

To the Graduate Council:

I am submitting herewith a thesis written by Rae D. Evans entitled "A Comprehensive Study and Master Plan for the Future Development of Lichterman Park, Memphis, Tennessee." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Science, with a major in Ornamental Horticulture and Landscape Design.


Donald B. Williams, Major Professor

We have read this thesis
and recommend its acceptance:




Accepted for the Council:


Vice Chancellor
Graduate Studies and Research

Thesis

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A COMPREHENSIVE STUDY AND MASTER PLAN FOR THE
FUTURE DEVELOPMENT OF LICHTERMAN PARK,
MEMPHIS, TENNESSEE

A Thesis
Presented for the
Master of Science
Degree
The University of Tennessee, Knoxville

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ABSTRACT

The purpose of this thesis was to make a comprehensive study of the area surrounding Lichterman Park, the people and their needs, the actual site, the Memphis park system, and the future of parks in the Memphis area. A master plan for the development of the park was made from the findings of the study.

Various books and pamphlets were used in gathering data. Both printed material and personal interviews were used to obtain information from the Memphis Park Commission and the Memphis and Shelby County Planning Commission. Several maps were used to gather information concerning zoning, soils, topography, and other physical aspects pertaining to the park.

A master plan was drawn after reviewing all of the information concerning the area around the park. The plan dictated that some basic recreational facilities be integrated into the natural environment while the major part of the park remained natural. The park was designed to serve as a nature center. The active sports area was separated from the passive and natural areas of the park in order to preserve the tranquility of the less active areas. Various activities pertaining to a nature center have been proposed as well as the encouragement of wildlife. Nature trails

circulate throughout the park and cars are only allowed in specific areas.

The landscape design is functional and attractive. Trees were used to screen opposing views outside of the park. In other areas plants were removed in order to provide views of certain areas within the park. The design of Lichterman Park offers some contact with nature and the opportunity for participation in active sports. It will serve the varied needs of the people in its service radius.

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INTRODUCTION

Recreation today is rapidly changing. Leisure time, income, and mobility have increased greatly for many Americans since World War II. The result has been that increasing numbers of people have been participating in a wide variety of recreational and open space activities. Because of these trends, local governments are becoming concerned with recreational needs and deficiencies, leisure time habits, and the preservation of open space.

The change in public attitudes has caused a change in the design of new parks. Sweeping lawns and vistas are disappearing in many urban parks. Massive central entrances of older parks are giving way to small, scattered and convenient entrances.

Increasingly, playgrounds and small parks are becoming places where residents of all ages may find leisure opportunities. The newer parks are being designed with areas for active and passive activities and specific features that attract various age groups. No longer are small parks just places for children to play. Also, year around activities are becoming more popular.

According to Lewis Mumford in Small Urban Spaces:

New style recreation should consist of nothing less than a whole region, the larger part of which is in a state of natural growth and useful cultivation--open to the larger part of the population. The

whole landscape should be articulated so that every part may serve for recreation.¹

There have been attempts to attain Mr. Mumford's ideal of a totally integrated and harmonious recreational, residential, and business community. These attempts have been expressed mainly as new towns and planned communities. The National Recreation and Park Association recommends that a minimum of 25 percent of new towns, planned unit developments, and large subdivisions be devoted to park and recreation lands and open space.

Many cities have comprehensive plans detailing how their prospective park systems are to develop. Emphasis is placed upon land acquisition for various types of city parks, greenbelts, and open space land.

It is the objective of this thesis to propose a design for Lichterman Park that will serve the people in the Memphis area in the best possible way without destroying natural features on the site. By accomplishing this, a step is taken in the pursuit of more and better recreational facilities for the people of Memphis.

In the process of attaining this goal, a survey of the Memphis and Shelby County parks plan has been made. It was also important to take a look at the people living in the service radius of the park, and to make a comprehensive site analysis before any planning was attempted.

¹Lewis Mumford, "The Philosophy of Open Spaces" in Small Urban Spaces, ed. Whitney North Seymour, Jr. (New York: New York University Press, 1969), p. 13.

CHAPTER I

MEMPHIS CONSERVATION PLAN

The conservation plan for Memphis and Shelby County as outlined in the Parks, Recreation and Conservation Plan by the Memphis and Shelby County Planning Commission calls for the development of play lots, mini parks, neighborhood parks, district parks, large urban parks, regional parks, greenways, and open space land.

Play Lots and Mini Parks

The primary purpose of the play lot is to serve pre-school children. In high density areas a play lot generally substitutes for a back yard, particularly in apartment and tenement districts. Equipment for a play lot often consists of play apparatus, a hard surfaced play area, benches, sand boxes, wading pools, and landscaping. The size ranges from 2,500 square feet to one acre.

Mini parks are usually developed on vacant lots in high density areas. They may be designed to serve any age group and may feature children's play areas, quiet game areas, multi-purpose courts, and landscaping. The availability of land usually determines the size of the mini park. Since the facilities in play lots and mini parks are rather limited, they should be considered supportive to neighborhood

parks and not a substitute for them.²

Neighborhood Parks

Neighborhood parks should serve a neighborhood of approximately one square mile. A neighborhood park should be within one-half mile or ten minutes' walking distance of every resident it serves.

Although the types of facilities provided in the neighborhood park vary according to the characteristics of the neighborhood, there are some general aspects to be included. These are: small area for the exclusive use of children of pre-school age, apparatus for older children (six-eleven years old), area for free play and semi-organized games, multi-use paved area, area for field games, shaded area for handicrafts and quiet activities, area for lawn games, pool area (wading or spray pool), area for older people, picnic area, shelter house or recreation building, and landscaped area. The size of the neighborhood park may vary from five to twenty acres depending on the neighborhood to be served.

District Parks

District parks provide the same types of facilities as neighborhood parks but on a larger scale. Facilities common

²Parks, Recreation and Conservation Plan, Memphis and Shelby County Planning Commission, Community Facilities Study, Vol. V (Memphis, 1972), pp. 11-19.

to a district park are: areas for game courts such as tennis, volleyball, basketball, etc. Also included are sport fields, picnic areas, landscaped park, and children's play areas.³ Certain areas of the park need to be lighted for night use and adequate off-street parking should be provided. The size ranges from twenty to one hundred acres.

Large Urban Parks

Major parks are designed and developed for the diversified use by large numbers of people. They should give the city dweller some contact with nature and provide a pleasant environment in which one can engage in a wide variety of activities. Large urban parks usually include natural landscapes and landscaping, large picnic areas, athletic fields, play grounds, numerous play areas, archery range, nature trails, bandstand, comfort stations, winter sports area, day camping, and off-street parking. Additional specialized features include: golf courses, bridle paths, boating and swimming facilities, zoo, botanical gardens, museum, and outdoor amphitheater. This type park should serve a minimum of 50,000 people and should be within thirty minutes' driving time of the population it serves. The size is one hundred or more acres.

³Ibid.

Regional Parks

These parks serve a large population--usually those residents within one hour's travel time. While total area and location vary, these parks are normally located outside the city's boundary, and range in size from a minimum of 250 acres to several thousand acres.⁴

In developing the regional park, attempts should be made to maintain its natural characteristics. Water areas may be utilized for fishing and water sports or they can be set aside as sanctuaries for water fowl.

The regional park should provide facilities which enhance the maximum enjoyment of nature and the natural scenery. Such facilities would include overnight and long-term camping facilities, fishing, boating, and natural wooded areas.

Greenways

Greenways include parkways, greenbelts, and trails, but because of their unique function, there is no recommended acreage per population standard.

Parkways are essentially elongated parks with a road extending throughout their length. They visually connect segments of the park system and provide scenic corridors for leisure driving. Commercial vehicles and high speed

⁴Ibid.

traffic should be discouraged through proper design and speed restrictions.

In some cases, parkways follow stream and river alignments, shorelines and natural wooded areas. Size and location are dependent on the availability of these resources. A minimum right of way of 300 feet is recommended.

Greenbelts are natural strips of undeveloped open space which can serve as buffers between urban developments or provide links in the open space system. They are frequently located along streams or rivers and are helpful in preventing flood plain encroachment, controlling erosion, and providing recreational opportunities. Greenbelts usually contain hiking, horseback riding, and bicycle trails. A width of 750 feet to 1,500 feet is recommended, but this may be modified depending on topography and other natural features.⁵

Open Space

"Open space" is a multi-purpose term which includes land that serves functions other than recreation. "Open space" land can be defined as predominantly undeveloped land which should remain permanently open to serve important public purposes. Open spaces may be used to reserve land to meet future recreational needs, protect streams and

⁵Ibid.

wildlife, preserve scenic and historic resources, conserve threatened agricultural and timber resources, serve as buffers between incompatible land uses, and as a tool in guiding urban growth. Although there is no definite standard for open space expressed in acres per 1,000 population, the National Recreation and Park Association recommends that a minimum of 25 percent of the total area of new towns, planned unit developments, and large subdivisions be devoted to parks, recreation and open space uses.⁶

Recommended Park Standards for Memphis and Shelby County

Table I is a review of the recommended park standards for Memphis and Shelby County. The table differentiates the parks according to their acreage per population ratio, size range, population served, and service area.

Organizations Responsible for Parks

There are two main organizations responsible for public parks and recreational facilities in Shelby County. They are the Memphis Park Commission and the Shelby County Conservation Board.

The Memphis Park Commission is responsible for providing parks and recreation within the Memphis urban area. It is authorized to acquire land for park purposes inside or within ten miles of the city limits.

⁶Ibid.

TABLE I

RECOMMENDED PARK STANDARDS FOR MEMPHIS AND SHELBY COUNTY

Classification	Acres/ 1000 People	Size Range	Population Served	Service Area
Playlots	N/A*	2,500 sq. ft. to 1 acre	500-2,500	Sub-Neighborhood
Vest Pocket Parks	N/A*	2,500 sq. ft. to 1 acre	500-2,500	Sub-Neighborhood
Neighborhood Parks	2.5	5 acres up to 20 acres	2,000-10,000	1/4 - 1/2 mile
District Parks	2.5	20-100 acres	10,000-50,000	1/2 - 3 miles
Large Urban Parks	5.0	100+ acres	one per 50,000	Within one hour driving time
Regional Parks	20.0	250+ acres	Serves entire pop- ulation in smaller communities; should be distrib- uted throughout larger metro areas	Within one hour driving time
Special Areas	N/A*	Includes Parkways, Beaches, Plazas, Historical Sites, Flood Plains, Downtown Malls, and Small Parks, Tree Lawns, etc. No standard is applicable.		

*N/A = Non-Applicable.

Source: Parks, Recreation and Conservation Plan, Community Facilities
Study, Memphis and Shelby County Planning Commission, 1972, p. 20.

The 1977 operating budget for the Park Commission is \$11,100,000. Many of the Park Commission's operations are revenue producing. These include golf courses, an amusement park, concessions, football stadiums, and swimming pools. The 1977 expected revenue for these operations is \$3,400,000.

The Shelby County Conservation Board has the responsibility for custody, control, and management of properties that have been acquired for public parks, preserves, parkways, play grounds, recreation centers, county forests, wildlife areas, and other county conservation and recreation purposes.⁷

The state parks in Shelby County are administered by a division of the State Department of Conservation.

The Chickasaw Basin Authority was created in 1971 for the purposes of controlling and developing the water and related land resources of the Chickasaw Basin. The Chickasaw Basin encompasses the drainage areas of the Wolf and Loosahatchie Rivers and Nonaconnah and Horn Lake Creeks in the counties of Shelby, Fayette, Tipton, and Hardeman.⁸

Lichterman Park

Lichterman Park is an approximately sixty-five acre tract of land located in east Memphis. According to the

⁷Ibid.

⁸Ibid.

standards set forth by the Memphis Park Commission, the park is classified as a district park and should serve an area with a radius of one-half to three miles. All of the following information relating to the service radius refers to a three-mile radius.

There are three main reasons for choosing the larger service radius. First of all, public interest in the development of the park has already gone beyond the three-mile radius. Secondly, there are several areas within the service radius that have relatively low population densities. And finally, Lichterman Park will be a rather unique facility in that it will remain relatively natural. There are not many parks in the Memphis urban area that can offer the experiences to be offered by Lichterman Park. Therefore, it is believed that many people living outside the service radius will use the park.

CHAPTER II

LICHTERMAN PARK SERVICE RADIUS

Important Factors in the Service Radius

In order to plan a park to serve its best possible function, one must look at the area in which it is located. It is important to look at the people in the service radius and note the socio-economic level, population density, population by age, and projected population.

Other important factors to consider in studying the area in which the park is located are zoning surrounding the park and urban growth patterns. The relationship of the park to other similar and differing types of recreational facilities is important in evaluating the types of recreational facilities to be included in a park.

A careful site analysis should be made before any planning is done. Such items as topography, soil structure, and natural features should be included in the site analysis.

Location

Lichterman Park is located in east Memphis, within one mile of the Poplar Avenue exit on Interstate 240. It is bounded by three fairly busy streets: Lynfield on the west side, Quince Road on the south, and Ridgeway Road on the east. The park is also bounded by two schools, Ridgeway Junior High and Ridgeway Elementary. An office park is

located across Lynfield from the park, a YMCA swimming pool is across Quince Road from the park, the schools bound the southeast and east sides, and the Lynfield Woods Apartments bound the north side.

The people in the park's service radius live in apartments, townhouses, condominiums, and single family units.

Figure 1 shows the location of Lichterman Park in Shelby County. Figure 2 shows the various types of zoning adjacent to the park.

Urban Growth

The trend in growth eastward and southeastward in the city of Memphis has been quite significant in the past ten years. This recent growth has made its mark in the east and southeast sectors of Lichterman Park's service radius. The service radius lies within four planning districts. These are Walnut Grove, Quince, Oakhaven-Parkway Village, and Shelby Farms-Germantown. See Figure 3.

Between 1960 and 1970 the percentage change in population in these planning districts was as follows: Walnut Grove (+ 14.9 percent), Quince (+ 3.8 percent), Oakhaven-Parkway Village (+ 166.2 percent), and Shelby Farms-Germantown (+ 93.1 percent).

The eastward and southeastward trends in growth are easily seen by noting the changes in population for the

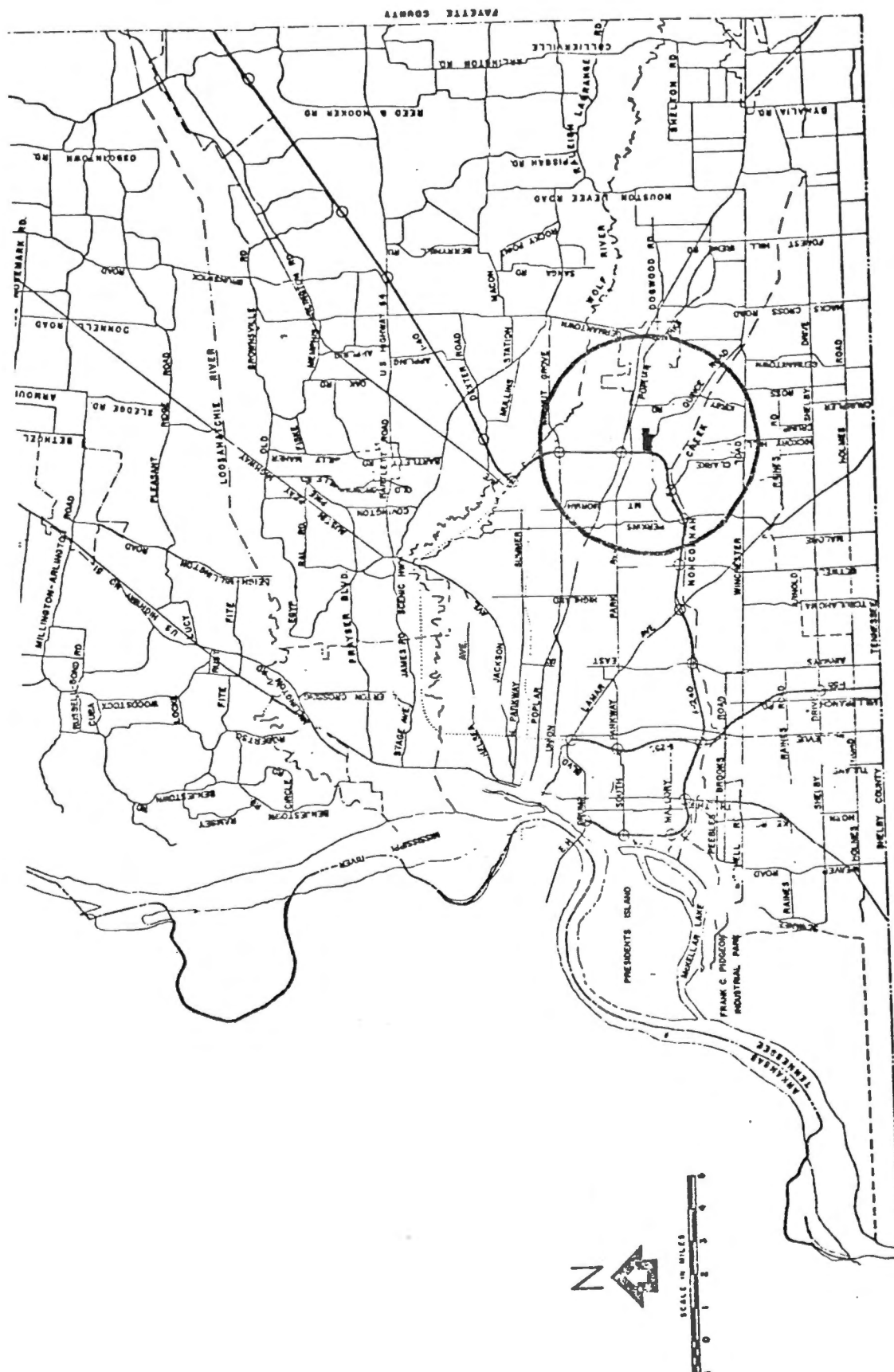


Figure 1. Location of Lichterman Park and Service Radius in Shelby County.

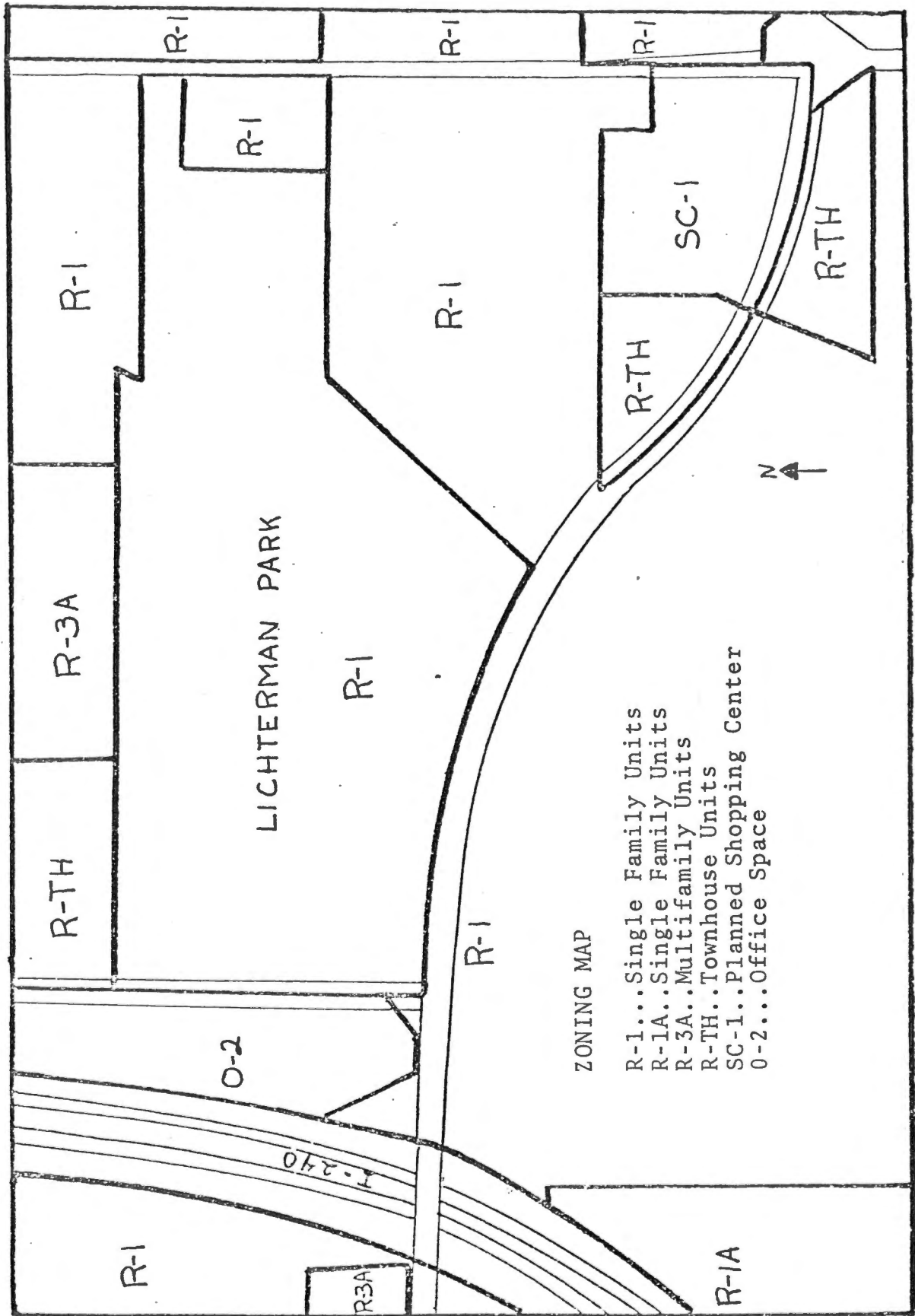


Figure 2. Zoning Adjacent to Lichtermann Park.

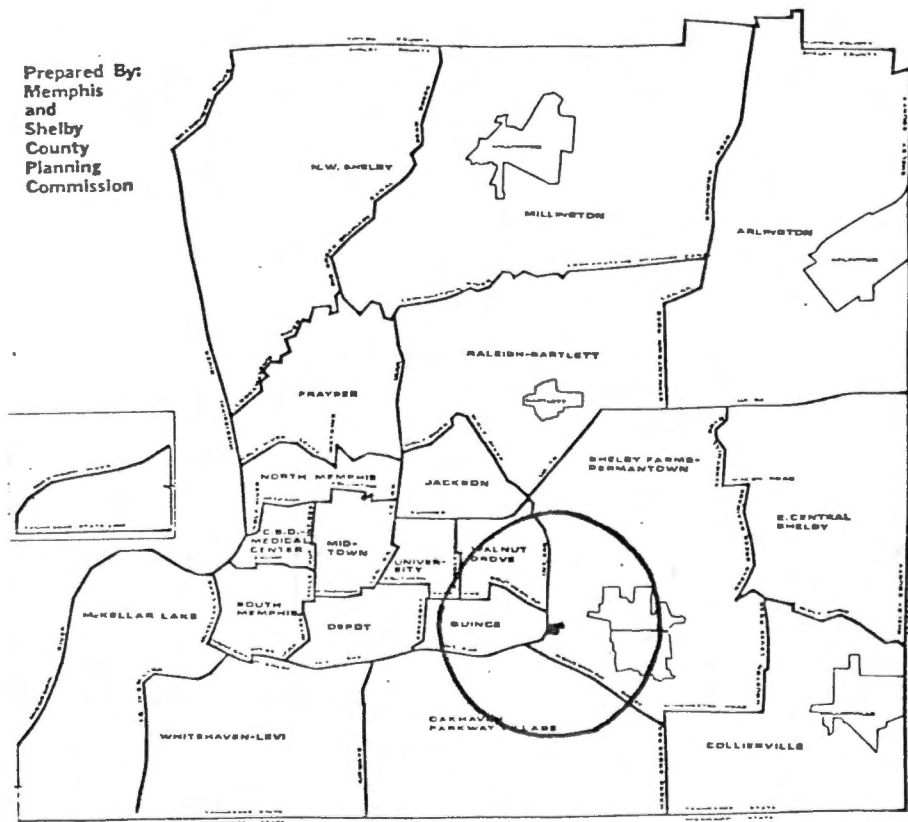


Figure 3. Planning Districts for Memphis and Shelby County.

Oakhaven-Parkway Village and Shelby Farms-Germantown planning districts.⁹.

The expected changes in population between 1970 and 1980 are as follows: Walnut Grove (+ 7 percent), Quince (- 2 percent), Oakhaven-Parkway Village (+ 67 percent), and Shelby Farms-Germantown (+ 80 percent).

The projections for the 1980 to 1990 changes in population are as follows: Walnut Grove (+ 2 percent), Quince (- 7 percent), Oakhaven-Parkway Village (+ 41 percent), and Shelby Farms-Germantown (+ 100 percent).¹⁰

Recreational Facilities

Table II is a survey of the park facilities that exist in Memphis and Shelby County. It also states the recommended acreages needed to meet future park needs.

Table III lists the types of parks, their names, and acreages that exist within the service radius of Lichterman Park.

The People

The estimated population of the three-mile service radius is 60,000 people. This number was determined by totaling the populations of the 1970 Census Tracts within the service radius.

⁹Population, Housing and Economy Report, Memphis and Shelby County Planning Commission, 1970.

¹⁰Ibid.

TABLE II
PRESENT PARK NEEDS IN ACRES

Political Jurisdiction	Population	Existing ^a			Recommended ^a		
		N	D	L.U.	N	D	L.U.
Memphis	623,530	710	638	2179	1559	1558	3118
Unincorporated	67,780	193	0	156	169	N/A	N/A
Arlington	1,349	0	0	0	4	N/A	N/A
Bartlett	1,150	0	0	0	3	N/A	N/A
Collierville	3,625	1	0	0	9	N/A	N/A
Germentown	3,474	16	0	0	9	N/A	N/A
Millington	21,106	15	27	0	53	53	N/A
Shelby County							
Total	722,014	935	665	2335	1805	1611	3118
							14,440

^aN = Neighborhood Park, D = District Park, L.U. = Large Urban Park,
R = Regional Park, N/A = Standard Does Not Apply.

Source: Parks, Recreation and Conservation Plan, Community Facilities
Study, Memphis and Shelby County Planning Commission, 1972, p. 43.

TABLE III

RECREATIONAL FACILITIES AVAILABLE WITHIN THE
SERVICE RADIUS OF LICHTERMAN PARK

Parks	Acres
Neighborhood	
J. R. Godwin Park	10.00
L. B. McFarland Park	11.04
C. P. J. Mooney Park	17.16
Pep Marquette Park	10.18
Sea Isle Park	12.14
Walter K. Singleton Park	10.00
Wilson Park	12.02
Germantown Community Center	16.00
Total	98.54
District	
A. Arthur Halle Park	39.10
Judge Andrew Holmes	20.16
Lichterman Park	65.00
Willow Park and Community Center	57.18
Total	181.44
Golf Course	
Fox Meadows	18 holes

The average of the population densities is 5.25 people per acre (based on the 1970 Census).

The average of the median incomes of the residents of the census tracts is \$14,423.77 (based on the 1970 Census).

A survey of 346 residents in the service radius was made by Boy Scout Troop 364 in the summer of 1976. It is interesting to note some of their findings (Table IV).

The people in the Lichterman Park area are very interested in the development of the park for their use. They have demonstrated this by raising \$125,000 for the development of Lichterman Park.

TABLE IV
DEMOGRAPHIC STATISTICS

Demographic Statistics	Percent
Type of Housing	
Private	72
Apartment	28
Family Size	
Single	13
2 in family	25
3 in family	19
More than 3	43
Age of Adults	
20-30	25
31-40	28
41-50	28
Over 50	19
Age of Children ^a	
0-3	15
4-6	15
7-10	22
11-15	23
15-20	25
What Residents Use Parks for (in Order of Preference) ^b	
Picnicking	
Tennis	
Playgrounds	
Golf	
Bicycling	
Swimming	

^aFifty-one percent of the residents are children.

^bEighty-two percent of the residents have access to private recreational facilities.

CHAPTER III

SITE ANALYSIS

The site is an approximately sixty-five acre tract of land that was once part of an estate. The topography as seen in Figure 4 is flat to slightly rolling. The majority of the site is wooded with a quite extensive undergrowth of honeysuckle and privet in places (Figure 5).

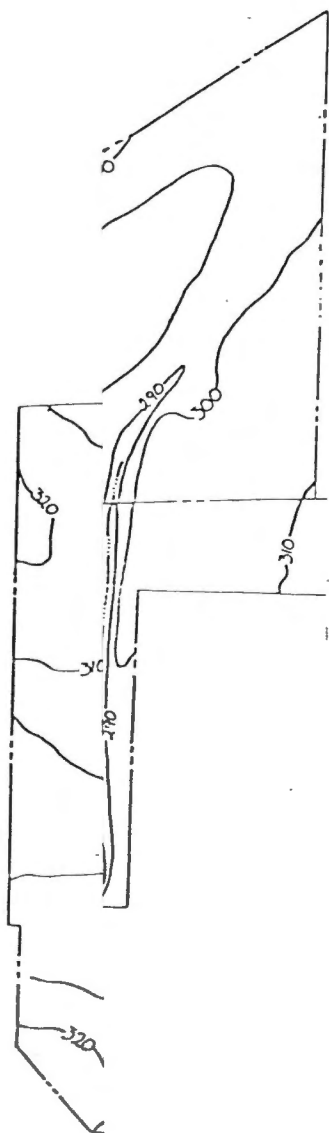
Entering the park from Quince Road on the south side of the park, one passes through a wooded area. Immediately on the right side of the drive is a baseball diamond belonging to Ridgeway Junior High School. Most of the southeast side of the park is completely open to the view of the school.

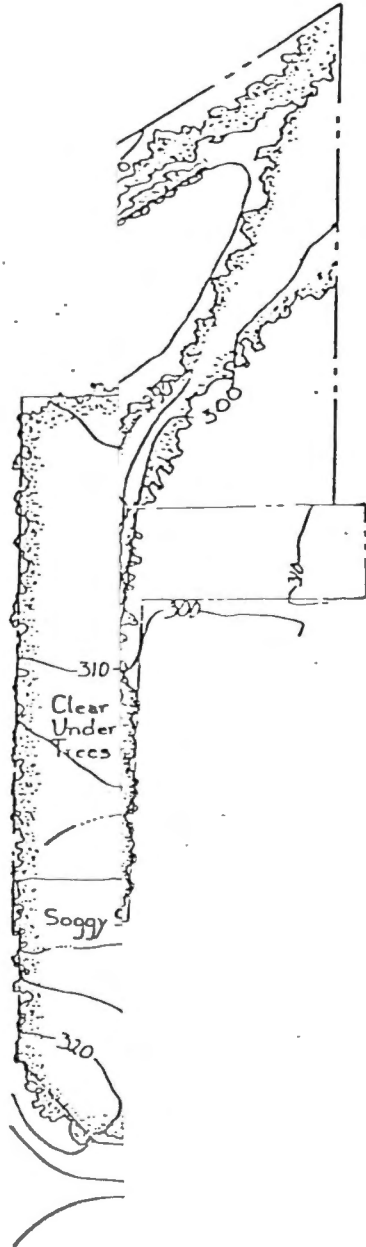
Continuing up the driveway one passes a large two-story house and comes upon an open field to the right, bounded by privet on the west side.

A transformer is located about 100 feet from the southwest corner of the lake. It is enclosed in a stone structure on the ground and is surrounded by a chain link fence.

A system of sand and gravel trails loops the interior of the woods. In several areas the large trees are far apart allowing extensive undergrowth such as honeysuckle and privet.

Traffic noise can be heard on the western and southern





sections of the trail, especially in the winter.

In several areas on the northern side of the park, views of the apartments can be seen from the trail.

The section of land protruding eastward to Ridgeway lacks trees and is presently being used by Ridgeway Elementary as a playground.

West of the northern section of the lake is an area that lacks vegetation and the soil has been disturbed. It appears as if the topsoil has been removed by heavy machinery.

Lake

A seventeen-acre, man-made lake exists on the site. As seen in the graphic site analysis and the topographic map, a boundary divides the lake. The section including the northern half of the lake does not presently belong to the Park Commission. It is included in the plans for the development of the park because the Park Commission intends to acquire the land.

The water level in the lake has dropped due to a leak in its dam causing the eastern side of the lake to be swamp-like. The entire lake is silty, and the depth varies from less than one inch to five feet. The source of water is runoff from the area north of the lake, and the maximum watershed is one hundred acres of drainage.

Many views of the lake are blocked by dense vegetation near the lake shoreline.

There are two islands in the lake. The southern island is accessible by a bridge from the shore. This island has some trees on it and is frequently used for fishing. The northern island is grassy and lacks trees. It is not accessible by bridge.

The area south of the lake is swampy and features marsh plants such as sedges and cattails.

A system of streams divides the wooded area of the park. These streams are classified intermittent, but the main collective stream usually has water in it.

Structures

There are several structures on the site, the most impressive of which is a large two-story house with split cypress siding, rustic wood detailing, stone fireplaces, and slate roofing. The house was built in the 1930's by Clarence Saunders, founder of the Piggly Wiggly Supermarkets. The house was apparently used as a lodge or a country retreat. The architect was Hubert T. McGhee who also designed the Pink Palace Museum in Memphis. The Pink Palace was originally planned as a residence for Mr. Saunders.

A three-car garage is located west of the house. This structure is quite delapidated and has been vandalized.

A small hobby-sized greenhouse is located in front of the house. All of the glass has been removed and just the base and structure remain. There is a heating system in the greenhouse.

A water aerification structure is located approximately 125 feet from the beginning of the trail. The structure resembles a gazebo with rocks piled inside nearly to the roof for filtering water dripped from a pipe above the rocks.

A narrow stone bridge is located on the trail near the gazebo.

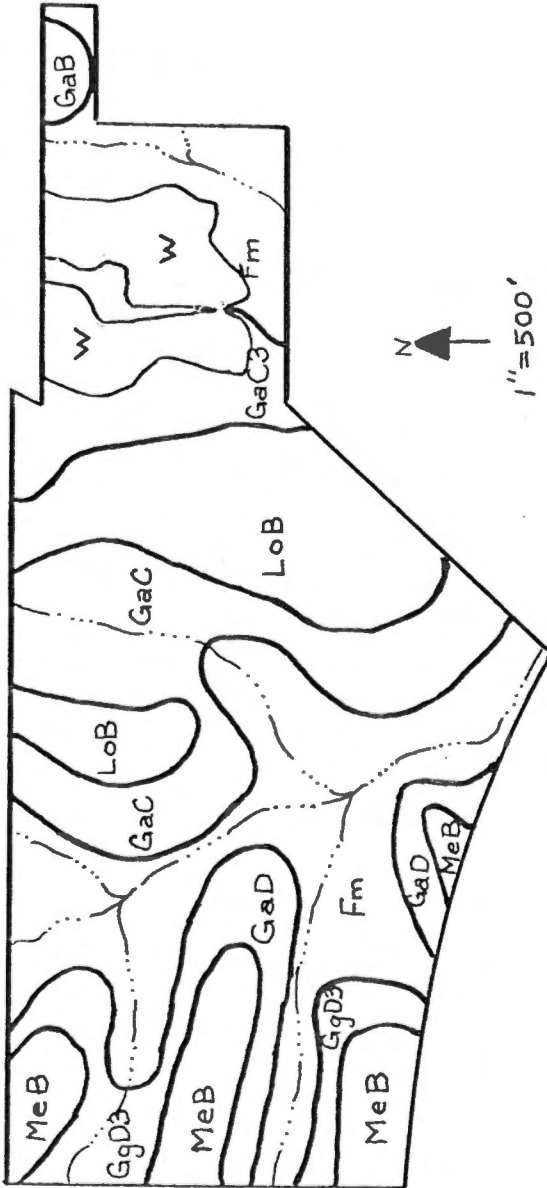
Soils

The soils in the park are silt loams, as seen in Figure 6. A general description of the soils follows.

Grenada silt loams. These soils are moderately well drained soils found on hillsides and uplands. Roots, air, and water penetrate the upper layers of soil but are restricted by a fragipan. This restricted movement of water causes rapid runoff. The soils are somewhat droughty during summer and fall. The reaction of these soils is strongly acid and low in natural fertility. Erosion is the greatest hazard to these soils.

Falaya silt loam. This is a somewhat poorly drained, very silty soil on first bottoms. In winter and early spring, the water table is often within a foot of the surface. Excess water is the main limitation. The reaction is medium or strongly acid, and the content of phosphorus and potassium is moderately high.

Soils Map



GaB....Grenada silt loam, 2-5 percent slopes
 GaC....Grenada silt loam, 5-8 percent slopes
 GaC3...Grenada silt loam, 5-8 percent slopes, severely eroded
 GaD....Grenada silt loam, 8-12 percent slopes
 GgD3...Grenada complex, 5-12 percent slopes, severely eroded
 Fm....Falaya silt loam
 LoB....Loring silt loam, 2-5 percent slopes
 MeB....Memphis silt loam, 2-5 percent slopes
 W.....Water

~~~~~ Streams

\*The above information was taken from the Shelby County Soil Survey.

Figure 6. Soils in Lichterman Park

Loring silt loam. This is a deep, moderately well drained or well drained soil on broad ridgetops. Roots, water, and air readily penetrate this soil to a depth of about twenty-eight inches. The weak fragipan slightly retards root growth, aeration, and drainage. This soil is strongly acid and medium in content of phosphorus and potassium.<sup>11</sup>

Memphis silt loam. This is a deep, well drained soil on broad tops of low-lying hills. Runoff is the main limitation and erosion control is the main management problem. The soil is strongly acid or medium acid in reaction and high in content of phosphorus and potassium. The root zone is very deep. Runoff is the main limitation and control of erosion is the main management problem.<sup>12</sup>

### Drainage

An intermittent stream in the western half of the park provides most of the drainage for the gently sloping landscape. Due to the Falaya silt loam which is the main soil in which the stream flows, the area around the stream is quite saturated with water at times. There is another intermittent stream in the eastern section of the park. It runs along the eastern section of the lake.

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<sup>11</sup>Soil Survey of Shelby County, Tennessee, Department of Agriculture, Soil Conservation Service (Washington, D.C., 1970), pp. 16-30.

<sup>12</sup>Ibid.

Vegetation

Some of the common plant materials found on the site are listed in Table V.

TABLE V  
PLANT MATERIALS

| Name                | Name                |
|---------------------|---------------------|
| American Basswood   | Redbud              |
| Eastern Red Cedar   | Sassafras           |
| Black Cherry        | Sweet Gum           |
| Red Osier Dogwood   | Sycamore            |
| American Elderberry | Blackberry          |
| American Elm        | Honeysuckle         |
| Shagbark Hickory    | Muscadine           |
| Shellbark Hickory   | Poison Ivy          |
| Swamp Hickory       | Poke Weed           |
| Honey Locust        | Privet              |
| Mountain Maple      | Thistle             |
| Pin Oak             | Various Ferns       |
| White Oak           | Various Wildflowers |

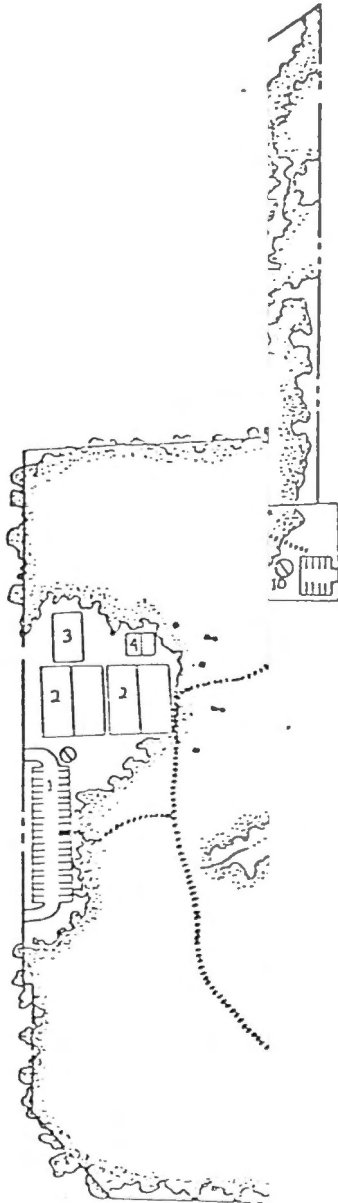
## CHAPTER IV

### EXPLANATION OF THE PLAN

Lichterman Park is designed to serve as a nature center. The landscape has been kept as natural as possible while still providing some basic recreational facilities. See Figure 7.

In order to maintain the peace and tranquility within the natural areas of the park, only one central road is provided. It is a two-way road, twenty-four feet wide with three-foot shoulders and will provide access to the nature center and the main parking area. This road is lighted for night use.

A system of trails provides circulation within the natural areas of the park and connects the various areas such as the sports area, picnic area, and the Ridgeway Road access and parking area. The trails are ten-feet wide and are to be used for nature walks, jogging, and bicycling. The ten-foot width provides adequate room for these activities and for maintenance vehicles when necessary. The trails are to be constructed of asphalt and the entrances will be gated in order to prevent vehicles other than maintenance vehicles on the trails. Various trees and plant materials along the trails are to be labeled for identification.



- s
- 12. Pine Screen
  - 13. Children's Garden
  - 14. Arts and Crafts Shelter
  - 15. Greenhouse
  - 16. House-Nature Center
  - 17. Parking for Nature Center
  - 18. Children's Play Area
  - 19. Picnic Area
  - 20. Planted Trees
  - 21. Sport Field

The lake is to be dredged and reconstructed to correct the leak in the dam and to make it more favorable to aquatic life. The lake will be fertilized and restocked with fish and ducks. Bird feeding stations and nesting boxes will be provided near this area to encourage wildlife.

### Specific Areas of the Park

#1 Parking for sports area. This lot has forty-one parking spaces and will serve the people using the sports area as well as those wishing to enter the park on the west side. A ramp leads to the trail to provide adequate access for bicycles and handicapped people. The parking area is lighted.

#2 Tennis courts. Four tennis courts are provided. They are lighted, surfaced with asphalt, and enclosed by a chain link fence.

#3 Basketball court. One full basketball court is located in the sports area. It will be lighted for night use.

#4 Raquetball courts. Two three-walled raquetball courts have been included in the plan because of the rapidly growing popularity of raquetball. However, these courts are actually multi-purpose courts as they may be

used for handball, paddleball, and tennis practice. They will be lighted for night use. Five picnic tables and two grills are provided in the sports area as well as a restroom.

#5 Pine screen. Since the intimacy of the park is imposed upon by the views of the apartments on the northern side, a mixed pine screen has been used to block views. The year-around color of the pines will help enclose the park. Loblolly, shortleaf, and white pine seedlings are to be used in the screen. The mixture of pine species provides an interesting mixture of textures for the screen.

#6 Picnic area. This picnic area is located in an area of the woods in which the underbrush is to be removed, thus allowing views through the woods to the sport field (#21). Twelve picnic tables and four grills are provided in this area. Trash receptacles will be located approximately thirty feet from the nature trail.

#7 Main parking area. The main parking area will provide parking for most of the people that drive to the park. The area is lighted and has a capacity of sixty cars.

#8 Meadow. This area is to be sown with a wildflower seed mix. The meadow is bounded by the pine screen and by the trail and the lake. It offers some visual variation as one travels along the trail, and it will also be a focal

point from the opposite side of the lake.

#9 Picnic area. This picnic area is located in a planted wooded area of sycamore, sweet gum, white oak, and loblolly pine. The flooring of the area is to consist of wildflowers and low growing plants with foot paths circulating throughout the area. Ten picnic tables and five grills are located here.

#10 Ridgeway access and parking area. This parking area provides parking for ten cars. The Ridgeway access is considered important because it is the only access to the park actually located in a residential neighborhood. It is believed that the people living on the eastern side of the park will be more likely to walk or ride bicycles to the park if it is easily accessible to them on Ridgeway. However, it must be realized that this area would be quite vulnerable to vandalism due to its rather isolated location. It is, therefore, proposed to close this area off at night by fencing the portion of the park directly on Ridgeway. This area is to be lighted and a restroom is located here.

#11 Landfill and planted screen trees. In the reconstruction of the lake, the area south of the lake will be filled to reinforce the southern edge of the lake, as proposed by the Park Commission. It is, therefore, proposed to plant a mixture of sycamore, sweet gum, white oak, and loblolly pine on the fill area in order to help

screen the view of the school. The pines will be planted close to the perimeter of the area to utilize their year-around foliage and color.

#12 Pine screen. The mixed pine screen is to be planted to block views of the school and to further enclose the park for a more intimate feeling. The screen consists of loblolly, shortleaf, and white pines.

#13 Children's garden. A children's garden is considered to be a useful tool in educating children about food production and plant growth and development. It is an excellent summer activity as well as a weekend activity during the spring and fall. The garden area will be enclosed by a fence.

#14 Arts and crafts shelter. The arts and crafts shelter will be the site of instruction and practice of various crafts during favorable weather for both adults and children. The area is accessible by a gravel service road and enough room is provided for a few cars to park along the drive and near the shelter.

When the area is not being used for arts and crafts, it may be used for large group picnics.

The underbrush in the wooded area between the shelter and the children's garden has been removed to allow movement between the two areas.

#15 Greenhouse. The small, hobby greenhouse is to be reconstructed with either fiberglass glazing or some other non-breakable material. The greenhouse will be used as an educational facility in conjunction with the children's garden.

#16 House-nature center. The Memphis Park Commission is planning to remodel the house to serve as a nature center. The nature center will function as a site for lectures, group meetings, classes, a small museum, and various nature exhibits. This will be an important feature of the park and is a good utilization of an attractive structure. The only other alternative would be to tear down the house. The nature center will probably attract people from outside the immediate service radius because it is such a unique feature in the Memphis city parks.

#17 Parking for nature center. This area provides parking for twenty cars. A path leading to a wildflower garden located in the woods begins here. The wildflower garden is to be an educational facility and could possibly be maintained by volunteers interested in wildflowers.

#18 Children's play area. This area is enclosed by a mound four feet high with a four-to-one slope. Inside the mounded area is another mound and modern play equipment. An artistically designed play structure is to be incorporated into the mounds. The play area is designed to

provide play experiences that allow children to be creative. The design of the area is protected by enclosing the area by the mound. Bermuda grass is the main ground-cover, and trees are planted providing shade.

The mounds are to be constructed from soil on the site and about 25 percent purchased fill soil.

A detailed drawing of the area is seen in Figure 8.

#19 Picnic area. This is a large picnic area with a view of the lake. Fifteen picnic tables and eight grills are located under and in the shade of large trees.

A restroom is located in the northern part of the picnic area near the parking area.

#20 Planted trees. The original entry to the trails was mainly through privet with a few large trees. The privet has been removed and sycamore, sweet gum, white oak, and loblolly pine have been planted. Wildflowers and low growing plants are to be the ground cover.

#21 Sport field. This is a grassy field that is to be used for semi-organized games.

### Cost Estimate

Below is an analysis of the costs involved in developing Lichterman Park as proposed by this thesis. The total cost estimate includes the cost of installation (Table VI).

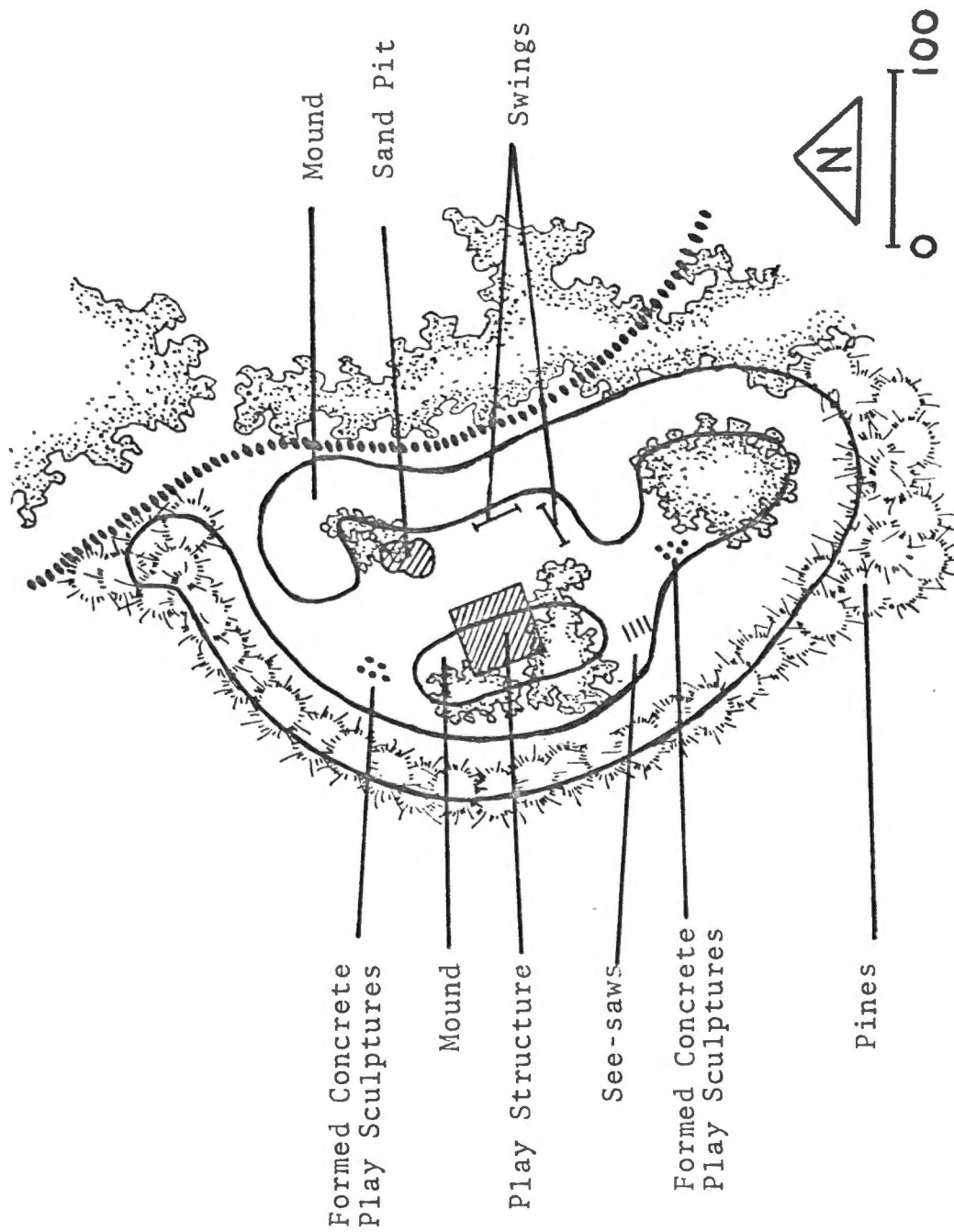


Figure 8. Lichterman Park Children's Play Area

TABLE VI  
COST ESTIMATE

| Items                       | Cost      |
|-----------------------------|-----------|
| Entry Road                  | \$ 18,360 |
| Parking Area #1             | 6,426     |
| Parking Area #7             | 9,792     |
| Parking Area #10            | 1,530     |
| Parking Area #17            | 3,060     |
| Labor for Above             | 6,000     |
| Tennis Courts               | 60,000    |
| Basketball Court            | 6,000     |
| Raquetball Courts           | 30,000    |
| Restrooms                   | 45,000    |
| Renovation of House         | 40,000    |
| Tearing Down Garage         | 1,000     |
| Rebuilding of Lake          | 60,000    |
| Shelter                     | 5,000     |
| Picnic Tables               | 16,000    |
| Grills                      | 1,800     |
| Trails (9,000 feet)         | 40,000    |
| Glazing Greenhouse          | 200       |
| Play Equipment              | 20,000    |
| Tools for Children's Garden | 200       |
| Trash Cans                  | 600       |
| Grading                     | 6,650     |
| Clearing                    | 1,500     |
| Fill Soil                   | 5,300     |
| Seedling Trees              | 600       |
| Wildflower Seeds and Plants | 2,000     |
| Trees for Play Area (B&B)   | 320       |
| Total                       | \$394,138 |

## CHAPTER V

### MANAGEMENT CONSIDERATIONS

One of the main concerns in planning a park is the prevention of vandalism. Although total prevention of vandalism may not be possible, several steps can be made in order to deter vandalism.

The planning of Lichterman Park calls for a caretaker to live on the site. He will be in charge of supervising a maintenance crew. The size of the crew will vary during the year according to need.

The duties of the caretaker and crew will include the following: garbage pick up, restroom clean up, locking restrooms at night, closing off Ridgeway access at night, and feed and care for ducks. The caretaker is to be deputized and will have the same authority as the park police.

The landscape management duties will include the following: cultivation of seedling trees for the first few years, mow and maintain play area, prevent meadow from reforesting, mow lawns, help prepare children's garden (plowing), and to keep debris off the trails.

The park maintenance vehicles will be able to use the asphalt nature trails to have access to areas in the interior of the park requiring maintenance.

By developing the park so that more people will be attracted to the park and by having maintenance crews working in the park, it is believed that vandalism will be deterred.

Patrols of the park may also be made to further deter vandalism. The sports area, picnic areas, shelter, greenhouse, and restrooms would probably be the main targets of any vandalism. The central areas such as picnic areas #6 and #19, the children's play area, and the greenhouse may be observed easily from the main drive. If the caretaker lived in an apartment in the Nature Center, it would be possible to observe anyone entering the park along the main drive at night. The sports area may be observed by driving down Lynfield, and picnic area #9 may be observed by driving down Ridgeway.

If regular patrols are made of the vulnerable areas, the extent of damage due to vandalism may be reduced.

One aspect in planning a park is to estimate the cost of maintenance, but all maintenance costs are not always broken down between each individual park in a park system. For example, the majority of the equipment used in maintaining parks in Memphis is not kept in each park. Instead there are several regional centers where the equipment is kept. From these regional centers the Memphis Park Commission maintains and dispatches equipment according to each park's need. Since the Park Commission uses regional

equipment centers, the cost is not broken down between each individual park but is an aggregate cost of all equipment used in the park system.

Table VII shows a breakdown of the costs that may be directly assigned to Lichterman Park.

Through proper management and planning, Lichterman Park can become a unique entity serving the people within its service radius and still preserve and cultivate natural features on the site.

TABLE VII

## BREAKDOWN OF COSTS

| Expenses                  | Cost/Year |
|---------------------------|-----------|
| Personnel                 |           |
| Caretaker                 | \$11,000  |
| Laborers                  | 6,000     |
| Temporary help            | 2,000     |
| Operating Supplies        |           |
| Motor fuel and supplies   | 800       |
| Chemicals                 | 300       |
| Small equipment and parts | 300       |
| Electricity               | 2,400     |
| Water                     | 400       |
| Total                     | \$23,200  |

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## VITA

Rae D. Evans was born in Corvallis, Oregon, on February 13, 1953. As an infant she moved with her family to San Mateo, California, where she lived three years, then she moved to Minneapolis, Minnesota, and lived there four years. In December of 1959 she moved to Memphis, Tennessee. She attended schools in Memphis and Germantown and was graduated from Overton High School in May, 1971.

The following September she entered The University of Tennessee in Knoxville, and in December, 1975, she received a Bachelor of Science degree in Agriculture with a major in Ornamental Horticulture and Landscape Design. The following January she entered The Graduate School of The University of Tennessee, Knoxville. She received a Master of Science degree with a major in Ornamental Horticulture and Landscape Design in August, 1977.

The author has traveled quite extensively in the United States including Alaska. She spent two summers in Mexico studying Spanish. She has also traveled in Canada, the Bahamas, and Colombia, South America.

She was a member of the University of Tennessee Horticulture Club and was secretary of The University of Tennessee Scuba Diving Club.