

EAST FORK LAKE
EAST FORK LITTLE MIAMI RIVER
OHIO RIVER BASIN
OHIO

MASTER PLAN
DESIGN MEMORANDUM NO. 11

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Previously Issued Design Memorandas

DM No.

1	Report on Economics
2	Reservoir and Spillway Capacities, Flood Control
3	General Design Memorandum
4	Concrete Aggregate & Stone Protection
5	Dam and Spillway
6	Outlet Works
7A	Preliminary Master Plan
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8C	Real Estate
9	Relocation of State, County and Township Roads
10	Relocation of Utilities

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

REPORT OF THE COMMITTEE ON THE

PROGRESS OF THE PHYSICS DEPARTMENT
DURING THE YEAR 1954-55

The following is a list of the members of the
Committee on the Progress of the Physics Department
during the year 1954-55. The members of the
Committee are: [List of names and titles]

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- B Forest Management Plan
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- C Fire Protection and Project Safety Plan
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- D Fish and Wildlife Management Plan
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- E Correspondence with Ohio Department of Natural Resources
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Wildlife

PUBLIC USE PLAN
DESIGN MEMORANDUM NO. 11
EAST FORK LAKE, OHIO

SECTION 1 - INTRODUCTION

1-01. AUTHORIZATION. The East Fork Reservoir project is a unit in the general comprehensive flood control plan for the Ohio River Basin adopted by the Flood Control Act approved 28 June 1938, Public Law 761, 75th Congress.

Post-authorization changes include water supply and water quality control as project purposes within the purview of the Water Supply Act of 1958, as amended (Public Law 85-500), and the Water Pollution Control Act of 1961 (Public Law 87-88).

1-02. PROJECT PURPOSES. The project will operate for flood control in the East Fork and Little Miami River Valleys and as a unit of the general plan for the Ohio River Basin; for storage for water supply and water quality control, and for recreation and fish and wildlife activities.

1-03. PURPOSE OF THE MASTER PLAN. The purpose of this master plan is to present a public use plan for the effective development and efficient utilization for public benefit of the project lands, waters, features and facilities. The plan provides for the development, use and administration of all project lands and public use facilities.

1-04. PRIOR PERTINENT DESIGN MEMORANDA. Although all of the Design Memoranda listed on page a have contributed to this plan, of particular significance was the Preliminary Master Plan, D.M. No. 7A, which is the basis for the lands being acquired specifically for recreation development and use.

SECTION 2 - PROJECT DESCRIPTION

2-01. LOCATION. The project is in southwestern Ohio on the East Fork of the Little Miami River about 20 miles east of Cincinnati in Clermont County. The damsite is located at East Fork, river mile 32.6 approximately 6.5 miles upstream from Batavia, Ohio, and 3.5 miles east of Amelia, Ohio.

2-02. SUMMARIZED PROJECT DATA.

Pool	Elevation (ft msl)	Surface (acres)	Storage	
			Capacity (acre-ft)	Runoff (inches)
Minimum	683	820	19,000	1.04
Water Quality Pool	729	2,050	84,000	4.62
Seasonal	733	2,160	92,600	5.08
Flood	795	4,600	294,800	16.16

Dam

Type	Earth Fill
Length, feet	1,450
Top Elevation, feet msl	819
Maximum Height, feet	200

Spillway

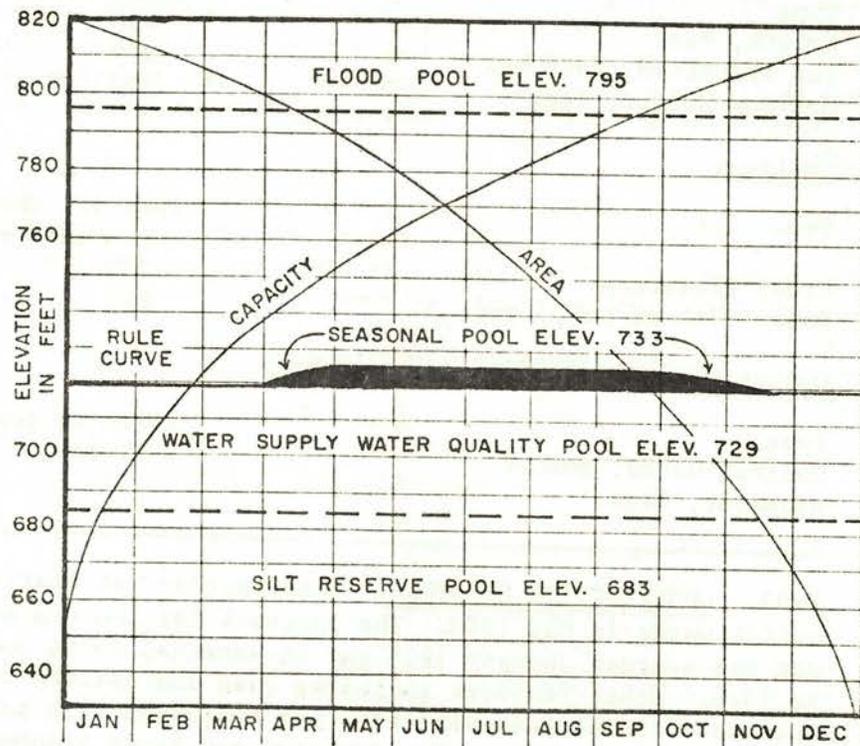
Type	Open cut through left abutment ridge
Crest Elevation	795
Base Width of Cut, feet	875

Outlet Works

Type	Circular concrete
Control Gates, number	2 sluice, 2 emergency
Diameter, feet	12

2-03. CONSTRUCTION SCHEDULE. Construction was started on the outlet works in May 1970. The contract for the dam and saddle dam was awarded January 1973 and is expected to be completed in 1976. Other features including road and utility relocations and recreational road utilities and buildings will be started as planning and design are completed and funds become available. Impoundment is scheduled to begin in fall of 1976.

2-04. PROJECT OPERATIONS. The project schedule will be in the interest of flood control, water quality control, and recreation. The plan of operation provides for a normal winter impoundment of the water quality pool at elevation 729 and a recreational seasonal pool at elevation 733. The 733 seasonal regulation plan provides for gradually raising the reservoir pool during April. Seasonal pool will be maintained as nearly as possible through 15 September. Normally, seasonal pool storage will be uniformly reduced to reach winter pool on 30 November. This will provide a summer pool of 2,180 acres and a winter pool of 2,050 acres. A history of floods on East Fork and the Little Miami River indicates the need for flood control storage is less during the summer season. It is thus possible to raise the reservoir pool in April, holding out excessive streamflow and releasing this storage in the 15 September to 30 November period without decreasing the reservoir effectiveness for flood control. Recreation will benefit by a larger water surface area for water-oriented types of recreation utilization provided by increased pools for water supply, water quality and the seasonal pool. A larger reservoir pool is thus provided for the summer season when maximum utilization for recreation occurs. Routings based on stream discharge records (1939-1964) reveal that seasonal pool elevation 849 would be attained about 85 percent of the years.



SECTION 3 - FACTORS INFLUENCING
RESOURCE DEVELOPMENT AND MANAGEMENT

3-01. AREA OF INFLUENCE. The East Fork basin is located in Clermont County immediately to the east of the Cincinnati Metropolitan area. Clermont County is presently largely rural in character, but it can be anticipated that urbanization will proceed at an accelerated rate in the immediate area of the lake due to the completion of a four lane highway to Batavia. Further extension of this highway to the east is proposed. Immediately surrounding the lake are three small towns Batavia, Bethel and Williamsburg, the County seat. The project will also be affected by the other cities of the southwest Ohio area, Hamilton, Middletown and Dayton.

3-02. ACCESS. Interstate Routes 71, 74, and 75 pass through central Cincinnati, approximately twenty miles to the west, and facilitate travel to the general project area from the centers of population to the north, south, and west. The Cincinnati Outer Belt, near completion, will provide high speed access from all points around the city and will exit traffic approximately ten miles from the damsite. The proposed 4-lane Appalachian Highway Ohio 50 will run just north of the lake and has presently been completed to Batavia. Access to the project area from Cincinnati and points east is presently afforded over U.S. Highways 50 and 52, major east-west arteries which generally parallel the reservoir approximately ten miles to the north and south, respectively. Access to the project is then afforded over the good primary and secondary road system which prevails in the area.

3-03. POPULATION. The 50-mile zone of the project includes the heavily populated area of southwestern Ohio and northern Kentucky. The estimated 1977 population in the nine county area of influence around East Fork Lake will be about 1,800,000.

Estimated 1977 Population

Clermont County, Ohio	107,000
Brown County, Ohio	28,000
Hamilton County, Ohio	1,028,000
Campbell County, Ky.	96,000
Kenton County, Ky.	141,000
Highland County, Ohio	32,000
Warren County, Ohio	100,000
Clinton County, Ohio	33,000
Butler County, Ohio	292,000

3-04. RELATED RECREATIONAL-HISTORICAL AREAS. There are three Corps of Engineers projects now existing and under construction within the 50-mile zone of influence of the East Fork Lake, Caesar Creek, Paint Creek and West Fork of Mill Creek Lakes. Eagle Creek and Falmouth Lakes are authorized.

There are eight state parks within 50 miles of the project along with several other smaller areas of historical and cultural interest that are administered by the State of Ohio and Commonwealth of Kentucky. Following is a list of the state parks and other points of interest that are located within a radius of fifty miles from the dam.

<u>STATE PARK</u>	<u>COUNTY</u>	<u>DISTANCE FROM E.F.L.</u>
<u>Ohio</u>		
Hueston Woods	Preble	50
Cowan Lake	Clinton	30
Shanelick Lake	Clermont	15
Rocky Fork Lake	Highland	40
Adams Lake	Adams	40
West Fork Mill Creek	Hamilton	30
Paint Creek Res.	Ross & Highland	40
Caesar Creek Lake	Warren	30
Brush Creek St. For.	Scioto, Adams, Pike	50
County Parks	Hamilton Co.	10-30
Fort Hill St. Mem.	Highland	40
Harison St. Mem.	Hamilton	30
Fort Hamilton Mem.	Butler	30
Miamisburg Mound	Montgomery	40
Ft. Ancient St. Mem.	Warren	25
General Grant's Birthplace	Clermont	10
Grant Schoolhouse	Brown	20
Rankin House	Brown	30
Serpent Mound	Adams	40
<u>Kentucky</u>		
Big Bone Lick	Boone	30
Lincaid Lake	Pendelton	25
Blue Licks Battle Field	Robertson	40
Falmouth Lake	Harrison, Brathen	30
Eagle Creek Lake	Grant	40

3-05. ATTENDANCE. The estimated annual visitation for the initial period of reservoir operation, calculated for the year 1980 is 1,800,000. Ultimate visitation estimated for the year 2025 is 3,000,000. The preceding estimates have been calculated by the methodology of "Technical Report No. 2, Estimating Initial Reservoir Recreation Use, October 1969". The former estimate contained in the Preliminary Master Plan, 1967, for the project were 837,000 visitors during the initial period and 2,659,000 visitors ultimately.

3-06. RESERVOIR PLAN OF OPERATION. Just prior to the summer season, it is expected that the reservoir stage will be increased to provide a greater area for recreation. This increase will be in accord with rule curves developed in Design Memorandum No. 2. At the end of the summer season when this storage is released, it will permit some increase in the streamflow downstream from the reservoir project which will be beneficial to health as streamflows are normally deficient at this season of the year and will supply water for household and industrial use. Coordination with Federal and State Health Authorities, the Forest Service and the U.S. and State Fish and Wildlife interests will be carried out during project operation. During the detailed design of the project, studies will be made on the best method of operations and the result of these studies will be presented in a reservoir regulation manual. The reservoir will be operated for flood control when river stages downstream from the dam indicate necessity for reduction of streamflow.

3-07. RELOCATIONS. Relocations at this project will include relocation of a 69 KV powerline south of the project lands as shown on Plate 5. There are also only three cemeteries affected by the project, one is quite large and is located in the middle of the Tate recreation area. Although this cemetery is not affected by the flood pool, relocation must be considered due to its location along the entrance road to the main day use area at the project.

3-08. BORROW AND WASTE AREAS. All material for the dam and saddle dam will be supplied by excavation from the spillway, consequently no borrow areas will be required. It is anticipated that a small waste area will be acquired for stripping from the dam area. This area is below seasonal pool.

3-09. TOPOGRAPHY, GEOLOGY AND SOILS.

a. Topography. The area lies entirely within Clermont County in southwestern Ohio and it's principal stream itself is moderate, falling from approximately 800 feet msl at Williamsburg

to less than 620 feet msl at the proposed damsite. Tributary streams have similar incised patterns with relatively low to moderate gradients. The area lies within the central lowland physiographic province, in the Till Plains section.

The modern topography consists of a tableland dissected by a dendritic drainage pattern producing a relief in excess of 200 feet. The East Fork of the Little Miami River is the most marked topographic feature of the county producing a distinct contrast with the surrounding peneplain smothered in glacial drift.

b. Geology. Ordovician limestones and shales form the bedrock surface upon which the mantle of glacial materials have been deposited. The glacial deposits are of particular significance because the age and topographic position of the soils derived from these glacial events have been the most significant controlling factors in the distribution of various botanical species, probably do more than any other single factor in governing the entire ecologic framework. Illinoian glaciation stripped away most of the preglacial topographic expression of the East Fork area depositing a new mantle of glacial debris. Subsequent erosion upon this veneer of detritus has produced the present day topographic relief. In many places the drift has been removed by stream action and erosion of the Ordovician Eden and Maysville bedrock has resumed.

The Illinoian drift deposits consist mostly of 20 to 50 feet of stony clays with some interbedded sand layers. The drift material consists of four distinct deposits, not all of which are necessarily present in any one particular profile. A typical section through the drift would consist of:

White Clay	1 - 2 feet
Yellow Clay	6 - 8 feet
Forest Bed	2 - 2-1/2 feet
Boulder Clay	10 - 20 feet

c. Soils. The soil of the East Fork area consists of native soils derived from direct decomposition of the bedrock and drift soils. The native soils are of limited extent in this glaciated region and then due to their youth. This shallow soil erodes rapidly but is very fertile. Its appearance is red when little organic material is present.

The drift soils cover most of the area and are derived from the surface clays. The surface clays in turn trace their history back to the native bedrock. This extremely close link with the local bedrock is unusual for glacially derived soils in Ohio. This soil is very rich and is responsible for the growing of fruit in the county.

3-10. NATURAL RESOURCES. The absence of mineral resources such as oil, gas and gravel does not enhance the economic value of the area. Minor deposits of iron ore and placer gold are not of significance. The most valuable asset of the area other than its scenic beauty lies in the fertility of its soil. The best soils do not lie on the slopes of the valley nor on the flood plain but on the surrounding highlands well above maximum pool.

3-11. BIOLOGICAL ELEMENTS. An inventory of natural features of the area has been prepared by contract with Wright State University.

a. Vegetation. The study area is superimposed over an octave comprising two vegetational regions, specifically, the Western Mesophytic Forest Region to the north and west (Beech-Maple) and its Bluegrass Section to the south and the Mixed Mesophytic Forest Region to the east. Elements of each region are found within the area, along with specialized vegetation in specialized subareas, e.g., xero-Mesophytic associations on exposed bluffs and drier slopes (Oak-Ash-Maple). Principal canopy in the West Mesophytic-dominated areas include Beech and Maple, but the overall area seems grading toward a mixed Mesophytic community. Here the canopy is dominated by Tulip Tree, Basswood, Sugar Maple, Black Walnut and White Ash, associated with Beech, Buckeye, Red and White Oak and Hemlock. Also found, usually locally and less abundant, are Birch, Black Cherry, Biltmore Ash, and Red Maple.

Understory is principally in Dogwood, Magnolia, Sourwood, Striped Maple, Redbud, Blue Beech, Hop Hornbeam, Holly and Serviceberry. Other common shrubs include Spice Bush, Pawpaw, Wild Hydrangia and Dogwood. Also included as widespread and common are Hickory and Elm, Black and Honey Locust and Tree of Heaven, with Sycamore, Box Elder, Red Mulberry and Black Willow in the more Mesic areas.

b. Animals.

(1) Fishes. The Wright State University report lists over 80 species as actual or potential members of the fauna. Most are the common catostomids, cyprinids and centrarchids native to the region. Impoundment may be expected to shift population numbers and diversity from its current lotic expression. No rare or endangered species have been recognized as present in the area.

(2) Birds. Over 200 birds are listed in the report as residents, migrants or visitants. Those listed as rare are not indigenous to the area proper and are not expected to be adversely affected by any aspect of the proposed project.

(3) Reptiles and Amphibians. Some 28 reptiles and 30 amphibians are actual or potential residents of the study area according to the report (op. cit.). As with the fishes, no rare or endangered species have been recognized.

(4) Mammals. Over 40 mammals are listed in the report; those rare or endangered species are classified as such over their entire range and should not be affected by the proposed project.

(5) Macro-invertebrates. The referenced report emphasizes the pelycepod community and lists several rare and/or endangered species which would be adversely affected by all aspects of the project. The crustacean community is relatively limited and the bulk of the bethoic fauna remains uninvestigated, although limited sampling has provided a preliminary list of 40 genera and their horizontal distribution. Those species with lotic requirements may expect extermination as a result of the project's completion.

3-12. HISTORICAL FEATURES. Settlement of the East Fork area began in the first decade of the nineteenth century and a number of houses and churches in the area date from this period. Among the significant sites in the project area is the stone house built by Rev. John Collins in 1803. Unfortunately, this house is located well within the pool area. The four-chimney brick house built by General Richard Collins, son of John Collins, is located in the same area. The house of Captain Andrew Pinkham built in 1924 has a number of interesting out buildings, one of which was used for sugaring and still contains its equipment. This site is well above flood pool and the house can be retained for development of historical exhibits. Other sites of historical interest are the site of the flume built to wash glacial deposits for gold and also a tunnel mine for the same function. Another interesting site is Tunnel Mills where a tunnel was built in the mid-nineteenth century to improve the water power for operating two mills on the site.

3-13. ARCHAEOLOGICAL. There are few archaeological sites in the area and only one known site is located below pool level. This and the other sites on federal lands should be investigated.

3-14. WATER QUALITY. Corps of Engineers and USGS investigations indicate that bacteria, dissolved solids, radioactivity and heavy metal concentrations comply with the approved State of Ohio water quality standards.

BOD is projected to increase from a present range of 1.3 to 1.8 mg/l to a range of 3.4 to 4.8 mg/l. This projection is based on increases both in population and treatment efficiencies through the year 2020. Of itself, this increase in oxygen demand should have no gross

deoxygenating effect on the impoundment, but this does represent a high nutrient input, especially in light of the aforementioned efficiency increases. It should be noted that secondary sewage treatment has no effect on the quantity of nutrient supply, only the quality, i.e., major nutrients are in their oxidized forms and as such more readily available for planktonic uptake.

The treated sewage input which, given the size and configuration of the lake and the mineralized condition of the water, should be expected to hasten the eutrophication of this impoundment.

Eutrophication processes can be minimized through the implementation of any of the following processes:

1. Divergence of sewage to below damsite;
2. Addition of tertiary treatment capabilities to existing facilities; and
3. Aeration of impoundment hypolimnion.

3-15. ENVIRONMENTAL CONSEQUENCES OF THE PROJECT. Construction of the East Fork Lake project would convert approximately 10,600 acres of land from private to public use, and would change the character of the area from a rural agricultural environment to a water related outdoor recreation park-like environment. This plan would dedicate about 4,600 acres of water surface at flood control pool elevation, and approximately 2,160 acres of water surface at seasonal pool elevation, for project purposes. The environmental setting for communities and residents along the East Fork of the Little Miami River, and the Little Miami River, would be benefited by virtue of the contribution of this lake project to flood control. Although the present quality of the water in most of the stream is considered good during normal flow, storage of water for low flow augmentation in the lake insures that such quality downstream from the dam will remain. This is of particular importance because of the projected expansion of the nearby Cincinnati Metropolitan area. Additionally, storage of water for low flow augmentation will insure a continued flow of water during periods of drought or low inflow. Residents of the surrounding area, and particularly residents of the Cincinnati Metropolitan area, would gain a valuable recreation facility.

Inundation of the 17 mile reach of East Fork (flood pool elevation) would result in a change of the ecology upon which present flora and fauna in that area are based. Additionally, the agricultural bottomland for that reach would be eliminated. A modification of the ecosystem would result since the aquatic habitat would be altered from lotic (free flowing) to lentic (slack water). The existing stream fishery will be destroyed within the limits of the

seasonal pool and probably will be somewhat changed in character for some distance above the seasonal pool due to slow down of flow. A scenic stretch of the East Fork, which has remained virtually unchanged for some time, will be inundated.

Because of flood control provided downstream from the project, the availability of a firm yield water supply, the availability of relatively high water quality and existence of a nearby recreation area, urbanization can be expected to increase rapidly. If this occurs, audio, air, water, and visual pollution will probably result. Developments which occur as a result of this project will probably cause a decrease in wildlife population.

The lake development, influx of visitors, and the pursuit of recreation activities resulting from this project would destroy the tranquility which presently prevails. As adverse psychological and sociological impact will occur to many of the people displaced by the project.

SECTION 4 - COORDINATION WITH OTHER AGENCIES

- 4-01. GENERAL. To broaden the scope and to substantiate the soundness of planning, the advice and assistance of various agencies have been sought. Such coordination will continue and will assure optimum development and management of East Fork Lake for fish and wildlife and the authorized project purposes.
- 4-02. FEDERAL. Reports from the U.S. Fish and Wildlife Service are inclosed as an exhibit.
- 4-03. STATE. The Ohio Department of Natural Resources intends to apply for a lease on all available project lands. They also participated in and will continue to participate in the recreational planning of the project. Correspondence with the Department of Natural Resources appears as exhibits.

SECTION 5 - PLAN OF DEVELOPMENT

5-01. GENERAL. Public use development at East Fork Lake Project is planned to allow the maximum use of the available land. The development proposed includes a plan for the enhancement of the scenic values of the project, as well as for screening and eliminating undesirable features of the project area. The reservoir is scheduled for start of impoundment in the fall of 1976.

5-02. ALLOCATION OF PROJECT LANDS. The allocation for use of project lands was made on the basis of the resources of the project, and will assure full utilization of the resources throughout the project life. The allocations were made after full consideration of the provisions of applicable Federal laws, instructions contained in change 1 to EM-1120-2-400. The classification as assigned to the various areas of project land is shown in Plate 2, the Land Use Allocation Map. Five hundred and sixty five (565) acres of land are required for operation and maintenance of project structures and will be retained by the Corps.

5-03. RECREATIONAL DEVELOPMENT.

a. Damsite and Tailwater, Plates 6.1 and 6.14. This area includes approximately 560 acres in the immediate vicinity of the dam, spillway and saddle dam which will be retained by the Corps of Engineers for operations and maintenance purposes. The area will include the tailwater fishing area with its road through the spillway. Ultimately, the tailwater can be developed for additional picnicking or camping. Planning for construction of the dam has tried to take the scenic quality of the area into consideration by using the alignment of the tailwater access road for the haul road and preserving areas of tree cover whenever possible. The present overlook area will be retained and further developed with sanitary facilities for use after completion of the dam. Also, a 4-land boat launching ramp is planned for the spillway. The ramp and its approach road will take advantage of the topography of the valley sides in its alignment, however, great care will be taken in the design of this feature due to the difficult geological conditions of the bedrock throughout the region. Location of a boat ramp and parking area in the spillway is advantageous at this project because there is no other practical location less than five road miles from operations area at the dam for boat launching for operational use and the spillway will facilitate parking in closer proximity to the boat ramp since it will be cut down about 40 feet below the prevailing elevation of the top of the plain around the river valley. Since the elevation of this end of the spillway is approximately fifteen feet below the spillway crest elevation, no change to the hydrologic characteristics of the spillway are anticipated from the ramp parking area, and it is unlikely that the parking area would be damaged as the result of the use of the spillway.

b. Greenbrier Site, Plates 6.3 through 6.12. The Greenbrier Site is located along the northern shore of the lake. Steep lake shores rise to a gently rolling plateau. Only in a few areas are river terraces available for development of water associated facilities such as boat ramps and beaches. However, views from the high steep banks are exceptional; consequently, this area has been chosen as the primary resort and camping area. The area is also well suited to the development of nature and interpretive centers. The State of Ohio has acquired additional land for an entrance at this site from Highway 32. This land will also be used as part of the buffer zone of this site and for a sanitary landfill site if one is needed at this project.

(1) Resort Area. The type of recreation used or facilities under consideration includes major attraction for tourists or vacationers, for those who expect to stay from several days to several weeks and who have the time to enjoy the attractions normally found in a resort park. In order to exist, such facilities must be placed on a revenue producing basis, and since they are beyond the authorization of the Corps of Engineers, they are considered separately. In those locations determined to be appropriate there are located a resort-lodge complex, including a 184-unit hotel with dining room, game rooms, a swimming pool, game courts and similar resort features. As a part of this overall complex, cottages and cabins of various degrees of quality are included, private launching ramps, boat docks, a nearby golf course and other features of a resort nature.

Other items which may be classified as revenue producing include an interpretive center, the conference and seminar center, a full-scale marina with service building and slips, facilities for horseback riding, grocery store, an equipment store and other items for the general enjoyment of the visitor who may make East Fork Lake the terminus of this vacation. Revenue producing items are listed separately on the cost estimates.

(a) Resort Lodge Complex. The main lodge, as shown on Sheet 6.8, is located on a promontory approximately 100 feet above the seasonal pool level of the lake and facing west toward the dam over one of the longest and handsomest views of the water and hillsides. The structural elements should be arranged so that the main public rooms - the lobby and dining room - take advantage of the best view, and the guest-unit wings are oriented to the view and the topography to allow one story on the landside and two stories on the lakesides. In addition to the 184 guest units in the main lodge, 42 housekeeping cabins are on the neighboring ridge tops. A neighboring interpretive center provides parking for 80 cars, an outdoor classroom and hiking trails. The interpretive center will furnish an opportunity to study the flora and fauna of the region, its history and other characteristics of the environment.

(b) Riding Stables. The riding stable facilities, as shown on Sheet 6.5, include administrative buildings, parking areas for those coming to this point to rent horses for riding and the service buildings necessary for operation of the development. In addition to this, riding trails will be established in the area generally south and southwest of the riding stables providing nearly ten miles of riding trails.

(c) Cabins. A rental cabin complex containing 78 units, parking areas, a boat ramp and 25 picnic sites as shown on Sheet 6.3.

(d) Interpretive Center. A major interpretive center is shown on Sheet 6.5, closely related to conservation and nature study areas, and contains dormitories, dining and meeting rooms, and an interpretive center headquarters building.

(2) Camping Areas. East of the resort area and the nature study area, the major camping areas of the project have been planned. Approximately 600 campsites are planned of which 400 will be constructed initially. In the initial phase the campground will have a prefab vault sanitary facilities and water. Also, a small boat launching ramp will be supplied and a small beach. A seasonal small beach is planned for future development. Access will be from the resort area and Route 32. Main circulation roads throughout the camping areas are proposed to be 20 feet in width; secondary access roads, 18 feet; and one-way roads through the campsites, 12 feet.

(3) Sanitary Landfill. In the event that solid wastes cannot be disposed of outside the project area, a possible site for sanitary landfill is indicated on Sheet 6.5. This land has been acquired by the State of Ohio and is located directly west of the Afton-Elk Road. Other possible uses within this to-be-acquired land include conservation, nature study and riding stables.

(4) Utilities. Sufficient supplies of water and power are located along Highway 32. During the initial period, water will be brought into the camping area along the alignment of Williamsburg-Bantam Road. In the future when the resort complex is developed it will be most practical to connect to the lines at Route 32 in the vicinity of the main park entrance. Electric power may be similarly distributed to the site. When waterborne facilities are developed at the site it will probably be necessary to build a sewage treatment plant and discharge the effluent below the dam. However, if the interceptor sewer line from Williamsburg to Batavia becomes a reality, it might be feasible to pump into this.

(5) Tate Site, Plates 6.14 through 6.19. The Tate site located on the south shore of the lake has a number of good terraces close to the water which makes it ideal for major day use development. Initially a moderately large bench, and boat ramp will be developed with many accompanying picnic facilities. Future development will include development of a second beach and additional picnic facilities.

(a) Access. It is anticipated that the State of Ohio will be able to acquire a small tract along new alignment of Highway 125 so that the entrance may be extended to that highway. The entrance may be extended to that highway. The entrance road will ultimately be made into a low speed four-lane road to facilitate the heavy traffic and frequent turnoffs.

(b) Boat Ramp. The primary boat launching ramp has eight lanes plus dock facilities. It is proposed that the boat launching ramps and docks and parking for 200 cars plus picnic sites and toilets be constructed as part of the initial installation.

(c) Beaches.

1. Initial. The major sand beach, as shown on Sheet No. 6.17 and the enlarged detailed site plan, is proposed as part of the initial development of this project. In consideration of the timing of the construction and the cost, it is proposed that only a portion of the parking area be paved initially. The remaining parking space and walks may be installed later as the need develops. It is anticipated that if the initial parking area is insufficient to take care of the peak load of cars, the cars may park in the grass until such time as additional parking areas are paved. In addition to the sand beach, the installation includes sizeable areas of "grass beach", to be used mainly for sun-bathing. Also, in order to afford additional recreation in relation to the beach, certain areas are set aside for playfields, and picnic sites are nearby. Following is a tabulation of the various use areas related to the major beach development shown on Sheet 6.17.

Playfields & Grass Beach	8 acres
Sand Beach	13,300 square yards
Under Water (at seasonal pool)	20,000 square yards
Parking	1,120 cars

2. Future Beach. The beach on Plate 6.18 will serve the future swimming demand at this project. The following table shows the areas to be developed for this beach.

Playfields & Grass Beach	8 acres
Sand Beach	13,550.0 square yards
Under Water (at seasonal pool)	39,665.0 square yards
Parking	756 cars

3. Group Beach. The "group beach" shown on the same sheet is intended as a supplement to the larger beach as a place for special outing or for swimming instruction and day camp use. The following use tabulations apply to this smaller development.

Playfields & Grass Beach	5 acres
Sand Beach	11,000.0 square yards
Under Water	
(at seasonal pool)	11,000.0 square yards
Parking	152 cars

(d) Picnic Sites. The initial picnic areas are located in the vicinity of the beach and the boating facilities. About 500 sites are scheduled for initial development with the approximately 800 left for future stages. Organized picnic sites are provided with grills, tables, waste receptacles and toilets and parking areas within easy walking distance. Main circulation roads throughout the picnic area are proposed to be 20-foot asphalt, with secondary roads leading to the picnic sites and their parking areas 18-foot asphalt. It is expected that tables and grills will be provided by the State of Ohio. Major initial picnic areas are indicated on Sheets 6.17 and 6.18. Waterborne sanitary facilities will be provided whenever possible.

(e) Interpretive Area for Historic Display. The Pinkham house, located on this site, is considered to be an excellent example of the architecture of its period. This house also has a number of excellent out buildings, one of which was used for making maple syrup. There has been a considerable local interest in preservation of this group of buildings, which is in ideal location with relation to the rest of the facilities at the site. Consequently, this area has been set aside as an area for historic exhibits. It would be desirable to use this site to relocate any other notable buildings which must be disposed of because of the project. It is anticipated that management of this area will be worked out through the cooperation of a local historical society and the Ohio Department of Natural Resources. If the managing group desires to use the adjacent sugar-bush for demonstration purposes in the appropriate season it would be considered appropriate as long as proper management of the trees is applied and any proceeds go towards to support of the exhibit.

(f) Utilities.

1. Electric Distribution. Power is available at the boundaries of this site.

2. Water. Local water districts have lines along both Highway 32, north of the lake and Highway 125, south of the project. It would be most desirable to utilize the Tate-Monroe system south of the project for the Tate site. However, if for any reason this system cannot be used it is possible to run a line from the northern water system. The latter scheme would require an initial storage tank on the high ground in the Concord site.

3. Sewage Disposal. It will be necessary to construct a sewage disposal plant initially at the Tate site. Since the cost of any plant will be relatively great because of the high level of treatment necessary when effluent is run into the lake it will prove practical to collect all sewage into a central plant. For safety considerations the site chosen for the plant is located downstream from all planned beaches.

c. Concord Site, Plates 6.11, 6.12, and 6.21, 6.22. This site is located at the extreme eastern end of the lake. The topography of the site is rugged with deep ravines and narrow ridges. The state proposes to acquire a small area adjoining Federal lands at this site. During planning for the site a larger state acquisition area was considered. In the future this site will be entirely developed for group camping. The Tunnel Mill Road Bridge connects the area to the Greenbrier site. The deck of this bridge is well above seasonal pool and it is proposed to repair it for use of the campers and maintenance personnel. The State will operate the group camp on a reservation basis for the benefit of all kinds of groups who wish to use the lake.

(1) Access. Access to this site is planned in two ways. This multiple-planning will facilitate flexibility in management. If this site is to be managed as part of the Greenbrier site it may be approached from the north by the Tunnel Mill Bridge. If it proves desirable to manage it as a separate site, access may be from the east over Twin Bridges Road.

(2) Group Camping. Development of this camping area will include 6 group campsites and a beach located to serve all of these.

(3) Utilities. Power for the campground and the sewage treatment plant will come from the vicinity of Highway 133 to the east of the lake. Water will come from the Greenbrier site to the north, either over a proposed reservoir crossing or a line sunk into the bottom of the lake which is quite shallow in this vicinity.

d. Bethel and Marina Site, Plates 6.23 and 6.24. A four-lane boat ramp and marina are planned on the south side of Cloverlick Creek near the e-d of the Concord-Bethel Road. This area is also planned for future development of picnic facilities with 315 sites and two campsites. Vault sanitary facilities will be used.

e. Conservation Areas, Plates 6.26.3 and 6.13, and 6.19, 6.20, and 6.25. Suitable areas around the lake are set aside for wildlife study and interpretation. Access to this area is at specific points from which travel through the area may be by hiking, bridle and bicycle trails. No motorized traffic is to be allowed in this area and no provision is made to take care of it.

At strategic points throughout the wildlife areas, picnic tables and waste receptacles may be provided, but no provision for water service, sewage disposal or electricity will be made.

Trails through the wildlife area are set up to provide hiking trips of different mileage and showing an interesting variety of scenic quality. The trails will be provided with appropriate signs and information calling attention to interesting features of the area.

5-04. FISH AND WILDLIFE CONSERVATION AND MANAGEMENT. Lands not shown for recreational development are designated for fish and wildlife development and management and for shoreline access. The State of Ohio Department of Natural Resources, in its application for lease of project lands, will submit a general development and management plan for certain portions of these lands.

a. Use of Recreation Lands for Fish and Wildlife Management.

Much of the recreational areas are reserved for future development, or will serve as buffer areas, and may be managed for limited wildlife purposes. Hunting in recreation area lands may be considered, providing such use is compatible with the other public use of the area. Specific wildlife management practices on these lands will restrict:

(1) Any practices or developments which would interfere with ultimate general public recreation use;

(2) Any development which could permanently alter the landscape, such as roads, parking lots, ponds or marshes, etc., and

(3) The planting of any undesirable permanent vegetation in areas other than along the outer boundary.

b. Hunting. Because of the surrounding topography, reservoir conformation and location, the East Fork Lake Project is very well adaptable for development as a public hunting area.

All Federal lands and waters within the project area will be open to hunting and fishing except for areas reserved for safety, efficient operation, or protection of public property. Hunter utilization of general recreation lands will be allowed according to the policies of the Ohio Department of Natural Resources.

c. Fishing. A part of the construction of the dam and outlet works improvements will be made to the tailwater for the benefit of fisherman use. These include fishing platform and a deep hole to provide a resting plan for fish during low streamflows.

Also, consideration will be given to leaving standing timber on the lake banks in the upper reaches of the pool. Also, there are locations within the recreation areas where standing timber will not be highly visible and therefore should remain to improve fishing in these areas.

5-05. COST ESTIMATES. The 1 January 1974 escalation of PB-3 estimate for Feature 14 dated 1 July 1973 is \$5,345,000 including contingencies but exclusive of distributive costs. The estimated cost of the recreational facilities required to meet initial user demand essentially agrees with the PB-3 figure and is \$5,464,900. The PB-3 should be revised to show the actual estimate. The approved PB-3 estimate for overlook facilities at the dam, part of Feature 19, is \$62,000, including contingencies. This figure will supply the planned facilities.

a. Future Costs. The Corps will participate in future recreational development in accordance with OCE directive dated 5 August 1964, subject, "Implementation of the Federal Water Projects Recreation Act (PL 89-72)", in previously authorized projects.

b. Detailed Cost Estimate for Public Use Facility Development. Following is a cost estimate for recreational facilities. Costs of development of revenue producing and special use facilities are listed separately.

TOTAL COSTS
IN (\$1,000)
DEVELOPMENT IN WHICH CORPS MAY PARTICIPATE

	Initial	Future	Total
Bethel	251.9	612.0	863.9
Concord	—	1,370.7	1,370.7
Damsite	243.6	466.1	709.7
Greenbrier	1,686.5	1,781.5	3,468.0
Tate	<u>2,570.1</u>	<u>3,806.3</u>	<u>6,376.4</u>
Subtotal	4,752.1	8,036.6	12,788.7
Contingencies	712.8	1,205.5	1,918.3
Construction Cost	5,464.9	9,242.1	14,707.0
E&D, S&A	<u>1,093.0</u>	<u>1,848.4</u>	<u>2,941.4</u>
Total Cost	6,557.9	11,090.5	17,648.4

NON-FEDERAL DEVELOPMENT
REVENUE PRODUCING FACILITIES
IN (\$1,000)

Marina Area	567.6
Lodge Area	8,424.7
Special Use Facilities	
Environmental Education Center	<u>370.0</u>
Subtotal	9,362.3
Contingencies 15 percent	1,404.3
Construction Cost	10,766.6
E&D, S&A 20 percent	<u>2,153.3</u>
Total Cost	12,919.9

Facility	Unit	Unit Cost	Initial		Future		Total	
			Quantity	Cost Thousands	Quantity	Cost Thousands	Quantity	Cost Thousands
<u>BETHEL</u>								
Parking (Bitum)	S.Y.	7.00	8,888	62.2	20,555	144.2	29,443	264.4
Road (Type A)	Lin.ft.	19.00	5,800	110.0	10,800	172.8	5,800	110.0
Road (Type B)	Lin.ft.	16.00			3,000	45.0	10,800	172.8
Road (Type C)	Lin.ft.	15.00					3,000	45.0
Comfort Station (Prefab Vault)	Pair	3,000.00			16	48.0	16	48.0
Electrical Distrib.	Job		1	35.0			1	35.0
Water Distrib.	Job		1	50.0	1	75.0	2	125.0
Picnic Facilities	Each	200.00						
Tree Planting (Seedlings)	Acre	250.00	3	.7	635	127.0	635	127.0
Sub Total								
Contingencies 15%				251.9		612.0		863.9
Construction Cost				37.8		91.8		129.6
E&D, S&A, 20%				289.7		703.8		993.5
TOTAL COST				57.9		140.8		198.7
				347.6		844.6		1,192.2

Facility	Unit	Unit Cost	Initial Cost		Future Cost		Total Cost	
			Quantity	Thousands	Quantity	Thousands	Quantity	Thousands
<u>CONCORD</u>								
Parking (Bitum)	S.Y.	7.00						
Road (Type B)	Lin.ft.	16.00	5,111	36.5	5,111	36.5	5,111	36.5
Road (Type C)	Lin.ft.	15.00	17,000	272.0	17,000	272.0	17,000	272.0
Road (Type D)	Lin.ft.	12.00	14,000	210.0	14,000	210.0	14,000	210.0
			1,000	12.0	1,000	12.0	1,000	12.0
Change Inclosure	Each	25,000.00	1	25.0	1	25.0	1	25.0
Picnic Shelter	Each	10,000.00	7	70.0	7	70.0	7	70.0
Comfort Stations	Pair	3,000.00	17	51.0	17	51.0	17	51.0
(Prefab Vault)								
Sanitary Dumpstation	Each	3,000.00	2	6.0	2	6.0	2	6.0
Electrical Distrib.	Job		1	130.0	1	130.0	1	130.0
Water Distrib.	Job		1	220.0	1	220.0	1	220.0
Beach Area	Job		1	75.0	1	75.0	1	75.0
Group Camp Sites	Each	3,000.00	7	21.0	7	21.0	7	21.0
Foot Trails	Lin.ft.	3.00	29,400	88.0	29,400	88.0	29,400	88.0
Tree Planting	Acre	250.00	257	64.2	257	64.2	257	64.2
(Seedlings)								
Entrance Control Sta.	Each	25,000.00	2	50.0	2	50.0	2	50.0
Ranger Station	Each	40,000.00	1	40.0	1	40.0	1	40.0
SubTotal								
Contingencies 15%				1,370.7		1,370.7		1,370.7
				205.6		205.6		205.6
Construction Cost				1,576.3		1,576.3		1,576.3
E&D, S&A, 20%				315.3		315.3		315.3
TOTAL COST				1,891.6		1,891.6		1,891.6

Facility	Unit	Unit Cost	Initial Cost		Future		Total	
			Quantity	Thousands	Quantity	Thousands	Quantity	Thousands
DAMBSITE								
Parking (Bitum) Ramp	S.Y. Job	7.00	1,944	13.6	20,200	141.4	22,144	155.0
Road (Type B)	Lin.ft.	16.00	1	100.0	13,400	214.4	1	100.0
Road (Type C)	Lin.ft.	15.00			2,400	36.0	2,400	214.4
Picnic Shelter (Without Toilets)	Each	10,000.00			2	20.0	2	36.0
Comfort Station (Flush)	Each	22,000.00	1	22.0			1	20.0
Comfort Station (Prefab Vault)	Pair	3,000.00			6	18.0	6	22.0
Sewage Disposal	Job		1	50.0			1	18.0
Electrical Distrib.	Job		1	27.0			1	50.0
Water Distrib.	Job		1	30.0			1	27.0
Foot Trails	Lin.ft.	3.00			3,002	9.0	3,002	30.0
Overlook (Platform)	Each	5,000.00			2	10.0	2	9.0
Picnic Facilities	Each	200.00			43	8.6	43	10.0
Tree Planting (Seedlings)	Acre	250.00	4	1.0	35	8.7	39	8.6
Sub Total								9.7
Contingencies 15%				243.6		466.1		709.7
Construction Cost				36.6		69.9		106.5
E&D, S&A, 20%				280.2		536.0		816.2
TOTAL COST				56.0		107.2		163.2
				336.2		643.2		979.4

Facility	Unit	Unit Cost	Initial		Future		Total	
			Quantity	Cost Thousands	Quantity	Cost Thousands	Quantity	Cost Thousands
GREEN BRIER								
Parking (Bitum)	S.Y.	7.00	21,788	152.6	21,277	149.0	43,065	301.6
Ramp	Job		1	30.0			1	30.0
Roads (Type A)	Lin.ft.	19.00	3,800	72.2			3,800	72.2
Roads (Type B)	Lin.ft.	16.00	17,800	284.8	17,000	272.0	34,800	556.8
Roads (Type C)	Lin.ft.	15.00	6,600	99.0	3,400	51.0	10,000	150.0
Roads (Type D)	Lin.ft.	12.00	22,100	265.2	27,600	331.2	49,700	596.4
Change Inclosure	Each	25,000.00	1	25.0	1	25.0	2	50.0
Picnic Shelter	Each	10,000.00	1	25.0	1	10.0	1	10.0
Comfort Stations (Prefab Vault)	Pair	3,000.00	24	72.0	23	69.0	47	141.0
Sanitary Dump Station	Each	3,000.00	3	9.0			3	9.0
Sewage Collection	Job		1	25.0			1	25.0
Sewage Treatment	Job				1	300.0	1	300.0
Camping Facilities	Each	500.00	409	204.5	193	96.5	602	301.0
Electrical Distrib.	Job		1	130.0	1	90.0	2	220.0
Foot Trails	Lin.ft.	3.00			67,200	201.6	67,200	201.6
Tree Plantings	Acre	250.00	153	38.2	105	26.2	258	64.5
(Seedlings)								
Water Distrib.	Job		1	200.0	1	110.0	2	310.0
Beach Areas	Job		1	50.0	1	50.0	2	100.0
Boat Loading Docks	Each	4,000.00	1	4.0			1	4.0
Entrance Control Sta.	Each	25,000.00	1	25.0			1	25.0
Sub Total				1,686.5		1,781.5		3,468.0
Contingencies 15%				253.0		267.3		520.3
Construction Cost				1,939.5		2,048.8		3,988.3
E&D, S&A, 20%				387.9		409.8		797.7
TOTAL COST				2,327.4		2,458.6		4,786.0

Facility	Unit	Unit Cost	Initial		Future		Total	
			Quantity	Cost Thousands	Quantity	Cost Thousands	Quantity	Cost Thousands
Parking (Bitum)	S.Y.	7.00	41,333	289.0	98,679	690.0	140,012	979.0
Ramp	Job		1	40.0			1	40.0
Road (Type A)	Lin.ft.	19.00	13,900	264.1	1,200	22.9	15,100	287.0
Road (Type B)	Lin.ft.	16.00	7,950	127.2	34,400	550.4	42,350	677.6
Road (Type C)	Lin.ft.	15.00			24,400	366.0	24,400	366.0
Road (Type D)	Lin.ft.	12.00			1,400	16.8	1,400	16.8
Turf Parking	Job		1	24.0	1	25.0	2	49.0
Picnic Shelters	Each	10,000.00	5	50.0	23	230.0	28	280.0
Change House	Each	100,000.00	1	100.0	1	100.0	2	200.0
Comfort Station (Flush)	Each	22,000.00	9	198.0	18	396.0	27	594.0
Comfort Station (Prefab Vault)	Each	3,000.00	2	6.0	15	45.0	17	51.0
Sewage Treatment	Job		1	800.0	1	600.0	2	1,400.0
Electric Distrib	Job		1	140.0	1	150.0	2	290.0
Water Distrib	Job		1	300.0	1	210.0	2	510.0
Group Picnic Area	Job				1	3.0	1	3.0
Picnic Facilities	Each	200.00	514	102.8	644	128.8	1,158	231.6
Tree Plantings (Seedlings)	Acre	250.00	116	29.0	204	51.0	320	80.0
Beach Area	Job		1	100.0	1	165.0	2	265.0
Foot Trails	Lin.ft.	3.00			18,800	56.4	18,800	56.4
Sub Total				25,701.0		38,063.0		6,376.4
Contingencies 15%				3,855.0		570.9		956.4
Construction Cost				29,556.0		4,377.2		7,332.8
E&D, S&A, 20%				591.1		875.4		1,466.5
TOTAL COST				35,467.0		5,252.6		8,799.3

Facility	Unit	Unit Cost	Initial Cost		Future Cost		Total Cost	
			Quantity	Thousands	Quantity	Thousands	Quantity	Thousands
<u>EAST FORK LAKE, MARINA</u>								
Parking (Bitum)	S.Y.	7.00						
Ramp	Job	30,000.00						
Roads (Type C)	Lin.ft.	15.00						
Sewage Treatment	Job	150,000.00						
Electrical Distrib.	Job	25,000.00						
Water Distrib.	Job	15,000.00						
Tree Planting (Seedlings)	Acre	250.00						
Marina	Job	150,000.00						
Sub Total								
Contingencies 15%								
Construction Cost								
E&D, S&A, 20%								
TOTAL COST								

Facility	Unit	Unit Cost	Initial Cost		Future Cost		Total Cost	
			Quantity	Thousands	Quantity	Thousands	Quantity	Thousands
<u>EAST FORK LAKE, LODGE SITE</u>								
Boat Launching Ramps (Concrete)	Lane	10,000.00			1	10.0	1	10.0
Parking (Bitum)	S.Y.	7.00			329,800	2,310.0	329,800	2,638.4
Roads (Type A)	Lin.ft.	19.00			3,000	57.0	3,000	60.0
Roads (Type B)	Lin.ft.	16.00			45,000	720.0	45,000	720.0
Roads (Type C)	Lin.ft.	15.00			9,000	135.0	9,000	135.0
Cabins	Each	15,000.00			94	1,410.0	94	1,410.0
Class Room	Job	100,000.00			1	100.0	1	100.0
Club House	Job	50,000.00			1	50.0	1	50.0
Interpretive Center	Job	100,000.00			1	100.0	1	100.0
Stable	Job	80,000.00			1	80.0	1	80.0
Lodge	Job	2,000,000.00			1	2,000.0	1	2,000.0
Comfort Stations (Prefab Vault)	Pair	3,000.00			8	24.0	8	24.0
Sewage Treatment	Job	750,000.00			1	750.0	1	750.0
Electrical Distrib.	Job	150,000.00			1	150.0	1	150.0
Water Distrib.	Job	240,000.00			1	240.0	1	240.0
Beach Area	Job	75,000.00			1	75.0	1	75.0
Foot Trails (4' gravel/crushed stone)	Lin.ft.	3.00			43,200	129.6	43,200	129.6
RDTR	Job	39,200.00			1	39.2	1	39.2
Picnic Facilities	Each	200.00			207	41.4	207	41.4
Maintenance Build.	Job	50,000.00			1	50.0	1	50.0
Marina	Job	75,000.00			1	75.0	1	75.0
Sub Total								8,424.7
Contingencies 15%								1,363.7
Construction Cost								9,688.4
E&D, S&A, 20%								1,937.7
TOTAL COST								11,626.1

5-06. DESIGN CRITERIA. The annual visitation estimate shown in the Preliminary Master Plan of 1966 is 837,000 initially and 2,659,000 ultimately. Based on the experience of this District and on the recreation needs as expressed in the Ohio State Recreation Plan, this figure appears much lower than the actual visitation will be. A detailed discussion of criteria for design and sketches of proposed structures appears as Appendix F to this report.

Basic Facilities to be supplied initially

Boating			
Ramp Lanes	19		
Parking	480		
Swimming			
Beach SY	33,000		
Parking	330 paved	580 turf	
Picnic Units	514		
Camping Units	409		

SECTION 6 - OPERATION AND MANAGEMENT

6-01. LEGISLATIVE CONSTRAINTS. East Fork Lake was authorized prior to the enactment of PL 89-72. Therefore, the State of Ohio is not required to participate in the initial development of the recreational facilities and the management and operation of the recreation facilities. However, the Ohio Department of Natural Resources wishes to add the project lands to the system of parks and to contribute to the ultimate development through the vehicle of a lease for available project lands.

6-02. REGULATIONS. East Fork Lake will be administered in accordance with the provisions of "Title 36 - Chapter III - Part 311 - Federal Code of Regulations" and the applicable Federal and state policies.

6-03. ADMINISTRATIVE AND MANAGEMENT ORGANIZATIONS.

a. Corps of Engineers. The chart on page 6-04 depicts the organizational arrangement of those elements within the Louisville District, Corps of Engineers, which have administration and management responsibilities. The basic responsibilities of these organizational elements will be in general accord with ER 1130-2-400 and specifically in Louisville District Regulation DR 405-2-1. The District Engineer will vest appropriate responsibility and authority with the Area Reservoir Manager for implementation of the District Regulations at the field contact level.

b. State of Ohio. The chart on page 6-04 depicts the organization of those elements for the State of Ohio having administrative and management responsibilities. The Department of Natural Resources will have basic responsibility but will call on other State Departments when needed.

c. Functional Responsibilities. The State of Ohio will promulgate regulations governing the use of lands, facilities, and water areas at East Fork Lake. Hence, under the lease agreement the state will be principally concerned with determining the nature and extent of recreation and fish and wildlife development; preparing construction codes and requirements; initiating coordinating and reconciling activities relative to management policies and regulation; and relations with concerned agencies and public relations in general. The state would also be required to submit an annual management plan to the District Engineer for his approval. Land and water areas and facilities

retained for direct management by the Corps will be administered by field and office personnel of the Louisville District. The Corps will be principally concerned with reservoir regulation, operation and maintenance of the dam structure area, and the checking on compliance with terms of outgrant instruments.

6-04. ADMINISTRATIVE CONTROLS AND PROCEDURES.

a. Land Use. Plate 3 shows designation of land use for all project lands. The designations were based on existing natural conditions that could best serve the specific activity. It is intended to serve as a guide for any future development or land use consideration.

b. Water Use Zoning. A preliminary zoning plan, Plate 4, has been prepared to minimize conflicts between water skiing, boating, fishing, swimming, and waterfowl refuge.

c. Fees and Charges. All fees and charges for use of developed areas and facilities, whether managed by the state or Corps, will be consistent with the schedule of charges suggested in implementation of the Land and Water Conservation Fund Act of 1965.

d. Outgrant Coordination. Outgrants, leases, and easements to others for use of project land and/or water areas, will be administered by Real Estate Division and will be based on the approved Public Use Plan. In this regard, coordination with Engineering and Operations Divisions will be maintained so as to assure full consideration of all desires, requirements, and objectives. All outgrants will be thoroughly coordinated with the Director, Ohio Department of Natural Resources before issuance by the District Engineer. The Director, Ohio Department of Natural Resources, will likewise coordinate any proposed third party concession agreement with the District Engineer on project areas leased to the state.

e. Encroachments. Those project lands abutting privately owned lands have been monumented with project funds as a means for guarding against encroachments on project lands. The state will promptly report any encroachments on project lands under its jurisdiction to the District Engineer, and will cooperate with the District Engineer in such measures as he may determine necessary for the elimination of any encroachments.

f. Fire Control. The project lands are covered with timber and open grass fields which will constitute a major fire hazard. In this regard, state management personnel should be adequately trained in fire prevention and control procedures and assigned definite duties in accordance with a specific plan for mobilization for fire suppression. An appendix presents a plan for fire control at the project.

g. Erosion Control. Erosion control is also essential for prevention of reservoir siltation and for the assurance of maintaining water quality for enjoyment of certain recreational activities. It shall be the responsibility of Corps reservoir management personnel to effect proper erosion control measures over project lands where corrective treatment becomes necessary for prevention of continuing or accelerating damage to natural features due to flood control operation of the project. Erosion control relative to recreation and fish and wildlife management of land leased to the state will be the state's responsibility. The Corps will be responsible for all erosion control on the operational lands.

h. Debris Control. Debris in the reservoir is dangerous to pleasure craft and when blown ashore often makes shoreline and beach areas unsightly and unusable. Debris control will be the responsibility of the Corps. If debris persists in the reservoir as a result of the project lands management for recreation or fish and wildlife, a definite program for debris removal and subsequent disposal will be formulated and implemented by the state.

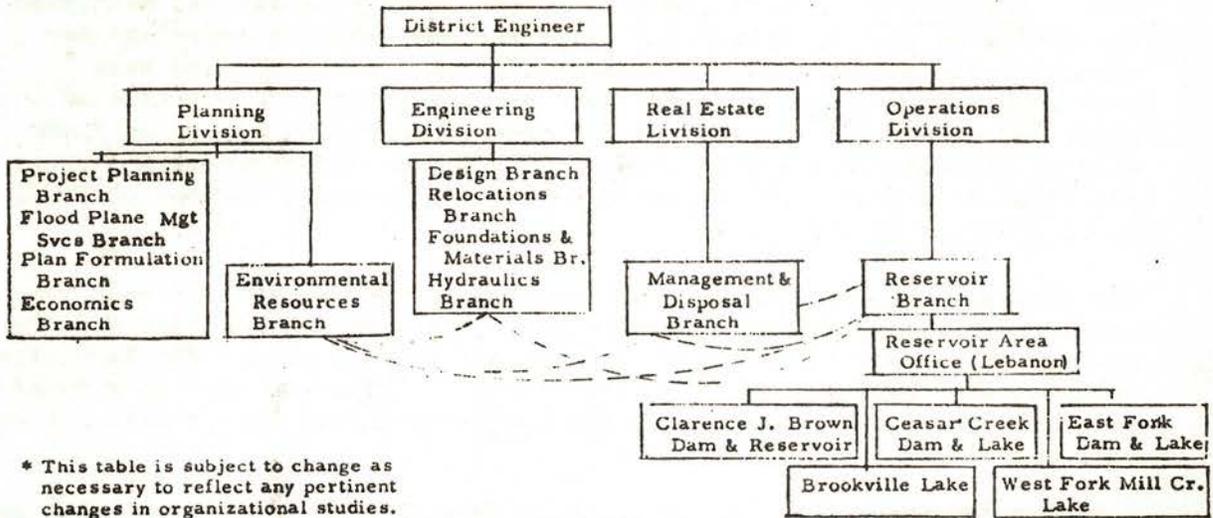
i. Law Enforcement. An effective program of proper land and water use management cannot be achieved without law enforcement. It is therefore anticipated that the State of Ohio will assign law enforcement personnel for enforcing the rules and regulations for land and water use.

j. Health, Sanitation and Pollution Control. In promoting the adequate standards relating to health, sanitation, and pollution control all developments for public use will be thoroughly coordinated with the Ohio Department of Health. It will be the responsibility of the Ohio Department of Natural Resources to initiate such coordination for any contemplated development on all project lands.

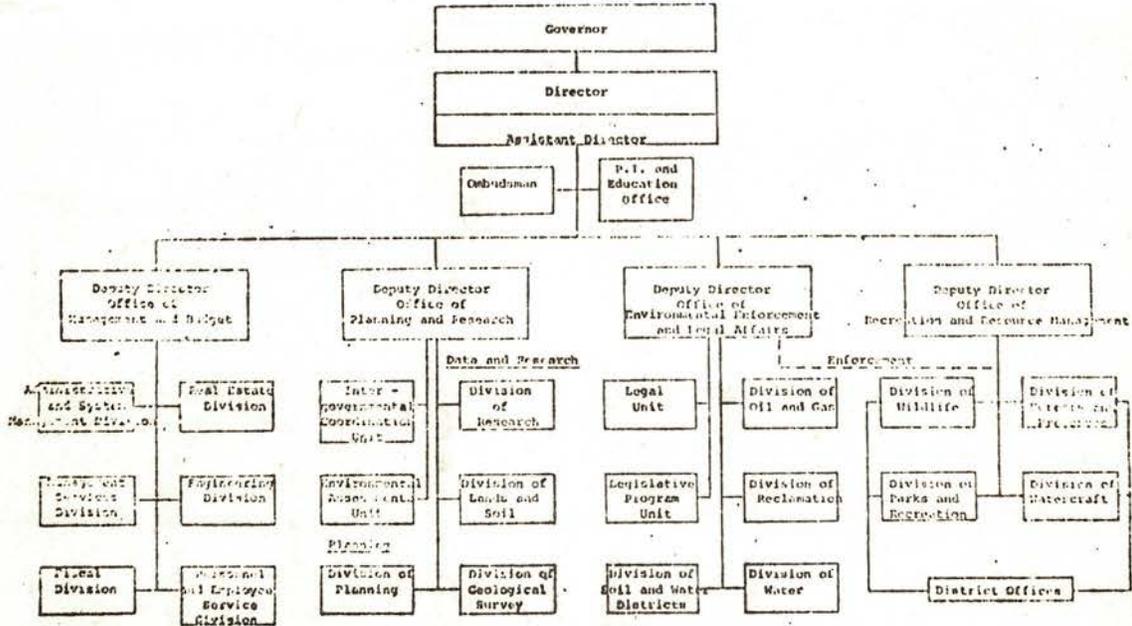
k. Resources on Project Lands. All resources on project lands such as timber and gravel will be managed solely for recreation and fish and wildlife purposes. Care will be taken to assure that the highest aesthetic standards are maintained if any resource is removed as part of recreation or fish and wildlife development at this project.

LOUISVILLE DISTRICT
CORPS OF ENGINEERS

DISTRICT ORGANIZATION CHART FOR ADMINISTRATION OF
EAST FORK LAKE, OHIO *



* This table is subject to change as necessary to reflect any pertinent changes in organizational studies.



SECTION 7 - CONCLUSIONS AND RECOMMENDATIONS

7-01. CONCLUSIONS. The State of Ohio, Department of Natural Resources, has indicated that it intends to lease all available project land for operation and maintenance. Approximately 8,240 acres of land have been acquired above the seasonal pool estimation of 733. Of this amount, about 560 acres will be required for project operation and about 7,680 will be allocated for public use purposes. Four major recreation areas are planned including the Bethel site which is largely located on lands to be acquired by the state.

The lake area has been planned for development and management as a unit with each site having different types of facilities. The Greenbrier site is planned to be used for a resort complex and camping area. The Tate site will contain the major day use facilities. The Concord site is planned primarily for group camping, and the Bethel site will have a marina boat ramp and picnic facilities.

7-02. RECOMMENDATIONS. It is recommended that this plan be approved as a basis for the preparation of plans and specifications for the initial public use facilities proposed herein and as a basis for negotiation of a lease for available project lands with the Ohio Department of Natural Resources.