

**REVISION OF
MASTER PLAN
FOR
RESOURCE MANAGEMENT**

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



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

NCDPD-ER (26 May 70) 3rd Ind
SUBJECT: Revision of Master Plan for Resource Management, Upper
Mississippi River, Pools 11-22, Nine-Foot Channel
Navigation Project

DA, North Central Div., Corps of Engineers, 536 S. Clark St., Chicago,
Illinois 60605 26 January 1971

TO: District Engineer, Rock Island

Forwarded for appropriate action.

FOR THE DIVISION ENGINEER:

James W. Gilland

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





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

IN REPLY REFER TO

NCRED-PB

26 May 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 VIII, Pool 17, 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 VIII 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 VIII, Pool 17
2. Miss. R., Master Plan,
Pool 17, Maps

JAMES E. BUNCH
Colonel, Corps of Engineers
District Engineer

cc: District File w/o incls
Engrg Div w/o incls
Plan Br (Environ. Res.)



NCDPD-ER (26 May 70) 1st 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 29 September 1970

TO: Chief of Engineers, ATTN: ENGOW-PV

1. Chapter VIII, Pool 17, of the subject master plan revision is forwarded, recommending approval, subject to the following comments.
2. Par. 5b, page IV-3. This paragraph should be modified to explain what kind of recreational facilities are being provided by the Bureau of Sport Fisheries and Wildlife on Federal land at river mile 443.7 (Iowa) and at river mile 441.1 (Iowa).
3. Par. 5c, page IV-3. This paragraph should be modified to explain what kind of recreational facilities are being provided on Federal land by the Illinois Department of Conservation along the Illinois shore between river mile 446.0 and 447.5. Explain, also, what type of facilities are being provided by the Iowa Conservation Commission on Federal land on the Iowa mainland at river mile 439.3.
4. Plate V-1.2. Figures shown for existing Federal facilities for boating do not agree with information provided in paragraph 5, pages IV-2 and IV-3.
5. 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.
6. 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

29 September 1970

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, levee 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 ENGCV-Y dated 5 August 1965, subject: Implementation of the Federal Water Project Recreation Act (P.L. 89-72) in Previously Authorized Projects.)

7. 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:

James W. Gilland

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

2 Incl
3 cys each wd

CF: Rock Island District
(w/cy incl #6)



ENGW-PV (26 May 70) 2d 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 5 Jan 71

TO: Division Engineer, North Central

The Public Use Plan for Pool 17 is approved subject to the comments
expressed by NCDPD-ER in the preceding 1st Indorsement.

FOR THE CHIEF OF ENGINEERS:

wd all incl

Louis G. Feil

LOUIS G. FEIL

Chief, Planning Division
Directorate of Civil Works

REVISION OF MASTER PLAN
FOR
RESOURCE MANAGEMENT

POOLS 11 - 22
NINE-FOOT CHANNEL NAVIGATION PROJECT

CHAPTER VIII
THE MISSISSIPPI RIVER, POOL 17

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REVISION OF MASTER PLAN
FOR
RESOURCE MANAGEMENT

POOLS 11 - 22
NINE-FOOT CHANNEL NAVIGATION PROJECT

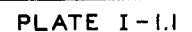
CHAPTER VIII
THE MISSISSIPPI RIVER, POOL 17

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 17, 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. Pool 17 extends upstream of lock and dam No. 17 - from river mile 437.1 to lock and dam No. 16, river mile 457.2 - a distance of 20.1 miles measured along a determined sailing line. The pool begins approximately 4 miles above the town of New Boston, Illinois, and ends at the approximate upstream city limits of Muscatine, Iowa. Portions of Rock Island and Mercer Counties border the pool along the Illinois shore with Muscatine and Louisa Counties being the Iowa counterparts.

2. Topography and geology. The river follows a course through a valley which widens considerably downstream of the Muscatine, Iowa, vicinity. The bordering hills - once the banks of the prehistoric river - are far removed from the present shores and the flatlands of the flood plain are protected by levees on each side of the river which extend the length of the pool. The flood plain, landward of the levees, is given to extensive agricultural operations and is devoid of populated settlements downstream of Muscatine, Iowa.

Only three minor creeks, but no major tributary streams, join the river within the limits of the pool. Mad Creek and Michael Creek in Iowa, along with the Copperas Creek Diversion Channel in Illinois, are subject to rapid response to excessive precipitation, but have little effect on short-range pool levels. Resulting siltation, however, can develop problems from a resource management standpoint. Interior drainage, landward of the levee system, is controlled by pumping methods and operated by various local drainage district authorities.

Numerous and sizeable islands exist throughout the entire reach of the pool and are generally densely vegetated. Pool 17 differs in this respect since in upstream pools the majority of island complexes have been located in the upper two-thirds of pool areas.

The original river valley was excavated by a much larger stream resulting from glacial melting approximately one million years ago. The three subsequent ice sheets - the last of which began to recede about 25,000 years ago - partially filled the valley with rock and soil debris and covered the foundation rock. As a result, the bottom of

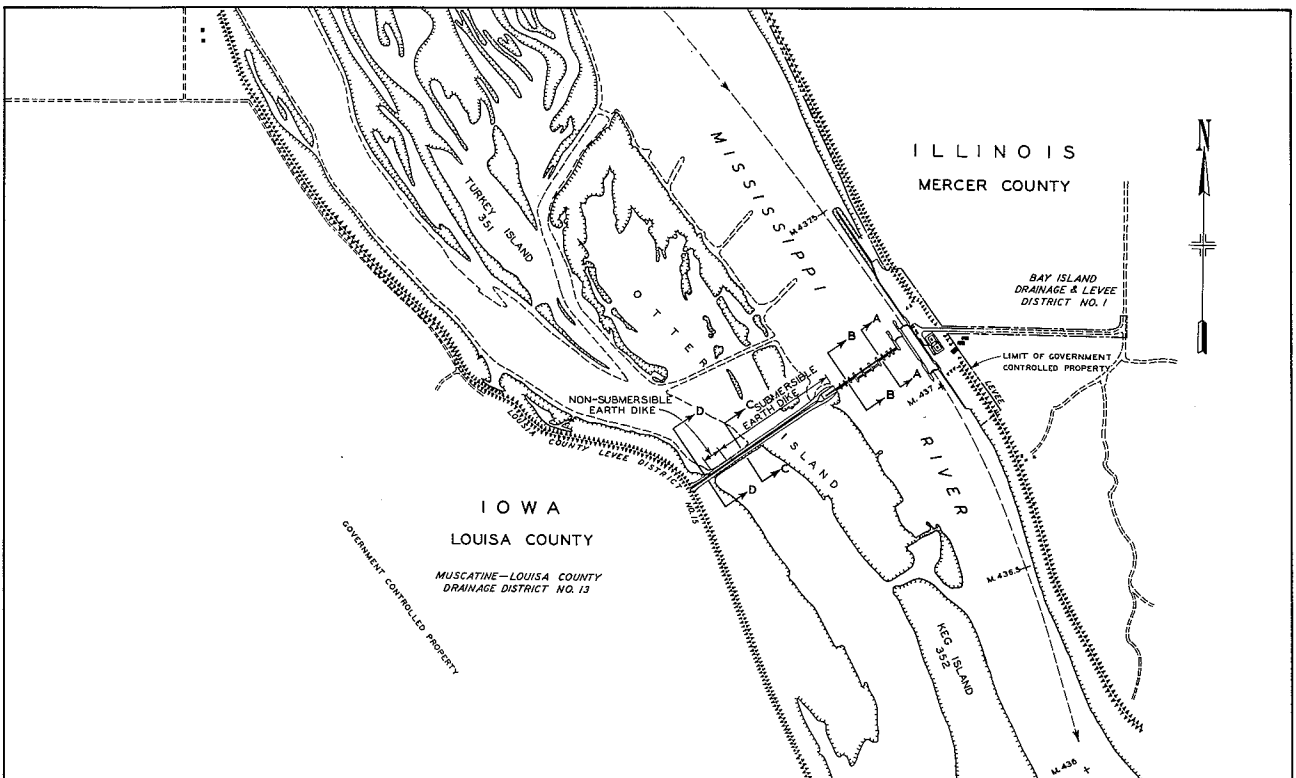
the present river is 100 or more feet above the original bed throughout the pool area. Loess, eroded from the highlands and combined with decayed vegetative matter, has been deposited on the flood plain by centuries of recurrent high water stages resulting in highly fertile soils. The underlying rock strata beneath the pool is classified as Devonian limestone and is overlain by Kinderhook shales in the immediate vicinity of lock and dam No. 17.

3. Lock and dam No. 17. Located at river mile 437.1 (above the mouth of the Ohio River), the existing structure is the seventh of such navigational installations considered in a downstream sequence within the Rock Island District and was constructed as part of the canalization project on the Upper Mississippi River. The 110-foot by 600-foot lock, and a completed upper section of a future auxiliary lock, lie adjacent to and along the Illinois shore. Beyond the gated control area an overflow section of earthen dike extends nearly to the Iowa shore. Completing the dam structure, a section of non-overflow earthen dike extends to high ground beyond the immediate Iowa shoreline.

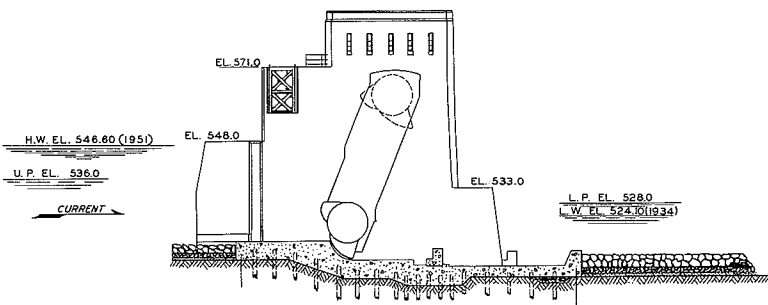
The operable section of the dam consists of 3 roller and 8 tainter gates which are positioned and adjusted as necessary to regulate water flows and maintain the impounded pool at the established and authorized elevation. A plan and location of the installation is provided on plate II-2.1 as well as chart No. 80 of the Upper Mississippi River Navigation Charts.

4. Pool 17. Extending towards the northwest for four miles above the dam, the pool turns north-northeast for the remaining 16.1 miles of its reach and ends at dam No. 16. With a total length of 20.1 river miles, measured along a determined sailing line, pool 17 is one of the shorter pools within the District-only upstream pool 15 and downstream pool 21 cover less distance. Base charts Nos. 80 through 83, accompanying this narrative, detail and define the pool and its various physical features.

The drainage area at the dam encompasses 99,600 square miles and the width of the pool varies between 1500 and 6500 feet at the authorized (flat pool) elevation of 536.0 feet above mean sea level (1912 adj.). Low water of record, since the dam was placed in operation, was noted at elevation 533.7, or 2.3 feet below the established and authorized pool level. High water of record was established on 28 April 1965 and reached elevation 550.7, or 14.7 feet above the authorized flat pool elevation at the dam.

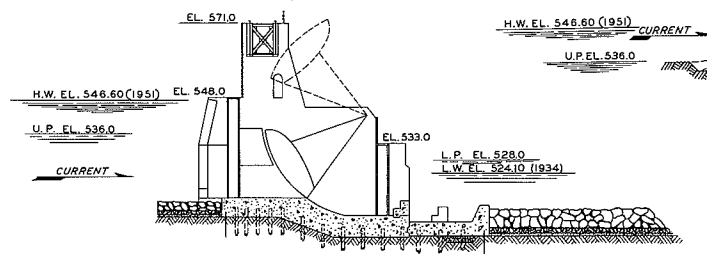


1000 0 1000 2000
SCALE IN FEET



SECTION A-A

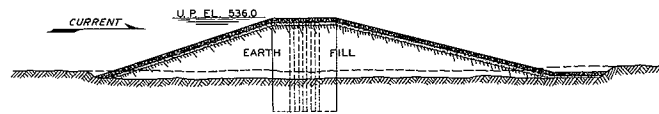
NOTE:
AVAILABLE DIMENSIONS OF LOCKS:
MAIN LOCK 600' X 110'
AUXILIARY LOCK 360' X 110' (FUTURE)
CONTROLLING DEPTH 13' AT NORMAL POOL
NORMAL LIFT 8 FEET.



SECTION B-B



SECTION D-D



SECTION C-C

10 0 20 40 60
SCALE IN 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. 17
NEAR NEW BOSTON, ILLINOIS**
SCALE AS SHOWN
ROCK ISLAND DISTRICT
30 JUNE 1953



Maintenance dredging, entirely in the upper half of the pool region, has amounted to 1,597,800 cubic yards of material since the dam became operable and the pool level established. Dredging activities have not been required in areas where existing or future recreational sites could benefit from spoil disposal.



SECTION III

POOL RESOURCES

1. General. The physical resources of the pool and its environs are examined and considered on both a qualitative and quantitative basis. Present and proposed resource management, usage, and recommended future developments are predicated on such pertinent factors.

As noted in chapter I, page II-5, paragraph 7b, acreage figures have been calculated from Master Plan maps prepared for recreation and general land use planning, and are not to be considered as accurate for legal purposes. Significant variances may exist between the acreages cited and the official records maintained by the Real Estate Division of the Rock Island District office.

2. Water. The general characteristics of both a river and a shallow lake are present in the 8,312 surface acres of pool waters at the authorized water elevation. Pollution problems have existed in the vicinity of Muscatine, Iowa, but remedial action has been taken and additional plans for alleviation have been approved. No industrial or urban concentrations exist on pool shores below the Muscatine, Iowa area--downstream waters are considered to be of good quality.

Approximately 960 surface acres of the pool, or 9%, are classified as channel waters of a minimum 9-foot depth. The remaining 7,352 surface acres, or 91%, are considered as off-channel waters, vary in depth, and may present navigational hazards to recreational boating in some areas.

3. Land. Shore and island real property, acquired by the Federal Government for the 9-foot channel project within the pool limits, amounted to 11,379 acres in fee. Of such total acquisition, 7,039 acres presently remain above the water surface at the established operating elevation.

In certain upstream pools Federal lands existed prior to 9-foot channel construction and were assigned to the Department of the Interior for management by the Bureau of Sport Fisheries and Wildlife. No Federal ownership or assignment existed in the pool 17 area prior to project planning. Of the Federal lands administered by the Corps of Engineers and remaining above the flat pool elevation 6,991 acres have been outgranted to the Bureau for fish

7476

as of 9-7-71

and wildlife management purposes only under the provisions of the General Plan and Cooperative Agreement. The Federal Government recently acquired a 62 acre tract, in fee, in the Lake Odessa area which was assigned to the Department of the Interior for administration by the Bureau of Sport Fisheries and Wildlife. Lands outgranted to the Bureau by the Corps of Engineers under the General Plan and Cooperative Agreement have been further outgranted by the Bureau to the States for wildlife management purposes.

Identifiable accretions to Federal lands, within the pool limits, total 78 acres through the year 1964.

Flat pool shoreline (mainland and islands) totals approximately 202.5 miles with 178.2 miles owned by the Federal Government and 24.3 miles owned or controlled by non-Federal entities. The Bureau of Sport Fisheries and Wildlife is not assigned control of any Federal shoreline.

Some 65 islands - mostly sizeable - lie within the pool limits with 55, totaling 2,816 acres, owned by the Federal Government and administered by the Corps of Engineers. Ten islands, totaling 192 acres and located offshore of Muscatine, Iowa, are under other than Federal ownership.

Existing laws permit the use of project lands for agricultural purposes under leases granted by the Rock Island District of the Corps of Engineers. One such lease, for the use of 93 acres of Federal land, is presently in force.

4. Vegetation. Vegetative cover on Federally-owned lands is general throughout the pool and tends, for the most part, towards a medium to dense classification. Open areas account for 25%, or 1,735 acres, while 6%, or 390 acres, are sparsely covered. Medium to dense growths are supported on 69%, or 4,914 acres.

Timber associations follow much the same pattern as those found in contemporary pools with willow, cottonwood, red birch, locust, and maple occupying the lower areas, and ash, hickory, oak, basswood, American elm, and hackberry being more predominant on the somewhat higher elevations.

The timber management program of the Rock Island District, which was initiated in 1941, directs the periodic harvesting of select and mature timber specimens. Contracts granted to private interests during the period of October 1950 through February 1967, accounted for 2,147,545

board feet of harvest and represented an income to the Federal Government of \$79,710.48. Timber management objectives, which are being realized, are concerned with increasing annual yields, improvement of quality, and the enhancement of specie composition.

5. Wildlife. Conditions for a very favorable habitat exists in general since no industrial or urban concentrations are located below the city of Muscatine, Iowa. A wide variety of wildlife species are attracted to and supported by the land and water habitat offered within the pool limits, especially in the Lake Odessa area. Buttonbush grows profusely over Lake Odessa lands and waters and offers excellent habitat for area wildlife. A wildlife sanctuary (Navigation Chart No. 80) has been established in the upstream portion of the Lake Odessa area and comprises 2,635 acres of land and water managed by the Bureau of Sport Fisheries and Wildlife. The wildlife sanctuary, as managed by the Bureau, includes 62 land acres assigned in fee along with 506 water acres and 2,067 land acres outgranted by the Corps of Engineers for management purposes.

a. Birds. The pool, as a part of the "Mississippi Flyway," is especially attractive to migratory waterfowl particularly in the Lake Odessa region. The complex of islands and sloughs, the food supplies offered by the vegetative cover and adjacent agricultural lands, and the lack of urban or industrial concentrations combine for unexcelled resting and feeding grounds during seasonal migrations. Lands administered by the Corps of Engineers in the lower Lake Odessa area, which have been outgranted to the Bureau of Sport Fisheries and Wildlife and further outgranted by the Bureau to the State of Iowa for management purposes, are the scene of extensive seasonal hunting activities.

Some 19 species of ducks and 4 species of geese can be observed during migratory periods. Duck species are most commonly represented by mallard, gadwall, widgeon, pintail, blue-winged and green-winged teal, shoveler, wood duck, and scaup, with red-head, ring-necked, canvasback, and merganser present in lesser numbers. The wood duck is a common resident and mallards have been known to nest on occasion. Visiting species of geese include the Canadas, blues, snows, and occasionally the white-fronted goose.

Numerous species of songbirds and shorebirds are either resident or transient. The coot is common and grebe, bittern, gull, blue heron and American egret are present

in varying numbers. Several species of hawks and owls are fairly common and the bald eagle is often seen.

b. Animals. Excellent habitat exists for the small mammal populations which inhabit the land and shallow water areas of the pool. Species include raccoon, skunk, weasel, opossum, mink, muskrat, beaver, fox, squirrel, rabbit, and woodchuck. Badger and river otter are relatively uncommon.

Muskrats, common to abundant, vary in numbers according to weather and water conditions for a given year. Squirrel and raccoon populations, generally abundant, are readily affected by changes in habitat caused by fire, flood, or timber-harvesting activities. Other small animals are considered to have reached a generally stable concentration of numbers.

The only animal of big-game status to frequent pool lands is the white-tailed or Virginia deer. Ranging mainly in the timbered bottomlands and along tributary streams, the animal is not numerous, but has wide distribution.

Reptiles are represented by several species of turtles and harmless water snakes. Poisonous snakes, which still inhabit the timbered land areas, are the massasauga and timber rattlesnake, and the copperhead. These species, common in the days of the early settlers, are now but seldom encountered.

6. Fish. Sport fishing is popular in pool waters - particularly in the Lake Odessa area. The commercial fishing effort is confined to main river waters inasmuch as Lake Odessa is considered as an inland lake under the legal classification.

No creel census is available for 1968 among the 3,658 participating sport fishermen whose catch has been placed at 75,000 pounds. Walleye, northern, sauger, and carp were likely well represented in the sport catch. However, bluegill, crappie, white bass, largemouth bass, bullhead, channel catfish, and freshwater drum are considered to have accounted for the preponderance of the species taken.

Pool 17, one of the shorter pools in the District, has excellent fish habitat with numerous islands and sloughs and the protected and controlled water levels of Lake Odessa. Commercial fishing, confined to main river waters, concentrates on crap, buffalo, channel catfish and freshwater drum. The commercial catch for 1968 was in excess of 287,000 pounds which is far less than that realized in the upper pools of the District.

7. Recreation. Little of the considerable recreational potential has so far been realized within the pool limits. Federal shoreline ownership is fairly extensive and in several instances access roads could be provided with a minimum of construction. Scenic opportunities, while of a high order, do not have the general background of hills and bluffs so evident in upstream pools. The flood plain is broad throughout the pool stretch with the rugged terrain of hills removed from proximity to the river shores. Hunting and fishing opportunities exist throughout the pool although the major portion of such activity is concentrated in the Lake Odessa area which is not posted as a refuge. Pressure of participants at Lake Odessa, especially for camping and hunting, is increasing.

8. Historical and archaeological. The Indians of Saukenuk, (now part of Rock Island, Illinois,) Black Hawk's people, journeyed each year to downstream Skunk River and the Devil's Creek bottoms for the Fall hunting activities and ceremonies. The many islands afforded protection for the frail canoes and the comparative still waters of the sloughs reduced the arduous labor of paddling. Only in the vicinity of the present city of Muscatine, Iowa, was it necessary to travel on the open river.

The city of Muscatine, Iowa, derives its name from the Mascoutin Indian tribe that occupied the site before the arrival of the white man in the midwest. The new settlement, by 1850, had become a major gateway to the interior lands of the future State of Iowa. Around the turn of the century, the city was proudly advertising itself as "the Pearl Button Capitol of the World." Muscatine manufactured an estimated 85% of the "pearl" buttons (made of river clam shells) used in the United States and sent abroad. An eventual shortage of clams, coupled with the growing use and popularity of other materials for buttons, led to a decline in the industry.

River clam fishing, once a thriving industry in its own right to supply shells for button manufacturing, became practically non-existent for many years. In the later years of the thriving industry many tons of shells were imported from Australia to supplement the dwindling river supply. However, clam fishing is now once again a profitable form of employment, although on a much smaller scale and for an entirely different purpose. Large quantities of shells today are shipped to Japan for use as seed particles in the cultured pearl industry of that nation.

Opposite Muscatine, Iowa, and landward of the Illinois levee, lies the Drury Drainage District which is named for William Drury, an early settler. Mr. Drury, a citizen of Indiana, visited the area in 1831 and was much impressed by the possibilities for agricultural and business opportunities. Returning in 1833, Mr. Drury acquired land and built a palatial home which still stands. In later years Drury was destined to become the largest individual land owner in the country with vast holdings in areas that were, or became, the States of Illinois, Colorado, Nebraska, and Texas.

The vicinity of Muscatine, Iowa, marks the beginning of the Mississippi River levee system - famous in song, literature, and history. Man-made earthen embankments - in effect raising the banks of the river - parallel the stream for much of its remaining course to the Gulf of Mexico. The broadening flood plain, downstream of Muscatine, necessitates a method of confining high water flows to protect valuable urban, industrial, and agricultural lands along natural, low shores. Early levees, dating from the 1860's, were originally constructed as a navigation aid in the steamboat era and, in recent years, have been raised and improved to serve for flood protection.

Indian mounds are reported to exist on high ground flanking the Lake Odessa area and undoubtedly have counterparts on the Illinois shore, although well removed from the river. No archaeological investigations are known to have taken place on lands within the pool limits; however, evidence points to the presence of prehistoric peoples, as well as Indians of historic times, along the entire course of the river from St. Paul, Minnesota, to Baton Rouge, Louisiana.

SECTION IV

FACTORS AFFECTING RESOURCE USE

1. General. Pool 17 is a link in the chain of pools, or lakes, in the Upper Mississippi River canalization project which extends from St. Louis, Missouri, to above Minneapolis, Minnesota. The pool is devoid of urban and industrial concentration, except for the city of Muscatine, Iowa, in the extreme upper limits and two commercial docks along the Iowa shore near the pool center. Plate IV-2.1 traces commercial navigation activities at lock No. 17 over a period of nearly two decades. Recreational facilities and developments, Federal and non-Federal, are not extensive.
2. Zone of influence. The primary zone of influence is considered as an area two counties in width (approximately 50 miles) extending inland on each side of the river and following the length of the Rock Island District. The approximate total population, on the basis of the 1960 census, is listed in chapter I. It is considered impractical, however, to attempt population estimates by pools since a given pool spans portions of several counties. Only one center of population, Muscatine, Iowa, is located on pool shores in the extreme upper limits with 20,997 inhabitants. The recreational facilities of upstream pool 16 are also readily available to residents of the city and immediate area.
3. Economic conditions. Several industries operate in Muscatine, Iowa, and in the immediate and adjacent downstream area. Docks along the river serve for unloading raw materials and for loading finished products for transshipment to other points. The remainder of bordering pool lands, landward of the protecting levees, are under extensive cultivation. The pool area may be considered as having a predominantly agricultural economy with produce not generally moved by water transportation.

An excellent city park with a zoo is located in Muscatine near the upstream limits of the city and attracts numerous visitors during the summer recreational season. An economic benefit likely accrues to the city as an indirect result.

An industrial development site of 6.3 acres has been reserved at river mile 449.2 (Illinois) and is presently occupied. Identifying symbols, however, are not shown on the base navigation map (Chart No. 82) nor on the transparent land use overlay. No other sites within the pool limits have been considered for future industrial use.

4. Accessibility. Railroads, which commonly paralleled the shores of the upper pools, do not follow the river below Muscatine, Iowa. No downstream communities exist within the pool limits to require bus service. A municipal airport, traffic-uncontrolled, is located near Muscatine, Iowa, and is limited to private and charter flights. The nearest scheduled airline service is located at the Moline, Illinois, airport some 30 miles upstream.

Road access to pool waters, except for points within the city of Muscatine, exists at 5 locations in the State of Iowa and at 3 locations in the State of Illinois. Three of the five Iowa roads, and all three in Illinois, lead through Federal land and are ramped over the existing levees.

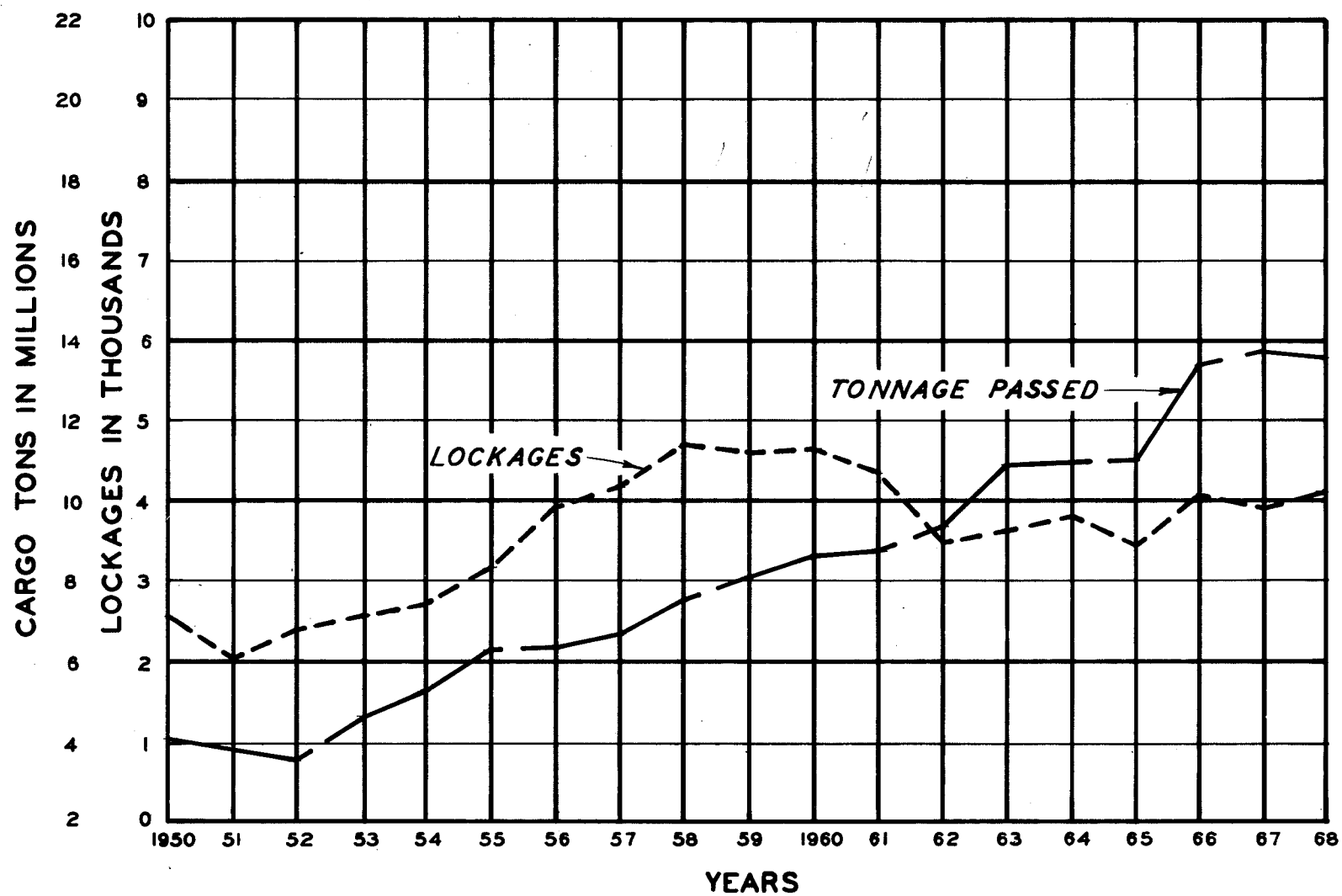
No scheduled public sightseeing or excursion boats operate out of Muscatine or from any dock on pool waters. A high-level highway bridge between Muscatine, Iowa, and the Illinois shore is the only structure to span the river within pool limits.

The Great River Road is being planned to begin near the Canadian border and follow, as closely as possible, both shores of the river to the Gulf of Mexico. Roads are to be constructed, improved, or designated through the cooperation of the various States and counties bordering the river and will not involve the Government except where easement might be required through Federal lands. The presently designated routes along pool 17 are well back of the river shores and afford only an occasional view of the water. Unless, in the future, the Great River Road is relocated on the crown of the levee system lining most of the pool shores, the full scenic purpose will not be realized.

5. Existing recreational facilities.

a. Of the 25 public recreational areas developed and maintained by the Corps of Engineers within the limits of the Rock Island District, plate IV-2.2, two are situated on pool 17 shores.

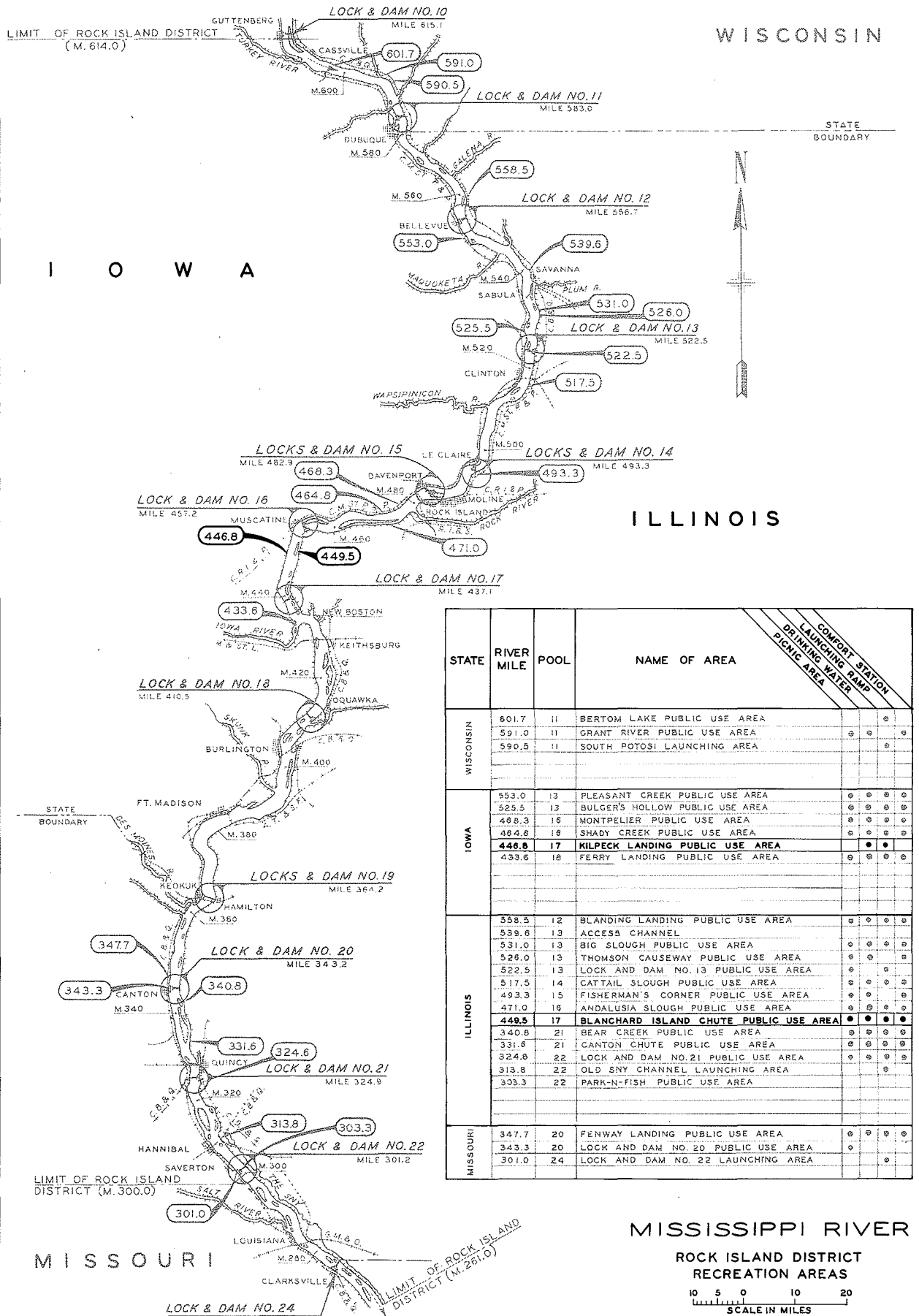
(1) Blanchard Island Chute Public Use Area. Located at river mile 449.8, the development, plate IV-2.3, lies along the Illinois shore riverward of the levee and some 5.7 river miles below the Muscatine, Iowa, highway bridge. Because of popularity and steadily increasing use, the installation was doubled in size and facilities during 1967. Further expansion is feasible as demand may require. Present facilities, serving the 3-acre tract, include a



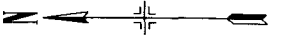
LOCK NO. 17












5

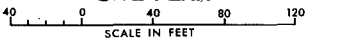






	PICNIC TABLE
	TRASH CONTAINER
	FIREPLACE
	FIRE RING
	WATER SUPPLY
	SIGN
	SANITATION - PIT TYPE
	GUARDRAIL
	EXISTING VEGETATION

SITE PLAN



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

concrete boat launching ramp, parking for 12 car-trailer units, a well and hand pump, 20 picnic tables, 10 fireplaces, 5 fire rings, 16 trash containers, 2 pit toilets, and parking for 8 passenger cars. Individual camping spurs have not been constructed although considerable camping use is made of the area. Approximately 1,500 feet of graveled access and circulation roadway serves the site. The location is not attractive to swimmers because of the relatively high river banks and lack of a sand beach along the water's edge.

(2) Kilpeck Landing Public Use Area. The site, plate IV-4.1, is located at river mile 446.8, riverward of the levee along the Iowa shore, and 8.7 miles below the Muscatine, Iowa, highway bridge. Occupying less than an acre, the installation is largely undeveloped at the present time. However, potential exists for an outstanding future development with the elimination of upstream and downstream adjacent cottage sites on Federal property. Existing facilities include a graveled boat launching ramp, parking space for 15 car-trailer units, 2 picnic tables, a well and hand pump, and a trash container. Local area residents make considerable use of the launching ramp, but the site has no attraction for campers or swimmers.

b. The Bureau of Sport Fisheries and Wildlife, a Federal agency, also maintains recreational facilities at river mile 443.7 (Iowa) and at river mile 441.1 (Iowa) on Federal land.

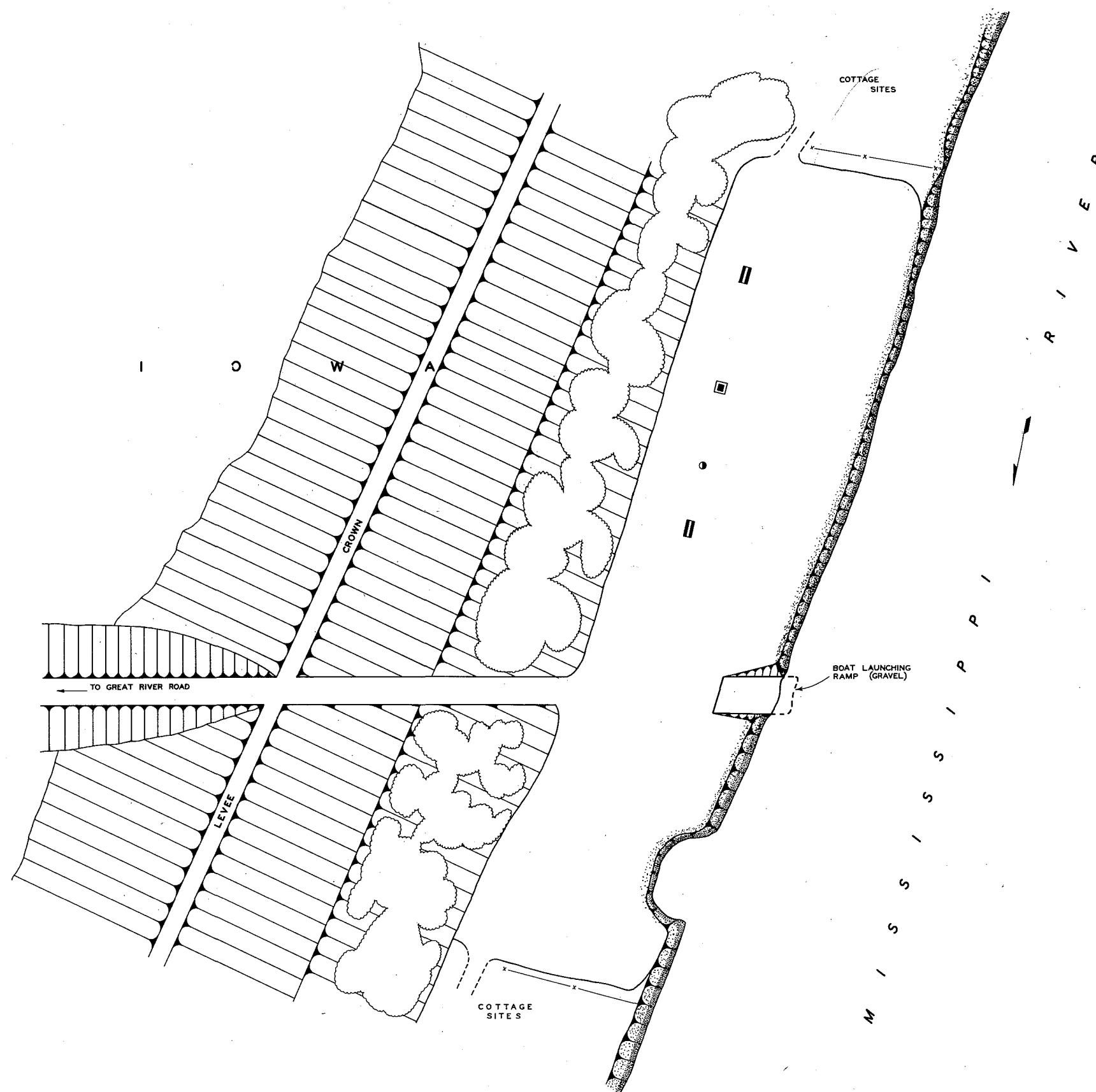
c. Other recreational facilities have been located on Federal lands by non-Federal agencies under leases or licenses granted through the Corps of Engineers. The Illinois Department of Conservation administers a stretch of Illinois shoreline between river mile 446.0 and 447.5. The entire Lake Odessa area, from river mile 435.0 (pool 18) to river mile 441.5, has been outgranted to the Bureau of Sport Fisheries and Wildlife of the Department of the Interior under the General Plan and Cooperative Agreement. The Bureau manages the upper half of the area as a wildlife sanctuary and has assigned the lower half to the Iowa Conservation Commission for management of public hunting and fishing and related recreational pursuits. The Iowa Conservation Commission also operates a recreational facility on the Iowa mainland at river mile 439.3.

d. Pool recreational facilities on other than Federal lands are located at: river mile 455.6, Iowa - a boat harbor; river mile 455.4, Iowa - a boat club dock and, immediately adjacent, a marina; and at river mile 455.3, Iowa - a boat launching ramp. No facilities on non-Federal lands are located on the Illinois shore within the pool limits.

Efforts will be made to interest Mercer County, Illinois, in improving an existing road leading over the levee to Federal property at river mile 441.9. Chart No. 80, Land Use Zoning overlay, locates the road proposed for improvement.

6. Water quality. As previously outlined, pool 17 waters are considered to be generally of such quality as to allow for water-oriented recreation. Pollution problems at Muscatine, Iowa, have been rectified and no other urban concentrations or industrial complexes exist within the pool. Existing levees and absence of major tributary streams preclude the influx of excessive agricultural pollutants. Discharge from levee district pumping stations, however, may create areas of intensive agricultural pollution. Accelerated hill stream runoff, as a feature of the agricultural levee systems, may pose a threat of excessive siltation at various locations within the pool.

7. Climatic conditions. Precipitation in the area averages 33 inches per year with the greatest amount normally recorded during June. The growing season spans a 180-day period from mid-April to late September. Prevailing winds are from the south to southwest in summer and shift to northwest and north during the winter months. A mean annual temperature of 50.1° is normally recorded with a summer high average of 79.2° and a winter low average of 27.1°. In the past, winter ice had usually halted navigation by late December with traffic resuming by late February or early March. In recent years, however, more powerful towboats have been able to extend the navigation season by a month or more. Studies are presently under way to investigate methods of providing a full 12-month period for water transportation.



LEGEND
■ PICNIC TABLE
● TRASH CONTAINERS
□ WATER SUPPLY
☁ VEGETATION

UPPER MISSISSIPPI RIVER
REVISED MASTER PLAN
KILPECK LANDING PUBLIC USE AREA
POOL 17, RIVER MILE 446.8

SITE PLAN

30 0 30 60 90
SCALE IN FEET

CORPS OF ENGINEERS
ROCK ISLAND, ILLINOIS

ROCK ISLAND DISTRICT
OCTOBER 1969

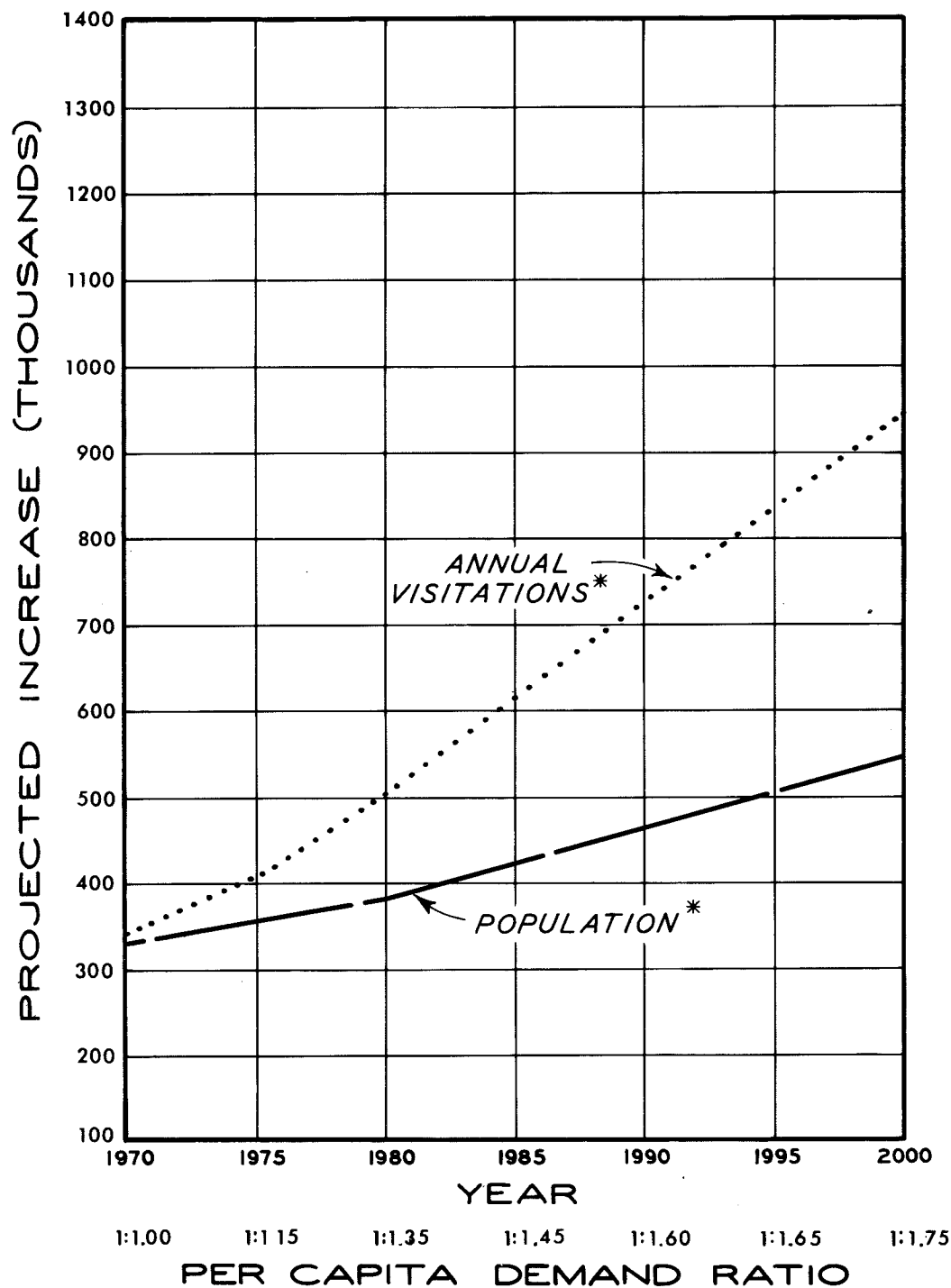
SECTION V

CURRENT AND ANTICIPATED RECREATIONAL USE

In terms of public visitations the pool 17 area ranks in sixth place among the 12 Mississippi River navigation pools within the Rock Island District. Visitations during 1968 were in excess of 339,000, ranging from a February low of 10,838 to a July high of 57,609, and with a peak day visitation in excess of 1,000.

Plate V-1.1 is a presentation of the anticipated population increase and corresponding projected recreational demand within the primary zone of influence - the 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 ORRRC and BOR.

Plate V-1.2 enumerates recreational facilities developed and maintained by the Corps of Engineers and the Bureau of Sport Fisheries and Wildlife as Federal agencies, and those developed and maintained by States, Counties, municipalities, or private individuals as non-Federal agencies. Non-Federal installations are limited to those immediately adjacent to the river and may or may not be located on lands leased from the Federal Government.



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

POOL 17
MISSISSIPPI RIVER
PROJECTED
POPULATION & VISITATIONS



POOL 17
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
<u>DAY - USE</u>										
PARKING (UNITS)	25	0	25				84	126	182	236
PICNIC TABLES	22	0	22				84	126	182	236
FIREPLACES	10	0	10				42	63	91	118
POTABLE WATER	2	0	2				2	4	6	7
SHELTERS	0	0	0				25	37	54	70
<u>BOAT LAUNCHING</u>										
PARKING (UNITS)	27		107				80	120	180	230
RAMPS	15	80	95				8	12	18	23
CONCESSIONS, FUEL, ETC.	2	6	8				-	-	-	-
	-	1	1							
<u>SANITATION</u>										
PIT TOILETS	4	0	4				2	4	8	10
FLUSH TOILETS	0	4	4				NONE PROPOSED UNDETERMINED			
TRAILER STATIONS	0	0	0							
<u>CAMPING</u>										
PARKING	10	0	10				45	67	97	126
PICNIC TABLES	0	0	0				45	67	97	126
FIREPLACES	0	0	0				45	67	97	126

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 8 rural locations within the 96.5 miles of mainland shoreline.



SECTION VI

POOL RESOURCE MANAGEMENT

1. General. The stated purpose of a Master Plan requires analysis and examination of the existing physical features of the pool area as well as proposals for the utilization and development of the scenic, biologic, and recreational potential. The pool management program is conditioned on orderly and controlled resource protection and development.

2. Land use zoning. Section VI, chapter I, describes and outlines the zoning classifications 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. Lands under Federal ownership within the pool limits, both mainland and islands, are extensive throughout the lower three-fourths of the reach. All Federal lands are under the basic administration of the Corps of Engineers except for a small tract in the Lake Odessa area which is assigned to the Department of Interior, Bureau of Sport Fisheries and Wildlife.

All Federal lands, including the minor area administered directly by the Bureau, are assigned zoning classification. Of the 7,039 acres of Federal pool land, 92%, or 6,520 acres, are classified as recreational-undeveloped; 7%, or 496 acres, as recreational-developed; and, 1%, or 23 acres, are in the special use category. An industrial site of 6.3 acres represents but a small fraction of total Federal property. No other land use classifications have been established for pool 17.

The entire fee acreage remaining above the flat pool elevation is under the basic jurisdiction of the Corps of Engineers. Approximately 99%, or ~~84,934~~ acres of such lands have been outgranted to the Bureau of Sport Fisheries and Wildlife, Department of the Interior, under the General Plan and Cooperative Agreement for wildlife management purposes. The Bureau, in turn, has assigned a part of the outgrant to the State of Iowa, also for wildlife management purposes. All such lands, however, remain under the basic administration of the Corps of Engineers with rights of road access and timber harvest. The 62 acre fee tract assigned to the Bureau and adjoining Corps lands, was acquired subsequent to the establishment of the pool and is not included in the acreages quoted.

3. Water zoning. Detailed water zoning is not a matter of consideration in this Master Plan. The pool contains 8,312 surface acres of water of which 960 acres, or 9%, are classified as channel waters and 7,352 acres, or 91%, as off-channel waters. A wildlife sanctuary, managed by the Bureau of Sports Fisheries and Wildlife, contains 506 acres of water, or 7% of the off-channel total area.

Submerged features, such as wing dams, stump fields, etc., may present navigation hazards to small craft in the upper reaches of the pool, but do not generally offer danger in the middle and lower areas. To indicate off-channel water depths on the navigation charts would be highly impractical since such information could soon be rendered obsolete because of changing currents, shifting sandbars, and other natural events.

Water zoning will become necessary in the future, at least in some areas, as population and water-oriented recreational activity expands.

4. Timber management. Subsection 3 of section VIII, chapter 1, describes and details the forestry resource on Federal lands administered by the Corps of Engineers within the Rock Island District. Each base map of the Master Plan features a transparent overlay delineating the type and location of forestry cover, management objectives, specie association, and related information.

The management program, currently under study, may revise or modify objectives presently established. Of the 7,039 acres of Federal land currently under the basic administration of the Corps of Engineers, 5,304 acres, or 75%, support significant timber growth. The management program presently planned for the timber resource is: 826 acres, or 12% as recreation-developed; 573 acres, or 8% as recreation-undeveloped; and 5,578 acres, or 80% for wildlife-waterfowl. No other management objectives have been planned under the presently established program.

5. Wildlife management. No Federally-owned lands existed within the present pool limits prior to the 9-foot channel project. Since project completion, lands acquired in fee and assigned to the Corps of Engineers have been outgranted, in part, to the Bureau of Sport Fisheries and Wildlife for wildlife management purposes. The Bureau, in turn, has assigned a part of such outgrants to the State of Iowa - also for wildlife management purposes. The Corps of Engineers, however, retains basic administration, the right of road use, and control of the harvesting and sale of merchantable timber.

6. Shoreline ownership. Mainland and island shoreline totals 202.5 miles within the limits of the pool. Of this amount 96.5 miles of mainland and 81.7 miles of island shoreline is administered by the Corps of Engineers under fee ownership of the Federal Government. The Bureau of Sport Fisheries and Wildlife, while not assigned shore lands through the Department of the Interior, does indirectly supervise shoreline outgranted by the Corps of Engineers under the provisions of the General Plan and Cooperative Agreement.

7. Additional recreational developments.

a. Corps of Engineers. No additional sites are presently under study or recommended for location and development.

b. Bureau of Sport Fisheries and Wildlife. In addition to facilities presently existing in the Big Timber Area (Iowa), the Bureau plans another development which will include a boat launching ramp, visitor center, and sanitary stations. The Iowa State Conservation Commission is to cooperate, in an as yet undetermined extent, in the development tentatively estimated to cost \$4,000.00. No definite plans have been prepared nor a completion date established since funding is presently uncertain.

c. States.

(1) Iowa. Except for participating in the above mentioned Bureau of Sport Fisheries and Wildlife project, the State has no immediate plans to request use of Federal lands for additional developments within the pool limits.

(2) Illinois. The Department of Conservation presently operates a public recreation area on pool shores but has no immediate plans for expansion or the location of additional sites on Federal property.

d. Counties.

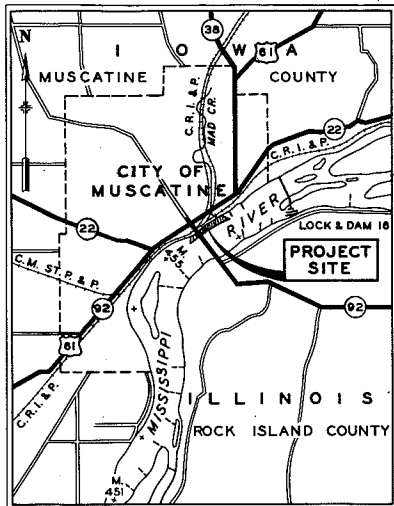
(1) Louisa (Iowa). All suitable Federal land is represented in the Big Timber Area and the Lake Odessa region with each supporting established public recreational facilities. The County has no present plans for further developments on available areas of Federal property.

(2) Rock Island and Mercer Counties (Illinois). While State law permits the formulation of county conservation boards, neither county has established an entity of such responsibility.

e. Municipal.

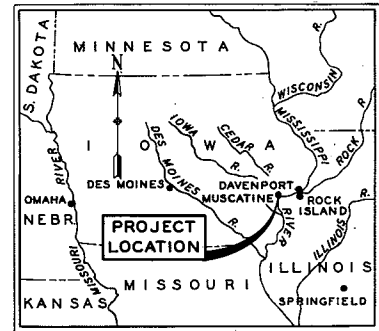
City of Muscatine, Iowa. No Federal land exists either within or immediately adjacent to the city.

Plate VI-4.1, locates the small-boat harbor authorized by the River and Harbor Act of 1950. The harbor was completed in May 1961 and included dredging to afford an approach to the public landing site for freight commerce.



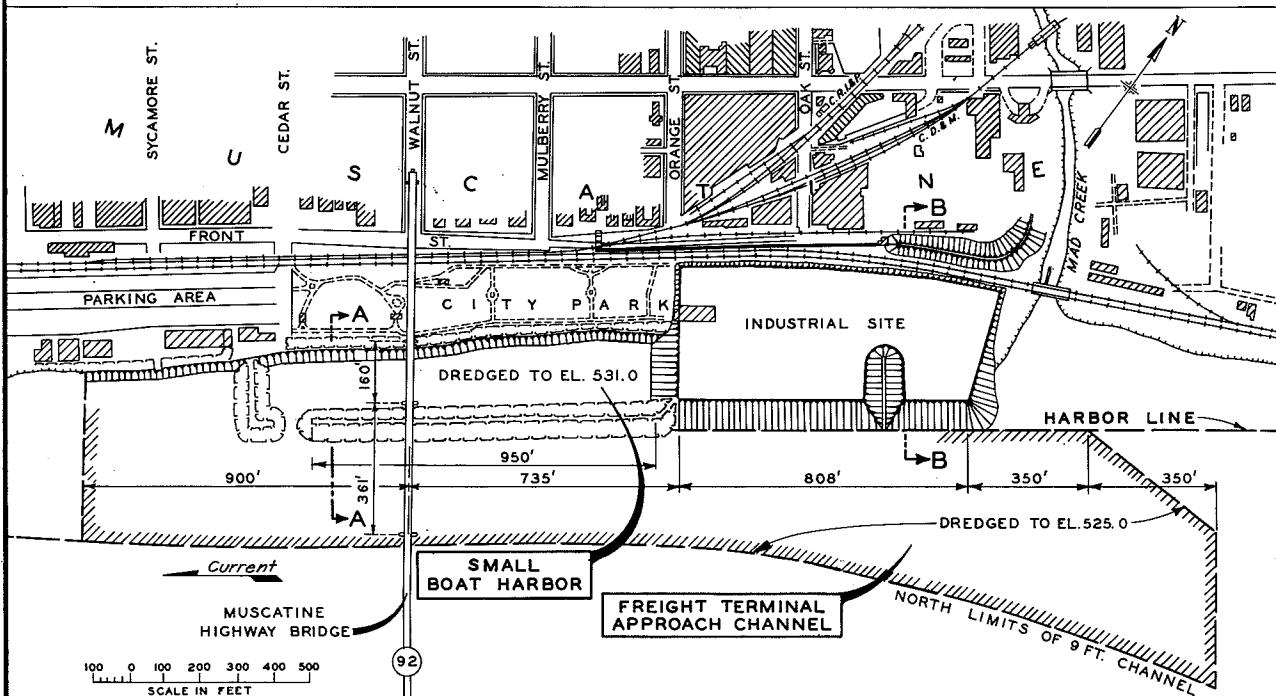
SITE MAP

4000 0 4000 8000
SCALE IN FEET

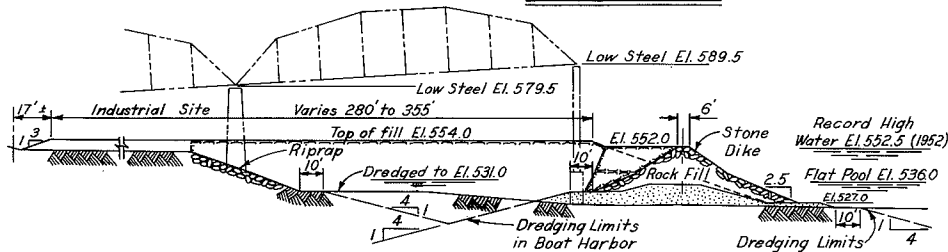


VICINITY MAP

50 0 50 100 150
SCALE IN MILES

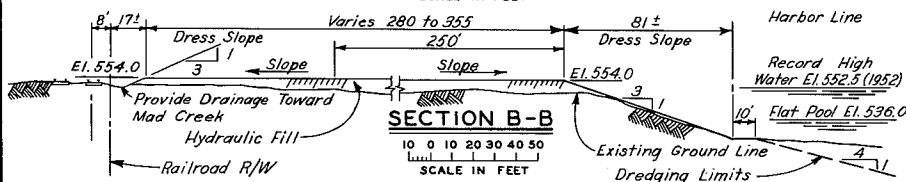


LOCATION MAP



SECTION A-A

10 0 10 20 30 40 50
SCALE IN FEET



SECTION B-B

10 0 10 20 30 40 50
SCALE IN FEET

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

MISSISSIPPI RIVER RIVER AND HARBOR PROJECT MUSCATINE, IOWA

HARBOR IMPROVEMENTS

SCALES AS SHOWN
ROCK ISLAND DISTRICT
30 JUNE 1964



SECTION VII

OPERATION AND MAINTENANCE

1. Manager-Ranger. The need for and suggested duties of a Manager-Ranger are outlined and explained in chapter I, section IX, Project Administration, paragraph 2. The extent of Federal lands within the pool, the timber resource, and the recreational activities of the public merits the patrol and supervision of authorized personnel in this specialized capacity.

2. Recreation facilities maintenance. Responsibility for all phases of recreational construction and maintenance within the pool limits lies with the Operation Division of the Rock Island District office. A field crew of six persons accomplishes the required work with additional and temporary assistance hired during peak or emergency periods. Work continues throughout the year except for brief periods of adverse weather conditions. The supervisor of the crew also acts as contracting officer in obtaining the services of private individuals who bid for seasonal appointments of grass cutting, garbage and trash removal, sanitary facility upkeep, etc.

SECTION VIII

SUMMARY AND RECOMMENDATIONS

1. General summary. While considerable undeveloped recreational potential exists within the pool limits, present developments - along with the planned site of the Bureau of Sport Fisheries and Wildlife - are probably adequate for the immediate future. However, with a growing population and popularity of outdoor recreation, and with the steadily increasing public use of the Lake Odessa area, additional recreational facilities will soon be required.

2. Recommendations.

a. The establishment of a Manager-Ranger responsibility, as outlined in chapter I, section IX, paragraph 2, is recommended for consideration. Although pool 17 is one of the shorter stretches in the Rock Island District and ranks in sixth place in terms of recreational visitations, the extent of Federal lands and the forestry resource warrants the periodic supervision which would be provided under this specialized position. Time and effort on the part of other District personnel would be eliminated, unauthorized use of Government land as well as vandalism would be minimized, and closer public relations established.

b. Dredging is recommended at river mile 444.6, along the Illinois shore, to provide boat passage to Eagle Fill and the associated slough complex. An excellent area for hunting and fishing recreational opportunities will be realized.

c. Approval is recommended for the land use zoning and forestry management objectives as established for Federal property and indicated on the transparent overlays accompanying the base charts of the Master Plan for the pool. By order of the Chief of Engineers, private and exclusive use of cabin sites will be terminated after 30 November 1988 and such sites will then be reclassified as to priority and use. The concept of a Master Plan, however, allows for flexibility and is subject to continual review and revision. Any of the private use areas are, therefore, subject to reclassification prior to the above date should a higher priority of use become apparent. All other presently classified areas are subject to revision and reclassification as circumstances may dictate under priority rules.

d. No immediate change is planned for the timber management program presently outlined for the pool. The program is currently being restudied and decisions may be reached which will revise or modify the objectives presently indicated on the transparent overlays. Although dutch elm disease has all but eliminated the stand of American elm throughout the pool, no program of removal of affected trees is considered feasible because of costs involved. Reforestation of open areas is not presently planned, although the propagation of walnut and pecan species in suitable areas may receive future consideration. Timber management objectives, pending the management study, should continue to be pursued through the implementation of sound silvicultural procedures and practices.

3. Suggested future recreation areas.

a. Regions offering opportunities for marked canoe trails exist in the interior slough complexes of the Big Timber Area, river miles 443.0 to 445.8; Bogus Island, river miles 440.6 to 443.7; and, Turkey Island, river miles 437.3 to 438.8.

b. The Blanchard Island Chute Public Use Area is quite isolated and telephone facilities would be a safety feature in the event of need. Emergency phone numbers and location of the nearest medical and hospital facilities should be prominently displayed with the installation.

c. Nature trails need to be established both upstream and downstream of the Blanchard Island Chute development. Shoreline fishing opportunities could also be established.

d. The Kilpeck Landing Public Use Area can be greatly expanded and improved after elimination of existing private cottage site leases. Nature trails throughout the Big Timber Area could follow this expansion and shoreline fishing opportunities established both on the river and the interior slough complex.


e. The levee embankment could be used to establish vantage points for sightseers, artists, and photographers at especially scenic locations. The autumn season of spectacular coloring attracts numerous visitors each year. Specific locations would need to be established by seasonal survey, and access may present problems.

f. The Blanchard Island Chute development might feature a sealed bulletin-board type of display with posted information concerning camping regulations, hunting and fishing laws, vandalism warnings, littering appeal, etc. Identified specimens of the area flora and fauna could be included as an educational service.

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

