WATERWAYS MANAGEMENT TASK FORCE
RECREATION AND PARKS STAFF**

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* A special note of thanks to Columbus Recreation and Parks Commissioner Catherine Gillie for assisting with the public workshops.

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Study Organization

The Comprehensive Waterways Management Plan Study Organization is printed on the following page (See Exhibit _____).

The Waterways Management Task Force established the basis for consultation and coordination of these areas:

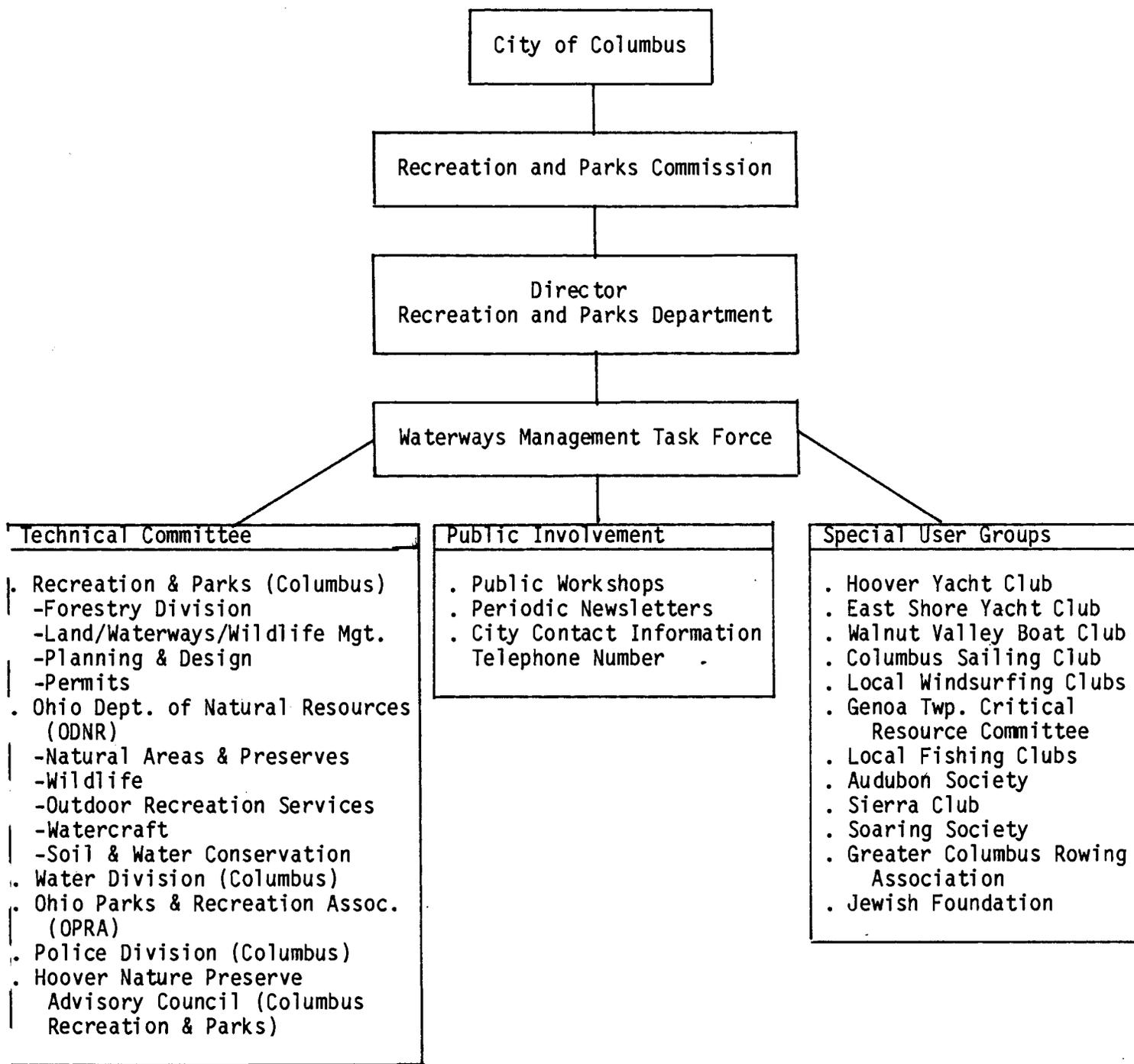
Technical Committee, Special User Groups, and the General Public.

The Technical Committee was established in order to discuss formulas and land use Planning aspects of the Comprehensive Management Plan. As shown in the exhibit, the Waterways Management Task Force worked with representatives from the Ohio Department of Natural Resources (ODNR), City Divisions, Ohio Parks and Recreation Association (OPRA), and the Hoover Nature Preserve Advisory Council.

Contacts were made and meetings were held with Special User Groups of Hoover Reservoir to review the plan and discuss the process. Representatives of these groups provided early input on existing land use, proposed changes, and looked at alternatives.

The Comprehensive Waterways Management Plan also provided for public involvement by Reservoir neighbors, other users, and interested citizens.

**Study Organization
Comprehensive Waterways Management Plan**



Public Involvement

The Public Involvement program included (1) two public workshops; (2) periodic newsletters; and (3) the establishment of an information telephone number and designation of a City staff contact to answer questions.

The public information workshops were held during the process to facilitate the exchange of technical findings and citizen input and comment.

At each meeting, presentations were made at five (5) workshop stations and was followed by a public comment/question station. A summary of meeting highlights was made at each subsequent meeting. The meeting notices were in local newspapers, noted in the program newsletter, and specified in letters sent to interested persons on a continually updated mailing list. In addition to the public workshops, a separate orientation was held with representation from special user groups of the Reservoir.

A newsletter was prepared periodically to present a summary of the Task Force's planning effects. The newsletter also contained information regarding future meetings. The letters were sent initially to citizen groups, media, Hoover users, and interested persons, and were supplemental with the listing of those people attending each public workshop. Each newsletter contained the name of the City staff contact and telephone number for further information and assistance.

Copies of the newsletter and documentation for the public meetings are contained in Appendix _____ of this report.

FOREWORD

This Comprehensive waterways management plan is being undertaken to protect the single greatest asset of The Greater Metropolitan Columbus Area - the waterways of Central Ohio. This plan is concerned with the preservation and development of unique natural resources, unique in the sense that many cities have a major waterway, but Columbus has a network of reservoirs, rivers and streams which touch upon many communities.

A review of the history of Columbus will point out the significant role the waterways are playing in shaping the growth and prosperity of Columbus. Columbus, Ohio was founded along the banks of the Scioto River in the late 1700's. In 1812, Columbus became the Capital of Ohio as the city grew and expanded along the banks of the Scioto and Olentangy. At the turn of the century, the City was quickly becoming the focal point of Central Ohio. The Scioto River was dammed in 1905 to provide a safe water supply for the City. In 1913, the City of Columbus was nearly destroyed by floodwaters. To prevent a recurrence of such an event, a complex system of low head dams and weirs were constructed in the 1920's to provide flood control. The O'Shaughnessy Dam was also finished in the 1920's. In response to the flooding, the Downtown riverbank was transformed into a uninviting concrete chute to protect homes and businesses. The 1950's brought the construction of Hoover Reservoir on the Big Walnut Creek which now provides over 60% of the daily water needs of the region. During this same time, the Delaware Reservoir was constructed on the Olentangy River to provide flood control and recreational opportunities. In 1974, the last major waterway through Columbus was dammed as the Alum Creek Reservoir was completed.

The development of recreational opportunities along the waterways has also been an ongoing endeavor. Construction of Griggs and O'Shaughnessy Dams provided thousands of acres of public land for boating and picnicking. Franklin Park which was the original State Fairgrounds became a city park in 1890. Today, 56 Columbus City parks and 66% of all the parkland in Columbus is located along the waterways of Central Ohio. Major developments include the Olentangy bikeway in the mid 1970's and the transformation of the downtown parks beginning with Bicentennial park in 1976. The Downtown riverfront has become the focal point of the area's cultural and activity center.

The goal of this plan is provide leadership in developing a plan to guide the future of Columbus' waterways. The vision of Columbus' future, as portrayed in this plan, will depict a city with quality waterways accessible by the public. Endless stretches of bikeways will form a corridor which protects naturally forested "greenbelts" adjacent to the waterways. These greenbelts will attract private investors who will develop the land nearby, but in such a way as not to damage the sensitive riverine habitat. With the new downtown bikeway, business executives and employees alike will be able to leave the confines of their offices to walk or jog on a course which overlooks a cleaner Scioto River.

The reservoirs will showcase multi-use park facilities. Present recreation areas at the reservoirs will undergo improvements and new areas will be developed. Water events will continue to grow in popularity as Columbus will host major Rowing Regattas, National Waterski Championships and a multitude of events. Many waterway parks already offer soccer, softball, football and tennis facilities. Special facilities such as the floating amphitheater attract hundreds of thousands of park users each year for "Music in the Air" programs. In addition, current plans include building portions of the Alum Creek bikeway for completion by 1992.

The people of Central Ohio want their future to be filled with opportunities to improve the quality of life through recreation and a clean environment. A responsive government can fill these needs and, in so doing, it can attract private investment dollars to maintain a healthy local economy. Our waterways may become Columbus' claim to fame!

THE NEED

For the past several years, the expanding population and economy of the greater Columbus area have increased the need for more recreation areas as land has been converted, through development, from farmland and wooded areas to residential and commercial projects. Growth rates for the region have increased at a greater rate during the 1980's than experienced in the 1970's. The population reached 604,116 by 1987 in the City of Columbus and is increasing at a rate of approximately 5,596 annually.

As a result of this growth of Columbus, land values in and around Columbus have risen substantially which has made the purchase of reasonably priced parkland much more difficult. The result is the existing parkland is now an exceptionally valuable public asset, with the parkland located along the waterways being the most valuable due to the variety of recreation activities and ecological protection it provides.

The Columbus Area waterways total over 170 miles between the seven primary watercourses in Franklin County. Continuing efforts are being made through the Department's Waterways Advisory Council, Hoover Nature Preserve Advisory Council and the Comprehensive Waterways Management Task Force to communicate to the general public the opportunities that exist for recreation along the Central Ohio watercourses. Griggs, O'Shaughnessy and Hoover Reservoirs, provide opportunities that attract regional visitors. Such opportunities include fishing, waterskiing, sailing, power boating, picnicking, hiking, and many other active and passive opportunities generally not available in a neighborhood type park. The reservoir parks make up 54.1 % of all Columbus parkland (see Appendix A, Table 2).

The Columbus waterways are located within the Columbus Metropolitan Statistical Area (MSA). This area represents approximately 1,398,701 residents of which 640,116 (1987 estimates) reside in the City of Columbus. The Columbus waterways serve those residents as well as transient tourist populations. The total parkland in the Columbus Recreation and Parks system is 12,007 acres. Projections for parkland through the year 2000 are displayed in Appendix A, Table 1. On an average, approximately 73 acres of parkland per year needs to be acquired to keep pace with the 20 acres of parkland per thousand people ratio currently maintained by the department. Areas are identified in this plan that could be developed into quality recreation areas to help ease the need for places to recreate. The multiple use management of the reservoir parks will enhance the Department's abilities to provide for the leisure needs of residents.

While the reservoir parks are generally attractive and highly visited parks, many recreational areas are deteriorating due to age and overuse. A recent grant application to the Ohio Department of Natural Resources, Division of Watercraft for improvements to the primary boat launch and marina area of O'Shaughnessy Reservoir is an excellent example of the City moving toward improving recreational boating facilities. This plan will assess all reservoir and watercourse parks to identify areas like the O'Shaughnessy marina that are in need of improvements and propose a priority list for funding projects in order to meet the current and anticipated needs of the public. In reference to Tables 3 and 4, Appendix A, notice that the

undeveloped parkland category is nearly 10% of the park system. Most of this category is made up of watercourse parkland. In all, nearly two-thirds of the total parkland in the Columbus Recreation and Parks system is adjacent to a waterway.

Why do we need a plan?...Currently there is no comprehensive master plan for the waterways which includes all of the elements necessary to make an appropriate impact on the future of the waterways. Therefore, let us examine four questions that are often asked.

1. What goes into the waterways?...Everything. Everything consists of gasoline and oil from leaks or spills from autos, various pollutants such as pesticides and trash that can wash down a storm sewer. The storm sewers simply flow to a nearby waterway and discharge their spoil. Presently, there is no filtration or treatment of storm water.
2. Why do developers build near waterways? People are naturally attracted to water. The most important factor to the private sector is the higher property values associated with waterfront properties. Some developers are more sensitive than others regarding riverine vegetation but in Columbus, a private property owner of riverfront property is allowed to clear all vegetation to the high water mark even though massive damage can result in soil erosion, water quality and wildlife habitat destruction.
3. Are the waterways publicly owned? The actual water is public property (some restrictions apply with government impounded water supplies) and the public has rights to use the water, for such activities as fishing and boating. The problem is access. In order to get to a waterway, public access and recreation areas are necessary since the general public cannot trespass on private property to get to any waterway.
4. How are the waterways important to wildlife? Waterways act as natural "highways" for most wildlife. The wooded riverbanks provide a natural edge for safe passage of wildlife through Central Ohio. When private property owners clear this edge, the natural system is disturbed resulting in a loss of habitat and lower populations of wildlife.

These items describe only some of the effects we have on waterways. The important point to consider is that the problems associated with the waterways can be managed through the development and implementation of a comprehensive plan.

This plan must be based upon a sound understanding of the philosophy of land stewardship which is essential to the effectiveness of this plan. Land stewardship, simply stated, means those management practices that conserve the natural aspects of ecosystems and uses them to our advantage. It takes an integrated approach to waterways, riverbanks and adjoining land management to promote development and uses which enhance the natural character of the land, rather than contribute to its destruction. Only by moving today to adopt such a plan can Columbus expect to still have a beautiful system of waterways to manage tomorrow.

INTRODUCTION

This comprehensive management plan is intended to be a ongoing, working document in order that The Columbus Recreation and Parks Department may adopt the goals outlined below and then implement the recommendations contained in this report to satisfy the growing recreational demands on the waterways of Central Ohio. In a review of waterway management programs developed by other cities, states and the United States government, it has been demonstrated that comprehensive waterway management plans can be developed and implemented successfully. The State of Ohio, Department of Natural Resources, has developed general management plans for State reservoir parks that incorporate recreational as well as environmental concerns that are tailored to each park given the unique local conditions present at each site. Recreation is just one aspect of the management plan. An in-depth analysis of all the elements detailed below is necessary in order to formulate a waterways plan. The Columbus Recreation and Parks Comprehensive Waterways Plan addresses the following key points that relate to waterways management:

ELEMENTS OF THE COMPREHENSIVE WATERWAYS MANAGEMENT PLAN

1. Public Awareness and Education
2. Department Management Strategies
3. Water Quality Considerations
4. Boat Carrying Capacity
5. Recreation Delivery Systems
6. Public Safety and Security
7. Ecosystem Management
8. Long Range Needs Assessment

The goal is examine each element and to formulate an individual plan for each reservoir and watercourse which together will form one segment of an overall comprehensive management plan for the Columbus Metropolitan Area. Phase one of the plan will begin with Hoover Reservoir and follow the order listed below (Appendix A, Map 6 details the location of each waterway).

<u>Reservoir/Watercourse</u>	<u>Proposed Reveiw</u>	<u>Implementation</u>
Hoover Reservoir	Oct. 1989 - May 1990	May 1990
O'Shaughnessy Reservoir	May 1990 - Oct. 1990	May 1991
Griggs Reservoir	Oct. 1990 - May 1991	May 1991
Olentangy River	May 1990 - Oct. 1990	May 1991
Scioto River	Oct. 1990 - May 1991	May 1991
Alum Creek	To be determined	
Big Walnut Creek	To be determined	
All other Creeks	To be determined	

PUBLIC AWARENESS AND EDUCATION:

The role of public awareness and education in this management plan is to inform visitors of the park rules, increase awareness about management strategies (i.e. respect sensitive nesting areas etc.), enhance the protection of the resources and reduce the propensity for vandalism.

Awareness may take many forms. One, is property boundary awareness. Park visitors and contiguous property owners must be able to easily identify if land is public property. Too often private encroachment has destroyed valuable riverine vegetation in the name of "improvement" and because of ignorance of actual property lines.

A second form is an awareness of park visitor's conduct. The park visitor must understand the rules of the park, especially those pertaining to alcoholic beverages, litter, open fires, and vehicle access which are the most predominant problems.

Public Education opportunities through the cooperative effect of government agencies and local school districts is another form of awareness. The waterways should be available for continuous study and observation by students of all ages.

The Nature Preserve at Hoover is a good example of the opportunities for observation, research and education.

DEPARTMENT MANAGEMENT STRATEGIES:

The management strategies developed for this plan will redefine the direction for long range maintenance operations relating to the watercourses. These directions relate to the following areas:

1. Routine Maintenance - to develop routine maintenance schedules for the reservoirs and streams including refuse collection, mowing cycles, facility maintenance, buoy placement and seasonal and special event activities.
2. Neighbor Relations - through the process of public workshops, community meetings and an active role by the Waterways Advisory Council and the Waterways Management Task Force, lease holders, adjacent property owners, joint jurisdictional governmental bodies and the general public will be able to contribute input throughout the planning and implementation phases of this management plan.
3. Bank Stabilization and Erosion Control - to develop erosion control measures which can be implemented to preserve the reservoir's banks and streams. Potential alternatives include utilizing reforestation techniques to hold soil on the banks of watercourses. For example, the U.S. Army Corps of Engineers has developed techniques using the root systems of willow trees to spread and retain soil on erodible shore areas. This option may be used in various areas at reasonable costs. General reforestation through the process of natural regeneration or manipulated planting of various indigenous tree species are also excellent low cost techniques for controlling soil erosion.

4. Habitat Management - the primary mission of habitat management is to accomplish two goals: a) to maintain the species diversity of existing fish and wildlife at healthy population levels, and b) to enhance populations of rare, threatened and endangered species that exist within and around the Central Ohio waterways. The Columbus Recreation and Parks Department currently cooperates with other local, state and federal agencies for assistance in wildlife management projects. This practice can continue to expand to other programs to accomplish projects as they are identified. An example of this type of cooperation is the Ohio Department of Natural Resources (ODNR), Division of Wildlife, funding of a program to designate areas in the Columbus City Parks System exclusively for wildlife habitat.

WATER QUALITY CONSIDERATIONS:

While the primary role of Columbus' reservoirs is to provide safe, clean drinking water for public consumption, this plan is concerned with the supply of water from the point of origin and entry into the stream. The quality of untreated water in the reservoirs and streams is important when considering recreational activities. Considerations include:

1. Non-point pollution sources - farm fertilizers, failed or inadequate septic systems and chemically treated lawns within dangerous proximity of source waters all pose potential hazards.
2. Riparian Management - the importance of natural flora to protect watercourse banks from soil erosion and slow down water runoff to allow evaporation or absorption of pollutants before reaching the waterway are all significant considerations.
3. Aquatic Management - the effects of untreated, source water has a substantial impact on terrestrial and aquatic ecosystems.

BOATING CARRYING CAPACITY:

The ODNR, Office of Outdoor Recreation, has developed a formula to determine safe boating carrying capacity that can be applied to Columbus waterways. This formula takes into account the different types of boating opportunities such as waterskiing, fishing, pleasure, etc. to determine a maximum number of vessels that should occupy a given waterway without putting the public's safety at risk. The carrying capacity rating system will assist the task force in developing policies relating to public and private docks and stakes, launch ramps and special activities on the waterways.

RECREATION DELIVERY SYSTEMS:

The role of this element of the plan is to address the inter-relationships of various forms of recreation, both passive and active, which provide areas for an optimum mix of the recreational opportunities. This element classifies existing areas and identifies user groups of known, current recreational activities. Details will include the present use of each area and the services and facilities available, recommendations for improvements and cost estimates. This element will also attempt to identify the potential to meet new and different recreational opportunities not currently being provided.

PUBLIC SAFETY AND SECURITY:

This element focuses on enforcement, public boating safety, and updating existing park codes and rules. The role of public safety and security in this plan is to protect both the public and the watercourse resources.

Applications of this element include:

1. Public education to convey the rationale for protecting sensitive areas and deterring vandalism.
2. The improvement of cooperation among enforcement jurisdictions (i.e. a lease agreement with the Village of Galena enables Galena police officers to patrol sections of Hoover Reservoir and enforce local codes that in turn help protect the parkland and waterway).
3. Facility improvements including: security lighting, boat ramp renovation, road repairs, etc.
4. Updating the City of Columbus Waterways codes to assist law enforcement agencies in improved supervision of the areas.

ECOSYSTEM MANAGEMENT:

This element of the plan deals with the following areas:

1. Wildlife Management: The three reservoirs and numerous streams in the Central Ohio area offer a wide diversity of wildlife habitat throughout the region. With over 12,000 areas of land and water in the Columbus Recreation and Parks System spread across 170 plus parks, an excellent opportunity exists to develop an active wildlife management program
2. Fisheries Management: Currently, The Department maintains a formal agreement with the Ohio Department of Natural Resources, Division of Wildlife, to manage the fisheries of Columbus' controlled waterways. The Department now has the potential to take an active role in fisheries management and development of specific projects for each reservoir or stream.
3. Forest Management: While the City maintains an excellent street tree management program, almost no emphasis is placed on the management of the Department large tracts of forested areas.

The role of this element of the plan is to examine these management areas and other related disciplines to formulate a program for the protection and preservation of the natural and environmental resources of the waterways.

LONG RANGE NEEDS ASSESSMENT:

This element will combine all the aspects of this plan into a future needs assessment. This includes long range capital improvements needs, identifying potential parkland recreation areas, sensitive zones, boating carrying capacity ceiling limits and policies dealing with lease holders and adjacent watercourse neighbors.

HOOVER RESERVOIR COMPREHENSIVE MANAGEMENT PLAN

INTRODUCTION TO THE HOOVER RESERVOIR
COMPREHENSIVE MANAGEMENT PLAN

Hoover Reservoir is the first phase in the development of an overall comprehensive waterways management plan for Columbus' waterways. Before a detailed management plan can be developed, two important topics must be examined to state the current status of Hoover Reservoir.

First, a history of the reservoir will be summarized noting important events and data. Second, this plan will identify four (4) major issues which significantly affect the long-term management of the reservoir. After laying this foundation, the plan will present each element of the plan along with a detailed analysis of each area with recommendations and preliminary cost estimates for improvements. Finally, the recommendations will be summarized and a priority list of proposed improvements will be stated.

HISTORY AND BACKGROUND OF HOOVER RESERVOIR

Hoover Reservoir, located north of State Route 161 and east of Sunbury Road, is part of the Big Walnut Watershed which in turn is part of the Scioto River Watershed Basin. Hoover is the City of Columbus' largest water storage pool. This reservoir was named after Charles Hoover, one of the first superintendents of the Columbus Water Division. A dedication plaque is located at the west end of the dam. Built between 1952 and 1955, Hoover is an earthfilled dam with an ogee* concrete spillway. Although the dam is not hydro-electric, provisions have been built into its structure (also in Griggs and O'Shaughnessy Dams) to allow it to be converted to produce hydro-electric power at some future time. O'Shaughnessy has been converted and is producing power. Griggs also has the potential to produce electrical power.

The dam structure of Hoover is 2,583 feet long, 680 feet of which is the spillway. It took 180,000 cubic feet of concrete and 591,500 cubic feet of earth to construct the dam structure. Contracted by Burgess and Niple Company, this project cost \$7.3 million at the time of construction. The dam structure is 90 feet high, 83 feet wide at the base and the reservoir took 5 months to fill with water.

The reservoir is 8.75 miles long and 1.5 miles wide at the widest point. By 1954, the City had acquired 4,600 acres of land for the project. Today the City land around the reservoir totals 1,780 acres. The maximum elevation of the water level (holding capacity) of the reservoir was 890 feet above sea level. With the addition of crestgates in 1969, the water level capacity could potentially rise to 898 feet above sea level. The volume of water contained at the 890 level is 19.7 billion gallons; also measured as 60,000 acre feet with 2,825 surface water acres. At 898 elevation, holding capacity is 27.8 billion gallons of water or 86,000 acre feet with 3,570 surface water acres. The average water capacity is held at 893 feet of elevation holding 22.4 billion gallons with 3,073 surface water acres. The lowest recorded water level was 868 feet in 1965 or 22 feet below the spillway.

Hoover Reservoir releases 120 million gallons of water per day into Big Walnut Creek of which only 110 million gallons is treated for consumption leaving 10 million gallons per day for Big Walnut Creek. The water is treated from Hoover at the Morse Road Water Treatment Plant some 3 1/2 miles downstream. The water velocity released from the dam ranges from 9 to 16 cubic feet of water per second. Hoover Reservoir contains 60% of all the water used by Columbus. Of all the water treatment facilities in Columbus, the water flow from Hoover is the least expensive to treat. Presently, a proposal exists to build a 54 inch pipe from the dam to the Morse Road Treatment Plant to feed water directly to the plant without expensive electric pumping from the creek as is now done.

This would also reduce mud, silt and nitrates (turbidity) in the creek water. A pipe to carry water from Alum Creek State Reservoir some 6 miles northwest of Hoover Dam was built in the late 1960's to be used as a supplemental supply of water in case of a water shortage emergency. Alum Creek State Reservoir

*a double curve with the shape of an elongated "S".

was constructed primarily for flood control and not as a water storage pool. Erosion of shoreline is a significant problem at Hoover Reservoir and to help control the erosion, the Water Division uses large rocks (rip-rap) placed on the steep banks (mostly the east side).

As a recreational and boating facility, Hoover provides opportunities for boating, sailing, sailboarding, and fishing. Boats are restricted to no more than a six horsepower motor and no swimming is permitted. Park facilities at Hoover include a campground, boat docks, staking areas, launch ramps and a wide variety of day-use facilities. Many species of fish and wildlife thrive in and along the reservoir. Fishermen may find many species of game fish including bass, catfish, perch, saugeye and occasionally muskie. A Nature Preserve has been established since 1988 to protect sensitive areas where rare birds and plants have been identified.

The water and affiliated responsibilities regarding water consumption and quality are under the jurisdiction of the Columbus Water Division. The parkland surrounding the reservoir is managed by the Columbus Recreation and Parks Department.

Hoover Reservoir represents 40.4% of all parkland within the Columbus Recreation and Parks Department.

MAJOR ISSUES

ISSUE #1 - BOATING CARRYING CAPACITY

The ODNR, Office of Outdoor Recreation has devised a series of outdoor recreation standards for use in guiding recreation and parks professionals in the management of lakes and reservoirs. One of the most significant standards developed by ODNR is Boating Capacity Analysis. The process of Boating Capacity Analysis is used to determine an ideal boating capacity for Hoover Reservoir. The following formula was used to calculate the Hoover Reservoir Rating:

OVERALL CAPACITY RATING

1)	3073	Amount of water acres for Hoover Reservoir
	<u>./.4</u>	Amount of acres of water required per boat for an 6 (six) horsepower lake.
	768	Hoover Reservoir Maximum Carrying Capacity
2)	4	Improved launch lanes.
	<u>4</u>	Unimproved launch lanes...6 unimproved lanes which are equivalent to 4 improved lanes.
	8	Total equivalent quality launch lanes.
	x 25	Boats launched per lane rating for inland lakes.
	<u>200</u>	Boats from existing launch lanes.
3)	150	Total sail boarders.
	294	Total lease holder boats. (ES18, CS60, CC20, HY66, WV30, 100)
	105	Total private boats (18)/stakes (87).
	<u>220</u>	Total public boats 84)/stakes (136).
	769	Total boats docked/moored at Hoover Reservoir.
	<u>x25%</u>	Percent of docked boats which will be on the lake at any one time.
	192	Boats from existing docks, etc.
4)	200	Boats from existing launch lanes.
	<u>192</u>	Boats from existing docks, etc.
	392	Total peak use boating projection.
5)	768	Hoover Reservoir maximum carrying capacity.
	<u>392</u>	Current peak use boating projection.
	51%	Percent of overall capacity.

Based upon the ODNR, Office of Outdoor Recreation, formula Hoover Reservoir is currently at 51.0% of maximum carrying capacity. While boating opportunities can be expanded at Hoover, the method and policy for expansion will determine the future personality of the reservoir. For example, expansion can take the form of additional launch ramps, private docks, public docks/stakes or some combination of the above. The capacity of the reservoir also must be evaluated by pool area. The reservoir is made up of three primary pools:

Pool #1. From the dam north to the County Line Bridge.

Pool #2. From the County Line Bridge north to the Sunbury Road Bridge.

Pool #3. From the County Line Bridge north to the Village of Galena (see Appendix B, Map 1).

The current capacity levels (at maximum pool elevation) are as follows:

Pool #1 - 83%

Pool #2 - 80%

Pool #3 - 13%

Various department policies for expansion in each pool area will be examined in great detail in Element #2 (Department Management Strategies). Each of these carrying capacity ratings do not address special events in the reservoir.

ISSUE #2 - RESIDENTIAL/COMMERCIAL DEVELOPMENT

The evolution of development along and near Hoover Reservoir has progressed steadily since the reservoir was completed in 1955. In the last five (5) years as the Westerville and Columbus Metropolitan areas have expanded and began to encompass the Hoover region, growth in the region has increased significantly. Approximately 1,000 new homes are planned for property no more than 2,000 feet from the reservoir. These developments include Windsor Bay with 260 homes, Woods at Bay Ridge with 225 homes, Hoover Woods with 32 sites and Landings at Hoover with 164 homes. These developments and many others will place an increased demand on Hoover Reservoir's limited park acreage, boating surface acres and current recreation facilities.

The development of private property near and adjacent to the reservoir will not only impact the recreation capabilities of Hoover, but will also impact on water quality due to the use of on-site sewage package plants, increased surface water run-off, and potential surface water contamination. Increased development will reduce potential wildlife habitat in the Hoover region. In conclusion, it is evident that the demands on Hoover's limited resources will continue to increase over time and thus residential and commercial development must be considered 1 of the 4 major influences identified in this report as having significant impact on the development of a management plan for Hoover Reservoir. It is very important to note that in no way is this statement of concern intended to be anti-development. Rather, it is intended to stress the need to plan for anticipated new growth and develop a strategy to manage that growth.

ISSUE #3 -MAXIMUM POOL EVALUATION OF HOOVER RESERVOIR

When Hoover Reservoir was first constructed in 1955, the maximum pool elevation/water level was intended to be 890 feet above sea level. In 19 , the City of Columbus, Division of Water, hired a consultant to study the long-term land acquisition needs to raise the pool elevation to 898 feet. Over the course of the past 34 years, recreation facilities have been added to Hoover based upon a maximum pool evaluation of 893 feet. Due to the

significant growth in the Columbus Metropolitan area, and resulting increased demands on the Hoover water supply, the Division of Water has decided to maintain the maximum pool elevation at 894 feet for 1989, and into the future. Future demands for increased water supply could necessitate reevaluating the need to increase the maximum pool elevation to 898 feet.

The one (1) foot net increase in maximum pool elevation in 1989, has significant impact on the recreational and natural habitat of Hoover Reservoir. Detailed below is a partial list of some of the impacts.

Recreational Impact:

1. Placed all Recreation and Parks Department staking areas under water from early March until June of 1989.
2. Placed the access ramps to the public docks under water.
3. Reduced access to two boat ramps.
4. Flooded an additional 100 acres of parkland.

Natural/Wildlife Impacts:

1. Inundation of habitat including unique areas and nesting sites.

As water rises unpredictably, many lowland nesting areas are flooded resulting in drowning broods and young of various birds and wildlife. Unpredictable fluctuations in water levels make conditions more difficult for wildlife managers to predict the effect on many species.

2. Elimination of traditional spawning areas for some fish species.

The unpredictable fluctuation of water levels can eliminate popular fish spawning areas. A consistent level, be it high or low, is preferable to maintaining seasonally predictable areas for fish spawning.

Overall, this increase in pool elevation covered approximately 100 acres of normally dry land area. If the Division of Water decides to raise the water level to the maximum height of 898 feet, the result would be a loss of approximately 500 acres from the current land inventory. However, it must be noted that in order to increase the pool elevation to 898 feet, there would need to be a corresponding increase in land purchases and flooding easements.

In conclusion, Hoover Reservoir's primary purpose is one of a water supply system for the Columbus Metropolitan Area. The recreational opportunities, while significant, are a secondary benefit provided by the reservoir. Therefore, the present and potential pool elevation of Hoover Reservoir must be considered one of the major issues when developing a comprehensive waterway management plan for the reservoir.

ISSUE #4 - STREAM AND RESERVOIR BANK STABILIZATION

When Hoover Reservoir was constructed in 1955, engineers calculated the progressive effects that various forms of erosion would have on Hoover Reservoir and therefore, acquired the corresponding acreage to adequately encompass the area. Through various scientific techniques, engineers have estimated the effects of raising the pool elevation to a pool level of 893 feet.

What the engineers could not project in 1955 was the effect of developing property contiguous to the water's edge. In many cases, the development of areas adjacent to the water did not increase the potential for erosion. Rather, the removal of the dense vegetation adjacent to the water's edge was a factor which significantly increased bank erosion.

The removal of bank vegetation and cover has not only impacted erosion control, but has also affected public recreation areas, fisheries and wildlife habitat and private property.

The management of Hoover's 28 plus miles of stream bank must be considered a significant issue in the development of this management plan.

SUMMARY

While this plan details four (4) significant issues concerning Hoover Reservoir, in no way is it intended to exclude other less relevant topics. Each of these individual issues merit significant ecological and economical consideration when attempting to develop a waterway management plan for Hoover Reservoir.

Throughout the remainder of this plan, every attempt will be made to consider the impact of these four issues when developing recommendations for the management of specific areas, facilities, and habitats in the Hoover region. This plan is designed to be flexible to future input. Future issues that may arise should be integrated into this working management plan.

ELEMENTS OF THE WATERWAYS MANAGEMENT PLAN FOR HOOVER RESERVOIR

INTRODUCTION:

The following section is a detailed account of each element of the management plan for Hoover Reservoir. How each element relates to the needs of Hoover will be examined in depth. In many cases each element will be broken down into sub-elements or items that will detail current management practices, make policy recommendations and offer preliminary cost estimates.

The scope of this plan is limited to Hoover Reservoir and the surrounding city property. Moreover, this plan will comprise one segment of the overall comprehensive waterways management plan. Therefore, this plan will not attempt to, nor should it attempt to meet everyone's recreational needs at Hoover. What this plan will attempt to do is to optimize the recreational opportunities at Hoover given the known variables, existing limitations, major issues and limited resources available.

ELEMENT #1 PUBLIC AWARENESS AND EDUCATION

Anyone who visits Hoover Reservoir for the first time is sure to be impressed by the 3,000 acres of water, extensive boating facilities and wide variety of picnicking areas. However, upon closer examination it can be seen that Hoover is a reservoir in transition. As the map (See Appendix B, Map 1) illustrates, Hoover Reservoir at the time of construction in 1955 was located in an area dominated by rural farmland. Today, Columbus and the metro area have grown significantly and the impact on Hoover is being felt in a number of ways. In 1988, severe drought in the Central Ohio region resulted in lowering the reservoir to historical lows greatly affecting recreational activities on the lake. In 1989, record rainfall helped maintain the reservoir at unusually high levels well into the summer months, which again had effects on both the recreational and environmental resources of Hoover. Residential development in the immediate area is rapidly expanding with 2,000 new homes planned for construction in the near future. The Hoover region is rapidly changing from a rural environment to a densely populated urban development.

How all of this affects the public and their recreational needs is the subject of this element of the plan. The role of public education and awareness is to develop a well informed public who cares about their recreation needs and the protection of their park system. This element of the plan will identify a series of techniques and methods that can be used to develop a more informed and aware public:

RECOMMENDATIONS:

- 1) Throughout the development of this management plan, public workshops should be held to gather input and evaluate the plan, the public input process should become part of an annual management policy review.
- 2) A public information survey should be developed to determine the expected recreational needs of the community.
- 3) The Department should utilize the assistance of The Division of Traffic to place road counters at various locations to determine accurate visitation rates and boating density.
- 4) Active programming in the areas of habitat management, nature appreciation and litter prevention should be instituted at Hoover through a cooperative effort with the Hoover Nature Preserve Advisory Council.
- 5) Education materials should be developed to inform the public of the recreational opportunities available at Hoover and the unique natural areas being preserved.
- 6) A waterways information newsletter should be developed to inform various user groups about critical issues facing the management of Hoover Reservoir.

**ELEMENT #2 DEPARTMENT MANAGEMENT STRATEGIES
ITEM A RESERVOIR SIGNAGE PLAN**

Hoover Reservoir is a collection of 19 public areas both designated and unofficial. These areas are all frequented by the public on a regular basis. Many of the areas currently have signage as illustrated in the photo below. As the photo demonstrates, the signage is large, very labor intensive to construct and difficult to maintain. The Department of Recreation and Parks has also recently developed a new sign manual and policy for the park and recreation areas.

RECOMMEDATIONS:

- 7) A systematic program should be instituted to replace the existing signs at Hoover with signs meeting the Department's new sign policy. Detailed below are the types of signs required:
 - a) Uniform park signs for each recreation and staking area that identify the area, detail park rules, post handicapped access and explain points of interest.
 - b) Uniform park information displays at each boat launch ramp detailing watercraft regulations, reservoir maps and information of interest to park users.
 - c) Property identification markers to be set along the property line of the reservoir distinguishing public from private property.

ELEMENT #2 DEPARTMENT MANAGEMENT STRATEGIES
ITEM B MOWING AREA ROTATION AND CYCLES

In 1989, the Columbus Recreation and Parks Department expended approximately 4000 manhours on the regular mowing schedule at Hoover Reservoir. This is an approximate 25% reduction from 1987 levels when the Department instituted the Urban Wildlife Management Program. Through the implementation of this program, the Department has committed 100 acres at Hoover Reservoir to succession management already in use as wildlife habitat.

Map 2 in Appendix A details the reductions in mowing from 1987 levels and the proposed, Phase 2, reductions in 1990. Each area proposed for further reduction in 1990 was evaluated for possible use as sport fields, open space, picnicking and passive recreation. It was determined that the best use for these areas would be conversion to natural areas under the Urban Wildlife Management Program. Other large open areas have been identified along the reservoir at periodic locations which will continue to be maintained as regularly mowed open space (see Appendix A, Map 3 for locations).

Map 3 in Appendix A represents the proposed mowing schedule for each area along Hoover Reservoir. The concept of mowing cycles is to optimize maintenance efficiencies by eliminating unnecessary mowing, evaluating the "best" use for specific areas and concentrating limited manpower on the highest priority recreation area.

RECOMMENDATIONS:

- 8) Adopt the mowing schedule detailed on Map 3 in Appendix A of this plan.**



ELEMENT 2 DEPARTMENT MANAGEMENT STRATEGIES
ITEM C REFUSE COLLECTION AND ROUTINE MAINTENANCE

After inspecting the recreation and the support facilities located at each site, two (2) maintenance items were identified that require attention. First, due to the many locations and diverse recreational opportunities at Hoover Reservoir, refuse collection presents a variety of problems for the maintenance staff. The department currently relies on the use of 30 gallon trash barrels placed at each location along the reservoir. While the use of barrels is appropriate, the barrels frequently are overfilled, dumped over or poorly located. Consequently, litter is left on the ground and is blown by the wind across large areas of the reservoir. The solution to this problem involves the following items.

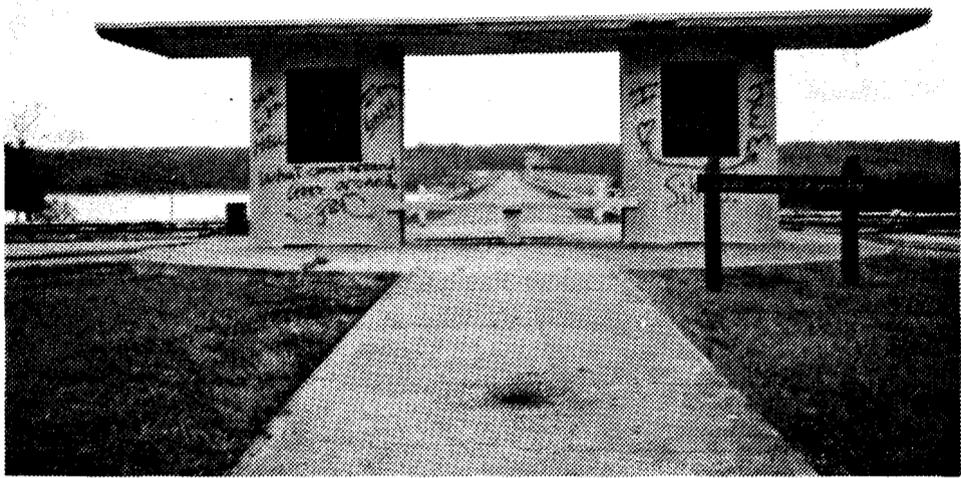
RECOMMENDATIONS:

- 9) All areas should be inspected for quantity and location of barrels. Additional barrels should be placed where needs are identified.
- 10) The frequency of refuse collection should be re-evaluated with an increase emphasis on weekend pickup to prevent overflowing barrels.
- 11) The park police must take an active role in enforcement of litter laws and unauthorized dumping.
- 12) All areas should have appropriate signage addressing litter prevention.
- 13) Community groups should be organized to perform area cleanup projects. These groups have been very successful and should be encouraged and expanded.

The second item requiring attention at Hoover is routine maintenance. Many of the public shelters require painting, grafitti needs to be removed from restrooms, tree stumps need to be removed from public areas and a host of other items need to be addressed.

RECOMMENDATIONS:

- 14) A comprehensive list of these items should be compiled and addressed both by community groups, park police and department maintenance personnel. It is the recommendation of this task force that manhours saved by reductions in mowing be reallocated to refuse collection and routine maintenance.



ELEMENT #2 ... DEPARTMENT MANAGEMENT STRATEGIES
ITEM D NEIGHBOR RELATIONS

The management of Hoover Reservoir involves much more than just the protection of parkland and the supervision of picnicking areas. As the major land owner in the region, the City of Columbus has hundreds of neighbors along the banks of Hoover. Every neighbor has a perception and expectations of what Hoover should represent and offer to the public. The City appreciates and attempts to consider the needs of their neighbors while meeting the recreational and water needs of the entire community. The basic philosophy for the development of this section of the plan is predicated on two ideas: First, the Reservoir's limited resources must be protected. Second, the Reservoir is a multi-use park and open to the entire public for everyone's enjoyment. For the purpose of this plan, policies regarding the use of City property by its neighbors have been classified into groups as detailed on the following pages:

GROUP 1...ADJACENT PROPERTY OWNERS

Adjacent property owners are entitled to the same rights and governed by the same regulations as the general public. Individuals who own property contiguous to Hoover Reservoir are also entitled to apply for permission to install a floating dock or boat stake on Hoover. The following policies have been developed in regard to the use of City property by adjacent landowners.

RECOMMENDATIONS:

- 15) The Columbus City Code governing private docks should be revised with specific guidelines and criteria outlined.
- 16) The Department should adopt the policy entitled "City Reservoir Parkland and Water Use" as detailed in this report.

CITY RESERVOIR PARKLAND AND WATER USE

APPLICABLE LAW

Section 919.07, of the Columbus City Code, states..."No person shall remove, destroy, break, injure, mutilate, or deface, in any way, property in any park or parkway...No person shall construct any...recreational facility...or in any manner alter the natural habitat for any reason in any park unless a special permit is obtained."

(Authority is also granted by any other applicable sections of the Columbus City Code.)

- 1) Any person desiring to alter, in any way, the public parkland between private property and the water's edge must submit written plans and specifications to the Recreation and Parks Department for review. NO ACTION OF ANY KIND MAY TAKE PLACE WITHOUT PRIOR WRITTEN APPROVAL FROM THE RECREATION AND PARKS DEPARTMENT.
- 2) In areas where parkland is already maintained as a "yard", property owners must either discontinue mowing on public parkland or work with the City to implement a bank stabilization plan. No new areas shall be converted to grass, or any other form, from their natural condition without written approval.
- 3) The use of chemicals of any kind on public parkland including, but not limited to, pesticides, fertilizers, or any other material that may affect the natural vegetation or quality of the water, is not permitted.
- 4) The placement, or use, of utilities on public parkland including, but not limited to, electric lines, water pumps, irrigation lines and gas lines, is not permitted.
- 5) Dumping or discharging any material on public parkland, or in the reservoir, shall not be permitted.
- 6) Concrete and other permanent type building materials shall not be considered for any approved construction.
- 7) Permanent structures of any kind are not permitted.
- 8) Storage, or placement of private property on public parkland between private property and the water's edge, will be limited to only an authorized flotation dock structure during the off season. This floating dock structure shall not, in any way, cause a public hazard, or be handled in an unsafe manner.
- 9) Removal of trees of less than one inch in diameter and assorted underbrush may be considered by this department if a pathway (no wider than 5 feet) is desired from private property to the water's edge where a permitted floating dock is located. Again, written plans must be submitted before any action may be taken. Without written approval, no changes in the natural vegetation (including, but not limited to, clearing) are permitted.

- 10) In case of a steep slope between private property and the water's edge, this department may consider the installation of (removable, non-permanent, wooden) stairs. Stairways that block through access of public parkland will not be considered for approval.

PRIVATE FLOATING BOAT DOCKS

APPLICABLE LAW

Section 921.14, of the Columbus City Code, states "Application...for private boat docks along the shores of...reservoirs will be given consideration only for those areas that are contiguous to undeveloped city property."

"Any lease granted to individuals hereunder shall be for the sole benefit of the leasee and his immediate family."

"Leased areas shall be 15 feet in the width of waterfront for each boat accommodated, and a width of five feet above the high water mark. Persons leasing such areas may erect either floating, unroofed docks, or openside floating docks, with a roof or awning to be constructed in accordance with the plans and specifications approved by the Director of Recreation and Parks..."

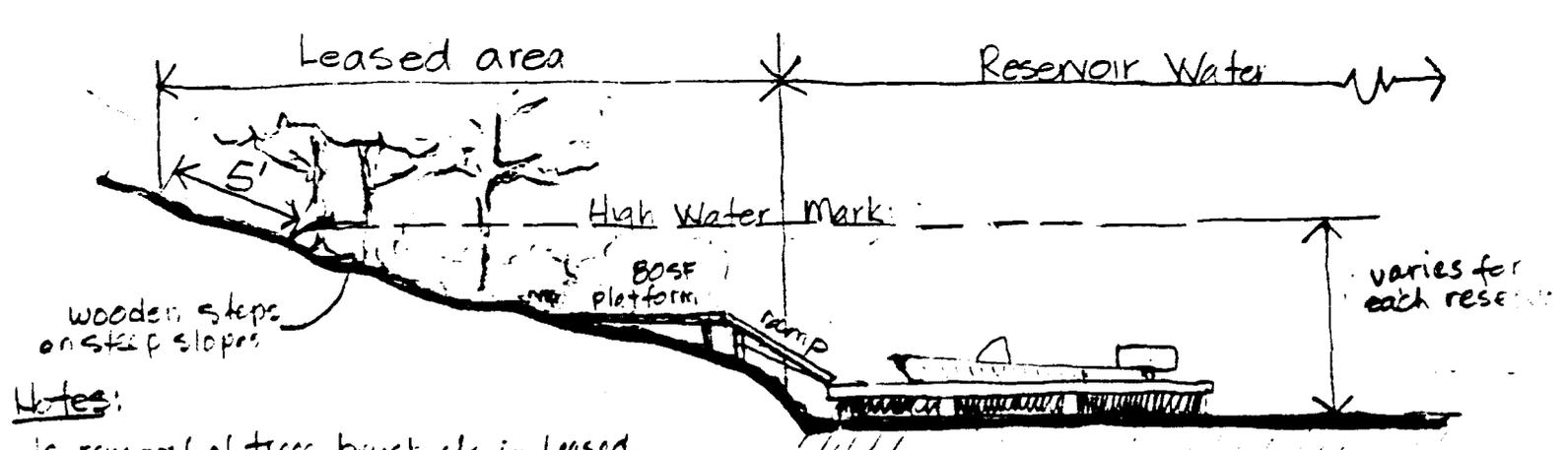
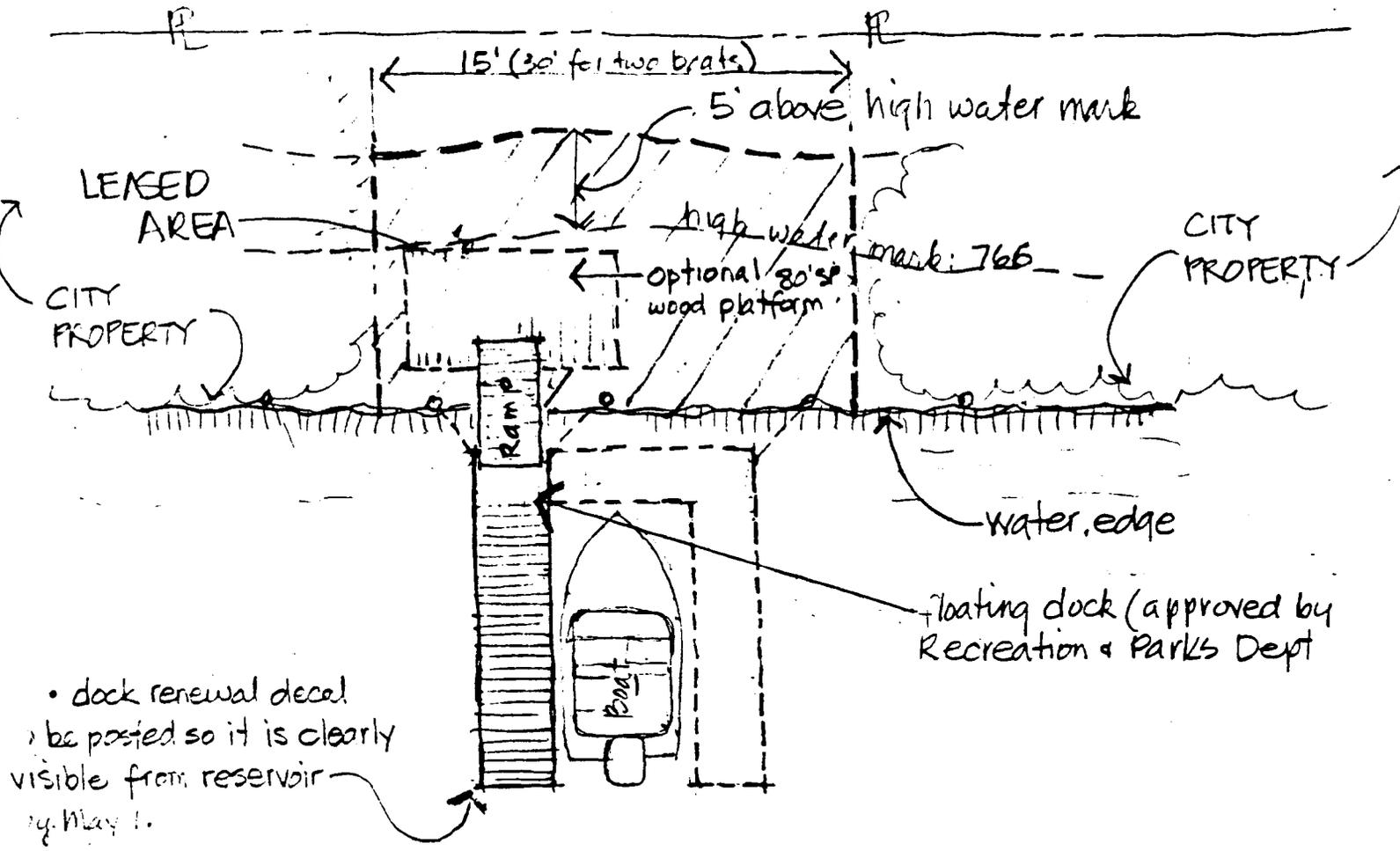
STEPS FOR DOCK APPLICATION APPROVAL

- 1) Contact the Permits Office (455-3337) for information and detailed dock specification. The Permits Office will request verification that yours is a contiguous property along a City Reservoir.
- 2) You may then submit a detailed plan in accordance with the established requirements.
- 3) Once your plan has been approved, you will need to bring in your current boat registration and title to the Permits Office and make application for a private floating boat dock permit.
- 4) Renewal of permits are made annually between January 1 and April 15. Any private dock not renewed for permit by April 15 must be removed from city property.
- 5) Any dock failing to meet health and safety requirements must be brought up to acceptable standards or removed from city property.

FLOATING DOCK SPECIFICATIONS

- 1) All structures must comply with the specifications authorized by the United States Army Corps of Engineers under federal regulations.
- 2) Galvanized or plated hardware should be used in dock construction.
- 3) Wood materials used for decking and/or walkways shall be pressure treated.
- 4) The minimum width of any boat dock will be four feet to allow safe access.

- 5) Flotation shall be achieved by the use of styrofoam blocks or plastic drums. Metal barrels are not permitted.
- 6) Spuds for securing boat docks shall be wood piling or metal pipe. If metal pipe is used, it shall be no smaller than three inches in diameter. Tying to trees, or the use of concrete, or other permanent materials, is not permitted.
- 7) As part of the dock plan, this department will consider requests for a non-permanent, wooden landing platform, not to exceed 80 square feet. This landing platform is to be located adjacent to the dock on the shore. The landing area will be connected to the dock by a free floating (hinged) metal or wooden ramp.
- 8) All docks must clearly display the permit decal and the owner's name and property address. These shall be visible from the water for the convenience of the Marine Park Police.
- 9) Boat docks must be non-commercial, with no closed structure for any use on, or adjacent to, the dock.
- 10) The installation of facilities conducive to human habitation including, but not limited to, household furnishings, potable water, electrical hookups, living quarters, sewers, toilets, or fueling facilities, is not permitted.
- 11) You must make every reasonable effort to construct and operate the authorized floating dock in a manner so as to minimize any adverse impact on fish, wildlife, and natural environmental values, including water quality.



Notes:
 to removal of trees, brush, etc in leased area without written permission of dept of Recreation & Parks.

Refer to City Code, Section 919 + 921 for applicable rules, regulations and permitted activities on City property.

3.15.88/JHD

Section

TYPICAL LEASED AREA & BOAT DOCK INSTALLATION

GROUP 2...SPECIAL PERMIT USERS

There are two main groups who utilize the Reservoir on a special permit basis: 1) the special permit area along Cabbage Road is used by groups on a reservation/permit basis through the Department's Permit Office and 2) the sailboard and boat clubs hold a variety of special events and races on the reservoir. The following policies are recommended for the administration of these user groups.

RECOMMENDATIONS:

- 17) The special permit area should remain a controlled, permit area. A site rotation, maintenance and improvement schedule needs to be developed to rehabilitate this area.

GROUP 3...SAILBOARDING

Sailboard clubs are new to the Reservoir in the past three years. While these clubs have brought a dramatic, new user group to the reservoir, new problems are being encountered. First, sailboarders have significantly increased the use of the reservoir in the middle pool (2) (see Appendix A, Map 4) thus effecting the carrying capacity rating of that area. At the same time, the boat clubs are holding numerous sailboat races on weekends (estimate 40 - 50 events in 1989). Currently, there is no specific designated racing zones or regulations. The same is true for sailboarding. The current carrying capacity in pool 2 is 87% without the additional impact of special events. While no specific problems have arisen to date, this task force would offer the following recommendations.

RECOMMENDATIONS:

- 18) A sub-committee of the Waterways Advisory Council should be formed to evaluate specific boating problems at Hoover Reservoir. This group would be a working group and continue the process of improving Hoover boating opportunities.
- 19) Bouys should be installed to designate the sailboard launch area.
- 20) The feasibility of constructing a launch platform for sailboards should be evaluated
- 21) The need for a second sailboard launch to distribute the current usage should be reviewed.

GROUP 4...FISHING CLUBS

While Hoover is a very popular fishing lake the majority of organized clubs avoid Hoover due to the City Code requirement that boats with greater than six (6) horsepower are required to have the propellers removed in order to be on Hoover Reservoir. Currently, the reservoir is used by the Gahanna Bass Masters and the Redbank Harbor Club for organized fishing tournaments.

RECOMMENDATIONS:

- 22) The Columbus City Code that requires boats with greater than six (6) horsepower engines to remove their propellers while on Hoover Reservoir should be modified to require that the motors be tilted out of the water.
- 23) All launch ramps should remain open year-a-round. During the months of November through March the courtesy docks should be removed and the docks posted that boaters are launching at their own risk.

GROUP 5...BOAT CLUBS

There are currently five (5) boat clubs located on Hoover Reservoir (City Club, Columbus Sailing, East Shore, Hoover Yacht Club and Walnut Valley Boat Club). Each club leases property from the City and pays an annual fee to maintain docks and stakes on the reservoir. The boat clubs currently represent approximately 19% of the boating capacity of Hoover. The following recommendations are offered in regard to the management of these clubs.

RECOMMENDATIONS:

- 24) Fee schedules should be based on fair market value of property.
- 25) All clubs should adopt policies of non-discrimination. Membership should be open to the public on the same basis. All clubs should annually file their bylaws with the Recreation and Parks Department.
- 26) Each club should annually adopt a plan to provide some significant form of public service for the right to operate on public property. For example, a club could offer some form of watercourse instruction, sailing lessons, sponsor special events, make donations to improve public areas, etc.

ELEMENT #2 DEPARTMENT MANAGEMENT STRATEGIES
ITEM #E BANK STABILIZATION

Stream and reservoir bank stabilization have already been identified as one of the 4 major issues that will significantly impact the development of this management plan. The effect of wind and wave erosion, combined with the existing geology of the reservoir basin makes bank stabilization one of the critical problems at Hoover Reservoir. In some places, residents have recorded bank erosion from 2 inches to 2 feet per year. Furthermore, through routine observation of the shoreline it is apparent that areas with dense vegetation are eroding, less rapidly than those areas where vegetation has been removed along the waters edge. Obviously, this plan must rely upon the expert assistance of the Water Division and The ODNR to establish and evaluate the effectiveness of erosion control methods on specific problem areas at Hoover Reservoir. Erosion control methods include the following:

- 1) "Rip-Rap". This is the use of large stone placed along the shoreline to reduce the effect of wave action on areas lacking in vegetation. This method is effective but cost prohibitive. This method is almost always considered as a last resort and used primarily to protect expensive improvements including the bridges at County Line Road and Sunbury, and the dam wall at the mouth of the reservoir. If specific stone is selected and installed properly, rip-rap may actually provide new habitat for some aquatic wildlife.
- 2) "Gabions". This is stone that is wrapped in fencing material to form a package and then placed on a steep bank. This method is usely applied along channels and is also very expensive. This technique has been used to prevent rock slides in Glen Echo Park where steep shale cliff walls are eroding along a meandering stream.
- 3) Flood Walls and Terracing. These are structures installed to control erosion. This technique has been applied along the Scioto River in downtown Columbus. This method can detract from the natural aesthetics of a region.
- 4) Natural Vegetation Buffers. These buffers utilize native vegetations and indigenous trees along the shoreline to hold soil and develop dense root system to deter erosion. The root systems of trees and forbs (weeds) are much deeper than lawn grasses and provide a variety of environmental benefits. These include the following: a) deep rooted plants form a natural filter to retain storm water thus allowing pollutants and pesticides longer periods to evaporate or be absorbed before reaching the reservoir, b) the vegetation and ground cover provide wildlife habitat, c) tree cover provide shade along the shoreline thus lowering temperatures and encouraging fish habitat and spawning, d) there is almost no cost to maintaining natural vegetation along the shoreline.

- 5) Innovative alternatives. Various techniques always being developed. For example, the U.S. Army Corp of Engineers are experimenting with willow tree sprigs to form a living "fence" along the shoreline.

Because of the high cost of rip-rap, gabions and flood wall construction these techniques are often only used to protect expensive public work projects. This plan offers the following recommendations:

RECOMMENDATIONS:

- 27) The City should establish a natural vegetation buffer along the entire shoreline of the reservoir. This will reduce the rate of erosion and improve the aesthetic appearance of the reservoir.
- 28) In all areas but the highly developed recreation areas, the shoreline shall be left undisturbed.
- 29) A plan shall be developed to begin reforestation of the reservoir utilizing natural indigenous species under the direction of the City Forester. A goal of planting 25 trees annually should be set as a standard.
- 30) All recreation areas shall be evaluated and erosion control measures instituted to protect public property where it is cost-effective.
- 31) Adjacent property owners along the reservoir shoreline shall be required to stop mowing City property and allow the reservoir to return to its natural state.
- 32) Department staff shall assist those homeowners who want implement reforestation or vegetation plans for City property along the waters edge.

ELEMENT #3 WATER QUALITY CONSIDERATIONS

Water quality at Hoover Reservoir is a very important and serious matter. Over 60% of Columbus' water comes from this water supply reservoir. The Columbus Water Division has one of the finest treatment programs in the nation. From a recreational and ecological standpoint, however, treating the water is only one aspect of overall water quality. Of great concern is the quality of the source water or raw reservoir water stored and entering Hoover Reservoir. Hoover Reservoir Park is surrounded by private land ownership. In the 1950's, the land surrounding the reservoir was primarily farmland. Today, conditions have radically changed, transforming the once rural farm communities of Westerville, Blendon Township and Genoa Township into booming suburban residential communities. The older residential subdivisions and individual houses that are adjacent to reservoir parkland do not have sanitary sewer systems. These houses use leach beds, septic tanks and aeration treatment systems that often break down resulting in untreated sewage flowing into the reservoir. As new subdivisions are constructed, many have improved sanitary treatment plants or aeration systems. However, any aeration or package treatment plant can break down or malfunction even under ideal maintenance conditions resulting in pollution of raw wastes into the water supply reservoir. New subdivisions can also add pollutants to storm water that flows into the feeder streams that in turn, flow into Hoover Reservoir. These pollutants include oil and gasoline from automobiles and pesticides and nitrates from lawn chemicals. These pollutants can be dangerous to aquatic wildlife and humans. The nitrates promote the growth of algae which in turn consume large amounts of oxygen contributing to fish kills.

The solution is not an easy one since the City of Columbus does not have control over private properties and non-point pollution. Riparian Management can help. Managing the banks of the City controlled reservoir and streams to maximize a vegetative "buffer" between private development and the water will provide the following:

- 1) Tree cover and natural flora can slow the erosion process considerably. In some areas where contiguous property owners have removed natural vegetation and replaced it with lawns, erosion has increased to as much as two (2) feet per year of lost stream bank.
- 2) Tree cover and natural flora can also slow down the rate of storm water run-off at an approximately 60% greater rate than grass covered areas. This extra time will allow many more pollutants to be evaporated out of the water run-off before entering the reservoir thereby allowing only for "cleaner" water to flow into the reservoir.

- 3) Tree cover and natural flora will enhance riparian wildlife providing renewed habitat, food and cover.
- 4) Tree cover and natural flora will enhance the reproductive capabilities of fish populations where shade from trees is a necessary component along reservoir banks. The shade provides for cooler water temperatures along the shorelines which is necessary for fish eggs and spawning.

RECOMMENDATIONS:

- 33) The Department of Recreation and Parks should cooperate with the Division of Water and the reservoir neighbors to adopt the bank stabilization recommendations outlined in Element 2, Item E.

ELEMENT #4 ... BOATING CARRYING CAPACITY

Boating carrying capacity has already been identified as one of the four significant issues facing the overall development of a management plan for Hoover Reservoir. Overall, Hoover is currently at 51.0% of maximum boating capacity at maximum pool elevation. With a current rating of approximately 51% of capacity, many people may not foresee the significance of this element in the plan. However, upon closer examination, the Hoover Reservoir carrying capacity ratings varies greatly from one end of the reservoir to the other end. The area south of the Sunbury Bridge (pools 1 and 2) has a current rating of 87%. Pool area 3, north of the Sunbury Bridge, is currently at approximately 16% of capacity. The table on the following page offers a detailed examination of the carrying capacity of Hoover under 3 different conditions. First, capacity is evaluated based upon the reservoir being at maximum pool (see columns 1, overall rating; 4, pool 1; 7, pool 2; and 10, pool 3). Second, columns 5,8 and 11 reflect the rating for each pool area at elevation 883 with 2650 acres of water. This level represents the average monthly water elevations for June, July and August since 1956. Third, columns 6, 9 and 12 show the amount of expansion possibly in each pool area if the boating levels were allowed to reach 100 % of capacity.

After reviewing the comments of the first public workshop and discussions with the State Division of Watercraft there seems to be a consensus that maximum capacity should be based upon the available water resources during the boating season which in this case is 2650 acres of water and not the maximum pool of 3073. With regard to additional boating opportunities, pool 1 (column 6) can be expanded by 93 boating units before reaching capacity. Pool 2 (column 9) can be expanded by 134 units before reaching capacity. Pool 3 (column 12) has been adjusted for 2 factors: First, the area is designated as a nature preserve and therefore merits consideration for reduced capacity. The acres per boat in pool 3 has been raised from 4 to 8 based upon recommendations from the State Divisions of Watercraft and Wildlife. Second, due to comments from the workshop, the capacity in pool 3 has been adjusted assuming that the baldridge launch ramp would be improved to offer greater access to the upper pool. Given the effect of these two factors, boating opportunities can still be expanded in pool 3 by 112 units. Overall, 339 boating units can be added to Hoover before the reservoir reaches capacity under current conditions.

Hoover Reservoir contains over 3,000 acres of water for potential recreational use. Hoover Reservoir and the surrounding parkland represent over 40% of the entire park acreage in the Columbus Park System. Therefore, the long term development of Hoover as a regional and local provider of recreational opportunities will have a major impact on this part of the city. As illustrated on Map 5, Appendix 2, Hoover Reservoir is in planning area #4 of the City and represents the vast majority of the parkland in the region. Hoover Reservoir is the only six (6) horsepower rated reservoir in the Central Ohio area. Therefore, Hoover naturally provides the majority of sailing and sail boarding opportunities in the region.

As the population continues to expand, the pressures on Hoover to provide services is expected to increase substantially, thus raising the boating levels to capacity or beyond. How the limited water resources are allocated as the reservoir reaches capacity will determine the long-term ability of the Department to meet recreational boating needs for the City.

Carrying capacity is also directly related to overcrowding. As everyone knows when any facility begins to become overcrowded, the satisfaction level of the users begins to decrease. The demands on the resource are strained beyond design capacity and the potential for risk and injury to public safety is increased.

As noted above, what form or mixture the development of new and improved recreational activities compose will greatly affect the overall ability of the reservoir to optimize limited resources. The current boating user groups represent the following breakdown:

Day Use Boaters (51%) and sail boarders (10%) represent public groups who drive to the reservoir each day and who utilize the public boat launch ramps and parking areas.....total percent - 61%.

Public Dock and Stake permit holders (14%) have purchased the right to maintain their boats on Hoover Reservoir for the entire boating season.

Private Docks and Stakes (7%) and boat clubs (19%) represent individuals who own or lease property on the reservoir.

Overall, the current ratio of public (75%) to private (25%) docks and stakes is 3 to 1.

RECOMMENDATIONS:

- 34) Hoover Reservoir should be managed as a regional boating facility. Hoover provides unique boating opportunities in Central Ohio and this boating environment should be maintained.
- 35) The reservoir's maximum carrying capacity should be based upon the average June, July and August elevations of 883' or 2650 water acres.
- 36) The enclosed carrying capacity table should be adopted as a working policy to guide expansion of boating opportunities at Hoover. In no cases, should capacity exceed 100% in any pool.
- 37) The current ratio of 75% public and 25% private docks and stakes should be maintained when considering any expansion of boating opportunities at Hoover.

HOOVER RESERVOIR CARRYING CAPACITY MODEL

	(1) Overall Max Pool	(2) Overall Ave Pool	(3) Overall In.Boat	(4) Pool 1 Max Pool	(5) Pool 1 Ave Pool	(6) Pool 1 In.Boat	(7) Pool 2 Max Pool	(8) Pool 2 Ave Pool	(9) Pool 2 In.Boat	(10) Pool 3 Max Pool	(11) Pool 3 Ave Pool	(12) Pool 3 In.Boat
Acres	3073	2650		773	730	730	1000	937	937	1300	983	983
Water Requirements	4	4		4	4	4	4	4	4	8	8	8*
Maximum Capacity	768	663	540***	193	183	183	250	234	234	163	123	123
Improved Ramps	4	4	6	2	2	2	2	2	2	0	0	2**
Eq. Improved Ramps	4	4	5	2	2	2	2	2	2	0	0	1
Total Ramps	8	8	11	4	4	4	4	4	4	0	0	3
Boats Per Ramp	25	25	25	25	25	25	25	25	25	25	25	25
Boats From Ramps	200	200	263	88	88	88	100	100	100	0	0	75
Expansion			339			93			134			112
Sailboarders	150	150	150	150	150	150	0	0	0	0	0	0
Lease Holders	294	294	294	20	20	20	256	256	256	18	18	18
Private D/S	105	105	105	20	20	20	75	75	75	10	10	10
Public D/S	220	220	220	100	100	100	70	70	70	50	50	50
Total Boats	769	769	1108	290	290	383	401	401	535	78	78	190
Boats Per	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%	25%
Boats From Existing	192	192	277	73	73	96	100	100	134	20	20	48
Boats From Ramps	200	200	263	88	88	88	100	100	100	0	0	75
Boats From Existing	192	192	277	73	73	96	100	100	134	20	20	48
Total Peak Use	392	392	540	160	160	183	200	200	234	20	20	123
Total Peak Use	392	392	540	160	160	183	200	200	234	20	20	123
Overall Rating	51%	59%	100%	83%	88%	100%	80%	85%	100%	12%	16%	100%

* Acre per boat requirement raised to protect Nature Preserve.

** Based upon improvement of Baldrige Launch Ramp.

*** Sum of maximum capacity of Columns 6, 9 and 12.

ELEMENT #5 ... RECREATION DELIVERY SYSTEMS

INTRODUCTION

As noted throughout this plan, Hoover Reservoir is a park in transition. As development continues, the surrounding neighborhood is progressively changing from farmland into subdivisions. This change will affect the recreational needs in the Hoover area as the public demands more services and facilities.

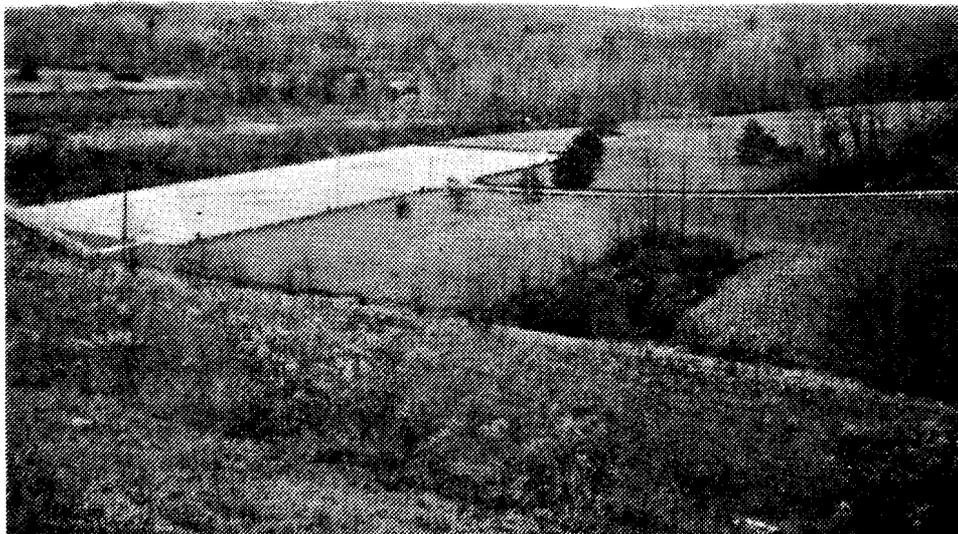
Historically, Hoover has been perceived as a quiet reservoir for sailboating and picnicking. While this plan does not necessarily want to change this image, it does want to address the growth in the region and demand for quality recreational programming. What follows is an evaluation of the current recreational areas at Hoover, recommendations for improvements and cost estimates. This evaluation also includes proposed long-term development of three (3) new areas.

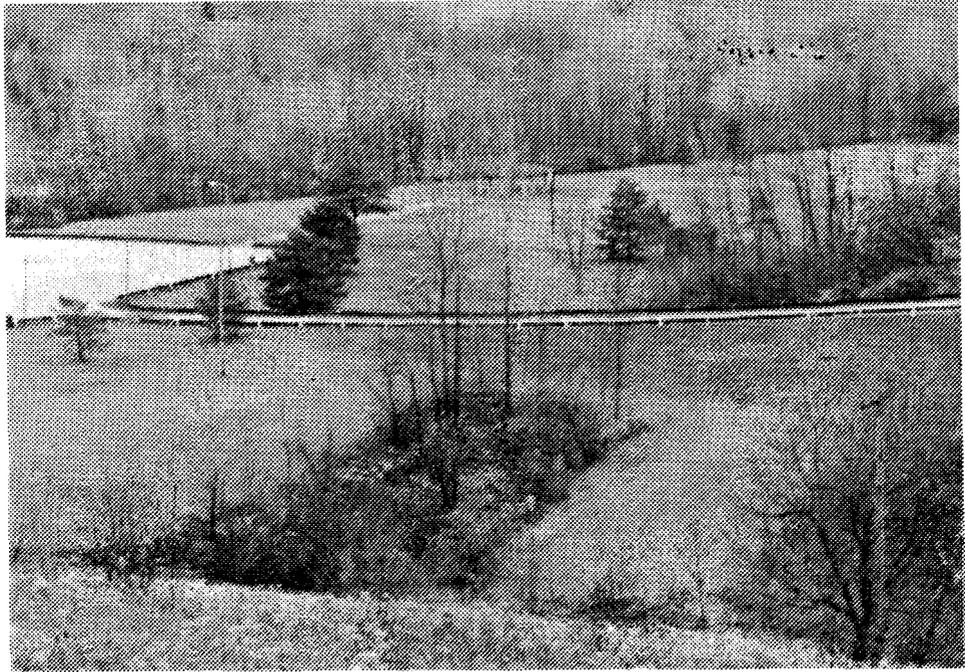
AREA #1 Westbank Recreation Area - located south and west of the dam spillway.

- Current Use:**
- 1) The unimproved soccer field is used by the Westerville Soccer Association. Facilities include an open shelterhouse, picnic tables, pit toilets and paved parking.
 - 2) The informal picnic area located along Sunbury Road south of the Dam Overlook parking lot consists mainly of scattered picnic tables.

- Recommendation:**
- 1) Redefine mowing areas.
 - 2) Paint shelter and toilet facilities.
 - 3) Install proper signage.

- Estimated Cost:**
- 1) No cost.
 - 2) \$250 for materials.
 - 3) Signage is addressed in Element # 2.





**AREA #2 Hoover Marina - located on the west bank of the reservoir
immediately north of the dam.**

Current Use: 1) The 84 public docks are available to the public on an annual renewable basis.
2) The playground and scattered picnic tables form an informal area with concession facilities and unimproved public parking located along Sunbury Road.

Recommendation: 1) The entire area is in need of complete redesign and capital improvement. The plan should include paved parking, handicapped access to the docks, security lights, restroom facilities, picnic area and new signage.

Estimated Cost: 1) \$450,000



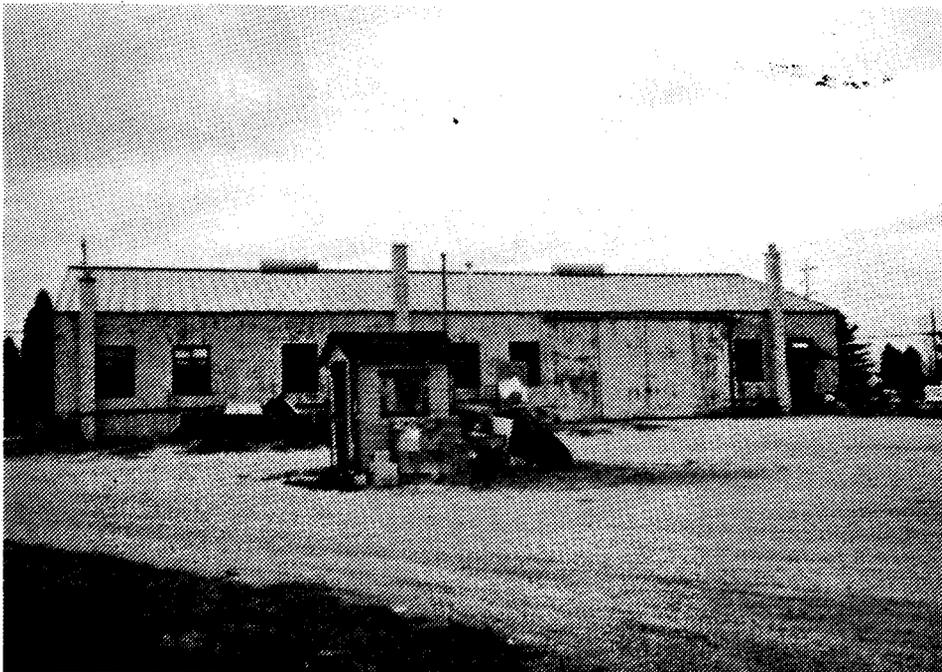


AREA #3 Hoover Service Areas - located approximately 1/4 mile north of the dam on the west bank of the reservoir within 300' of Sunbury Road.

Current Use: 1) The area currently includes the Maintenance Zone Headquarters and the Marina Park Police Center.

Recommendation: 1) Due to the proximity of these support facilities to Sunbury Road, the maintenance areas should be screened from view and maintained in an orderly fashion.

Estimated Cost: 1) \$1,000 for small trees and shrubs.



AREA #4 Pontoon Staking Area "A" - located approximately 1/2 mile north of the dam on the west bank of the reservoir.

Current Use: 1) 62 public boat stakes are available to the public on an annual rental basis. This area is designated for pontoon boats only. The area is supported by a gravel parking lot, open shelterhouse, and limited picnic area. The area is also utilized by the Central Ohio Transit Authority (C.O.T.A.) as a park and ride location.

Recommendation: 1) Short Range: Signage.
2) Long range: Paved parking and security lights.

Estimated Cost: 1) Short Range: Signage is addressed in Element # 2.
2) Long Range: Paved parking lot and lights, \$75,000



AREA #5 Walnut Street Staking Area "B" - located on the west bank of the reservoir at the intersection of Sunbury road and Walnut Street.

Current Use: 1) 50 public stakes are available to the public on an annual rental basis. This area is a mixture of pontoon boats and sailboats. The area is supported by a gravel parking lot, pit toilets, an open shelterhouse, limited picnic space and a badly deteriorating launch ramp. The area is also used extensively by local sail board groups and has informally been designated as a launch and retrieval area for sail boarding. The Walnut Street area is also serviced by an upgraded parking and launch area just north of the staking area commonly referred to as the North Walnut Street Launch Ramp.

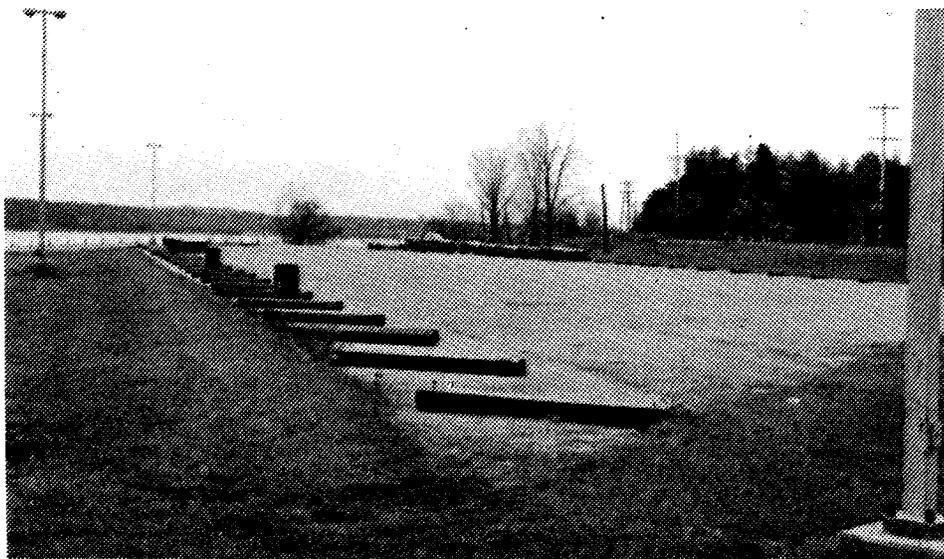
Recommendation: 1) Due to the promiximity of the upgraded launch facilities just north of the staking area, it is recommended that the launch ramp at Walnut street be maintained strictly as a backup facility.

2) With the substantial increase in use of the Walnut Street facility by the sail board community, the parking lot and restroom facilities require upgrading with appropriate signage.

Estimated Cost: 1) Minor routine repairs, no cost.

2) Paved parking and upgraded restrooms, \$100,000.

3) Signage is addressed in Element # 2.



AREA #6 Cring Staking Area "C" - located south of the County Line Bridge on the west bank of the reservoir.

Current Use: 1) 30 public boat stakes are available to the public on an annual rental basis. This area is used by a mixture of pontoon and sailboats. The area is supported by a gravel parking lot and an unimproved launch ramp.

Recommendation: 1) Minor repairs to the stakes and ramp with new signage.

Estimated Cost: 1) Signage is addressed in Element # 2.



AREA #7 County Line Staking Area "D" - located on the west bank of the reservoir north of the County Line Bridge.

Current Use: 1) 46 public stakes are available to the public on an annual rental basis. The area consists of various open areas, no picnic facilities, and a series of undefined, meandering roads.

Recommendation: 1) The area needs to be redesigned with closure of unnecessary roads, redefinition of mowing areas, possible reforestation and installation of new signage.

Estimated Cost: 1) \$200 for bollards and cable.
2) Relocate picnic tables currently not being used in the campground to the area.
3) Allow for natural reforestation of designated areas.
4) Signage is addressed in Element # 2.



AREA #8 Apple Orchard Launch Ramp - located on the west bank of the reservoir approximately 1/4 mile north of the County Line Road Bridge.

Current Use: 1) This is primarily a fishing point with access to the reservoir by a series of unrelated roads and paths. The area also offers the public the use of a low level boat launch. Given normal water levels, this ramp is under water 4-6 months a year.

Recommendation: 1) Fishing access needs to be defined and parking limited to specific areas. The area also needs refuse barrels and signage.

Estimated Cost: 1) \$200 for bollards and cable.
2) Signage is addressed in Element # 2.



AREA #9 Fishing Area #1 - located approximately 1/4 mile south of Maxtown road on the west bank of the reservoir.

Current Use: 1) This area is an undesignated fishing area with access to the reservoir by a series of unrelated roads and abandoned strips of Old Sunbury Road. Due to the water elevation, this area is subject to frequent flooding and is normally under water 4-6 months a year. Uncontrolled access in this area is creating a variety of problems including illegal dumping, habitat damage due to off road vehicles and other criminal code violations.

Recommendation: 1) Installation of bollards and cable to control unauthorized access and designation of parking areas.

Estimated Cost: 1) \$200 for materials.
2) Signage is addressed in Element # 2.







AREA #10 ... Redbank Sailboat Mooring Area "E" - located on the west bank of the reservoir at the west end of Maxtown Road.

Current Use:

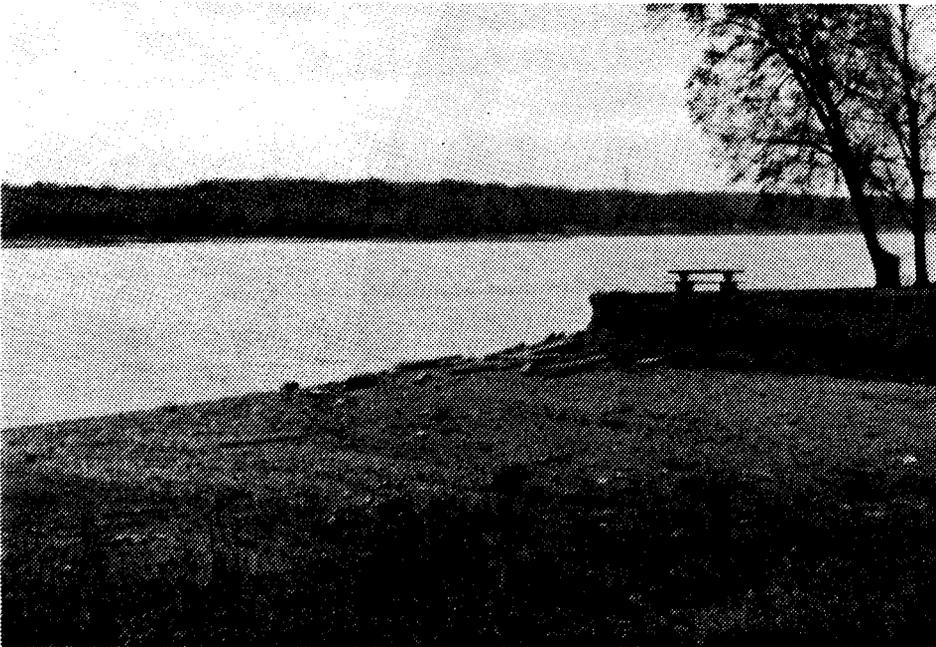
- 1) This area is primarily a boat launching site for day use visitors of the reservoir. With paved parking and two (2) high quality launch lanes, this facility is heavily used throughout the year as access to the reservoir.
- 2) The area also offers a designated picnic area with an open shelterhouse and pit type restrooms overlooking the reservoir.
- 3) The inlet directly north and west of the launch ramp is the location of the designated sailboat mooring area. This area offers 23 mooring sites available to the public on an annual rental basis.
- 4) The Redbank site is also home to what is commonly referred to as the watercraft building. This is an old enclosed shelter currently used for storage.

**Recommendation:
(Refer to Current Use)**

- 1) This area is in excellent condition and only requires annual routine maintenance.
- 2) The picnic area is suffering from severe erosion. The shelterhouse requires general painting. Parking bollards should be installed to replace traffic control devices on the abandoned road just east of the restroom.
- 3) The number of mooring should be limited to existing levels in order to maintain a safe area.
- 4) The watercraft building requires evaluation of both the structure and intended use. This facility may have potential to meet some yet undefined need.
- 5) The entire area requires appropriate signage.

Estimated Cost:
(Refer to Current Use)

- 1) No cost.
- 2) Some form of erosion control must be taken to preserve the bank area around this picnic area. Alternatives include: 1) natural reforestation and vegetation cover estimated cost \$2,000.00; 2) rip-rap or some other form of earthen control cost estimates of \$50,000-75,000.00.
3. No cost.
4. Unknown.
5. Signage is addressed in Element # 2.

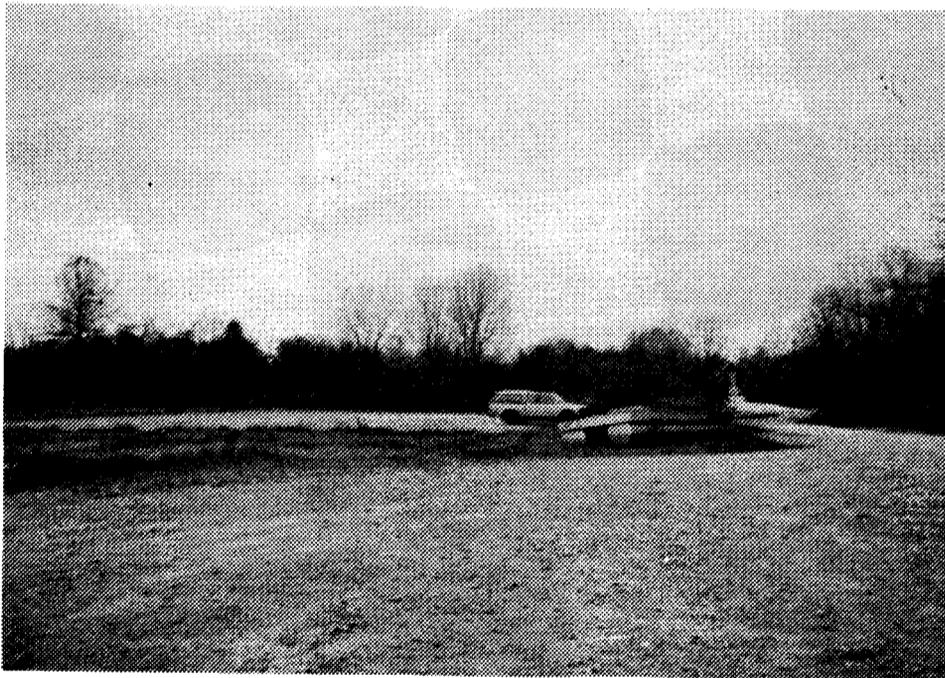


AREA #11 ... Baldrige Launch Area - located on the west bank of the reservoir immediately south of the Sunbury Road Bridge.

Current Use: 1) This area is the northern-most developed area on Hoover Reservoir. While the area only serves day use boaters, it is very heavily used because it offers the most convenient access to the upper 1/3 of the reservoir. The area is supported by an unimproved launch ramp, gravel parking lots and no restrooms.

Recommendation: 1) Due to the location and use of this area, long term improvements should include upgrades to the launch ramp, paved parking, some form of restroom facilities (i.e. port-a-johns) and signage.

Estimated Cost: 1) Short Term: Signage which addressed in Element # 2.
2) Long term: Upgrades to the launch ramp, paved parking and minimal restroom facilities approximately \$80,000.



AREA #12 ... Oxbow Recreation Area - located on the west bank of the reservoir at the east end of Oxbow Road.

Current Use: 1) This area is an undesignated fishing access point with no formal parking, undefined roadways and a substandard launch area. The island portion of the area is flooded 4-6 months each year. This area is of importance because it is the best access point north of the Sunbury Bridge on the west bank. The long term development of this area is dependent upon the Division of Water's management policy regarding the maximum pool level for Hoover Reservoir.

Recommendation: 1) Ideally, this area would offer excellent access to the northern part of the reservoir. Long term development could include improved parking and redefinition of the area, closure of unauthorized roadways and signage. Short range options should include general cleanup, closure of unauthorized roads and appropriate signage.

Estimated Cost: 1) Short Range: \$200 for bollards and cable.
2) Long Range: Unknown.

AREA #13 ... Galena Recreation Area - (Proposed) - located along Big Walnut Creek at the north end of the reservoir in the Village of Galena.

Current: 1) This area is an undeveloped site being used by residences of the Village for community gardens. The area is mostly lowland flood plain along Big Walnut Creek.

Recommendation: 1) Lease the area to the Village of Galena for development as a neighborhood park.

Estimated Cost: 1) No cost to the City of Columbus.



AREA #14 ... Pelican Island Nature Study Area (Proposed) - located on the east bank of the reservoir on Old Sunbury Road approximately 1.5 miles north of the Sunbury Bridge.

Current Use: 1) Undeveloped parkland.

Recommendation: 1) Development of a regional nature study center for use by local schools, for scientific study and by the general public as an observation site. The area would include a nature center, bird blinds, trails, observation platforms and various support facilities.

Estimated Cost: 1) \$400,000.00



AREA #15 ... Twin Bridges Recreation Area - located approximately 1/3 of a mile south of the Sunbury Road Bridge on the east bank of the reservoir.

Current Use: 1) This is a former boat staking area with an unimproved launch ramp and gravel parking. The staking area was eliminated due to theft and to vandalism to the boats staked at the area.

Recommendation: 1) Short Range: No change.
2) Long Range: Due to rapid growth in the Hoover region, this area should be preserved for future possible development.

Estimated Cost: 1) Short Range: No cost.
2) Long Range: Unknown.



AREA #16 ... Walnut Bluffs Campground - located at 8111 Schott Road on the east bank of the reservoir.

Current Use: 1) The facility is a 151 unit Class "B" campground with no electrical or sanitary hookups.

Recommendation: 1) The area requires minor improvements, defined mowing areas and redistribution of used picnic tables.

Estimated Cost: 1) No cost.



AREA #17 ... Cabbage Recreation Area - located on the east bank of the reservoir approximately 1/4 mile north of the dam.

Current Use:

- 1) The special permit area is used by local scout troops. Facilities include informal camp sites and picnic areas. The area is supported by pit toilets and gravel parking lots.
- 2) An unprotected prairie grass area exists on the site.
- 3) The informal picnic area located at the south end of the site includes an open shelter and picnic tables.

**Recommendation:
(Refer to Current Use)**

- 1) This area should be redefined with formal group camp sites, controlled access and site rehabilitation and mowing rotation cycles established to protect the site. The cooperation and assistance of the local scout troops could be requested in the development of a quality camp experience.
- 2) The prairie area should be managed and protected as a prairie. Expertise in prairie management should be obtained through the O.D.N.R., Division of Natural Areas and Preserves.
- 3) The picnic area should be maintained in its current state with general maintenance to the shelter. The open fields and slopes in the area should be reevaluated as recreation fields and mowing areas redefined.

**Estimated Cost:
(Refer to Current Use)**

- 1) \$2,000 for materials.
- 2) No cost.
- 3) No cost.
- 4) Signage is addressed in Element # 2.

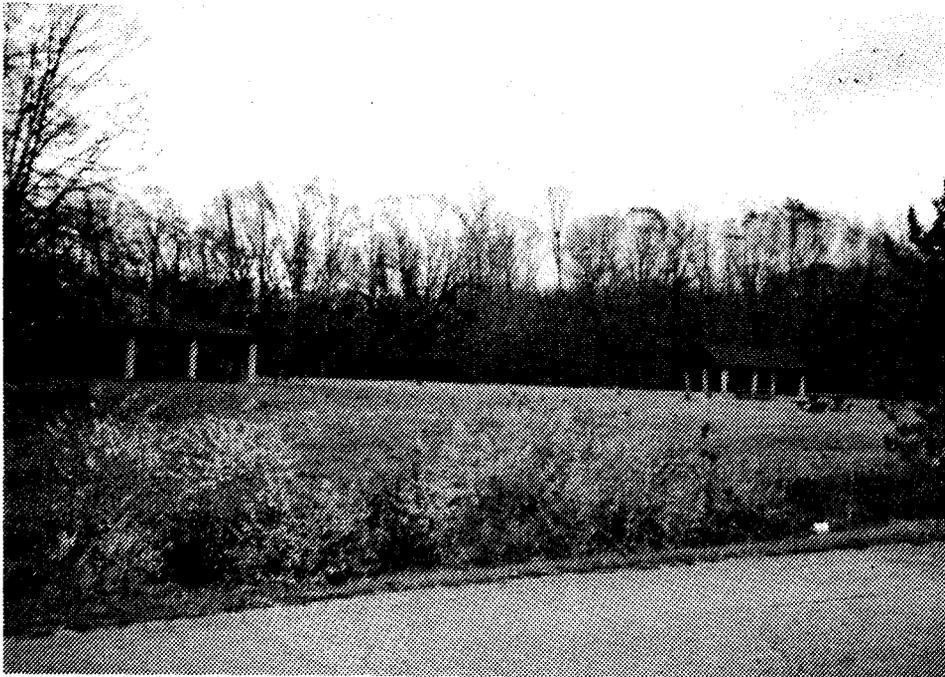


AREA #18 ... East Bank Recreation Area - located on the east bank of the reservoir south of the dam spillway.

Current Use: 1) This serves day use visitors to the reservoir. Facilities include a picnic area with an open shelterhouse, pit toilets and open fields for informal recreation.

Recommendation: 1) The area should be redefined with mowing zones established for the open areas. The area also requires appropriate signage and general maintenance.

Estimated Cost: 1) Signage is addressed in Element # 2. No other cost.





AREA #19 Hoover Nature Preserve - Wildlife Management Plan

I. General Objectives

- A. To conserve the scenery, history, and wildlife of the Hoover Nature Preserve.
- B. To provide for the enjoyment of these areas in a manner that does not impair them.
- C. To maintain wildlife populations in their natural settings.
- D. To follow guidelines as set forth by the City of Columbus Recreation and Parks Department and the ODNR.
- E. To follow the goals and objectives as outlined in the Hoover Preserve Strategic Plan of January 7, 1989 (Attachment 1).

II. Management Areas

The Hoover Nature Preserve consists of the following seven management areas (Attachment 2):

City Plot	Islands and Shorelines
Pelican Island	Mudflats
Big and Little Walnut Creeks	Proposed Wetland Areas
Open Water	

III. Background - Plants and Animals

A. City Plot (89 acres)

- 1. Plants - Multiflora rose, grasses, thistle, hawthorne goldenrod, asters, blackberry, scotch pine.
- 2. Animals - White-tailed deer, red fox, eastern chipmunk, woodchuck, raccoon, cottontail rabbit, deer mouse, striped skunk.

Cardinal, bobwhite, pheasant, robin, mockingbird, American kestrel, brown-headed cowbird, red-tailed hawk.

B. Islands and Shorelines

- 1. Plants - yellow flag, spring beauty, jack-in-the-pulpit, water smartweed, black willow, sycamore, silver maple, buttonbush, sedges.

2. Animals - Woodchuck, muskrat, eastern chipmunk, fox squirrel, red squirrel, white-tailed deer, raccoon, mink, little brown bat, deer mouse.

House wren, downy woodpecker, catbird, indigo bunting, song sparrow, northern orioles, Cooper's hawk, American kestrel, red-tailed hawk, turkey vulture, great blue heron, green heron, wood duck.

Northern watersnake, eastern spiny softshell turtle, midland painted turtle, American toad, green frog.

C. Pelican Island

1. Plants - Buttonbush, black willow, sycamore, water willow, water smartweed, duckweed.

2. Animals - Muskrat, white-tailed deer, raccoon, fox squirrel, red fox, opossum, deer mouse.

Double-crested cormorant, great blue heron, carolina wren, screech owl, great horned owl, yellow warbler, prothonotary warbler, carolina chickadee, tree swallows, water pipits, cedar waxwing.

D. Mudflats

1. Plants - Tick-trefoil, thistle, cocklebur, water smartweed, sedges, rushes, horsetail.

2. Animals - Raccoons, opossum, red fox.

Great blue heron, great egret, greater and lesser yellowlegs, killdeer, semipalmated plover and sandpiper, sanderlings, short-billed dowitcher, pectoral and spotted sandpipers.

E. Big Walnut and Little Walnut Creeks

1. Plants - Black willow, eastern cottonwood, black walnut, American elm, sycamore, honeylocust, sugar maple, red ash, boxelder, buttonbush.

2. Animals - White-tailed deer, raccoon, striped skunk, opossum, gray squirrel, deer mice, cotton tail rabbit.

Belted kingfisher, red-bellied woodpecker, wood duck, red-eyed vireos, carolina chickadee, yellow-billed cuckoos, scarlet tanager, northern cardinal, red-tailed hawk, green heron, prothonotary warbler.

American toad, green frog, leopard frog, eastern spiny softshell turtle.

F. Proposed Wetland (40 acres) Intersection of Big Walnut and Sunbury Road

1. Plants - Multiflora rose, grasses, asters, goldenrod, thistle, tick-trefoil.
2. Animals - White-tailed deer, raccoon, striped skunk, opossum, muskrat, cottontail rabbit.

American tree sparrow, common yellowthroat goldfinch, blue-winged warbler, yellow warbler, song sparrow, red-winged blackbird, American kestrel, wood duck, tree swallow.

G. Open Water

1. Fish - Common carp, walleye, saugeye, white bass, largemouth bass, gizzard shad, bluegill, black crappie, yellow bullhead, longnosed gar.
2. Waterfowl - Canada goose, mallard, black duck, American widgeon, canvasback, ring-necked duck, lesser scaup, common merganser, hooded merganser.
3. Water birds - Double-crested cormorants, pied-billed grebe, common loon, tundra swans, common tern, bonaparte's gull, herring gull.

IV. Specific Wildlife Management Objectives

A. City plot

1. Desired Successional Communities - Young and old fields, shrub and forest.
2. Target Species - "Edge species" such as quail, pheasant, rabbit, ground hog, red fox, bluebirds, American kestrel, and white-tailed deer.
3. Management - Develop edge (places where two habitats meet). Favor trees with high wildlife values - mast, seed, berries, and fruit producers. Maintain cover for protection, food, and nesting requirements. Establish hedges around field borders; establish wind breaks and brush piles. Mix planting of evergreens and hardwoods for cover. Keep some areas open by mowing. Establish nest box programs for screech owls, bluebirds, and American kestrels.

B. Islands and Shorelines

1. Desired Successional Community - Wetland climax of black willows and sycamores.
2. Target Species - Largemouth bass, bluegill, black crappie, prothonotary warbler, wood duck, and screech owl.

3. Management - Maintain and stabilize shorelines with wetland plants. Aquatic vegetation provides spawning, cover, shelter, and feeding habitat for game fish. Continue with nest box programs for the prothonotary warbler, screech owl, and wood duck.

C. Pelican Island

1. Desired Successional Community - Wetland climax community of black willows and sycamores.
2. Target Species - Largemouth bass, bluegill, black crappie, prothonotary warbler, great blue heron, double-crested cormorant.
3. Management - Maintain and stabilize shorelines with wetland plants. Aquatic vegetation provides spawning, cover, shelter, and feeding habitats for game fish. Favor tall trees for colonial nesters (great blue herons and cormorants). Continue with nesting platform program. Maintain prothonotary warbler boxes.

D. Mudflats

1. Desired Successional Community - Herbaceous wetland plants, shallow flooded areas, pools, and exposed mudflats.
2. Target Species - Migratory shorebirds, long-legged waders, gulls and terns.
3. Management - Mudflats are extensively used in the fall by shorebirds as migratory stopover places to replenish fat supplies and rest. Maintain invertebrate population. Follow guidelines as set forth by the City of Columbus Recreation and Parks Department regarding use of all terrain vehicles.

E. Big Walnut and Little Walnut Creeks

1. Desired Successional Community - Upland climax community (beech and maple) and riparian climax community (black willow, box elder, eastern cottonwood).
2. Target Species - White bass, largemouth bass, yellow bullhead, black crappie, prothonotary warbler, wood duck, screech owl, white-tailed deer.
3. Management - Stabilize creek banks by fostering riparian plant growth. Maintain shelter, spawning and feeding habitat for game fishes. Continue with wood duck and prothonotary warbler nest box programs. If necessary, monitor water quality.

F. Proposed Wetland Area

1. Desired Wetland Community - Shallow marsh and small pond. Runoff waters will flood Nature Preserve lands contributing to seasonal and semipermanent wetland communities. Herbaceous plants include cattail, sedges, rush, smartweed, and pondweed; woody plants include boxelder, black willow, eastern cottonwood, silver maple, and button bush.
2. Target Species - American coot, mallard, tree swallow, marsh wren, blue-winged teal, muskrat, prothonotary warbler, wood duck, largemouth bass, crappie and bluegill.
3. Management - Wetlands will be managed for waterfowl, prothonotary warblers, and game fish. Interspersion of open water and marsh vegetation is ideal management. Waters should disperse in shallow zones through wetland vegetation. If necessary, monitor water quality.

G. Open Water

1. Fish Management - As determined by the state of ODNR.
2. Recreation Use - As determined by the City of Columbus and ODNR.

ATTACHMENT 1

HOOVER PRESERVE STRATEGIC PLAN January 7, 1989

This following Goals and Objectives have been proposed for a five-year period subject to approvals.

Goals

1. To maintain the biological integrity of the Hoover Reservoir Nature Preserve.
2. To increase local populations of select fauna and flora.
3. To increase public awareness and utilization of the Hoover Reservoir Nature Preserve compatible with its designated purpose.

Objectives

1. To establish 15 nesting pairs of prothonotary warblers by Spring, 1994. (Goal #2)
2. To achieve and maintain an annual nesting population of 15 pairs of great blue herons within the Hoover Reservoir Nature Preserve. (#2)
3. To establish 25 nesting pairs of wood ducks by 1992. (#2)
4. Develop a recreational plan by 1990.
5. Develop an educational plan by 1990 and begin an active on-site educational program by 1992.
6. Develop an ecological management plan by 1990.

ELEMENT #6 ... PUBLIC SAFETY AND SECURITY

To ensure the park visitor of a quality recreation experience, public safety and law enforcement must become pro-active rather than reactive in dealing with the problem at Hoover Reservoir. The role of public safety and security in this plan is much more than code enforcement. Detailed below is the areas that comprise this element:

- 1) Public Education - Through intergration with the Public Education and Awareness Element, signage should be developed to be informative and educational, thereby assisting to deter vandalism. Current park signage must be redesigned to accomplish this objective. Also important to the success of this element is the installation of park boundary identification signs or markers. Enforcement personnel as well as reservoir neighbors need to know where private property ends and public property begins. Currently in encroachment situations, the Columbus Division of Water survey team must be called each time to determine actual property lines. Enforcement action in this way can only be done after the crime has been committed. Such encroachment crimes have resulted in damages approaching \$20,000 within the past three (3) years at Hoover Reservoir alone. These were in cases where the police or other officials have caught offenders in the act. Many encroachments have occurred where offenders have not been identified. Boundary signage should prevent good citizens from making property boundary mistakes and make potential offenders think twice about encroaching onto City property.
- 2) Jurisdictional Cooperation/Assistance - As a regional facility, cooperative patrol from the Delaware and Franklin County Sheriff's Department as well as support from Westerville, Berkshire Township, Genoa Township and Blendon Township Police Departments should be encouraged to a greater degree. This cooperative assistance should not be preceived as lessening the overall enforcement responsibility or role the Marine Park Section. Specialty patrol in areas designated as preserves or other large remote tracts should be considered to deter off-road vehicle use and habitat destruction.
- 3) Facility Improvements - With reference to the Recreation and Delivery Systems Element, improvements to public recreation areas should include security lighting when necessary, road repair, boat ramp renovation and other similar items. In regard to the Department Management Strategies Element, maintenance activities should be redirected so that time saved from mowing can be reinvested into increased preventive maintenance duties to reduce risk of injury.
- 4) Transitional Enforcement - The "Block Watch" concept which is now common in many neighborhoods throughout the City has application to the Reservoirs. Through contact with various constituency groups, neighbors, property owners and park visitors, the formulation of a "Park Watch" plan can significantly improve the law enforcement effort at Hoover Reservoir. With over 4000 acres of land and water to patrol, one officer working an eight hour shift has very little hope of preventing all the criminal activity in the region.

Through, the active involvement of the public along with the Marine Park Police and other jurisdictional agencies the protection of the park can become a community goal.

- 5) Columbus City Waterway Codes Revision - The Department Waterways Advisory Council has been working with Department staff, Marine Park Police and City Attorneys to revise Chapter 921 (waterways codes) of the Columbus City Code. These revisions will update codes and terminology. With assistance from the ODNR, Division of Watercraft, the code revision proposal should be drafted to reflect consistency between the State and the City waterways codes.
- 6) Training - A joint sponsored training seminar by the Police Division and Recreation and Parks for the Marine Police unit would ensure that marine park police officers understood the types of park-specific law enforcement required to provide quality parks and experiences for the visitors. Law enforcement areas of special concern to Recreation and Parks include off-road vehicles, poachers, vandalism, parking violations (vehicles driving and parking in areas not designated for use) and surveillance of the marina and staking areas.
- 7) Protection of Sensitive Areas - The Hoover Nature Preserve is unique to Central Ohio and can only be maintained through active resource management and pro-active law enforcement. Once a protected area is damaged or destroyed there is little chance of restoring the area to its original condition. The Marine Park Police should become aware of the significance of these areas. Specific enforcement techniques need to be developed to patrol the areas without damaging the fragile resources.

RECOMMENDATIONS:

- 38) The Columbus City code should be amended to reflect proposed management practices, improve safety conditions and allow the City to better serve the needs of the public.
- 39) The City should institute a waterways enforcement training program to be equipment and inform the officers about the problems and management of Hoover Reservoir.
- 40) The "Park Watch" program should be instituted at Hoover Reservoir.
- 41) The patrol officers should become aware of the sensitive resource areas at Hoover Reservoir and actively enforce code violations in these areas.

ELEMENT #7 ... ECOSYSTEM AND RESOURCE MANAGEMENT

Hoover Reservoir is more than just 18 recreation areas, a nature preserve and over 4000 acres of land and water. The natural environment at Hoover was at work long before the reservoir was constructed in 1955. Until recently, the various ecosystems and natural resources at Hoover have been left to develop as best they could with few exceptions. The area is now dominated by a mix of highly developed public areas, open meadows and forested tracts.

Before examining this element of the plan in detail, it is important to first understand what an ecosystem is. The ecosystem is a delicate balance of natural forces that form an "equilibrium" in nature. This equilibrium acts to ensure the survival of species, both plants and animals, and tends to take care of any surpluses or shortages. The ecosystem is defined by the American Heritage Dictionary as "an ecological community together with its physical environment, considered as a unit." In other words, any effect or action taken on the physical environment is an action taken against the ecosystem. Management of resources including wildlife, waterways, forests, prairies, etc. must be done with the entire ecosystem in mind. Land Managers realize that any actions taken to favor a given species of plant or animal may have an adverse effect on something else.

This element of the plan deals with the following areas:

1. Wildlife Management - The presence of the Hoover Nature Preserve and the 4000 acres of land and water offer the public a unique opportunity in Central Ohio to observe waterfowl and wildlife management first hand. As noted in the Public Awareness Element of this plan, the reservoir has potential as a public education facility. Through the cooperative effect of the Nature Preserve Council, a wildlife inventory is being conducted and habitat recommendations are being prepared.
2. Prairie Management - At Hoover Reservoir and a few other isolated sites, some prairie still exists in remnant form. These areas, with the assistance of the ODNR, Division of Natural Areas and Preserves, can be managed and restored to a prairie environment. Prairies often contain rare and unusual plant species that should be preserved.
3. Fisheries Management - The Columbus Recreation and Parks Department has a formal agreement with the Ohio Department of Natural Resources, Division of Wildlife to manage the fisheries of Columbus controlled waterways. The State tracts fish populations and releases, on occasion, new fish to the reservoirs. Fisheries management can also be enhanced by adopting the policies outlined in the Bank Stabilization element regarding maintaining highly vegetated riverbanks to provide shade necessary for spawning many species of fish.

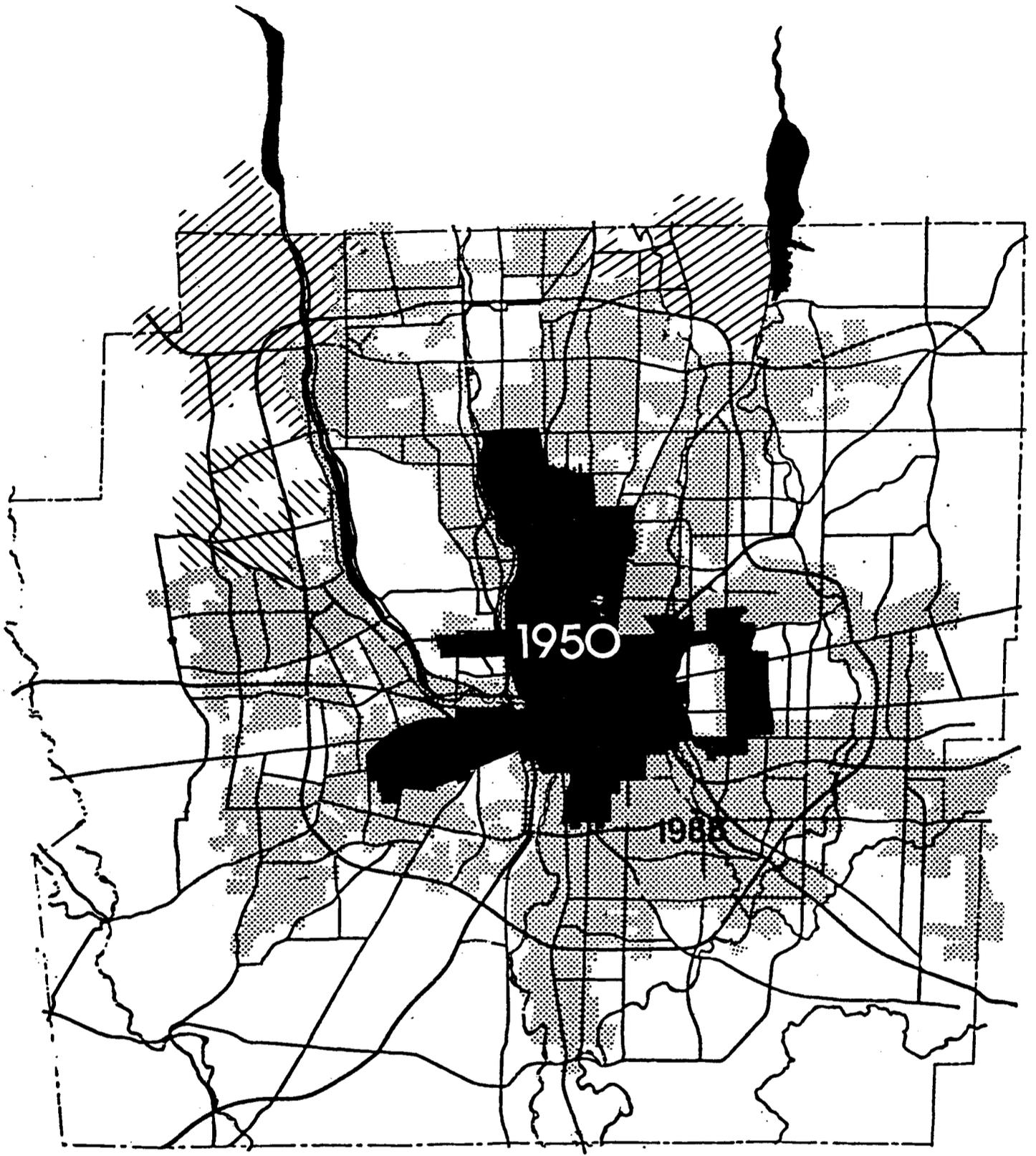
4. Forestry/Succession Management - The Department established the Urban Wildlife Management Program in 1987. This program set aside large tracts of land throughout the city as wildlife nesting sites and succession management areas. The intent is to manage these areas to develop a full range of natural habitats ranging from densely forested areas to open meadows to developed public areas.

At this stage in the plan, the department does not have the expertise to put forth detailed program for managing the ecosystems at Hoover Reservoir. What this plan does do is point out the need for expert assistance in these areas. Detailed below are the primarily recommendations for management of the various ecosystems present at Hoover Reservoir:

RECOMMENDATIONS:

- 42) The Department should seek expert advise in wildlife, fisheries and prairie management in order to protect these resources and to develop a sound resource policy.
- 43) The Department shall request the Division of Wildlife to conduct field studies in the area of fisheries management and habitat development.
- 44) The City shall actively manage Hoover to improve water quality to enhance the fisheries and wildlife of the region.
- 45) Through the continued effects of the Nature Preserve Council, habitat development programs shall be undertaken.

APPENDIX A



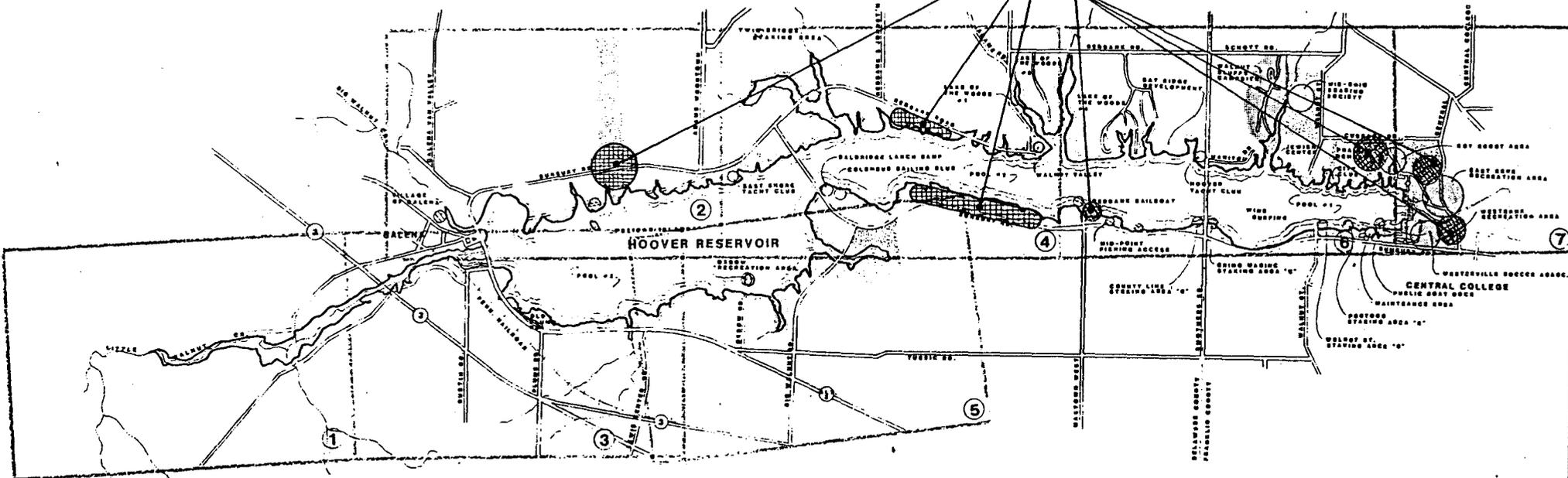
APPENDIX A MAP 1

KEY MAP

HOOVER RESERVOIR BASE MAP STUDY

1987 WILDLIFE SUCCESSION AREAS

1990 PROPOSED W.S.A.



GENERAL LEGEND

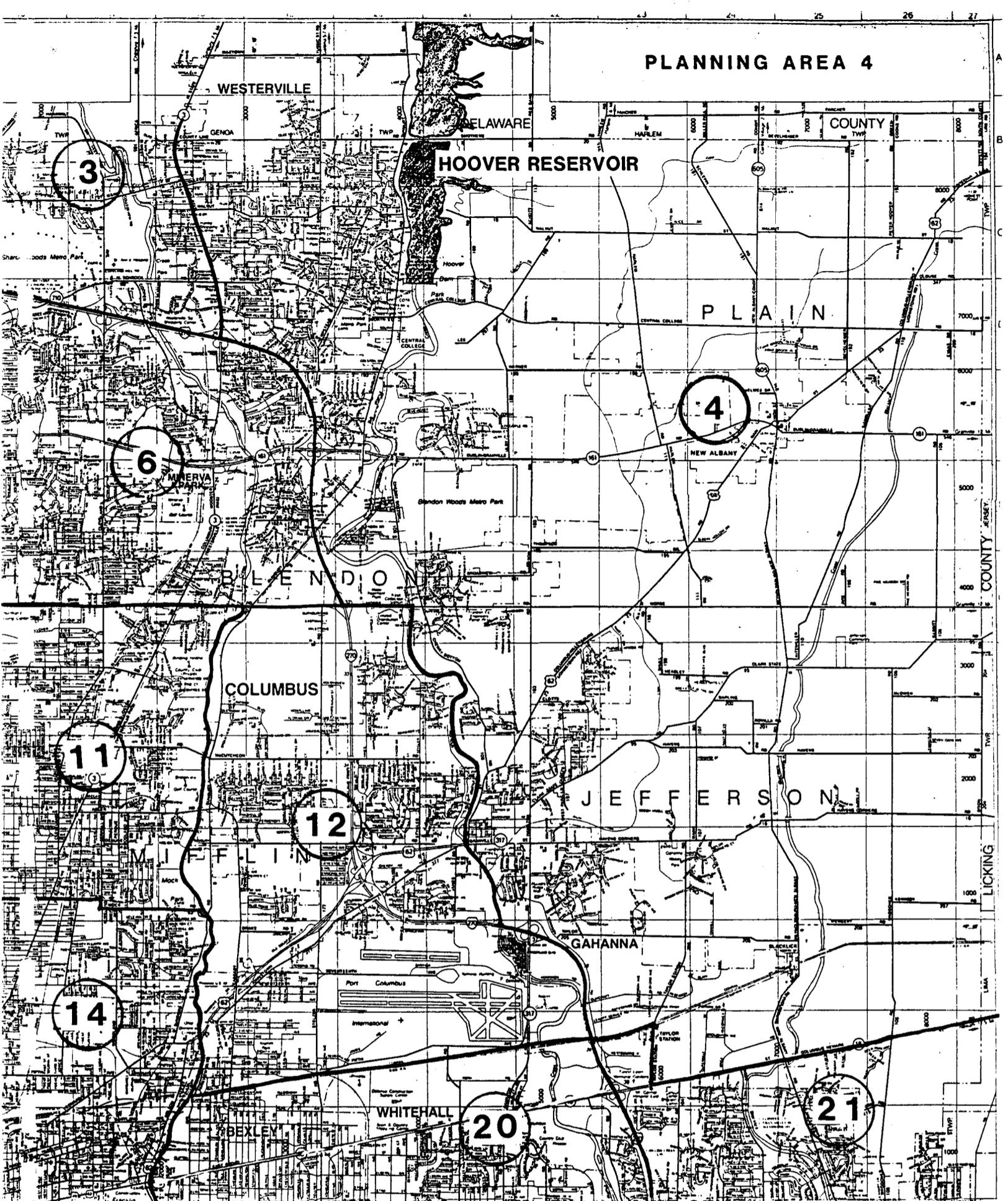
- | | | | | | |
|--|----------------------------|--|----------------|--|--------------|
| | ACCESSIBLE PUBLIC PARKLAND | | MARINA | | PARKING |
| | PRIVATELY OWNED BOAT CLUB | | SAILBOATING | | PICNICING |
| | NATURE PRESERVE | | LAUNCH RAMP | | SHELTERHOUSE |
| | SPECIAL PERMIT AREA | | FISHING | | RESTROOMS |
| | PROPERTY EASEMENT | | DAM | | CAMPSITES |
| | DISTURBANCE FREE ZONE | | RANGER STATION | | GOOD VIEWS |
| | CITY PROPERTY LINE | | INFORMATION | | |
| | RAILROAD | | | | |



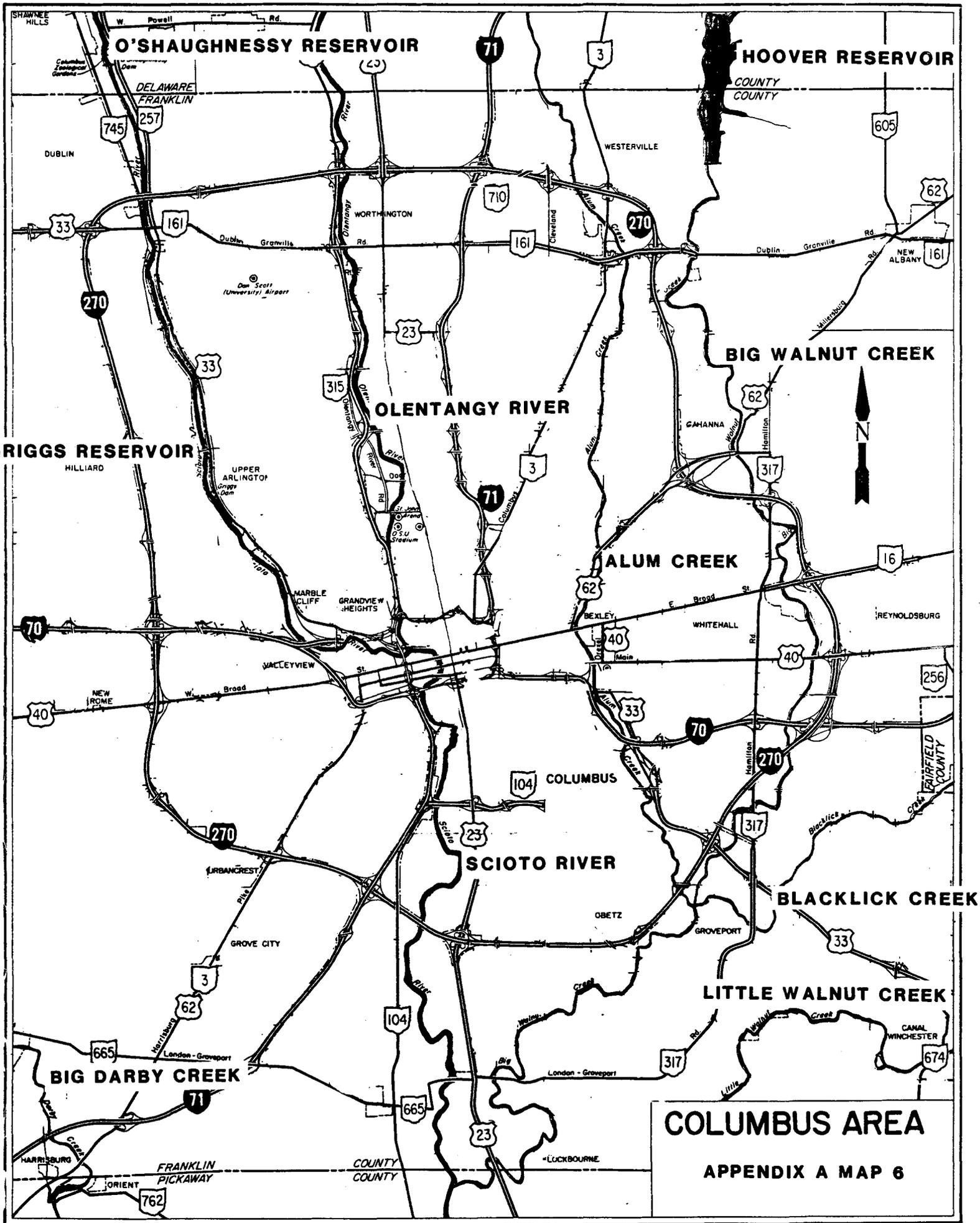
APPENDIX A MAP 2

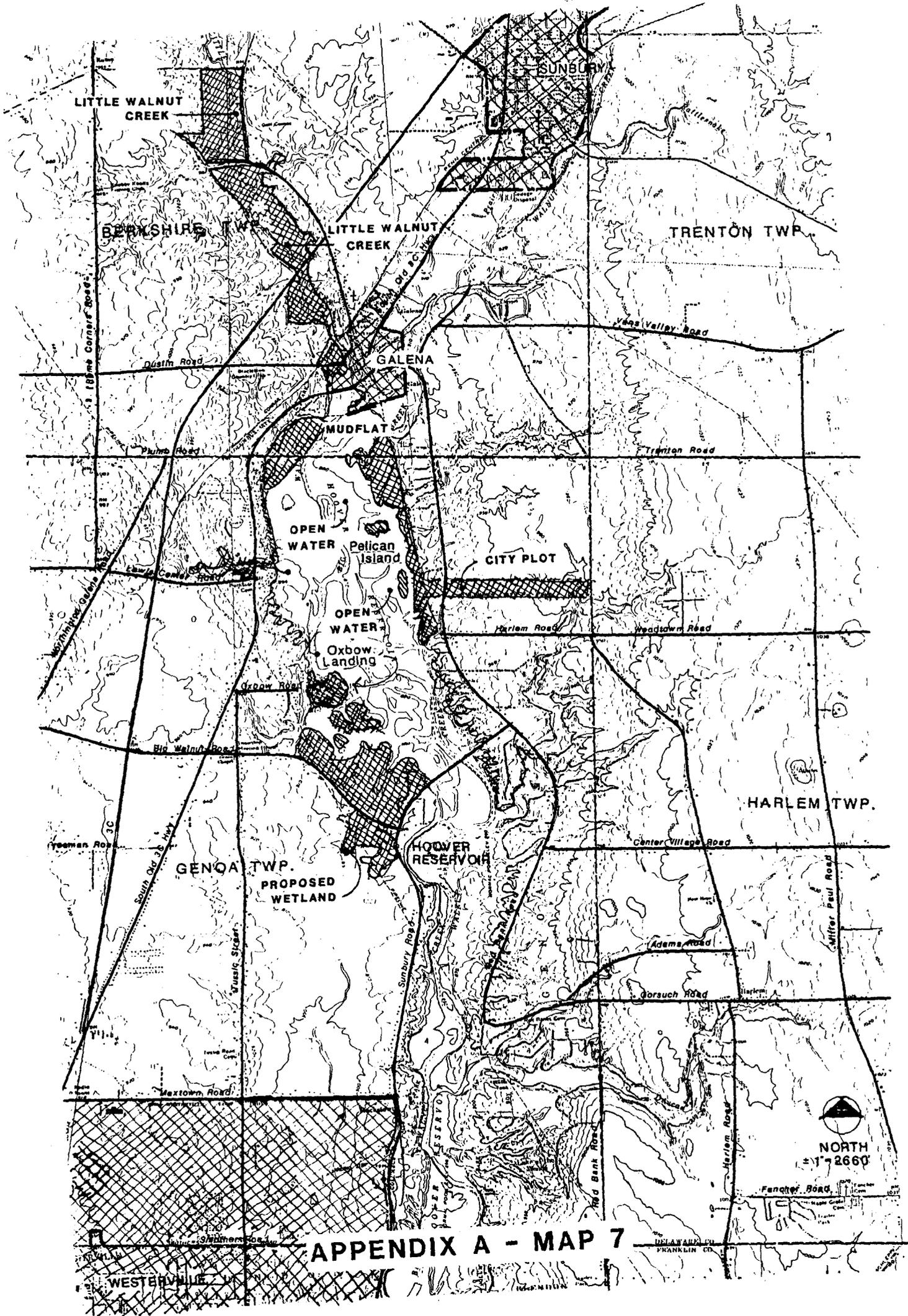
	Project Title		Project No.
	HOOVER RESERVOIR		800-828-81
DEPT. OF RECREATION & PARKS		430 W. WHITTIER ST.	C.S.
PLANNING AND DESIGN		COLUMBUS, OHIO 43215	
614-223-7920			

PLANNING AREA 4



APPENDIX A MAP 5





APPENDIX A - MAP 7

DELAWARE COUNTY
FRANKLIN CO.

APPENDIX B

TABLE _ : COMPARISON OF CITY OF COLUMBUS POPULATION AND PARKLAND

* * INCLUDES ALL PARK PROPERTY AND RESERVOIR ACREAGE * *

YEAR	POPULATION			PARK ACREAGE			ACRES/ 1000 POP
	CITY POPULTN	POPULTN INCREASE	% INCREASE	PARK ACRES	INCREASE	% INCREASE	
1970	540,025			10,104			
1975	552,820	12,795	2.37%	10,684	580	5.74%	19.33
1980	564,871	12,051	2.18%	11,524	840	7.86%	20.40
1981	568,447	3,576	0.63%	11,596	72	0.62%	20.40
1982	572,143	3,696	0.65%	11,599	3	0.03%	20.27
1983	575,845	3,702	0.65%	11,641	42	0.36%	20.22
1984	579,727	3,882	0.67%	11,669	28	0.24%	20.13
1985	583,722	3,995	0.69%	11,679	10	0.09%	20.01
1986	593,149	9,427	1.61%	11,719	40	0.34%	19.76
1987	596,615	3,466	0.58%	11,783	64	0.55%	19.75
1988	600,081	3,466	0.58%	12,007	224	1.90%	20.01
/-----P-R-O-J-E-C-T-E-D-----/							
1989	603,547	3,466	0.58%	12,297	290	2.42%	20.37
1990	607,013	3,466	0.57%	12,146	71	0.57%	20.01
1995	623,610	16,597	2.73%	12,478	332	2.73%	20.01
2000	640,116	16,506	2.65%	12,808	330	2.65%	20.01

NOTES:

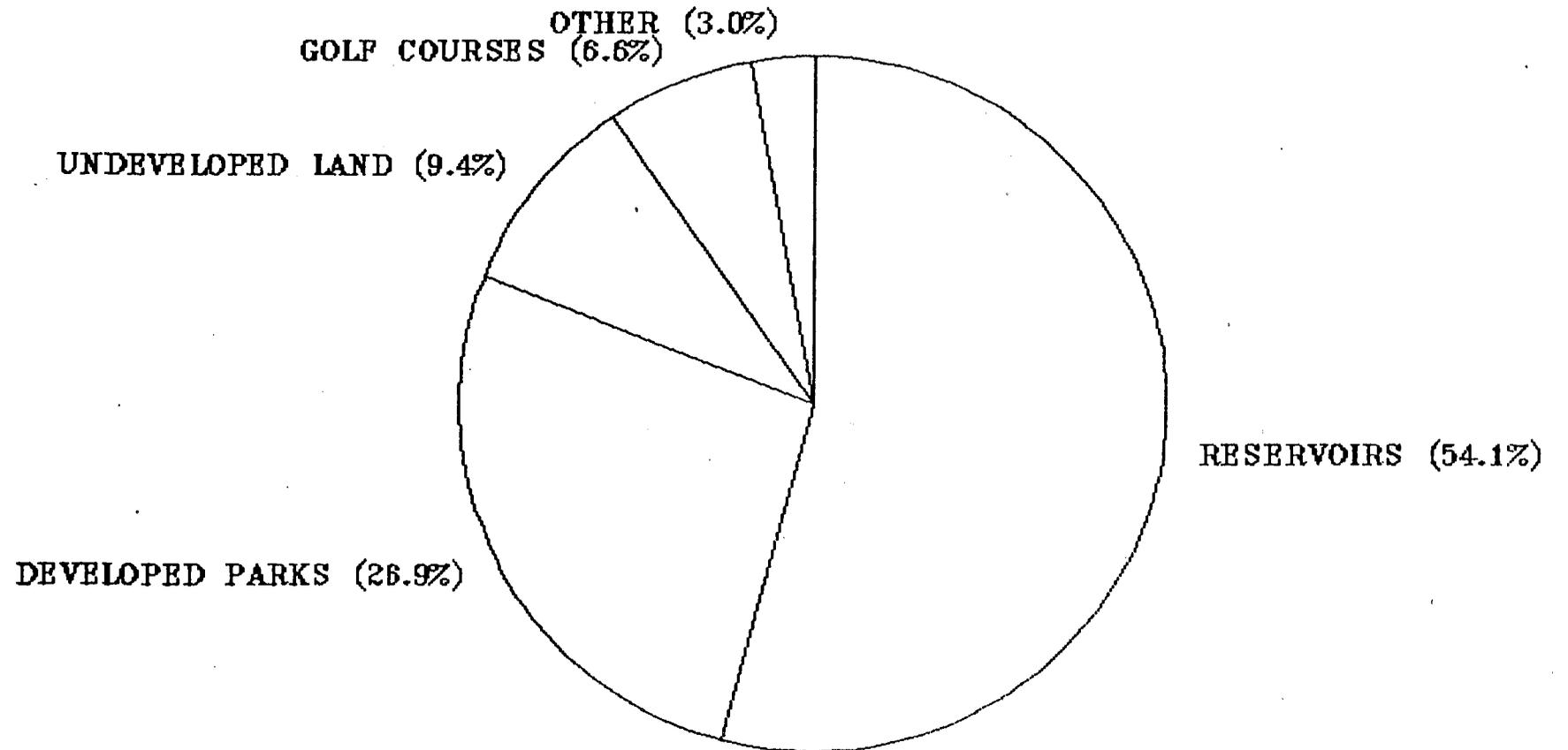
- 1) RESERVOIR ACREAGE (6499 acres) IS INCLUDED IN TOTAL PARK ACREAGE.
- 2) 733 ADDITIONAL ACRES OF PARKLAND WILL NEED TO BE ACQUIRED 1990-2000 TO MAINTAIN 1988 RATIO OF 20.01 ACRES OF PARKLAND/1000 POPULATION AND TO KEEP PACE WITH PROJECTED POPULATION GROWTH.
- 3) AVERAGE ACRES NEEDED PER YEAR-1990 THRU 2000: 73
- 4) POPULATION PROJECTIONS OBTAINED FROM "GROWTH STATEMENT 1988" PREPARED BY CITY OF COLUMBUS, DEVELOPMENT DEPARTMENT, JANUARY, 1988 Tables P-1, P-2, P-8, P-9.

APPENDIX B - TABLE 1

POPACRES:16-Feb-89

RECREATION & PARKS DEPARTMENT

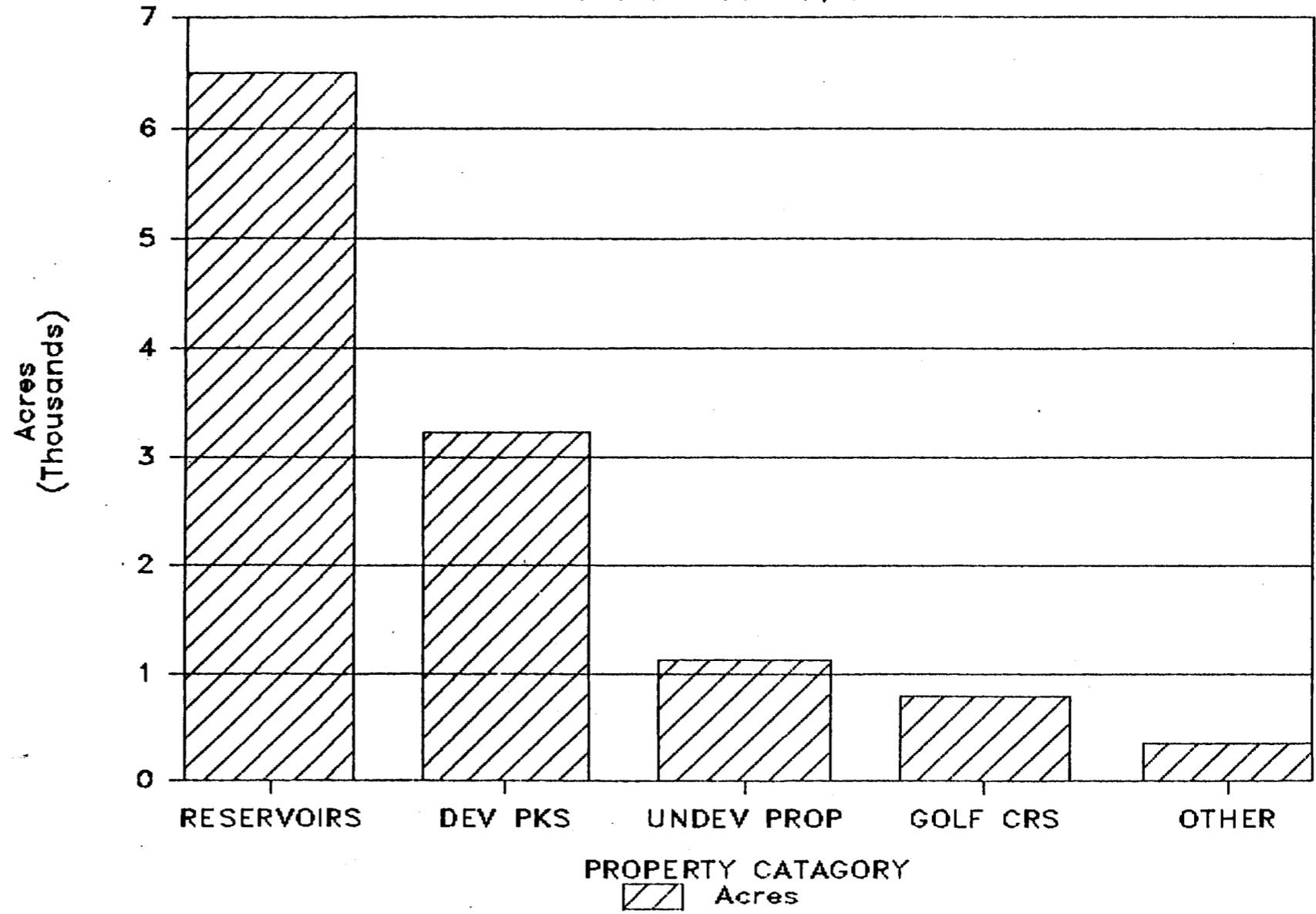
ACRES OF PARKLAND



APPENDIX B - TABLE 2

PARKLAND AND PROPERTIES

TOTAL ACREAGE, 1989



APPENDIX B - TABLE 3

RESERVOIR PARKS

Columbus Recreation & Parks Dept, 1989

