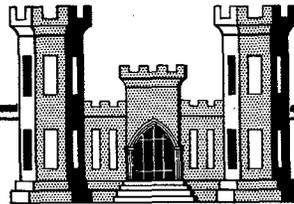


**REVISION OF  
MASTER PLAN  
FOR  
RESOURCE MANAGEMENT**

**POOLS 11-22  
9-FOOT CHANNEL NAVIGATION PROJECT**



**CHAPTER IX  
THE MISSISSIPPI RIVER  
POOL 18**

**U. S. ARMY ENGINEER DISTRICT, ROCK ISLAND  
CORPS OF ENGINEERS  
ROCK ISLAND, ILLINOIS  
DECEMBER 1969**

NCDPD-ER (20 Oct 71) 2d Ind  
SUBJECT: Revision of Master Plan for Resource Management, Upper  
Mississippi River, Pools 11-22, Nine-Foot Channel Navigation  
Project

DA, North Central Div., CE, Chicago, Illinois 5 January 1972

TO: District Engineer, Rock Island

Forwarded for appropriate action.

FOR THE DIVISION ENGINEER:

JAMES W. GILLIAND  
Colonel, Corps of Engineers  
Deputy Division Engineer for  
Civil Functions



DEPARTMENT OF THE ARMY  
NORTH CENTRAL DIVISION, CORPS OF ENGINEERS  
536 SOUTH CLARK STREET  
CHICAGO, ILLINOIS 60605

NCDPD-ER

20 October 1971

SUBJECT: Revision of Master Plan for Resource Management, Upper  
Mississippi River, Pools 11-22, Nine-Foot Channel  
Navigation Project

HQDA (DAEN-CWP-V)  
WASH D.C. 20314

1. Chapters IX and X of the subject master plan (Pools 18 and 19) are forwarded, recommending approval, subject to the following comments.
2. The land use zoning and forestry management objectives indicated on the plastic overlays with the base maps are important features of this master plan. These overlays provide guides for achieving rational long range resource management on project lands and waters. Preparation of these land use zoning and forestry management overlays involved detailed analysis of resources and extensive coordination efforts which warrant special mention in the narrative portion of the plan. As indicated in Chapter I, General Information, the last chapter of the master plan, Chapter XIV, will contain a summary of the complete master plan. Chapter XIV should contain a section to emphasize the fact that the most significant long range value of this master plan can be realized through appropriate implementation of the land use zoning and forestry management features of the plan.
3. The chapters of the master plan covering the individual pools do not present sufficient data on recommended recreational facility expansion. It is suggested, therefore, that Chapter XIV should provide a consolidated detailed analysis of all works specifically recommended in Pools 11 thru 22, to include the following:
  - a. Existing Facilities Operated by the Corps.
    - (1) Provide site plans indicating expansion needed to meet increased demand, or modifications needed to improve site design or user control.

NCDPD-ER

20 October 1971

SUBJECT: Revision of Master Plan for Resource Management, Upper  
Mississippi River, Pools 11-22, Nine-Foot Channel Navigation  
Project

(2) Provide detailed cost estimates including costs of site preparation, landscaping and signs.

b. Dredging.

(1) Identify by pool and river mile all dredging proposed in support of recreational boating.

(2) Provide detailed information on length, width and depth of channel that should be provided and explain if dredge spoil can be used beneficially.

(3) Provide cost estimates for each site.

c. New Sites.

This master plan contains specific recommendations for development of new sites even though at this time no local agencies have indicated an intent to cost share. For these new sites, provide detailed cost estimates including special items of cost associated with development such as bridges, railroad crossings and fencing.

d. Programming.

Establish priorities for recommended improvement of existing facilities. Indicate which improvements will be programmed for development under current policy prior to 30 June 1976. (See OCE letter ENG CW-Y dated 5 August 1965, subject: Implementation of the Federal Water Project Recreation Act (P.L. 89-72) in Previously Authorized Projects.)

4. Items discussed or proposed in this master plan do not in any way conflict with the current concept of a National Recreation Area for the Upper Mississippi River. In fact, this master plan and the related resource maps could very well serve as the framework for a more elaborate development and management plan should the National Recreation Area become a reality.

FOR THE DIVISION ENGINEER:

2 Incl (trip)  
as fwd sep

*James W. Gilland*  
JAMES W. GILLAND  
Colonel, Corps of Engineers  
Deputy Division Engineer for  
Civil Functions

DAEN-CWP-V (20 Oct 71) 1st Ind  
SUBJECT: Revision of Master Plan for Resource Management, Upper Mississippi  
River, Pools 11-22, Nine-Foot Channel Navigation Project

DA, Office of the Chief of Engineers, Washington, D. C. 20314 16 Dec 71

TO: Division Engineer, North Central

Chapters IX and X of the Master Plan, Pools 18 and 19, respectively, are approved subject to comments contained in the basic letter.

FOR THE CHIEF OF ENGINEERS:

wd all incl

  
IRWIN REISLER  
Acting Chief, Planning Division  
Directorate of Civil Works



DEPARTMENT OF THE ARMY  
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS  
CLOCK TOWER BUILDING  
ROCK ISLAND, ILLINOIS 61201

IN REPLY REFER TO  
NCRED-PB

15 December 1970

SUBJECT: Revision of Master Plan for Resource Management,  
Upper Mississippi River, Pools 11-22, Nine-Foot  
Channel Navigation Project

Division Engineer, North Central

1. Chapter IX, Pool 18, of the subject master plan is submitted in accordance with Engineer Manual 1130-2-302.
2. This chapter of the master plan contains specific information concerning the administration and development of the resources within the pool.
3. It is recommended that chapter IX of the master plan for resource management of the Mississippi River 9-foot channel navigation pools be approved.

- 2 Incls (6 cys)
1. Miss. R., Master Plan,  
Chapter IX, Pool 18
  2. Miss. R., Master Plan,  
Pool 18, Maps

JAMES E. BUNCH  
Colonel, Corps of Engineers  
District Engineer

cc: District File w/o incls  
Engrg Div w/o incls  
✓ Environ. Res. Sect. w/incls

REVISION OF MASTER PLAN  
FOR  
RESOURCE MANAGEMENT

POOL 11 - 22  
NINE-FOOT CHANNEL NAVIGATION PROJECT

CHAPTER IX  
THE MISSISSIPPI RIVER, POOL 18

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REVISION OF MASTER PLAN  
FOR  
RESOURCE MANAGEMENT

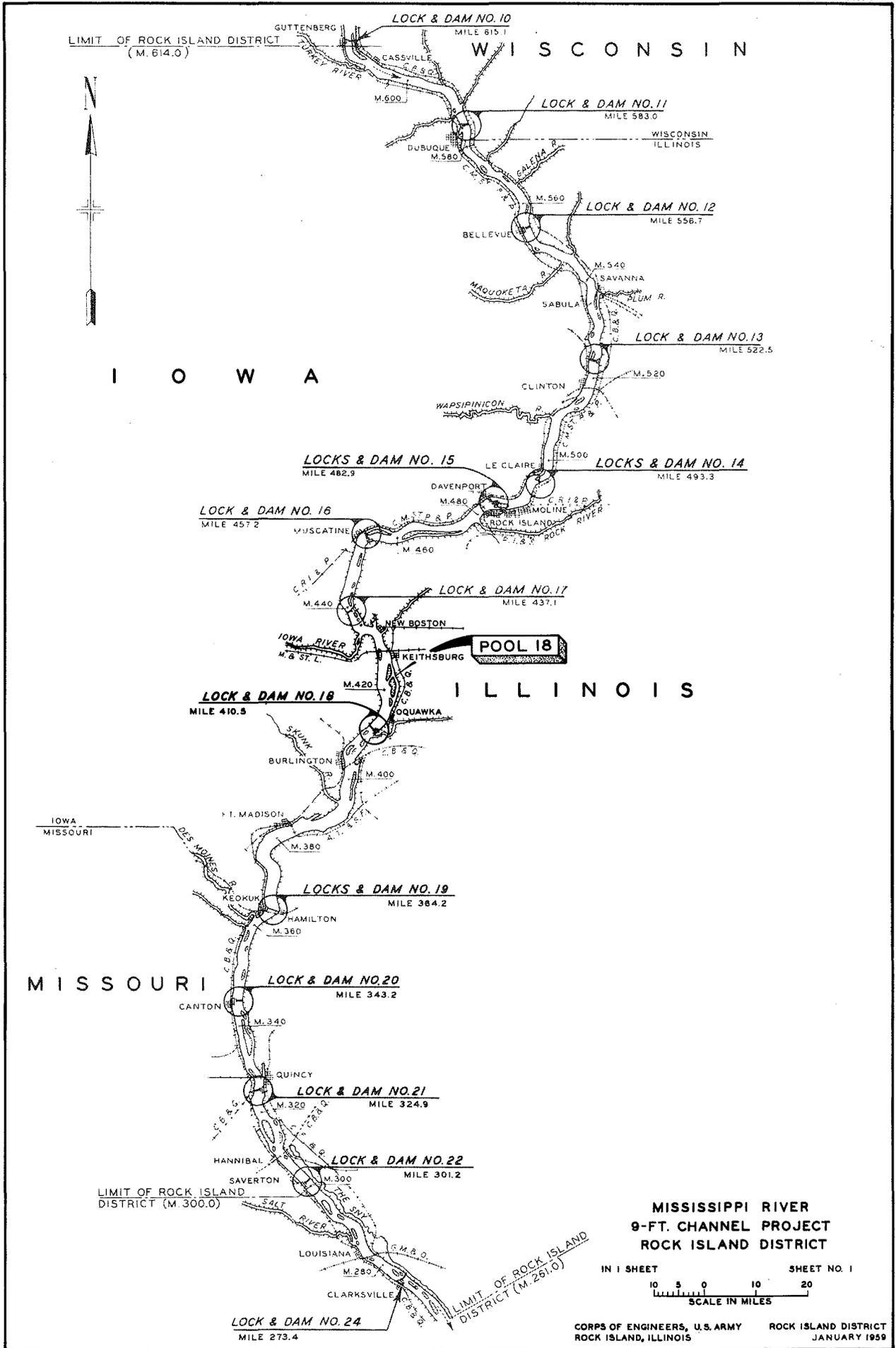
POOLS 11 - 22  
NINE-FOOT CHANNEL NAVIGATION PROJECT

CHAPTER IX  
THE MISSISSIPPI RIVER, POOL 18

SECTION I

INTRODUCTION

As noted in chapter I, a Master Plan is developed to provide a sound instrument of guidance for the administration and operation of land and water resource projects; to assure sound resource management; and to coordinate activities with interested Federal, State, and local agencies. Pool 18, one of the series of navigation pools on the Upper Mississippi River, and within the limits of the Rock Island District, is treated under such master planning requirements. Plate I-1.1 locates the pool with reference to others of the navigational system in the Rock Island District, U. S. Army Corps of Engineers.



## SECTION II

### DESCRIPTION OF PROJECT

1. General. In terms of a downstream numerical sequence of navigation units, pool 18 is the eighth such impoundment within the limits of the Rock Island District. Covering 26.6 miles, the pool stretches between river miles 410.5 and 437.1 and is bounded on the west by the State of Iowa and on the east by the State of Illinois. The pool begins at Dam No. 18, some  $6\frac{1}{2}$  miles upstream of Burlington, Iowa, and ends at Dam No. 17, approximately 4 miles upstream of New Boston, Illinois. Portions of Mercer and Henderson Counties extend along the Illinois shore and portions of Louisa and Des Moines Counties are the Iowa counterparts.

2. Topography and geology. In contrast to the northern pools, pool 18 continues the trend - which began in pool 16 - towards a continuing broadening flood plain. Levees follow the mainland shore and prevent flood waters from inundating the flat flood plain, except in approximately half the pool stretch along the Illinois shore where higher ground persists. The bordering highlands, except for this particular stretch, are generally far removed from the present river. Flood plain lands, protected by the levees, are extensively cultivated.

Three minor tributary creeks, as well as one major and one minor tributary river, discharge into the Mississippi within the limits of the pool. The creeks, while having rapid response to heavy rainfall and runoff, have only short range effect on the pool levels. The major tributary, however - the Iowa River - can have considerable effect on pool elevations below the confluence point during periods of flood discharge. This river has a major tributary of its own - the Cedar River - which drains a considerable area, and joins the Iowa some 30 miles from its confluence with the Mississippi. Excessive flows from the upper Iowa River, however, are greatly reduced by the Coralville Dam and Reservoir near Iowa City, Iowa. The Edwards River can have similar effects on pool levels below the confluence point, but to a much lesser extent. Recurrent high water stages on any tributary stream may present localized siltation problems to resource management.

The present river follows a general course originally excavated by a much larger glacial stream. Sustained melting of the first ice sheet of some 1,000,000 years ago began the formation of the Mississippi Valley with a wide

and shallow stream - the approximate limits, considering erosion and weathering, represented by the present bordering highlands. As the new stream cut deeper into the earth the flow gradually narrowed and formed the valley slopes. Three subsequent ice sheets have advanced over the upper Mississippi Valley region since that time - each partially filling the valley with debris and raising the river bed. Original bedrock, in the pool, lies as much as 100 feet below the present river bottom. Loess and decayed vegetable matter, washed by the elements from the highlands and upstream areas over the centuries, has been deposited to form a broad and comparatively flat and fertile flood plain.

The underlying rock strata is Devonian limestone overlain, below Dam No. 17, by Kinderhook limestone, and by shales in the immediate vicinity of Dam No. 18.

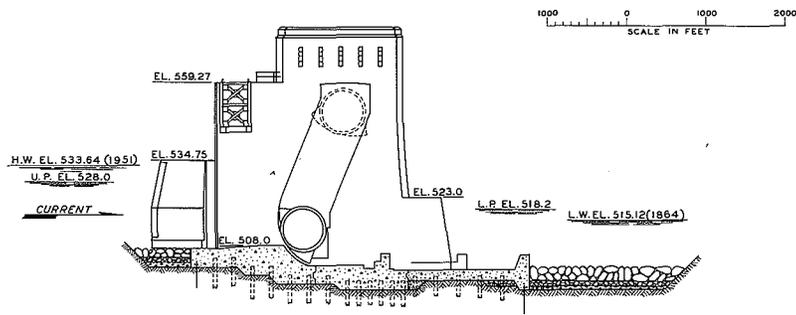
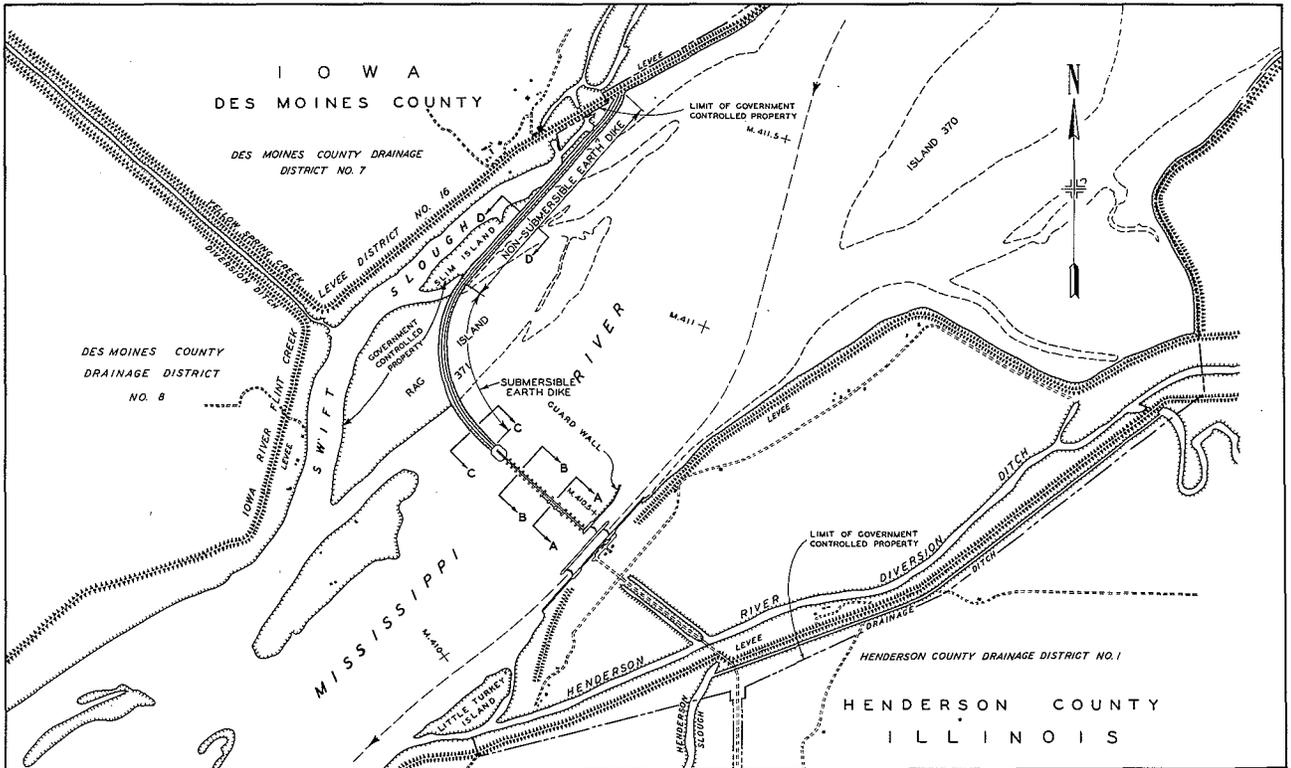
3. Lock and Dam No. 18. The existing structure is located at river mile 410.5, approximately  $6\frac{1}{2}$  miles upstream of the Burlington, Iowa, highway bridge. Constructed as part of the canalization project of the Upper Mississippi River, the installation impounds one of the 12 navigation pools existing within the Rock Island District. A single lock, 110 feet wide and 600 feet long, lies along the Illinois shore with the completed upper gate section of a future auxiliary lock located adjacent to the operating chamber.

The movable section of the dam consists of 3 roller gates and 14 tainter gates which are adjusted as necessary to maintain and control the impounded pool at the established and authorized elevation. The remainder of the dam is composed of a section of overflow earthen dike and a section of non-overflow earthen dike tied to a levee on the Iowa shore.

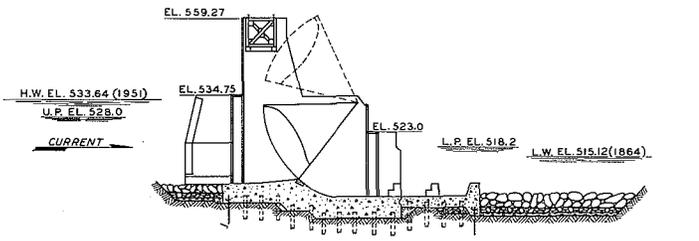
A plan and location of the lock and dam, and their relative positions in the river, appears on plate II-2.1 and on Chart 74 of the Upper Mississippi River navigation charts.

4. Pool 18. From the dam the pool extends in a northeasterly direction, turns to the north, then west, and finally northwest in its 26.6 river mile stretch. Base charts Nos. 74 through 80, accompanying this narrative, detail and define the pool and its various physical features.

The upstream drainage area at the dam is 113,600 square miles and the pool varies from 1,000 to 9,000 feet in width under normal flow conditions. The authorized water elevation (flat pool) is established at 528.0 feet above mean



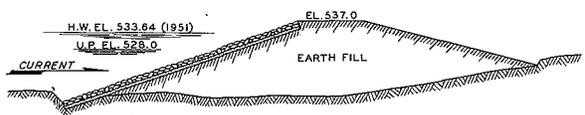
SECTION A-A



SECTION B-B



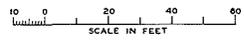
SECTION C-C



SECTION D-D

NOTE:  
 AVAILABLE DIMENSIONS OF LOCKS:  
 MAIN LOCK 600' X 110'  
 AUXILIARY LOCK 360' X 110' (FUTURE)  
 CONTROLLING DEPTH 13.7' AT NORMAL POOL  
 NORMAL LIFT 9.8 FEET.

REFERENCES:  
 1. ELEVATIONS BASED ON MEAN SEA LEVEL DATUM (1912 ADJUSTMENT).  
 2. RIVER MILEAGE ORIGINATES AT MOUTH OF OHIO RIVER.



**MISSISSIPPI RIVER  
 RIVER AND HARBOR PROJECT  
 LOCK & DAM NO. 18  
 NEAR BURLINGTON, IOWA**  
 SCALE AS SHOWN  
 ROCK ISLAND DISTRICT  
 30 JUNE 1953

sea level (1912 adj.). Low water of record, since the dam became operable, was observed at elevation 520.82 or 7.2 feet below the authorized flat pool level. High water of record (April 1965) reached elevation 536.16 or 8.16 feet above the normal pool elevation at the dam.

Maintenance dredging, all in the upper half of the pool, has amounted to 4,665,800 cubic yards of material since the pool was established. Dredging, however, has not been required in proximity to the only Federally established pool public recreation area which might have benefited from spoil disposal.

## SECTION III

### POOL RESOURCES

1. General. The Master Plan examines and analyzes the existing physical resources of the pool on both a qualitative and quantitative basis. Present and proposed management, planned usage, operational procedures, and recommendations are predicated on such relevant factors.

As noted in chapter I, paragraph 7b, page II-5, acreage figures, as enumerated, have been calculated from Master Plan maps for recreation and general land use planning, and are not to be considered accurate and acceptable for legal purposes. Significant variance does exist between acreages, as given, and the official records maintained by the Real Estate Division of the Rock Island District office. Original Iowa land acquisition, for upstream pool 17, included tracts to the shores of the Iowa River. For the purpose of this Master Plan Iowa land tracts from a projected centerline of the dam to the Iowa River are included in pool 18 acreages.

2. Water. Pool 18, similar to the other navigational pools of the Upper Mississippi River system, contains the general characteristics of both a river and shallow lake in its 13,600 surface acres of water at the established flat pool elevation.

Only three small communities, all within Illinois and with populations of 1,000 or less, are located on the shores of the pool. Industry is represented by 3 grain elevators and one railroad dock on the Illinois shore and one elevator on the Iowa riverfront. No significant pollution is considered likely from such sources at the present time.

Channel waters, maintained at a minimum 9-foot depth, occupy 9%, or 1,277 surface acres of the pool area. The remaining 91%, or 12,323 surface acres, are considered as off-channel waters, vary in depth, and may present navigational hazards to recreational boating - especially in the upper reaches.

3. Land. The Federal Government acquired 12,315 acres of land in fee for the 9-foot channel project within the limits of the present pool, representing both island and mainland real property. In some upstream pools the government had owned land prior to the canalization project; in the pool 18 region, however, no such prior ownership existed.

Of the land acquired for the project, 9,879 acres remain above the normal flat pool elevation. Identifiable accretions to Federal property have totaled 74 acres through the year 1964. Under the provisions of the General Plan and Cooperative Agreement, 5,380 acres of Corps-administered land has been outgranted to the Bureau of Sport Fisheries and Wildlife for fish and wildlife management purposes, but remain under the basic jurisdiction of the Corps of Engineers.

Pool shoreline at the flat pool elevation - both mainland and islands - totals 279 miles. The Corps of Engineers controls 100 miles of mainland and 149 miles of island shoreline, and non-Federal entities control 16 miles of mainland and 14 miles of island shoreline.

Some 143 islands are surrounded by the waters of pool 18, and have a total combined area of 4,387 acres. With the exception of 350 acres, all island property is under fee ownership of the Federal Government and is administered by the Corps of Engineers.

Leases for agricultural purposes on project lands are permitted by law and are generally granted for 5-year periods, subject to availability. No such leases have been granted on pool 18 lands, however, and none are presently anticipated.

4. Vegetation. Forest cover tends towards a dense classification except along levees which are of necessity kept clear of excessive growth. Of the 9,879 acres of Federal lands administered by the Corps of Engineers, cover on 1,579 acres, or 16%, is classified as open; on 300 acres, or 3%, as sparse; and on 8,000 acres or 81% as dense.

Cottonwood, willow, locust, maple, and red birch are the tree species most commonly found in the lower areas where moisture is the most abundant, while oak, ash, American elm, walnut, cedar, hickory, hackberry, wild cherry, pecan, sycamore, and linden favor the higher elevations.

A timber management program, initiated in 1941, directs the selection of mature trees for harvesting and are chosen and marked by District specialists. A total of 2,571,645 board feet of lumber was sold to private interests between October 1950 and February 1967. The sum of \$57,651.30 was realized by the Government from the several sales which were advertised and awarded to the highest bidder. The controlled harvesting program has, as its purpose, the increase of annual yields and the improvement of timber quality and specie composition.

5. Wildlife. A wide variety of wildlife is attracted to and supported in the habitat established by the pool and its land environs. Approximately 0.7 of 1% of the total land and water area, some 1,753 acres, has been set aside by the Bureau of Sport Fisheries and Wildlife as a wildlife sanctuary.

a. Birds. The pool, as part of the "Mississippi Flyway", is host to some 19 species of ducks and 4 species of geese during the spring and fall migratory periods. The backwater sloughs offer sheltered resting areas and the extensive and adjoining farming regions provide feeding grounds for certain species. The more numerous species of ducks are represented by mallard, pintail, black, green- and blue-winged teal, wood duck, scaup, canvasback, golden-eye, and hooded merganser. Canadian, blue, and snow are the most commonly represented species of geese. The wood duck is an established resident and mallard, teal, and merganser may nest occasionally.

The coot, grebe, American egret, heron, bittern, gull, and numerous other shore and song birds are either resident or migratory visitors. Several species of hawks and owls are common and the bald eagle is often observed. Quail, an upland game bird, is found on the higher flood plain.

b. Animals. The pool habitat is attractive to small animal populations, which are fairly numerous, and include raccoon, skunk, weasel, opossum, mink, muskrat, beaver, fox, squirrel, rabbit, and woodchuck. River otter and badger are rare and an occasional coyote is sighted. The only animal to be classified in the big-game category, the white-tailed deer, is also found in the region.

Muskrat, common to abundant, vary in numbers from year to year depending on water conditions and elevations. Beaver and mink are considered to have reached generally stable concentrations. Deer favor the timbered bottomlands of the pool and its tributaries, and while well distributed, are relatively low in numbers. Raccoon and squirrel are generally abundant in the wooded areas, but can vary considerably in numbers because of changes in habitat resulting from fire, flood, and timber harvest. Populations are also affected by the availability of food supplies.

Several species of watersnake are the most common and abundant of a variety of non-poisonous snakes found along the shores of the pool. Poisonous species, represented by the timber and massasauga rattlesnake and the copperhead, were fairly common in times of the early settlers of the region, but are now seldom reported.

6. Fish. Species common to pool waters are much the same as those to be found in upstream pools, and include: sauger, perch, bluegill, freshwater drum, crappie, white bass, channel catfish, bullhead, carp, buffalo, paddlefish, along with northern pike, walleye, and black bass in possibly lesser numbers. Catches vary with the season, prevailing climatic conditions, and water elevations. A creel census conducted in 1967 among 6,430 sportsmen indicated success at the rate of 0.94 fish per man-hour of effort, a rate higher than average.

Reports for the year 1968 indicate a sports catch of 71,000 pounds and a commercial catch exceeding 280,300 pounds. Carp, buffalo, freshwater drum, and channel catfish are the species most sought in the commercial endeavor.

7. Recreation. Shoreline recreational potential, except at the three small populated centers, is quite limited because of the levee system paralleling most of the pool shores and the high banks along one stretch of Illinois. Only one public use area has been established by the Corps of Engineers within the pool area and the access road also serves a commercial ferry operating between New Boston, Illinois, and the Iowa shore.

8. Historical and archaeological. The eastern portion of the present State of Iowa was sold to the United States Government by Keokuk, Chief of the Sauk and Fox Indians, following the defeat of Black Hawk and his warriors in 1832. Keokuk later sold the remaining lands within the present state boundaries - all of which became part of the Territory of Wisconsin and was later organized as the Territory of Iowa. On 28 December 1846 the new State of Iowa was admitted to the Union, opening the rich prairie lands to settlement and development. The period of 1850-1860 was one of extensive steamboat traffic to interior lands on the Iowa and Cedar Rivers. From the Mississippi, boats traveled the 67 miles to Iowa City on the Iowa River, and 110 miles to Cedar Rapids on the Cedar River, a major tributary of the Iowa.

The area bordering the confluence of the Mississippi and Iowa Rivers was a major concentration of prehistoric peoples in the upper Mississippi Valley. A number of burial mounds exist on each side of the Iowa River in the vicinity of the present town of Oakville and the site of the former settlement of Toolesboro.

The Mound Builders were smokers of native tobacco before the times of the historic Indians, judging from the

number of carved stone pipes found in early excavations at Rock Island, Illinois, and other locations. Many pipes were of the ordinary platform type, but others were formed in effigies of birds, animals, or reptiles, and had eyes of copper. The find of two pipes carved in the form of mastodons, near Toolesboro in 1880, excited the interest of scientists on two continents. For many years it was believed that the prehistoric mound builders were familiar with and lived in the era of that extinct animal, until the Smithsonian Institution published a report questioning the authenticity of the find. The hoax was finally traced to friends of an amateur archaeologist of Davenport, Iowa, who planted the spurious articles in a mound being investigated - believing the fraud would be readily recognized. In the light of the international interest that developed, the perpetrators became too embarrassed to admit the deceit and remained silent.

The original town of New Boston, Illinois, was surveyed and platted in 1834 by 25-year old Abraham Lincoln who had moved to Illinois from Indiana some two years earlier. Lincoln was employed by Peter Butler, surveyor for Warren County, Illinois, at this time.

Keithsburg, Illinois, lies at the upper limits of the original Lake Keokuk which was formed in 1913 by the completion of the power dam at Keokuk, Iowa, some 63 river miles downstream. The construction of Lock and Dam No. 18 presently limits Lake Keokuk to 46 miles at river mile 410.5, some 17 miles downstream of Keithsburg.

The only lift bridge on the Mississippi River is located immediately upstream of the town of Keithsburg. Originally built in 1885 for the Minneapolis and St. Louis Railroad Company, the bridge was reconstructed in 1910 under the supervision of Mr. J. F. Wallace who had formerly been associated with the Panama Canal project.

Following heavy rains in 1932, Pope Creek (immediately below the Keithsburg railroad bridge) discharged such enormous quantities of sand and silt into the Mississippi River that the entire channel was blocked. Emergency dredging operations were instituted by the Rock Island District of the Corps of Engineers to permit waiting river traffic to proceed. In an earlier day this event would have likely altered the course of the river as a new channel formed.

Abraham Lincoln, along with other volunteers, marched to the settlement of Yellow Banks for service in the Black Hawk War of 1832. In 1836, when the town was platted, the name Oquawka was adopted - an Indian word translated as "Yellow Earth". The first circuit court judge to preside in Oquawka was Stephen A. Douglas, later to become Lincoln's chief political opponent. A speech by former Judge Douglas in Oquawka was followed, five days later, with an address by Lincoln in the 1858 election campaign for the U. S. Senate which Lincoln lost.

J. B. Patterson, an Oquawka newspaper editor, wrote and preserved the autobiography of Black Hawk, great War Chief of the Sauk and Fox Indian tribes. Edgar Allen Poe, the renowned poet and author, was considering settling in Oquawka to collaborate with Patterson on a new literary journal when death intervened in 1849.

## SECTION IV

### FACTORS AFFECTING RESOURCE USE

1. General. Pool 18, beginning upstream of Burlington, Iowa, and extending above New Boston, Illinois, comprises another step in the navigational stairway of the Upper Mississippi River. The broadening flood plain, which began below Muscatine, Iowa, continues throughout the pool 18 stretch with protective levees lining most of the shore. No major urban concentrations exist within the pool limits and industrial developments are few. Vast recreational potential is present, but accessibility is limited. Plate IV-2.1 graphically outlines the commercial activities through lock No. 18 during the past period of nearly two decades.
2. Zone of influence. The primary zone of influence is considered as a two county area, approximately 50 miles in width, extending inland on each side of the river and following the length of the Rock Island District. The approximate total population of this zone is given in chapter I, General Information, and is based on the 1960 census. To attempt a population estimate by pools is considered impractical since a given pool may span parts of several counties. Three small communities -- all in Illinois -- are located on the shores of the pool. The total urban population (1960 census) was listed as 2,779 with 726 persons in New Boston, 963 in Keithsburg, and 1,090 in Oquawka. None of the urban communities lie adjacent to adjoining pools.
3. Economic conditions. Except for the three small centers of population, lands bordering the pool are nearly entirely under an agricultural economy. The broad flood plain, protected from flood waters by the levee system, is extensively cultivated on fertile lands laid down by the deposition of centuries of intermittent high water periods. Four grain elevators are located on pool shores and represent the only industry presently operating. A railroad dock is present at Keithsburg, but is not in use.

One small park - Delabar State Park - is located on high ground overlooking the river at mile 418.0, a short distance upstream of Oquawka, Illinois. Federal land is included within the park limits along the shoreline and boat launching, picnicking, and camping facilities are offered in a generally densely wooded area.

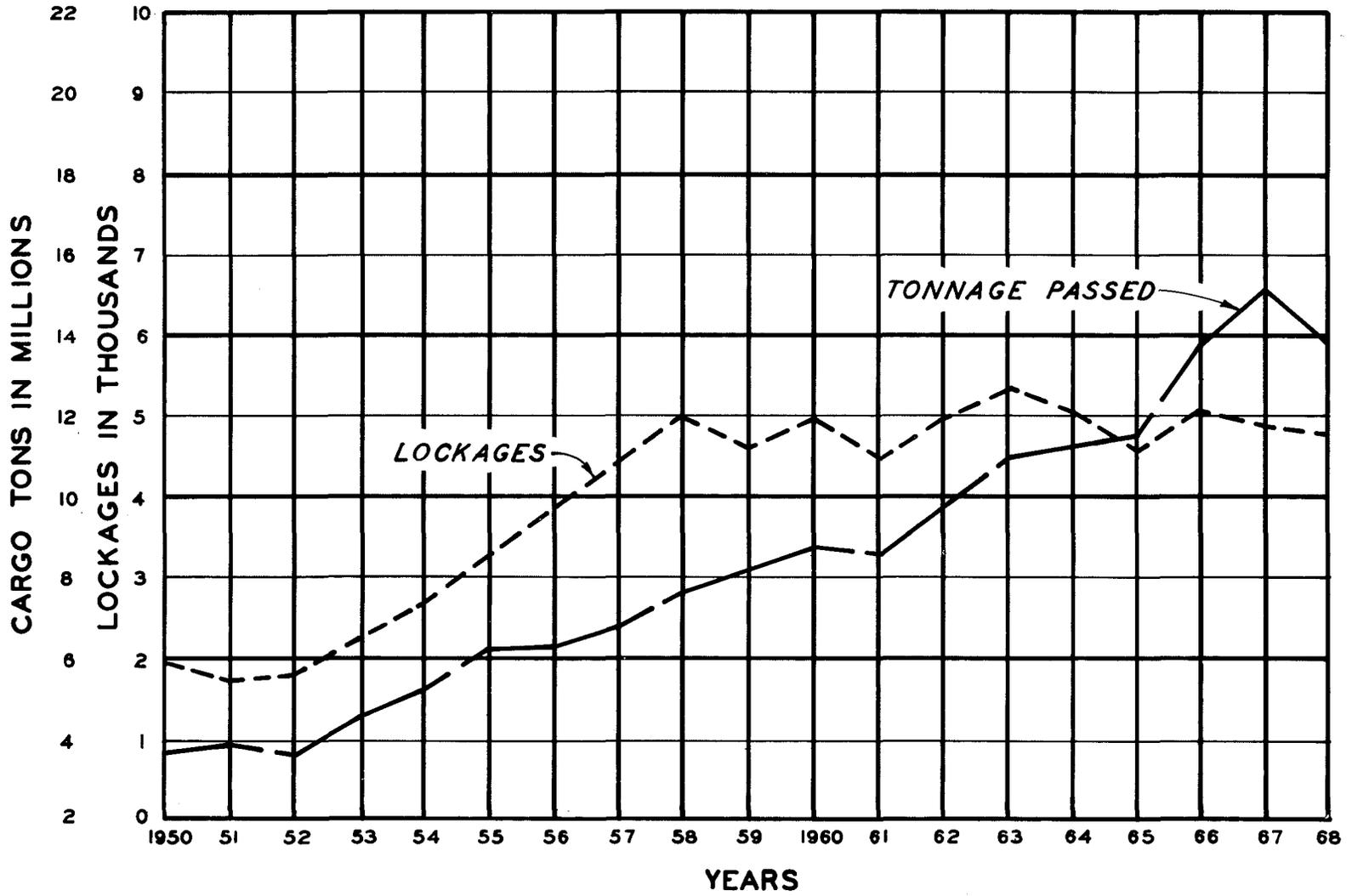
Both New Boston and Oquawka have historical significance, as explained in the preceding section of this Master Plan, and are of interest to tourists. New Boston is also the the Illinois terminus of one of the few auto ferries still operating on the Mississippi River and numerous tourists plan itineraries to take advantage of what has become an unusual experience for many persons. The town also enjoys somewhat of a reputation as a headquarters for sport fishermen and attracts seasonal recreationists.

Federally-owned lands along the river, totaling 65 acres, have been reserved for industrial development. Two such areas, a 6-acre tract at river mile 418.1 and a 1-acre tract at river mile 427.8, are located on the Illinois shore. Two other areas, one of 35 acres and an adjacent tract of 23 acres, are located between river mile 430.8 and 431.4 in Iowa. Only 2.6 acres of the total available industrial land are presently occupied. Studies are presently being conducted on ice conditions and the possibility of providing a 12-month navigation season. Should a program be developed to insure such activity, interest in developing the remaining industrial reservations will likely follow.

4. Accessibility. Railroads do not follow the shores of the pool as was the general rule in northern pools. One line crosses the river at Keithsburg, Illinois, but passenger service is not available to this or the other two communities located within pool limits. No bus or air service is available to or between the three towns and no sightseeing or excursion boats operate on pool waters. One railroad bridge spans the river and a car ferry operates between Illinois and Iowa shores during the recreation season.

Road access to the water, except within the limits of the three communities, exists at 12 rural locations along pool shores -- at four points in Illinois and eight in Iowa. All Iowa access roads, and three of the four in Illinois, lead to Federal lands.

The Great River Road, by means of State and County construction and relocation, is being planned to eventually closely follow both shores of the river beginning near the Canadian border and extending to the Gulf of Mexico to offer outstanding scenic attractions. At the present time, however, only a short stretch of the road approaches the river between Keithsburg and Oquawka, Illinois, in an area where no levees are required. Unless, at some future time, the levee system is widened and the Great River Road located on the crown of the embankment, no scenic view of the river will be possible throughout most of the pool.



LOCK NO. 18

5. Existing recreational facilities.

a. Of the 25 public recreational areas which have been established and are maintained by the Corps of Engineers within the Rock Island District, Plate IV-4.1, one is located on the Iowa shore of pool 18.

Ferry Landing Public Use Area. Located at river mile 433.0, plate IV-4.2, the 9-acre development lies opposite the historic town of New Boston, Illinois. An auto ferry operates between New Boston and the Iowa riverfront from early May until mid-September and on weekends thereafter until halted by weather conditions. Increasing siltation along the Iowa shore forced the relocation of the ferry landing to a point some 1,200 feet downstream in 1968. The original landing site presently has very limited use for recreationists with shallow draft boats.

The Iowa State Conservation Commission had constructed a concrete public boat launching ramp approximately 100 feet upstream of the new ferry docking site. However, silt deposition along the shore has buried the ramp for nearly half its length and the facility is entirely unusable for its intended purpose.

Other public use facilities include 18 picnic tables, 11 pedestal fireplaces, 27 trash containers, 3 fire rings, a hand pumped well, and 2 pit toilets. No specific parking area has been provided; however, sandy soil conditions allow for general off-road parking. Also, no defined camping spurs have been provided. Ample space exists, however, to accommodate 20 or more camping units.

Approximately 0.35 mile of graveled roadway extends upstream from the ferry landing through the public use area and crosses the levee to join a county road leading to the town of Oakville, Iowa, and Iowa State Highway 99.

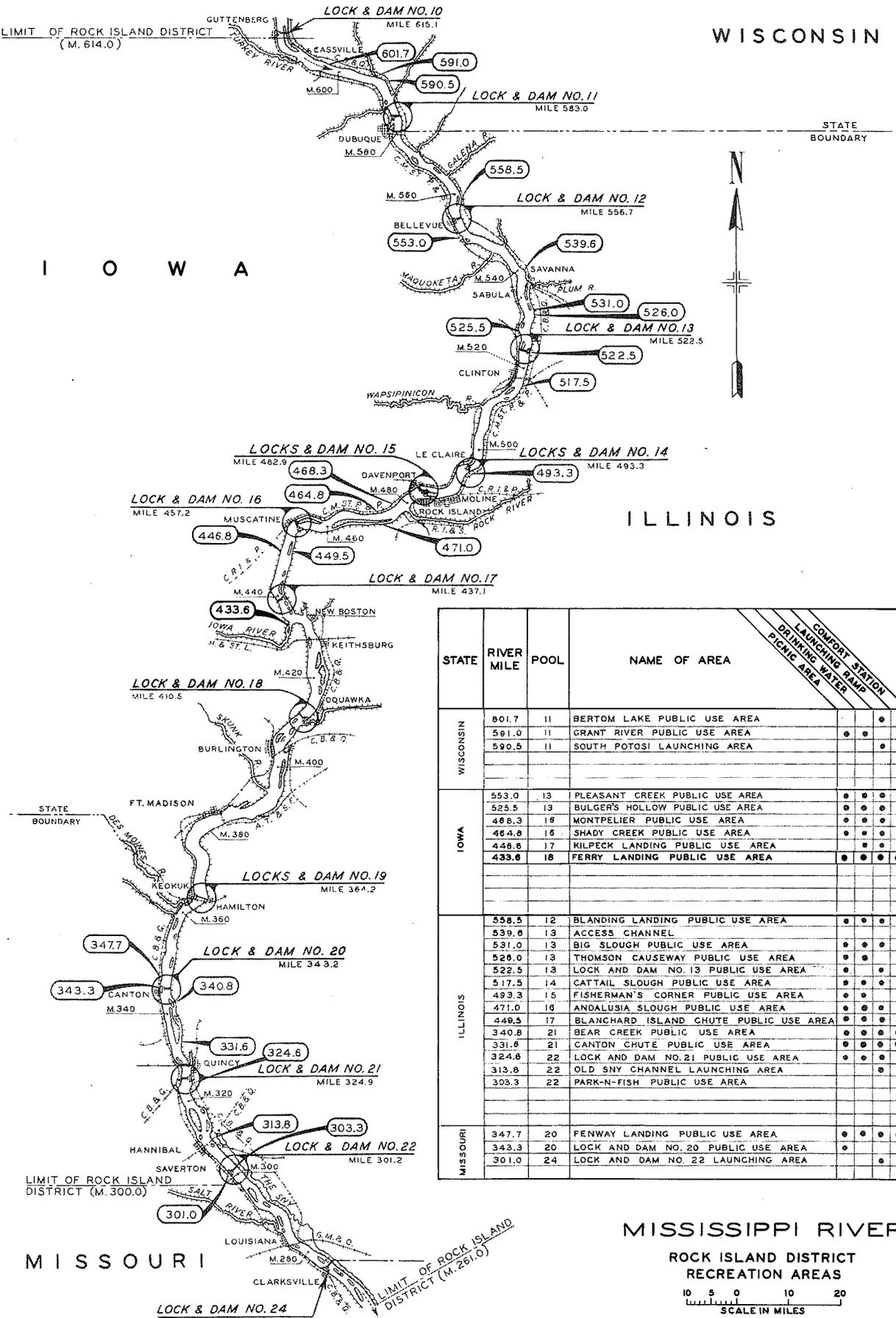
b. Other recreational facilities are operated on Federal lands under lease or license from the Corps of Engineers to non-Federal agencies, and include: Toolesboro river access, river mile 435 - Iowa State Conservation Commission; Putney's Landing, river mile 422.8 - Illinois Department of Conservation; Western Illinois boat club, river mile 421.3 - privately operated; Delabar State Park, river mile 417.2 to 418.1 - Illinois Department of Conservation; and a public launching ramp, river mile 416.1 - Des Moines County (Iowa) Conservation Board.

Recreational facilities within the pool limits and operated on non-Federal lands under private or municipal management include: a municipal boat launching ramp, river mile 433.1 - town of New Boston, Illinois; a municipal public use area, river mile 427.4 - town of Keithsburg, Illinois; a municipal boat launching ramp, river mile 415.9 - village of Oquawka, Illinois; a municipal public use area, river mile 415.8 - village of Oquawka; and a privately operated marina at river mile 415.2, Illinois.

6. Water quality. The entire pool is presently regarded as providing water of a quality to allow for most forms of water-oriented recreation. The absence of extensive municipal or industrial developments reduces the immediate threat of pollutants from such sources.

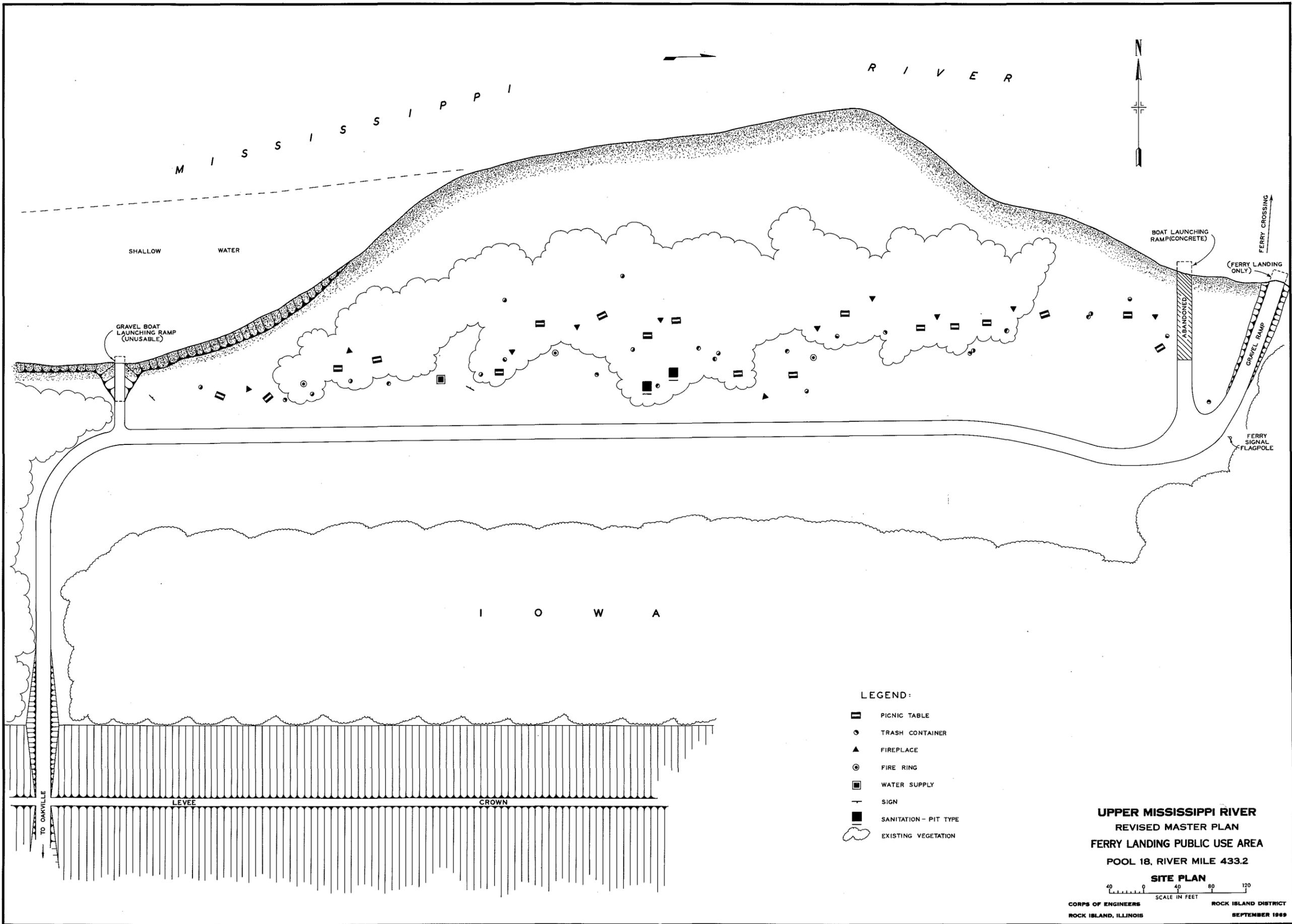
Potential pollution from agricultural sources, and primarily in the form of silt, exists in the discharge of tributary streams - especially the Iowa and Edwards Rivers. Agricultural pollutants from the flood plain and valley slopes are prevented from entering the river along the major portion of the shoreline by the existing levee system, but may be discharged at the pumping stations which operate to eliminate drainage landward of the levees.

7. Climatic conditions. The pool area experiences average precipitation of 35 inches per year and temperature extremes of 111° and -27° have been recorded. First and last frosts have occurred as early as 6 October and as late as 20 April, both in marked contrast to the nearest upstream weather station at Moline, Illinois, (70 miles) where such records were noted on 18 September and 22 May respectively. The mean annual temperature is 51° with averages of 74° in summer and 27° during the winter months. An average growing season extends over a period of 183 days from mid-April to late October. Prevailing winds during the summer are from the south to southwest, and from the northwest during the winter period. Navigation activities, in the past, had normally been halted because of ice by late December and were resumed in late February or early March. However, the increasingly powerful towboats of recent years have extended what had been considered a normal navigation season. Studies, presently under way, are seeking methods of providing for full 12-month navigation operations.



STATE	RIVER MILE	POOL	NAME OF AREA	RECREATION AREA					
				COMFORT STATION	LAUNCHING RAMP	DRINKING WATER	PICNIC AREA	LAUNCHING RAMP	
WISCONSIN	601.7	11	BERTOM LAKE PUBLIC USE AREA						
	591.0	11	GRANT RIVER PUBLIC USE AREA						
	590.5	11	SOUTH POTOSI LAUNCHING AREA						
IOWA	553.0	13	PLEASANT CREEK PUBLIC USE AREA						
	525.5	13	BULGER'S HOLLOW PUBLIC USE AREA						
	468.3	18	MONTPELIER PUBLIC USE AREA						
	464.8	16	SHADY CREEK PUBLIC USE AREA						
	448.8	17	KILPECK LANDING PUBLIC USE AREA						
	433.6	18	FERRY LANDING PUBLIC USE AREA						
ILLINOIS	558.5	12	BLANDING LANDING PUBLIC USE AREA						
	539.6	13	ACCESS CHANNEL						
	531.0	13	BIG SLOUGH PUBLIC USE AREA						
	526.0	13	THOMSON CAUSEWAY PUBLIC USE AREA						
	522.5	13	LOCK AND DAM NO. 13 PUBLIC USE AREA						
	517.5	14	CATTAIL SLOUGH PUBLIC USE AREA						
	493.3	15	FISHERMAN'S CORNER PUBLIC USE AREA						
	471.0	16	ANDALUSIA SLOUGH PUBLIC USE AREA						
	449.5	17	BLANCHARD ISLAND CHUTE PUBLIC USE AREA						
	340.8	21	BEAR CREEK PUBLIC USE AREA						
	331.6	21	CANTON CHUTE PUBLIC USE AREA						
MISSOURI	347.7	20	FENWAY LANDING PUBLIC USE AREA						
	343.3	20	LOCK AND DAM NO. 20 PUBLIC USE AREA						
	301.0	24	LOCK AND DAM NO. 22 LAUNCHING AREA						

MISSISSIPPI RIVER  
 ROCK ISLAND DISTRICT  
 RECREATION AREAS  
 10 5 0 10 20  
 SCALE IN MILES



R I V E R

M I S S I S S I P P I

SHALLOW WATER

GRAVEL BOAT LAUNCHING RAMP (UNUSABLE)

BOAT LAUNCHING RAMP (CONCRETE)

(FERRY LANDING ONLY)

ABANDONED

GRAVEL RAMP

FERRY SIGNAL FLAGPOLE

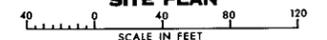
I O W A

LEGEND:

- ▬ PICNIC TABLE
- TRASH CONTAINER
- ▲ FIREPLACE
- ⊙ FIRE RING
- ◻ WATER SUPPLY
- SIGN
- SANITATION - PIT TYPE
- ☁ EXISTING VEGETATION

**UPPER MISSISSIPPI RIVER**  
**REVISED MASTER PLAN**  
**FERRY LANDING PUBLIC USE AREA**  
**POOL 18, RIVER MILE 433.2**

SITE PLAN



CORPS OF ENGINEERS ROCK ISLAND DISTRICT  
 ROCK ISLAND, ILLINOIS SEPTEMBER 1969

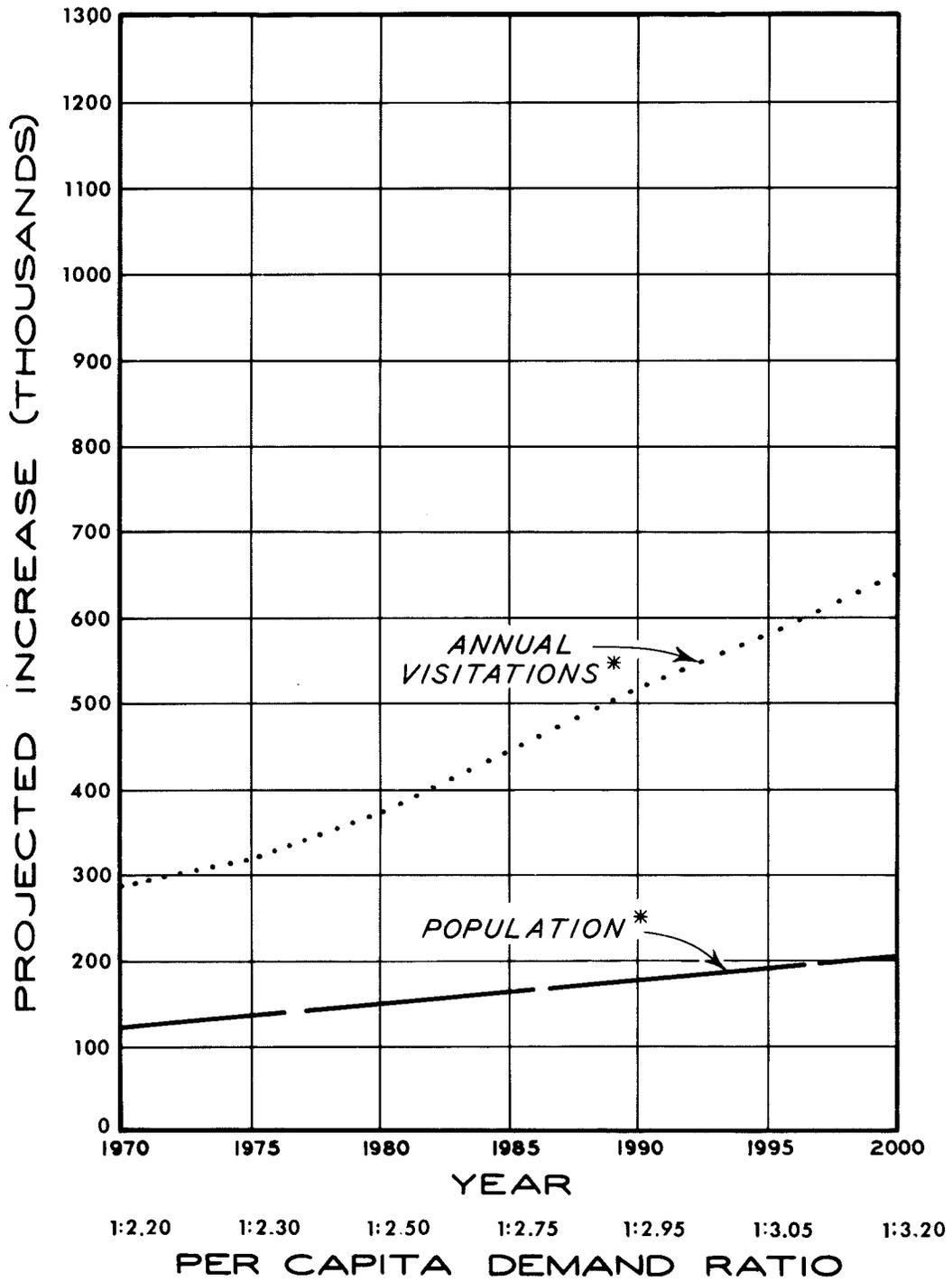
## SECTION V

### CURRENT AND ANTICIPATED RECREATION USE

In terms of public visitations the pool 18 area ranks in seventh place among the 12 Mississippi River navigation pools within the Rock Island District. Visitations during 1968 were in excess of 292,300 ranging from a January low of 6,357 to a July high of 51,143 with an estimated peak day attendance in excess of 2,300.

Plate V-1.1 presents anticipated population increases and projected demands within the primary zone of influence -- an area two counties in width (approximately 50 miles) on each side of the pool. The per capita use ratio, calculated on the projected 1970 population and reported past visitations, is expected to hold relatively constant under existing conditions. An increase, following 1980, is based on an assumption of improved and additional access to pool waters. The rate of increase, considering population growth and popularity of outdoor recreation, is consistent with the projections of the Outdoor Recreation Resources Review Commission and the Bureau of Outdoor Recreation.

Plate V-1.2 enumerates existing recreational facilities which have been developed and are maintained by the Corps of Engineers and by non-Federal agencies.



\* PRIMARY ZONE - AREA TWO COUNTIES IN WIDTH (APPROX. 50 MILES) EXTENDING INLAND ON EACH SIDE OF POOL.

POOL 18  
MISSISSIPPI RIVER  
PROJECTED  
POPULATION & VISITATIONS

**POOL 18**  
**1969 EXISTING AND PROPOSED FACILITY DATA**

	EXISTING FEDERAL FACILITIES	EXISTING NON-FEDERAL FACILITIES	TOTAL EXISTING FACILITIES	RECOMMENDED FEDERAL FACILITIES	PROPOSED NON-FEDERAL FACILITIES	TOTAL PROJECTED FACILITIES	* TOTAL REQUIREMENTS FOR ANTICIPATED DEMAND			
							1970	1980	1990	2000
<b>DAY-USE</b>										
PARKING (UNITS)	18	50	68				73	93	129	138
PICNIC TABLES	18	35	53				73	93	129	138
FIREPLACES	11	20	31				36	46	64	69
POTABLE WATER	1	2	3				2	3	4	5
SHELTERS	0	1	1				21	27	38	48
<b>BOAT LAUNCHING</b>										
PARKING (UNITS)	6	135	141				70	90	120	130
RAMPS	1	11	12				7	9	12	13
CONCESSIONS, FUEL, ETC.	0	1	1				-	-	-	-
<b>SANITATION</b>										
PIT TOILETS	2	8	10				2	4	4	6
FLUSH TOILETS	0	2	2				NONE PROPOSED UNDETERMINED			
TRAILER STATIONS	0	0	0							
<b>CAMPING</b>										
PARKING	20	25	45				38	49	68	86
PICNIC TABLES	0	25	25				38	49	68	86
FIREPLACES	0	25	25				38	49	68	86

**NOTES:****\* BASED ON ER 1130-2-312 CRITERIA:**

- 1 PICNIC TABLE PER 4000 ANNUAL VISITORS
- 1 PARKING SPACE PER TABLE
- 1 FIREPLACE PER 2 DAY-USE PICNIC TABLES
- 1 FIREPLACE PER CAMP SPUR
- 1 SHELTER PER 225 WEEK-END DAY VISITORS
- 1 LAUNCHING RAMP PER 40,000 ANNUAL VISITORS
- 10 CAR-TRAILER PARKING SPACES PER RAMP
- 2 PIT TOILETS PER 3000 WEEK-END DAY VISITORS
- 1 CAMP SPUR PER 7500 ANNUAL VISITORS

1. Primitive camping is permitted on unreserved Federal property - shorelands, islands, and sandbars.
2. No supervised river swimming areas are in operation.
3. Road access to the river exists at 5 rural locations within the 100 miles of mainland shoreline.

## SECTION VI

### POOL RESOURCE MANAGEMENT

1. General. The stated purpose of a Master Plan requires the examination and analysis of the existing physical features of the pool along with proposals for the utilization and development of the scenic, biologic, and recreational potential. Orderly and controlled resource protection and development is the prime purpose of a management program.

2. Land use zoning. Section VI, chapter I, describes and outlines land use classifications as established to meet the criteria of a Master Plan development. Each base chart of the Master Plan features a transparent overlay delineating the land use categories assigned under priority classifications. Federally-owned lands are extensive on both islands and mainlands in the upper two-thirds of the pool and the Corps of Engineers acts as the sole basic administrative agency.

The 9,879 acres of Federal lands within the pool limits are classified as: recreation-undeveloped, 8,590 acres, or 87% of total acreage; recreation-developed, 985 acres, or 10%; and special use, 146 acres, or 1½%. The remaining 1½% of Federal acreage is represented by 45 acres assigned to recreation-commercial, 10 acres to quasi-private use, 38 acres to existing private use, and 65 acres to industrial development sites. No houseboat mooring sites have been considered in this instance.

A lease on 23.5 acres of Federal land along the Illinois shore, in the vicinity of river mile 425.0, was granted to Monmouth College for educational purposes in 1969. The tract is included as part of the recreation-undeveloped land classification area.

Section III, paragraph 3, details the land outgranted by the Corps of Engineers to the Bureau of Sport Fisheries and Wildlife for wildlife management purposes only. Paragraph 5 outlines the wildlife sanctuary which has been established on such outgranted property by the Bureau as part of wildlife management responsibilities.

3. Water zoning. Detailed water zoning is not presently considered in the Master Plan although regulatory measures will undoubtedly be necessary in the future - at least in certain areas, as population and water-oriented recreation activities increase.

The only zoning presently established is the water area associated with the wildlife sanctuary established by the Bureau of Sport Fisheries and Wildlife and located on Mississippi River navigation chart No. 78. In this area, however, boating from the open river is barred by the levee extending the full length of the sanctuary.

Acreages of water surface within the pool, as well as other pertinent data, is contained in Section III, paragraph 2 of this Master Plan.

Submerged wing dams, stump fields, and other navigational hazards indicated on the navigation charts, will not ordinarily present dangers to small boats operating in the lower reaches of the pool, but may in the upper areas. Little purpose would be served in publishing water depths in off-channel waters since shifting currents and changing sandbars would likely soon render such information obsolete.

4. Timber management. The forestry resource, existing on Federal lands within the Rock Island District limits, is described and detailed in chapter I, Section VIII, subsection 3. Each base map of the Master Plan for the pool features a transparent overlay delineating the type and location of forestry cover, management objectives, species association, and related information. The management program is presently being studied and may modify or revise the objectives now established. Significant stands of timber are found on 8,401 acres of the 9,879 acres of land owned in fee by the Federal Government within the limits of pool 18. The timbered areas have been classified as recreation-developed on 1,176 acres, or 14%; recreation-undeveloped on 1,428 acres, or 17%; and wildlife-waterfowl on 5,797 acres, or 69%. Wildlife-upland game, timber-sawlogs, timber-pulpwood, and timber-special products have not been classified in this instance, but will receive attention as part of the restudy in progress.

5. Wildlife management. The Bureau of Sport Fisheries and Wildlife of the Department of the Interior did not administer lands within the pool limits, prior to the 9-foot channel project, and no real property was owned by the Federal Government. Of the lands owned in fee by the Federal Government and administered by the Corps of Engineers since completion of the project, 54% has been out-granted to the Bureau for wildlife management purposes under the provisions of the General Plan and Cooperative Agreement. The Bureau, in turn, is empowered to assign portions of such lands to the bordering States for wildlife

management purposes only. Basic administration, however, along with the right of road use and harvesting and sale of merchantable timber, remains with the Corps of Engineers.

6. Shoreline ownership. Approximately 279 miles of shoreline, mainland and islands, are contained within the pool at the established flat pool elevation. Federal lands, administered by the Corps of Engineers, are represented by 249 miles of the total with 100 miles of mainland and 149 miles of island shores. Non-Federal interests control 16 miles of mainland and 14 miles of island shoreline property.

7. Additional recreational developments.

a. Corps of Engineers. No new sites are presently being studied for recommended development.

b. Bureau of Sport Fisheries and Wildlife. The Bureau plans to improve two accesses into the existing wildlife sanctuary area above Keithsburg, Illinois. Facilities are to include launching ramps, parking areas, an information center, sanitary facilities, and picnic areas. Plans and cost estimates are not as yet available. Recreational activities will not involve the river proper because of the levee system enclosing the area on the river side.

c. States.

(1) Iowa. The State presently holds a lease on Federal lands in the Lake Odessa area of the upper pool area. No requests for additional lands in other areas of the pool are contemplated in the immediate future.

(2) Illinois. The Department of Conservation maintains Delabar State Park, <sup>near</sup> Oquawka, Illinois, which is partially on Federal property. The Department also maintains a park on Federal property as part of the Henderson State Forest. The area, extending between river miles 422.5 and 424.6, includes the Putney's Landing launching ramp and is being developed for public park and recreational purposes. No present plans exist to request the use of additional Government lands in any other Illinois section of the pool.

d. Counties.

(1) Louisa (Iowa). The county has not established recreation areas on Federal lands within its portion of the pool, and no present plans exist to request a lease or license for such purpose.

(2) Des Moines (Iowa). One launching ramp is presently maintained on Federal land, but no additional sites are presently planned. Government lands throughout the pool reach of the county are associated with the levee system and are not especially suited to recreational development.

(3) Mercer and Henderson (Illinois). Although State law permits the formulation of County Conservation Boards, neither of these two counties is presently served by such an organization.

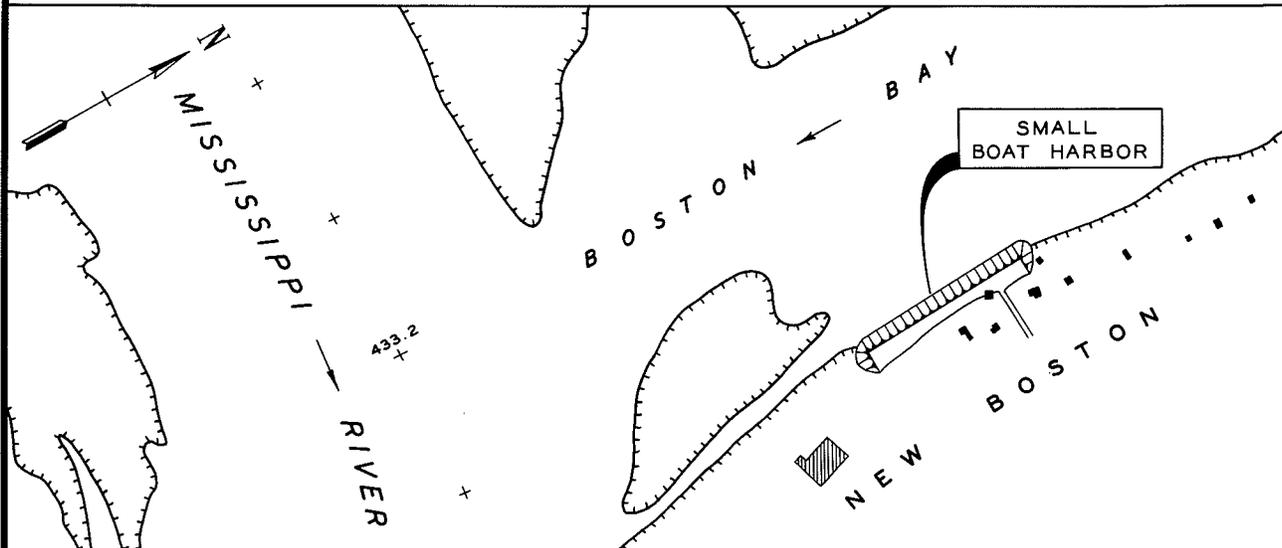
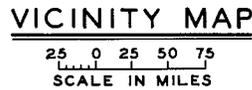
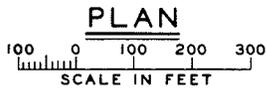
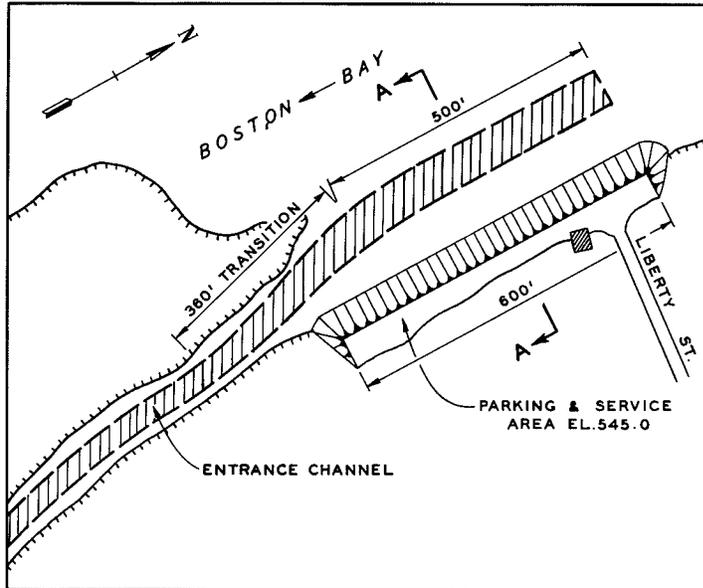
e. Municipal.

(1) Town of New Boston, Illinois. No Federal land exists on the immediate river front of the community. Federally-owned land is present immediately downstream; however, the population of the town is probably not sufficient to warrant recreational facilities other than presently existing on non-Federal property.

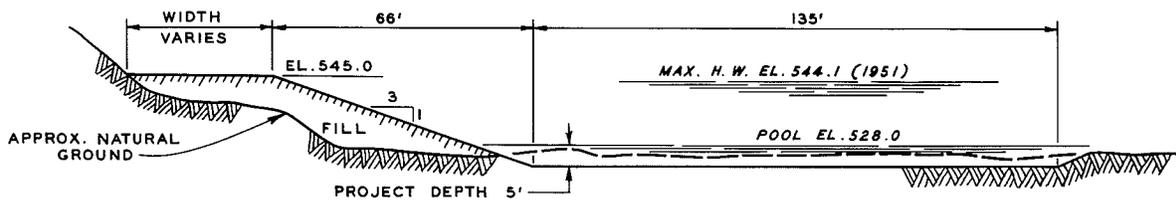
Plate VI-4.1 locates a small boat harbor authorized for construction at New Boston by the River and Harbor Act of 1962. The project has been deferred because of lack of local support.

(2) Town of Keithsburg, Illinois. No Federal land exists on the river front within the limits of the town. Ample recreational opportunities will exist for local residents with the completion of planned facilities by the Bureau of Sport Fisheries and Wildlife in the nearby wildlife refuge. The population of the community is not sufficient to warrant additional facilities on downstream available Federal lands at municipal expense.

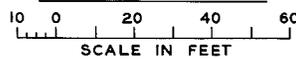
(3) Town of Oquawka, Illinois. No Federal land exists within the town limits and along the waterfront. Residents of the community have ample recreational opportunities and facilities in adjacent upstream Delabar State Park. Very little Federal land is present on the downstream shore and the town population is not sufficient to require additional facilities at municipal expense.



**LOCATION MAP**



**SECTION A-A**



**LEGEND**

DREDGING

MILEAGE ORIGINATES AT MOUTH OF OHIO RIVER

ELEVATIONS BASED ON MEAN SEA LEVEL DATUM (1912 ADJUSTMENT)

**MISSISSIPPI RIVER RIVER AND HARBOR PROJECT NEW BOSTON, ILLINOIS**

SMALL BOAT HARBOR  
SCALES AS SHOWN

ROCK ISLAND DISTRICT

30 JUNE 1963

## SECTION VII

### OPERATION AND MAINTENANCE

1. Pool Manager-Ranger. The need for and suggested duties of a Manager-Ranger are outlined and explained in chapter I, Section IX, Project Administration. Although pool 18 ranks in seventh place in terms of recreational visitations and only one Federal public use site has been developed, Government-owned lands are extensive and require periodic patrol and supervision. The establishment of such a specialized position is considered highly desirable for supervision of existing recreational facilities, inspection of the bordering levee system, protection of the timber resource, and related administrative duties.

2. Recreation facilities maintenance. The Corps of Engineers is prohibited from locating and developing new recreational sites, at exclusively Federal expense, by existing laws and regulations (PL 89-72). Installations presently established, however, may be expanded, improved, and maintained with Federal funds as requested and allocated.

New construction within and general maintenance of existing areas is the responsibility of the Operations Division of the Rock Island District organization. A field crew of six persons operates under the supervision of this department to accomplish the required construction and maintenance. Activity continues throughout the year, weather permitting, on the 25 public use areas operated by the Corps of Engineers with occasional and temporary personnel added as needed. The supervisor of the field group also acts as a contracting officer with private individuals who bid for and accept seasonal appointments for grass cutting, garbage and trash removal, and sanitary facility upkeep.

## SECTION VIII

### SUMMARY AND RECOMMENDATIONS

1. General summary. Considerable recreational potential exists along the river shores, although the major portion of large Federal land tracts occur in the upper half of the pool area. The levee system presents access problems in Iowa, and on both shores existing roads to or near Federal property are not numerous. The Iowa stretch of the pool is devoid of any urban development and only three small centers of population are located along the Illinois shore. The protective levee, lack of road and rail transportation, and low population concentration, likely precludes industrial development of any magnitude in the foreseeable future. Industry might be attracted, however, should a full-year navigation season become a reality.

2. Recommendations.

a. The establishment of the pool Manager-Ranger position, as outlined and detailed in chapter I, section IX, paragraph 2, is recommended. Time and effort of personnel of the District Office could be eliminated, improved liaison should result with other Federal and non-Federal agencies, unauthorized use of Federal lands as well as vandalism would be minimized, and closer public relations established.

b. With authority, if required, and as funding will permit, dredging is recommended in the vicinity of river mile 433.0 - the entrance to Boston Bay lying adjacent to the town of New Boston, Illinois. Silt and sand deposits in the lower portion of Boston Bay and the narrow passage to the Mississippi River are adversely affecting small boat operations. The proposed dredging would open a considerable area to extensive recreational pursuits.

c. A relocated boat launching ramp is required at the Ferry Landing Public Use Area. Public launching is not permitted from the new commercial ferry landing ramp and the original upstream facility, presently used by the public, is all but unusable because of sand and silt deposition. Dredging would only temporarily alleviate the shallow water problem since flow from the Iowa River, immediately upstream, is accreting land along the entire length of the public use area. Shoaling is not in evidence below the new ferry landing ramp and a public launching facility can be located at a downstream distance with due regard to ferry operations.

d. Approval is recommended for the land use classifications appearing on the transparent overlays accompanying each base chart of the Master Plan for the pool. Leases on private use areas, as located on the overlays, will expire on 30 November 1988 by order of the Chief of Engineers.. Such lands will then be reclassified as to priority and use. However, the concept of a Master Plan allows for flexibility and is subject to constant review and revision. Private use areas, therefore, may be reclassified prior to the date indicated should a higher priority of use become apparent. All other lands are equally subject to reclassification when in the best interests of the Government.

e. The timber management program, indicated on a separate transparent overlay, is recommended pending the re-evaluation studies of the timber resource presently in progress. Management objectives will be pursued through the implementation of sound silvicultural practices, as indicated, unless revised or modified by such examination.

Dutch elm disease has all but eliminated the stand of American elm within the pool area. No program for removal of affected trees is being considered, however, since costs would be prohibitive. Nor is reforestation of open areas presently contemplated although future plans may include the propagation of walnut and pecan species on some of the more desirable and suitable tracts.

### 3. Suggested future recreation facilities.

a. The auto ferry, operating between historic New Boston, Illinois, and the Iowa shore, is gaining in popularity among tourists as a remnant of vanishing Americana. A defined camping area, hard surfaced road, and a lighting system would benefit night-arriving recreationists at the Ferry Landing Public Use Area.

b. Five miles of Federal shore property extends below the Ferry Landing Public Use Area. Considerable potential exists for the development of hiking and nature trails as well as horseback trails if a commercial concessionaire can be interested.

c. A sealed bulletin-board type of display might be erected at the ferry landing site featuring samples of the flora and fauna of the area, historical highlights of New Boston across the river, hunting and fishing regulations, littering appeal, medical aid information, etc.

d. The isolated location of the Ferry Landing Area may warrant consideration of telephone service for emergencies. Or an eventual 24-hour custodian, in season, might be equipped with radio facilities.

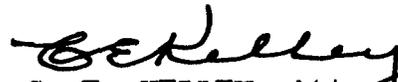
e. Float marked canoe trails would have excellent application in the wildlife sanctuary area with ready access existing. The slough complex along the Illinois shore between river miles 418.5 and 427.0 also offers potential for canoe trails with several existing points of access. An outstanding area for marked water trails exists in the interior of Huron Island, river mile 421.0 - 426.0, but access to the river would need to be provided on the Iowa shore.

f. Areas of particular scenic interest - especially those affording a view of the spectacular autumn coloring, for which the river area is noted - could be located by seasonal survey and vantage points provided.

SECTION IX  
REVIEW OF PLAN

1. Real Estate Division.

Pursuant to paragraph 5b of ER 405-2-835, the Master Plan was submitted for review and the Real Estate Division concurs that the material was prepared in accordance with sound real estate management and utilization practices.

  
C. E. KELLEY, Attorney  
Chief, Real Estate Division

2. Operations Division.

Sections of this Master Plan, which have a direct or indirect bearing upon the operation and maintenance of the Mississippi River, have been coordinated with the Operations Division.

  
ROBERT E. CLEVENSTINE  
Chief, Operations Division