

**US Army Corps
of Engineers**

Rock Island District

RECREATION- RESOURCE MASTER PLAN

Mississippi River Pool 22

NINE FOOT CHANNEL
NAVIGATION
PROJECT



MISSISSIPPI RIVER - POOLS 11-22
MASTER PLAN REPORTS

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1/ PLATES ONLY, NO INDIVIDUAL POOL NARRATIVE PREPARED

MISSISSIPPI RIVER - POOL 22
RECREATION - RESOURCE MASTER PLAN

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DISTRIBUTION LIST

ENVIRONMENTAL ASSESSMENT

INTRODUCTION

• Pursuant to the Cooperative Agreement between the Department of the Army, and the Department of the Interior U.S. Fish and Wildlife Service, the exercise of the privileges granted to the U.S. Fish and Wildlife Service shall in no way interfere with navigation and shall be subject at all times, without notice to or approval of the Service to the occupation and use by the public for navigation, by the Department of the Army for navigation, flood control, and all other related purposes; including, but not limited to construction of training works, bank protection, and navigation aids, requiring a minimum of a 50' radius of control around the landward end of all training works or wing dams for purposes of maintenance, and use of areas for survey and day marker maintenance as required. •

INTRODUCTION

AUTHORIZATION

THE MISSISSIPPI RIVER NINE-FOOT CHANNEL NAVIGATION PROJECT WAS ORIGINALLY AUTHORIZED BY THE RIVER AND HARBOR ACT OF 1930. LATER AUTHORIZATION MODIFIED THE PROJECT BY EXTENDING THE NAVIGATION SYSTEM TO ITS PRESENT DISTANCE BEGINNING IN ST. ANTHONY FALLS, MINNESOTA, TO THE MOUTH OF THE MISSOURI RIVER. THE NAVIGATION SYSTEM CONSISTS OF A SERIES OF LOCKS AND DAMS CREATING A CHAIN OF POOLS, OF WHICH POOL 22 IS A PART, IN THE UPPER MISSISSIPPI RIVER.

PROJECT PURPOSE

THE AUTHORIZED PURPOSE OF THE PROJECT IS TO MAINTAIN A CONTINUOUS NAVIGABLE CHANNEL WITH A MINIMUM NINE-FOOT DEPTH AND SUITABLE WIDTH FOR COMMERCIAL TRAFFIC. APPLICABLE RESOURCE ADMINISTRATION AND DEVELOPMENT PURPOSES INCLUDE RECREATION, FISH AND WILDLIFE, CULTURAL, FORESTRY, AND COMMERCIAL CONSIDERATIONS.

MASTER PLAN PURPOSE

THIS MASTER PLAN DOCUMENT SERVES AS A GUIDE FOR THE SHORT- AND LONG-TERM MANAGEMENT AND DEVELOPMENT OF THE PROJECT RESOURCES. IT ALSO SERVES TO COORDINATE PROJECT

FEATURES WITH INTERESTED FEDERAL, STATE, AND LOCAL ENTITIES. PERTINENT RESOURCES DATA AND MANAGEMENT PHILOSOPHIES DEVELOPED BY OTHERS, WHICH DIRECTLY OR INDIRECTLY AFFECT THE PROJECT, HAVE BEEN CONSIDERED IN THE DEVELOPMENT OF THE PLAN. FUTURE SUPPLEMENTAL REVISION TO INDIVIDUAL ITEMS IN THE PLAN MAY BE NECESSARY TO MAINTAIN THE PLAN FOR CURRENT CONDITIONS.

PREVIOUS PLANS

THE ORIGINAL MASTER PLAN FOR THE PROJECT WAS PREPARED IN 1947, AND CONSISTED OF A COMPOSITE REPORT FOR ALL POOLS WITHIN THE ROCK ISLAND DISTRICT. SUBSEQUENT REVISIONS WERE MADE IN 1954 AND 1969. THE LATEST REVISION CONSISTED OF INDIVIDUAL POOL PLANS, OF WHICH POOL 22 WAS NEVER FULLY ACCOMPLISHED. A LISTING OF THE VARIOUS MASTER PLAN REPORTS PREVIOUSLY PREPARED IS PROVIDED AT THE BEGINNING OF THIS PLAN.

REQUIRED MANAGEMENT APPENDIXES TO THE MASTER PLAN, WHICH HAVE BEEN PREPARED SEPARATELY, INCLUDE THE PROJECT RESOURCE MANAGEMENT PLAN (APPENDIX A), THE FOREST, FISH, AND WILDLIFE, MANAGEMENT PLAN (APPENDIXES B AND D), THE FIRE PROTECTION PLAN (APPENDIX C), AND THE PROJECT SAFETY PLAN (APPENDIX E). THE LAKESHORE MANAGEMENT PLAN (APPENDIX F) REQUIREMENTS HAVE BEEN INCORPORATED IN THE MASTER PLAN. ALL OF THE INDIVIDUAL MANAGEMENT APPENDIXES HAVE BEEN COMPLETED FOR THE PROJECT, AND ARE COMPOSITE REPORTS FOR POOLS LOCATED WITHIN THE ROCK ISLAND DISTRICT. SUMMARY DISCUSSIONS OF THE CONTENTS OF SUCH PLANS ARE PROVIDED IN SECTION X OF THIS REPORT.

APPLICATION OF PUBLIC LAWS

GUIDANCE AND OBJECTIVES PRESENTED IN THIS PLAN, CONCERNING RESOURCE DEVELOPMENT AND USE OF THE PROJECT, ARE IN CONFORMANCE WITH APPLICABLE LEGISLATIVE AUTHORITIES. SUCH AUTHORITIES INCLUDE FEDERAL LAWS, REGULATIONS, AND EXECUTIVE ORDERS CONCERNING NAVIGATION, RECREATION, FISH AND WILDLIFE, CULTURAL, FORESTRY, ENVIRONMENTAL, AND FLOOD PLAIN MANAGEMENT RESPONSIBILITIES. ATTACHMENT 1 TO THIS REPORT LISTS THESE AUTHORITIES AND SUMMARIZES THEIR APPLICATION TO THE PROJECT.

SCOPE OF MASTER PLAN

THIS REPORT PRESENTS AND DIRECTS THE RESOURCE PROGRAM AND LAND-USE PLAN FOR POOL 22 OF THE MISSISSIPPI RIVER, NINE-FOOT CHANNEL NAVIGATION PROJECT. USE OF PROJECT RESOURCES IS TO OBTAIN OPTIMUM BENEFIT FOR THE GENERAL PUBLIC FROM THOSE RESOURCES OVER THE LIFE OF THE PROJECT.

THIS PLAN EVALUATES THE RESOURCES OF POOL 22 IN TERMS OF THE EFFECTS OF PRESENT AND HISTORIC USES OF THESE RESOURCES, THE ANTICIPATED USE DEMANDS THROUGH THE YEAR 2025, AND THE POTENTIALS AND LIMITATIONS OF THE PROJECT RESOURCES TO SATISFY SUCH DEMANDS.

CORPS ADMINISTRATIVE POLICY

GENERAL

THE SCOPE OF ADMINISTRATIVE RESPONSIBILITIES ASSOCIATED WITH THE NINE-FOOT NAVIGATION PROJECT'S NATURAL AND MANMADE FEATURES REPRESENTS A BROAD DIVERSITY OF CONCERNS WHICH INCLUDE: NAVIGATION, FISH AND WILDLIFE, RECREATION, CULTURAL, AND FORESTRY INTERESTS.

THE PROJECT'S SOCIAL AND ENVIRONMENTAL CHARACTERISTICS ARE EQUALLY DIVERSE WITH INTERRELATED INTEREST OF COMMERCIAL, PRIVATE, AND PUBLIC ENTITIES WITHIN THE CONTEXT OF A VARIETY OF REGIONAL AND LOCAL INSTITUTIONS. USE AND ACCESSIBILITY OF PROJECT RESOURCES ARE PRIMARILY AN OPEN SYSTEM WITH LIMITED PORTIONS HAVING CONTROLLED MANAGEMENT OPPORTUNITIES. MANAGEMENT OF PROJECT LANDS INVOLVES VARIOUS MULTIPLE FEDERAL, STATE, AND LOCAL GOVERNMENT AGENCIES. HOWEVER, THE CORPS RETAINS PRINCIPAL ADMINISTRATIVE RESPONSIBILITY OVER ALL PROJECT LANDS FOR THE AUTHORIZED PROJECT PURPOSE OF NAVIGATION. ADMINISTRATIVE AND MANAGEMENT PRACTICES CONCERNING THE NATURAL RESOURCES OF THE PROJECT ARE DIRECTED TOWARD MAXIMUM BENEFIT TO THE GENERAL PUBLIC, CONSISTENT WITH ECONOMIC, ECOLOGICAL, AND AESTHETIC VALUES SET FORTH BY FEDERAL LEGISLATION. BASIC ADMINISTRATIVE POLICY CONCERNING NAVIGATION, FISH AND WILDLIFE, RECREATION, FORESTRY, CULTURAL, AND OTHER INTERESTS IS AS FOLLOWS.

NAVIGATION

THE CORPS BEARS ALL COSTS OF PROJECT CONSTRUCTION, OPERATION, AND MAINTENANCE FOR COMMERCIAL NAVIGATION. HOWEVER, A FEDERAL EXCISE TAX (PL 95-502) ON FUEL IS APPLIED TO CERTAIN COMMERCIAL CARGO VESSELS USING SPECIFIED INLAND WATERWAYS. THIS USER CHARGE IN THE FORM OF A FUEL TAX DOES NOT APPLY TO DEEP-DRAFT OCEAN-GOING VESSELS, PASSENGER VESSELS, STATE OR LOCAL GOVERNMENT VESSELS, OR RECREATION CRAFT.

CORPS PARTICIPATION IN RECREATIONAL NAVIGATION PROJECT COSTS IS LIMITED TO GENERAL NAVIGATION FEATURES SUCH AS BREAKWATERS, JETTIES, AND ACCESS CHANNELS. FEDERAL SHARE WILL NOT BE MORE THAN ONE-HALF OF THE FIRST COST OF THESE GENERAL NAVIGATION FEATURES. NON-FEDERAL INTERESTS ARE RESPONSIBLE FOR ANY COSTS FOR TERMINAL FACILITIES, DOCKING,

INTERIOR DREDGING, LANDS, DISPOSAL AREAS, AND REMAINING FIRST COSTS OF GENERAL FEATURES ASSOCIATED WITH SUCH PROJECTS. COSTS OF OPERATION AND MAINTENANCE OF THE GENERAL NAVIGATION FEATURES ARE A FEDERAL RESPONSIBILITY.

FISH AND WILDLIFE

SPECIFIC MANAGEMENT PROGRAMS CONCERNING FISH AND WILDLIFE CONSERVATION ON PROJECT LANDS ARE ADMINISTERED BY EITHER THE U.S. FISH AND WILDLIFE SERVICE (FWS) OR APPROPRIATE STATE AGENCIES. UNDER THE PROVISIONS OF THE GENERAL PLAN AND COOPERATIVE AGREEMENT (PL 79-732), PORTIONS OF PROJECT LANDS HAVE BEEN LICENSED TO THE FWS AND EITHER DESIGNATED AS A PART OF A NATIONAL REFUGE SYSTEM, OR FURTHER LICENSED BY THEM TO ADJACENT STATES FOR SUCH PURPOSES. OTHER PROJECT LANDS NOT CONTAINED WITHIN THE GENERAL PLAN ARE DIRECTLY MANAGED BY THE CORPS FOR GENERAL WILDLIFE HABITAT ENHANCEMENT FOR BOTH GAME AND NON-GAME SPECIES. PROJECT LANDS UNDER THE COOPERATIVE AGREEMENT REMAIN AVAILABLE FOR NAVIGATION OPERATION AND MAINTENANCE, AND OTHER HIGHER PRIORITY PUBLIC USE NEEDS AS REQUIRED.

COOPERATIVE IMPROVEMENTS ON PROJECT LANDS FOR ENHANCEMENT OF SPORT FISH, WILDLIFE, AND WILDLIFE RESOURCES ARE AVAILABLE BETWEEN THE CORPS AND NON-FEDERAL PUBLIC INTERESTS ON A 75 PERCENT FEDERAL AND 25 PERCENT NON-FEDERAL COST-SHARING BASIS. NON-FEDERAL INTERESTS ASSUME ALL COSTS FOR OPERATION, MAINTENANCE, AND REPLACEMENTS. COSTS ATTRIBUTABLE TO LAND ACQUISITION TO PROVIDE PUBLIC ACCESS AND TO PROMOTE PUBLIC USE OF FISH AND WILDLIFE RESOURCES ARE EXPENDITURES MADE IN THE INTEREST OF ENHANCING OPPORTUNITIES FOR PUBLIC OUTDOOR RECREATION, AND ARE, THEREFORE, SUBJECT TO A 50/50 COST-SHARING APPROPRIATION.

RECREATION

INITIALLY, GENERAL LEGISLATIVE AUTHORITY ALLOWED THE CORPS TO CONSTRUCT, MAINTAIN, AND OPERATE PUBLIC PARK AND RECREATIONAL FACILITIES ON LANDS ACQUIRED FOR PROJECT PURPOSE. SUBSEQUENT LEGISLATION HAS ESTABLISHED COST-SHARING PROCEDURES WHICH ARE NOW APPLICABLE TO ANY NEW AREAS OF DEVELOPMENT OR IMPROVEMENTS (EXPANSION) TO EXISTING AREAS. RECREATIONAL DEVELOPMENT, INCLUDING ADDITIONAL LANDS NOT REQUIRED FOR THE BASIC PROJECT, ARE COST-SHARED ON A 50/50 BASIS WITH THE NON-FEDERAL PUBLIC INTEREST. OPERATION, MAINTENANCE, AND REPLACEMENT COSTS ARE THE RESPONSIBILITY OF THE NON-FEDERAL SPONSOR.

WITHOUT A NON-FEDERAL SPONSOR OR SPECIFIC LEGISLATIVE AUTHORITY, ADDITIONAL RECREATIONAL IMPROVEMENTS SPONSORED BY THE CORPS ARE LIMITED TO THE UPGRADING OF SANITARY FACILITIES AT EXISTING CORPS-MANAGED RECREATIONAL AREAS TO MEET FEDERAL AND STATE HEALTH STANDARDS. HOWEVER, ADDITIONAL ACCESS IMPROVEMENTS TO CORPS-MANAGED RECREATIONAL AREAS HAVE BEEN PROVIDED THROUGH COOPERATIVE STATE EFFORTS IN CONJUNCTION WITH THE DEVELOPMENT OF THE GREAT RIVER ROAD SYSTEM.

RELOCATION OR REALLOCATION OF EXISTING RECREATION FACILITIES MAY BE NECESSARY FOR MANAGEMENT CONTROL, USER CONVENIENCE, CHANGING USE PATTERNS, COST EFFICIENCY, OR CONCENTRATING MAINTENANCE EXPENSES. THESE IMPROVEMENTS ARE AT FULL FEDERAL EXPENSE WHEN DETERMINED THAT SIGNIFICANT COST EFFICIENCY FOR OPERATION, MAINTENANCE, AND REPLACEMENT IS ACHIEVED. THESE MODIFICATIONS ARE CONSIDERED MANAGEMENT OPTIONS AND NOT NEW OR EXPANDED IMPROVEMENTS AS LONG AS THE TOTAL EXISTING FACILITIES FOR THE ENTIRE PROJECT ARE NOT INCREASED.

FORESTRY

TIMBER MANAGEMENT POLICY IS DIRECTED TO INCREASE THE VALUE OF PROJECT LANDS FOR RECREATION, AESTHETICS, AND WILDLIFE; AND TO PROMOTE NATURAL ECOLOGICAL CONDITIONS BY FOLLOWING ACCEPTED CONSERVATION PRACTICES. COMMERCIAL FIBER PRODUCTION IS NOT A PRIMARY CONSIDERATION. THE CORPS HAS PRINCIPAL ADMINISTRATIVE RESPONSIBILITIES FOR FOREST MANAGEMENT IMPROVEMENTS FOR ALL PROJECT LANDS. HOWEVER, FOREST MANAGEMENT PLANS PRESCRIBED ON LANDS UNDER THE COOPERATIVE AGREEMENT ARE ENCOURAGED AS OPTIONAL IMPLEMENTATION BY THE RESPECTIVE WILDLIFE MANAGEMENT AGENCY TO ENHANCE THE OVERALL QUALITY OF THE NATURAL HABITAT.

CULTURAL

THE IDENTIFICATION, EVALUATION, AND PROTECTION (PRESERVATION OR MITIGATION) OF SIGNIFICANT ARCHAEOLOGICAL AND HISTORICAL SITES LOCATED ON PROJECT LANDS ARE A PRINCIPAL RESPONSIBILITY OF THE CORPS. THIS STEWARDSHIP IS, HOWEVER, DIRECTLY APPLICABLE TO OTHER AGENCIES ADMINISTERING PROJECT LANDS. CULTURAL RESPONSIBILITIES INCLUDE: INVENTORY AND EVALUATION FOR SITES POTENTIALLY ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES (NRHP), PROTECTION OF NRHP SITES AGAINST NATURAL DETERIORATION OR VANDALISM, MITIGATING ADVERSE CONSTRUCTION OR MAINTENANCE IMPACTS ON NRHP SITES, AND PREVENTION OF ILLEGAL OR UNAUTHORIZED REMOVAL OF CERTAIN CULTURAL ARTIFACTS.

OTHER PURPOSES

PROJECT LANDS ARE ALSO MADE AVAILABLE TO PUBLIC AGENCIES AND INDIVIDUAL INTERESTS UNDER LEASE, PERMIT, LICENSE, OR EASEMENT FOR AGRICULTURAL, INDUSTRIAL/COMMERCIAL, PUBLIC UTILITY, SCIENTIFIC, OR RECREATIONAL PURPOSES. THESE UNDERTAKINGS ARE AT THE FULL EXPENSE OF THE APPLICANT FOR DEVELOPMENT, MAINTENANCE, AND RESTORATION, AS SPECIFIED IN THE TERMS OF THE AGREEMENT. SUCH USES MAY DIRECTLY OR INDIRECTLY RESTRICT GENERAL PUBLIC USE OF THE LANDS. THE LENGTH OF THESE AGREEMENTS RANGES BETWEEN 5-25 YEARS DEPENDING UPON THE TYPE OF REAL ESTATE INSTRUMENT AND PURPOSE INVOLVED. AVAILABILITY OF PROJECT LANDS FOR SUCH SPECIAL USE IS DETERMINED APPROPRIATE WHEN SUITABLE PRIVATE PROPERTY IS NOT AVAILABLE FOR SUCH PURPOSES AND WHEN CONSIDERED TO BE IN THE PUBLIC INTEREST AND NOT TO INTERFERE WITH PRIMARY PROJECT PURPOSES. SUCH USES ARE NOT TO PERMIT IRRETRIEVABLE OR IRREVERSIBLE COMMITMENT OF THE NATURAL RESOURCES. ACTIONS INVOLVING LANDS UNDER THE COOPERATIVE AGREEMENT REQUIRE COORDINATION WITH THE U.S. FWS AND THE APPROPRIATE STATE WILDLIFE MANAGEMENT AGENCY TO ASSURE COMPATIBILITY WITH WILDLIFE MANAGEMENT ACTIVITIES.

RESOURCE MANAGEMENT POLICY

IDENTIFICATION OF RESOURCE MANAGEMENT OBJECTIVES SERVES TO DIRECT PROJECT MANAGEMENT AND DEVELOPMENT ACTIVITIES IN ACCORDANCE WITH GIVEN ADMINISTRATIVE POLICIES AND CONDITIONS. THE FOLLOWING LIST OF GENERAL RESOURCE MANAGEMENT OBJECTIVES REPRESENTS THE BROAD DIVERSITY OF OPTIONS AND OPPORTUNITIES AVAILABLE. SUCH DIVERSITY ENCOMPASSES CONFLICTING PURPOSES WHICH, WHEN INDIVIDUALLY IMPLEMENTED, WILL REQUIRE TRADE-OFFS OR COMPROMISES TO EFFICIENTLY MEET THE OVERALL NEEDS AND VALUES OF THE REGION AND THE

NATION AS A WHOLE. NO PRIORITY IS ASSIGNED TO ANY OF THE OBJECTIVES; THEREFORE, INDIVIDUAL MANAGEMENT ACTIONS SHOULD SEEK TO ACHIEVE MUTUALLY ACCEPTABLE AND COMPATIBLE MEASURES.

- * ASSIST IN THE DEVELOPMENT, CONDUCT, SAFETY, AND EFFICIENCY OF WATERBORNE COMMERCE (BOTH COMMERCIAL AND RECREATIONAL).

- * OPERATE AND MAINTAIN PROJECT FACILITIES AND RESOURCES FOR MAXIMUM USE BY THE VISITING PUBLIC CONSISTENT WITH RESOURCE CAPACITY LIMITATIONS ON A BASIS THAT IS EQUAL FOR ALL POTENTIAL USERS.

- * ENCOURAGE NON-FEDERAL SPONSORSHIP FOR NEEDED RECREATIONAL AND FISH AND WILDLIFE ENHANCEMENT, AND SEEK TO OBTAIN APPROPRIATE PUBLIC AGENCY INTEREST IN ASSUMING OPERATION AND MAINTENANCE OF EXISTING CORPS-MANAGED RECREATIONAL AREAS.

- * PROTECT AND MANAGE PROJECT RESOURCES IN A MANNER TO ASSURE PUBLIC USE AND BENEFITS CONSISTENT WITH OPTIMUM ECOLOGICAL VALUES.

- * PARTICIPATE IN AND DEVELOP EDUCATIONAL, SCIENTIFIC, AND SOCIAL PROGRAMS PROMOTING THE IDENTIFICATION, CONSERVATION, OR ENHANCEMENT OF ENVIRONMENTAL AND CULTURAL INTERESTS ASSOCIATED WITH PROJECT LANDS.

- * IMPLEMENT AN ACTIVE FORESTRY MANAGEMENT PLAN ON PROJECT LANDS TO ENHANCE TIMBER QUALITY, THEREBY ENHANCING OVERALL QUALITY OF WILDLIFE HABITAT FOR BOTH GAME AND NON-GAME SPECIES.

- * SURVEY LANDS AND WATERS PRIOR TO ANY PLANNED SIGNIFICANT ACTION FOR IDENTIFICATION OF RARE AND ENDANGERED SPECIES FOR CRITICAL HABITAT AREAS, AND DESIGNATE SUCH KNOWN HABITAT AS UNDISTURBED (NATURAL) AREAS.

- * UNDERTAKE A SYSTEMATIC CULTURAL SURVEY OF PROJECT LANDS TO DETERMINE KNOWN LOCATIONS OF POTENTIAL SENSITIVE AREAS OF SIGNIFICANT RESOURCES, AND TO NOMINATE ANY POTENTIALLY ELIGIBLE SITE TO THE NATIONAL REGISTER OF HISTORIC PLACES.

- * REVIEW AND COORDINATE MANAGEMENT PLANS AND DEVELOPMENT ACTIONS TO ASSURE APPROPRIATE CONSIDERATION BY OTHER CONCERNED PUBLIC AGENCIES AS NEEDED.

SPECIFIC RESOURCE USE OBJECTIVES PRESENTED IN THIS PLAN ARE IN CORRELATION WITH VARIOUS REGIONAL AND LOCAL STUDIES THAT ADDRESS PROBLEMS, NEEDS, AND CHARACTERISTICS OF THE PROJECT AREA. STUDIES PERFORMED BY STATE, FEDERAL, AND REGIONAL PLANNING AGENCIES, PROVIDED THE ENVIRONMENTAL, SOCIAL, AND DEMOGRAPHIC INFORMATION NEEDED TO DETERMINE

MANAGEMENT OPTIONS AND NEEDS. SUCH STUDIES INCLUDE STATE COMPREHENSIVE OUTDOOR RECREATION PLANS, GREAT RIVER ENVIRONMENTAL ACTION TEAM REPORTS, REGIONAL PLANNING STUDIES, AND VARIOUS FEDERAL AND STATE MANAGEMENT PLANS. THIS INFORMATION IS SUPPLEMENTED WITH PUBLIC INTEREST OPINIONS OBTAINED DURING WORKSHOP MEETINGS CONCERNING THE MASTER PLAN REVISION EFFORT.

DESIGNATED MANAGEMENT ACTIONS REFLECT THE BEST OVERALL PUBLIC INTEREST OF BOTH PRESENT AND FUTURE GENERATIONS, ON A BASIS THAT IS EQUAL FOR ALL POTENTIAL USERS. AS CONTINUED PLANNING AND RESEARCH EFFORTS ARE UNDERTAKEN, RESULTS OF NEW FINDINGS AND UNDERSTANDINGS MAY REQUIRE REVISION OF MANAGEMENT ACTIONS IDENTIFIED WITHIN THIS PLAN.

PROJECT DESCRIPTION

PROJECT DESCRIPTION

LOCATION

LOCK AND DAM 22 IS LOCATED 1.5 MILES DOWNSTREAM FROM SAVERTON, MISSOURI, AT RIVER MILE 301.2. POOL 22 IS THE SOUTHERNMOST OF THE NAVIGATION POOLS WITHIN THE ROCK ISLAND DISTRICT. THE POOL AREA EXTENDS UPSTREAM 23.7 RIVER MILES INTO THE TAILWATERS OF LOCK AND DAM 21, LOCATED AT RIVER MILE 324.9. THE POOL IS BORDERED BY PORTIONS OF MARION AND RALLS COUNTIES IN MISSOURI, AND ADAMS AND PIKE COUNTIES IN ILLINOIS. SEE FIGURE 11-1 FOR LOCATION OF THE PROJECT IN RELATION TO OTHER NAVIGATION POOLS OF THE MISSISSIPPI RIVER UNDER THE JURISDICTION OF THE ROCK ISLAND DISTRICT.

THE ROCK ISLAND DISTRICT CHANNEL AND WATER JURISDICTION CONTINUES BELOW LOCK AND DAM 22 FOR ONLY 1.2 MILES, ENDING AT RIVER MILE 300. THEREFORE, FOR THE PURPOSE OF THIS MASTER PLAN, THE 1.2 MILES BELOW LOCK AND DAM 22 WILL BE CONSIDERED AS PART OF POOL 22.

PROJECT DATA

CLIMATE

THE PRINCIPAL FEATURE OF THE CLIMATE AT POOL 22 IS ITS VARIETY, SINCE IT IS LOCATED AT THE CROSSROADS OF THE VARIOUS AIR MASSES THAT CROSS THE CONTINENT. THE AVERAGE SUMMER TEMPERATURE IS APPROXIMATELY 75°F AND THE AVERAGE WINTER TEMPERATURE IS APPROXIMATELY

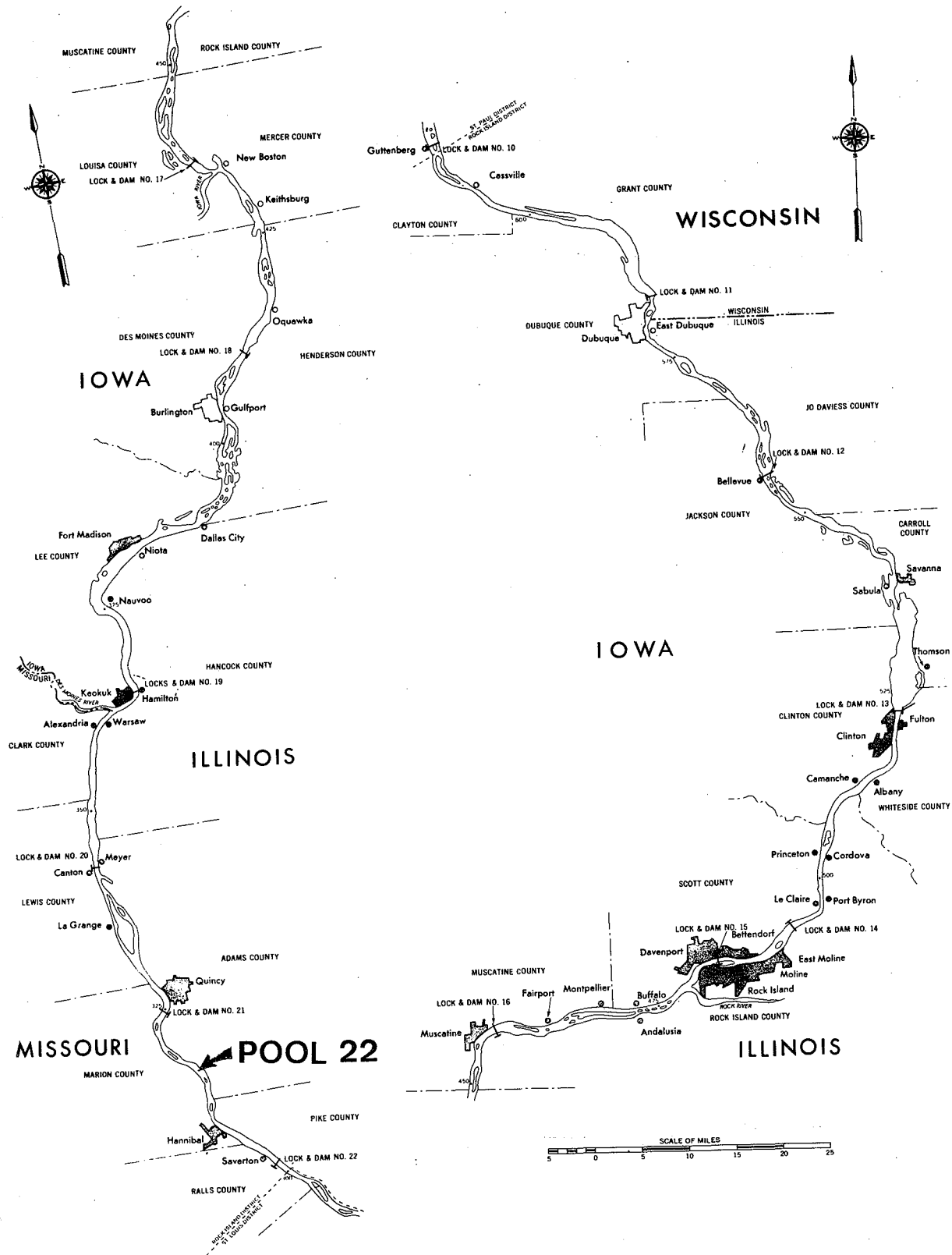


FIGURE II-1
MISSISSIPPI RIVER - POOL 22
PROJECT LOCATION

28°F. EXTREME TEMPERATURES FOR SUMMER AND WINTER CAN REACH A HIGH OF 110°F AND A LOW OF -22°F IN SEASONAL OCCURRENCES.

THE AVERAGE GROWING SEASON IS APPROXIMATELY 190 DAYS, FROM EARLY APRIL THROUGH MID-OCTOBER. THE MEAN ANNUAL PRECIPITATION FOR THE POOL DRAINAGE AREA IS 32.1 INCHES. ALL SEASONS ARE MARKED BY STORMS THAT ACCOMPANY THE CHANGES FROM ONE TYPE OF AIR MASS TO ANOTHER. SUMMER THUNDERSTORMS HAVE BEEN SUFFICIENTLY INTENSE AT TIMES TO RAISE THE MISSISSIPPI RIVER A SIGNIFICANT AMOUNT WITHIN A RELATIVELY SHORT TIME. WINDS ARE GENERALLY FROM THE SOUTH-SOUTHWEST IN THE SUMMER AND FROM THE NORTH-NORTHWEST IN THE WINTER.

HYDROLOGY

THE TOTAL DRAINAGE AREA OF THE MISSISSIPPI RIVER AT LOCK AND DAM 22 IS 137,500 SQUARE MILES, OF WHICH 135,000 SQUARE MILES IS ABOVE ITS ENTRANCE INTO POOL 22 AT QUINCY, ILLINOIS. LARGE STREAMS WHICH FLOW DIRECTLY INTO POOL 22 INCLUDE THE FABIVS RIVER (RIVER MILE 323.5), THE NORTH RIVER (RIVER MILE 321.0), AND THE SOUTH RIVER (RIVER MILE 320.8) ALONG THE MISSOURI SIDE; AND ONLY MILL CREEK (RIVER MILES 318.0) ON THE ILLINOIS SIDE.

THE AVERAGE SLOPE OF THE CHANNEL (THALWEG) FOR THE 23.7 RIVER MILES IN POOL 22 IS 0.17 FEET PER MILE. MEAN ANNUAL RUNOFF OF THE MISSISSIPPI RIVER AT LOCK AND DAM 22 IS 6.91 INCHES, AND THE INFILTRATION RATE OVER THE WATERSHED IS APPROXIMATELY 0.10 INCHES PER HOUR. WATER VELOCITIES IN THE NAVIGATION CHANNEL VARY FROM 2 MILES PER HOUR AT NORMAL FLOWS TO ABOUT 4 MILES PER HOUR AT HIGH FLOWS.

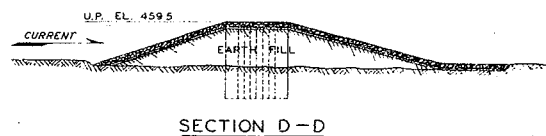
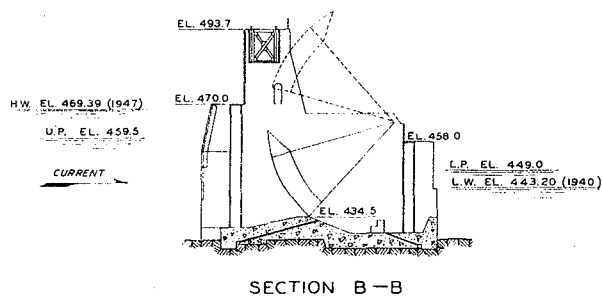
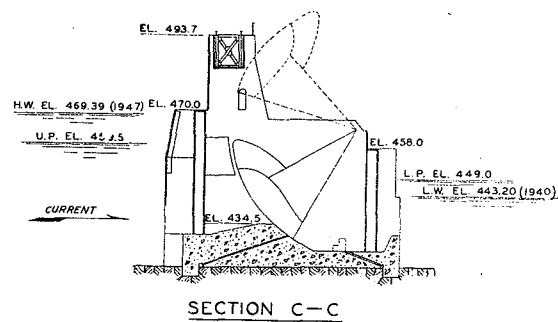
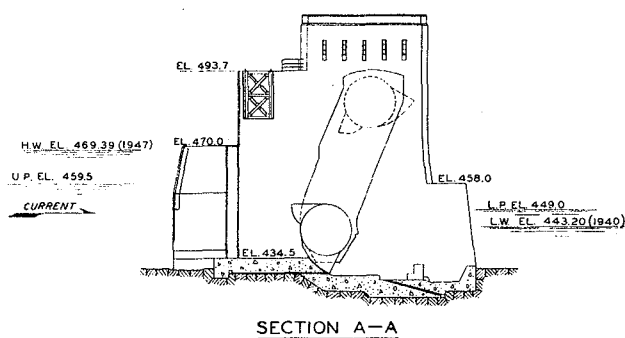
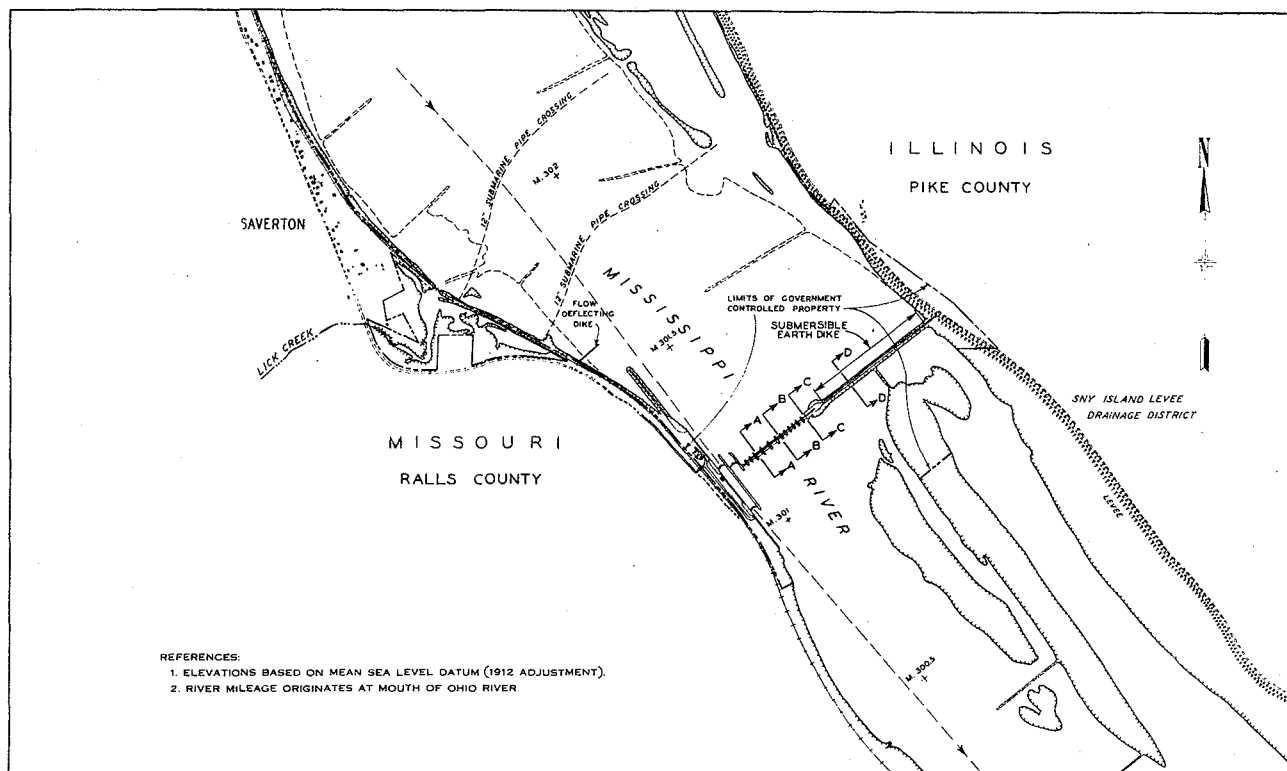
SHORELINE CHARACTERISTICS

THE POOL HAS AN AVERAGE WIDTH OF 0.63 MILES, AND A FLOOD PLAIN OF ABOUT 6 MILES. AGRICULTURAL LEVEES FOLLOW BOTH SHORES THROUGHOUT MOST OF THE POOL REACH, ALTHOUGH IN THE LOWER AREA RISING BLUFFS IN MISSOURI BORDER THE RIVER SHORES. THE MAJORITY OF SHORELINE, BOTH MAINLAND AND ISLAND, IS HEAVILY TIMBERED. HOWEVER, THE FLOOD PLAIN LANDWARD OF THE LEVEE SYSTEMS IS MOSTLY FARMLAND. THE TIMBERED AREAS ARE RESTRICTED TO LANDS LOCATED RIVERWARD OF THE LEVEES AND ALONG STEEPLY SLOPED HILLSIDES.

A TRULY EXTANT MEASUREMENT OF THE SHORELINE IS NOT POSSIBLE BECAUSE OF THE DYNAMIC NATURE OF THE RIVER. THE EVER-CHANGING NATURE OF THE RIVER, THROUGH SILTATION AND ACCRETION, CONTINUOUSLY ALTERS ANY ATTEMPT AT SUCH DELINEATION. NONETHELESS, MEASURED ESTIMATES WERE MADE FOR RELATIVE PURPOSES OF THIS REPORT. COMBINED MAINLAND AND ISLAND SHORELINE TOTAL 103.8 MILES. ISLANDS, INCLUDING ONE BELOW LOCK AND DAM 22, TOTAL 78 IN NUMBER, AND REPRESENT 54.6 MILES OF SHORELINE. ALL ISLANDS ARE FEDERALLY OWNED. THERE ARE 49.2 MILES OF MAINLAND SHORELINE, OF WHICH 34.3 MILES ARE OWNED BY THE FEDERAL GOVERNMENT.

PROJECT STRUCTURE

THE OPERATIONAL STRUCTURES OF LOCK AND DAM 22 ARE SHOWN IN FIGURE 11-2, AND PERTINENT DATA ARE SUMMARIZED IN TABLE 2-1.



SCALE IN FEET

FIGURE II-2
MISSISSIPPI RIVER - POOL 22
OPERATIONAL STRUCTURES

TABLE 2-1

MISSISSIPPI RIVER - POOL 22PERTINENT DATA OF LOCK 22

NORMAL SIZE OF CHAMBER	110' WIDTH x 600' LENGTH
MAXIMUM LIFT	10.5'
ELEVATION OF UPPER MITER SILL	441.5
ELEVATION OF LOWER MITER SILL	435.5
ELEVATION OF CHAMBER FLOOR	435.0
ELEVATION OF TOP OF UPPER APPROACH WALLS	471.5
ELEVATION OF TOP OF LOWER GUIDE WALLS	471.5
ELEVATION OF TOP OF CHAMBER WALL	471.5
NORMAL POOL OPERATION LEVEL	459.5
MAXIMUM ELEVATION PERMITTING NAVIGATION	466.10 TAILWATER ELEVATION
FREEBOARD ON LOWER GUIDE WALL WHEN LOCK BECOMES INOPERATIVE	5.4'
OPERATIVE PERIOD	FEBRUARY THROUGH DECEMBER
TYPE AND HEIGHT OF UPPER GATE	27.0' MITER GATES
TYPE AND HEIGHT OF LOWER GATE	33.0' MITER GATES
LOCK FILLING TIME	7 MINUTES AVERAGE TIME
LOCK EMPTYING TIME	7 MINUTES AVERAGE TIME
PROJECT COST	\$3,943,000
CLOSURE DATE	22 JULY 1938

POOL OPERATION

LOCK AND DAM 22 IS ONE OF 29 LOCKS AND DAMS ON THE MISSISSIPPI RIVER WHICH OPERATE AS A SYSTEM TO PROVIDE 9 FEET OF NAVIGATIONAL DEPTH FROM ST. LOUIS, MISSOURI, TO MINNEAPOLIS, MINNESOTA. THE RESPONSIBILITY FOR REGULATION OF DAM 22 IS WITH THE ROCK ISLAND DISTRICT ENGINEER. WITHIN THE DISTRICT OFFICE, THE PRINCIPAL RESPONSIBILITY IS ASSIGNED TO HYDRAULICS BRANCH, ENGINEERING DIVISION. OPERATING INSTRUCTIONS ARE ISSUED TO THE LOCKMASTER ON A DAILY BASIS.

THE OPERATIONAL PLAN FOR REGULATION OF THE NAVIGATION PROJECT IS CONTAINED IN A DISTRICT REPORT ENTITLED MASTER RESERVOIR REGULATION MANUAL FOR THE MISSISSIPPI RIVER, IOWA, ILLINOIS, AND MISSOURI. THE LOCKS AND DAMS ALONG THE NAVIGATION SYSTEM ARE NOT CAPABLE OF STORING WATER FOR FLOOD CONTROL PURPOSES. LIMITED MANIPULATION OF THE POOL LEVELS IS ACHIEVED TO PROVIDE THE 9-FOOT CHANNEL DEPTH SPECIFIED FOR NAVIGATION PURPOSES. THE MISSISSIPPI RIVER IN POOL 22 GENERALLY FLOWS IN A SOUTHEASTERLY DIRECTION.

THE POOL IS MAINTAINED BETWEEN ELEVATIONS 459.1 AND 459.6 FEET MEAN SEA LEVEL (MSL), DURING NORMAL OPERATIONS OF DAM 22. FIGURE 11-3 SHOWS THE ELEVATION DURATION CURVES FOR VARIOUS LOCATIONS WITHIN THE POOL, AND FIGURE 11-4 SHOWS THE ANNUAL PEAK DISCHARGE VERSUS FREQUENCY CURVE FOR THE MISSISSIPPI RIVER AT LOCK AND DAM 22.

THE DEPTH OF THE NAVIGATION CHANNEL AT THE NORMAL POOL LEVEL VARIES FROM 9 FEET BELOW DAM 21 TO APPROXIMATELY 20 FEET AT DAM 22. THE CHANNEL IS MAINTAINED AT A DREDGED WIDTH OF 400 FEET FOR NAVIGATION PURPOSES.

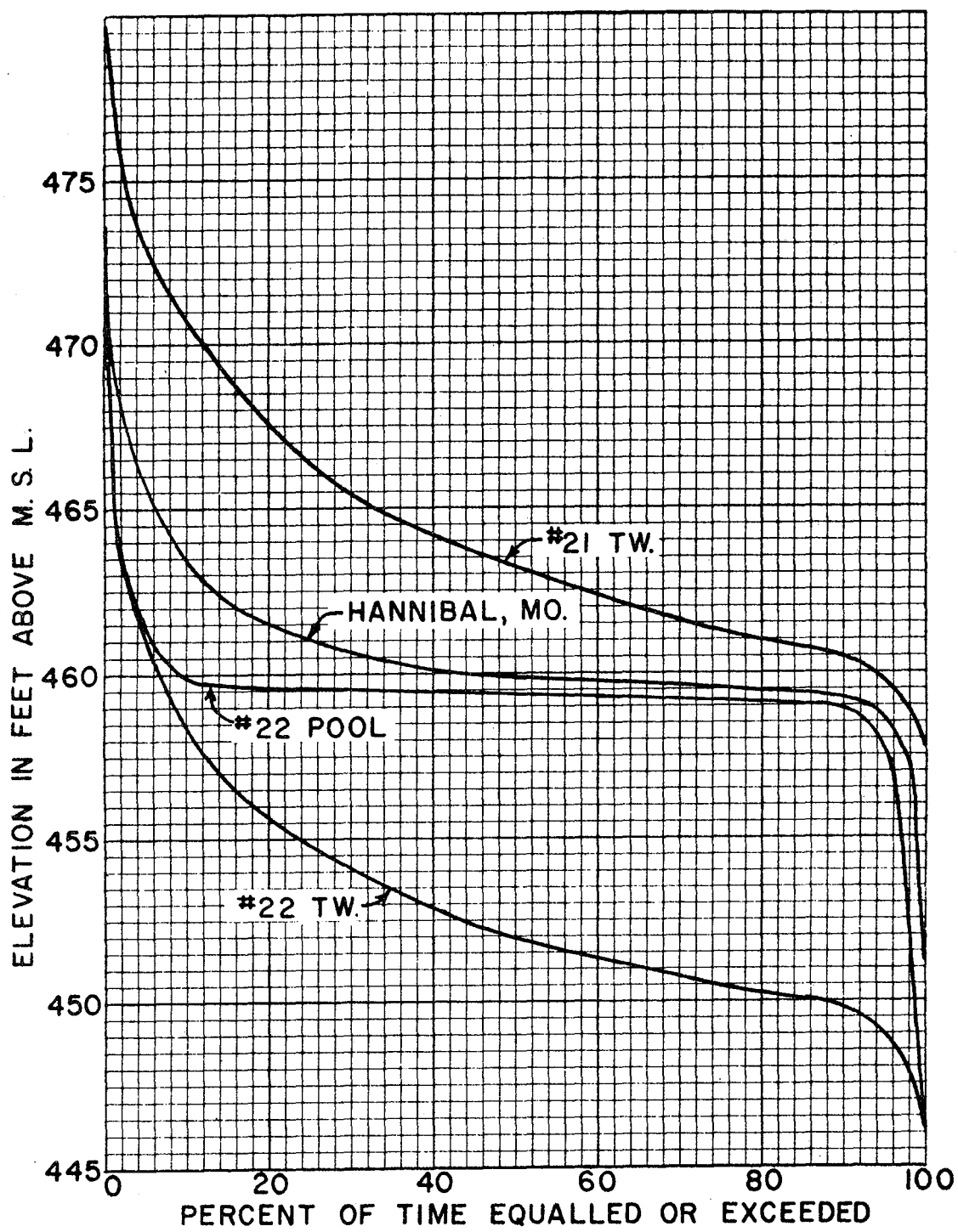


FIGURE II-3
MISSISSIPPI RIVER - POOL 22
ELEVATION - DURATION CURVES

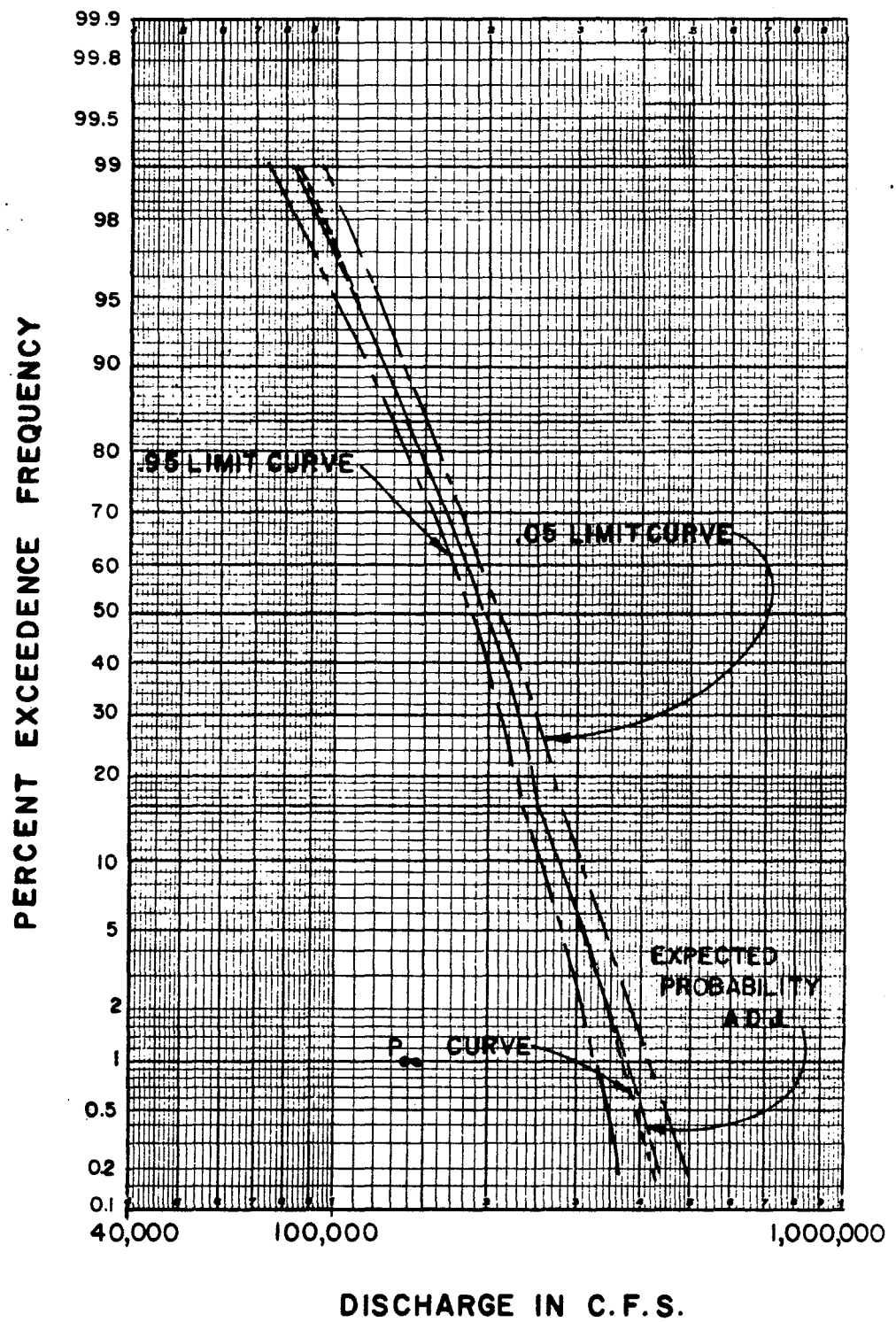


FIGURE II-4
MISSISSIPPI RIVER - POOL 22
ANNUAL PEAK DISCHARGE VS. FREQUENCY CURVE

RECREATION VISITATION

AN EXACT VISITATION ACCOUNT OF ALL THE RECREATION EXPERIENCES OCCURRING ON THE RIVER IS AN UNOBTAINABLE TASK. SUCH FACTORS AS UNCONTROLLED ACCESS, MULTIPLE OWNERSHIPS (PUBLIC, PRIVATE, AND COMMERCIAL), AND VARIETY OF RECREATION OPPORTUNITIES PROHIBIT ANY PRECISE STATISTICAL ACCOUNT. THEREFORE, THE FOLLOWING FIGURES ARE ONLY BEST REPRESENTATIONS FROM AVAILABLE SOURCES AND ESTABLISHED TECHNIQUES. EFFORTS TO IMPROVE VISITATION COUNTS FOR CORPS ADMINISTERED AREAS ARE BEING MADE EACH YEAR THROUGH MORE THOROUGH COORDINATION, USE OF MECHANICAL DEVICES, USER SURVEYS, AND SURVEILLANCE PROCEDURES.

THE FOLLOWING HISTORIC DATA ARE REFERENCED FROM THE RECREATION-RESOURCE MANAGEMENT SYSTEM ANNUAL REPORTS PREPARED BY THE DISTRICT. THIS SYSTEM AND DATA COLLECTION TECHNIQUES ARE EXPLAINED IN ATTACHMENT II.

TABLE 2-2

MISSISSIPPI RIVER - POOL 22

ANNUAL RECREATION DAYS OF USE

	YEAR		
	1981	1982	1983
<u>CORPS PUBLIC USE AREA</u>			
JOHN HAY	78,400	56,700	75,100
LOCK AND DAM 22	43,300	42,600	52,900
PARK-N-FISH	<u>10,000</u>	<u>7,500</u>	<u>7,300</u>
TOTAL	131,700	106,800	135,300

TOTAL RECREATION USE PROJECTIONS AND NEEDS HAVE BEEN PREPARED BY THE GREAT RIVER ENVIRONMENTAL ACTION TEAM II (GREAT II), RECREATION WORK GROUP 1/. THIS TASK GROUP REPORT DEVELOPED TOTAL PROJECTED ANNUAL RECREATION USE TO THE YEAR 2025. TOTAL RECREATION USE PROJECTIONS FOR POOL 22 BY MAJOR ACTIVITY USE WERE ESTIMATED AS FOLLOWS:

TABLE 2-3
MISSISSIPPI RIVER - POOL 22
PROJECTED ACTIVITY DAYS

<u>ACTIVITY</u>	<u>YEAR</u>	
	<u>2000</u>	<u>2025</u>
PICNICKING	49,404	53,198
CAMPING	16,468	17,733
SWIMMING	90,575	97,529
WATER-SKIING	57,638	62,064
BOATING	403,469	434,449
FISHING	444,639	478,780
HUNTING	<u>123,511</u>	<u>132,994</u>
TOTAL	1,646,811	1,773,260

A "BASE YEAR" RECREATION ATTENDANCE, PRESENTED IN THE REPORT FOR COMPARISON AND ANALYSIS OF FUTURE NEEDS, USED AN AVERAGE OF 1977 AND 1978 INFORMATION.

THE BASE YEAR FIGURE FOR POOL 22 WAS 1,566,900 ACTIVITY DAYS. AN ACTIVITY DAY IS DEFINED AS THE ATTENDANCE OF ONE PERSON AT THE AREA FOR THE PURPOSE OF ENGAGING IN ONE OR MORE RECREATIONAL ACTIVITIES FOR ONE DAY OR A FRACTION THEREOF.

1/ GREAT RIVER ENVIRONMENTAL ACTION TEAM II, RECREATION WORK GROUP II, RECREATION APPENDIX, FINAL REPORT, DECEMBER 1980.

PROJECT STATUS

PROJECT STATUS

LAND ACQUISITION - EXISTING

LAND ACQUISITION WITHIN POOL 22 FOR THE 9-FOOT NAVIGATION PROJECT CONSISTS OF APPROXIMATELY 6,200 ACRES, OF WHICH 890 ACRES ARE INUNDATED BY PROJECT OPERATIONS. THE CORPS HAS DIRECT MANAGEMENT OF ONLY 735 ACRES (14%) OF THESE LANDS; THE REMAINING ACRES ARE UNDER THE GENERAL PLAN AND COOPERATIVE AGREEMENT WITH THE U.S. FWS. THE WATER SURFACE AREA WITHIN POOL 22 IS 8,540 ACRES, WITH 1,185 ACRES CLASSIFIED AS CHANNEL AND 7,355 ACRES AS OFF-CHANNEL. THE FOLLOWING LAND ACREAGE FIGURES SUMMARIZE THE CORPS REAL ESTATE HOLDINGS AND TRANSACTIONS FOR POOL 22.

TABLE 3-1

MISSISSIPPI RIVER - POOL 22

LAND ACREAGE

TOTAL PROJECT LANDS 1/

ILLINOIS

ADAMS COUNTY

2,775.70

PIKE COUNTY

1,459.12

MISSOURI

RALLS COUNTY

64.01

MARION COUNTY

1,884.35

TOTAL

6,183.18

FISH AND WILDLIFE AGREEMENT LANDS 2/

ILLINOIS

ADAMS COUNTY

2,390.22

PIKE COUNTY

563.54

MISSOURI

RALLS COUNTY

.90

MARION COUNTY

1,602.97

TOTAL

4,557.63

TABLE 3-1 (CONT'D)

MISSISSIPPI RIVER - POOL 22LAND ACREAGELEASE, LICENSE, OR EASEMENT TO OTHERS

PUBLIC PARK & RECREATION (1)	38.30
COTTAGES (47)	48.30
INDUSTRIAL (1)	34.10
SPECIAL USE (7)	-
UTILITY (8)	22.50
OTHER (1)	<u>16.60</u>

TOTAL	159.80
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1/ 891.05 ACRES PERMANENTLY INUNDATED.2/ EXCLUDES INUNDATED ACREAGE INCLUDED IN THE AGREEMENT.

CHRONOLOGY OF EXPENDITURES

PARK ADMINISTRATION

THE BASE ADMINISTRATIVE AND MAINTENANCE FACILITIES FOR CORPS PARK MANAGEMENT PERSONNEL AND EQUIPMENT FOR THE MISSISSIPPI RIVER PROJECT ARE LOCATED AT LECLAIRE BASE, LOCK AND DAM 14, LECLAIRE, IOWA. DURING THE RECREATION SEASON, STAFF PARK MAINTENANCE PERSONNEL ARE ON A SEMI-PERMANENT, FIELD OPERATION TRAVEL STATUS. A FIELD OFFICE LOCATED AT LOCK AND DAM 21, QUINCY, ILLINOIS, SERVES AS A RANGER STATION FOR TWO PARK RANGERS WHO PATROL PROJECT LANDS WITHIN POOLS 19-22. ROUTINE CARETAKER MAINTENANCE FOR THE CORPS-OPERATED PARKS IS ACCOMPLISHED BY CONTRACT SERVICES. THE PHYSICAL FACILITIES FOR PARK MANAGEMENT PERSONNEL AND EQUIPMENT ARE IDENTIFIED IN THE LECLAIRE BASE INSTALLATION MASTER PLAN, PREPARED BY THE RECREATION-RESOURCES MANAGEMENT BRANCH, OPERATIONS DIVISION, ROCK ISLAND DISTRICT.

THE ANNUAL OPERATION AND MAINTENANCE COSTS FOR THE INDIVIDUAL PARK FACILITIES ARE PRESENTED IN TABLE 3-2. THESE FIGURES INCLUDE CONTRACT COSTS SUCH AS LAW ENFORCEMENT, GRASS CUTTING, AND JANITORIAL SERVICES. RANGER SUPPORT COSTS IN THE FORM OF VISITOR ASSISTANCE, PATROLS AND INSPECTIONS ARE ALSO INCORPORATED INTO THE FIGURES. IN ADDITION, SUPPORT COSTS SUCH AS MAINTENANCE, OVERHEAD AND ADMINISTRATIVE OFFICE COSTS INVOLVING THE RECREATION SITE ARE INCLUDED IN THE TOTAL OPERATION AND MAINTENANCE COSTS DISPLAYED IN TABLE 3-2.

TABLE 3-2

MISSISSIPPI RIVER - POOL 22

ANNUAL RECREATION OPERATION/MAINTENANCE COSTS (\$)

	<u>1981</u>	<u>1982</u>	<u>1983</u>
JOHN HAY	44,000	46,200	47,000
PARK-N-FISH	19,000	20,000	17,100
LOCK AND DAM 22	<u>12,000</u>	<u>12,600</u>	<u>12,200</u>
TOTAL	75,000	78,800	76,300

RECREATION DEVELOPMENT

THERE ARE THREE CORPS MANAGED AND DEVELOPED PUBLIC USE AREAS WITHIN POOL 22. THE TOTAL ACREAGE FOR THESE AREAS IS 9 ACRES. THE PHYSICAL DESCRIPTIONS OF THESE AREAS ARE CONTAINED IN SECTION VII, RESOURCE MANAGEMENT AND DEVELOPMENT PLANS.

CORPS PUBLIC USE AREAS WERE INITIALLY DEVELOPED IN THE MID-SIXTIES AS RIVER ACCESS POINTS FOR BOATING AND FISHING INTERESTS. THE AREAS HAVE GENERALLY EVOLVED FROM MINIMUM FACILITIES THROUGH A SERIES OF IMPROVEMENT PHASES TO UPGRADE SANITARY

FACILITIES OR PROVIDE BASIC MAINTENANCE AND REPLACEMENT NEEDS OR TO PROVIDE IMPROVED MANAGEMENT CONTROL FOR EXISTING USE PRESSURES. AREA DEVELOPMENTS ARE CONSIDERED MINIMAL INTENSIVE USE FACILITIES.

TOTAL INITIAL RECREATION DEVELOPMENT COSTS UNDER FEDERAL EXPENDITURES TO DATE ARE SUMMARIZED BELOW.

TABLE 3-3

MISSISSIPPI RIVER - POOL 22

CORPS INITIAL RECREATION EXPENDITURES

JOHN HAY	\$ 35,000
PARK-N-FISH	15,000
LOCK AND DAM 22	<u>73,000</u>
TOTAL	\$123,000

NON-FEDERAL RECREATION DEVELOPMENT

PUBLIC

A 25-YEAR LEASE TO THE MISSOURI DEPARTMENT OF CONSERVATION IS IN PROCESS FOR PROPOSED BOAT ACCESS DEVELOPMENT ALONG ORTON-FABIUS CHUTE, MARION COUNTY, RIVER MILE 321.3. THE TOTAL ACREAGE FOR THIS AREA IS 38.3 ACRES, AND ESTIMATED DEVELOPMENT COST IS \$. THE PHYSICAL DESCRIPTION OF THIS AREA AND DEVELOPMENT PROPOSAL IS CONTAINED IN SECTION VII, RESOURCE MANAGEMENT AND DEVELOPMENT PLANS.

THERE ARE NO OTHER RECREATION DEVELOPMENTS BY OTHER PUBLIC AGENCIES LOCATED ON PROJECT LANDS.

PRIVATE

THERE ARE 47 COTTAGE SITE LEASES AND 7 SPECIAL USE LICENSES WHICH ARE ISSUED ON PROJECT LANDS. SUCH USES ARE CONSIDERED RECREATIONAL AND TOTAL APPROXIMATELY 48 ACRES. THESE USES ARE DISCUSSED FURTHER IN SECTION IX, SPECIAL PROBLEMS. IMPROVEMENTS ARE MADE AT THE FULL EXPENSE OF THE APPLICANT FOR DEVELOPMENT, MAINTENANCE, AND RESTORATION, AS SPECIFIED IN THE TERMS OF THE AGREEMENT.

OTHER USES

A TOTAL OF APPROXIMATELY 73 ACRES OF PROJECT LAND HAVE BEEN MADE AVAILABLE TO OTHER INTERESTS FOR EITHER RIGHT-OF-WAY OR COMMERCIAL DEVELOPMENT PURPOSES. SUCH REQUESTS ARE EVALUATED ON A CASE-BY-CASE BASIS, AND MUST DEMONSTRATE THAT SUITABLE PRIVATE LANDS ARE NOT AVAILABLE TO MEET SUCH NEEDS. IMPROVEMENTS ARE MADE AT THE FULL EXPENSE OF THE APPLICANT FOR DEVELOPMENT, MAINTENANCE, AND RESTORATION, AS SPECIFIED IN THE TERMS OF THE AGREEMENT.

**ENVIRONMENTAL AND RECREATIONAL
RESOURCES OF THE PROJECT AREA**

ENVIRONMENTAL AND RECREATIONAL
RESOURCES OF THE PROJECT AREA

GEOLOGICAL

THE BEDROCK IN THE POOL 22 AREA IS OF THE UPPER ORDOVICIAN (MAQUOKETA) AND LOWER MISSISSIPPIAN (KINDERHOOKIAN) AGES. A SMALL AREA OF DEVONIAN (MIDDLE) AGE OCCURS NEAR THE COUNTY BOUNDARY LINE (ADAMS, PIKE) IN ILLINOIS, OTHERWISE, A COMPLETE UNCONFORMITY EXISTS OF INTERVENING SILURIAN AND DEVONIAN STRATA. THE BEDROCK FORMATIONS CONSIST OF VARIOUS LIMESTONE AND SHALE LAYERS, OVERLAIN WITH PLEISTOCENE AGE GLACIAL AND RECENT ALLUVIAL DEPOSITS AS MUCH AS 100 FEET IN DEPTH. THE MISSISSIPPIAN FORMATIONS ARE CALCAREOUS, AND CAVES ARE KNOWN TO EXIST WITHIN THE BLUFFS LOCATED IN MISSOURI BELOW HANNIBAL. THE CAVES CONSTITUTE A MAJOR RECREATIONAL AND HISTORICAL ASPECT OF THE AREA.

ARCHAEOLOGICAL

WITHIN THE PROJECT VICINITY THERE ARE SOME 112 RECORDED PREHISTORIC ARCHAEOLOGICAL SITES, REPRESENTING THE EARLY ARCHAIC THROUGH LATE WOODLAND PERIODS. MOST OF THESE SITES ARE LOCATED ALONG THE ILLINOIS SIDE WITHIN PIKE COUNTY. TABLE 4-1 PRESENTS RECORDED ARCHAEOLOGICAL SITES FOR THE POOL 22 AREA.

TABLE 4-1

MISSISSIPPI RIVER - POOL 22RECORDED ARCHAEOLOGICAL SITES

<u>STATE/COUNTY</u>	<u>CULTURAL AFFILIATION</u>					<u>TOTAL</u>
	<u>ARCHAIC</u>	<u>HOPEWELL</u>	<u>GENERALIZED WOODLAND</u>	<u>MULTI- COMPONENT</u>	<u>UNKNOWN</u>	
ILLINOIS						
MARION	0	1	4	1	14	20
RALLS	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>9</u>	<u>11</u>
TOTAL	0	1	5	2	23	31
MISSOURI						
ADAMS	1	0	4	1	22	28
PIKE	<u>4</u>	<u>8</u>	<u>19</u>	<u>6</u>	<u>16</u>	<u>53</u>
TOTAL	5	8	23	7	38	81
TOTAL	5	9	28	9	61	112

SOURCE: GREAT RIVER ENVIRONMENTAL ACTION TEAM II, CULTURAL RESOURCE WORK GROUP II, CULTURAL RESOURCES OF THE UPPER MISSISSIPPI VALLEY: GUTTENBERG, IOWA TO SAVERTON, MISSOURI, VOL. I AND II, MAY 1978.

NOT ALL OF THE SITES IDENTIFIED IN TABLE 4-1 ARE LOCATED ON PROJECT LANDS, BUT ALL ARE WITHIN THE IMMEDIATE FLOOD PLAIN AREA. FEW SITES HAVE BEEN INTENSIVELY STUDIED AND APPROXIMATELY 54% ARE OF UNKNOWN AFFILIATION; THUS, THE IMPORTANCE OF THESE SITES IS UNKNOWN. AT THIS TIME, NONE OF THE PREHISTORIC ARCHAEOLOGICAL SITES ARE LISTED OR ELIGIBLE FOR LISTING IN THE NATIONAL REGISTER OF HISTORIC PLACES. SIGNIFICANT HISTORIC AREAS WITHIN THE STUDY AREA ARE IDENTIFIED IN SECTION V, FACTORS INFLUENCING AND CONSTRAINING RESOURCE DEVELOPMENT AND MANAGEMENT.

A SYSTEMATIC SURVEY OF POOL 22 PROJECT LANDS HAS NEVER BEEN PERFORMED. PREVIOUS ARCHAEOLOGICAL SURVEY INVESTIGATIONS BEGINNING FROM AS EARLY AS 1933 (GRIFFIN) AND

1939-56 (EICHENBERGER AND MOHRAN) TO THE RECENT EFFORTS BETWEEN 1970-77 (BRAY, CLARK, DEEGAN-ROSE, EVANS, FARNSWORTH, AND TANDARICH) ARE, TYPICALLY, REPORTINGS OF PROJECT OR SITE SPECIFIC UNDERTAKINGS. SITE SPECIFIC INFORMATION AND EVALUATION IS UNAVAILABLE FOR PROJECT LANDS UNTIL FURTHER INVESTIGATIONS ARE PERFORMED. A CULTURAL RESOURCE PROGRAM FOR THE ENTIRE PROJECT IS UNDER PREPARATION AS PART OF THE OPERATIONAL MANAGEMENT PLAN (SEE SECTION X FOR PLAN DISCUSSION). ESTABLISHED CULTURAL STATUS FOR ALL PROJECT LANDS WILL BE PRESENTED AND ADDRESSED IN THE PLAN.

EFFORTS ARE BEING MADE AT THE FEDERAL AND STATE LEVELS TO DEVELOP REGIONAL RESEARCH DESIGNS THAT WILL IDENTIFY RESEARCH OBJECTIVES AND METHODS IN RELATION TO STUDY UNITS IN ACCORDANCE WITH THE RESOURCE PROTECTION PLANNING PROCESS (RP3) DEVELOPED BY THE NATIONAL PARK SERVICE UNDER THE AUSPICES OF THE SECRETARY OF THE INTERIOR. THIS PROCEDURE WAS DESIGNED TO ESTABLISH REFINED RESOURCE SPECIFIC NEEDS ON REGIONAL AND STATE BASES THAT WILL IMPROVE THE IDENTIFICATION, EVALUATION AND MANAGEMENT PROCESSES IN RELATION TO NATIONAL REGISTER OF HISTORIC PLACES GUIDELINES AND OTHER RELEVANT HISTORIC PRESERVATION REGULATIONS. THE STATE OF ILLINOIS HAS BEGUN TO DEVELOP AN RP3 FOR PREHISTORIC RESOURCES IN THE SOUTHERN PORTION OF THE STATE AND THERE ARE PLANS FOR BEGINNING RP3 DEVELOPMENT FOR HISTORIC PERIOD RESOURCES IN THE FALL OF 1983. THE STATE OF MISSOURI HAS NOT COMPLETED AN RP3 FOR THE POOL 22 AREA.

IN 1980, THE ROCK ISLAND DISTRICT INITIATED TWO PRELIMINARY ARCHAEOLOGICAL, HISTORICAL, AND GEOMORPHOLOGICAL STUDIES IN POOLS 12 AND 16 TO FULFILL RESPONSIBILITIES UNDER EXECUTIVE ORDER 11593 WHICH REQUIRES THE IDENTIFICATION OF SIGNIFICANT CULTURAL RESOURCES UNDER OUR JURISDICTION. THE PURPOSE OF THESE INVESTIGATIONS WAS TO DEVELOP PRELIMINARY PREDICTIVE SETTLEMENT MODELS BASED UPON THE IDENTIFICATION OF PREHISTORIC AND EARLY HISTORIC LAND SURFACES. ALTHOUGH THE ENVIRONMENTAL AND CULTURAL MANIFESTATIONS WITHIN THE POOL 22 AREA ARE DIFFERENT FROM

POOLS 12 AND 16, IT IS ANTICIPATED THAT THE EPISTEMOLOGICAL APPROACH, THE LOGISTICAL CONSIDERATION, AND THE METHODS USED CAN BE APPLIED TO ANY SIMILAR WORK CONDUCTED AT POOL 22. IDEALLY, EACH OF THE POOLS WILL BE STUDIED IN THE FUTURE, ON BOTH PRELIMINARY AND INTENSIVE BASES.

HISTORICAL

THE HISTORIC LEGACY FOR THE POOL 22 REGION IS TYPICAL OF MIDWESTERN SETTLEMENT PATTERNS ALONG A MAJOR RIVER WATERWAY OF THE GREAT PLAINS. THE REMOVAL OF ABORIGINAL INHABITANTS THROUGH THE ESTABLISHMENT OF THE INDUSTRIAL AND AGRICULTURAL ERA IS WELL DOCUMENTED IN RECORD AND REMNANT SOURCES. TODAY, THE AREA IS A STRONG TOURIST ATTRACTION WHICH HAS POPULARIZED LOCAL HISTORIC HERITAGE. THE CITIES OF QUINCY, ILLINOIS, AND HANNIBAL, MISSOURI, ARE VERY ACTIVE IN THE PRESERVATION OF HISTORIC RESOURCES. STATE SURVEY RECORDS FOR HISTORIC LANDMARKS AND STRUCTURES LIST NUMEROUS SITES WITHIN THE BORDERING COUNTIES AND COMMUNITIES, MANY OF WHICH ARE ALSO LISTED IN THE NATIONAL REGISTER OF HISTORIC PLACES. HOWEVER, THERE ARE NO KNOWN SITES OF NATIONAL REGISTER SIGNIFICANCE LOCATED ON PROJECT LANDS. SIGNIFICANT HISTORIC SITES OF RELATED PROJECT INTEREST ARE IDENTIFIED IN SECTION V.

THE EARLY HISTORIC PERIOD (1500-1800) WITNESSED THE REMOVAL OF THE HISTORIC NATIVE INDIAN TRIBES (SAUK AND FOX), THAT BECAME SUPPLANTED BY THE EUROPEAN (FRENCH) FUR TRADE COMMUNITIES AND MIDWESTERN SETTLEMENT. HISTORIC ARCHAEOLOGICAL SITES COVERING THIS PERIOD ARE COMMON THROUGHOUT THE FLOOD PLAIN, SINCE THE RIVER WAS A PRIMARY TRANSPORTATION ROUTE AND VALUED RESOURCE. THE STEAMBOAT ERA, WITH ITS HEIGHT DURING THE 1850'S, BROUGHT RAPID DEVELOPMENT TO THE AREA, PARTICULARLY HANNIBAL AND QUINCY.

HOWEVER, OTHER RIVER COMMUNITIES (MARION CITY AND TULLY NEAR RIVER MILE 318.5, MISSOURI) WERE NOT AS SUCCESSFUL, AND WERE EVENTUALLY ABANDONED AS A RESULT OF MAJOR FLOODING (1851) OR LACK OF FAVORED RAIL SERVICE. IT IS THIS PERIOD (1835-1910) THAT IS MOST POPULARIZED BY THE TOURIST INTERESTS, AND CHARACTERISTICALLY PRESERVED IN THE STRUCTURAL REMNANTS AND FOLKLORE OF THE AREA.

ECOLOGICAL

THE FOLLOWING ECOLOGICAL INFORMATION IS INTENDED AS GENERAL DESCRIPTION OF THE BIOLOGICAL ELEMENTS AND ENVIRONMENTAL CONDITIONS, AND NOT AN APPROPRIATE SOURCE DOCUMENT FOR CITE REFERENCE. NOTATION IS MADE IN THE DISCUSSION OF SOURCE MATERIAL WHEN APPLICABLE.

FLORA

PROJECT LANDS REPRESENT THE FEW REMAINING AREAS OF UNDEVELOPED BOTTOMLAND FOREST. TYPICALLY, FLOOD PLAIN AND FLAT UPLAND AREAS ARE INTENSIVELY FARMED. HOWEVER, WELL-FORESTED BLUFFS FLANK BOTH SIDES OF THE POOL 22 FLOOD PLAIN. THE DEVELOPMENT OF FOREST COMMUNITIES WITHIN POOL 22 IS CONTROLLED LARGELY BY THE GROUND WATER ELEVATION OF THE AREA AND FREQUENCY OF FLOODING OCCURRENCES. READILY APPARENT BOUNDARIES SEPARATE THE RIVER LOWLAND COMMUNITY FROM THE MORE ELEVATED, BETTER DRAINED BOTTOMLAND COMMUNITY, AND BOTH OF THESE FROM THE SHARPLY DIFFERENT BLUFF ASSOCIATIONS. INDIVIDUAL SPECIES COMMONLY TRANSCEND THESE BOUNDARIES, BUT ASSOCIATIONS OF SPECIES GENERALLY RESPECT THE BOUNDARIES.

RIVER LOWLAND SITES INCLUDE SANDBARS, VEGETATED SANDBARS, AND FORESTED AREAS INTERSPERSED WITH GRASSY PATCHES AND MARSH. TYPICAL PLANT SPECIES THAT OCCUPY THESE AREAS ARE WILLOW, COTTONWOOD, ELM, AND BUTTONBUSH. SUCH SITES ARE COMMON NORTH OF HANNIBAL, PARTICULARLY ON WARD, FABIUS, GOOSE, AND McDONALD ISLANDS.

THE PIONEER STAGES OF LOWLAND SITES DEVELOP SUCCESSIONALLY TO MORE DOMINANT SHADE-TOLERANT SPECIES WITH THE ACCOMPANYING REDUCTIONS OF MOIST SOIL CONDITIONS. SILVER MAPLE, ELM, ASH, AND BIRCH SEED INTO DECLINING WILLOW-COTTONWOOD STANDS, AND EVENTUALLY BECOME THE DOMINANT ASSOCIATIONS. IN SELECT AREAS WHERE SEDIMENT ACCUMULATION HAS ELEVATED THE SITES AND BETTER SOIL DRAINAGE EXISTS, SPECIES SUCH AS HACKBERRY, HICKORY, AND OAK HAVE BEEN ABLE TO DEVELOP. THE GROUND LAYER VEGETATION THAT IS PREDOMINANT WITHIN THE DENSELY FORESTED AREAS CONSISTS OF POISON IVY, WOODNETTLE, GRAPE, RAGWEED, AND BUR CUCUMBER.

FAUNA

THE WHITE-TAILED DEER, RED FOX, GRAY FOX, COYOTE, RACCOON, WOODCHUCK, GRAY SQUIRREL, FOX SQUIRREL, STRIPED SKUNK, OPOSSUM, COTTONTAIL RABBIT, AND LONGTAILED WEASEL ARE COMMON LAND-DWELLING SPECIES IN THE POOL 22 AREA. VARIOUS SEMI-AQUATIC MAMMALS THAT MAY ALSO INHABIT THE ENVIRONS ARE MUSKRAT, MINK, BEAVER, AND RIVER OTTER. FUR-PRODUCING MAMMALS OF POPULAR INTEREST TO TRAPPERS ARE MUSKRAT, MINK, BEAVER, RACCOON, AND BOTH FOX SPECIES. MINK, MUSKRAT, AND BEAVER PREFER THE MARSHES AND SLOUGHS; THE RACCOON AND WEASEL DESIRE BOTH THE MARSH AND FOREST AREAS. DEER, FOX, SQUIRREL, AND RABBIT ARE TYPICAL FAUNA THROUGHOUT THE BOTTOMLAND FOREST. OTHER IMPORTANT SMALL MAMMALS INCLUDE THE LEAST SHREW, EASTERN MOLE, PLAINS POCKET GOPHER, AND PRAIRIE WHITEFOOT MOUSE.

THE RIVER ENVIRONS ARE PART OF A MAJOR NORTH-SOUTH MIGRATION ROUTE FOR AVIAN WILDLIFE KNOWN AS THE MISSISSIPPI RIVER FLYWAY, WHICH IS OF BOTH NATIONAL AND INTERNATIONAL SIGNIFICANCE. NEARLY 300 SPECIES OF BIRDS ARE KNOWN TO FREQUENT THE AREA, AND SOME 100 SPECIES USE THE RIVER CORRIDOR FOR NESTING. WHILE POOL 22 OFFERS A WIDE VARIETY OF BIRD HABITAT TYPES, RANGING FROM DRY BLUFF FORESTS TO MARSH RIVER BACKWATERS, THE RELATIVE LACK OF LOW ISLAND SLOUGH HABITAT DISCOURAGES HEAVY USE BY SHORE AND MARSH BIRDS AND SURFACE-FEEDING DUCKS. THE WOODED BOTTOMLAND AND BLUFFS THAT FLANK THE RIVERCOURSE PROVIDE SUITABLE HABITAT CONDITIONS FOR MANY AVIAN SPECIES. THE POOL ENVIRONS ARE USED BY BOTH RESIDENT AND MIGRATORY BIRDS.

UPLAND BIRDS COMMON IN THE POOL AREA ARE THE BOBWHITE QUAIL AND TURKEY. VARIED SPECIES OF HAWKS, DOVES, AND OWLS ARE COMMON RESIDENTS, WHILE THE OSPRY AND PEREGRINE FALCON ARE OCCASIONAL MIGRANT VISITORS. THE BALD EAGLE OCCURS AS A REGULAR MIGRANT AND WINTER RESIDENT WITHIN THE PROJECT AREA. COMMON AND RESIDENT SONGBIRDS INCLUDE WOODPECKERS, LARK, CROW, BLUE JAY, CHICKADEE, TITMOUSE, NUTHATCH, WREN, MOCKINGBIRD, ROBIN, AND SPARROWS.

SEASONAL (SPRING AND FALL) MIGRATIONS OF WATERFOWL AND SHOREBIRDS THAT TRAVEL THE MISSISSIPPI ARE SEEN IN THE POOL AREA FOR THEIR NESTING AND FEEDING NEEDS. THE MALLARD IS THE MOST COMMON SURFACE FEEDING DUCK WITH COOT, GADWALL, AMERICAN WIDGEON, PINTAIL, AND GREEN-WINGED TEAL ALSO PRESENT. DIVING DUCKS ARE REPRESENTED BY LESSER AND GREATER SCAUP, REDHEAD, CANVASBACK, AND GOLDENEYE. THE HERON, GREBE, EGRET, SNIPE, WOODCOCK, AND KILLDEER ARE ALSO COMMON WITHIN THE POOL AREA.

COMMON AMPHIBIANS AND REPTILES ARE SMALL-MOUTHED SALAMANDER, NORTHERN SPRING PEEPER, BULLFROG, SOUTHERN LEOPARD FROG, FIVE-LINED SKINK, WESTERN RIBBON SNAKE, RED-SIDED

GARTER SNAKE, AND BLACK RAT SNAKE. UPLAND FOREST SPECIES ALSO INCLUDE THE PRAIRIE RINGNECK SNAKE, NORTHERN COPPERHEAD, AND THE TIMBER RATTLESNAKE. COMMON UPLAND FIELD SPECIES INCLUDE ALSO THE ORNATE BOX TURTLE AND EASTERN GARTER SNAKE.

AQUATIC

MARSH. THE MARSHLAND COMMUNITY OF WET-SOIL AND EMERGENT AND ASSOCIATED AQUATIC PLANTS OCCURS IN LIMITED QUANTITIES THROUGHOUT THE POOL AS NARROW SCATTERED FRINGES ALONG THE EDGES AND BACKWATERS OF SLOUGHS, PONDS, AND SIDE CHANNELS WHERE WATER CURRENTS ARE SLOWER. THE POOL IS LESS THAN A MILE WIDE THROUGH THIS SECTION OF THE RIVER AS IT IS RESTRICTED BY NUMEROUS LEVEE AND RAILROAD EMBANKMENTS. THE BROAD FLOOD PLAIN EAST OF THE POOL BELOW HANNIBAL, AND ON BOTH SIDES OF THE POOL NORTH TO LOCK AND DAM 21 CONTAINS MANY MEANDERING STREAMS, RIVER SCARS, PONDS, LAKES, AND SLOUGHS AMONG AGRICULTURAL FIELDS. THESE WATER BODIES AND LOWLANDS CONTAIN MANY POCKETS OF MARSH/AQUATIC COMMUNITY COMPLEXES. THE AREA IN THE SOUTH QUINCY DRAINAGE AND LEVEE DISTRICT IS AN EXAMPLE OF HABITAT SUPPORTING MARSHLAND/AQUATIC VEGETATION COMMUNITIES.

MARSHES ARE A COMPLEX ECOSYSTEM OF PLANT SPECIES AND COMMUNITIES DEPENDENT ON WATER DEPTHS, CURRENTS, AND TURBIDITY. SOILS THAT LIE JUST ABOVE THE WATER TABLE OR THOSE THAT ARE FREQUENTLY FLOODED ARE TYPIFIED BY SEDGES (FORMING SEDGE MEADOWS OR TERRESTRIAL MARSHES), GRASSES, OTHER BROAD-LEAVED HERBS, AND AN OCCASIONAL SHRUB. THE SHALLOW WATER AREAS TYPICALLY SUPPORT EMERGENT PLANTS SUCH AS CATTAILS, BULRUSHES, AND ARROWHEADS. DUCKWEEDS, COONTAIL, AND OTHER FLOATING AQUATIC PLANTS, AS WELL AS THE ROOTED SUBMERGED PLANTS SUCH AS CANADA WATERWEED AND PONDWEEDS ALSO MAY OCCUR IN THE QUIET WATERS AMONG THE EMERGENT VEGETATION. THE DEEPER WATER MARSHES USUALLY

CONTAIN SEMI-EMERGENT PLANTS, SUCH AS LOTUS AND WATER LILIES, AS WELL AS A FULL RANGE OF ROOTED SUBMERGED PLANTS IF THE WATER IS CLEAR ENOUGH TO ALLOW ADEQUATE LIGHT TO PENETRATE.

BENTHIC. THE ACTUAL BENTHIC (ORGANISMS WHICH LIVE ON THE BOTTOM OF WATER BODIES) COMMUNITY EXISTING IN POOL 22 IS UNCERTAIN, BECAUSE OF LIMITED AVAILABLE DATA COLLECTION. THE KNOWN PRESENCE OF FISH POPULATIONS THAT FEED UPON SUCH ORGANISMS, HOWEVER, IS AN INDICATOR OF THEIR SUFFICIENT ABUNDANCE TO SUPPORT THESE SPECIES. BENTHIC DATA COLLECTED IN STUDIES PERFORMED BY QUINCY COLLEGE IN POOL 21 ARE FELT TO BE CHARACTERISTIC OR SIMILAR TO THAT WHICH COULD BE FOUND TO EXIST IN POOL 22.

THE DIVERSITY AND ABUNDANCE OF BENTHIC ORGANISMS ARE GENERALLY LOW IN SANDY, SCoured SUBSTRATE COMMON NEAR THE CHANNEL. IN THAT, THE OFF-CHANNEL BACKWATER MUDDY SUBSTRATES ARE WHERE SUCH POPULATIONS COMMONLY THRIVE. SOME TWENTY-SEVEN SPECIES COULD BE EXPECTED TO EXIST WITHIN POOL 22, WITH CADDISFLY LARVAE, MAYFLIES, AND CHIRONOMIDS BEING THE MOST ABUNDANT.

MUSSELS. SURVEYS CONCERNING MUSSEL POPULATIONS HAVE BEEN SPONSORED BY THE CORPS, ^{1/} PRIVATE COMMERCIAL INTERESTS, AND INSTITUTIONS WITHIN THE POOL AREA FOR A VARIETY OF REASONS. EMPHASIS OF SUCH SURVEYS HAS BEEN SITE SPECIFIC, AND A COMPLETE IDENTIFICATION OF AVAILABLE MUSSEL BED LOCATIONS IS NOT AVAILABLE. FINDINGS CONCERNING BEDS OF LIVE MUSSELS HAVE IDENTIFIED SOME 20 DIFFERENT SPECIES OF MUSSELS, WITH THE THREE-RIDGE MUSSEL BEING THE MOST ABUNDANT FIND. RECENTLY (1981) REPORTED LOCATIONS OF MUSSEL BED AND DOMINANT SPECIES LOCATED IN POOL 22 ARE AS FOLLOWS:

^{1/} LEWIS, RANDALL. SURVEY OF FRESHWATER MUSSELS (PELECYPODA: UNIONACEA) AT SELECTED SITES IN POOLS 11 THROUGH 24 OF THE MISSISSIPPI RIVER, ECOLOGICAL ANALYSIS, INC., NORTHBROOK, ILLINOIS, 1981.

* RIVER MILES 321.2-323.5 ALONG THE MISSOURI SHORELINE AND EAST BANKS OF ORTON AND FABIVS ISLANDS. (12 DIFFERENT SPECIES - HICKORY-NUT DOMINANT SPECIES).

* RIVER MILE 320.4 ALONG WESTERN SHORELINE TIP OF GOOSE ISLAND. (14 SPECIES - WARTY-BACK AND PINK PAPER-SHELL DOMINANT SPECIES).

* RIVER MILE 320 ALONG MISSOURI MAIN SHORELINE NEAR NORTHWEST MISSOURI POWER STATION SITE. (18 DIFFERENT SPECIES - MAPLE-LEAF AND HICKORY-NUT DOMINANT SPECIES).

* RIVER MILE 316.7 ALONG WESTERN SHORELINE OF BEEBE ISLAND. (14 SPECIES - THREE-RIDGE AND PINK PAPER-SHELL DOMINANT SPECIES).

* RIVER MILE 311.6 ALONG WESTERN SHORELINE OF TURTLE ISLAND. (14 SPECIES - THREE-RIDGE AND THREE-HORNED WARTY-BACK DOMINANT SPECIES).

* BELOW LOCK AND DAM 22 BETWEEN RIVER MILES 300-301 ALONG MISSOURI MAIN SHORELINE. (11 SPECIES - THREE-RIDGE AND WASHBOARD DOMINANT SPECIES).

* BELOW LOCK AND DAM 22 AT SOUTHERN TIP OF COTTEL ISLAND. (11 SPECIES - THREE-RIDGE AND WARTY-BACK DOMINANT SPECIES).

FISHERIES. THERE HAVE BEEN 77 SPECIES OF FISH RECORDED IN POOL 22; OF THESE, 30 ARE CONSIDERED COMMON. FISH UTILIZE EVERY AVAILABLE PORTION OF THE POOL; HOWEVER, THE OFF-CHANNEL AREAS PROVIDE THE ESSENTIAL SPAWNING, REARING, RESTING, AND FEEDING HABITAT FOR THE MAJORITY OF SPECIES.

WITHIN POOL 22, SHOVELNOSE STURGEON, PADDLEFISH, CHANNEL CATFISH, FRESHWATER DRUM, WALLEYE, SAUGER, AND BIGMOUTH AND SMALLMOUTH BUFFALO GENERALLY LIVE IN THE MAIN CHANNEL. MOONEYE ALSO OCCUR IN THE MAIN CHANNEL IN THE SPRING. ALL OF THESE SPECIES TEND TO MIGRATE BETWEEN THE MAIN CHANNEL AND BORDER, AND INTO SHALLOWER WATERS DURING PERIODS OF HEAVY FLOODING.

THE BACKWATER AREAS BEHIND WING DAMS ARE PRIMARY HABITAT FOR WHITE BASS, BLACK AND WHITE CRAPPIES, SHORT AND LONGNOSE GAR, WALLEYE, SAUGER, AND GIZZARD SHAD. PADDLEFISH, BLUEGILL, LARGEMOUTH BASS, WHITE BASS, AND YELLOW BASS ALSO ARE FOUND BEHIND THE WING DAMS.

STUMP FIELDS ARE PARTICULARLY VALUABLE AS SPAWNING SITES FOR CHANNEL CATFISH. OTHER FISHES THAT INHABIT STUMP FIELDS INCLUDE LARGEMOUTH BASS, BLUEGILL, AND BLACK AND WHITE CRAPPIES.

FISH FOUND IN THE SLOUGH HABITAT INCLUDE BOWFIN, NORTHERN PIKE, BLUEGILL, BLACK AND WHITE CRAPPIES, WARMOUTH, CARP, AND FORAGE FISHES.

SPECIES INHABITING QUIET BACKWATERS EXCLUSIVELY OR EXTENSIVELY INCLUDE NORTHERN PIKE, BIGMOUTH AND SMALLMOUTH BUFFALO, BLACK AND WHITE CRAPPIES, LARGEMOUTH BASS, BULLHEAD, BOWFIN, CARP, FRESHWATER DRUM, RIVER CARPSUCKER, AND WARMOUTH. OTHER SPECIES OFTEN FOUND IN THIS HABITAT ARE SILVER CHUB, EMERALD SHINER, RIVER SHINER, SPOTTAIL SHINER, AND SPOTFIN SHINER. WALLEYE AND SAUGER OCCASIONALLY OCCUR IN THE QUIET BACKWATER AREAS.

THE SIZE OF THE POPULATIONS OF ANY SPECIES WITHIN THE POOL IS ABOUT PROPORTIONAL TO THE AREA OF ITS PREFERRED HABITAT. THE MOST ABUNDANT SPECIES IN POOL 22 INCLUDE THOSE ASSOCIATED WITH THE MAIN CHANNEL, MAIN CHANNEL BORDER, AND SIDE CHANNELS SINCE SUCH HABITAT COMPRISES MOST OF THE POOL. RIVER LAKE HABITAT EXTENDS APPROXIMATELY 3 MILES UPSTREAM FROM LOCK AND DAM 22 AND OCCURS IN SMALL ISOLATED PERIPHERAL AREAS FARTHER NORTH BUT THERE ARE ALMOST NO STUMP FIELDS IN THESE AREAS. SMALL AREAS OF SLOUGHS ARE PRESENT NEAR ISLANDS AND SHORELINE THROUGHOUT THE POOL BUT ARE MOST NUMEROUS SOUTH OF ARMSTRONG ISLAND.

VECTOR CONTROL

CONTROL OF INSECTS OR OTHER ORGANISMS THAT TRANSMIT PATHOGENS IS IMPLEMENTED UPON DOCUMENTED NEED AS DETERMINED BY STATE OR LOCAL PUBLIC HEALTH DEPARTMENTS. ALL VECTOR CONTROL MEASURES ARE COORDINATED WITH THE RESPECTIVE HEALTH DEPARTMENTS PRIOR TO IMPLEMENTATION. LICENSED COMMERCIAL PESTICIDE APPLICATORS ARE UTILIZED FOR VECTOR CONTROL MEASURES.

PEST CONTROL

ALL USES OF PESTICIDES ARE REVIEWED BY THE CORPS DISTRICT PESTICIDE OFFICER AND SUBMITTED TO THE NORTH CENTRAL DIVISION FOR APPROVAL PRIOR TO USE. MECHANICAL OR PHYSICAL CONTROL OF PESTS IS USED WHEN PRACTICAL. PESTICIDE SELECTION IS BASED ON EFFECTIVENESS, TOXICITY, SAFETY TO THE APPLICATOR, AND OTHER RELEVANT ENVIRONMENTAL CONSIDERATIONS.

BURROWING MAMMALS SUCH AS GROUNDHOGS (MARMOTA MONAX) AND MUSKRAT (ONDATRA ZIBETHICA) MAY SIGNIFICANTLY AFFECT THE INTEGRITY OF FLOOD CONTROL LEVEES OR LOCK AND DAM STRUCTURES. WHEN BURROWS CREATE A STRUCTURAL PROBLEM, EITHER MECHANICAL TRAPPING OR SUFFOCANT GAS BOMBS ARE USED.

PIGEON AND STARLING CONTROL ON THE LOCK AND DAM STRUCTURES MAY BECOME NECESSARY DUE TO THE HEALTH AND SAFETY FACTOR CAUSED BY LARGE AMOUNTS OF BIRD DROPPINGS. USE OF FOOD BAIT TREATED WITH THE CHEMICAL AVITROL HAS PROVEN BOTH SAFE AND EFFECTIVE. WHEN INGESTED BY A BIRD, AVITROL PRODUCES A NERVOUS MUSCULAR REACTION WHICH FRIGHTENS THE ENTIRE FLOCK AWAY. IN MOST CASES, THE AFFECTED BIRD WILL SURVIVE. WHEN INGESTED, THE CHEMICAL BREAKS DOWN AND THEREFORE DOES NOT AFFECT SECONDARY NON-TARGET HOST SPECIES.

ENDANGERED SPECIES

TABLE 4-2 LISTS FEDERAL AND STATE ENDANGERED AND/OR THREATENED SPECIES WHICH MAY BE FOUND WITHIN THE PROJECT AREA. STATUS CLASSIFICATION MAY VARY BETWEEN FEDERAL AND STATE LISTINGS FOR INDIVIDUAL SPECIES. SOME OF THE SPECIES IDENTIFIED ARE UNDER AGENCY REVIEW OR OF UNKNOWN STATUS, AND ARE LISTED FOR INFORMATIONAL PURPOSES AS WELL. THE PROJECT AREA OR ADJACENT ENVIRONS (BLUFF SLOPES) POSSESS SUITABLE HABITAT FOR THESE SPECIES. SPECIES WHICH DID NOT DEPEND UPON CHARACTERISTIC HABITAT OF THE PROJECT WERE OMITTED.

TABLE 4-2

MISSISSIPPI RIVER - POOL 22ENDANGERED AND THREATENED SPECIES

	<u>LISTS</u>		
	<u>FEDERAL</u>	<u>ILLINOIS</u>	<u>MISSOURI</u>
INVERTEBRATES	FAT POCKETBOOK HIGGINS' EYE		FAT POCKETBOOK HIGGINS' EYE SPECTACLE CASE EBONY SHELL HICKORY-NUT WARTY-BACK
FISHES		LAKE STURGEON	LAKE STURGEON PALLID SHINER BURBOT
REPTILES AND AMPHIBIANS		CORN SNAKE SLIDER YELLOW MUD TURTLE	YELLOW MUD TURTLE BLANDING'S TURTLE SMOOTH GREEN SNAKE MASSASAUGA
PLANTS		HEART-LEAFED PLANTAIN SMALL BURHEAD SALT MEADOW GRASS ARROWWOOD FALSE DRAGONHEAD JEWELLED SHOOTING STAR ARCHING DEMBERRY GREEN TRILLIUM GINSENG FALSE HELLEBORE GOLDEN SEAL	ASTER (FLAVERIA RADICATUM) WILD SARSAPARILLA SMALL SPIKE-RUSH PINEWEED RED-BERRY ELDER AMETHYST SHOOTING STAR
MAMMALS	INDIANA BAT GRAY BAT	INDIANA BAT GRAY BAT RIVER OTTER BOBCAT GOLDEN MOUSE	INDIANA BAT GRAY BAT RIVER OTTER
BIRDS	BALD EAGLE	AMERICAN PEREGRINE FALCON BALD EAGLE OSPREY RED-SHOULDERED HAWK COOPER'S HAWK DOUBLE-CRESTED CORMORANT BLACK RAIL LEAST TERN MISSISSIPPI KITE LONG-EARED OWL PURPLE GALLINULE COMMON GALLINULE BLACK-CROWNED NIGHT HERON GREAT EGRET SNOWY EGRET LITTLE BLUE HERON BLACK TERN BROWN CREEPER YELLOW-HEADED BLACKBIRD	AMERICAN PEREGRINE FALCON BALD EAGLE OSPREY RED-SHOULDERED HAWK COOPER'S HAWK DOUBLE-CRESTED CORMORANT BLACK RAIL LEAST TERN

SOURCES:

U.S. FISH AND WILDLIFE SERVICE, GREAT LAKES REGION RED BOOK, 1979 (WITH
SUBSEQUENT UPDATES).

BOWLES, MARLIN L., ET.AL., ENDANGERED AND THREATENED VERTEBRATE ANIMALS
AND VASCULAR PLANTS OF ILLINOIS, NATURAL LAND INSTITUTE, JAN. 1981.

MORDSTROM, GARY R., ET.AL., RARE AND ENDANGERED SPECIES OF MISSOURI, MISSOURI
DEPARTMENT OF CONSERVATION, AND USDA SOIL CONSERVATION SERVICE, 1977.

DISCUSSION OF INDIVIDUAL SPECIES OR RECORDED SIGHTING OR OF HISTORIC LOCATION WITHIN THE PROJECT AREA IS GIVEN BELOW.

INVERTEBRATES. THE FAT POCKETBOOK MUSSEL IS CONSIDERED TO BE MORE POPULATED IN THE LOWER POOLS (16 AND BELOW) OF THE MISSISSIPPI RIVER, ALTHOUGH LIVE COLLECTIONS HAVE NOT BEEN RECORDED SINCE 1966. THE ECOLOGICAL REQUIREMENTS FOR THIS SPECIES ARE NOT FULLY KNOWN BECAUSE OF ITS UNCOMMON RECORDINGS TO DATE. THE LATEST RELIC VALVE DISCOVERED IN POOL 22 WAS IN 1978.

THE HIGGINS' EYE MUSSEL HAS BEEN COLLECTED FROM A VARIETY OF HABITATS RANGING FROM DENSE CONCENTRATIONS WITHIN DEEP-WATER AREAS HAVING A GRAVEL SUBSTRATE TO SPARSE CONCENTRATIONS WITHIN SHALLOW, SANDY AREAS. A CONTINUOUS RIVER CURRENT IS CONSIDERED THE SINGLE MOST IMPORTANT ENVIRONMENTAL FACTOR FOR THE EXISTENCE OF THIS SPECIES. NO RECORDED COLLECTION HAS BEEN MADE WITHIN THE POOL 22 AREA.

SPECTACLE CASE IS FOUND IN SUBSTRATES INCLUDING RUBBLE, ROCK, GRAVEL, SAND, MUD, AND SILT AT DEPTHS OF 3 TO 16 FEET. RECENT FINDINGS HAVE BEEN LIMITED TO THE UPPER POOLS ABOVE POOL 18. NO RECORDED COLLECTION HAS BEEN MADE WITHIN THE POOL 22 AREA.

THE EBONY SHELL MUSSEL WAS A COMMON SPECIES IN THE EARLY 1900'S AND WAS HEAVILY HARVESTED BY THE PEARL BUTTON INDUSTRY (1920-30). TODAY, THIS SPECIES IS CONSIDERED RARE, AND RECENT COLLECTIONS HAVE BEEN MADE WITHIN POOL 21. PRESENT OCCURRENCES HAVE BEEN WITHIN DEEP-WATER BEDS CHARACTERIZED BY SILTY AND SANDY GRAVEL SUBSTRATES HAVING A STEADY CURRENT.

THE HICKORY-NUT AND WARTY-BACK MUSSELS WERE DOMINANT SPECIES IN RECENT SURVEY COLLECTIONS WITHIN POOL 22. KNOWN BED LOCATIONS ARE IDENTIFIED WITHIN THIS PLAN.

FISHES. THE LAKE STURGEON IS CONSIDERED RARE IN THE MISSISSIPPI RIVER, AND WAS LAST RECORDED IN THE POOL AREA IN 1966 BY COMMERCIAL ACTIVITIES NEAR QUINCY, ILLINOIS. THE LAKE STURGEON GENERALLY AVOIDS SOFT BOTTOMS, AND PREFERS SUBSTRATES OF SAND OR GRAVEL WHERE MUSSELS, SNAILS, AND INSECTS ARE READILY AVAILABLE.

THE PALLID SHINER AND BURBOT ARE IDENTIFIED AS POSSIBLE EXTIRPATED OR RARE SPECIES WHICH MAY INHABIT THE RIVER. THEIR POPULATION OR PRESENT DISTRIBUTION WITHIN POOL 22 ARE UNKNOWN.

REPTILES AND AMPHIBIANS. ANY OCCURRENCE OF LISTED SPECIES IS UNKNOWN WITHIN THE POOL 22 AREA.

PLANTS. THE ONLY PLANT SPECIES OF KNOWN OCCURRENCE ON PROJECT LANDS IS THE SALT MEADOW GRASS LISTED BY ILLINOIS. ITS LOCATION IS ALONG WET SHORES, MARSHES, AND DITCHES; THIS AREA IS ITS NORTHERN LIMIT OF RANGE. OTHER SPECIES LISTED ARE OF UNKNOWN OCCURRENCE WITHIN THE PROJECT AREA.

MAMMALS. USE OF THE PROJECT AREA BY THE INDIANA AND GRAY BATS IS PROBABLE BECAUSE OF KNOWN COLONIES AND INDIVIDUAL SIGHTINGS WITHIN THE PROXIMITY. HOWEVER, SPECIFIC OCCURRENCES AND OCCUPATIONS ON PROJECT LANDS ARE UNKNOWN TO DATE.

THE RIVER OTTER, BOBCAT, AND GOLDEN MOUSE ARE OF UNKNOWN OCCURRENCE WITHIN THE PROJECT AREA, AND NO RECENT SIGHTINGS HAVE BEEN RECORDED.

BIRDS. THE AMERICAN PEREGRINE FALCON IS A MIGRATORY BIRD WITHIN THE POOL AREA. SUITABLE HABITAT PREFERRED BY THE PEREGRINE FALCON IS THE BLUFF AREAS ALONG THE RIVER. NO RECORDED SIGHTINGS HAVE BEEN MADE IN THE PROJECT AREA.

THE BALD EAGLE OCCURS AS A REGULAR MIGRANT AND WINTER RESIDENT WITHIN THE PROJECT AREA. EAGLES PERCH IN TREES DURING THE DAYTIME NEAR AREAS OF OPEN WATER FOR FEEDING PURPOSES, AND AT NIGHT SEEK TREES SHELTERED FROM THE WINDS IN THE VALLEY OF FEEDER STREAMS. THEIR NIGHT ROOSTING MAY VARY WITH THE PREVAILING WIND PATTERNS. CONCENTRATIONS AND MIGRATION SOUTH DEPEND UPON THE EXTENT OF ICE-COVER ON THE RIVER. ANNUAL MONITORING OF EAGLE ACTIVITY ALONG THE MISSISSIPPI RIVER HAS BEEN SYSTEMATICALLY RECORDED SINCE 1979 BY VARIOUS INTERESTS. KNOWN PATTERNS OF CONCENTRATION HAVE BEEN IDENTIFIED IN THE POOL AREA, AND CERTAIN PROJECT LANDS HAVE BEEN DESIGNATED AS SENSITIVE USE AREAS IN RECOGNITION OF THESE OBSERVATIONS.

THE REMAINING BIRD SPECIES ARE OF UNKNOWN OCCURRENCE WITHIN THE PROJECT AREA. SEVERAL OF THE SPECIES ARE CONSIDERED TO BE NEAR THE OUTER LIMITS OF THEIR RANGE WITH STATUS TO STATE LISTINGS AND DISTRIBUTION OCCURRENCES.

WATER QUALITY

THE WATER QUALITY OF THE MISSISSIPPI RIVER IS PRIMARILY INFLUENCED BY THE EXTENSIVE AGRICULTURAL, INDUSTRIAL, MUNICIPAL, AND COMMERCIAL WATERBORNE USES. DESPITE THIS BROAD CONTRIBUTION (BOTH QUANTITY AND QUALITY), THE OVERALL WATER QUALITY ON MUCH OF THE RIVER IS GENERALLY GOOD. THIS WAS THE FINDING OF THE GREAT II WATER QUALITY WORK GROUP.^{2/} THIS IS ATTRIBUTED TO THE RIVERS' LARGE WASTE DILUTION AND ASSIMILATION CAPACITY, AND STATE AND FEDERAL WATER REGULATORY PROGRAMS.

RECENT WATER QUALITY MONITORING OF THE MISSISSIPPI RIVER WITHIN THE ROCK ISLAND

^{2/} GREAT RIVER ENVIRONMENTAL ACTION TEAM II, WATER QUALITY WORK GROUP APPENDIX, FINAL REPORT, DEC. 1980.

DISTRICT WAS PERFORMED BETWEEN SEPTEMBER 1979 AND OCTOBER 1980. ^{3/} A SAMPLING SITE AT HANNIBAL, MISSOURI (RIVER MILE 309.8) WAS SELECTED AS THE SOUTHERNMOST STATION WITHIN THE DISTRICT, AND WAS THE ONLY SITE WITHIN POOL 22. THE RESULTS OF THIS MONITORING PROGRAM WERE COMPARED TO ILLINOIS' GENERAL WATER QUALITY STANDARDS. THE PARAMETERS MEASURED WERE:

AIR TEMPERATURE	NITRATE
WATER TEMPERATURE	NITRITE
DISSOLVED OXYGEN	AMMONIA
HYDROGEN ION CONCENTRATION	ORGANIC NITROGEN
FREE CARBON DIOXIDE	TOTAL NITROGEN
SPECIFIC CONDUCTANCE	OIL AND GREASE
TOTAL DISSOLVED IONIZABLE SOLIDS	BIOCHEMICAL OXYGEN DEMAND
CHLORIDE	TOTAL CALCIUM
TOTAL ALKALINITY	TOTAL IRON
EDTA HARDNESS	TOTAL MAGNESIUM
SULFATE	TOTAL MANGANESE
TURBIDITY	TOTAL POTASSIUM
TOTAL PHOSPHORUS	TOTAL SODIUM
SOLUBLE ORTHOPHOSPHATE	DISCHARGE

TOO MANY OBSERVED CONCENTRATIONS OF PHENOL, TOTAL ARSENIC, TOTAL BARIUM, TOTAL BORON, TOTAL CADMIUM, TOTAL CHROMIUM, TOTAL COPPER, TOTAL LEAD, TOTAL MERCURY, TOTAL NICKEL, TOTAL SELENIUM, TOTAL SILVER, TOTAL STRONTIUM, AND TOTAL ZINC WERE AT OR BELOW THE LIMITS OF DETECTION TO ALLOW THEIR INCLUSION FOR ANALYSIS.

THE GENERAL WATER QUALITY STANDARDS FOR ILLINOIS ARE TO PROTECT WATER FOR AQUATIC LIFE, PRIMARY AND SECONDARY CONTACT USE, AND TO ENSURE THE AESTHETIC QUALITY OF THE AQUATIC ENVIRONMENT. OF THE 43 PHYSICAL AND CHEMICAL PARAMETERS MEASURED IN THE PROGRAM, 23 ARE SPECIFICALLY COVERED BY ILLINOIS' GENERAL WATER QUALITY STANDARDS. NO PARAMETER MEASURED OCCURRED AT A CONCENTRATION OR A LEVEL WHICH WOULD BE CONSIDERED

^{3/} BRINGHAM, ALLISON R., ANNUAL REPORT: A WATER QUALITY STUDY OF THE MISSISSIPPI RIVER, EAST DUBUQUE, ILL., TO HANNIBAL, MO., ILLINOIS NATURAL HISTORY SURVEY, UNDATED.

HAZARDOUS TO AQUATIC LIFE. OCCASIONAL EXCEEDENCE OVER PARTICULAR STANDARDS WAS OBSERVED (I.E., DISSOLVED OXYGEN CONCENTRATION BELOW 5.0 mg/l); HOWEVER, THESE WERE INFREQUENT AND OF SHORT DURATION.

ENVIRONMENTAL AND SCENIC FEATURES

FISH AND WILDLIFE AGREEMENT LANDS

GENERAL. INTENSIVE MANAGEMENT PROGRAMS ON PROJECT LANDS CONCERNING FISH AND WILDLIFE CONSERVATION ARE PRIMARILY ADMINISTERED BY EITHER THE U.S. FWS OR APPROPRIATE STATE AGENCIES. A COOPERATIVE AGREEMENT MADE BETWEEN THE DEPARTMENT OF THE ARMY AND THE DEPARTMENT OF INTERIOR PROVIDES A LARGE PORTION OF PROJECT LANDS FOR FISH AND WILDLIFE CONSERVATION PROGRAMS. THE COOPERATIVE AGREEMENT LANDS ARE MANAGED BY THE U.S. FWS AS A PART OF A NATIONAL REFUGE SYSTEM OR BY THE INDIVIDUAL STATE CONSERVATION AGENCIES THROUGH A THIRD PARTY AGREEMENT. ALL OF THE LANDS (4,558 ACRES) DESIGNATED IN POOL 22, UNDER THE GENERAL PLAN AND COOPERATIVE AGREEMENT, ARE ADMINISTERED BY THE APPROPRIATE STATE CONSERVATION AGENCIES. NONE OF THE PROJECT LANDS LOCATED WITHIN POOL 22 ARE DESIGNATED AS FEDERAL REFUGE OR SANCTUARY AREAS.

ILLINOIS. STATE MANAGED PROJECT LANDS (2,954 ACRES) IN POOL 22 ARE IDENTIFIED AS A PART OF THEIR MISSISSIPPI RIVER FISH AND WILDLIFE MANAGEMENT AREA. THE SITE MANAGER'S OFFICE FOR THIS AREA IS STATIONED IN GRAFTON, ILLINOIS, WITH A FIELD MANAGEMENT OFFICE LOCATED IN PITTSFIELD, ILLINOIS. THE TOTAL COOPERATIVE AGREEMENT AREA IN ILLINOIS INCLUDES POOLS 12-26 AND COMPRISES SOME 62,228 ACRES OF LAND AND WATER, OF WHICH THE STATE DIRECTLY MANAGES 33,794 ACRES.

PROJECT LANDS PRIMARILY CONTRIBUTE TO WATERFOWL MIGRATION HABITATS AND PROVIDE PUBLIC HUNTING OPPORTUNITY, WHICH COM^EPL~~X~~MENT THE FEDERAL REFUGE SYSTEM. THE LONG-TERM GOAL IS THAT THE PROJECT LANDS AND WATERS CONTINUALLY PROVIDE SUITABLE HABITAT CONDITIONS TO SUPPORT POPULATIONS OF FISH AND WILDLIFE SPECIES AND AFFORD BOTH CONSUMPTIVE AND NON-CONSUMPTIVE USES OF THESE NATURAL RESOURCES BY PRESENT AND FUTURE GENERATIONS. SPECIFIC MANAGEMENT ACTIVITIES CONCERNING PROJECT LANDS ARE REPORTED TO THE DISTRICT ANNUALLY FOR REVIEW.

NONE OF THE PROJECT LANDS LOCATED WITHIN POOL 22 ARE DESIGNATED AS STATE REFUGE AREAS. HOWEVER, THE EXISTENCE OF A GREAT-BLUE HERON/EGRET ROOKERY (NESTING SITE) LOCATED ON ARMSTRONG ISLAND IS AN IMPORTANT FEATURE WHICH HAS BEEN NOTED FOR SPECIFIC PROTECTIVE MEASURES.

MISSOURI. STATE MANAGED GENERAL PLAN LANDS WITHIN POOL 22 (1,604 ACRES) ARE A PART OF THEIR UPPER MISSISSIPPI WILDLIFE MANAGEMENT AREA, WHICH EXTENDS FROM POOL 21 THROUGH POOL 26 AND TOTALS APPROXIMATELY 11,000 ACRES. THE AREA HEADQUARTERS IS LOCATED IN ELSBERRY, MISSOURI.

THEIR OBJECTIVES ARE SIMILAR TO ILLINOIS' IN THAT THE PRIMARY OBJECTIVE IS TO PROVIDE OPTIMUM HABITAT FOR ALL WATERFOWL SPECIES, AND A SECONDARY OBJECTIVE IS TO PROVIDE WATERFOWL HUNTING OPPORTUNITIES TO THE POPULACE. THERE ARE NO STATE-DESIGNATED REFUGE AREAS WITHIN POOL 22. AN ANNUAL MANAGEMENT REPORT OF THE STATE ACTIVITIES AND PROGRAMS INVOLVING THE PROJECT LANDS IS SUBMITTED THROUGH THE FWS TO THE CORPS OF ENGINEERS FOR REVIEW.

NATURE PRESERVES

ILLINOIS. AN ILLINOIS NATURAL AREAS INVENTORY, COMPLETED IN 1978, IDENTIFIED FOUR AREAS IN ADAMS COUNTY AND EIGHT AREAS IN PIKE COUNTY THAT ARE WITHIN THE PROJECT VICINITY AND WHICH HAVE POTENTIAL SIGNIFICANCE FOR DEDICATION AS A STATE NATURE PRESERVE AREA. NONE OF THE AREAS IDENTIFIED INVOLVE PROJECT LANDS. THE AREAS LOCATED IN ADAMS COUNTY ARE OUTSTANDING GEOLOGIC FEATURES OF EXPOSED LIMESTONE, WHILE ALL THE AREAS WITHIN PIKE COUNTY CONCERN EITHER LOESS HILL PRAIRIE OR WET-MESIC FLOOD PLAIN FOREST FEATURES. ALL OF THESE LANDS ARE UNDER PRIVATE OWNERSHIP, AND AS TO DATE, HAVE NOT RECEIVED OFFICIAL STATE PRESERVE STATUS.

MISSOURI. THE MISSOURI NATURAL AREA SURVEY HAS RECOGNIZED TWO AREAS IN MARION COUNTY AS HIGH QUALITY NATURAL AREA SITES. BOTH AREAS INVOLVE PROJECT LANDS, AND ARE LICENSED TO THE MISSOURI DEPARTMENT OF CONSERVATION FOR FISH AND WILDLIFE MANAGEMENT PURPOSES. THE AREAS COMPRISE APPROXIMATELY 835 ACRES, AND ARE LOCATED NORTH OF HANNIBAL ALONG THE BAY DE CHARLES AND NORTH RIVER WATERWAYS. BOTH SITES ARE CHARACTERISTIC OF GLACIATED BOTTOMLAND FORESTS WITH SLOUGHS. THE SITES NEED FURTHER INVESTIGATION PRIOR TO OFFICIAL DESIGNATION BY THE MISSOURI DEPARTMENT OF CONSERVATION FOR STATE NATURAL AREA STATUS.

GREAT RIVER ROAD

THE GREAT RIVER ROAD IS A NATIONAL SCENIC AND RECREATIONAL ROAD NETWORK WHICH BORDERS BOTH SIDES OF THE MISSISSIPPI RIVER FOR ITS ENTIRE LENGTH. THIS PROGRAM WAS INITIALLY CONCEIVED IN 1938, AND IS ADMINISTERED BY THE MISSISSIPPI RIVER PARKWAY COMMISSION, ST. PAUL, MINNESOTA. CONTINUAL PLANNING, DEVELOPMENT, AND MAINTENANCE HAVE OCCURRED

SINCE ITS BEGINNING, THROUGH COOPERATIVE EFFORTS OF FEDERAL, STATE, COUNTY, AND LOCAL GOVERNMENTAL ENTITIES. OVER THE YEARS THE OBJECTIVES AND SCOPE OF THIS PROGRAM HAVE BEEN BROADENED TO INCLUDE PRESERVATION OF SCENIC AND CULTURAL SITES THROUGH EASEMENT ACQUISITION, AND CONSTRUCTION OF WAYSIDE REST AREAS, TRAILS, AND SCENIC VISTAS. RESOURCES OF THE PROJECT AREA ARE DIRECTLY ASSOCIATED TO THIS PARKWAY CONCEPT AND HAVE ^ECOMPLEMENTED THE PROGRAM WHENEVER POSSIBLE. PRESENT EFFORTS HAVE EMPHASIZED THE NEED TO ENHANCE PUBLIC FACILITIES AT VARIOUS LOCK AND DAM STRUCTURES FOR PUBLIC ACCESS AND VIEWING PURPOSES.

SPECIFIC FEATURES INVOLVING POOL 22 PROJECT LANDS HAVE BEEN PROPOSED FOR THE JOHN HAY AND PARK-N-FISH PUBLIC USE AREAS WHICH ARE MANAGED BY THE ROCK ISLAND DISTRICT, CORPS OF ENGINEERS. COOPERATIVE EFFORTS THROUGH THE ILLINOIS DEPARTMENT OF TRANSPORTATION HAVE BEEN REQUESTED FOR FUNDING. PROPOSED IMPROVEMENT COSTS WERE ESTIMATED AT \$163,000 AND \$78,000, RESPECTIVELY, AND SUBMITTED IN 1980 FOR SUBSEQUENT FUNDING AVAILABILITY. DESCRIPTIONS OF PROPOSED IMPROVEMENTS ARE PRESENTED AND DISCUSSED IN SECTION VII, RESOURCE MANAGEMENT AND DEVELOPMENT PLANS.

RECREATIONAL

OPPORTUNITIES FOR LEISURE OUTDOOR RECREATIONAL PURSUITS, CONCERNING THE LAND AND WATER ORIENTED CHARACTERISTICS OF THE PROJECT, SPAN A WIDE SPECTRUM OF SEASONAL ACTIVE AND PASSIVE INTERESTS. THE SCOPE AND EXTENT OF SUCH ACTIVITIES AND TRENDS HAVE BEEN STUDIED AT NATIONAL, STATE, AND LOCAL LEVELS. OUTDOOR RECREATIONAL EXPERIENCES HAVE BEEN INFLUENCED BY TODAY'S AWARENESS OF ENERGY COSTS, ECONOMIC CONSTRAINTS, AND LOWER GOVERNMENT SPENDING. RESEARCH AND STUDIES ARE JUST NOW BEGINNING TO ADDRESS THE

CHANGES AND PATTERNS EVOLVING FROM THESE INFLUENCES. TYPICALLY, THE RECREATIONAL ACTIVITIES ALONG THE RIVER INCLUDE BOATING, FISHING, HUNTING, SWIMMING, WATERSKIING, CAMPING, PICNICKING, HIKING, AND SIGHTSEEING (NATURE AND SCENIC). AN INCREASING INTEREST IN SIMILAR WINTER USES SUCH AS ICE-FISHING, CROSS-COUNTRY SKIING, AND SNOWMOBILING IS ALSO ENJOYED.

AN ANALYSIS OF THE RECREATIONAL RESOURCES OF THE RIVER WAS MADE BY THE RECREATION WORK GROUP OF THE GREAT II STUDY TEAM. THE FOLLOWING EVALUATIONS FOR POOL 22 ARE BASED ON THEIR FINDINGS (DEC. 1980 FINAL REPORT) CONCERNING SEVEN SELECTED ACTIVITIES USED AS RECREATIONAL INDICATORS FOR USE TRENDS AND FACILITY NEEDS.

* FISHING, BOATING, AND HUNTING WERE THE MORE POPULAR ACTIVITIES. BOATING USAGE IS ORIGINATING FROM THE URBAN CENTERS OF HANNIBAL AND QUINCY. THIS MAY BE ATTRIBUTED TO THE LACK OF BOAT ACCESS POINTS ELSEWHERE ALONG THE RIVER.

* SWIMMING AND WATERSKIING WERE NEXT IN POPULARITY. THE AVAILABILITY OF SEVERAL DREDGE DISPOSAL BEACHES WITHIN THE POOL PROVIDE POPULAR SWIMMING LOCATIONS. UNFORTUNATELY, THESE ARE ACCESSIBLE ONLY BY BOAT.

* PICNICKING AND CAMPING ACTIVITIES WERE LOW BOTH WITHIN THE POOL AND IN RELATION TO OTHER POOLS IN THE DISTRICT. THIS IS FELT TO BE ATTRIBUTED TO THE LACK OF SUCH FACILITIES WITHIN THE POOL AREA. MOST OF THE EXISTING LAND RECREATIONAL FACILITIES ARE OF HISTORICAL ATTRACTION AND ORIENTATION.

OTHER RECREATIONAL ACTIVITIES ARE POPULAR WITHIN THE POOL AREA; HOWEVER, SUCH ACTIVITIES ARE DIFFICULT TO MONITOR BECAUSE OF THEIR DISPERSED OR UNCONTROLLED NATURE. THE SEVEN SELECTED ACTIVITIES REPRESENT MAJOR LAND-BASED FACILITY NEEDS AND DIRECT OPPORTUNITIES ASSOCIATED WITH PROJECT RESOURCES. SPECIFIC PROJECT-RELATED RECREATIONAL SUPPLY AND DEMAND CHARACTERISTICS ARE DISCUSSED IN SECTION V.

FACTORS INFLUENCING AND CONSTRAINING RESOURCE DEVELOPMENT AND MANAGEMENT

FACTORS INFLUENCING AND CONSTRAINING
RESOURCE DEVELOPMENT AND MANAGEMENT

GENERAL

THE MISSISSIPPI RIVER NAVIGATION PROJECT IS UNIQUE IN LAND ACQUISITION AND MANAGEMENT POLICIES COMPARED WITH OTHER RELATED PUBLIC AND CIVIL WORKS PROJECTS, PARTICULARLY IN REGARD TO A GREATER COMPLEXITY OF PUBLIC ACCESSES AND USES. EXPLOITS OF PUBLIC, PRIVATE, AND COMMERCIAL INTERESTS, BOTH CONTROLLED AND UNCONTROLLED, CREATE SPECIAL CONDITIONS IN RELATION TO PROJECT DEVELOPMENT AND MANAGEMENT. SUCH FACTORS AS FRAGMENTED SHORELINE OWNERSHIP, HISTORIC LAND PRACTICES, DIMINISHING NATURAL RESOURCES, DIVERSE COMMERCIAL AND INDUSTRIAL USES, AND TRANSPORTATION AND UTILITY REQUIREMENTS ARE CONCERNS OF BOTH NATIONAL AND LOCAL INTERESTS WHICH DICTATE SPECIAL PROVISIONS AND USE PRIORITIES. THE FOLLOWING DISCUSSIONS ADDRESS MAJOR NATURAL, PHYSICAL, AND SOCIAL INFLUENCES CONCERNING THE PROJECT'S DEVELOPMENT AND MANAGEMENT FEATURES.

GEOGRAPHICAL FEATURES

PROJECT ACCESS

COMMERCIAL. THE VARIOUS COMMERCIAL TRANSPORTATION MODES SERVICING THE PROJECT AREA CONSIST OF LAND, WATER, AND AIR TRANSPORT SYSTEMS. THESE TRANSPORT SYSTEMS ARE BOTH PRIMARY AND SECONDARY NETWORK LINKS OF THE INTER- AND INTRA-STATE COMMODITY SERVICES. THE HIGHLY DEVELOPED INDUSTRIAL AND AGRICULTURAL ECONOMY OF THIS AREA DEPENDS UPON THESE SYSTEMS FOR SUPPLY AND DISTRIBUTION.

THE MAJOR ROAD NETWORKS SERVING THE POOL 22 AREA INCLUDE FEDERAL, STATE, AND COUNTY SYSTEMS. THE FEDERAL NETWORKS INCLUDE ROUTE 61, WHICH EXTENDS NORTH-SOUTH ALONG MISSOURI, AND ROUTE 36, WHICH EXTENDS EAST-WEST THROUGH BOTH ILLINOIS AND MISSOURI AND CROSSES AT HANNIBAL. THE STATE SYSTEMS INCLUDE TWO ROUTES IN MISSOURI (79 AND 168) AND THREE IN ILLINOIS (57, 79, 96). AN EXTENSIVE NETWORK OF COUNTY ROADS PROVIDES ACCESS WITHIN THE BORDERING INTERIORS OF THE PROJECT AREA. HOWEVER, DIRECT ACCESS TO THE WATER IS RESTRICTED BY EITHER RAIL OR LEVEE SYSTEMS WHICH PARALLEL THE SHORELINES.

SEVERAL RAIL SERVICES ARE AVAILABLE WITHIN THE AREA, PROVIDING BOTH NORTH-SOUTH AND EAST-WEST ROUTES. THE EAST-WEST ROUTES CROSS THE RIVER AT HANNIBAL, MISSOURI; THE NORTH-SOUTH ROUTES GENERALLY RUN PARALLEL TO THE RIVER. THE RAILROAD LINES SOUTH OF HANNIBAL, ALONG THE MISSOURI SHORE, BORDER THE RIVER BANK AND RESTRICT RIVER ACCESS WITHIN THIS REACH. PASSENGER RAIL SERVICE IS AVAILABLE AT HANNIBAL, MISSOURI.

SCHEDULED AIR SERVICE IS AVAILABLE AT THE QUINCY, ILLINOIS, AIRPORT. THE CITY OF HANNIBAL, MISSOURI, MAINTAINS AN AIRFIELD WITH HARD-SURFACE RUNWAYS, AND OFFERS CHARTER FLIGHTS AND SMALL PRIVATE AIRCRAFT FACILITIES.

IN ADDITION TO THE TRANSIT WATERBORNE COMMERCIAL USE SUPPORTED BY THE NAVIGATION CHANNEL, THERE ARE NINE RIVER TERMINALS LOCATED IN POOL 22. THE LOCATIONS AND PRODUCTS INVOLVED ARE IDENTIFIED IN TABLE 5-1.

TABLE 5-1

MISSISSIPPI RIVER - POOL 22COMMERCIAL RIVER TERMINALS

<u>RIVER MILE</u>	<u>STATE</u>	<u>OWNER/OPERATOR</u>	<u>TYPE OF SERVICE</u>	<u>LAND OWNERSHIP</u>
306.0	MISSOURI	UNIVERSAL ATLAS CEMENT CO.	BULK CEMENT	PRIVATE
309.0	MISSOURI	HANNIBAL GRAIN TERMINAL-MFA	GRAIN	PRIVATE
309.5	MISSOURI	HANNIBAL IRON AND METAL CO. MORRIS RESNICK	SCRAP IRON	PRIVATE
310.0	ILLINOIS	BUNGE CORPORATION	GRAIN	FEDERAL GOVERNMENT
310.7	MISSOURI	MFA CENTRAL CO-OP	GRAIN	PRIVATE
319.8	MISSOURI	AMERICAN CYANAMID CO.	AMMONIA	PRIVATE
320.1	MISSOURI	NORTHEAST MISSOURI ELECTRIC POWER COOPERATIVE	COAL	PRIVATE
320.5	MISSOURI	CENTRAL FARMERS FERTILIZER COMPANY	GRAIN AND FERTILIZER	PRIVATE

SOURCE: UPPER MISSISSIPPI RIVER NAVIGATION CHARTS, U.S. ARMY CORPS OF ENGINEERS, NORTH CENTRAL DIVISION, CHICAGO, ILLINOIS, 1982.

PUBLIC. GENERAL PUBLIC TRANSPORTATION CONVENIENCES ARE ACCOMMODATED THROUGH THE COMMERCIAL SYSTEMS DESCRIBED ABOVE. SPECIFIC PUBLIC ACCESS FEATURES THAT INVOLVE THE PROJECT RESOURCES ARE PRESENTED BELOW.

THE GREAT RIVER ROAD IS A NATIONALLY DESIGNATED PARKWAY SYSTEM THAT IS ESTABLISHED ALONG THE MISSISSIPPI RIVER CORRIDOR (BOTH SIDES), AND EXTENDS THE ENTIRE LENGTH OF THE RIVER. THIS SCENIC ROUTE CONCEPT WAS ESTABLISHED IN 1954, AND IS FINANCIALLY SUPPORTED THROUGH THE HIGHWAY BEAUTIFICATION ACT (P.L. 89-285) IN CONJUNCTION WITH THE FEDERAL AND STATE TRANSPORTATION DEPARTMENTS. WITHIN POOL 22, THE DESIGNATED ROUTES ARE HIGHWAYS 61 AND 79 IN MISSOURI, AND 36, 57, AND 96 IN ILLINOIS. UNFORTUNATELY, THESE ROUTES ARE NOT ENTIRELY IN CLOSE PROXIMITY TO THE RIVER SHORELINE AND ARE, ON OCCASION, SOME DISTANCE FROM THE RIVER. A "SPUR" ROUTE CONCEPT HAS BEEN DEVELOPED FOR

THE SYSTEM TO DIRECT DESIRED TRAVELERS FROM THE MAIN ROUTE TO SELECTED AREAS OF SCENIC, RECREATIONAL, AND HISTORICAL INTERESTS. PROPOSED DEVELOPMENT OF PROJECT LANDS RECOMMENDED FOR SUCH CONSIDERATION IS PRESENTED IN SECTION VII, RESOURCE MANAGEMENT AND DEVELOPMENT PLANS.

PUBLIC BOATING ACCESS WITHIN POOL 22 IS RESTRICTED BY THE EXTENSIVE AGRICULTURAL LEVEE SYSTEM THAT BORDERS MOST OF THE RIVER SHORELINE. MOST OF THE BOATING USE ORIGINATES FROM THE QUINCY (VIA L/D 21) AND HANNIBAL URBAN CENTERS. TABLE 5-2 IDENTIFIES THE PUBLIC BOAT ACCESS FACILITIES AVAILABLE WITHIN POOL 22.

TABLE 5-2

MISSISSIPPI RIVER - POOL 22

PUBLIC BOAT ACCESS FACILITIES

<u>RIVER MILE</u>	<u>STATE</u>	<u>NAME</u>	<u>FACILITIES</u>		
			<u>RAMP</u>	<u>DOCKS</u>	<u>SERVICES</u>
302.0	MISSOURI	L/D 22	X		
308.8	MISSOURI	HANNIBAL BOAT HARBOR	X	X	X
309.2	ILLINOIS	JOHN HAY RECREATION AREA	X		
310.8	MISSOURI	BELL'S BOAT BOAT DOC	X	X	X
320.1	MISSOURI	NORTHEAST POWER	X		
324.8	ILLINOIS	L/D 21	X		

SOURCE: U.S. ARMY ENGINEER DIVISION-NORTH CENTRAL, DIVISION BULLETIN NO. 2, NAVIGATION CONDITIONS FOR 1982. MARCH 1984.

THERE ALSO EXIST SEVEN SPECIAL USE LICENSES AND 47 COTTAGE LEASES LOCATED ON PROJECT LANDS THAT CAN BE CONSIDERED PUBLIC ACCESS FACILITIES. SUCH PERMITTED USES ALLOW PLACEMENT OF BOAT DOCKS FOR INDIVIDUAL ACCESS CONVENIENCES. THESE PERSONAL FACILITIES ARE NOT AVAILABLE FOR GENERAL PUBLIC USE; HOWEVER, THERE ARE NO ACCESS RESTRICTIONS ON THE LANDS. POLICY AND ADMINISTRATION CONCERNING SUCH PERMITTED USES ARE DISCUSSED IN SECTION X, OPERATIONAL MANAGEMENT PLAN, AND ATTACHMENT III, SHORELINE MANAGEMENT PLAN.

HYDROLOGIC CHARACTERISTICS

FLOODING. ALL PROJECT LANDS ARE LOCATED WITHIN THE 100-YEAR FLOOD PLAIN LIMITS OF THE RIVER, AND MUCH OF THE LAND IS SUBJECT TO FREQUENT FLOODING. BECAUSE OF THE EXTENDED LENGTH OF THE POOL REACH AND SUBSEQUENT GRADIENT CHANGES, FLOOD ELEVATIONS DIFFER FOR SIMILAR FLOOD OCCURRENCES WITHIN THE POOL. FIGURE V-1 SHOWS THE WATER SURFACE PROFILE FOR VARIOUS FLOOD OCCURRENCES WITHIN THE POOL. THE FOLLOWING STAGES AND FLOWS FOR FLOOD CONDITIONS AT HANNIBAL ARE REPORTED FOR CLARIFICATION PURPOSES. ITS APPROXIMATE CENTRAL LOCATION IN POOL 22 BEST REPRESENTS THE TYPICAL CONDITIONS WITHIN THE POOL.

THE CHANNEL CAPACITY FOR THE FLOOD STAGE NEAR HANNIBAL IS 280,000 CUBIC FEET PER SECOND (FT^3/s) DISCHARGE, WITH AN APPROXIMATE CORRESPONDING ELEVATION OF 470.9 NGVD. THE NORMAL FLOW REGULATION IS MAINTAINED AROUND 134,000 FT^3/s (462.4 NGVD) AT HANNIBAL, WHICH IS APPROXIMATELY 8.5 FEET LOWER THAN THE FLOOD STAGE ELEVATION. THE 100-YEAR FLOOD OCCURRENCE WITHIN THE HANNIBAL AREA IS A RIVER FLOW OF 377,000 FT^3/s , HAVING A CORRESPONDING ELEVATION OF 475.8 NGVD. THE HIGHEST FLOOD OF RECORD IN POOL 22 OCCURRED IN THE SPRING OF 1973, REACHING A WATER SURFACE ELEVATION OF 478.02 (575,000 FT^3/s) AT HANNIBAL.

AN EXTENSIVE RURAL LEVEE SYSTEM TO PROTECT AGRICULTURAL LANDS THAT BORDER THE POOL BOUNDARIES EXISTS WITHIN BOTH ILLINOIS AND MISSOURI. IN ILLINOIS THERE ARE TWO LEVEE DISTRICTS WHICH EXTEND ALONG THE ENTIRE POOL LENGTH, AND ARE DIVIDED AT MILL CREEK (APPROXIMATELY 6 RIVER MILES SOUTH OF QUINCY). THEY ARE THE SOUTH QUINCY DRAINAGE AND LEVEE DISTRICT, AND THE SNY ISLAND LEVEE DRAINAGE DISTRICT. THERE ARE THREE LEVEE DISTRICTS IN MISSOURI, ALL LOCATED NORTH OF HANNIBAL AND SEPARATED AT THE CONFLUENCES OF THE FABIUS RIVER, AND THE NORTH AND SOUTH RIVERS; THEY ARE THE FABIUS RIVER DRAINAGE DISTRICT, THE MARION COUNTY DRAINAGE DISTRICT, AND THE SOUTH RIVER DRAINAGE DISTRICT.



FIGURE V-1
MISSISSIPPI RIVER - POOL 22
WATER SURFACE PROFILES

THE ROCK ISLAND DISTRICT COMPLETED A FINAL FEASIBILITY STUDY ^{1/} IN 1982 FOR FLOOD DAMAGE REDUCTION FOR THE SOUTH RIVER DRAINAGE DISTRICT. THE STUDY FINDINGS IDENTIFY A TENTATIVE PLAN INVOLVING THE RAISING OF THE EXISTING LEVEE APPROXIMATELY 3.5 FEET (500-YEAR LEVEL OF PROTECTION). THIS PLAN IS UNDER REVIEW, AND WILL REQUIRE CONGRESSIONAL APPROVAL AND FUNDING APPROPRIATION PRIOR TO INITIATION OF DETAILED DESIGN PLANS FOR CONSTRUCTION.

THE CITY OF HANNIBAL HAS REQUESTED THE CORPS TO REEVALUATE FLOOD DAMAGE REDUCTION AUTHORIZED FOR THE CITY IN 1962, WHICH WAS SUSPENDED IN 1965 BECAUSE OF LACK OF LOCAL SUPPORT. AN INITIAL PLAN OF STUDY IS IN PROGRESS TO ASSESS CURRENT FEASIBILITY. VARIOUS PLANNING ALTERNATIVES EMPHASIZE PROTECTION OF THE HISTORIC TOURIST AND COMMERCIAL INTERESTS IN THE DOWNTOWN AREA. ANY RECOMMENDED ACTION WOULD NOT INVOLVE PROJECT LANDS.

POOL REGULATION. DAM 22 IS A RUN-OF-THE-RIVER DAM AND CANNOT STORE ANY WATER FOR FLOOD CONTROL PURPOSES. AT DAM 22, A MINIMUM POOL ELEVATION OF 459.5 NGVD IS MAINTAINED TO ASSURE NAVIGATION DEPTHS BETWEEN RIVER MILES 301.2 AND 324.9. DURING THE WINTER SEASON, WHEN NAVIGATION IS HALTED, THE POOL IS REGULATED SOMEWHAT LOWER AT ELEVATIONS BETWEEN 459.0 AND 459.5. DURING FLOODING CONDITIONS WHEN THE RIVER IS RISING, THE DAM IS TAKEN OUT OF OPERATION BY RAISING THE TAINTER AND ROLLER GATES ABOVE THE WATER SURFACE. THIS OCCURS WHEN THE TAILWATER STAGE REACHES ELEVATION 458.5. LOCK MOTORS ARE SUBSEQUENTLY REMOVED WHEN FLOOD STAGES REACH 466.1 AND 466.7.

^{1/} U.S. ARMY ENGINEER DISTRICT, ROCK ISLAND, MISSISSIPPI RIVER, COON RAPIDS DAM TO OHIO RIVER, FINAL FEASIBILITY STUDY FOR FLOOD DAMAGE REDUCTION, SOUTH QUINCY DRAINAGE AND LEVEE DISTRICT, ILLINOIS, INTERIM REPORT NO. 3, INCLUDING ENVIRONMENTAL IMPACT STATEMENT. JUNE 1982.

SEDIMENTATION, EROSION, AND ACCRETIONS. ALTHOUGH THE RIVER HAS BEEN ALTERED TO A STEPPED GRADIENT PROFILE BY THE PLACEMENT OF THE LOCKS AND DAMS, ITS CHARACTERISTIC ALLUVIAL PROCESSES CONTINUE. WITHIN THESE YEARS (1930-PRESENT), THE NATURAL RIVER PROCESSES HAVE TENDED TOWARD A SOMEWHAT STABILIZED RIVER BOTTOM AND A REDUCED MEANDERING, RESULTING IN THE REDUCTION OF THE RIVER'S FREE FLOWING ENERGY. SEDIMENTATION, EROSION, AND ACCRETION PROCESSES, A COMBINED EFFECT OF BOTH MAN AND NATURE, REMAIN EVIDENT IN THE RIVER'S PROFILE.

SEDIMENT (SUSPENDED AND BEDLOAD) IS BEING SAMPLED WITHIN THE ROCK ISLAND DISTRICT DRAINAGE AREA BY THE CORPS AND OTHER VARIOUS AGENCIES. RECORDINGS, HOWEVER, VARY FROM DAILY TO ONE-TIME SAMPLINGS AND FROM DESIGNATED STATIONS TO CONCENTRATED REACHES. VARIOUS DATA RECORDINGS WITHIN POOL 22 HAVE BEEN MORE FREQUENT AND CONSISTENT THAN THOSE OCCURRING IN MANY OF THE OTHER POOLS WITHIN THE DISTRICT. TABLE 5-3 IDENTIFIES THE AVERAGE SEDIMENT YIELDS FOR STATIONS LOCATED WITHIN THE POOL 22 DRAINAGE AREA.

TABLE 5-3

MISSISSIPPI RIVER - POOL 22

AVERAGE SEDIMENT YIELDS

<u>STATION</u>	<u>DRAINAGE AREA (SQUARE MILES)</u>	<u>YIELD (TONS/SQ MI/YR)</u>
CLAYTON CITY RESERVOIR, WALNUT CREEK, MCKEE CREEK, NEAR CLAYTON, ILLINOIS	3.18	907
NORTH FABUS RIVER AT MONTICELLO, MISSOURI	452	973
MISSISSIPPI RIVER AT HANNIBAL, MISSOURI	137,300	181

SOURCE: UPPER MISSISSIPPI RIVER BASIN COORDINATING COMMITTEE, UPPER MISSISSIPPI RIVER COMPREHENSIVE BASIN STUDY, APPENDIX G, FLUVIAL SEDIMENT. 1970.

SEDIMENT PROBLEMS OF THE RIVER GENERALLY ORIGINATE FROM TWO MAJOR SOURCES. LARGE AMOUNTS OF SAND-SIZED SEDIMENTS WHICH ORIGINATE FROM STREAMBANK AND GULLY EROSION MOVE INTO THE RIVER; THIS IS A MAJOR PROBLEM IN MAINTAINING THE NAVIGATION CHANNEL. ANOTHER SOURCE IS FINE-GRAINED SEDIMENTS ORIGINATING FROM AGRICULTURAL AND OTHER LANDS IN THE FORM OF SHEET AND RILL EROSION, CAUSING ENVIRONMENTAL PROBLEMS TO BACKWATER AND POOL AREAS.

THE SIDE CHANNEL WORK GROUP OF GREAT 11 ESTIMATED THAT 22-49 PERCENT OF THE BACKWATERS OF POOL 22 WILL BE LOST OVER THE NEXT 50 YEARS. THIS RATE IS TYPICAL FOR THE ENTIRE REACH BETWEEN POOLS 11-22. TEN SPECIFIC PROBLEM SITES WERE IDENTIFIED IN POOL 22. FOUR OF THESE SITES ARE LOSING THEIR NATURAL HABITAT VALUES AT A RAPID RATE TO WARRANT IMMEDIATE REMEDIAL ATTENTION. THESE ARE LOCATED AT RM 324.0L (TEXAS CHUTE), RM 316.7-318.5L (BEEBE ISLAND), RM 316-0L, AND RM 300-301L (COTTEL ISLAND). SUCH CONCERNS ARE UNDER THE REVIEW OF THE FISH AND WILDLIFE INTERAGENCY COMMITTEE (FWIC).

THE EROSION AND ACCRETION PROCESSES ALONG THE RIVER ARE CONTINUALLY CHANGING EXISTANT LAND CONDITIONS FOR BOTH ISLAND AND MAINLAND PROPERTIES. LEGAL OWNERSHIP AND RIPARIAN RIGHTS OF SUCH ACCRETED LANDS VARY WITH BORDERING STATE STATUTES. FOR THE PURPOSES OF THIS PLAN, LAND ACCRETIONS FORMED ON LANDS ACQUIRED IN FEE FOR THE PROJECT ARE IDENTIFIED AS FEDERAL GOVERNMENT PROPERTY. THEREFORE, LAND USE CLASSIFICATIONS HAVE BEEN ASSIGNED TO SUCH PROPERTIES. SUCH INCLUSION IS NOT A LEGAL DECLARATION, AND ANY OWNERSHIP DISPUTES WOULD BE RESOLVED ON A CASE-BY-CASE BASIS. TOTAL LAND ACREAGES IDENTIFIED IN TABLES 3-1 AND 7-1 VARY BECAUSE OF THIS CONDITION.

DREDGING. THE OPERATIONS DIVISION, ROCK ISLAND DISTRICT, MONITORS CHANNEL SOUNDINGS OF THE POOLS AT LEAST BI-WEEKLY TO DETERMINE IF THERE ARE ANY AREAS THAT WILL REQUIRE

MAINTENANCE DREDGING. WHEN AN AREA SHOWS CONTINUED PROBLEMS IN MEETING MINIMUM DEPTH REQUIREMENTS WITHIN THE CHANNEL BOUNDARIES, A SURVEY IS PERFORMED TO DETERMINE THE VOLUME OF DREDGE MATERIAL TO BE REMOVED. SUCH FINDINGS ARE COORDINATED WITH INTERESTED AGENCIES SO THAT APPROPRIATE PROVISIONS CAN BE MADE FOR THE DISPOSAL. EMERGENCY SITUATIONS MAY NOT ALWAYS ALLOW FOLLOWING OF FULL COORDINATION PROCEDURES.

HISTORIC CHANNEL MAINTENANCE ACTIVITY IN POOL 22 HAS BEEN TYPICALLY AN ANNUAL REQUIREMENT WITHIN THE LAST DECADE; HOWEVER, THE AMOUNT OF MATERIAL REMOVED ANNUALLY IS VERY INCONSISTENT. OF THE 23.7 RIVER MILES IN POOL 22, 25 PERCENT HAS BEEN DREDGED SINCE 1945. IN ADDITION, THE SMALL BOAT HARBOR LOCATED AT HANNIBAL IS MAINTAINED BY THE CORPS TO A 5-FOOT DEPTH. A TOTAL OF APPROXIMATELY 5,375,200 CUBIC YARDS (YD³) OF MATERIAL HAVE BEEN DREDGED FROM POOL 22 SINCE 1941. HOWEVER, A 50-YEAR DREDGING PREDICTION FOR POOL 22, DETERMINED BY THE GREAT 11 TEAM, IS ONLY 1,596,250 YD³ OF MATERIAL. TABLE 5-4 SHOWS ESTIMATED CHANNEL MAINTENANCE REQUIREMENTS FOR POOL 22.

TABLE 5-4

MISSISSIPPI RIVER - POOL 22

ESTIMATED CHANNEL MAINTENANCE

<u>HISTORIC LOCATION (RM)</u>	<u>ESTIMATED FREQUENCY (NO. TIMES PER NO. YEARS)</u>	<u>VOLUME/OCCURRENCE (YD³)</u>
319.5 - 320.5	1:4	30,000
315.8 - 316.8	1:6	30,000
312.6 - 314.3	1:7	30,000
311.2 - 312.2	1:5	25,000
302.0 - 303.5	1:5	35,000
300.3 - 300.4	1:10	15,000

SOURCE: GREAT RIVER ENVIRONMENTAL ACTION TEAM 11, CHANNEL MAINTENANCE HANDBOOK, DECEMBER 1980.

DREDGE MATERIAL HAS BEEN PRIMARILY A SAND COMPOSITION WITHIN POOL 22, AND HISTORICALLY PLACED EITHER ALONG THE RIVER BANKS (70 PERCENT OF TIME) OR IN OPEN WATER SIDE CHANNEL AREAS (30 PERCENT OF TIME). FUTURE DISPOSAL SITES HAVE BEEN SELECTED AND EXAMINED BY A MULTI-AGENCY TASK GROUP THROUGH GREAT II STUDY EFFORTS. WITHIN POOL 22, SOME 35 SITES HAVE BEEN IDENTIFIED AND EVALUATED AS ACCEPTABLE DISPOSAL LOCATIONS. OF THESE, NINE HAVE BEEN SELECTED AS PRIMARY SITES FOR PREFERRED USE. A PRIMARY SITE LOCATED BELOW BEEBE ISLAND IN ILLINOIS (RIVER MILE 316.0) HAS BEEN IDENTIFIED AS AN ALTERNATIVE SITE FOR BEACH NOURISHMENT PURPOSES.

RECREATIONAL USES AND NEEDS OF DREDGE MATERIAL FOR BEACH DEVELOPMENT PURPOSES WERE EXAMINED BY THE GREAT II, RECREATION WORK GROUP. GUIDELINES WERE DEVELOPED TO DIRECT FUTURE SELECTION, DESIGN, AND MAINTENANCE FOR DESIGNATED "BEACH NOURISHMENT" DISPOSAL SITES. ADDITIONAL DETAILED ANALYSIS AND PLANNING OF THESE NEEDS WILL BE MADE DURING PREPARATION OF INDIVIDUAL POOL DREDGE DISPOSAL PLANS.

TABLE 5-5 LISTS THE LOCATIONS, SIZE, AND OWNERSHIP/MANAGEMENT DESCRIPTIONS OF THE EIGHT PRIMARY DISPOSAL SITES IN POOL 22. ALTHOUGH THE DISPOSAL SITES WERE SELECTED BY GREAT II, THE SPECIFIC DETAILS, EASEMENTS, OPERATIONAL PROCEDURES, ETC. FOR SOME OF THE SITES HAVE YET TO BE DETERMINED. IN ADDITION, OTHER ALTERNATIVE DISPOSAL SITES MAY EXIST IN THE POOL. IT IS THE RESPONSIBILITY OF THE ON-SITE INSPECTION TEAM TO APPLY THE SITE SELECTION PRIORITIES IN DETERMINING THE MOST ACCEPTABLE DISPOSAL SITE.

TABLE 5-5

MISSISSIPPI RIVER - POOL 22PRIMARY DREDGE DISPOSAL SITES

<u>LOCATION</u> <u>(R.M.)</u>	<u>STATE</u>	<u>ACREAGE</u>	<u>OWNERSHIP/MANAGEMENT</u>
324.0	MISSOURI	7.8 (S2.5)*	PRIVATE
320.5	MISSOURI	18.8 (S3)	PRIVATE
317.0	MISSOURI	25.5	PRIVATE
313.7	MISSOURI	10.5	PRIVATE
311.7	ILLINOIS	25.0	PRIVATE
311.5	MISSOURI	25.0	FEDERAL
302.3	MISSOURI	35.0 (S3.5)	FEDERAL
300.5	MISSOURI	7.0	PRIVATE

* S - REPRESENTS THE REDUCED ACREAGE THAT WOULD BE REQUIRED IF TEMPORARY STOCKPILE
 PROVISIONS WERE IMPLEMENTED AT THE SITE.

SOURCE: GREAT RIVER ENVIRONMENTAL ACTION TEAM II, CHANNEL MAINTENANCE HANDBOOK,
 DECEMBER 1980.

THE RIVER RESOURCE COORDINATION TEAM (RRCT) HAS BEEN ESTABLISHED TO ASSIST THE CORPS OF
 ENGINEERS WITH THE IMPLEMENTAION OF THE GREAT II PLAN. THE ON-SITE INSPECTION TEAM
 (OSIT), COMPOSED OF THE SAME STATE AND FEDERAL AGENCIES AS THE RRCT, WILL BE UPDATING
 AND ADJUSTING THE CHANNEL MAINTENANCE HANDBOOK, AS THE NEED ARISES, TO ASSIST THE CORPS
 IN SELECTING DREDGE DISPOSAL SITES AND IN IDENTIFYING PARAMETERS FOR DISPOSAL OF THE
 MATERIAL FOR EACH SPECIFIC DREDGING EVENT.

SOILS

ALL OF THE PROJECT LANDS ARE NEARLY LEVEL SOILS FORMED FROM THE ALLUVIAL DEPOSITS
 WITHIN THE FLOOD PLAIN. SOIL MATERIALS ARE MIXED COMPOSITIONS OF SILTY CLAY AND/OR
 LOAM. WITHIN MISSOURI, THE DOMINANT SOILS ARE CARLOW, CHEQUEST, FATIMA, WESTERVILLE,
 AND WABASH. ALONG THE ILLINOIS SHORELINE, THE DOMINANT SOILS ARE THE BEAUCOUP AND
 WAKELAND SERIES. ALL OF THESE SOILS HAVE A NATURAL INTERNAL DRAINAGE RANGING FROM

VERY POORLY DRAINED TO MODERATELY WELL DRAINED. THE SILT LOAM SOILS (FATIMA AND WAKELAND) HAVE THE BETTER DRAINAGE CHARACTERISTICS WITHIN THESE CLASSIFICATIONS. THE UNFAVORABLE DRAINAGE PROPERTIES OF THESE SOILS MAKE THEM GENERALLY UNDESIRABLE FOR ANY DEVELOPMENT PURPOSES. HOWEVER, THE SCARCITY OF ANY ALTERNATIVE SITES AND THE AVAILABILITY OF ACCESS ARE FACTORS FAVORING DEVELOPMENT CHOICES.

DETAILED SOIL SURVEYS ARE AVAILABLE IN UNPUBLISHED FORM AND ARE USED IN PLANNING NEW DEVELOPMENT FOR RECREATION AREAS. SOIL SERIES INVOLVED AND THEIR PERTINENT CHARACTERISTICS ARE IDENTIFIED FOR NEW RECREATIONAL DEVELOPMENT AREAS IN SECTION VII, RESOURCE MANAGEMENT AND DEVELOPMENT PLANS.

MINERAL AND TIMBER EXPLOITATIONS

MINERAL. PROJECT LANDS HAVE NOT BEEN USED FOR ANY MINERAL EXTRACTION PURPOSES. THERE ARE NO KNOWN MINERAL DEPOSIT SITES LOCATED ON PROJECT LANDS. WITHIN POOL 22, THE ONLY COMMERCIAL MINERAL EXTRACTION (LIMESTONE) ACTIVITY IS AT HANNIBAL, MISSOURI, AND MARBLEHEAD, ILLINOIS.

TIMBER. HISTORIC TIMBER HARVESTING ACTIVITIES IN POOL 22, INVOLVING PROJECT LANDS, HAS AMOUNTED TO OVER 1,500,000 BOARD FEET. AVAILABLE RECORDS INDICATE TIMBER SALES WERE AWARDED IN 1963, 1968, AND 1971. SILVER MAPLE AND COTTONWOOD REPRESENT OVER 80 PERCENT OF THE HARVESTED SPECIES, WHICH ALSO INCLUDED ASH, ELM, AND SYCAMORE. FIGURES REPRESENTING ACTUAL ACRES OF LAND INVOLVED ARE NOT AVAILABLE. TIMBER SALES HAVE BEEN LOCATED AT WARD ISLAND (1963); ON THE ILLINOIS SHORE ACROSS FROM HANNIBAL (1968); AND, BEEBE ISLAND AND THE MAINLAND AREA SOUTH OF MILL CREEK (1971). HISTORIC COMMERCIAL

HARVESTING PRACTICES HAVE RESULTED IN HIGHGRADING (REMOVAL OF ALL MERCHANTABLE TIMBER), AND HAVE CONTRIBUTED TO THE POOR QUALITY OF THE EXISTING TIMBER RESOURCES. THESE ACTIVITIES OCCURRED PRIOR TO THE PREPARATION OF A FOREST MANAGEMENT PLAN FOR THE PROJECT.

AN INTENSIVE FOREST MANAGEMENT PLAN HAS BEEN DEVELOPED FOR POOL 22, AND IS CONTAINED IN A SEPARATE APPENDIX PREPARED IN 1982. SECTION X, RESOURCE MANAGEMENT APPENDIXES, OF THIS REPORT SUMMARIZES THE FOREST MANAGEMENT PROGRAM. AN INITIAL 5-YEAR PROGRAM WAS DEVELOPED WHICH IDENTIFIES A TOTAL OF 2,260 ACRES FOR PROPOSED SILVICULTURAL TREATMENTS. THIS REPRESENTS APPROXIMATELY 43 PERCENT OF THE TOTAL CORPS-OWNED PROPERTY IN THE POOL.

THE CORPS HAS AWARDED A TIMBER SALE FOR APPROXIMATELY 118,270 BOARD FEET LOCATED AT WARD ISLAND NEAR QUINCY, ILLINOIS, FOR REMOVAL BEFORE DECEMBER 1984. THE TIMBER IS LOCATED ON AN AREA MANAGED FOR FISH AND WILDLIFE PURPOSES BY THE ILLINOIS DEPARTMENT OF CONSERVATION THROUGH THE U.S. FWS, UNDER THE COOPERATIVE AGREEMENT WITH THE CORPS. TWO PATCH CUTS OF 10 ACRES EACH ARE TO BE ACCOMPLISHED TO PROMOTE REGENERATION OF BOTTOMLAND HARDWOODS AND TO PROMOTE WILDLIFE HABITAT. THE TIMBER CONSISTS MAINLY OF SILVER MAPLE, ASH, AND COTTONWOOD TREES.

RECREATION MARKET AREA ANALYSIS

AREA OF INFLUENCE

RECREATION ANALYSIS HAS BEEN PERFORMED BY THE RECREATION WORK GROUP OF GREAT II CONCERNING PRESENT AND PROJECTED USES. THIS MASTER PLAN HAS INCORPORATED THE GROUP'S

ANALYSIS AND FINDINGS AS REFERENCED PREVIOUSLY IN SECTION II. DATA COLLECTED BY THE GREAT II RECREATION WORK GROUP DURING 1978-79 INDICATED THAT 97 PERCENT OF THE EXISTING RECREATION USE WITHIN POOL 22 ORIGINATED WITHIN A 25-MILE DISTANCE OF THE POOL AREA. THEREFORE, THE POPULATION IDENTIFIED WITHIN THIS PRIMARY MARKET AREA REPRESENTS THE BASIS OF PROJECTED RECREATION USE AND NEEDS IN POOL 22. FIGURE V-2 ILLUSTRATES VARIOUS MILEAGE ZONES FOR THE PROJECT. THE PRIMARY MARKET AREA INCLUDES MARION COUNTY IN MISSOURI, AND ADAMS AND PIKE COUNTIES IN ILLINOIS. POPULATION PROJECTIONS ESTIMATED FOR THIS AREA FOR SELECTED YEARS ARE AS FOLLOWS:

TABLE 5-6

MISSISSIPPI RIVER - POOL 22

RECREATION MARKET AREA POPULATION PROJECTIONS

<u>STATE</u>	<u>1990</u>	<u>2000</u>	<u>YEAR</u>	
			<u>2010</u>	<u>2025</u>
ILLINOIS	88,561	97,434	99,836	107,804
MISSOURI	<u>27,500</u>	<u>26,500</u>	<u>25,900</u>	<u>24,900</u>
TOTAL	116,061	123,934	125,736	132,704

SOURCE: U.S. ARMY ENGINEER DISTRICT, ROCK ISLAND, ILLINOIS. FIVE-YEAR POPULATION PROJECTIONS FOR THE MISSISSIPPI RIVER REGION, 1975-2025 (LOCK & DAM 22 THROUGH LOCK AND DAM 10). 1978

ECONOMIC CHARACTERISTICS

THE RURAL ECONOMIC BASE WITHIN THE IMMEDIATE REGION IS AGRICULTURE RELATED. TWO MAJOR POPULATION CENTERS BORDERING THE RIVER PROVIDE SUPPORTING RETAIL SERVICES AND LIGHT INDUSTRIAL TRADE. QUINCY, ILLINOIS, THE LARGEST OF THE TWO CITIES, WITH A POPULATION OF 42,554, BORDERS THE NORTHERN LIMITS OF THE POOL. HANNIBAL, MISSOURI, WITH A POPULATION OF SOME 18,800 PEOPLE IS LOCATED NEAR THE CENTER OF THE POOL AND IS A MAJOR

RETAIL CENTER SERVING NORTHEASTERN MISSOURI. THE ECONOMY OF HANNIBAL IS ENHANCED BY A STRONG TOURIST TRADE, WHICH IS DRAWN TO THE HISTORIC ATTRACTIONS AND COMMERCIALISM ASSOCIATED WITH THE CITY'S FAMOUS SON, SAMUEL L. CLEMENS, KNOWN TO THE WORLD AS "MARK TWAIN." ESTIMATED TOURIST VISITATION IS EXPECTED TO REACH 250,000 IN 1982.

RELATED RECREATION FACILITIES

OUTDOOR RECREATION FACILITIES AVAILABLE IN THE MARKET AREA VICINITY THAT ARE COMPARABLE OR ASSOCIATED WITH RECREATIONAL OPPORTUNITIES CHARACTERISTIC OF THE PROJECT, INCLUDE FEDERAL, STATE, AND LOCAL LEVELS OF INTEREST. FACILITIES DIRECTLY ORIENTED TOWARD LAND AND WATER RESOURCE USES PROVIDE THE RECREATIONAL OPPORTUNITIES SUPPORTED BY AVAILABLE PROJECT FEATURES. HOWEVER, UNRELATED RECREATION ATTRACTIONS EXISTING WITHIN THE AREA ARE COMPLEMENTARY INFLUENCES IN THE OVERALL RECREATION EXPERIENCES AVAILABLE. POPULAR TOURIST INTEREST EXISTS IN BOTH LOCAL AND NATIONAL HISTORIC FEATURES WITHIN THE AREA. AS SUCH, MOST OF THE LAND RECREATIONAL FACILITIES WITHIN POOL 22 ARE OF HISTORICAL REFERENCE. IN ADDITION, SEVERAL STATE AND LOCAL PARKS PROVIDE A BALANCE OF DIVERSE RECREATION OPPORTUNITIES. FIGURE V-3, AND TABLES 5-7 AND 5-8 IDENTIFY PUBLIC NON-PROJECT RECREATIONAL AND INTERPRETIVE CULTURAL SITES LOCATED WITHIN 50 MILES OF THE PROJECT AREA.

TABLE 5-7

MISSISSIPPI RIVER - POOL 22NON-PROJECT RECREATION FACILITIES WITHIN 50 MILES

NAME	LOC.	ACRES	CAMPING	FACILITIES					
				PICNIC AREA	BOAT ACCESS	TRAILS	SWIMMING	HUNTING	FISHING
FEDERAL/STATE PARKS									
1. CUIVRE RIVER	MO.	5,916	X			X	X		X
2. MARK TWAIN	MO.	1,192	X			X	X		X
3. CLARENCE CANNON LAKE	MO.	18,600	X	X	X	X	X	X	X
4. DUPONT GAME RESERVATION	MO.	1,322	X	X	X	X		X	
5. WAKONDA	MO.	257	X	X			X		X
6. SILOAM SPRINGS	IL.	3,183		X	X	X		X	X
7. ARGLE LAKE	IL.	1,051	X	X	X	X			X
8. WEINBERG-KING	IL.	772		X	X			X	X
9. MURPHY'S BAY	IL.	41				X		X	
COUNTY/DISTRICT PARKS									
10. GRIGGSVILLE	PIKE CO.	20		X					
11. PLEASANT HILL	PIKE CO.	27		X	X				
MUNICIPAL PARKS									
12. ALL AMERICA	QUINCY	60		X					
13. BERRIAN	QUINCY	12		X					
14. CARDINAL	QUINCY	15		X	X				
15. GARDNER	QUINCY	43		X	X				
16. MOUNDS	QUINCY	37		X	X		X		
17. JOHNSON	QUINCY	10		X					
18. MADISON	QUINCY	9		X					
19. PARKER HEIGHTS	QUINCY	37		X	X				
20. PROGRESS	QUINCY	80		X					
21. QUINSHIP ISLAND	QUINCY	130		X	X	X			X
22. RESERVOIR	QUINCY	11		X					
23. RIVERVIEW	QUINCY	16		X					
24. SID SIMPSON	QUINCY	21		X	X	X	X		X
25. SOUTH	QUINCY	135		X	X				X
26. SUNSET	QUINCY	14		X					
27. WASHINGTON	QUINCY	4		X					
28. WAVERING	QUINCY	48		X	X		X		
29. HUCKLEBERRY	HANNIBAL	63		X					X
30. RIVERVIEW	HANNIBAL	14		X					X
31. KIWANIS	HANNIBAL	1		X		X			X
32. NIPER	HANNIBAL	1	X	X		X			X
33. LIGHTHOUSE	HANNIBAL	2		X					
34. CENTRAL	HANNIBAL	1		X					
35. CLEMENS	HANNIBAL	1		X					

TABLE 5-8

MISSISSIPPI RIVER - POOL 22INTERPRETIVE CULTURAL AREAS WITHIN 50 MILES

<u>NAME</u>	<u>LOCATION</u>	<u>SIGNIFICANCE</u>
36. JOHN WOOD MANSION	QUINCY, IL.	HISTORICAL
37. CARTHAGE JAIL	CARTHAGE, IL.	HISTORICAL
38. NAUVOO HISTORIC DISTRICT	NAUVOO, IL.	HISTORICAL
39. PITTSFIELD EAST SCHOOL	PITTSFIELD, IL.	HISTORICAL/ARCHAEOLOGICAL
40. BETHEL HISTORIC DISTRICT	BETHEL, MO.	HISTORICAL
41. KOSTER SITE	ELDRED, IL.	ARCHAEOLOGICAL
42. BOULWARE MOUND GROUP	CANTON, MO.	ARCHAEOLOGICAL
43. MARK TWAIN BOYHOOD HOME	HANNIBAL, MO.	MARK TWAIN LITERATURE
44. UNION COVERED BRIDGE	PARIS, MO.	ARCHITECTURAL
45. RALLS COUNTY COURTHOUSE AND JAIL - SHERIFF'S HOUSE	NEW LONDON, MO.	ARCHITECTURAL
46. GRAHAM CAVE	MINEOLA, MO.	ARCHAEOLOGICAL

RECREATION PERSPECTIVE

PROJECT RECREATIONAL ACTIVITY

PARTICIPATION PERCENTAGES FOR SELECTED RECREATION ACTIVITIES EXPERIENCED IN POOL 22 ARE PRESENTED IN TABLE 5-9. THESE PERCENTAGES ARE TAKEN FROM THE ROCK ISLAND DISTRICT RECREATION-RESOURCE MANAGEMENT SYSTEM AS REPORTED FOR VISITATIONS ASSOCIATED WITH THE PROJECT. THE AVERAGES FOR 1977-1978 WERE USED BY THE GREAT 11 STUDY TEAM TO CALCULATE FUTURE RECREATION USE. OTHER TYPICAL ACTIVITIES WHICH OCCUR ON THE PROJECT ARE SNOWMOBILING, ICE-FISHING, CROSS-COUNTRY SKIING, AND SIGHTSEEING. THE SELECTED ACTIVITIES REPRESENT THE MAJOR LAND-BASED FACILITY NEEDS AND OPPORTUNITIES ASSOCIATED WITH PROJECT RESOURCES.

TABLE 5-9

MISSISSIPPI RIVER - POOL 22ACTIVITY PARTICIPATION PERCENTAGES

<u>ACTIVITY</u>	<u>1977-78</u>	<u>PERCENTAGES/YEAR</u>	
		<u>1980</u>	<u>1981</u>
PICNICKING	3	17	10
CAMPING	1	2	1
SWIMMING	5.5	18	9
WATER-SKIING	3.5	11	4
BOATING	24.5	22	10
FISHING	27	8	32
HUNTING	7.5	2	0

ANTICIPATED PROJECT ATTENDANCE

AN ASSESSMENT OF THE RECREATION USE PROJECTIONS AND NEEDS WAS MADE BY THE RECREATION WORK GROUP OF GREAT 11. THE FOLLOWING DISCUSSION SUMMARIZES THEIR APPROACH AND ANALYSIS FOR PROJECTED RECREATION USE, AND THE SPECIFIC FINDINGS IN REFERENCE TO POOL 22. A RESEARCH REPORT WAS PREPARED BY THE RECREATION WORK GROUP ENTITLED RECREATION USE PROJECTIONS AND NEEDS REPORT, WHICH IS THE REFERENCE SOURCE FOR THE FOLLOWING INFORMATION.

CALCULATION FOR PROJECTED RECREATION USE INVOLVED POPULATION PREDICTIONS, DESIGNATION OF PRIMARY USER AREAS, AND VISITOR PARTICIPATION PERCENTAGES OF SELECTED ACTIVITIES. AN AVERAGE OF 1977 AND 1978 POOL VISITATIONS AND ACTIVITY PARTICIPATION PERCENTAGES, REPORTED IN THE RECREATION-RESOURCE MANAGEMENT SYSTEM, WERE USED TO DEVELOP A BASE YEAR VISITATION ESTIMATE FROM WHICH TO PROJECT FUTURE USE. CALCULATIONS WERE MADE FOR FUTURE PROJECTIONS IN ACCORDANCE WITH THE RELATIONSHIP COMPARISONS ESTABLISHED BY THESE FACTORS. RECREATION USE WAS PROJECTED FOR THE YEARS 2000 AND 2025, AND

INDICATED INCREMENTAL INCREASES OF 13 AND 8 PERCENT, RESPECTIVELY. THE TOTAL PROJECTED RECREATION USE FOR POOL 22 FOR THE YEAR 2000 IS 1,646,811, AND 1,773,260 FOR THE YEAR 2025.

FUTURE RECREATION FACILITY NEEDS

THE RECREATION NEEDS ANALYSIS MADE BY THE GREAT II RECREATION WORK GROUP USED THE METHODOLOGY OUTLINED IN OUTDOOR RECREATION IN ILLINOIS, THE STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN, 1978. ESSENTIALLY, THIS APPROACH IS A MEANS OF EVALUATING INDIVIDUAL POOL FACILITIES ON A BASIS OF SUPPLY AND DEMAND, AND RANKING THE POOLS ACCORDING TO A "RELATIVE ADEQUACY INDICATOR" (RAI). THE PURPOSE OF THE RAI TECHNIQUE IS TO IDENTIFY THE RELATIVE NEED FOR PUBLIC RECREATION FACILITIES IN EACH POOL, AND TO HELP ESTABLISH PRIORITIES FOR ADDITIONAL DEVELOPMENT TO MEET THOSE NEEDS. SITE SPECIFIC GUIDANCE IS NOT PROVIDED THROUGH USE OF THE RELATIVE ADEQUACY INDICATORS.

RELATIVE ADEQUACY INDICATORS (RAI) WERE COMPUTED FOR EACH ACTIVITY, ACCORDING TO COMPARISON OF THE PARTICIPATION IN ACTIVITY DAYS TO EXISTING FACILITY SUPPLY BY POOL FOR THE GIVEN STUDY YEARS. IT SHOULD BE REMEMBERED THAT THIS DATA DOES NOT INDICATE THE ACTUAL NEED FOR VARIOUS FACILITIES, BUT RATHER ONLY A RELATIVE COMPARISON BETWEEN THE POOLS IN MEETING THE NEEDS DURING A GIVEN YEAR. ADEQUATE DATA OR METHODOLOGY TO ESTIMATE FUTURE RECREATION FACILITY SUPPLY COULD NOT BE ESTABLISHED. IN ADDITION, NO ATTEMPT WAS MADE TO JUDGE THE QUALITY OF THE FACILITIES OR SERVICES PROVIDED. TABLE 5-10 PRESENTS THE ACTIVITY VERSUS SUPPLY ANALYSIS DEVELOPED FOR POOL 22. THE RAI RANKING ANALYSIS INDICATES THAT POOL 22 HAD THE WORST RATIO OF FACILITIES VERSUS PARTICIPATION (EXISTING AND FUTURE) OF THE POOLS WITHIN THE DISTRICT.

TABLE 5-10

MISSISSIPPI RIVER - POOL 22RECREATION SUPPLY ANALYSIS ^{1/}

SUPPLY UNIT	IL.	MO.	TOTAL	ACTIVITY DAYS/UNIT			RAI ^{2/}
				BASE YEAR	2000	2025	
PICNIC TABLES	16	8	24	1,958	2,058	2,216	12
CAMP SITES	18	8	26	602	633	682	9-10
BEACHES (L.F.)	8,500	2,000	10,500	8.2	8.6	9.3	9
BOAT RAMPS							
WATER SKIING	6	2	8	6,855	7,204	7,758	11
BOATING	6	2	8	47,986	50,433	54,306	11
PARKING							
SPACES	42	90	132	2,908	3,056	3,291	11
MARINA SLIPS	0	116	116	3,309	3,478	3,745	11
FISHING	6	2	8	52,882	55,579	59,847	12
HUNTING	6	2	8	14,689	15,438	16,624	12

^{1/} THE UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE'S 1977 GREAT II RECREATION FACILITY INVENTORY; NINE-FOOT CHANNEL NAVIGATION PROJECT EIS; AND AERIAL PHOTOGRAPHY DATED 2 JULY 1977 WERE USED TO DETERMINE EXISTING RECREATION SUPPLY.

^{2/} RELATIVE ADEQUACY INDICATOR RANKING FOR POOLS 11-22. RANKING 1-12 WITH 1 REPRESENTING THE BEST ADEQUACY AND 12 REPRESENTING THE WORST DEFICIENCY OF UNITS, WITHIN THE POOLS WITH RESPECT TO PARTICIPATION.

COST-SHARING OPPORTUNITIES

CERTAIN NEW RECREATION AND WILDLIFE IMPROVEMENT FEATURES INVOLVING PROJECT LANDS ARE APPLICABLE FOR CORPS PARTICIPATION WITH NON-FEDERAL GOVERNMENTAL INTERESTS UNDER THE COST-SHARING PROVISIONS OF PUBLIC LAW 89-72. UNDER THIS COST-SHARING PROGRAM, STATE, COUNTY, OR LOCAL GOVERNMENT ENTITIES WOULD BE REQUIRED TO ACCEPT THE COST OF THE MANAGEMENT AND MAINTENANCE OF SUCH FACILITIES. COORDINATION UNDERTAKEN DURING THE PREPARATION OF THIS PLAN HAS NOT IDENTIFIED ANY INTEREST IN THIS PROGRAM.

IN ADDITION TO THE COST-SHARING PROGRAM FOR NEW DEVELOPMENT, EXISTING FEDERAL RECREATION FACILITIES AND IMPROVEMENTS INSTALLED PRIOR TO FISCAL YEAR 1976 ARE TO BE

MADE AVAILABLE TO NON-FEDERAL GOVERNMENTAL ENTITIES FOR MANAGEMENT, OPERATION, AND MAINTENANCE. SPECIAL INQUIRY WAS MADE DURING 1980 AND 1981 CONCERNING THE WILLINGNESS OF SUCH INTERESTS TO ASSUME THESE RESPONSIBILITIES FOR THE CORPS-OPERATED RECREATIONAL FACILITIES LOCATED IN POOL 22. THE RESULTS OF THESE EFFORTS HAVE BEEN NEGATIVE.

POTENTIAL RECREATION DEVELOPMENT

RECREATION FACILITY IMPROVEMENTS CONCERNING PROJECT LANDS HAVE BEEN IDENTIFIED BY OTHER GOVERNMENTAL AGENCIES AND ORGANIZATIONS. SUCH CONSIDERATIONS RANGE IN SCOPE AND DETAIL ACCORDING TO THE AUTHORITIES AND CAPABILITIES OF THE VARIOUS ENTITIES. THE FOLLOWING DISCUSSION CONCERNS SUCH INTEREST KNOWN TO DATE, AND INDICATES THE RELATIONSHIP OF SUCH PROPOSALS TO THE PROJECT.

UMBRA. A REPORT ENTITLED RECREATION IN THE UPPER MISSISSIPPI RIVER SYSTEM: AN OVERVIEW OF FACILITY NEEDS WAS PREPARED BY THE UPPER MISSISSIPPI RIVER BASIN ASSOCIATION (UMRBA) IN JULY 1983. THE REPORT PROVIDES A SYSTEMWIDE PERSPECTIVE ON RECREATION FACILITY NEEDS. IMPLEMENTAION OF RECOMMENDED DEVELOPMENT IS SUBJECT TO THE RESPONSIBILITIES AND CAPABILITIES OF MANAGEMENT AGENCIES. THE REPORT STATES THE IMPORTANCE OF RIVER RECREATION RESOURCES AND IDENTIFIES SPECIFIC RECREATIONAL DEVELOPMENTS THAT ARE OF A HIGH PRIORITY FOR CONSIDERATION. THE SPECIFIC RECREATION PROJECTS IDENTIFIED FOR POOL 22 ARE LISTED IN TABLE 5-11.

TABLE 5-11

MISSISSIPPI RIVER - POOL 22UMRBA IDENTIFIED RECREATION NEEDS

FALL CREEK REST AREA	RM 314.0 (1L)	EXPAND FACILITY TO PROVIDE SHELTERS, TRAILS, AND PLAY EQUIPMENT (\$240,000).
HANNIBAL MARINA REVITALIZATION	RM 307.0 (MO)	IMPROVE MARINA THROUGH DREDGING, AND ADDING BOAT DOCKS AND WALKWAYS (\$125,000).

GREAT 11. THE RECREATION WORK GROUP OF GREAT 11 IDENTIFIED GENERAL RECREATION FACILITY DEVELOPMENT NEEDS FOR THE INDIVIDUAL POOLS. THIS ANALYSIS IDENTIFIED ALTERNATIVE FACILITY DEVELOPMENT NEEDS WITHIN A GENERAL AREA ONLY, AND DID NOT INVOLVE SPECIFIC SITES FOR DEVELOPMENT. SUCH CONSIDERATIONS WILL BE USED BY THE CORPS TO DIRECT FUTURE RESOURCE DEVELOPMENT OPPORTUNITIES. GENERAL RECREATION FACILITY NEEDS AND DEVELOPMENT POTENTIALS IDENTIFIED BY GREAT 11 FOR POOL 22 ARE PRESENTED IN FIGURE V-4.

GREAT RIVER ROAD. RECREATION FACILITY DEVELOPMENT UNDER THE AUTHORITY OF THE GREAT RIVER ROAD PROGRAM HAS BEEN COORDINATED WITH THE ILLINOIS DEPARTMENT OF TRANSPORTATION CONCERNING FUTURE NEEDS. SPECIFIC IMPROVEMENTS HAVE BEEN IDENTIFIED UNDER THIS PROGRAM FOR THE JOHN HAY AND PARK-N-FISH CORPS-MANAGED PUBLIC USE AREAS. PROPOSED IMPROVEMENTS ARE PRESENTED IN SECTION VII, RESOURCE MANAGEMENT AND DEVELOPMENT PLANS.

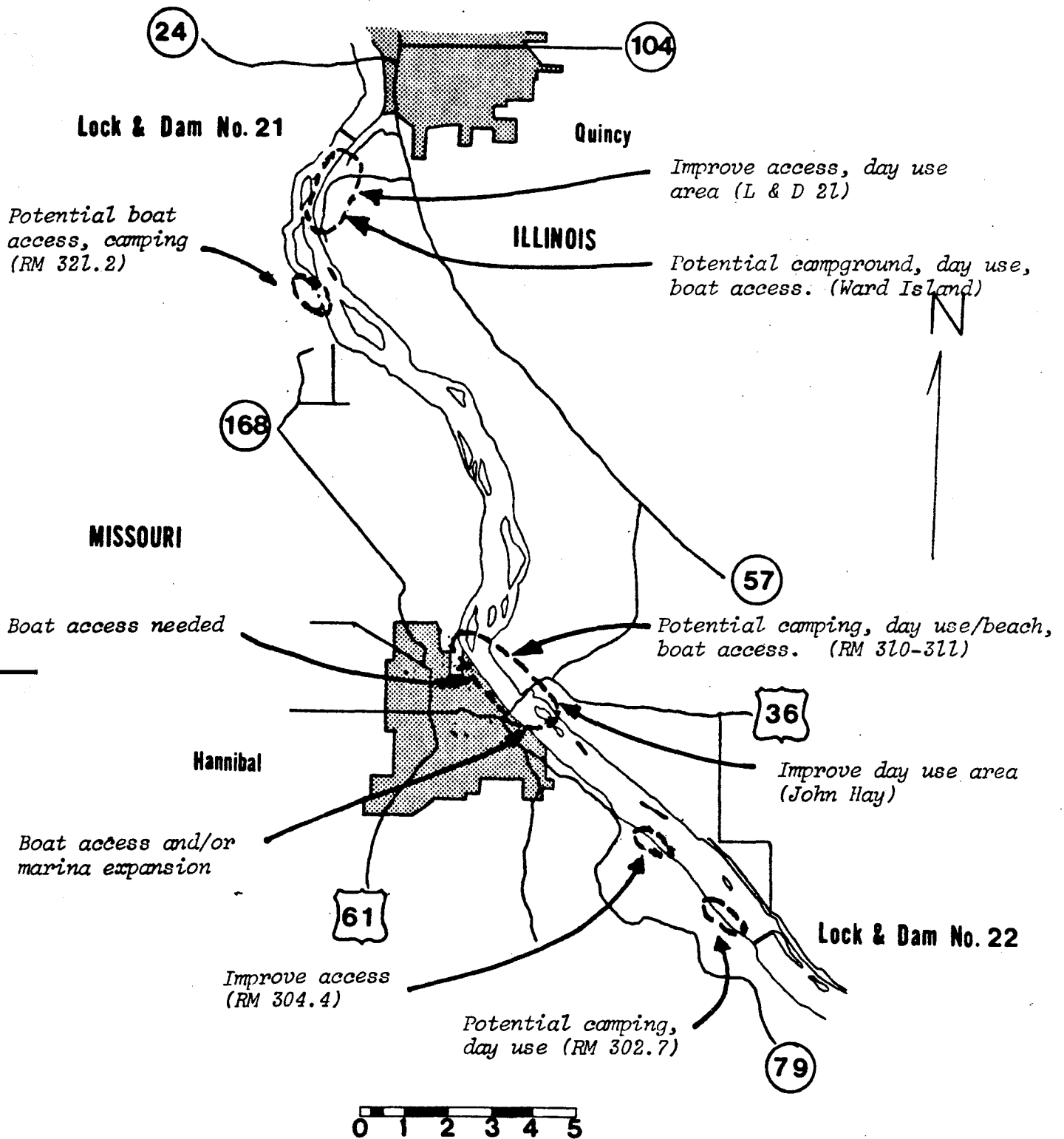


FIGURE V-4
MISSISSIPPI RIVER - POOL 22
GREAT II IDENTIFIED RECREATION AREAS

MISSOURI DEPARTMENT OF CONSERVATION. PROJECT LANDS ADMINISTERED BY THE MISSOURI DEPARTMENT OF CONSERVATION, UNDER THE COOPERATIVE AGREEMENT OF THE FISH AND WILDLIFE MANAGEMENT PROGRAM, HAVE BEEN IDENTIFIED FOR POTENTIAL WETLAND IMPROVEMENT. THE BAY DE CHARLES AREA, RIVER MILE 311-312, HAS THE POTENTIAL FOR MOIST SOIL WETLAND MANAGEMENT WITH THE CONSTRUCTION OF LOW PROFILE LEVEES. THE DEPARTMENT IS PREPARING SPECIFIC MANAGEMENT AND RESTORATION PLANS FOR THIS AREA.

IN ADDITION, THE DEPARTMENT IN 1984 REQUESTED A LEASE OF PROJECT LANDS FOR DEVELOPMENT OF A PUBLIC BOAT ACCESS ADJACENT TO THE NORTH RIVER CONFLUENCE (RIVER MILE 321.2). A GENERAL DEVELOPMENT PLAN AND A DRAFT LEASE AGREEMENT ARE UNDER FINAL REVIEW AND PROCESSING. PROPOSED DEVELOPMENT IS DISCUSSED IN SECTION VII, RESOURCE MANAGEMENT AND DEVELOPMENT PLANS.

ENVIRONMENTAL REQUIREMENTS

NATIONAL ENVIRONMENTAL PROTECTION ACT (NEPA)

IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATIONAL ENVIRONMENTAL PROTECTION ACT OF 1969, AN ENVIRONMENTAL STATEMENT WAS FILED WITH THE COUNCIL ON ENVIRONMENTAL QUALITY ON 7 FEBRUARY 1975, CONCERNING THE OPERATION AND MAINTENANCE STATUS OF THE PROJECT. A COMPOSITE STATEMENT GROUPING POOLS 11-22 WAS MADE TO ASSESS THE CUMULATIVE IMPACTS OF THE PROJECT, WITH INDIVIDUAL POOL CHARACTERISTICS ADDRESSED IN SEPARATE SUPPLEMENTS. THIS STATEMENT WAS CONCERNED PRIMARILY WITH DREDGING IMPACTS OF THE NAVIGATION SYSTEM.

ANY NEW MAJOR PHYSICAL IMPROVEMENTS WILL REQUIRE INDIVIDUAL ASSESSMENT OF ENVIRONMENTAL IMPACTS PRIOR TO IMPLEMENTATION. SUCH ASSESSMENTS WILL DETERMINE IF THE PREPARATION OF AN ENVIRONMENTAL STATEMENT IS WARRANTED. MAJOR ACTIONS WILL BE FULLY COORDINATED WITH APPROPRIATE AGENCIES, ORGANIZATIONS, AND THE PUBLIC TO ASSURE ALL INTERESTS ARE ADDRESSED.

CULTURAL

FORMAL CULTURAL RESOURCES COORDINATION IS NECESSARY PRIOR TO INITIATION OF ANY MAJOR IMPROVEMENTS WHICH WOULD CAUSE DISTURBANCE TO UNDEVELOPED LANDS OR ALTERATIONS TO HISTORIC STRUCTURES LISTED IN THE NATIONAL REGISTER. PROPOSED PLANS WILL BE COORDINATED WITH THE RESPECTIVE STATE HISTORIC PRESERVATION OFFICER (SHPO), AND IF NECESSARY, SITE SPECIFIC SURVEYS UNDERTAKEN FOR MAJOR ACTIONS FOR REVIEW BY APPROPRIATE STATE AND FEDERAL INTERESTS. REPLACEMENT, MAINTENANCE, MINOR FACILITY IMPROVEMENTS, REAL ESTATE, AND ANNUAL FORESTRY MANAGEMENT ACTIONS MAY ALSO NEED TO BE COORDINATED WITH THE SHPO. CULTURAL RESOURCE MANAGEMENT PROCEDURES ARE CONTAINED IN THE PROJECT RESOURCE MANAGEMENT PLAN, APPENDIX A, DATED MARCH 1978, AND SECTION X, OPERATIONAL MANAGEMENT PLAN.

REGULATORY PERMIT

THE CORPS OF ENGINEERS REGULATORY PROGRAM, UNDER THE AUTHORITY OF THE FEDERAL WATER POLLUTION CONTROL ACT AMENDMENTS OF 1972 AND THE RIVER AND HARBOR ACT OF 1899, MAY BE APPLICABLE TO ANY PLANNED PROJECT IMPROVEMENTS. AS APPLICABLE, PERMIT ACTIONS WILL BE ACCOMPLISHED IN CONJUNCTION WITH THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT OF PROPOSED MAJOR IMPROVEMENTS. MAINTENANCE OF EXISTING FACILITIES WOULD NOT REQUIRE ADDITIONAL AUTHORIZATION. ACTIONS TYPICALLY REQUIRING FEDERAL PERMITS ARE: DISCHARGE

OF DREDGE OR FILL MATERIAL IN WATERS OF THE UNITED STATES, DREDGING IN NAVIGABLE WATERS, PLACEMENT OF STRUCTURES IN NAVIGABLE WATERS, AND FILLING OF WETLAND AREAS.

A STATE WATER QUALITY CERTIFICATE, UNDER SECTION 401 OF THE CLEAN WATER ACT, AS AMENDED, WILL BE REQUIRED FOR DISCHARGE OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES. ADDITIONAL STATE AND LOCAL PERMITS MAY BE REQUIRED DEPENDING ON THE ACTIVITY.

RARE AND ENDANGERED SPECIES

COORDINATION WITH THE U.S. FWS WILL BE UNDERTAKEN REGARDING ANY ACTIONS WHICH MAY AFFECT LISTED SPECIES OR DESIGNATED CRITICAL HABITAT. SPECIFIC CONSULTATION PROCEDURES (SECTION 7, ENDANGERED SPECIES ACT OF 1973) WILL BE FOLLOWED IF DETERMINED TO BE WARRANTED. THE SERVICE WILL BE AFFORDED REVIEW OPPORTUNITY OF ANY ACTIONS REGARDING SUCH DETERMINATIONS.

FLOOD PLAIN MANAGEMENT

THE NATIONAL PROGRAM FOR MANAGING FLOOD LOSSES (H.D. NO. 465, 89th CONGRESS, 2d SESSION) IN CONJUNCTION WITH EXECUTIVE ORDER 11988, EMPHASIZES THE REQUIREMENT FOR FEDERAL AGENCIES TO MANAGE GOVERNMENT-OWNED LANDS IN A MANNER WHICH WILL REDUCE THE RISK OF FLOOD LOSS, MINIMIZE THE IMPACT OF FLOODS ON HUMAN SAFETY, HEALTH AND WELFARE, AND RESTORE AND PRESERVE THE NATURAL AND BENEFICIAL VALUES SERVED BY FLOOD PLAINS. AS SUCH, THE CONTINUED LEASING OF LANDS WITHIN THE FLOOD PLAIN (100-YEAR OCCURRENCE ELEVATION) FOR HABITABLE PURPOSES IS CONTRADICTORY TO THESE GUIDANCES. THE CORPS HAS

ADOPTED A POLICY TO PHASE OUT ALL COTTAGE SITE AND RESIDENTIAL LEASES LOCATED ON FEDERAL LANDS BY 31 DECEMBER 1989 PARTIALLY IN ACCORDANCE WITH THESE DIRECTIVES. THIS POLICY IS DISCUSSED FULLY IN SECTION IX, SPECIAL PROBLEMS. ALL FUTURE DEVELOPMENT ON PROJECT LANDS IS TO BE COMPATIBLE WITH THESE FLOOD PLAIN MANAGEMENT GUIDELINES.

COORDINATION

COORDINATION

GENERAL

A PROJECT AS LARGE AND AS COMPREHENSIVE AS THE UPPER MISSISSIPPI RIVER NAVIGATION SYSTEM INVOLVES THE COORDINATION OF A BROAD DIVERSITY OF INTERRELATED INTERESTS OF PUBLIC, COMMERCIAL, AND PRIVATE ENTITIES. IN ADDITION TO THIS COMPLEX POLITICAL AND SOCIAL INVOLVEMENT, DIRECT ADMINISTRATION AND MANAGEMENT OF BOTH THE PROJECT LANDS AND WATERS ALSO INVOLVES VARIOUS MULTIPLE FEDERAL, STATE, AND LOCAL GOVERNMENTAL AGENCIES. PROJECT ADMINISTRATION IS, THEREFORE, A CONTINUOUS COORDINATION PROCESS AT ALL LEVELS OF RESOURCE MANAGEMENT ACTIVITIES (I.E., REAL ESTATE TRANSACTIONS, MAINTENANCE DREDGING, BASIN PLANNING, NEPA COMPLIANCES, REGULATORY PERMITS, TIMBER HARVESTING, ETC.).

THIS PLAN SERVES AS A GUIDE IN THE ADMINISTRATIVE, MANAGERIAL, AND DEVELOPMENTAL ACTIONS CONCERNING PHYSICAL PROJECT RESOURCE USE. COOPERATIVE EFFORT IS MADE TO ASSURE COMPLEMENTARY AND COMPATIBLE MANAGEMENT OF PROJECT RESOURCES WITH PLANNING, MANAGEMENT, AND DEVELOPMENT CONCERNS OF OTHER INTERESTS THAT ARE EITHER DIRECTLY OR INDIRECTLY INVOLVED. THE FOLLOWING DISCUSSION IDENTIFIES COORDINATION WHICH IS DIRECTLY CONCERNED WITH THE PREPARATION OF THIS PLAN. THE LEVEL OF COORDINATION ACCOMPLISHED TO DATE VARIES IN RELATION TO RESPONSES RECEIVED FROM EARLIER EFFORTS, LEVEL OF ADMINISTRATIVE RESPONSIBILITY OF THE INDIVIDUAL INTERESTS, AND THE DOCUMENTED ACTIONS OR PLANNING OF SUCH INTEREST. THE CONTINUED COORDINATION PROCESS OF THIS PLAN AND FUTURE ASSOCIATED IMPLEMENTATION ACTIONS WILL BE FULLY PURSUED AND SUPPLEMENTALLY INCORPORATED IN THE FINAL PLAN OR FUTURE REVISIONS, AS WARRANTED.

OTHER FEDERAL PLANS/PROGRAMS

UPPER MISSISSIPPI RIVER BASIN COMMISSION (UMRBC)

RIVER BASIN COMMISSIONS WERE ESTABLISHED BY THE PRESIDENT PURSUANT TO TITLE II OF THE WATER RESOURCES PLANNING ACT OF 1965, UNDER THE CONTROL OF THE WATER RESOURCES COUNCIL. THE UMRBC WAS OFFICIALLY TERMINATED IN DECEMBER 1981. FROM 1965 UNTIL TERMINATION IN 1981, THE UMRBC HAD BEEN RESPONSIBLE FOR THE PREPARATION AND COORDINATION OF VARIOUS PLANNING STUDIES CONCERNING THE UPPER MISSISSIPPI RIVER SYSTEM. PLANNING EFFORTS IDENTIFY VARIOUS CRITICAL WATER AND RELATED LAND RESOURCE PROBLEMS, OPPORTUNITIES, AND NEEDS OF THE BASIN, AND CONTAIN RECOMMENDATIONS ADDRESSING THESE ISSUES. OPPORTUNITY WAS PROVIDED TO THE GENERAL PUBLIC TO PARTICIPATE IN THE RECENT STUDY EFFORTS AND REVIEW PROPOSED PLAN RECOMMENDATIONS. THE UMRBC DID NOT HAVE AUTHORITY TO CONSTRUCT OR OPERATE PROJECTS; THEREFORE, PLAN IMPLEMENTATIONS ARE DIRECTED FOR ALL LEVELS OF GOVERNMENT IN RELATION TO THEIR RESPECTIVE JURISDICTIONAL CONTROLS AND AUTHORITIES.

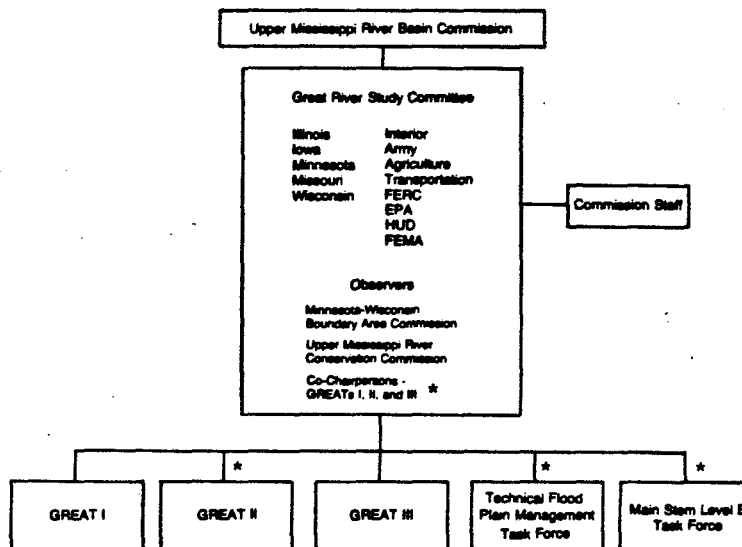
COMPREHENSIVE BASIN PLAN. THE FIRST BASIN PLANNING EFFORT (REFERRED TO AS LEVEL A STUDIES) WAS INITIATED IN 1963 AND COMPLETED IN 1970. THIS COMPREHENSIVE BASIN STUDY WAS A COOPERATIVE EFFORT BETWEEN VARIOUS FEDERAL AND STATE REPRESENTATIVES (A TOTAL OF 70) THAT RESULTED IN EIGHT POLICY DOCUMENTS CONCERNING AGRICULTURE, ECONOMICS, FISH AND WILDLIFE, FLOOD CONTROL-NAVIGATION, HYDROLOGY AND SEDIMENTATION, POWER, RECREATION, AND WATER SUPPLY AND WATER QUALITY CONTROL. THESE STUDIES PROVIDED A BASIS AND GUIDE FOR A SUGGESTED FRAMEWORK FOR DEVELOPING FOR THE BEST USE OF WATER

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AND RELATED LAND RESOURCES WITHIN THE ENTIRE UPPER MISSISSIPPI RIVER BASIN. THE PLAN IMPLEMENTATION WAS TO BE A JOINT RESPONSIBILITY OF THE FEDERAL GOVERNMENT, THE BASIN, STATES, LOCAL AGENCIES, AND PRIVATE INTERESTS.

MAIN STEM LEVEL B. A SUBSEQUENT STUDY EFFORT BY THE UMRBC WAS COMPLETED IN 1979 CONCERNING A MORE COMPREHENSIVE PLAN FOR THE CONSERVATION, DEVELOPMENT, AND MANAGEMENT OF THE WATER AND RELATED LAND RESOURCES OF THE MAIN STEM AREA ONLY. THE STUDY WAS DESIGNED TO IDENTIFY CRITICAL RESOURCE MANAGEMENT NEEDS, AND PROVIDE GUIDANCE AND RECOMMENDED STRATEGIES FOR MEETING THESE NEEDS DURING THE NEXT 25 YEARS (YEAR 2000). STUDY PARTICIPATION INVOLVED A VARIETY OF ORGANIZATIONAL ARRANGEMENTS INCLUDING THE UMRBC, ITS GREAT RIVER STUDY COMMITTEE, THE GREAT RIVER RESOURCE MANAGEMENT STUDY (GREAT'S I, II, AND III), THE LEVEL B TASK FORCE, AND PUBLIC MEETINGS. THE FOLLOWING ORGANIZATION CHART IDENTIFIES THE STUDY PARTICIPANT RELATIONSHIPS FOR THIS PLANNING EFFORT:

ORGANIZATIONAL CHART



* INDICATES OFFICIAL PARTICIPATION OF THE ROCK ISLAND DISTRICT.

THE MAIN STEM LEVEL B TASK FORCE EXECUTED THE STUDY EFFORT, AND CONSISTED OF REPRESENTATIVES FROM EACH STATE AND THE FEDERAL AGENCY PARTICIPATING IN THE STUDY. A SERIES OF TECHNICAL PAPERS EACH PROVIDING DETAILED INFORMATION REGARDING THE DEVELOPMENT OF FINAL PLANNING RECOMMENDATIONS WAS PREPARED BY THE TASK FORCE. THE FOCUS FOR THE STUDY CONCERNED THE FOLLOWING MAJOR ISSUES:

- * FLOODING IN AREAS WHERE PREVIOUS PLANS HAVE NOT PROVIDED FEASIBLE SOLUTIONS FOR REDUCING OR PREVENTING FLOOD DAMAGES.

- * RECREATIONAL BOATING SAFETY WITH RESPECT TO INTERSTATE REGULATION, ENFORCEMENT, AND EDUCATION.

- * NAVIGATION AND THE ENVIRONMENT WITH RESPECT TO THE INTERSTATE COORDINATION OF STANDARDS AND PLANNING EFFORTS.

- * SEDIMENTATION ANALYSIS AND CONTROL IN TERMS OF POTENTIAL SOURCES AND MANAGEMENT AUTHORITY.

- * LAND-USE MANAGEMENT PLANNING NEEDS ALONG THE MAIN STEM, PARTICULARLY IN REGARD TO CRITICAL AREAS AND ENERGY FACILITY SITING.

THE SCOPE OF THE PROBLEM RESOLUTION IN THIS STUDY IS LIMITED MAINLY TO GENERAL POLICY GUIDANCE AND MANAGEMENT STRATEGIES. IN GENERAL, MORE DETAILED STUDIES WOULD BE NECESSARY PRIOR TO IMPLEMENTATION OF MANY OF THE RECOMMENDATIONS CONTAINED IN THE FINAL REPORT. THE PLAN EMPHASIZES INCREASED COORDINATION OF ALL AUTHORITIES RESPONSIBLE FOR THE LAND AND WATER RESOURCES OF THE MAIN STEM AREA, AND INVOLVES THREE PRIMARY CATEGORIES OF ACTION:

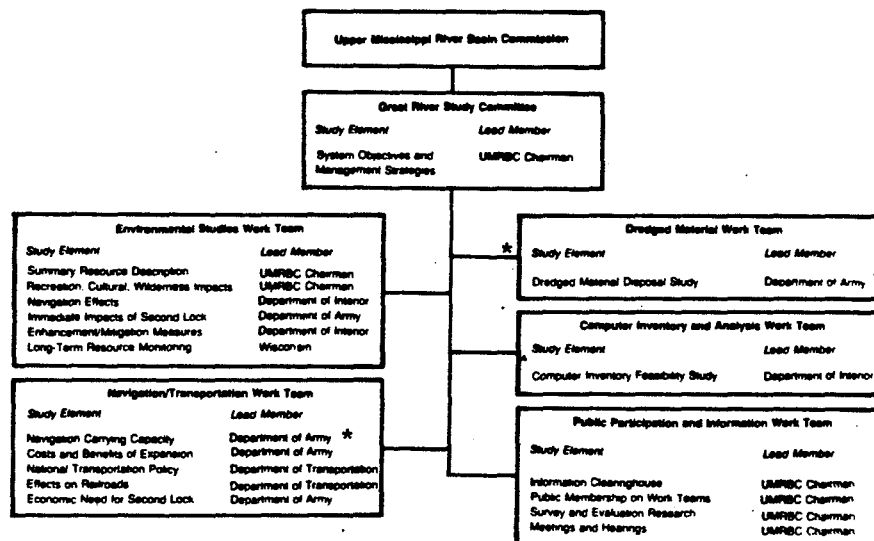
- * IMPROVE AND INCREASE INTERAGENCY COORDINATION OF ONGOING PROGRAMS AND PROJECTS RELATED TO THE INTERSTATE WATER OF THE MAIN STEM.

- * AUTHORIZATION, FUNDING, AND COMPLETION OF PROGRAMS TO PROVIDE AN ADEQUATE WATER AND LAND RESOURCE INFORMATION BASE.

- * ESTABLISHMENT AND CLARIFICATION OF AUTHORITIES FOR THE MANAGEMENT OF MAIN STEM WATER RESOURCES.

IMPLEMENTATION OF PLANNING RECOMMENDATIONS WOULD INVOLVE A SERIES OF DECISIONS AND ACTIONS BY GOVERNMENTAL AGENCIES AND PRIVATE INTERESTS TO SCHEDULE AND FUND THOSE PLAN ELEMENTS WHICH ARE ECONOMICALLY JUSTIFIED AND ENVIRONMENTALLY ACCEPTABLE.

MASTER PLAN. ANOTHER MAJOR PLANNING EFFORT OF THE UMRBC WAS THE DEVELOPMENT OF A COMPREHENSIVE "MASTER PLAN" FOR THE MANAGEMENT OF THE UPPER MISSISSIPPI RIVER SYSTEM (UMRS). THE AUTHORITY FOR THIS STUDY WAS DIRECTED BY CONGRESS UNDER SECTION 101 OF PUBLIC LAW 95-502, ENACTED 21 OCTOBER 1978. THIS PLANNING EFFORT OCCURRED OVER A SPAN OF THREE YEARS, AND FORMALLY ENDED ON 1 JANUARY 1982 WITH A FINAL PLAN SUBMITTED TO CONGRESS. THE FOCUS OF THE PLAN WAS TO BALANCE PRESENT AND FUTURE NAVIGATION ACTIVITY WITH THE ECONOMIC, ENVIRONMENTAL, AND RECREATIONAL OBJECTIVES OF THE RIVER SYSTEM. THE PLAN ALSO PRESENTS WAYS TO IMPROVE INSTITUTIONAL ARRANGEMENTS FOR MANAGING THE RIVER, AND CONSIDERS WAYS TO RESOLVE CONFLICTS OVER COMPETING USES. THE FINAL REPORT CONTAINS THE CONCLUSIONS AND RECOMMENDATIONS REACHED BY THE UMRBC IN COORDINATION WITH THE PUBLIC AND PARTICIPATING FEDERAL, STATE, AND LOCAL AGENCIES. THE FOLLOWING ORGANIZATION DIAGRAM IDENTIFIES THE VARIOUS WORK TEAM STUDIES AND REPRESENTATION INVOLVED IN THIS EFFORT:



* INDICATES OFFICIAL PARTICIPATION OF THE ROCK ISLAND DISTRICT.

THE COMPREHENSIVE MASTER PLAN PRODUCED BY THE UMRC IDENTIFIED BROAD STATEMENTS OF GOALS (SYSTEMWIDE OBJECTIVES) THAT REPRESENT THE NEEDS, USES, AND PERCEIVED OPPORTUNITIES OF THE PUBLIC, ELECTED OFFICIALS, AND GOVERNMENT ENTITIES RESPONSIBLE FOR THE UMRS RESOURCES. THE SYSTEM OBJECTIVES WERE AS FOLLOWS:

SYSTEM OBJECTIVES

ENVIRONMENTAL OBJECTIVES

- TO MAINTAIN AND IMPROVE THE QUANTITY AND QUALITY OF PHYSICAL AND BIOLOGICAL RESOURCES WHICH CONTRIBUTE TO AQUATIC AND TERRESTRIAL WILDLIFE HABITAT.
- TO PROVIDE FISHABLE AND SWIMMABLE WATERS AND PROTECT THE SYSTEM'S WATER FROM FUTURE DEGRADATION.
- TO PRESERVE AND PROTECT UNIQUE PHYSICAL, BIOLOGICAL, AND CULTURAL RESOURCES OF THE SYSTEM.
- TO PROTECT AND ENHANCE ENVIRONMENTAL RESOURCES WHICH MAY BE AFFECTED BY EXISTING AND FUTURE OPERATIONS AND MAINTENANCE OF THE NAVIGATION SYSTEM.

RECREATION OBJECTIVES

- TO MAINTAIN AND IMPROVE THE QUANTITY AND QUALITY OF PHYSICAL, BIOLOGICAL, AND CULTURAL RESOURCES WHICH CONTRIBUTE TO RECREATIONAL EXPERIENCES.
- TO PROVIDE IMPROVED ACCESS TO THE RIVER SYSTEM FOR WATER AND LAND-BASED RECREATION.
- TO PROVIDE A GREATER DEGREE OF SAFETY FOR WATER-BASED RECREATION.

ECONOMIC OBJECTIVES

- TO MEET THE FUTURE DEMAND FOR THE MOVEMENT OF GOODS THROUGH DEVELOPMENT AND MAINTENANCE OF A DEPENDABLE AND EFFICIENT TRANSPORTATION SYSTEM WHICH MAKES WISE USE OF OUR NATION'S RESOURCES, INCLUDING ENERGY.
- TO PROVIDE THOSE ECONOMICALLY JUSTIFIED COMMERCIAL NAVIGATION IMPROVEMENTS AND EXPANSION PROJECTS WHICH ARE FOUND TO BE NEEDED AND OF ADVANTAGE TO THE NATION'S TOTAL TRANSPORTATION SYSTEM.
- TO ENCOURAGE ECONOMIC AND ENERGY EFFICIENT SITE SELECTION AND FACILITY DESIGN FOR COMMERCIAL AND INDUSTRIAL ACTIVITIES.
- TO MINIMIZE THE POTENTIAL FOR FLOOD DAMAGE AND REDUCE THE ECONOMIC IMPACT OF FLOODING.
- TO ENSURE THE RELIABLE AND EQUITABLE DELIVERY OF WATER FOR CONSUMPTIVE AND NONCONSUMPTIVE USES.
- TO ACHIEVE EFFICIENT, SAFE, AND RELIABLE FORMS OF WATER-RELATED ENERGY REDUCTION.
- TO ENSURE THE VIABILITY OF COMMERCIAL FISHING, CLAMMING, AND FUR-TRAPPING ENTERPRISES.
- TO ACHIEVE THE WISE USE OF AGRICULTURAL, FOREST, AND URBAN LANDS.
- TO ENSURE THE ECONOMIC VIABILITY OF RECREATION SUCH AS BOATING, CAMPING, FISHING, HUNTING, AND SIGHTSEEING.

THESE SYSTEMWIDE OBJECTIVES ARE IN ADDITION TO TWO SPECIFIC NATIONAL PURPOSES MANDATED BY CONGRESS, WHICH ARE SEPARATE CONGRESSIONAL ACTIONS CONCERNING COMMERCIAL NAVIGATION AND NATIONAL WILDLIFE REFUGES.

THE FOCUS FOR THE STUDY CONCERNED THE FOLLOWING MAJOR ISSUES OF NATIONAL CONCERN:

- * GENERAL ASPECT OF INSTITUTIONAL ARRANGEMENTS FOR MANAGEMENT.
- * NAVIGATION CARRYING CAPACITY.
- * ENVIRONMENTAL IMPACTS OF NAVIGATION INCLUDING MITIGATION MEASURES.
- * DREDGED MATERIAL DISPOSAL OUT OF THE FLOOD PLAIN.
- * COMPUTER INVENTORY AND ANALYSIS CAPABILITIES.

RECOMMENDATIONS PRESENTED IN THE PLAN ADDRESSED EACH OF THESE FIVE ASPECTS OF RESOURCE MANAGEMENT, AS WELL AS THOSE NEEDS AND PROBLEMS THAT WERE FOUND INHERENT TO THE STUDY RELATIONSHIPS. A SUMMARY OF THE PLAN RECOMMENDATIONS FOLLOWS:

SUMMARY RECOMMENDATIONS

- THAT CONGRESS IMMEDIATELY AUTHORIZE THE ENGINEERING, DESIGN, AND CONSTRUCTION OF A SECOND CHAMBER, 400 FEET IN LENGTH, AT LOCK AND DAM 26.
- THAT CONGRESS EXEMPT THE CONSTRUCTION OF A SECOND CHAMBER AT LOCK AND DAM 26 FROM FURTHER ACTION UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (P.L. 91-190).
- IMMEDIATE ACTION SHOULD BE TAKEN TO REDUCE EROSION RATES TO TOLERABLE LEVELS TO HELP PRESERVE THE INTEGRITY OF ALL RESOURCE VALUES ON THE UMRS.
- CONGRESS IMMEDIATELY AUTHORIZE A HABITAT REHABILITATION AND ENHANCEMENT PROGRAM TO PLAN, CONSTRUCT, AND EVALUATE PROJECTS TO PROTECT, ENHANCE, OR REHABILITATE AQUATIC AND TERRESTRIAL HABITATS LOST OR THREATENED AS A RESULT OF MAN-INDUCED ACTIVITIES OR NATURAL FACTORS.
- CONGRESS IMMEDIATELY AUTHORIZE IMPLEMENTATION OF A LONG-TERM RESOURCE MONITORING PROGRAM.
- CONGRESS IMMEDIATELY AUTHORIZE IMPLEMENTATION OF A COMPUTERIZED INVENTORY AND ANALYSIS SYSTEM FOR DATA STORAGE AND RETRIEVAL, AND FOR USE IN THE LONG-TERM RESOURCE MONITORING PROGRAM.
- CONGRESS IMMEDIATELY AUTHORIZE IMPLEMENTATION OF A PROGRAM OF RECREATIONAL PROJECTS AND THE CONDUCT OF AN ASSESSMENT OF THE ECONOMIC BENEFITS GENERATED BY RECREATIONAL ACTIVITIES IN THE UMRS.
- AS PART OF A TOTAL NAVIGATION IMPROVEMENT PLAN, INCREASE THE CAPACITY OF SPECIFIC LOCKS THROUGHOUT THE SYSTEM BY EMPLOYING CERTAIN NONSTRUCTURAL MEASURES AND MAKING MINOR STRUCTURAL IMPROVEMENTS.
- TRAFFIC MOVEMENTS ON THE NAVIGATION SYSTEM BE MONITORED TO UPDATE TRAFFIC PROJECTIONS, VERIFY LOCK CAPACITIES, AND REFINE ECONOMIC JUSTIFICATIONS AND IMPLEMENTATION DATES FOR FUTURE CAPACITY EXPANSION.
- CONTINUED CURRENT DISPOSAL PRACTICES INCLUDING THOSE DETAILED IN THE GREAT CHANNEL MAINTENANCE PROGRAMS IN THOSE AREAS WHERE THEY HAVE BEEN DEVELOPED. THE MASTER PLAN DREDGED MATERIAL DISPOSAL MATRIX PROCESS MAY BE USED AS A TOOL IN THE SITE EVALUATION.
- A PROGRAM FOR COORDINATING WITH POTENTIAL USERS SHOULD BE DEVELOPED BY THE CONCERNED STATES IN COORDINATION WITH THE CORPS OF ENGINEERS, UTILIZING AND UPDATING EXISTING DEMAND INFORMATION, AS WELL AS THE COLLECTION OF EMPIRICAL DATA TO FACILITATE ECONOMICALLY FEASIBLE PRODUCTIVE USES OF DREDGED MATERIAL.
- THE STATES OF THE UMRS SHOULD ESTABLISH A COOPERATIVE ARRANGEMENT TO MAINTAIN COORDINATIVE AND MANAGEMENT ACTIVITIES FOR WATER AND RELATED LAND RESOURCES WITHIN THE UMRS.

THE SUCCESSFUL IMPLEMENTATION OF THE MASTER PLAN INVOLVES BOTH STATE AND FEDERAL AGENCY ACTIVITIES SUBSEQUENT TO CONGRESSIONAL ACTION ON THE PLAN. SUCH ACTIONS INCLUDE AUTHORIZATION OF ACTIVITIES AS WELL AS THE APPROPRIATION OF FUNDS TO DESIGNATED LEAD AGENCIES.

UPPER MISSISSIPPI RIVER BASIN ASSOCIATION (UMRBA). THE UMRBC WAS OFFICIALLY TERMINATED ON 31 DECEMBER 1981, AND SUBSEQUENTLY REPLACED BY AN AD HOC ASSOCIATION (UMRBA) COMPOSED OF THE AFFECTED STATE REPRESENTATIVES. THIS GROUP DOES NOT OPERATE UNDER ANY DIRECT FEDERAL SUPPORT. INTERESTED FEDERAL AGENCIES SERVE AS UNOFFICIAL ADVISORY REPRESENTATIVES TO THIS ASSOCIATION CONCERNING FUTURE IMPLEMENTATION ACTIONS AND PROGRAM COORDINATION. THE PREPARATION OF CORPS RECREATION-RESOURCE MASTER PLANS

RECOGNIZES AND INCORPORATES APPLICABLE INFORMATION, OBJECTIVES, AND RECOMMENDATIONS IDENTIFIED WITHIN THE VARIOUS UMRBC BASIN PLANNING DOCUMENTS. COORDINATION AND PARTICIPATION WITH THE UMRBA IS AN ONGOING AND INTEGRAL CONCERN OF THE PHYSICAL RESOURCE MANAGEMENT OF THE PROJECT.

A RECREATION STUDY WAS PREPARED BY THE UMRBA IN JULY 1983 ENTITLED RECREATION IN THE UPPER MISSISSIPPI RIVER SYSTEM: AN OVERVIEW OF FACILITY NEEDS. THE REPORT PROVIDES AN OVERVIEW OF RECREATIONAL OPPORTUNITIES, AND IDENTIFIES HIGH PRIORITY RECREATION PROJECTS. THERE ARE TWO WATER-RELATED RECREATION PROJECTS IDENTIFIED FOR POOL 22, WHICH ARE SPECIFICALLY DISCUSSED IN SECTION V OF THIS PLAN.

GREAT RIVER ENVIRONMENTAL ACTION TEAM II (GREAT II)

ORGANIZATION. THE GREAT TASK GROUPS WERE FORMALLY SET UP IN OCTOBER 1974 AS A WORKING PARTNERSHIP OF FEDERAL AGENCIES AND STATES UNDER THE AUSPICES OF THE UPPER MISSISSIPPI RIVER COMMISSION (SEE MAIN STEM LEVEL B ORGANIZATION DIAGRAM OF UMRBC) AND ITS GREAT RIVER STUDY COMMITTEE. THIS GROUP WAS DIVIDED INTO THREE SEPARATE TEAMS COVERING THE RESPECTIVE REACHES OF THE MISSISSIPPI RIVER UNDER THE JURISDICTIONAL BOUNDARIES OF THE ST. PAUL (I), ROCK ISLAND (II), AND ST. LOUIS (III) CORPS OF ENGINEERS DISTRICTS. THE GREAT II MEMBERS WERE REPRESENTATIVES FROM THE FOLLOWING AGENCIES:

- * STATE OF ILLINOIS
- * STATE OF IOWA
- * STATE OF MISSOURI
- * STATE OF WISCONSIN
- * U.S. DEPARTMENT OF THE INTERIOR - FISH AND WILDLIFE SERVICE
- * U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
- * U.S. DEPARTMENT OF DEFENSE - DEPARTMENT OF THE ARMY - CORPS OF ENGINEERS
- * U.S. DEPARTMENT OF TRANSPORTATION - U.S. COAST GUARD
- * U.S. ENVIRONMENTAL PROTECTION AGENCY
- * UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE (NON-VOTING MEMBER)

STUDY PLAN. GREAT RIVER STUDIES WERE AUTHORIZED BY CONGRESS IN THE WATER RESOURCES DEVELOPMENT ACT OF 1976 (PUBLIC LAW 94-587) WHICH DIRECTED THE U.S. ARMY CORPS OF ENGINEERS ". . . TO INVESTIGATE AND STUDY, IN COOPERATION WITH INTERESTED STATES AND FEDERAL AGENCIES, THROUGH THE UMRBC, THE DEVELOPMENT OF A RIVER SYSTEM MANAGEMENT PLAN IN THE FORMAT OF THE 'GREAT RIVER STUDY' FOR THE MISSISSIPPI RIVER . . . INCORPORATING TOTAL RIVER RESOURCE REQUIREMENTS INCLUDING, BUT NOT LIMITED TO, NAVIGATION, THE EFFECTS OF INCREASED BARGE TRAFFIC, FISH AND WILDLIFE, RECREATION, WATERSHED MANAGEMENT, AND WATER QUALITY . . ." THE GREAT II STUDY ADDRESSES MANAGEMENT NEEDS AND RECOMMENDED IMPLEMENTATION STRATEGIES FOR THESE NEEDS UP TO AND INCLUDING THE YEAR 2025. A FINAL GREAT II MAIN REPORT WAS COMPLETED IN DECEMBER 1980. THE SCOPE OF THE PROBLEM RESOLUTION IN THE STUDIES FOCUSED ON CHANNEL MAINTENANCE ACTIVITIES AND THEIR ASSOCIATED BIOLOGICAL, ECONOMICAL, AND SOCIAL IMPACTS, AND INTERRELATED ACTIVITIES OR RESOURCES AFFECTED BY ACTIVITIES ON THE RIVER.

PARTICIPANTS IN THE GREAT RIVER STUDY INCLUDED FEDERAL, STATE, REGIONAL, AND LOCAL AGENCY REPRESENTATIVES, AS WELL AS THE GENERAL PUBLIC. AN INTERNAL OVERVIEW COMMITTEE, CHAIRED BY THE FISH AND WILDLIFE SERVICE, FUNCTIONED AS AN ADVISORY BOARD TO THE TEAM IN DIRECTING FUNDING AND STUDY OBJECTIVES. A PLAN FORMULATION GROUP, CONSISTING OF 12 FUNCTIONAL WORK GROUPS, EXECUTED THE STUDY EFFORT AND COORDINATED, ORGANIZED, AND FORMULATED THE INDIVIDUAL STUDY ACTIVITIES, FINDINGS, AND RECOMMENDATIONS, INTO A COMPREHENSIVE PLAN FOR SUBMITTAL TO THE TEAM. THE FUNCTIONAL WORK GROUPS PREPARED INDIVIDUAL REPORTS WHICH IDENTIFIED PROBLEMS, CONDUCTED STUDIES, FORMULATED CONCLUSIONS AND ALTERNATIVE SOLUTIONS, AND DEVELOPED RECOMMENDATIONS TO BEST MANAGE THEIR RESPECTIVE AREAS OF CONCERN. THE INDIVIDUAL WORK GROUPS AND THE LEADING AGENCY WERE AS FOLLOWS:

WORK GROUPLEADER

COMMERCIAL TRANSPORTATION
CULTURAL RESOURCES

DEPARTMENT OF TRANSPORTATION; U.S. COAST GUARD
STATE HISTORICAL DEPARTMENT OF IOWA; DIVISION OF
HISTORIC PRESERVATION

DREDGED MATERIAL USES
DREDGING REQUIREMENTS
FISH AND WILDLIFE MANAGEMENT
FLOOD PLAIN MANAGEMENT
MATERIAL AND EQUIPMENT NEEDS
PUBLIC PARTICIPATION AND
INFORMATION
RECREATION

IOWA GEOLOGICAL SURVEY
CORPS OF ENGINEERS
U.S. FISH AND WILDLIFE SERVICE
MISSOURI DEPARTMENT OF NATURAL RESOURCES
CORPS OF ENGINEERS
PRIVATE CITIZENS AND PUBLIC INTEREST GROUPS;
PRIVATE CONTRACTOR
IOWA CONSERVATION COMMISSION AND ILLINOIS
DEPARTMENT OF CONSERVATION
SOIL CONSERVATION SERVICE
U.S. FISH AND WILDLIFE SERVICE
MISSOURI DEPARTMENT OF NATURAL RESOURCES

SEDIMENT AND EROSION CONTROL
SIDE CHANNEL
WATER QUALITY

PLAN OBJECTIVES. THE BOARD PLANNING OBJECTIVES FOR THE STUDY INCLUDED GUIDELINES PROVIDED BY THE UMRBC, AND THOSE DEVELOPED BY THE GREAT 11 TEAM. MORE SPECIFIC PLANNING OBJECTIVES WERE DEVELOPED INDIVIDUALLY BY EACH WORK GROUP TO DIRECT THEIR STUDY CONCERNS. THE FOLLOWING LIST DISPLAYS THE BROAD PLANNING OBJECTIVES OF THE STUDY:

PLANNING OBJECTIVES

- TO IDENTIFY PRESENT AND FUTURE PROBLEMS IN RIVER NAVIGATION. TO IDENTIFY THE NEEDS CREATED BY THESE PROBLEMS. TO IDENTIFY ALTERNATIVE WAYS TO MEET THESE NEEDS.
- TO DETERMINE THE MEANS, AND TO MAKE RECOMMENDATIONS FOR PRESERVING AND PROTECTING THE CULTURAL RESOURCES OF THE GREAT 11 REACH OF THE UMR.
- TO IDENTIFY AND DEVELOP WAYS TO USE DREDGED MATERIAL AS A VALUABLE RESOURCE FOR PRODUCTIVE USES.
- TO REDUCE THE QUANTITY OF DREDGED MATERIAL IN THE SHORT-TERM (SITE SPECIFIC EACH DREDGING OCCURRENCE) AND STILL MAINTAIN A SAFE NAVIGABLE CHANNEL. TO REDUCE THE QUANTITY OF DREDGED MATERIAL IN THE LONG-TERM BY DETERMINING CHANNEL DEPTHS AND WIDTHS TO MINIMIZE DREDGING QUANTITIES, AND STILL MAINTAIN A SAFE NAVIGABLE CHANNEL AND TO MAKE MORE USE OF REGULATORY STRUCTURES TO PREVENT CHANNEL SHOALING.
- TO DETERMINE THE MEANS AND TO MAKE RECOMMENDATIONS FOR PRESERVING, PROTECTING, AND ENHANCING THE FISH AND WILDLIFE RESOURCES OF THE UMR.
- TO STRIVE TO COMPLY WITH STATE AND LOCAL REGULATIONS CONCERNING DREDGING AND DREDGED MATERIAL DISPOSAL, AND TO PERFORM THOSE STUDIES NECESSARY TO DEVELOP UNIFIED FLOOD PLAIN MANAGEMENT ALONG THE GREAT 11 REACH OF THE UMR.
- TO ASSURE NECESSARY EQUIPMENT TO MAINTAIN THE TOTAL RIVER RESOURCES ON THE UMR IN AN ENVIRONMENTALLY SOUND MANNER.
- TO DEVELOP PROCEDURES FOR ASSURING AN APPROPRIATE LEVEL OF PUBLIC PARTICIPATION.
- TO ELIMINATE ADVERSE EFFECTS TO RECREATION RESULTING FROM CHANNEL MAINTENANCE ACTIVITIES. TO ENHANCE RECREATIONAL BENEFITS OF THE RIVER CORRIDOR FROM CHANNEL MAINTENANCE ACTIVITIES. TO ENHANCE RECREATIONAL USE OF THE RIVER CORRIDOR CONSISTENT WITH MAINTAINING THE QUALITY OF THE CORRIDOR'S NATURAL RESOURCES BY ADEQUATE DISTRIBUTION OF RELATED RECREATIONAL OPPORTUNITIES, TO MAINTAIN THE INTEGRITY OF THE RECREATION VIEWSHED, AND TO DISTRIBUTE INFORMATION ON STUDY FINDINGS.
- TO DETERMINE THE SOURCE(S) OF SEDIMENT CAUSING DREDGING AND SEDIMENTATION; TO DETERMINE THE QUANTITY OF SEDIMENT ENTERING THE RIVER CORRIDOR FROM THESE SOURCES, AND TO PROPOSE LAND TREATMENT AND LAND MANAGEMENT ALTERNATIVES TO ALLEVIATE THE SEDIMENTATION.
- TO MAKE RESOURCE MANAGEMENT RECOMMENDATIONS THAT WILL INSURE THE PROTECTION AND/OR ENHANCEMENT OF FISH AND WILDLIFE RESOURCES AND THEIR ENJOYMENT AND UTILIZATION BY THE PUBLIC IN OFF-CHANNEL (SIDE CHANNEL, BACKWATER) AREAS, THIS BEING IN THE CONTEXT OF AN ARTIFICIALLY CONTROLLED, RIVERINE ECOSYSTEM OPERATED AND MAINTAINED FOR COMMERCIAL NAVIGATION.
- TO PROMOTE THE IMPROVEMENT AND/OR MAINTENANCE OF WATER QUALITY IN THE GREAT 11 AREA.

PLAN RECOMMENDATIONS. DUE TO TIME AND FUNDING CONSTRAINTS, THE TEAM WAS NOT ABLE TO FULFILL ALL OF THEIR PLANNING OBJECTIVES. IN THOSE AREAS OF INSUFFICIENT DATA, RECOMMENDATIONS WERE MADE CONCERNING NEEDED FURTHER STUDY. THE OVERALL GOAL OF THE GREAT II STUDIES WAS TO DEVELOP A TOTAL RIVER RESOURCE MANAGEMENT PLAN FOR THE UPPER MISSISSIPPI RIVER, COLLECTIVELY WITH THE OTHER UMRBC STUDY EFFORTS. THE GREAT II RECOMMENDED PLAN SPECIFIES ACTIONS (WHERE POSSIBLE) OR DELINEATES STUDIES AND PROGRAMS AS PART OF A "TOTAL MANAGEMENT PLAN." THE RECOMMENDATIONS COVER THE FOLLOWING NINE AREAS OF RIVER MANAGEMENT: (1) CHANNEL MAINTENANCE; (2) COMMERCIAL TRANSPORTATION; (3) COMMERCIAL, INDUSTRIAL, AND UTILITY DEVELOPMENT; (4) FLOOD PLAIN MANAGEMENT; (5) RECREATION; (6) WATER QUALITY; (7) SEDIMENT AND EROSION; (8) FISH AND WILDLIFE MANAGEMENT; AND (9) CULTURAL AND AESTHETIC. MANY OF THE PLAN RECOMMENDATIONS FALL INTO THE CATEGORY OF FURTHER STUDY. THERE WERE 166 ORIGINAL WORK GROUP RECOMMENDATIONS, OF WHICH 151 WERE APPROVED FOR FURTHER REVIEW AND ANALYSIS BY THE TEAM. THE FINAL PLAN IDENTIFIES 56 MAJOR RECOMMENDATIONS ADOPTED AND APPROVED BY THE TEAM, ORGANIZED INTO THE 9 AREAS IDENTIFIED ABOVE, PLUS THREE ADDITIONAL AREAS (PUBLIC INFORMATION AND EDUCATION PROGRAM, ONGOING COORDINATION, AND LEGISLATION) PROVIDING GUIDANCE FOR IMPLEMENTATION OF THE PLAN. THE 13 MAJOR RECOMMENDATIONS IDENTIFIED FOR RECREATION AND 5 FOR FISH AND WILDLIFE MANAGEMENT WERE AS FOLLOWS:

MAJOR RECREATION AND FISH AND WILDLIFE MANAGEMENT RECOMMENDATIONS

- ROCK ISLAND DISTRICT/CORPS OF ENGINEERS SHOULD CONDUCT STUDIES AND ANALYSES OF POLICIES RELATED TO CANCELLING RECREATIONAL LEASE SITES PER EXECUTIVE ORDER 11980. THE PROCESS SHOULD INCLUDE CITIZEN REPRESENTATION FROM LEASE HOLDERS AND THE GENERAL PUBLIC.
- THE MANAGEMENT AGENCIES ON THE RIVER SHOULD CONDUCT STUDIES TO COMPILE A COMPLETE SET OF DATA ON RECREATIONAL USES AND FACILITIES.
- STATE AGENCIES SHOULD INCLUDE THE UPPER MISSISSIPPI RIVER IN FUTURE STATE COMPREHENSIVE OUTDOOR RECREATION PLANS (SCORP).
- STATES AND FEDERAL MANAGEMENT AGENCIES, WORKING TOGETHER, SHOULD DEVELOP RECREATION MANAGEMENT OBJECTIVES FOR EACH POOL.
- STATE AND FEDERAL AGENCIES, WORKING TOGETHER, SHOULD IDENTIFY AND EVALUATE RIVER ACCESS NEEDS AND SUBSEQUENTLY PROVIDE NEW AND/OR IMPROVED ACCESS AREAS. POOL 19 SHOULD BE HIGH PRIORITY FOR STUDY.
- STATE AND FEDERAL MANAGEMENT AGENCIES SHOULD DEVELOP AND IMPLEMENT PROGRAMS TO DECREASE LITTER PROBLEMS.
- TRAIL DEVELOPMENT EFFORTS (BOTH WATER AND LAND) SHOULD BE EXPANDED ALONG THE UPPER MISSISSIPPI RIVER THROUGH USE OF GREAT RIVER ROAD PROGRAMS AND RAIL RIGHT-OF-WAY CONVERSION.
- STATE REGULATORY AGENCIES SHOULD CARRY OUT EFFORTS TO REDUCE NOISE LEVELS FROM BOATING EQUIPMENT THROUGH REGULATION OF MANUFACTURERS AND BOATING EQUIPMENT USERS.
- STATE AND FEDERAL MANAGEMENT AGENCIES SHOULD SEEK FUNDING FROM VARIOUS SOURCES TO ASSURE IMPLEMENTATION OF ACTIONS NOTED IN ABOVE RECOMMENDATIONS.
- STATE AND FEDERAL AGENCIES RESPONSIBLE FOR ISSUING BOATHOUSE PERMITS SHOULD CAREFULLY CONTROL AND ENFORCE ISSUANCE TO PREVENT EXTENDED RESIDENCY, SANITARY DISCHARGE, AESTHETIC IMPACTS, AND CONFLICTS RESPECTIVE TO OTHER USES OF RIVER RESOURCES.
- A FISH AND WILDLIFE INTERAGENCY COMMITTEE (FWIC) SHOULD BE DESIGNATED AND FUNDED TO PROVIDE COORDINATION REGARDING FISH AND WILDLIFE MATTERS ASSOCIATED WITH MAIN CHANNEL BREDDING, BREDDING MATERIAL DISPOSAL, PHYSICAL RIVER MODIFICATIONS, AND RIVER MANAGEMENT STUDIES AND INVESTIGATIONS (SEE MAIN REPORT FOR MEMBERSHIP AND FWIC RESPONSIBILITIES).
- THE U.S. FWS, IN COOPERATION WITH THE OTHER STATE AND FEDERAL NATURAL RESOURCE MANAGEMENT AGENCIES, SHOULD CARRY OUT GREAT II SPECIFIED STUDIES RELATED TO THE DISTRIBUTION, ABUNDANCE, POPULATION CHARACTERISTICS, AND HARVEST OF ALL FISH AND WILDLIFE SPECIES IN THE RMR ON A SYSTEMATIC BASIS. A MONITORING PROGRAM OF ENDANGERED AND THREATENED SPECIES, MONITORING OF THE NESTING SITES OF COLONIAL BIRDS, AND AN INVENTORY OF SUMMERBENT CHARACTERISTICS OF THE RMR SHOULD BE A PART OF THIS EFFORT.
- THE ROCK ISLAND DISTRICT, CORPS OF ENGINEERS, IN COORDINATION WITH THE FWIC, SHOULD COMPLETE A SERIES OF SIX STUDIES IDENTIFIED BY GREAT II RELATED TO BACKWATER MODIFICATION AND HABITAT ENHANCEMENT (SEE MAIN REPORT).
- THE ROCK ISLAND DISTRICT, CORPS OF ENGINEERS, IN CONJUNCTION WITH THE FWIC, SHOULD DEVELOP AND SCOPE A STUDY TO DETERMINE THE CUMULATIVE EFFECTS OF INCREASED INDUSTRIAL, MUNICIPAL, RESIDENTIAL AND RECREATIONAL ENCROACHMENT ON FISH AND WILDLIFE HABITAT AND THE EFFECT OF ENVIRONMENTAL REGULATIONS ON INDUSTRIAL, MUNICIPAL, RESIDENTIAL AND RECREATIONAL DEVELOPMENT IN THE RMR CORRIDOR.
- A SERIES OF FISH AND WILDLIFE RESOURCE-RELATED STUDIES CURRENTLY BEING CONSIDERED AS PART OF THE UPPER MISSISSIPPI RIVER BASIN COMMISSION MASTER PLAN, THE ROCK ISLAND DISTRICT, CORPS OF ENGINEERS, WATER BIOLOGICAL STUDIES, AND THE WATER PLANNING EFFORT OF THE UPPER MISSISSIPPI WILD LIFE AND FISH REFUGE SHOULD ALL BE COMPLETED TO AID IN OVERALL EFFORTS TO PROTECT FISH AND WILDLIFE RESOURCES.

PLAN IMPLEMENTATION. SINCE THE GREAT STUDIES WERE SO COMPREHENSIVE AND COMPLEX, BOTH GENERAL AND SPECIFIC PROCEDURES FOR IMPLEMENTATION WERE OUTLINED. THE GENERAL PROCEDURES WERE A CONCEPTUAL ADMINISTRATIVE PROCESS OF IMPLEMENTATION FOR ANY OR ALL OF THE RECOMMENDATIONS. SPECIFIC PROCEDURES FOR IMPLEMENTATION IDENTIFIED LEAD AGENCIES AND PARTICIPATING INTERESTS FOR RESPONSIBILITY OF THE RECOMMENDED ACTION. THE FINAL PLAN IDENTIFIED THE ROCK ISLAND DISTRICT (COE) AS THE LEAD AGENCY FOR IMPLEMENTING 27 OF THE MAJOR RECOMMENDATIONS. IN JUNE 1981, THE ROCK ISLAND DISTRICT PREPARED A REPORT ^{1/} THAT OUTLINES A PROGRAM OF IMPLEMENTATION CONCERNING COSTS, AUTHORITIES, AND PRIORITY RANKINGS FOR CARRYING OUT VARIOUS GREAT II PLAN RECOMMENDATIONS ADDRESSED PARTICULARLY TO THE ROCK ISLAND DISTRICT. ACTIONS IDENTIFIED AS HIGH PRIORITY ITEMS WERE TO BE IMPLEMENTED WITHIN 5 YEARS OR BY 1986. MANY OF THE DESIGNATED HIGH PRIORITY ACTIONS ARE NOW BEING IMPLEMENTED OR ARE POSSIBLE IN THE NEAR FUTURE AS PART OF ONGOING PROGRAMS. SUCH IMPLEMENTATIONS ARE SUBJECT TO CONTINUED AND FUTURE CONGRESSIONAL APPROPRIATION AND FUNDING APPROVAL. THE UPDATE OF

^{1/} U.S. ARMY ENGINEER DISTRICT-ROCK ISLAND. IMPLEMENTATION REPORT FOR GREAT II STUDY UPPER MISSISSIPPI RIVER (GUTTENBERG, IOWA, TO SAVERTON, MISSOURI). JUNE 1981.

THE RECREATION-RESOURCE MASTER PLANS WAS IDENTIFIED AS A HIGH PRIORITY ITEM, AS PART OF THE RECREATION RECOMMENDATIONS. PREPARATION OF THE RECREATION-RESOURCE MASTER PLANS RECOGNIZES AND INCORPORATES APPLICABLE INFORMATION, OBJECTIVES, AND RECOMMENDATIONS CONTAINED IN THE GREAT STUDIES. ONGOING COORDINATION PROGRAMS (OSIT AND ORRMT) INITIATED THROUGH GREAT ARE CONTINUOUS INTEGRAL CONCERNS OF THE PHYSICAL RESOURCE MANAGEMENT OF THE PROJECT.

U.S. DEPARTMENT OF TRANSPORTATION

U.S. COAST GUARD. THE COAST GUARD HAS JURISDICTIONAL RESPONSIBILITY ON NAVIGABLE WATERS TO (1) PREVENT DAMAGE TO VESSELS, BRIDGES, AND OTHER STRUCTURES ON SUCH WATERS AND ADJACENT LANDS, AND (2) PROTECT SUCH WATERS AGAINST ENVIRONMENTAL HARM RESULTING FROM VESSEL OR STRUCTURE DAMAGE. THE SECRETARY OF TRANSPORTATION IS AUTHORIZED ALSO TO CONTROL VESSEL TRAFFIC IN HAZARDOUS AREAS OR DURING CONDITIONS OF ADVERSE WEATHER OR VESSEL CONGESTION. METHODS OF VESSEL TRAFFIC CONTROL INCLUDE VESSEL SIZE REQUIREMENTS, SPEED LIMITS, AND OPERATING CONDITIONS. THE SECRETARY OF TRANSPORTATION MAY ALSO PRESCRIBE MINIMUM SAFETY EQUIPMENT; INVESTIGATE ANY INCIDENT INVOLVING DAMAGE TO VESSELS OR STRUCTURES ON NAVIGABLE WATERS; AND ISSUE RULES, REGULATIONS, AND STANDARDS NECESSARY TO IMPLEMENT THIS LAW.

INSTALLATION AND MAINTENANCE OF PRIMARY NAVIGATION AIDS ARE ALSO COAST GUARD RESPONSIBILITIES. THE CORPS DISTRICT ENGINEER IS AUTHORIZED TO CONFER WITH THE COAST GUARD COMMANDER ABOUT ESTABLISHMENT OR ALTERATION OF PERMANENT NAVIGATION AIDS. THE CORPS IS ONLY RESPONSIBLE FOR NAVIGATION AIDS REQUIRED TEMPORARILY BECAUSE OF CONSTRUCTION AND ZONING ORDINANCES, SUCH AS BUOYS TO MARK DREDGING EQUIPMENT.

THE COAST GUARD WAS AN ACTIVE PARTICIPANT IN THE GREAT II STUDIES (COMMERCIAL TRANSPORTATION WORK GROUP LEADER, AS WELL AS A REPRESENTATIVE WITHIN OTHER WORK GROUPS CONCERNING NAVIGATION). THEIR ACTIVE PARTICIPATION WITH ONGOING GREAT PROGRAMS (OSIT, ORRMT) ALSO INVOLVES THEM IN A CONTINUOUS COORDINATION PROCESS OF PROJECT MANAGEMENT.

GREAT RIVER ROAD. THIS FEDERALLY-DESIGNATED PARKWAY ROUTE ALONG THE MISSISSIPPI RIVER WAS ORIGINALLY CONCEIVED IN 1938. IT IS THE THIRD MAJOR RECREATION AND SCENIC HIGHWAY IN THE COUNTRY. THE PARKWAY EXTENDS THE ENTIRE LENGTH OF THE RIVER, ALTERNATING OR PARALLELING EACH SIDE, AND INVOLVES A 10-STATE AREA. THE GREAT RIVER ROAD PROGRAM IS ADMINISTERED IN EACH STATE BY THE DEPARTMENT OF TRANSPORTATION UNDER THE GUIDANCE OF THE MISSISSIPPI RIVER PARKWAY COMMISSION, LOCATED IN ST. PAUL, MINNESOTA. CONGRESS FIRST AUTHORIZED STUDIES PERTAINING TO THE PARKWAY DEVELOPMENT IN 1949; HOWEVER, FUNDING WAS DELAYED UNTIL 1976 DUE TO PRIORITY DEVELOPMENT OF THE INTERSTATE HIGHWAY SYSTEM. FUNDING FOR PARKWAY DEVELOPMENT PROJECTS IS ON A COST-SHARE BASIS BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION (75 PERCENT) AND LOCAL NON-FEDERAL SPONSORS (25 PERCENT). APPROPRIATIONS COME FROM HIGHWAY TRUST AND GENERAL FUNDS. THIS PROGRAM HAS BEEN FUNDED FOR PROJECTS THROUGH FISCAL YEAR 1982 (30 SEPTEMBER 1982).

COOPERATIVE AND COMPLEMENTARY PARTICIPATION IN THE GREAT RIVER ROAD PROGRAM HAS BEEN COORDINATED WITH THE RESPECTIVE STATE TRANSPORTATION DEPARTMENTS CONCERNING POTENTIAL INVOLVEMENT OF PROJECT LANDS FOR PARKWAY DEVELOPMENT. THESE PROJECTS CONSIST PRIMARILY OF IMPROVEMENTS TO EXISTING CORPS-OPERATED RECREATION AREAS AND OBSERVATION OPPORTUNITIES AT THE LOCK AND DAMS. THE STATUS OF SUCH PROJECTS VARIES FROM COMPLETED EFFORTS TO PENDING FUNDING APPROPRIATIONS. THE PRIORITY OF SUCH IMPROVEMENTS VARIES ALSO WITHIN THE INDIVIDUAL STATES WHICH ADMINISTER THESE PROGRAMS. CONTINUED

COORDINATION WILL BE MAINTAINED WITH THE COMMISSION AND THE STATE TRANSPORTATION DEPARTMENTS CONCERNING THE GREAT RIVER PROGRAM STATUS AND OBJECTIVES INVOLVING PROJECT LANDS AND WATER.

U.S. DEPARTMENT OF INTERIOR (USDOI)

THERE ARE SEVERAL NATIONAL PROGRAMS ADMINISTERED UNDER THE SECRETARY OF THE INTERIOR WHICH CONCERN PROJECT LANDS AND WATER RESOURCE MANAGEMENT EITHER DIRECTLY OR INDIRECTLY. COORDINATION WITH THE USDOI IS FORMALLY MAINTAINED CONCERNING PLANNING, DEVELOPMENT, AND ADMINISTRATION OF THE PROJECT IN RELATION TO SUCH PROGRAMS FOR REVIEW, COMPLIANCE, AND/OR COOPERATIVE PURPOSES. THE FOLLOWING DISCUSSION IDENTIFIES THESE PROGRAMS AND COORDINATION PROCEDURES AS APPLICABLE TO THE PREPARATION AND IMPLEMENTATION OF THE RECREATION-RESOURCE MASTER PLAN.

NATIONAL PARK SERVICE. (NPS) THIS FEDERAL AGENCY DIRECTLY ADMINISTERS THE NATIONAL CULTURAL AND NATURAL HERITAGE PROGRAMS. COORDINATION WITH THE NPS IS LIMITED TO ADMINISTRATIVE REVIEW OF PROJECT ACTIVITIES AND PLANS TO ASSURE COMPLIANCE AND COMPATIBILITY WITH THEIR PROGRAM CONCERNS. THERE ARE PRESENTLY NO NATIONAL PARKS, MONUMENTS, OR AREAS/SITES LOCATED ON PROJECT LANDS THAT ARE MANAGED BY THE NPS. SPECIFIC PROGRAMS OF POTENTIAL OR KNOWN INFLUENCE WITH THE PROJECT ARE THE LAND AND WATER CONSERVATION FUND ADMINISTRATION (PUBLIC LAW 88-578), NATIONAL WILD AND SCENIC RIVER SYSTEM (PUBLIC LAW 90-542), NATIONAL REGISTER OF HISTORIC PLACES (PUBLIC LAWS 89-665 AND 96-515), AND NATIONAL RECREATION AREA ADMINISTRATION.

THE NPS PROVIDES ASSISTANCE TO THE STATES IN PREPARING AND MAINTAINING STATE COMPREHENSIVE OUTDOOR RECREATION PLANS (SCORP), WHICH IS DISCUSSED IN SUBSEQUENT PARAGRAPHS CONCERNING STATE PLANS AND PROGRAMS. RECREATION PLANNING FOR THE PROJECT

IS TO BE CONSISTENT WITH OR ASSIST IN THE FULFILLMENT OF IDENTIFIED OBJECTIVES AND ACTIONS CONTAINED WITHIN SUCH PLANS. THE NPS REVIEWS PROJECT RECREATION-RESOURCE MASTER PLANS IN RELATION TO THIS CONCERN.

AT THE REQUEST OF THE NPS AND FOREST SERVICE, THE CORPS PARTICIPATES IN FIELD STUDIES OF STREAM SEGMENTS FOR POTENTIAL ADDITIONS TO THE NATIONAL WILD AND SCENIC RIVERS SYSTEM. THE NPS ALSO REVIEWS PROJECT RECREATION-RESOURCE MASTER PLANS CONCERNING POTENTIAL IMPACTS ON ANY EXISTING OR POTENTIALLY DESIGNATED NATIONAL WILD AND SCENIC RIVER AREA.

THE NPS IS RESPONSIBLE FOR VARIOUS NATIONAL REGISTRY LISTINGS CONCERNING NATURAL AND HISTORIC RELATED PROPERTIES. TO BE LISTED, AN AREA MUST BE OF EITHER EXCEPTIONAL, SCIENTIFIC, OR UNIQUE VALUE AND BE RECOGNIZED, NOMINATED, AND RECOMMENDED BY RESPONSIBLE AUTHORITIES AT THE STATE LEVEL OR NOMINATED BY THE SECRETARY OF THE INTERIOR. THE NPS REVIEWS PROJECT RECREATION-RESOURCE MASTER PLANS CONCERNING IDENTIFICATION OF ANY LISTED OR ELIGIBLE NOMINATED SITES FOR SUCH NATIONAL LISTINGS.

AN UPPER MISSISSIPPI RIVER NATIONAL RECREATION AREA STUDY WAS STARTED IN 1968 AND COMPLETED IN 1970. THE INITIAL STUDY WAS PREPARED BY A TASK FORCE OF REPRESENTATIVES FROM VARIOUS FEDERAL AND STATE AGENCIES. BETWEEN 1968 AND 1972 SEVERAL BILLS HAD BEEN INTRODUCED IN CONGRESS PROPOSING THIS DESIGNATION, NONE OF WHICH PASSED A CONGRESSIONAL COMMITTEE REVIEW. THERE IS PRESENTLY NO LEGISLATION PENDING THAT WOULD AUTHORIZE SUCH DESIGNATION. A POTENTIAL PROBLEM, WHICH MAY HAVE DISCOURAGED SUCH ENACTMENT, IS THAT NRA DESIGNATIONS REQUIRE OUTDOOR RECREATION TO BE THE DOMINANT OR PRIMARY RESOURCE MANAGEMENT PURPOSE.

U.S. FISH AND WILDLIFE SERVICE. (FWS) THERE ARE TWO NATIONAL PROGRAMS (REFUGE SYSTEM AND ENDANGERED SPECIES ACT) ADMINISTERED BY THE FWS THAT CONCERN PROJECT RESOURCE MANAGEMENT DIRECTLY. IN PARTICULAR, THE DISTRICT IS WORKING JOINTLY WITH THE FWS CONCERNING MANAGEMENT OBJECTIVES AND PROGRAMS ON THE UPPER MISSISSIPPI RIVER BECAUSE OF SHARED JURISDICTION OVER ADJOINING AND COOPERATIVE AGREEMENT LANDS.

THE ENDANGERED SPECIES ACT OF 1973 (PUBLIC LAW 93-205), AS AMENDED, STATES THE POLICY OF CONGRESS THAT ALL FEDERAL AGENCIES MUST SEEK TO CONSERVE FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES. THE FWS ADMINISTERS FORMAL CONSULTATION PROCEDURES ESTABLISHED WITH THE SECRETARY OF INTERIOR, WHICH IS REQUIRED OF FEDERAL AGENCIES TO INSURE THAT THEIR AUTHORIZED ACTIONS NEITHER JEOPARDIZE THE CONTINUED EXISTENCE OF ANY ENDANGERED OR THREATENED SPECIES NOR RESULT IN ADVERSE MODIFICATION OF CRITICAL HABITAT. THE FWS REVIEWS PROJECT RECREATION-RESOURCE MASTER PLANS IN RELATION TO THIS CONCERN. SPECIFIC COORDINATION WILL BE UNDERTAKEN REGARDING INDIVIDUAL ACTIONS AND ACTIVITIES INVOLVING SUCH CONCERNS THAT ARE IDENTIFIED DURING NORMAL REVIEW PROCEDURES PRIOR TO ANY IMPLEMENTATION. LETTERS OF COORDINATION ON THIS CONCERN RECEIVED TO DATE ARE INCLUDED IN ATTACHMENT IV OF THIS PLAN.

THE FWS MANAGES MUCH OF THE PROJECT LANDS AND WATERS UNDER THE NATIONAL WILDLIFE REFUGE SYSTEMS THROUGH A COOPERATIVE AGREEMENT SIGNED IN 1963. PROJECT LANDS WERE MADE AVAILABLE UNDER THIS AGREEMENT FOR CONSERVATION, MAINTENANCE, AND MANAGEMENT OF WILDLIFE RESOURCES AND HABITAT TO BE ADMINISTERED BY THE SECRETARY OF INTERIOR. SUCH PROJECT LANDS HAVE BEEN SUBSEQUENTLY INCLUDED IN EITHER THE UPPER MISSISSIPPI RIVER NATIONAL WILDLIFE AND FISH REFUGE (ENCOMPASSING POOLS 11-14 IN THE ROCK ISLAND DISTRICT), THE MARK TWAIN NATIONAL WILDLIFE REFUGE (ENCOMPASSING POOLS 16-22 IN THE ROCK ISLAND DISTRICT), OR LICENSED TO THE ADJACENT STATE CONSERVATION AGENCIES FOR SUCH MANAGEMENT PURPOSES. APPROXIMATELY 90 PERCENT OF THE PROJECT LANDS AND WATER

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RESOURCES LOCATED WITHIN THE ROCK ISLAND DISTRICT ARE CONTAINED WITHIN THIS PROGRAM. THE FWS HAS ALSO PURCHASED ADDITIONAL LANDS SPECIFICALLY FOR ESTABLISHMENT OF THE REFUGE SYSTEMS.

IN OCTOBER 1980, THE U.S. ARMY CORPS OF ENGINEERS (NORTH CENTRAL DIVISION) AND THE FWS (NORTH CENTRAL REGION) ENTERED INTO AN AGREEMENT DETAILING CONDITIONS FOR A MORATORIUM ON PERMITS FOR NEW PRIVATE RECREATION STRUCTURES ON REFUGE LANDS LOCATED ON THE UPPER MISSISSIPPI RIVER. THIS TEMPORARY ACTION REMAINS IN EFFECT UNTIL EACH AGENCY HAS COMPLETED THEIR RESOURCE MANAGEMENT PLAN, OR OCTOBER 1985, WHICHEVER COMES FIRST. THE PURPOSE OF THIS TEMPORARY RESTRICTION IS TO ALLOW FOR A FULL ASSESSMENT OF MANAGEMENT OPTIONS PRIOR TO ANY ADDITIONAL ESTABLISHMENT/COMMITMENT OF PUBLIC LANDS FOR PRIVATE EXCLUSIVE USE. AUTHORIZED PRIVATE STRUCTURES LOCATED ON FEDERAL REFUGE LANDS ARE NOT AFFECTED BY THIS AGREEMENT, NOR DOES THE AGREEMENT APPLY TO PRIVATELY OWNED LANDS OR TO ALL FEDERAL LANDS. IT APPLIES ONLY TO THOSE FEDERAL LANDS WHICH ARE A PART OF THE UPPER MISSISSIPPI RIVER FISH AND WILDLIFE REFUGE OR THE MARK TWAIN NATIONAL WILDLIFE REFUGE. ATTACHMENT III OF THIS PLAN IDENTIFIES SPECIFIC SHORELINE MANAGEMENT PROCEDURES THAT WILL BE APPLIED IN DEALING WITH PRIVATE EXCLUSIVE USE ON PROJECT ADMINISTERED LANDS AND WATERS IN THE ROCK ISLAND DISTRICT.

IN JANUARY 1981, THE CORPS AND THE FWS JOINTLY FORMED A TASK GROUP TO AID COORDINATION IN THE PREPARATION OF RESPECTIVE ONGOING MASTER PLAN EFFORTS BY EACH AGENCY CONCERNING RESOURCE MANAGEMENT ON THE UPPER MISSISSIPPI RIVER. THE BASIC PURPOSES AND OBJECTIVES OF THE TASK GROUP WERE:

- * TO ACHIEVE COMPLEMENTARY MASTER PLANS FOR RESOURCE MANAGEMENT ON LANDS OWNED AND/OR MANAGED BY THE CORPS OF ENGINEERS AND THE FWS ALONG THE UPPER MISSISSIPPI RIVER.
- * TO MAINTAIN EFFECTIVE INTER- AND INTRA- AGENCY COMMUNICATION ON ISSUES RELATED TO RESOURCE MANAGEMENT.

- * TO ESTABLISH A "FRAMEWORK" FOR DECISION MAKING AND PROBLEM RESOLUTION RELATIVE TO LAND USE AND MANAGEMENT.
- * TO COORDINATE DISSEMINATION OF PLANNING INFORMATION TO THE PUBLIC AND APPROPRIATE GOVERNMENTAL UNITS.

THIS COORDINATION HAS RESULTED IN A GREATER UNDERSTANDING OF EACH AGENCY'S ROLE AND PROGRAMS IN MANAGING THE RESOURCES UNDER THE TWO AGENCIES' JURISDICTION. THE PRIMARY JOINT OUTPUTS OF THIS EFFORT ARE: (1) THE DEVELOPMENT OF A LAND-USE ALLOCATION PLAN WHICH IS SUPPORTED BY BOTH AGENCIES; AND, (2) REVISION AND UPDATING OF ADMINISTRATIVE ASSIGNMENT OF PROJECT LANDS IN THE COOPERATIVE AGREEMENT. A MAJOR ISSUE OF CONCERN WHICH COULD NOT BE RESOLVED THROUGH THIS COORDINATION EFFORT WAS THE FWS' DESIRE TO INCREASE ITS MANAGEMENT AUTHORITY OVER LANDS CONTAINED WITHIN THE COOPERATIVE AGREEMENT. THIS MATTER WAS DETERMINED A SEPARATE ISSUE FROM MASTER PLAN OBJECTIVES, AND A NATIONAL POLICY WHICH SHOULD BE PURSUED INDEPENDENTLY.

IN 1982, AN INTER-AGENCY TEAM WAS FORMED, AS A RESULT OF GREAT II RECOMMENDATIONS, TO PROVIDE TIMELY COORDINATION REGARDING FISH AND WILDLIFE MATTERS INVOLVING THE GREAT II AREA ASSOCIATED WITH MAIN CHANNEL DREDGING, DREDGED MATERIAL DISPOSAL, PHYSICAL RIVER MODIFICATIONS, BACKWATER MANAGEMENT STUDIES, AND INVESTIGATIONS. THE FWS CHAIRS THIS COMMITTEE, WHICH IS NAMED FISH AND WILDLIFE INTERAGENCY COMMITTEE (FWIC), AND IS ALSO COMPOSED OF FISH AND WILDLIFE BIOLOGISTS FROM WISCONSIN, IOWA, ILLINOIS, MISSOURI, AND THE CORPS OF ENGINEERS. THE ROCK ISLAND DISTRICT PARTICIPATES IN FWIC ACTIVITIES AND MAINTAINS CONTINUOUS COORDINATION OF RESPECTIVE PROGRAMS CONCERNING PROJECT RESOURCE MANAGEMENT AND RESEARCH INTERESTS.

ANOTHER COORDINATION TEAM FORMED DURING GREAT II EFFORTS WAS THE ON-SITE INSPECTION TEAM (OSIT). OSIT WAS FORMED TO MORE EFFECTIVELY DEAL WITH SITE-SPECIFIC DREDGE MATERIAL PROBLEMS. THE FWS IS ALSO THE DESIGNATED CHAIRMAN OF THIS TEAM. THE OSIT

PROVIDES INPUT AND GUIDANCE TO THE ROCK ISLAND DISTRICT FOR MAKING DREDGING AND DREDGED MATERIAL PLACEMENT DECISIONS. THE OSIT MAKES DETERMINATIONS AND RECOMMENDATIONS ON HOW TO BEST IMPLEMENT DREDGE MATERIAL PLACEMENT FOR ANY GIVEN DREDGE CUT.

THE FWS PROVIDED COMMENTS DURING THE INITIAL PREPARATION OF THE REVISED PLAN CONCERNING INFORMATION ON THE FEDERAL LISTING OF ENDANGERED SPECIES FOR THE AREA. COMMENTS WERE ALSO PROVIDED ON THE REVIEW OF THE DRAFT PLAN. SEE ATTACHMENT IV, LETTERS DATED 12 AND 23 APRIL 1984 AND COMBINED RESPONSE BY THE DISTRICT DATED 12 OCTOBER 1984 FOR SPECIFIC CONCERNS. SUCH INFORMATION AND CONSIDERATIONS HAVE BEEN INCORPORATED AND IDENTIFIED WITHIN THE FINAL PLAN, AS APPROPRIATE.

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- * A FISH AND WILDLIFE INTERAGENCY COMMITTEE (FWIC) SHOULD BE DESIGNATED AND FUNDED TO PROVIDE COORDINATION REGARDING FISH AND WILDLIFE MATTERS ASSOCIATED WITH MAIN CHANNEL DREDGING, DREDGED MATERIAL DISPOSAL, PHYSICAL RIVER MODIFICATIONS, AND RIVER MANAGEMENT STUDIES AND INVESTIGATIONS (SEE MAIN REPORT FOR MEMBERSHIP AND FWIC RESPONSIBILITIES).
- * THE U.S. FWS, IN COOPERATION WITH THE OTHER STATE AND FEDERAL NATURAL RESOURCE MANAGEMENT AGENCIES, SHOULD CARRY OUT GREAT II SPECIFIED STUDIES RELATED TO THE DISTRIBUTION, ABUNDANCE, POPULATION CHARACTERISTICS, AND HARVEST OF ALL FISH AND WILDLIFE SPECIES IN THE UMR ON A SYSTEMATIC BASIS. A MONITORING PROGRAM OF ENDANGERED AND THREATENED SPECIES, MONITORING OF THE NESTING SITES OF COLONIAL BIRDS, AND AN INVENTORY OF SUBMERGENT CHARACTERISTICS OF THE UMR SHOULD BE A PART OF THIS EFFORT.
- * THE ROCK ISLAND DISTRICT, CORPS OF ENGINEERS, IN COORDINATION WITH THE FWIC, SHOULD COMPLETE A SERIES OF SIX STUDIES IDENTIFIED BY GREAT RELATED TO BASKWATER MODIFICATION AND HABITAT ENHANCEMENT (SEE MAIN REPORT).
- * THE ROCK ISLAND DISTRICT, CORPS OF ENGINEERS, IN CONJUNCTION WITH THE FWIC, SHOULD DEVELOP AND SCOPE A STUDY TO DETERMINE THE CUMULATIVE EFFECTS OF INCREASED INDUSTRIAL, MUNICIPAL, RESIDENTIAL AND RECREATIONAL ENCROACHMENT ON FISH AND WILDLIFE HABITAT AND THE EFFECT OF ENVIRONMENTAL REGULATIONS ON INDUSTRIAL, MUNICIPAL, RESIDENTIAL AND RECREATIONAL DEVELOPMENT IN THE UMR CORRIDOR.
- * A SERIES OF FISH AND WILDLIFE RESOURCE-RELATED STUDIES CURRENTLY BEING CONSIDERED AS PART OF THE UPPER MISSISSIPPI RIVER BASIN COMMISSION MASTER PLAN, THE ROCK ISLAND DISTRICT, CORPS OF ENGINEERS, WINTER BIOLOGICAL STUDIES, AND THE MASTER PLANNING EFFORT OF THE UPPER MISSISSIPPI WILD LIFE AND FISH REFUGE SHOULD ALL BE COMPLETED TO AID IN OVERALL EFFORTS TO PROTECT FISH AND WILDLIFE RESOURCES.

STATE PLANS/PROGRAMS

THERE ARE VARIOUS INTER- AND INTRA- STATE ORGANIZATIONS AND PROGRAMS WHICH CONCERN PROJECT LANDS AND WATER RESOURCES MANAGEMENT. PARTICIPATION AND COORDINATION WITH THESE INTERESTS IS AN ONGOING PROCESS AND A MULTI-LEVEL (FIELD, POLICY, ADMINISTRATIVE, ETC.) MANAGEMENT INVOLVEMENT. STATE PROGRAMS CONCERNING FLOOD PLAIN MANAGEMENT, SCENIC PROTECTION, RECREATION DEVELOPMENT, AND FISH AND WILDLIFE MANAGEMENT ARE TYPICAL ISSUES AND POLICIES DIRECTLY INFLUENCING MASTER PLAN OBJECTIVES. THERE ARE MANY OTHER STATE PROGRAMS THAT ARE INVOLVED IN ASSOCIATED PROJECT MANAGEMENT ACTIVITIES THAT CONCERN VARIOUS PUBLIC ADMINISTRATION ASPECTS (I.E., HEALTH STANDARDS, ENVIRONMENTAL REVIEW, ZONING AND BUILDING CODES/PERMITS, ETC.). THE FOLLOWING DISCUSSION IS DIRECTED TOWARD PROGRAMS AND COORDINATION APPLICABLE TO THE PREPARATION AND IMPLEMENTATION OF THE PROJECT RECREATION-RESOURCE MASTER PLAN. COORDINATION WITH THESE INTERESTS WILL BE CONTINUED TO ASSURE PLANNING AND MANAGEMENT ACTIONS PROPERLY RECOGNIZE THEIR RESPECTIVE INTERESTS.

UPPER MISSISSIPPI RIVER CONSERVATION COMMITTEE (UMRCC)

THE UMRCC WAS ORGANIZED IN 1943 BY THE STATES OF IOWA, ILLINOIS, MINNESOTA, MISSOURI, AND WISCONSIN TO PROVIDE CONTINUING COOPERATION BETWEEN CONSERVATION AGENCIES RESPONSIBLE FOR FISH AND WILDLIFE MANAGEMENT OF THE UPPER MISSISSIPPI RIVER. COOPERATING FEDERAL CONSERVATION AGENCIES AND FEDERAL AND STATE POLLUTION CONTROL AGENCIES HAVE ALSO BECOME ACTIVE INTERESTS IN COMMITTEE PROGRAMS. THE UMRCC HAS A TWO-FOLD OBJECTIVE:

- * TO PROMOTE THE PRESERVATION, DEVELOPMENT, AND WISE USE OF THE NATURAL AND RECREATIONAL RESOURCES OF THE UPPER MISSISSIPPI RIVER; AND,

- * TO FORMULATE POLICIES, PLANS, AND PROGRAMS FOR CARRYING ON COOPERATIVE STUDIES.

STATE AND COOPERATING AGENCY REPRESENTATIVES COMPRISE TECHNICAL WORK GROUPS FOR FISH, GAME, RECREATION AND WATER USE, LAW ENFORCEMENT, POLLUTION, AND PUBLICATIONS. COOPERATIVE PROJECTS SUCH AS CREEL CENSUS, WATERFOWL HUNTER SURVEYS, FISH TAGGING, AND LITTER CONTROL ARE TYPICAL EFFORTS OF THE COMMITTEE.

REPRESENTATIVES OF THE ROCK ISLAND DISTRICT ARE ACTIVE PARTICIPANTS IN THE TECHNICAL COMMITTEES. IN ADDITION, THE COMMITTEE IS AFFORDED FORMAL REVIEW OPPORTUNITY OF THE PROJECT RECREATION-RESOURCE MASTER PLANS AND RELATED APPENDIXES/DOCUMENTS. PREPARATION OF THE CORPS OF ENGINEERS MASTER PLANS RECOGNIZES AND INCORPORATES APPLICABLE INFORMATION, OBJECTIVES, AND RECOMMENDATIONS OF THE UMRCC.

ILLINOIS

FLOOD PLAIN MANAGEMENT. IN THE STATE OF ILLINOIS, THE AGENCY MOST RESPONSIBLE FOR THE LAND USE REGULATION OF FLOOD PLAINS IS THE DEPARTMENT OF TRANSPORTATION, DIVISION OF WATER RESOURCES. THEIR DUTIES AND POWERS INCLUDE THE COLLECTION OF DATA REGARDING THE RIVERS AND LAKES OF ILLINOIS, AND THE SUPERVISION OF ENCROACHMENTS AND OBSTRUCTIONS ON PUBLIC WATERS. THEY ADMINISTER A PERMIT PROGRAM REQUIRED FOR CONSTRUCTION IN PUBLIC WATERS AND WITHIN AREAS DEFINED AS FLOOD PLAINS. AN EXCEPTION TO THE PERMITS REQUIREMENT ARE DUCK BLINDS APPROVED BY THE DEPARTMENT OF CONSERVATION. DEFINED FLOOD PLAIN MAPPING BY THE STATE DOES NOT YET INCLUDE ANY PORTION OF THE MISSISSIPPI RIVER.

THE STATE ORDINARILY WILL GRANT A PERMIT FOR CONSTRUCTION "WHICH DOES NOT HAVE A SIGNIFICANT FLOOD PLAIN MANAGEMENT POTENTIAL AND WHICH WILL NOT INCREASE PRESENT OR FUTURE FLOOD DAMAGES ON UPSTREAM, DOWNSTREAM, OR ADJACENT LANDS. NO CONSTRUCTION WILL BE PERMITTED WHICH SINGLY, OR CUMULATIVELY, CAUSES SIGNIFICANT INCREASES IN FLOOD STAGE OR VELOCITY." SIGNIFICANT INCREASES, THOUGH UNDEFINED IN THE REGULATIONS, HAVE BEEN HELD ON THE AVERAGE TO BE THOSE GREATER THAN 0.1 FOOT FOR URBAN AREAS. THE ILLINOIS RULES ARE GENERALLY SIMILAR TO BUT MORE RESTRICTIVE THAN THOSE DEVELOPED UNDER THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FEDERAL INSURANCE ADMINISTRATION.

ANY PROPOSED DEVELOPMENT ON PROJECT LANDS LOCATED WITHIN THE STATE OF ILLINOIS MAY REQUIRE STATE PERMIT APPROVAL. REVIEW OF THE RECREATION-RESOURCE MASTER PLAN BY THE STATE OF ILLINOIS CLEARINGHOUSE WILL ENCOMPASS THIS GENERAL PLANNING CONCERN AS WELL. INDIVIDUAL ACTIONS WILL BE SPECIFICALLY COORDINATED WITH THE DEPARTMENT OF TRANSPORTATION AS WARRANTED.

SCENIC RIVERS. AS PART OF THE NATIONAL WILD AND SCENIC RIVERS SYSTEM AND THE NATIONWIDE RIVERS INVENTORY OF THE NATIONAL PARK SERVICE, THE STATE OF ILLINOIS HAD FIVE STREAMS IDENTIFIED AS BEING POTENTIAL CANDIDATES FOR INCLUSION IN THIS NATIONAL SYSTEM. THE MISSISSIPPI RIVER DOES NOT QUALIFY FOR SUCH CLASSIFICATION, AND NONE OF THE TRIBUTARIES WITHIN THE PROJECT AREA HAVE BEEN IDENTIFIED FOR SUCH POTENTIAL NOMINATION. THE STATE OF ILLINOIS DOES NOT HAVE ANY SPECIFIC LEGISLATION TO PROTECT OR PRESERVE NATURAL STREAM RESOURCES BASED ON ECOLOGICAL, RECREATIONAL, OR CULTURAL VALUES. THE DEPARTMENT OF CONSERVATION COORDINATES AND ASSISTS INTERESTED PARTIES IN RELATION TO THESE CONCERNS WITHIN THE SCOPE OF ITS EXISTING LIMITED AUTHORITY.

NATURE PRESERVES. RESPONSIBILITY IN STATEWIDE NATURAL HERITAGE PLANNING AND PROGRAM ADMINISTRATION IS SHARED BETWEEN THE ILLINOIS NATURE PRESERVES COMMISSION AND THE ILLINOIS DEPARTMENT OF CONSERVATION. THE OFFICIAL STATE NATURAL AREAS SYSTEM IS THE "ILLINOIS NATURE PRESERVES SYSTEM." THE NATURE PRESERVES COMMISSION APPROVES AND RECOMMENDS ALL DEDICATIONS TO THE NATURE PRESERVES SYSTEM, AND MAKES POLICY FOR THE DEVELOPMENT AND MANAGEMENT OF THE AREAS. THE DEPARTMENT OF CONSERVATION ACQUIRES AND MANAGES NATURAL AREAS OF STATEWIDE SIGNIFICANCE FOR THE NATURE PRESERVES SYSTEM. ANY OWNER, PRIVATE OR PUBLIC, MAY ALSO MANAGE SUITABLE LANDS DEDICATED AS NATURE PRESERVES.

RECREATION. THE STATE COMPREHENSIVE OUTDOOR RECREATION PLAN (SCORP) IS A STATEWIDE COMPREHENSIVE PLAN PREPARED BY THE DEPARTMENT OF CONSERVATION WHICH IDENTIFIES POLICY FOR THE STATE CONCERNING OUTDOOR RECREATION. PREPARATION OF THE PLAN IS REQUIRED BY THE STATE TO QUALIFY FOR FEDERAL FUNDING UNDER THE LAND AND WATER CONSERVATION FUND ACT OF 1965. HOWEVER, IN 1981, CONGRESS DISCONTINUED FEDERAL PARTICIPATION IN THIS PROGRAM. THE STATE IS PRESENTLY UPDATING THE PREVIOUS PLAN PREPARED IN 1977, WHICH SHOULD BE COMPLETED IN 1983. A DRAFT POLICY PLAN WAS DISTRIBUTED FOR PUBLIC AND OTHER AGENCY REVIEW IN NOVEMBER 1982.

A REPRESENTATIVE OF THE ROCK ISLAND DISTRICT SERVES AS A MEMBER OF THE SCORP PANEL OF ADVISORS FOR THE PREPARATION AND COORDINATION OF THE POLICY PLAN AND THE RELATED ANNUAL ACTION PLANS. IN TURN, THE DEPARTMENT OF CONSERVATION REVIEWS CORPS PROJECT RESOURCE MANAGEMENT PLANS TO ASSURE STATE INTERESTS ARE PROPERLY ADDRESSED AND THAT RESPECTIVE PROGRAMS ARE COMPLEMENTARY AND/OR COMPATIBLE. RECREATION PLANNING FOR THE PROJECT IS TO BE CONSISTENT OR ASSIST IN THE FULFILLMENT OF IDENTIFIED OBJECTIVES AND

NEEDS OF THE STATE. PREPARATION OF THE RECREATION-RESOURCE MASTER PLANS RECOGNIZES AND INCORPORATES STATE DEVELOPED RECREATION STATISTICS AND RELATED DATA AS SUPPORTING DOCUMENTATION IN THE OVERALL PROGRAM DEVELOPMENT.

THE DEPARTMENT OF CONSERVATION HAS SIX LEASES (TOTALING APPROXIMATELY 414 ACRES) INVOLVING PROJECT LANDS FOR RECREATION AND PUBLIC ACCESS PURPOSES. ANNUAL MANAGEMENT PLANS ARE SUBMITTED AND REVIEWED FOR SUCH AREAS. NONE OF THESE AREAS ARE LOCATED WITHIN POOL 22.

FISH AND WILDLIFE. THE DEPARTMENT OF CONSERVATION, BUREAU OF PUBLIC LANDS, MANAGES PROJECT LANDS FOR FISH AND WILDLIFE MANAGEMENT PURPOSES, IN ACCORDANCE WITH THE COOPERATIVE AGREEMENT BETWEEN THE FWS AND THE CORPS OF ENGINEERS. THE STATE MANAGED LANDS ARE REFERENCED BY THE BUREAU OF PUBLIC LANDS AS THE MISSISSIPPI RIVER FISH AND WILDLIFE MANAGEMENT AREA, WHICH EXTENDS FROM POOL 12 THROUGH 26 (INVOLVING APPROXIMATELY 33,794 ACRES). SINCE POOLS 12, 13, AND 14 ARE MANAGED BY THE FWS AS PART OF THE UPPER MISSISSIPPI RIVER FISH AND WILDLIFE REFUGE, THE STATE'S RESPONSIBILITIES ARE LIMITED PRIMARILY TO COOPERATING WITH REFUGE EFFORTS WITHIN THESE POOLS. FOR THE MOST PART, THE STATE MANAGED AREAS COMPLEMENT AND AID IN THE NATIONAL REFUGE PROGRAM GOALS AND OBJECTIVES WHICH EMPHASIZE WATERFOWL MIGRATION HABITAT AND HUNTING OPPORTUNITIES SUPPORTING THE MISSISSIPPI FLYWAY. THE COOPERATIVE INTERESTS OF THE STATE ARE PART OF THE REVISION AND UPDATING OF THE ADMINISTRATIVE ASSIGNMENT OF PROJECT LANDS IN THE COOPERATIVE AGREEMENT.

THE STATE PREPARES AND SUBMITS AN ANNUAL MANAGEMENT REPORT CONCERNING THE MANAGEMENT PLANS AND ACTIVITIES FOR THIS AREA THROUGH THE FWS TO THE CORPS OF ENGINEERS. THIS ASSURES THAT STATE MANAGEMENT PROGRAMS ARE COMPATIBLE WITH FWS AND CORPS OF ENGINEERS

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MANAGEMENT PROGRAMS/PLANS FOR THE OVERALL PROJECT. ADDITIONAL ONGOING COOPERATIVE FISH AND WILDLIFE COORDINATION IS ACHIEVED THROUGH THE STATE'S PARTICIPATION IN FWIC EFFORTS RESULTING FROM GREAT II PROGRAM IMPLEMENTATIONS.

THE ILLINOIS DEPARTMENT OF CONSERVATION ANNUAL MANAGEMENT PLAN FOR 1984 IDENTIFIED THE FOLLOWING SPECIAL PROBLEMS OF CONCERN RELATIVE TO SPECIFIC FISH AND WILDLIFE RESOURCE MANAGEMENT INVOLVING PROJECT LANDS UNDER THE JURISDICTION OF THE ROCK ISLAND DISTRICT:

- * WATER LEVEL MANAGEMENT - REGULATION OF POOL ELEVATIONS HAS BEEN RESULTING IN NEGATIVE EFFECTS FROM HIGH SUMMER LEVELS ON THE PROPAGATION OF NATURAL WATERFOWL FOODS, AND IN NEGATIVE EFFECTS FROM LOW FALL LEVELS ON HUNTER ACCESS TO BLIND SITES.
- * CABIN LEASES - GENERAL CONCERN ABOUT A VARIETY OF PROBLEMS GENERATED BY RECREATIONAL COTTAGE LEASES LOCATED ADJACENT TO STATE MANAGEMENT AREAS, AND THE NEED TO CONSIDER SHORT- AND LONG-TERM PROBLEMS ASSOCIATED WITH SCHEDULED TERMINATION OF THESE LEASES IN 1990.

BOTH OF THESE ISSUES ARE MATTERS REQUIRING FURTHER COORDINATION WHICH WILL BE PURSUED INDEPENDENTLY OF THE MASTER PLAN FOR FULL CONSIDERATION. SPECIFIC PROBLEMS REGARDING THESE ISSUES WERE NOT IDENTIFIED WITHIN THE POOL 22 AREA.

MISSOURI

FLOOD PLAIN MANAGEMENT. THERE IS NO STATE LEVEL FLOOD PLAIN MANAGEMENT COMPREHENSIVE LEGISLATION FOR MISSOURI. THE AUTHORITY FOR ZONING AND PLANNING IS UNDER THE BROAD POWERS GIVEN TO THE COUNTIES, CITIES, TOWNS, AND VILLAGES. THE MISSOURI OFFICE OF DISASTER PLANNING AND OPERATIONS COORDINATES AND IMPLEMENTS ASSOCIATED PROGRAMS OF THE NATIONAL FLOOD INSURANCE PROGRAM, OF WHICH THE STATE IS AN ELIGIBLE PARTICIPANT. MARION COUNTY, LOCATED IN POOL 22, IS ONE OF THE FEW COUNTIES WITHIN THE STATE WHICH HAS ADOPTED FLOOD PLAIN ZONING ORDINANCES.

SCENIC RIVERS. AS PART OF THE NATIONWIDE RIVERS INVENTORY 2/ FOR THE IDENTIFICATION OF POTENTIAL WILD, SCENIC, AND RECREATIONAL RIVER AREAS WITHIN THE NATION, MISSOURI HAS SEVERAL STREAMS IDENTIFIED AS POTENTIAL CANDIDATES FOR INCLUSION IN THIS NATIONAL SYSTEM. THE MISSISSIPPI RIVER DOES NOT QUALIFY FOR SUCH CLASSIFICATION, AND NONE OF THE TRIBUTARIES WITHIN THE PROJECT AREA WERE IDENTIFIED FOR SUCH POTENTIAL NOMINATION. THERE IS NO SPECIFIC STATE LEGISLATION TO PROTECT OR PRESERVE NATURAL STREAM RESOURCES BASED ON UNIQUE ECOLOGICAL, RECREATIONAL, OR CULTURAL VALUES. THE MISSOURI DEPARTMENT OF NATURAL RESOURCES COORDINATES AND ASSISTS INTERESTS IN RELATION TO THESE CONCERNS UNDER ITS PRESENT SCOPE OF AUTHORITY.

THE DEPARTMENT OF NATURAL RESOURCES PROVIDED COMMENT AND RECOMMENDATIONS FOR THE PREPARATION OF THE POOL 22 RECREATION-RESOURCE MASTER PLAN CONCERNING SCENIC RESOURCES (SEE ATTACHMENT IV, LETTER DATED 27 NOVEMBER 1979). IN GENERAL, RECOMMENDATION WAS MADE THAT A SCENIC CORRIDOR OF 100 YARDS WIDE (INCLUDING ISLANDS) BE CONSIDERED TO PROTECT AND RESTORE RIVERINE HABITAT. THE MULTIPLE-USE PURPOSES OF THE PROJECT RESOURCES PRECLUDE SUCH EXCLUSIVE DESIGNATION ALONG THE ENTIRE SHORELINE. A SHORELINE MANAGEMENT PLAN (SEE ATTACHMENT III) HAS BEEN PREPARED THAT SPECIFICALLY ADDRESSES SPECIAL USE DEVELOPMENT ON PROJECT LANDS. A SPECIAL LAND-USE ALLOCATION CLASSIFICATION (NATURAL AREAS) HAS BEEN IDENTIFIED FOR DESIGNATION OF PROJECT LANDS FOR THE PRESERVATION AND PROTECTION OF UNIQUE SCIENTIFIC, ECOLOGIC, AND SCENIC RESOURCES. TYPICAL AREAS FOR SUCH DESIGNATION INCLUDE: NATIONAL LISTED PROPERTIES (I.E., WILD AND SCENIC RIVERS, CRITICAL HABITAT, CULTURAL SITES); STATE LISTED] PROPERTIES (I.E., NATURE PRESERVES, PROTECTED WATERS, CULTURAL SITES); AND ANY]

2/ NATIONAL PARK SERVICE, U.S. DEPARTMENT OF INTERIOR, THE NATIONWIDE RIVERS INVENTORY, SELECTED DRAFT MATERIAL FROM ROCKY MOUNTAIN REGIONAL OFFICE. JANUARY 1982.

IDENTIFIED UNIQUE HABITAT (I.E., HERON ROOKERIES AND EAGLE ROOSTS). SCENIC QUALITIES OF THE PROJECT ARE CONSIDERED A PRIORITY INTEREST IN THE OVERALL MANAGEMENT OBJECTIVES OF THE NATURAL RESOURCES. ALSO, ONGOING TIMBER MANAGEMENT ACTIVITIES OF THE CORPS INCLUDE SCENIC VALUES AS A PRIMARY OBJECTIVE.

NATURE PRESERVES. RESPONSIBILITY FOR STATEWIDE NATURAL HERITAGE PLANNING AND PROGRAM ADMINISTRATION IS SHARED BETWEEN THE DEPARTMENT OF NATURAL RESOURCES AND THE DEPARTMENT OF CONSERVATION. THE OFFICIAL STATE NATURAL AREA SYSTEM IS THE "MISSOURI NATURAL AREAS SYSTEM," ADMINISTERED BY THE DEPARTMENT OF NATURAL RESOURCES. THE DEPARTMENT OF CONSERVATION IS RESPONSIBLE FOR DESIGNATION AND MANAGEMENT (STATE ADMINISTERED PROPERTIES) OF SUCH AREAS FOR THE NATURAL AREA SYSTEM. A MODEL PROGRAM WAS ESTABLISHED IN 1981-1982 TO ENCOURAGE PRIVATE LANDOWNERS TO REGISTER UNIQUE AREAS IN A STATEWIDE NATURAL AREAS SYSTEM. THE DEPARTMENT OF CONSERVATION, IN COOPERATION WITH THE DEPARTMENT OF NATURAL RESOURCES, IS CONSIDERING THE DEVELOPMENT OF AN ECOLOGICAL INVENTORY TO IDENTIFY WHICH SPECIES AND ECOSYSTEMS ARE MOST ENDANGERED IN THE STATE. A COMPUTERIZED INFORMATION STORAGE AND RETRIEVAL SYSTEM IS BEING DEVELOPED TO AID IN THE ANALYSIS.

THE DEPARTMENT OF NATURAL RESOURCES PROVIDED INFORMATION FOR THE PREPARATION OF THE POOL 22 RECREATION-RESOURCE MASTER PLAN CONCERNING NATURAL AREA SITES LOCATED WITHIN THE PROJECT AREA (SEE ATTACHMENT IV, LETTER DATED 27 NOVEMBER 1979). TWO SITES WERE IDENTIFIED AS POTENTIAL AREAS FOR STATE NATURAL AREA DESIGNATION. THE DEPARTMENT OF CONSERVATION LEASES THESE AREAS FOR FISH AND WILDLIFE MANAGEMENT PURPOSES. THE SITES NEED FURTHER INVESTIGATION PRIOR TO OFFICIAL DESIGNATION FOR STATE NATURAL AREA STATUS. THESE EFFORTS WERE IDENTIFIED TO BE ACCOMPLISHED BY THE DEPARTMENT OF CONSERVATION. ANY PROPOSED MANAGEMENT ACTIONS INVOLVING THESE AREAS WILL REQUIRE

SPECIFIC COORDINATION REGARDING SUCH INTEREST PRIOR TO ANY IMPLEMENTATION. AN OFFICIAL DESIGNATION OF FEDERAL PROPERTIES FOR STATE NATURAL AREA STATUS WILL INVOLVE APPROPRIATE JOINT AGREEMENT BY THE CORPS.

RECREATION. THE MISSOURI STATEWIDE COMPREHENSIVE OUTDOOR RECREATION PLAN (SCORP) IS PREPARED BY THE DEPARTMENT OF NATURAL RESOURCES, UNDER THE DIRECTION OF THE STATE INTER-AGENCY COUNCIL FOR OUTDOOR RECREATION. THE PLAN IS DIVIDED INTO A POLICY PLAN AND A SERIES OF TECHNICAL APPENDIXES, AND HAS SHIFTED FROM A ONE-TIME, FIVE-YEAR PLAN TO A BIENNIAL PLANNING REVIEW PROCESS. THE CURRENT PLAN REPRESENTS THE 1980 TO 1985 ERA. THIS PLAN REPRESENTS THE RECREATIONAL POLICIES SET FORTH FOR THE STATE IN COOPERATION WITH OTHER STATE AGENCIES, FEDERAL, AND PUBLIC ORGANIZATIONS.

THE ROCK ISLAND DISTRICT PARTICIPATES IN THE SCORP PLANNING PROCESS AND APPLICABLE ACTION PROGRAM IMPLEMENTATIONS. IN TURN, THE DEPARTMENT OF NATURAL RESOURCES REVIEWS CORPS PROJECT RESOURCE MANAGEMENT PLANS TO ASSURE STATE INTERESTS ARE PROPERLY ADDRESSED. RECREATION PLANNING FOR THE PROJECT IS TO BE CONSISTENT AND ASSIST IN THE FULFILLMENT OF IDENTIFIED OBJECTIVES AND NEEDS OF THE STATE. PREPARATION OF THE RECREATION-RESOURCE MASTER PLANS RECOGNIZES AND INCORPORATES STATE DEVELOPED RECREATION STATISTICS AND RELATED DATA AS SUPPORTING DOCUMENTATION IN THE OVERALL PROGRAM DEVELOPMENT.

THE DEPARTMENT OF NATURAL RESOURCES PROVIDED COMMENT DURING INITIAL COORDINATION FOR THE PREPARATION OF THE POOL 22 RECREATION-RESOURCE MASTER PLAN CONCERNING RECREATION PLANNING AND DEVELOPMENT NEEDS WITHIN THE STUDY AREA (SEE ATTACHMENT IV, LETTER DATED 27 NOVEMBER 1979). THEIR COMMENTS EXPRESSED A GENERAL NEED FOR ADDITIONAL PUBLIC ACCESS ALONG THE MISSOURI SHORELINE OF POOL 22.

FISH AND WILDLIFE. THE DEPARTMENT OF CONSERVATION MANAGES PROJECT LANDS FOR FISH AND WILDLIFE MANAGEMENT PURPOSES AS PART OF THEIR UPPER MISSISSIPPI WILDLIFE MANAGEMENT AREA. THESE LEASED LANDS ARE UNDER THE COOPERATIVE AGREEMENT BETWEEN THE FWS AND THE CORPS OF ENGINEERS. AN ANNUAL MANAGEMENT PLAN/REPORT OF THE STATE ACTIVITIES AND PROGRAMS INVOLVING THE PROJECT LANDS IS SUBMITTED TO THE DISTRICT FOR REVIEW. THIS ASSURES THAT STATE MANAGEMENT PROGRAMS ARE COMPATIBLE WITH FWS AND CORPS OF ENGINEERS MANAGEMENT PLANS/PROGRAMS FOR THE OVERALL PROJECT. IN ADDITION, THE COOPERATIVE INTERESTS OF THE STATE ARE PART OF THE REVISION AND UPDATING OF THE ADMINISTRATIVE ASSIGNMENT OF PROJECT LANDS IN THE COOPERATIVE AGREEMENT. ADDITIONAL ONGOING COOPERATIVE FISH AND WILDLIFE COORDINATION IS ACHIEVED THROUGH THE STATE'S PARTICIPATION IN FWIC EFFORTS ORIGINATING FROM THE GREAT 11 STUDY IMPLEMENTATION.

THE MISSOURI DEPARTMENT OF CONSERVATION HAS REQUESTED A LEASE FOR PUBLIC ACCESS PURPOSES FOR PROJECT LANDS LOCATED NEAR FABIVS ISLAND (SEE ATTACHMENT IV, LETTER DATED 23 MAY 1984 FROM MISSOURI DEPARTMENT OF CONSERVATION). FURTHER COORDINATION OF THIS REQUEST WILL BE MADE TO ASSURE THAT PROPOSED DEVELOPMENT WILL NOT CONFLICT WITH THE SIGNIFICANT ECOLOGICAL CONCERNS IDENTIFIED WITHIN THE VICINITY, AS DISCUSSED IN SECTION VII, RESOURCE MANAGEMENT AND DEVELOPMENT PLANS.

THE MISSOURI DEPARTMENT OF CONSERVATION PROVIDED COMMENTS DURING THE INITIAL PREPARATION OF THE POOL 22 RECREATION-RESOURCE MASTER PLAN CONCERNING INFORMATION ABOUT ENDANGERED SPECIES, WILDLIFE MANAGEMENT, AND PROPOSED WETLAND HABITAT DEVELOPMENT WITHIN THE PROJECT AREA (SEE ATTACHMENT IV, LETTERS DATED 21 FEBRUARY 1980 AND 20 DECEMBER 1979). COMMENTS WERE ALSO PROVIDED DURING FORMAL DRAFT REVIEW OF THE PLAN. SEE ATTACHMENT IV, LETTER DATED 12 APRIL 1984 AND RESPONSE BY DISTRICT DATED OCTOBER 12, 1984 FOR SPECIFIC CONCERNS. SUCH INFORMATION HAS BEEN INCORPORATED AND IDENTIFIED WITHIN THE PLAN.

THE MISSOURI DEPARTMENT OF NATURAL RESOURCES ALSO PROVIDED COMMENT CONCERNING FISH AND WILDLIFE RESOURCES, IN RESPONSE TO INITIAL COORDINATION FOR THE PREPARATION OF THE POOL 22 RECREATION-RESOURCE MASTER PLAN (SEE ATTACHMENT IV, LETTER DATED 27 NOVEMBER 1979). THEIR COMMENTS EXPRESSED A GENERAL CONCERN TO PRESERVE WETLAND HABITATS, AND TO PRESERVE ALL ISLANDS AS SANCTUARIES FOR BIRDS AND AS "OLD GROWTH" TIMBER MANAGEMENT AREAS. ANY FORMAL DESIGNATION OF THE ISLANDS AS WILDLIFE SANCTUARIES WOULD REQUIRE ENDORSEMENT AND IMPLEMENTATION OF THE FWS AND RESPECTIVE STATE CONSERVATION AGENCIES WHICH PRESENTLY MANAGE THESE LANDS FOR FISH AND WILDLIFE MANAGEMENT PURPOSES. IN GENERAL, RESOURCE MANAGEMENT OBJECTIVES FOR THESE AREAS SUPPORT SUCH HABITAT PRESERVATION. ONGOING COORDINATION OF THE CORPS' TIMBER MANAGEMENT PROGRAM AFFORDS OPPORTUNITY FOR THE STATE TO EXPRESS AND PARTICIPATE IN SPECIFIC MANAGEMENT ACTIONS CONCERNING THESE ISSUES.

LOCAL AND REGIONAL PLANS/PROGRAMS

REGIONAL PLANNING COMMISSIONS

THERE ARE TWO REGIONAL PLANNING COMMISSIONS WHICH HAVE JURISDICTION INVOLVING PROJECT LANDS WITHIN THE POOL 22 AREA, ONE EACH IN THE RESPECTIVE STATES. IN ILLINOIS, PIKE AND ADAMS COUNTIES ARE A PART OF THE TWO RIVERS REGIONAL COUNCIL OF PUBLIC OFFICIALS, WHICH IS LOCATED IN QUINCY. IN MISSOURI, RALLS AND MARION COUNTIES ARE A PART OF THE MARK TWAIN REGIONAL PLANNING COMMISSION, WHICH IS LOCATED IN MONROE CITY. THESE PLANNING AGENCIES PREPARE AND COORDINATE COMPREHENSIVE PLANS FOR THE PRESENT AND FUTURE DEVELOPMENT OF THE COUNTIES, AND PROVIDE GUIDANCE TO LOCAL OFFICIALS IN ALLOCATION OF RESOURCES FOR ALL PUBLIC SERVICES (INCLUDING RECREATION). INFORMATION,]

OBJECTIVES AND RECOMMENDATIONS CONTAINED IN THESE STUDIES CONCERNING REGIONAL RESOURCE DATA AND DEVELOPMENT ASPECTS APPLICABLE TO THE PROJECT ARE USED AS SUPPORTING DOCUMENTATION AND REFERENCE IN PREPARATION OF THE RECREATION-RESOURCE MASTER PLAN.

COUNTY

IN 1981, THE ROCK ISLAND DISTRICT MADE INQUIRY OF VARIOUS COUNTY OFFICIALS CONCERNING A WILLINGNESS TO ASSUME OPERATION AND MAINTENANCE OF EXISTING CORPS-OPERATED PUBLIC USE AREAS LOCATED WITHIN THEIR JURISDICTION. PIKE COUNTY'S RESPONSE TO THIS INQUIRY WAS NEGATIVE (SEE ATTACHMENT IV, LETTER DATED 18 DECEMBER 1981), IN WHICH THE JOHN HAY AND PARK-N-FISH PUBLIC USE AREAS ARE LOCATED.

MUNICIPAL

THE CITY OF HANNIBAL PREVIOUSLY LEASED PROJECT LANDS FOR PUBLIC PARK AND RECREATION PURPOSES, WHICH IT RELINQUISHED IN 1981. THE AREA, COTTONWOOD POINT, WAS SUBSEQUENTLY IDENTIFIED FOR CLOSURE BY THE CORPS THAT SAME YEAR BECAUSE OF A LOW COST EFFICIENCY OPERATION FACTOR.

THE CITY OF QUINCY OPERATES A PUBLIC USE AREA AT LOCK AND DAM 21, HOWEVER, THIS FACILITY IS CONSIDERED A PART OF THE THE POOL 21 PROJECT AREA.

LEVEE AND DRAINAGE DISTRICTS

LEVEE AND DRAINAGE DISTRICTS ARE PUBLIC CORPORATIONS AUTHORIZED BY PERMISSIVE STATE LEGISLATION AND HAVE DIRECT OR INCIDENTAL POWERS TO CONSTRUCT, MAINTAIN, OR REPAIR DRAINS AND LEVEES, OR TO ENGAGE IN OTHER DRAINAGE OR LEVEE WORK FOR AGRICULTURAL,

SANITARY, OR MINING PURPOSES. THE ACTIVITIES OF A DISTRICT ARE COORDINATED AND DIRECTED BY EITHER A GROUP OF COMMISSIONERS/DIRECTORS/SUPERVISORS OR THE COUNTY COURT, DEPENDING UPON THE ENABLING PROCEDURE OF ITS ESTABLISHMENT. VARIOUS POWERS AND DUTIES TYPICALLY INVOLVE AN ADOPTED PLAN OF DRAINAGE, POWER OF EMINENT DOMAIN, MANIPULATION AND IMPROVEMENT OF THE WATERCOURSE, AND AUTHORITY TO LEVY TAX ASSESSMENTS AND ISSUE BONDS FOR FUNDING SUPPORT PURPOSES.

WITHIN POOL 22, THERE ARE FIVE LEVEE DISTRICTS, TWO IN ILLINOIS AND THREE IN MISSOURI. APPROXIMATELY 41.5 MILES OF AGRICULTURAL LEVEE EXIST IN POOL 22. PUBLIC ACCESS ACROSS THESE LEVEES TO PROJECT LANDS IS LIMITED, AND TYPICALLY DISCOURAGED BY LEVEE DISTRICT AUTHORITIES BECAUSE OF SECURITY OR STRUCTURAL INTEGRITY REASONS. COORDINATION IS MAINTAINED WITH THE LEVEE DISTRICT AUTHORITIES CONCERNING RESOURCE MANAGEMENT PROGRAMS AFFECTING THEIR INTERESTS. USE OF PROJECT LANDS BY THE LEVEE DISTRICTS IS PERMITTED IF COMPATIBLE WITH DESIGNATED RESOURCE MANAGEMENT PURPOSES. GENERALLY, SUCH REQUESTS INVOLVE RIGHT-OF-WAY EASEMENTS FOR STRUCTURAL IMPROVEMENTS AND FOR UTILITY OR MAINTENANCE ACCESS PURPOSES.

PUBLIC INVOLVEMENT

TWO PUBLIC WORKSHOPS WERE HELD ON 10 AND 11 OCTOBER 1979 IN QUINCY AND HANNIBAL TO SOLICIT INITIAL PUBLIC PARTICIPATION AND AWARENESS OF THE PREPARATION OF THE POOL 22 RECREATION-RESOURCE MASTER PLAN REVISION (SEE ATTACHMENT IV, PUBLIC MEETING ANNOUNCEMENT). THESE WORKSHOPS PROVIDED OPPORTUNITY FOR INTERESTED PUBLICS TO IDENTIFY ISSUES AND EXPRESS COMMENTS CONCERNING THE RESOURCE MANAGEMENT OBJECTIVES, PLANS, AND POLICIES FOR THE PROJECT. A SUMMARY OF THESE MEETING RESULTS WAS PREPARED AND

17

FURNISHED TO ALL PARTICIPANTS AND INTERESTED AGENCIES (SEE ATTACHMENT IV, LETTER DATED 21 DECEMBER 1979). THE MAJOR ISSUES IDENTIFIED CONCERNED ADDITIONAL RECREATION FACILITY NEEDS IN MISSOURI, WILDLIFE MANAGEMENT, COMMERCIAL USES, AND PRIVATE EXCLUSIVE USE AND COTTAGE SITE LEASE POLICIES. RESPONSE TO THESE AND OTHER EXPRESSED CONCERNS IS CONTAINED IN THE MEETING SUMMARY. SUCH ISSUES ARE ALSO DISCUSSED IN THE PLAN.

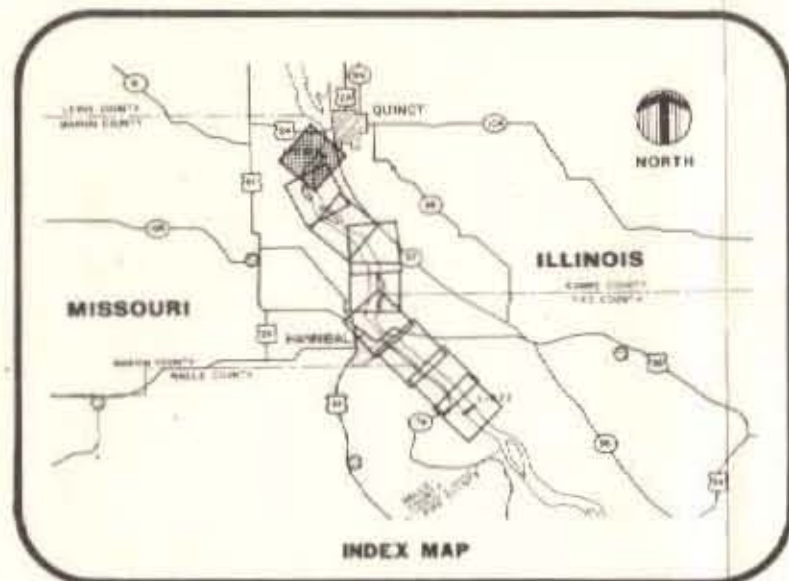
A DRAFT OF THE REVISED RECREATION-RESOURCE MASTER PLAN FOR POOL 22 WAS MADE AVAILABLE FOR AGENCY AND PUBLIC REVIEW AND COMMENT DURING A 60-DAY PERIOD COMMENCING ON 29 FEBRUARY 1984. A PUBLIC MEETING WAS HELD ON 10 APRIL 1984 IN HANNIBAL, MISSOURI, TO PUBLICLY PRESENT AND EXCHANGE INFORMATION AND COMMENT CONCERNING SPECIFIC ISSUES IN THE DRAFT PLAN. THE MEETING WAS ATTENDED BY 103 PEOPLE. A CITIZEN-TAXPAYER GROUP SUBMITTED A LIST OF RECOMMENDED ALTERNATIVE PROPOSALS FOR CONSIDERATION BY THE CORPS AND OTHER INTERESTED GOVERNMENT AGENCIES (SEE ATTACHMENT IV, LETTERS OF COORDINATION), WHICH REPRESENTED THE PRIMARY CONCERNS EXPRESSED AT THE MEETING. FORMAL RESPONSE TO THESE PROPOSALS WAS PROVIDED ON 15 AUGUST 1984 AS A SUMMARY OF THE PUBLIC MEETING RESULTS. SIGNIFICANT PUBLIC OBJECTION WAS EXPRESSED CONCERNING THE ^{CORPS}~~COPRS~~ PHASE-OUT POLICY ON PRIVATE COTTAGE LEASES ON PROJECT LANDS. THIS POLICY IS DISCUSSED IN SECTION IX UNDER PRIVATE RECREATIONAL LEASES. IT IS NOT WITHIN THE SCOPE OF THIS PLAN TO DIRECT OR RECOMMEND POLICY CHANGES.

RESOURCE MANAGEMENT AND DEVELOPMENT PLANS

INSTALLATION SITE PLAN

THE PHYSICAL FACILITIES LOCATED AT LOCK AND DAM 22 INCLUDE BOTH PUBLIC AND OPERATIONAL STRUCTURES. THE OPERATIONAL STRUCTURES ARE BRIEFLY DISCUSSED IN SECTION II. APPURTENANT FACILITIES ASSOCIATED WITH THE OPERATION AND MAINTENANCE OF THE LOCK AND DAM INSTALLATION INCLUDE A CENTRAL CONTROL STATION AND A MAINTENANCE SHOP BUILDING. A SITE PLAN FOR THE INSTALLATION GROUNDS IS IDENTIFIED ON PLATE 22-10. THE PUBLIC FACILITIES ARE IDENTIFIED LATER UNDER THE RECREATION AREA SITE PLANS DISCUSSION (SEE PLATE 22-13).

THE BASE ADMINISTRATION AND MAINTENANCE FACILITIES FOR PARK MANAGEMENT AND MAINTENANCE EQUIPMENT ARE LOCATED AT THE LE CLAIRE BASE INSTALLATION FACILITY, ADJACENT TO LOCK AND DAM 14, LE CLAIRE, IOWA. A FIELD OFFICE LOCATED AT LOCK AND DAM 21, QUINCY, ILLINOIS, SERVES AS A RANGER STATION FOR THE RANGERS WHO PATROL PROJECT LANDS WITHIN POOLS 19-22. THERE ARE NO ADMINISTRATIVE OR MAINTENANCE FACILITIES FOR CORPS PARK MANAGEMENT PERSONNEL AND EQUIPMENT LOCATED AT LOCK AND DAM 22.



Legend

- Project Operations
- Recreation - Intensive Use
- Recreation - Low Density Use
- Public Use
- Special Use (Density)
- Wildlife Management / Reserve Forest Land
- Natural Area

Administered by:

- Corps of Engineers
- Cooperative agreement

Approx. Scale 1" = 2,000'



Upper Mississippi River - Pool 22 Recreation-Resource Master Plan

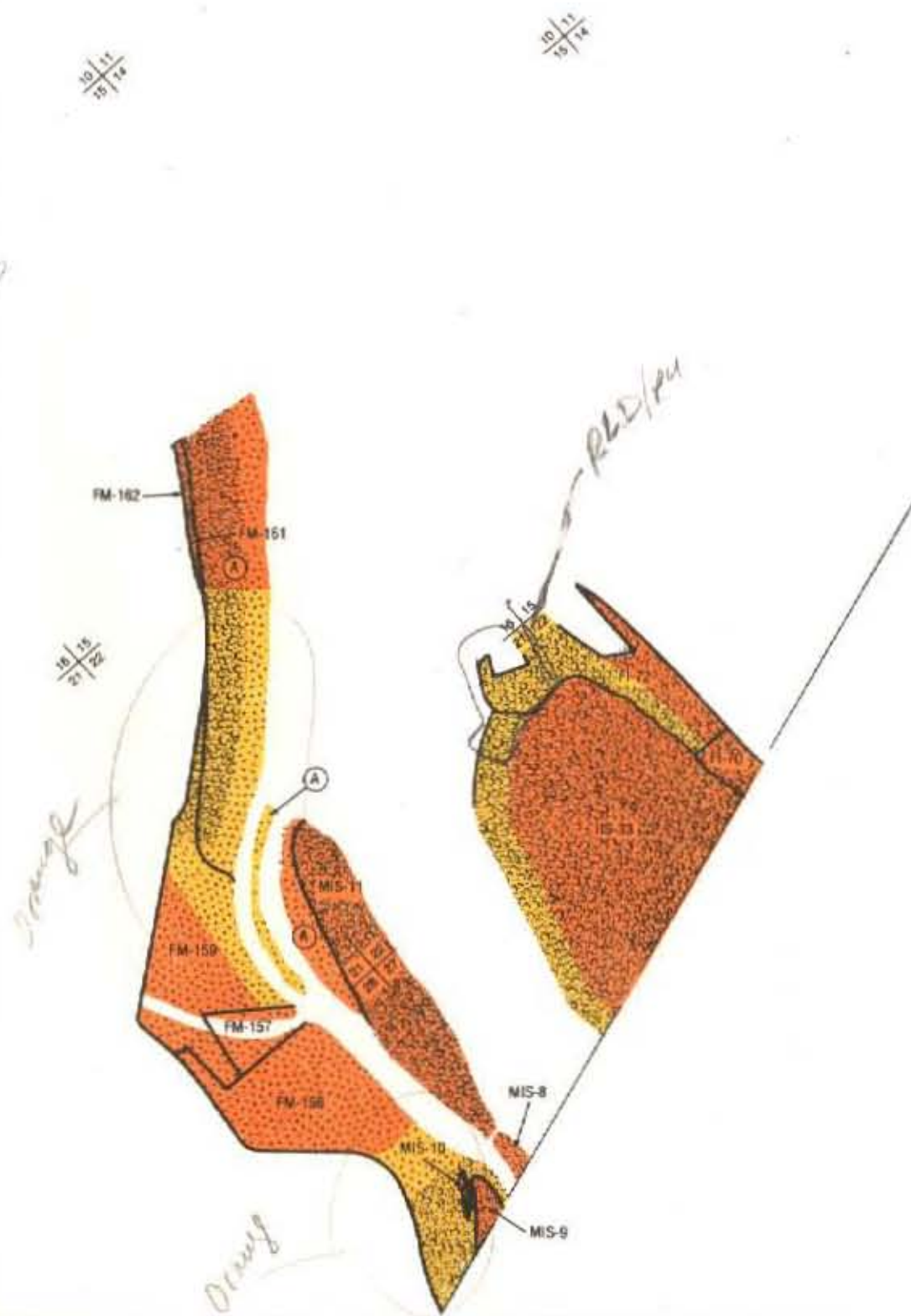


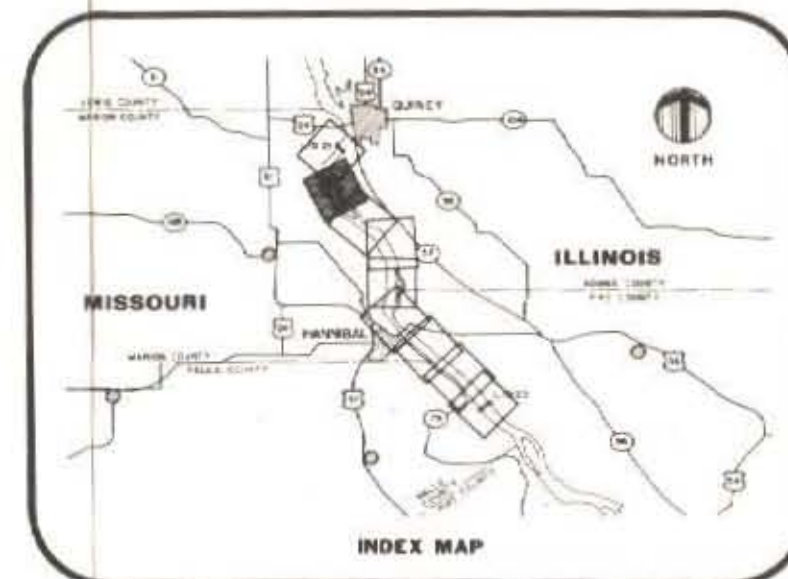
US Army Corps
of Engineers
Rock Island District

Land Use

PLATE 22-BA /A

*everything
now GP*





Legend

- Project Boundary
- (A) - Accretion (Since Purchase of Project Land)
- 599
|
F1-1 River Mile and Navigation Channel
- Government property tract number
- Submerged pipe or cable
- 3 Cottage Site (density)
- Primary Project Disposal Site
- Aerial cable crossing

Notes

Normal pool operation elevation is 459.5ft. The pool elevation at the time of this photograph at L/O 22 was 459.25.

Approx. Scale: 1" = 2,000'

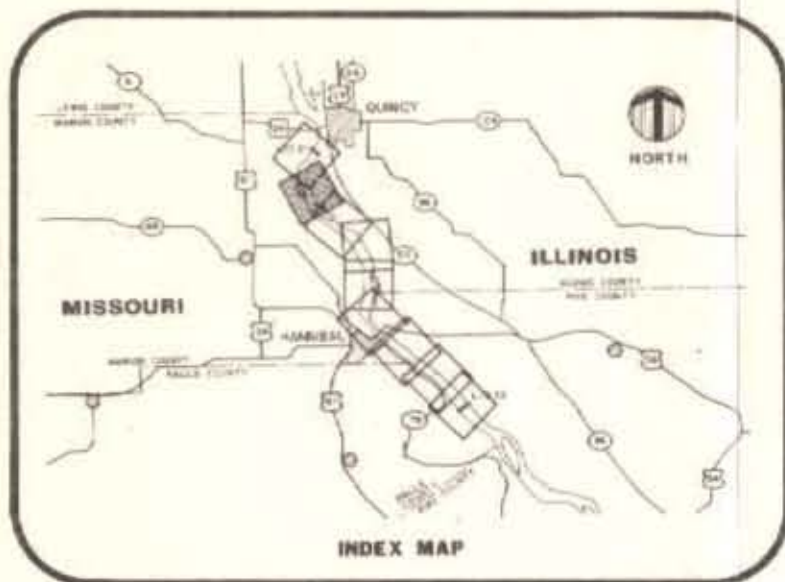


Upper Mississippi River - Pool 22
Recreation-Resource
Master Plan



**US Army Corps
of Engineers**
Rock Island District

Project Map



Legend

- Project Operations
- Recreation - Intensive Use
- Recreation - Low Density Use
- Public Use
- Special Use (Density)
- Wildlife Management / Reserve Forest Land
- Natural Area

Administered by:

- Corps of Engineers
- Cooperative agreement

Approx. Scale 1" = 2,000'



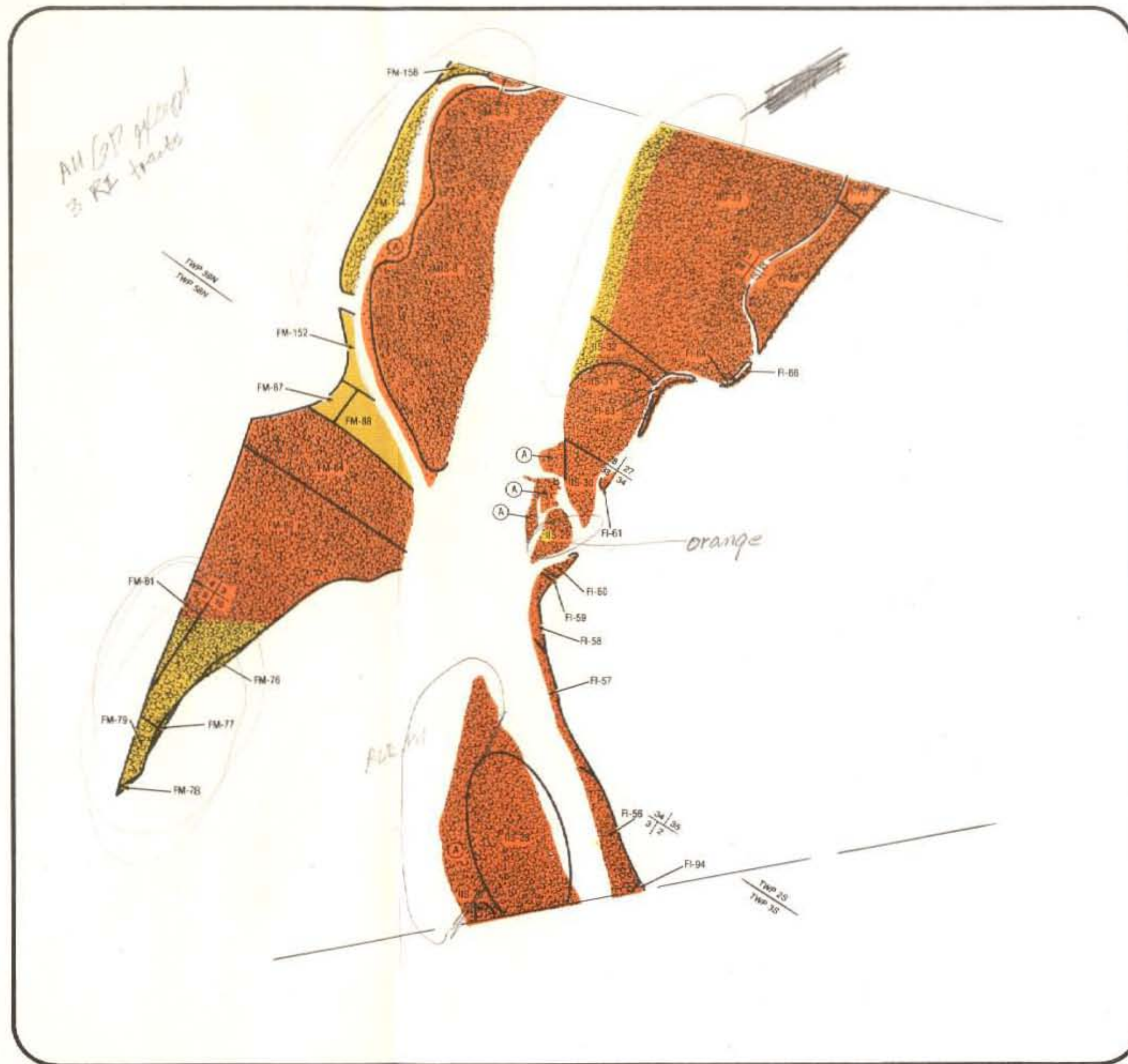
Upper Mississippi River - Pool 22 Recreation-Resource Master Plan

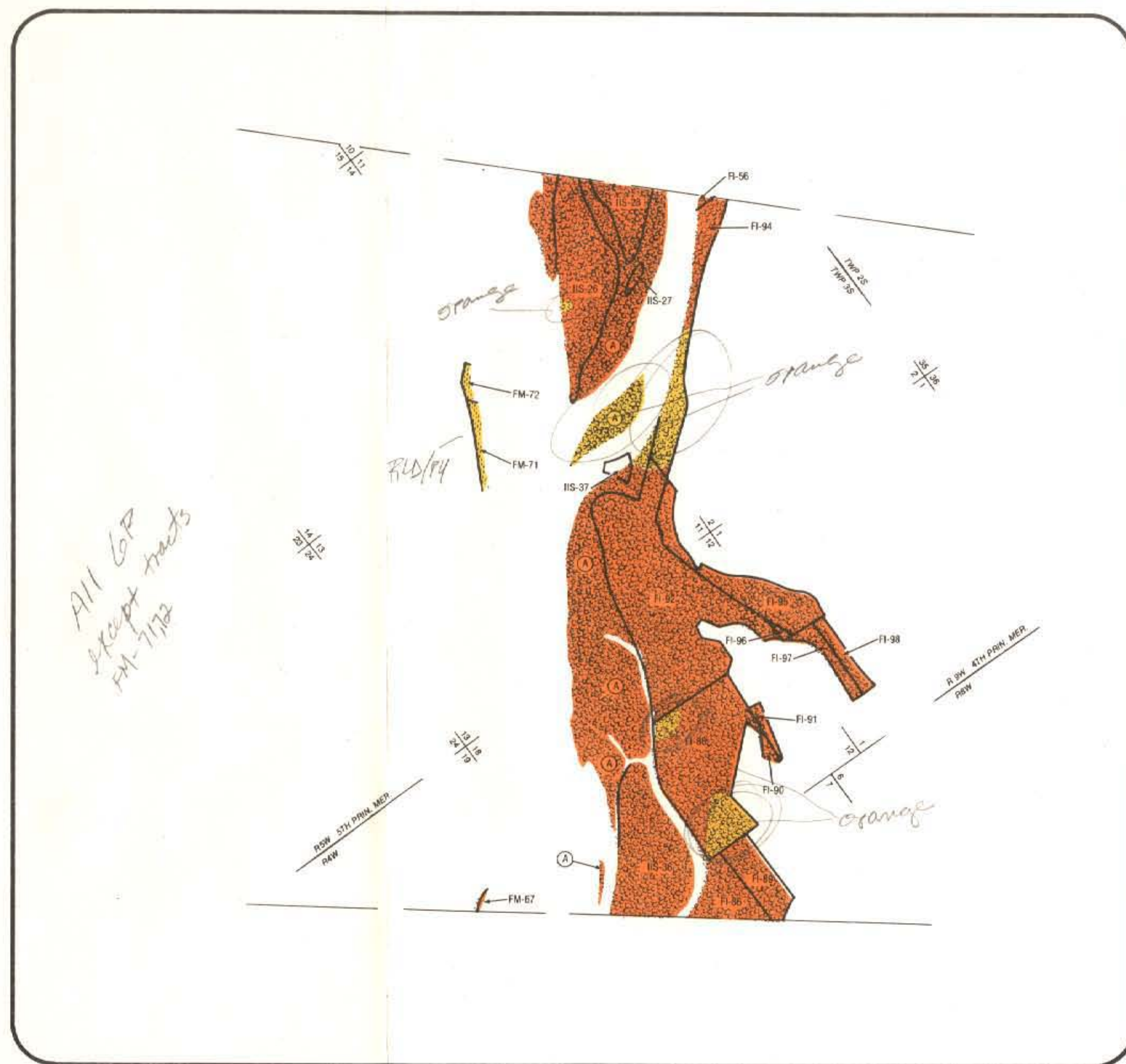


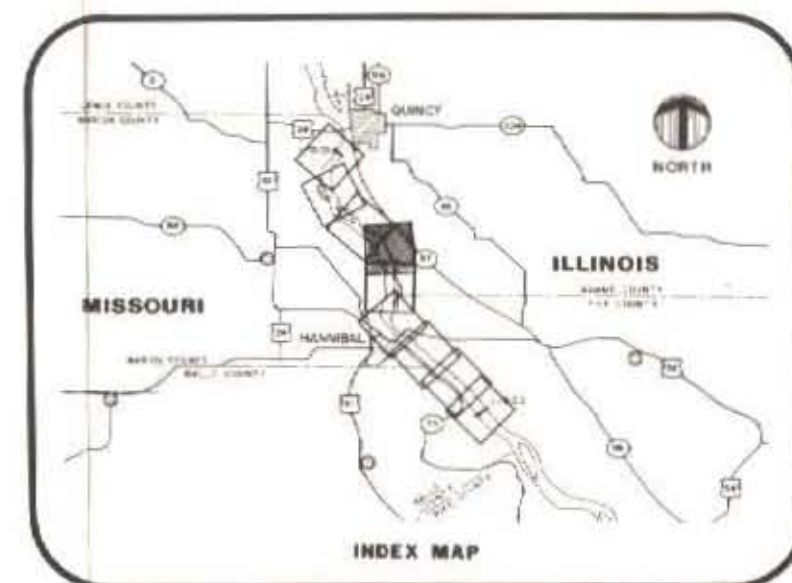
US Army Corps
of Engineers
Rock Island District

Land Use

PLATE 22-8A 2A







Legend

- Project Boundary
- A Accretion (Since Purchase of Project Land)
- 559 River Mile and Navigation Channel
- FI- Government property tract number
- Submerged pipe or cable
- 3 Collage Site (identity)
- Primary Project Disposal Site
- Aerial cable crossing

Notes

Normal pool operation elevation is 455.5ft. The pool elevation at the time of this photograph on 4/10/77 was 453.25

Approx. Scale 1" = 2,000'

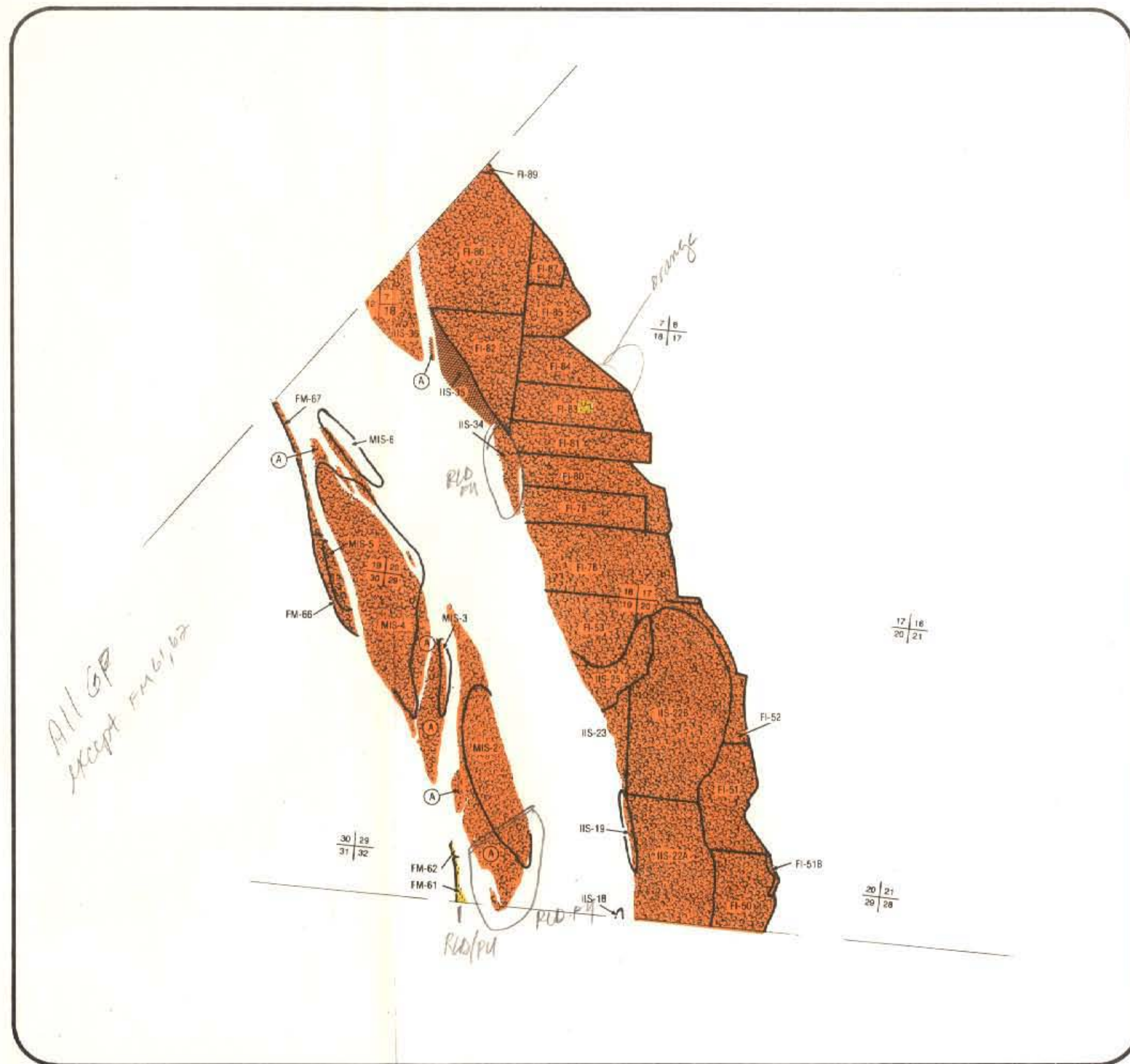
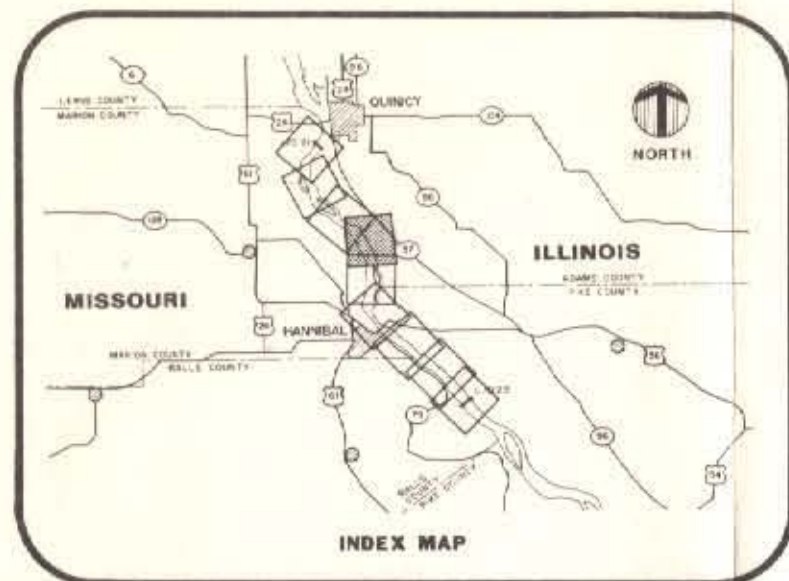


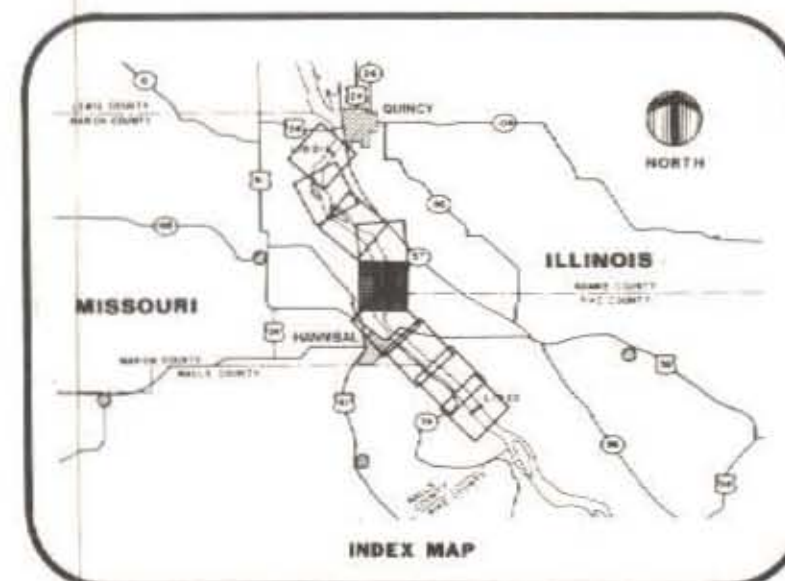
Upper Mississippi River - Pool 22 Recreation-Resource Master Plan



US Army Corps
of Engineers
Rock Island District

Project Map





Legend

- Project Boundary
- (A) Accretion (Since Purchase of Project Land)
- 599 River Mile and Navigation Channel
- F-1 Government property tract number
- Submerged pipe or cable
- 3 Cottage Site (Density)
- Primary Project Disposal Site
- Aerial cable crossing

Notes

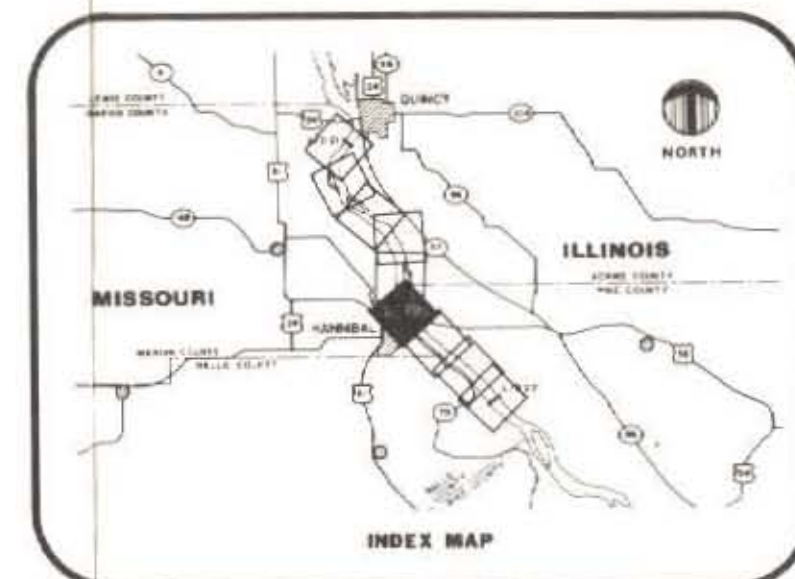
Normal pool operation elevation is 459.5ft. The pool elevation at the time of this photograph at L/O 22 was 458.25.

Approx. Scale 1"=2,000'

Upper Mississippi River - Pool 22
Recreation-Resource
Master Plan

**US Army Corps
of Engineers**
Rock Island District

Project Map



Legend

- Project Boundary
- (A) Accretion (Since Purchase of Project Land)
- 599 River Mile and Navigation Channel
- F1-1 Government property tract number
- Submerged pipe or cable
- 3 Cottage Site (density)
- Primary Project Disposal Site
- Aerial cable crossing

Notes

Normal pool operation elevation is 459.5ft. The pool elevation at the time of this photograph at L/D 22 was 459.25.

Approx. Scale 1" = 2,000'

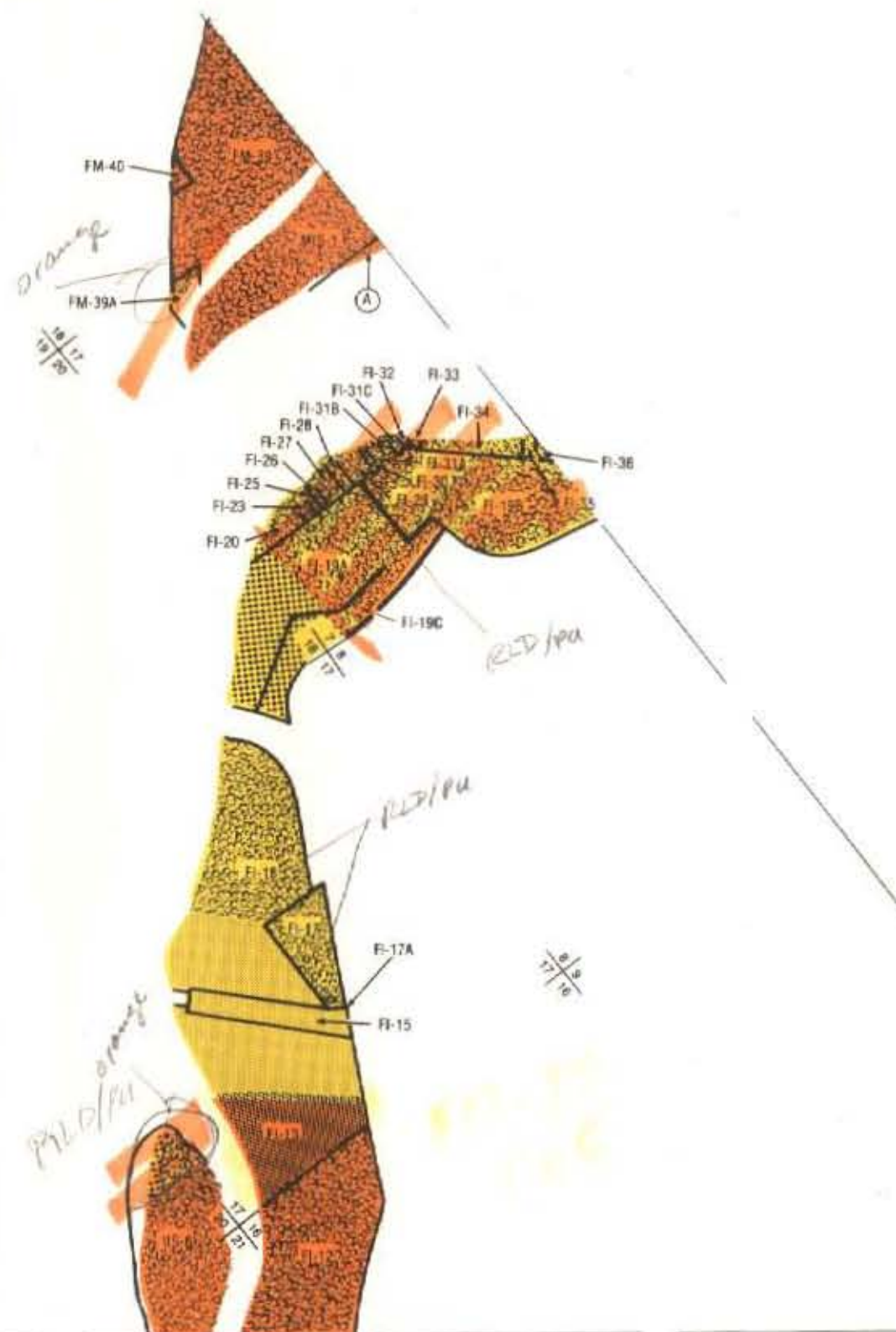


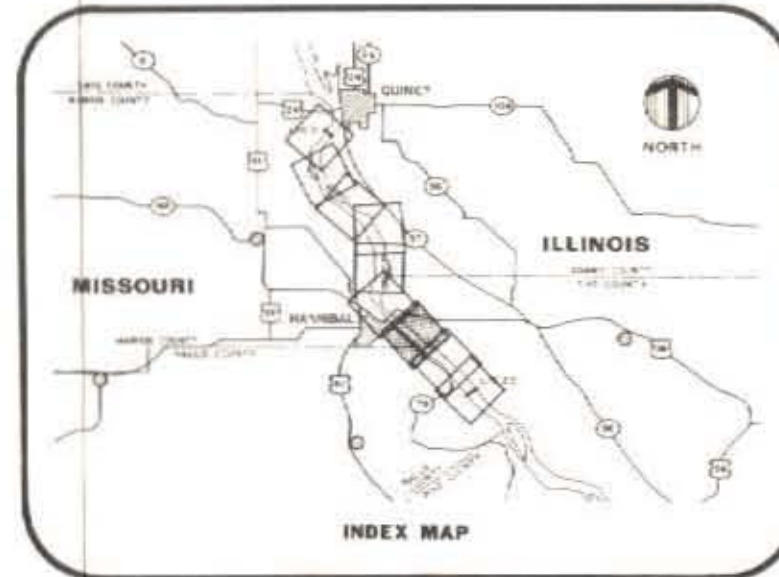
Upper Mississippi River - Pool 22
Recreation-Resource
Master Plan



**US Army Corps
of Engineers**
Rock Island District

Project Map





Legend

- Project Boundary
- (A) Accretion (Since Purchase of Project Land)
- 599 River Mile and Navigation Channel
- F-1 Government property tract number
- Submerged pipe or cable
- 3 Cottage Site (density)
- Primary Project Disposal Site
- Aerial cable crossing

Notes

Normal pool operation elevation is 459.5ft. The pool elevation at the time of this photograph at 1/0 22 was 459.25

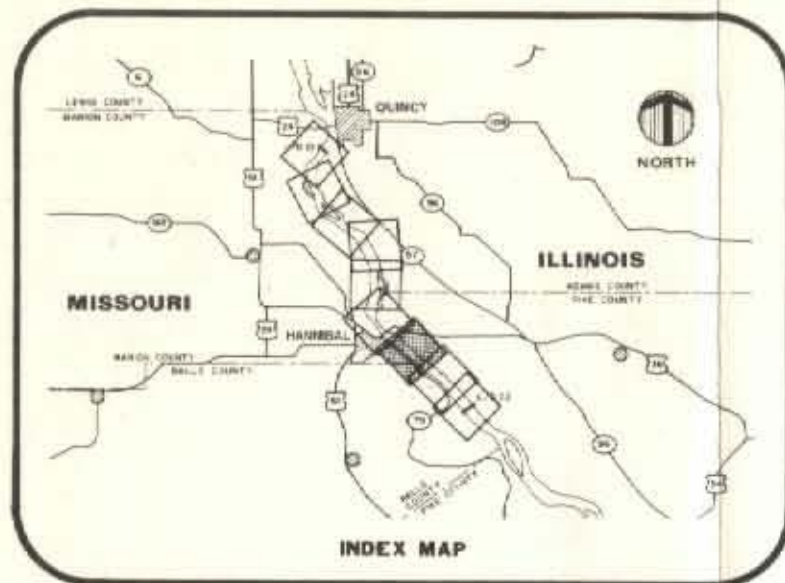
Approx. Scale 1"= 2,000'



Upper Mississippi River - Pool 22 Recreation-Resource Master Plan

US Army Corps
of Engineers
Rock Island District

Project Map



Legend

- Project Operations
- Recreation - Intensive Use
- Recreation - Low Density Use
- Public Use
- Special Use (Density)
- Wildlife Management / Reserve Forest Land
- Natural Area

Administered by:

- Corps of Engineers
- Cooperative agreement

Approx. Scale 1" = 2,000'



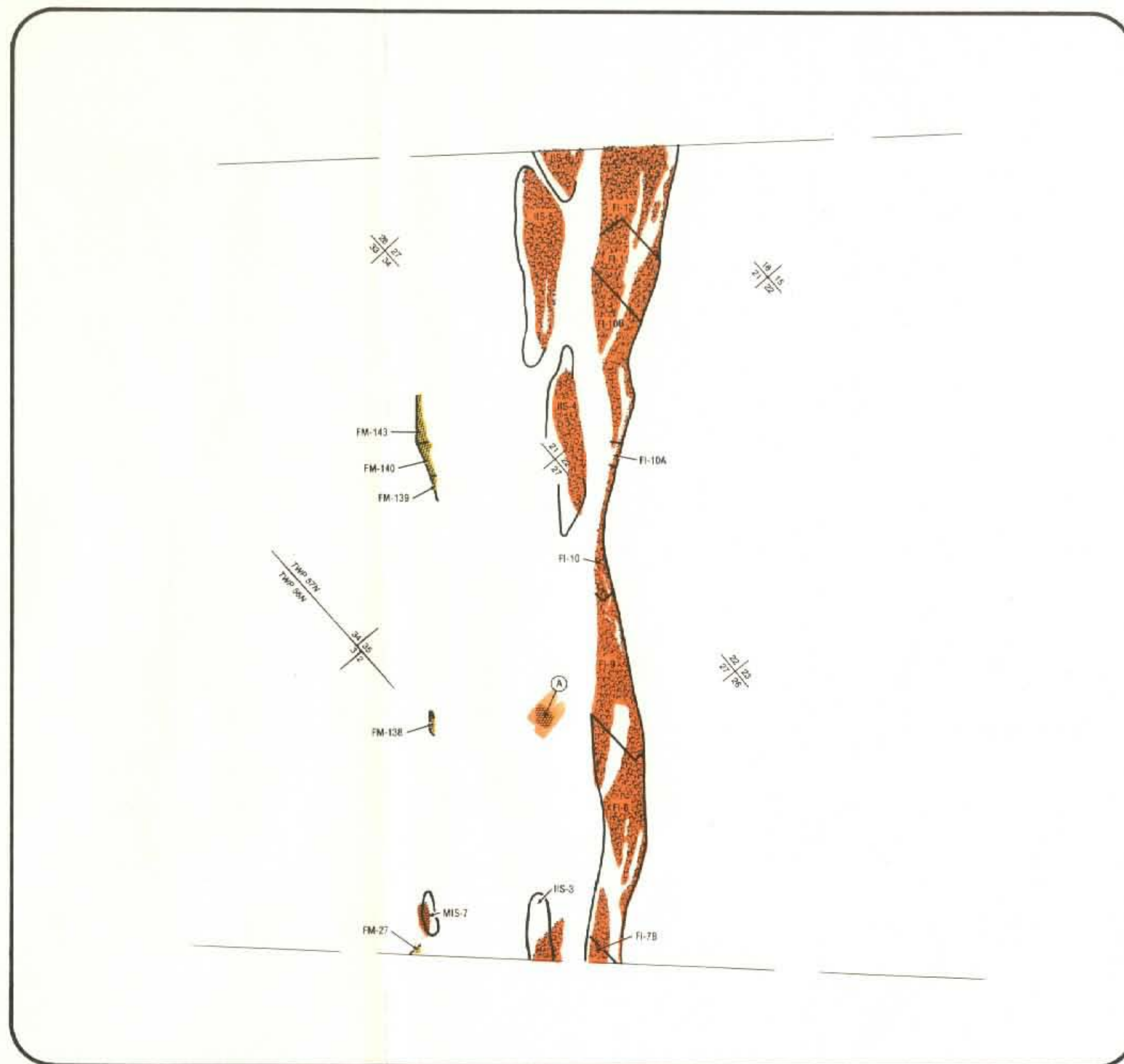
Upper Mississippi River - Pool 22 Recreation-Resource Master Plan

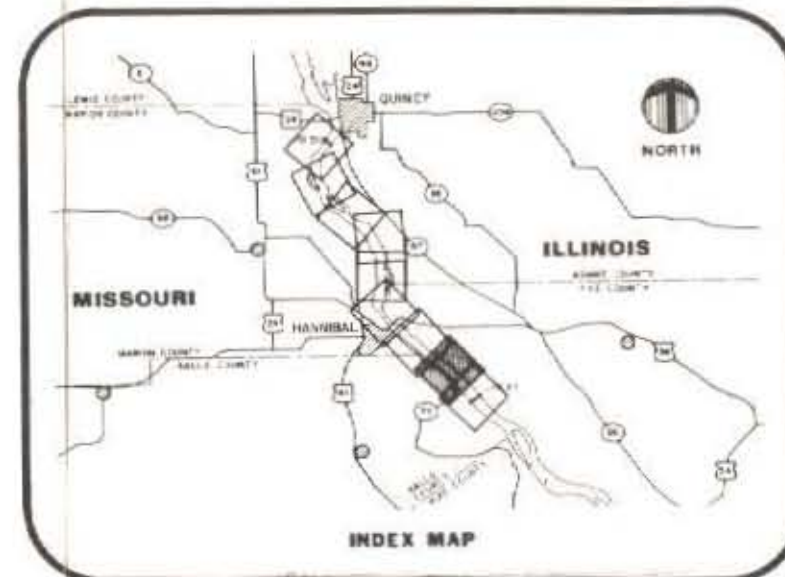


US Army Corps
of Engineers
Rock Island District

Land Use

PLATE 22-3A-7A





Legend

- Project Boundary
- (A) Accretion (Since Purchase of Project Land)
- 599 River Mile and Navigation Channel
- F-1 Government property tract number
- Submerged pipe or cable
- (3) Cottage Site (density)
- (A) Primary Project Disposal Site
- Aerial cable crossing

Notes

Normal pool operation elevation is 458.5 ft. The pool elevation at the time of this photograph at L/D 22 was 459.25.

Approx. Scale 1" = 2,000'



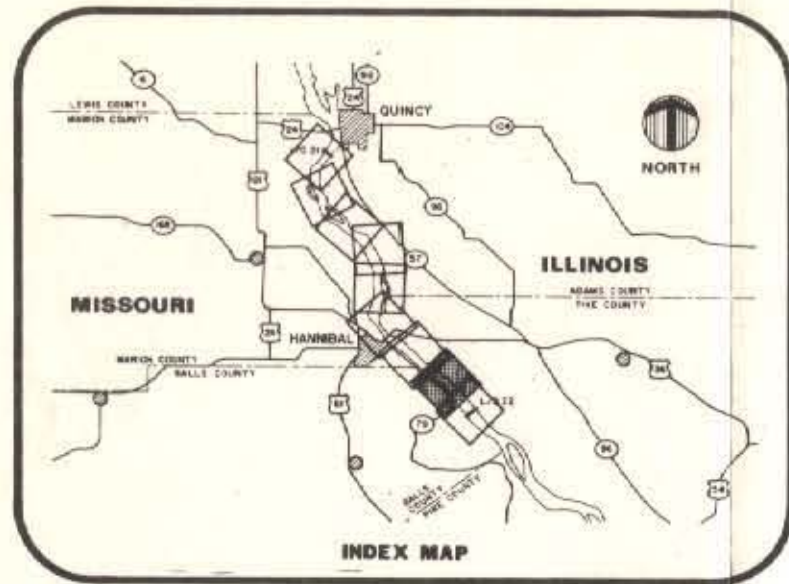
North

Upper Mississippi River - Pool 22 Recreation-Resource Master Plan



US Army Corps
of Engineers
Rock Island District

Project Map



Legend

- Project Operations
- Recreation - Intensive Use
- Recreation - Low Density Use
- Public Use
- Special Use (Density)
- Wildlife Management / Reserve Forest Land
- Natural Area

Administered by:

- Corps of Engineers
- Cooperative agreement

Approx. Scale 1" = 2,000'



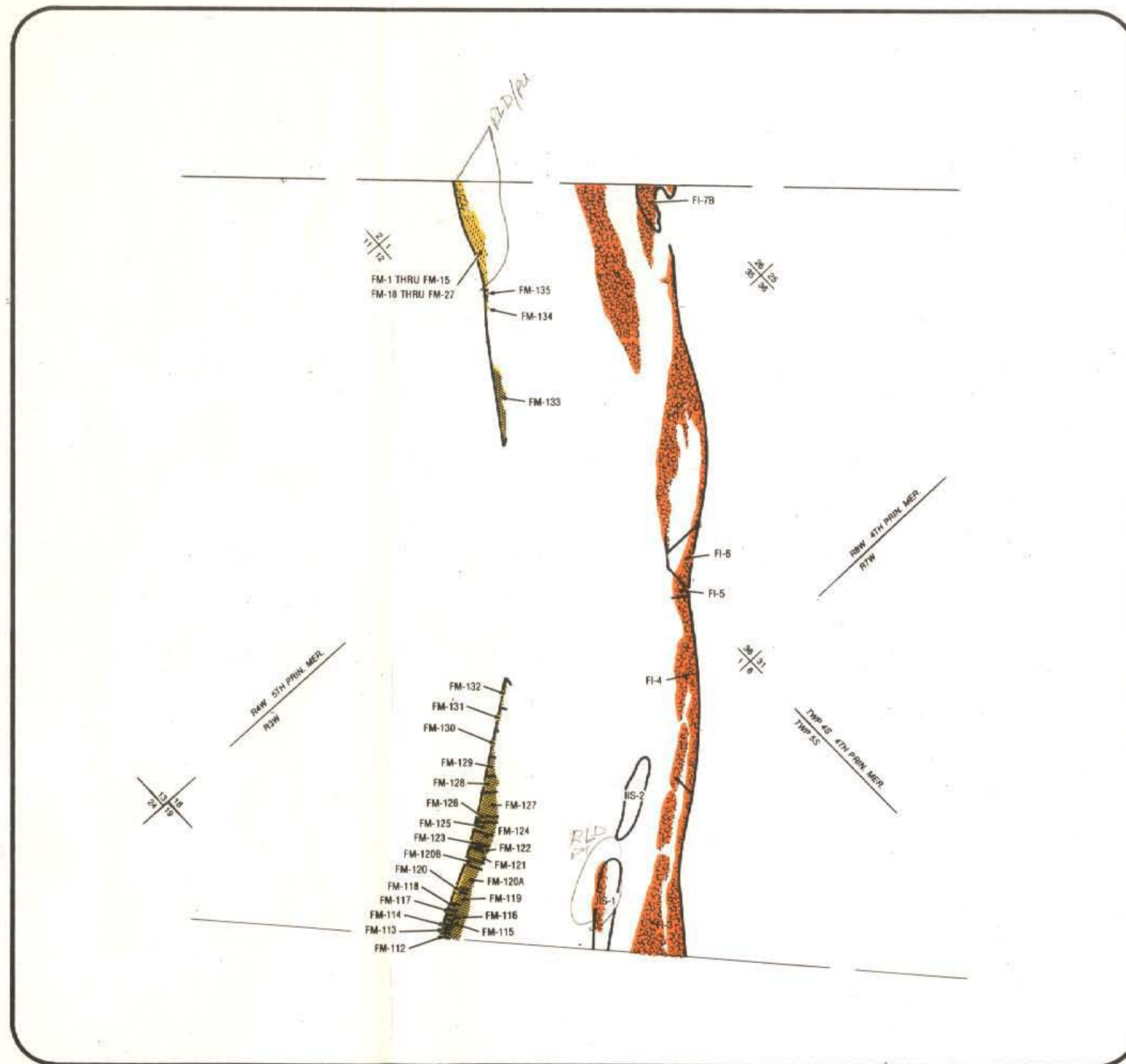
Upper Mississippi River - Pool 22 Recreation-Resource Master Plan

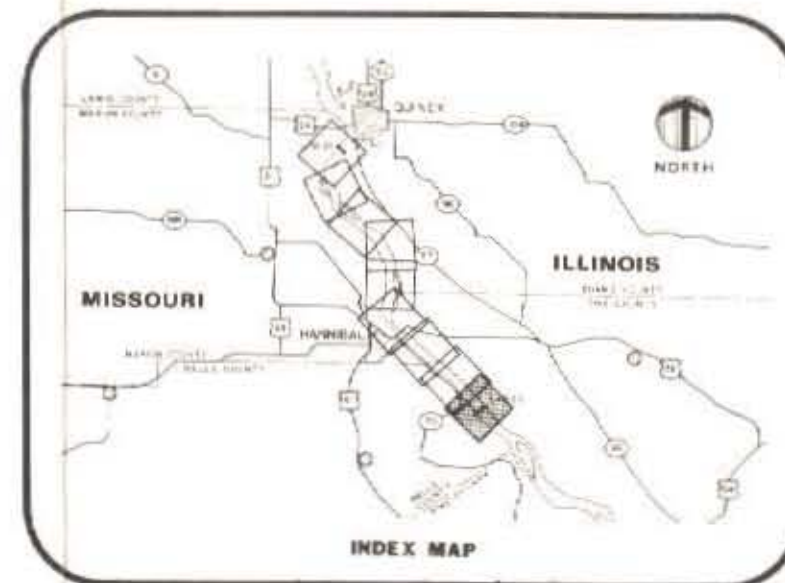


US Army Corps
of Engineers
Rock Island District

Land Use

PLATE 22-24 BA





Legend

- Project Boundary
- (A) Acquisition (Since Purchase of Project Land)
- 599 River Mile and Navigation Channel
- FI-1 Government property tract number
- Submerged pipe or cable
- 3 Cottage Site (density)
- Primary Project Disposal Site
- Aerial cable crossing

Notes

Normal pool operation elevation is 455.5 ft. The pool elevation at the time of this photograph at L/D 22 was 459.25.

Approx. Scale 1" = 2,000'

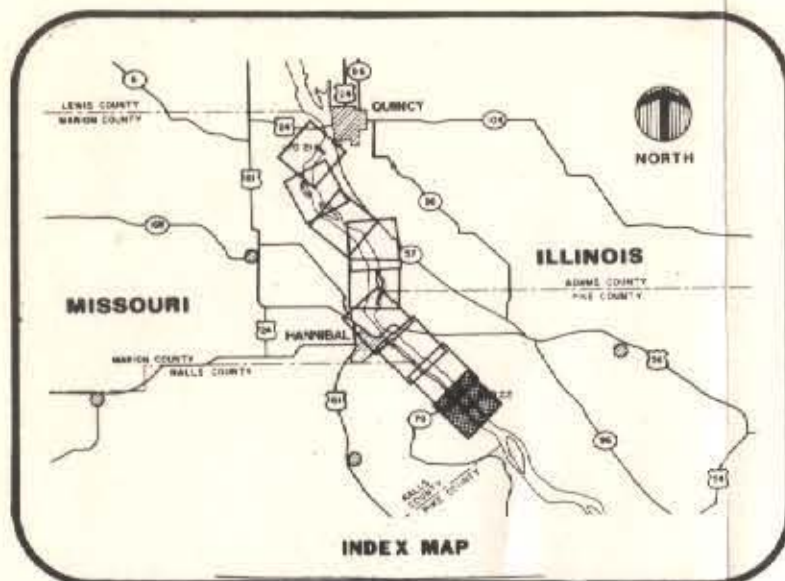


Upper Mississippi River - Pool 22 Recreation-Resource Master Plan



US Army Corps
of Engineers
Rock Island District

Project Map



Legend

- Project Operations
- Recreation - Intensive Use
- Recreation - Low Density Use
- Public Use
- Special Use (Density) *(Purple)*
- Wildlife Management / Reserve Forest Land
- Natural Area

Administered by:

- Corps of Engineers
- Cooperative agreement

Approx. Scale 1" = 2,000'



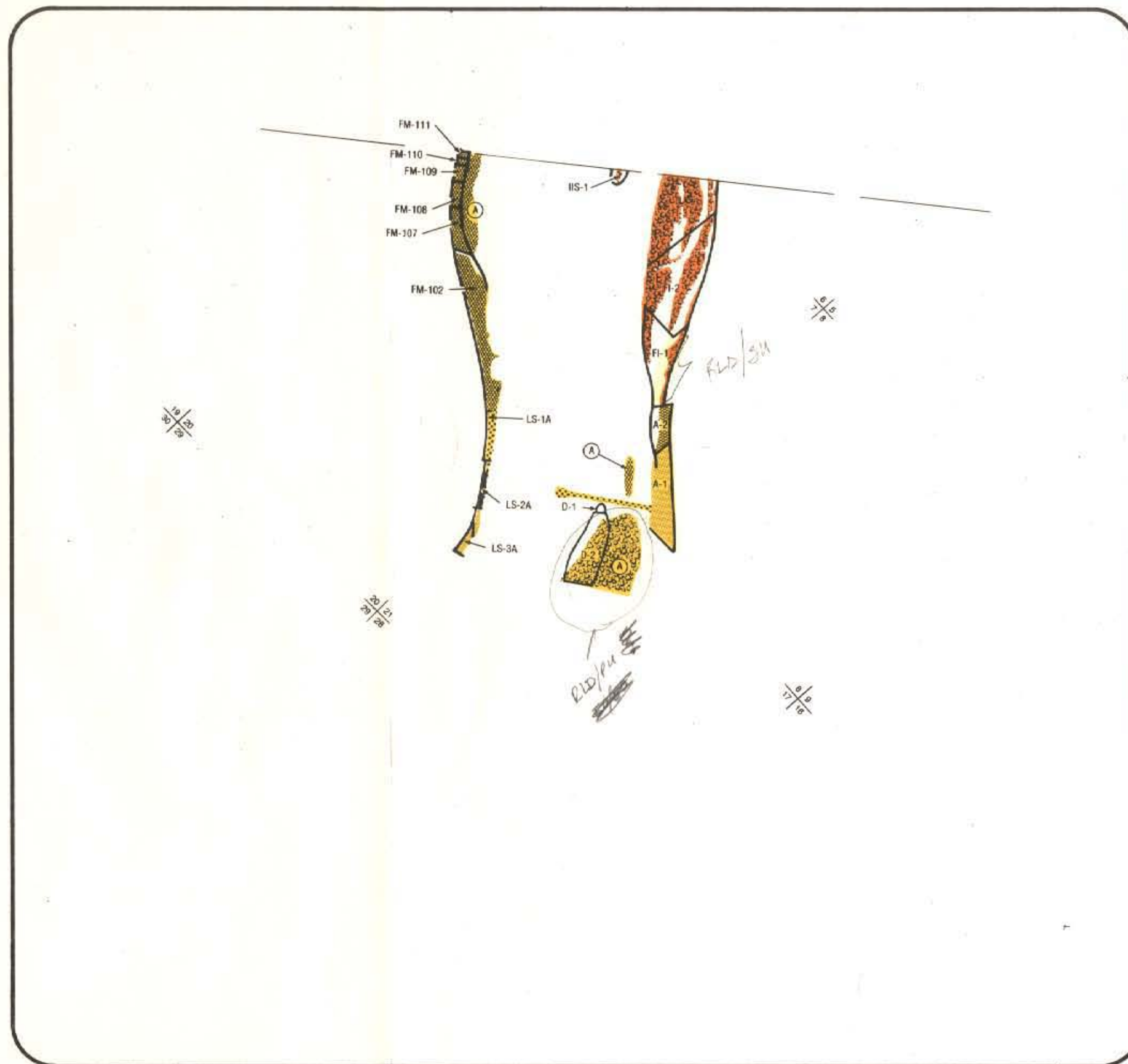
Upper Mississippi River - Pool 22 Recreation-Resource Master Plan

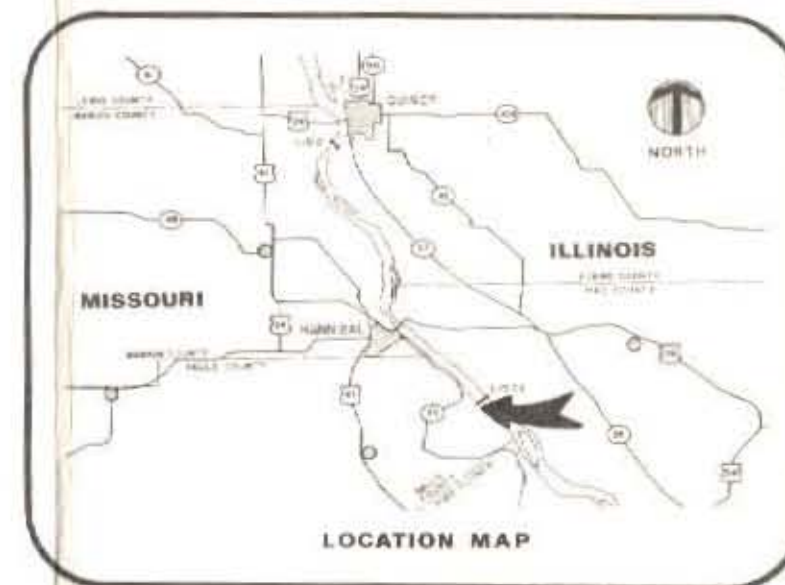
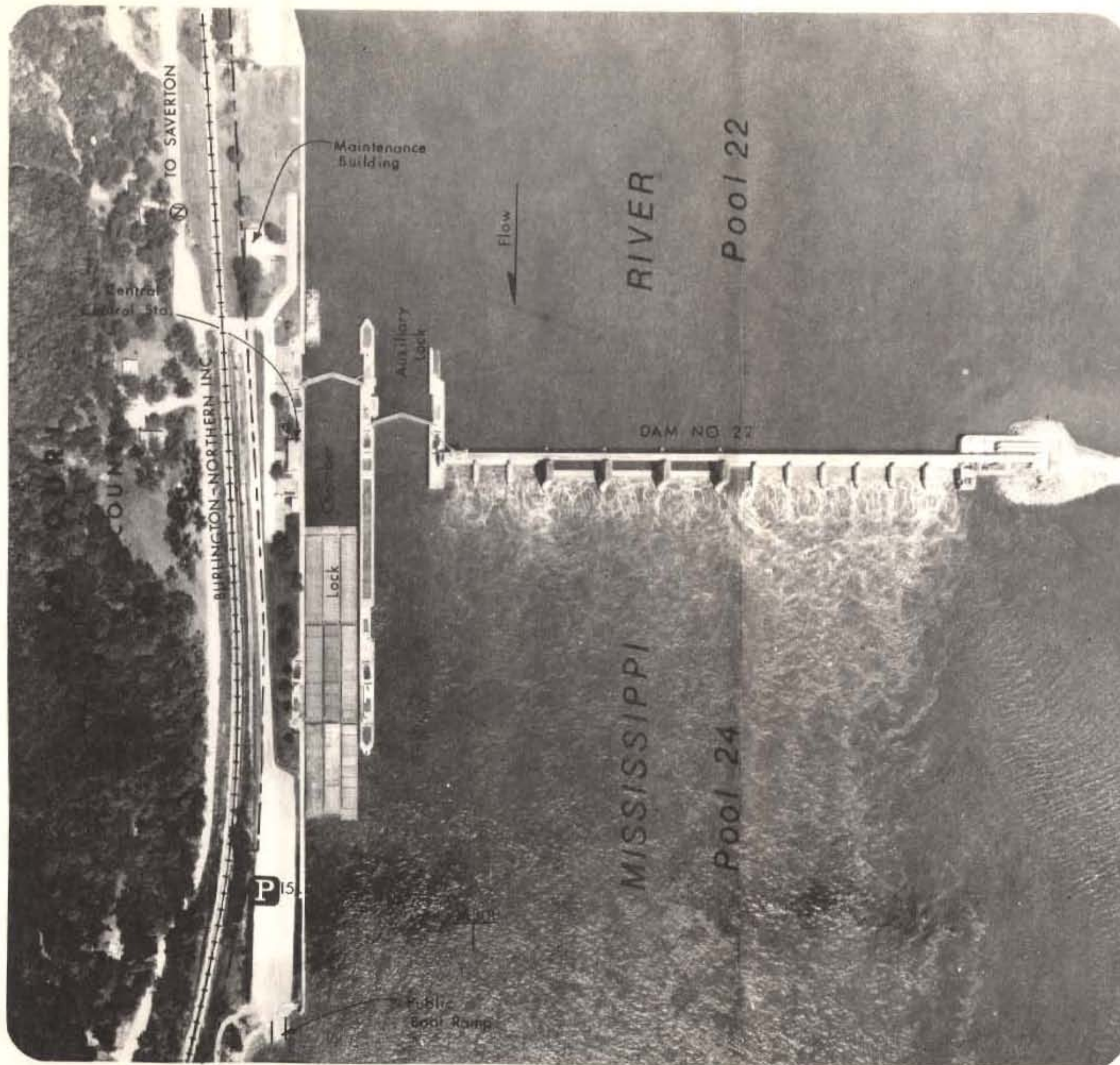


US Army Corps
of Engineers
Rock Island District

Land Use

PLATE 22-1A 9A





LEGEND

- GOVERNMENT BOUNDARY
- ⊗ STATE ROUTE
- P** PARKING (No. Spaces)
- +++ RAIL LINE
- M301 RIVER MILE

Approx Scale 1"=200 FEET

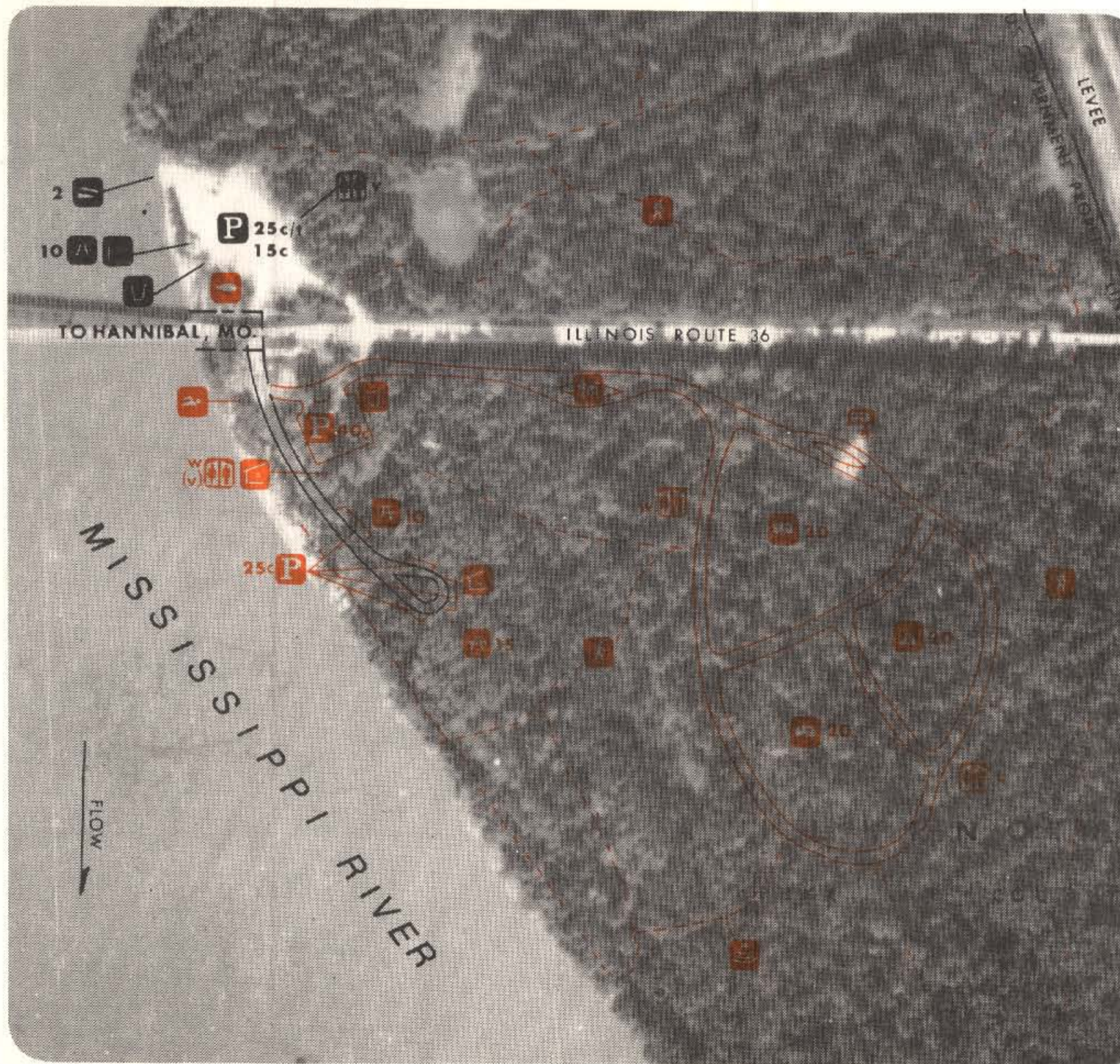


Upper Mississippi River - Pool 22
Recreation-Resource
Master Plan



US Army Corps
of Engineers
Rock Island District

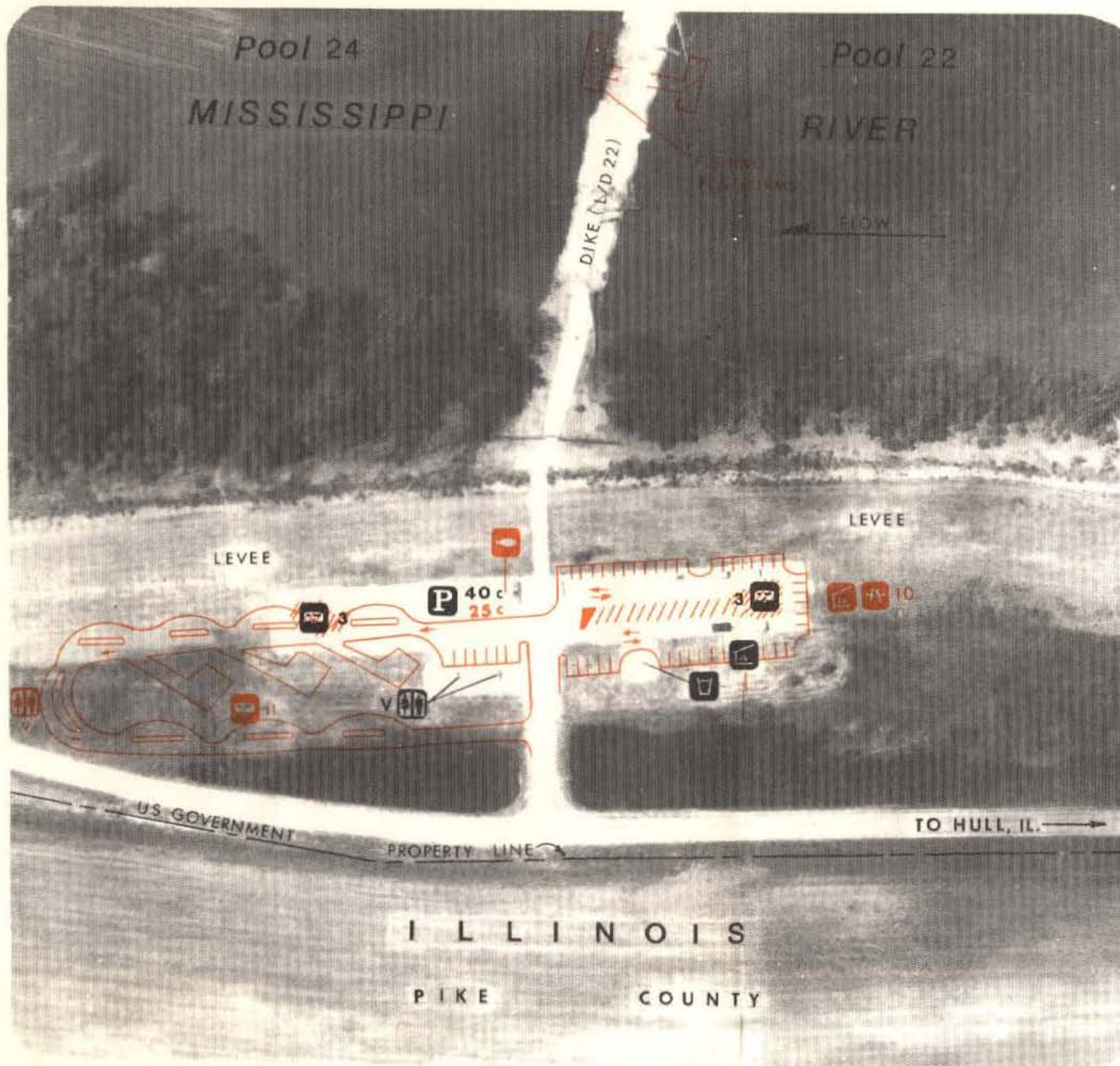
**Lock No.22
Installation**



Upper Mississippi River - Pool 22 Recreation-Resource Master Plan


US Army Corps
of Engineers
Rock Island District

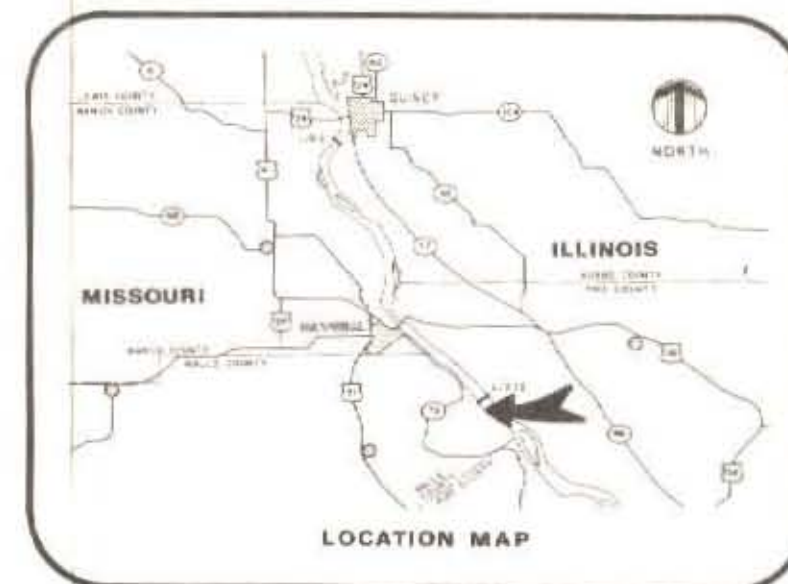
John Hay



Upper Mississippi River - Pool 22 Recreation-Resource Master Plan



Park-N-Fish



Upper Mississippi River - Pool 22
Recreation-Resource
Master Plan



**Lock & Dam
No. 22**



Upper Mississippi River - Pool 22
**Recreation-Resource
 Master Plan**



US Army Corps
 of Engineers
 River Island District

Fabius Island

CORPS PUBLIC USE AREAS

JOHN HAY

THIS CORPS-OPERATED PUBLIC USE AREA IS LOCATED ON THE ILLINOIS SIDE (PIKE COUNTY) OF THE MARK TWAIN MEMORIAL BRIDGE, HANNIBAL, MISSOURI. THE AREA IS A 4-ACRE SITE DEVELOPED FOR PICNICKING AND BOATING ACCESS PURPOSES. POPULARITY OF THE AREA FOR SWIMMING HAS BEEN INCREASING. THIS ATTRACTION IS DUE TO THE NATURAL SANDY SHORELINE. AN AERIAL SITE PLAN OF THE AREA IS PROVIDED ON PLATE 22-11.

THE NATURAL SETTING OF THE SITE IS A DENSELY WOODED BOTTOMLAND FLOOD PLAIN BORDERING THE MAIN CHANNEL OF THE RIVER. THE TOPOGRAPHY IS NEARLY LEVEL WITH THE HIGHEST ELEVATION (462 NGVD) ONLY 2.5 FEET ABOVE THE NORMAL POOL LEVEL. THE TREE COVER WITHIN THE DEVELOPED AREA IS AN IMMATURE (LESS THAN 20-INCH DIAMETER) MIXTURE OF SILVER MAPLE AND COTTONWOOD SPECIES. WITHIN THE SURROUNDING BUFFER AREA A MORE MIXED MATURITY STAND EXISTS WITH ASH, SYCAMORE, ELM, AND MULBERRY SPECIES ALSO PRESENT IN LESSER QUANTITIES. THE GROUND COVER WITHIN THE UNDEVELOPED AREAS CONSISTS PREDOMINANTLY OF BUR CUCUMBER AND WOOD NETTLE. MUCH OF THE AREA IS VERY LOW, SUCH THAT STANDING WATER AND WET SOIL CONDITIONS ARE PRESENT THROUGHOUT.

THE EXISTING RECREATION FACILITIES ARE LOCATED UPSTREAM OF THE BRIDGE AND CONSIST OF A CONCRETE DOUBLE-LANE BOAT-LAUNCHING RAMP WITH A GRAVEL SURFACED 25-SPACE CAR/TRAILER PARKING LOT AND A 10-UNIT FAMILY PICNIC AREA INCLUDING A GROUP PICNIC SHELTER. SUPPORTING FACILITIES INCLUDE 1 MILE OF GRAVEL CIRCULATION ROADS, PARKING SPACE FOR 15 CARS, A SET OF VAULT TOILETS, AND A HAND PUMP.

POTENTIAL RECREATION IMPROVEMENTS FOR THE AREA ARE TWO-FOLD. INITIAL ENHANCEMENT FEATURES HAVE BEEN IDENTIFIED IN ASSOCIATION WITH THE GREAT RIVER ROAD PROGRAM. THESE FACILITIES ARE INTENDED TO BOTH UPGRADE EXISTING FACILITIES AND PROVIDE ADDITIONAL OPPORTUNITIES FOR SWIMMING AND HIKING INTERESTS. SUCH IMPROVEMENTS INCLUDE A PRESSURIZED WATER SYSTEM, ASPHALT PAVING FOR PARKING LOT AND CIRCULATION ROADS, A BEACH CHANGEHOUSE, PARKING FOR 40 CARS, INTERPRETIVE NATURE TRAILS, AND ADDITIONAL VAULT TOILETS. SUPPORTING SIGNAGE AND LANDSCAPING IMPROVEMENTS ARE ALSO INCLUDED. A DETAILED LISTING AND COST ESTIMATE OF THE INDIVIDUAL ITEMS ARE CONTAINED IN TABLE VII-2. ULTIMATELY, POTENTIAL RECREATION IMPROVEMENTS IN ADDITION TO THOSE IDENTIFIED UNDER THE GREAT RIVER ROAD PROGRAM WOULD ALSO INCLUDE FACILITIES TO ACCOMMODATE GROUP AND FAMILY PICNICKING, TENT AND TRAILER CAMPING (CLASS A) AND NATURE INTERPRETIVE ITEMS. THESE ITEMS ARE ALSO PRESENTED IN TABLE 7-2.

TABLE 7-2

MISSISSIPPI RIVER - POOL 22

JOHN HAY RECREATION AREA 1/

COST ESTIMATE FOR POTENTIAL IMPROVEMENTS

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
				INITIAL	ULTIMATE
PHYSICAL SETTING:					
SITE PREPARATION	10	ac.	1,800	-	18,000
LANDSCAPING	3	ac.	1,500	2,000	2,500
BEACH	10,000	s.f.	2	-	20,000
RECREATION FEATURES:					
ENTRANCE STATION	1	ea.	5,000	-	5,000
PICNIC TABLES	91	ea.	250	-	22,750
SHELTER	400	s.f.	25	-	10,000
GRILLS	15	ea.	75	-	1,125
FIRE RINGS	60	ea.	55	-	3,300
CAMP SITE (PAD)	40	ea.	800	-	32,000
CHANGEHOUSE	1	ea.	10,000	10,000	-
PLAYGROUND	2	ea.	21,300	-	42,600
ACCESS FEATURES:					
TWO-WAY ROAD					
(Asphalt)	1.86	mi.	142,000	50,000	215,000
ONE-WAY ROAD					
(Asphalt)	.5	mi.	71,000	-	35,500
PARKING LOTS					
(Asphalt)	6,670	s.y.	12	50,000	30,000
TRAILS	10,000	l.f.	3	10,000	20,000
SANITARY FEATURES:					
WATER SUPPLY	1	ea.	15,000	15,000	-
WATER LINE	8,000	l.f.	5	-	40,000
DRINKING FOUNTAINS	7	ea.	710	-	4,970
VAULT TOILETS	6	ea.	7,100	20,000	22,600
WATERBORNE TOILETS	1	ea.	43,000	-	43,000
TRAILER DUMP STATION	1	ea.	27,000	-	27,000
TREATMENT SYSTEM	1	l.s.	117,000	-	117,000
REFUSE CONTAINERS	60	ea.	50	-	3,000
WASTE-WATER BASINS	30	ea.	75	-	2,250
FISH CLEANING STATION	1	ea.	7,100	-	7,100
SAFETY/INTERPRETIVE FEATURES:					
SIGNAGE	1	l.s.	21,000	6,000	15,000
SECURITY LIGHTING		l.s.	13,000	-	13,000
COURTESY DOCK		ea.	800	-	800
ELECTRICAL DISTRIBUTION		l.s.	12	-	96,000
AMPHITHEATER		ea.	4,200	-	4,200
SUB-TOTAL				\$163,000	\$853,695
CONTINGENCIES (20%)				-	170,705
TOTAL RECREATION FACILITY				\$163,000	\$1,024,400
ENGINEERING AND DESIGN (12%)				-	123,000
SUPERVISION AND ADMINISTRATION (10%)				-	102,400
TOTAL				\$163,000	\$1,249,800

1/ BASED ON PRICE LEVELS DEVELOPED FOR METHODOLOGY FOR DETERMINING EFFICIENCY OF RECREATION AREAS, NORTH CENTRAL DIVISION, OCTOBER 1981. CURRENT ACTUAL COSTS FOR INDIVIDUAL ITEMS WERE SUBSTITUTED WHEN AVAILABLE.

PARK-N-FISH

THIS CORPS-OPERATED PUBLIC USE AREA IS LOCATED AT THE ILLINOIS SIDE (PIKE COUNTY) OF DAM 22. THE AREA IS A SMALL 2-ACRE SITE DEVELOPED FOR FISHING ACCESS PURPOSES. THE POPULARITY OF THE AREA IS DUE TO THE TAILWATER FISHING OPPORTUNITIES ALONG THE DAM STRUCTURE. AN AERIAL SITE PLAN OF THE FACILITIES IS PROVIDED ON PLATE 22-12.

THE PHYSICAL SETTING OF THE SITE IS AN OPEN-SPACE AREA LOCATED BETWEEN A COUNTY ROAD AND THE LANDWARD SIDE OF A LEVEE. ALL OF THE NATURAL VEGETATION IS LOCATED ON LANDS EXTENDING RIVERWARD OF THE LEVEE. THE WOODED AREAS CONSIST PREDOMINANTLY OF SILVER MAPLE AND COTTONWOOD, WITH LESSER QUANTITIES OF ELM, ASH, SYCAMORE, AND WILLOW SPECIES. THE TERRAIN OF THE ACCESS AREA HAS BEEN EXTENSIVELY ALTERED BY THE MANMADE IMPROVEMENTS (LEVEE, ROAD, AND PARK FACILITY) LOCATED ON FEDERAL LANDS, WHILE ADJOINING PRIVATE PROPERTY IS CULTIVATED AGRICULTURAL LANDS. THE FLOOD PROTECTION ADVANTAGE OF THIS FACILITY DOES PROVIDE FOR EXTENDED PUBLIC USE AND EMERGENCY ACCESS OPPORTUNITIES.

THE EXISTING RECREATION FACILITIES CONSIST OF A SINGLE GRAVEL-SURFACED PARKING LOT, WHICH ACCOMMODATES 40 CAR SPACES, A PICNIC SHELTER, SIX CAMPING UNITS, A SET OF VAULT TOILETS, AND A HAND PUMP. PEDESTRIAN ACCESS ACROSS THE LEVEE AND ALONG THE DAM CROWN IS PROVIDED FOR FISHERMAN ACCESS.

POTENTIAL RECREATION IMPROVEMENTS FOR THE AREA ARE ORIENTED TOWARD UPGRADING EXISTING FACILITIES AND LIMITED EXPANSION OF PICNICKING AND CAMPING FEATURES. INITIAL IMPROVEMENTS HAVE BEEN IDENTIFIED IN ASSOCIATION WITH THE GREAT RIVER ROAD PROGRAM. THESE FACILITIES INCLUDE A WELL AND PRESSURIZED WATER SYSTEM, A GROUP PICNIC SHELTER, PICNIC UNITS (10), ADDITIONAL 25 CAR SPACE PARKING LOT, VAULT TOILETS, AND LANDSCAPING.

ADDITIONAL IMPROVEMENTS FOR THE CONVENIENCE, UPGRADING, AND SAFETY OF PRESENT USE ACTIVITIES INCLUDE PAVING (ASPHALT) OF EXISTING PARKING LOT, FISH CLEANING STATION, RAMPED HANDICAP ACCESS ACROSS LEVEE, FISHING PLATFORMS ALONG THE DIKE, SECURITY LIGHTING, EMERGENCY PHONE SERVICE, AND LANDSCAPING. LIMITED EXPANSION FOR CAMPING UNITS (5) SHOULD ALSO BE CONSIDERED. TABLE 7-3 ITEMIZES THE FACILITIES AND COST ESTIMATES FOR SUCH IMPROVEMENTS.

TABLE 7-3

MISSISSIPPI RIVER - POOL 22PARK-N-FISH RECREATION AREA
COST ESTIMATE FOR POTENTIAL IMPROVEMENTS ^{1/}

ITEM	QUANTITY	UNIT	UNIT PRICE	AMOUNT	
				INITIAL	ULTIMATE
PHYSICAL SETTING:					
SITE PREPARATION	3	ac.	1,800	-	5,400
LANDSCAPING	1	ac.	1,500	2,000	1,500
RECREATION FEATURES:					
PICNIC TABLES	10	ea.	250	1,500	1,000
SHELTER	400	s.f.	25	10,000	
GRILLS	2	ea.	75	-	150
FIRE RINGS	5	ea.	55	-	275
CAMP SITE (PAD)	5	ea.	800	-	4,000
FISHING PLATFORM	2,000	s.f.	25	-	50,000
ACCESS FEATURES:					
PARKING LOT (Asphalt)	4,000	s.y.	12	30,000	17,500
ONE-WAY ROAD (Asphalt)	.2	mi.	71,000	-	14,200
SANITARY FEATURES:					
WATER SUPPLY	1	l.s.	15,000	15,000	-
VAULT TOILETS	2	ea.	10,000	20,000	-
FISH CLEANING STATION	1	ea.	7,100	-	7,100
REFUSE CONTAINERS	5	ea.	50	-	250
SAFETY FEATURES:					
SIGNAGE	1	l.s.	2,500	-	2,500
SECURITY LIGHTING	1	l.s.	4,600	-	4,600
ELECTRICAL DISTRIBUTION	1,000	l.f.	12	-	12,000
SUB-TOTAL				\$ 78,500	\$120,475
CONTINGENCIES (20%)				-	24,025
TOTAL RECREATION FACILITIES				\$ 78,500	\$144,500
ENGINEERING AND DESIGN (12%)				-	17,340
SUPERVISION AND ADMINISTRATION (10%)				-	14,460
TOTAL				\$ 78,500	\$176,300

^{1/} BASED ON PRICE LEVELS DEVELOPED FOR METHODOLOGY FOR DETERMINING EFFICIENCY OF RECREATION AREAS, NORTH CENTRAL DIVISION, OCTOBER 1981. CURRENT ACTUAL COSTS FOR INDIVIDUAL ITEMS WERE SUBSTITUTED WHEN AVAILABLE.

LOCK AND DAM 22

THIS CORPS-OPERATED PUBLIC USE AREA IS LOCATED AT THE DOWNSTREAM END OF LOCK 22 IN RALLS COUNTY, MISSOURI. THE 3-ACRE SITE PROVIDES BOAT-LAUNCHING ACCESS TO POOL 24. THE FACILITIES CONSIST OF A CONCRETE PARKING LOT (30 CAR/TRAILER SPACES) AND A DOUBLE-LANE BOAT-LAUNCHING RAMP. AN AERIAL SITE PLAN OF THE FACILITIES IS PROVIDED ON PLATE 22-13.

THE PHYSICAL SETTING OF THE SITE IS A NARROW OPEN-SPACE AREA LOCATED BETWEEN THE LOCK WALL AND A RAILROAD EMBANKMENT. A NARROW STRIP OF SHORELINE LAND EXTENDING DOWNSTREAM OF THE RAMP CONTAINS A MODERATE COVER OF VEGETATION AND IS USED FOR SHORELINE FISHING AS PART OF THE PUBLIC ACCESS OPPORTUNITIES.

POTENTIAL RECREATIONAL IMPROVEMENTS FOR THE AREA ARE ORIENTED TOWARDS PROVIDING ADDITIONAL FACILITIES TO ACCOMMODATE LAND-BASED FISHING USE WITHIN THE DOWNSTREAM AREA, AND SUPPORTING SANITARY IMPROVEMENTS FOR ALL POTENTIAL DAY-USE INTERESTS (BOATERS, FISHERMEN, AND SIGHTSEERS). IMPROVEMENTS WOULD INCLUDE: PICNIC UNITS (5). ACCESS ROAD (ASPHALT) AND PARKING (ASPHALT), AND A WATERBORNE RESTROOM FACILITY. TABLE 7-4 ITEMIZES THE FACILITIES AND COST ESTIMATES FOR SUCH FEATURES.

TABLE 7-4

MISSISSIPPI RIVER - POOL 22LOCK AND DAM 22 RECREATION AREA
COST ESTIMATE FOR POTENTIAL IMPROVEMENTS ^{1/}

<u>ITEM</u>	<u>QUANTITY</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>AMOUNT</u>
PHYSICAL SETTING:				
SITE PREPARATION	.5	ac.	1,800	900
LANDSCAPING	.5	ac.	1,500	750
RECREATION FEATURES:				
PICNIC TABLES	5	ea.	250	1,250
GRILLS	3	ea.	75	225
ACCESS FEATURES:				
TWO-WAY ROAD (Asphalt)	500	s.y.	12	6,000
PARKING LOT (Asphalt)	70	s.y.	12	840
SANITARY FEATURES:				
WATERBORNE TOILETS (WITH OBSERVATION DECK)	1	ea.	43,000	43,000
REFUSE CONTAINERS	3	ea.	50	150
SAFETY FEATURES:				
SIGNAGE	1	l.s.	1,000	1,000
SECURITY LIGHTING	1	l.s.	5,000	5,000
SUB-TOTAL				\$59,115
CONTINGENCIES (20%)				11,825
TOTAL RECREATION FACILITIES				\$70,930
ENGINEERING AND DESIGN (12%)				8,510
SUPERVISION AND ADMINISTRATION (10%)				7,060
TOTAL				\$86,500

^{1/} BASED ON PRICE LEVELS DEVELOPED FOR METHODOLOGY FOR DETERMINING EFFICIENCY OF RECREATION AREAS, NORTH CENTRAL DIVISION, OCTOBER 1981. CURRENT ACTUAL COST FOR INDIVIDUAL ITEMS WERE SUBSTITUTED WHEN AVAILABLE.

LEASED PUBLIC USE AREAS

ORTON-FABIUS CHUTE

THE MISSOURI DEPARTMENT OF CONSERVATION HAS REQUESTED A PUBLIC PARK AND RECREATIONAL LEASE FOR CONSTRUCTION OF A BOAT RAMP AND PARKING ACCESS ALONG ORTON-FABIUS CHUTE (TRACTS FM-152, FM-87, AND FM-88). DISTRICT REVIEW APPROVAL OF THIS REQUEST HAS BEEN FAVORABLE, AND FORMAL LEASE ARRANGEMENTS ARE IN PROCESS AT THIS TIME. A 25-YEAR LEASE WILL BE ISSUED TO THE STATE FOR DEVELOPMENT AND MAINTENANCE OF A ^{39.3}~~30~~-ACRE AREA FOR PUBLIC ACCESS PURPOSES. PLATE 22-14 IS A SITE PLAN OF THE PROPOSED STATE FACILITY DEVELOPMENT.

← UPDATE
BASED ON
CURRENT
LEASE

THE PHYSICAL SETTING OF THE TOTAL LEASE AREA CONSISTS OF A DENSELY WOODED BOTTOMLAND FLOOD PLAIN LOCATED RIVERWARD OF A LEVEE, AND BORDERED BETWEEN A MAJOR TRIBUTARY AND A BACKWATER SLOUGH OF THE MISSISSIPPI RIVER. THE TOPOGRAPHY IS NEARLY LEVEL WITH THE HIGHEST ELEVATION (475 NGVD) BEING 10 FEET ABOVE THE NORMAL POOL LEVEL. THE SOIL CLASSIFICATION OF THE PENINSULA AREA IS PRIMARILY THE WESTERVILLE SERIES, WITH THE CHEQUEST SERIES EXTENDING ALONG THE NORTHERN UPSTREAM BANK OF THE NORTH RIVER. THESE SOILS ARE OF SILT LOAM AND SILTY CLAY LOAM TEXTURE, RESPECTIVELY. BOTH SOILS ARE CHARACTERISTICALLY DEEP, POORLY TO SOMEWHAT POORLY DRAINED, AND HAVING MODERATE TO MODERATELY SLOW PERMEABILITY AND HIGH AVAILABLE WATER CAPACITY. THE DENSE TREE COVER WITHIN THE AREA CONSISTS PREDOMINATELY OF SILVER MAPLE AND COTTONWOOD SPECIES. OCCASIONAL INDIVIDUAL SPECIES OF EITHER OAK, ASH, HACKBERRY, OR EVEN PECAN, HICKORY, OR WALNUT ARE ALSO PRESENT. GROUND COVER UNDER THE HEAVY CANOPY IS A THICK GROWTH OF BUR CUCUMBER, WOOD NETTLE, AND/OR POISON IVY.

THERE ARE TWO MAJOR ENVIRONMENTAL CONCERNS WHICH MIGHT RESTRICT ANY FUTURE INTENSIVE DEVELOPMENT OPPORTUNITIES. THESE ARE: (1) OBSERVED BALD EAGLE USE WITHIN THE AREA, AND (2) POTENTIAL NATURE PRESERVE DESIGNATION OF ADJOINING AREA.

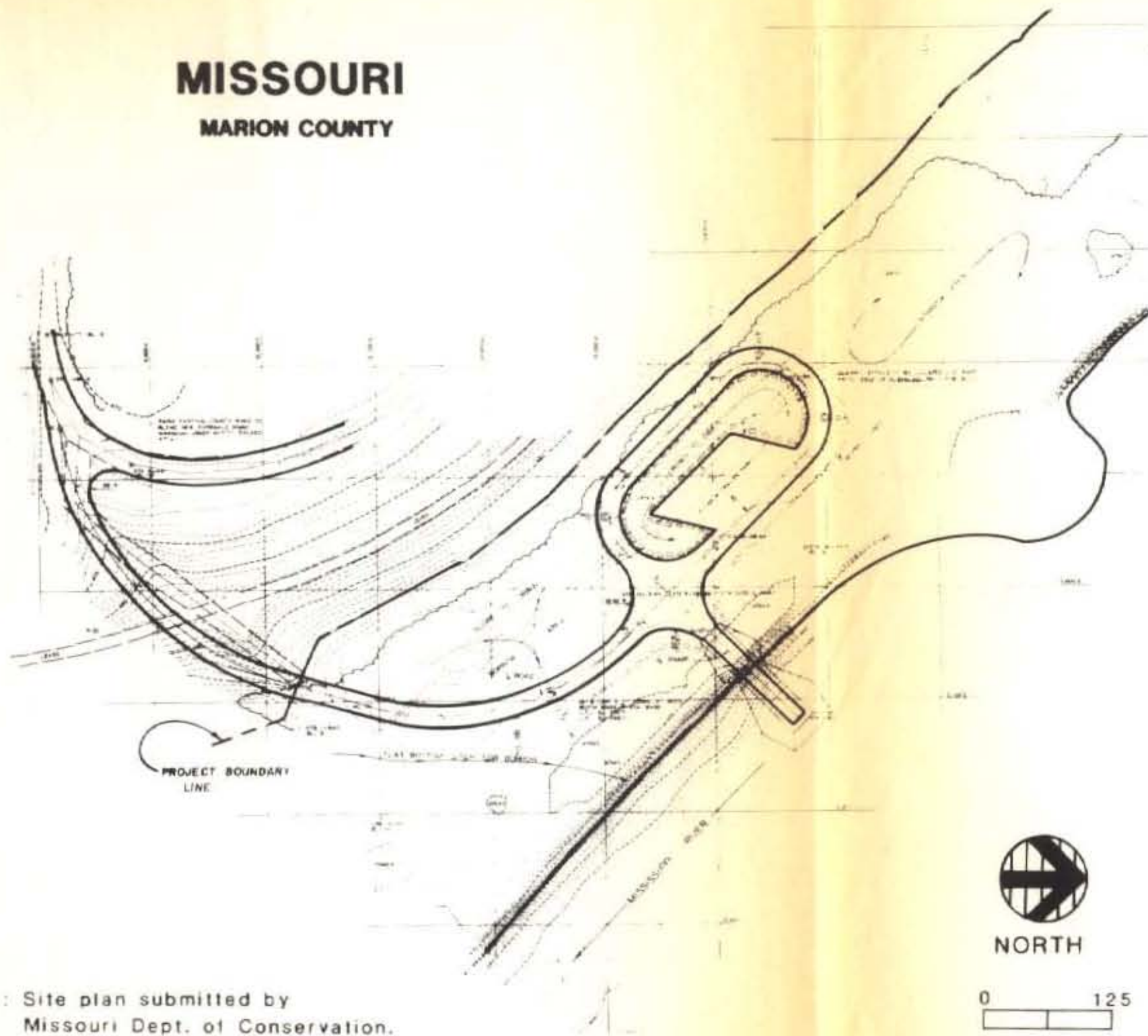
THE MAINLAND SHORELINE ALONG THE SLOUGH IS EXTENSIVELY USED BY WINTERING BALD EAGLES FOR DAY RESTING PURPOSES. THE INLAND AREAS OF FABRIS ISLAND ARE ALSO POPULAR WITH THESE BIRDS FOR NIGHT ROOSTING. ANY PROPOSED FUTURE INTENSIVE RECREATION USE COULD LIKELY CONFLICT WITH SUCH EAGLE-USE PATTERNS WITHIN THIS VICINITY. ALTHOUGH PEAK PERIODS OF USE FOR THE GENERAL PUBLIC AND THE BALD EAGLES OCCUR DURING OPPOSITE SEASONAL USES; HIGH EAGLE USE OCCURS DURING THE WINTER WHEN GENERAL PUBLIC USE IS THE LOWEST. THE SIGNIFICANCE OF INTENSIVE PUBLIC USE IMPACTS ON THE BALD EAGLE USE WITHIN THIS VICINITY WILL NEED FURTHER ANALYSIS AND/OR MONITORING FOR FULL EVALUATION PRIOR TO ANY APPROVAL FOR ADDITIONAL DEVELOPMENT. THE LIMITED DEVELOPMENT PLANNED BY THE STATE IS NOT EXPECTED TO RESULT IN ANY USE CONFLICTS. COORDINATION HAS BEEN MADE WITH THE U.S. FISH AND WILDLIFE SERVICE AS REQUIRED BY SECTION 7 OF THE ENDANGERED SPECIES ACT.

THE OTHER MAJOR ENVIRONMENTAL CONCERN IS THE IDENTIFICATION OF THE FORESTED BOTTOMLAND AREA LOCATED BETWEEN THE CONFLUENCE OF THE NORTH RIVER AND SOUTH RIVER BY THE STATE OF MISSOURI AS A POTENTIAL STATE NATURE PRESERVE AREA. THE STATE DEPARTMENT OF CONSERVATION PRESENTLY MANAGES THIS LAND FOR FISH AND WILDLIFE CONSERVATION PURPOSES; HOWEVER, TO DATE, THEY HAVE NOT PURSUED THE OFFICIAL DESIGNATION OF THE AREA AS A NATURE PRESERVE. THE PROPOSED STATE PUBLIC USE FACILITIES ARE LOCATED OUTSIDE (NORTHERN PENINSULA OF THE NORTH RIVER) OF THE AREA OF INITIAL CONSIDERATION FOR A NATURE PRESERVE.

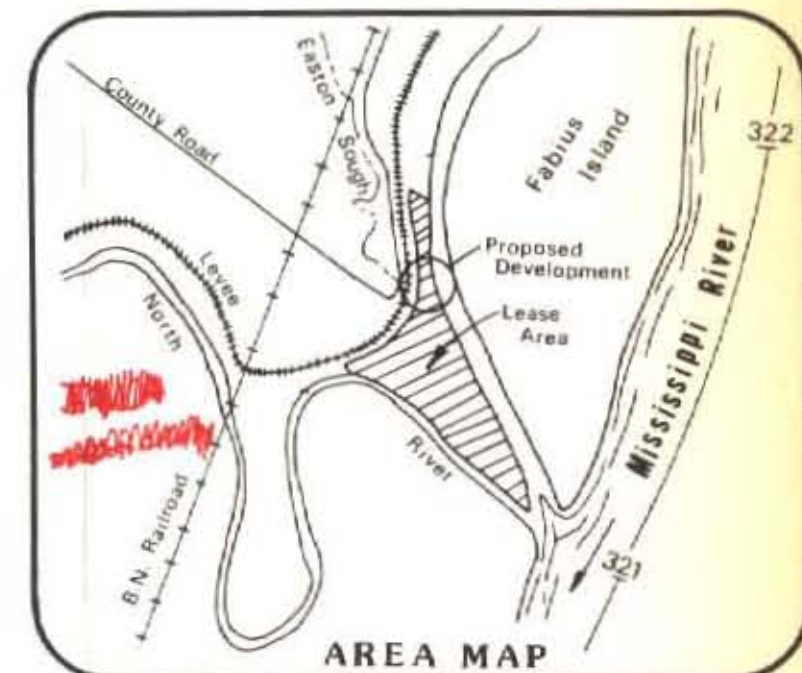
ANY PERMITTED PUBLIC USE WITHIN THIS AREA SHOULD BE CONSISTENT WITH THE RESOURCE CAPABILITIES THAT WILL ASSURE PRESERVATION OF THE EXISTING UNIQUE ENVIRONMENTAL QUALITIES.

MISSOURI

MARION COUNTY



Note : Site plan submitted by
Missouri Dept. of Conservation.



Upper Mississippi River - Pool 22
**Recreation-Resource
Master Plan**



**Orton-Fabius
Chute Access**

DEVELOPMENT PROGRAM

AS DISCUSSED IN SECTION I OF THIS PLAN, ANY NEW RECREATION FACILITY DEVELOPMENT LOCATED ON PROJECT LANDS INVOLVING CORPS PARTICIPATION IS SUBJECT TO COST-SHARING PROVISIONS WITH A NON-FEDERAL SPONSOR. THERE HAS BEEN NO SUCH COST-SHARING INTEREST EXPRESSED TO DATE DURING THE COORDINATION UNDERTAKEN FOR THE PREPARATION OF THIS PLAN. THEREFORE, NONE OF THE POTENTIAL RECREATION FACILITY DEVELOPMENT IDENTIFIED AT EXIST-COPRS-OPERATED AREAS^{ARE} PROPOSED FOR NON-FEDERAL SPONSORING AT THIS TIME. ANY NEW RECREATION OR FISH AND WILDLIFE FACILITY IMPROVEMENTS IDENTIFIED IN THIS PLAN MAY BE OPTIONALLY PURSUED AT FULL EXPENSE BY OTHER PUBLIC INTERESTS.

THE STATE OF MISSOURI HAS INDICATED POTENTIAL FUTURE COST-SHARING INTEREST IN PROPOSED WETLAND IMPROVEMENTS (LEVEE) FOR THE BAY DE CHARLES AREA. NO FORMAL INTENT OR PROPOSAL HAS BEEN EXPRESSED TO WARRANT CONSIDERATION AT THIS TIME. THIS INTEREST IS NOTED FOR FUTURE DEVELOPMENT AND COORDINATION EFFORTS.

ANOTHER IDENTIFIED OPPORTUNITY FOR NEW RECREATION DEVELOPMENT HAS BEEN THROUGH THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT) IN ASSOCIATION WITH THE GREAT RIVER ROAD PROGRAM. SUCH IMPROVEMENTS WOULD BE FOR ENHANCEMENT OF THE GREAT RIVER ROAD SYSTEM AND DO NOT REQUIRE CORPS FUNDING SUPPORT. THE INITIAL FACILITY IMPROVEMENTS IDENTIFIED FOR THE JOHN HAY AND PARK-N-FISH RECREATION AREAS REPRESENT THE FEATURES RECOMMENDED UNDER THIS PROGRAM. UPON NOTIFICATION FROM THE IDOT THAT FUNDING IS AVAILABLE, CORPS PREPARATION OF CONSTRUCTION DESIGN DRAWINGS WILL BE FORWARDED TO IDOT FOR FINAL APPROVAL. CONTRACT CONSTRUCTION ADMINISTRATION COSTS UNDERTAKEN BY THE CORPS FOR THESE FEATURES CAN ALSO BE SUPPORTED UNDER THIS PROGRAM.

TABLE 7-6

MISSISSIPPI RIVER - POOL 22SUMMARY OF RECREATION AREA
COST ESTIMATES FOR POTENTIAL IMPROVEMENTS

<u>NAME</u>	<u>INITIAL</u>	<u>ULTIMATE</u>	<u>TOTAL</u>
JOHN HAY	\$163,000	\$1,249,800	\$1,412,800
PARK-N-FISH	78,000	176,300	254,300
LOCK AND DAM 22		86,500	86,500
TOTAL	\$241,000	\$1,512,600	\$1,753,600

IDENTIFIED IMPROVEMENTS WITHIN EXISTING COPRS-OPERATED PUBLIC USE AREAS MAY BE IMPLEMENTED AT FULL FEDERAL EXPENSE IF DETERMINED THAT SIGNIFICANT COST EFFICIENCY FOR OPERATION, MAINTENANCE, AND REPLACEMENT WILL BE ACHIEVED. SITE MODIFICATIONS MAY BE JUSTIFIED TO ESTABLISH MANAGEMENT CONTROL FOR USER FEE COLLECTION PURPOSES OR UPGRADING SANITARY CONDITIONS AND CONVENIENCE TO MEET EXISTING VISITATION. ALSO, A REALLOCATION OF FACILITIES MAY BE MADE BETWEEN PUBLIC USE AREAS TO CONCENTRATE MAINTENANCE EXPENSES FOR COST EFFICIENCY, AS WELL AS, TO BETTER ACCOMMODATE EXISTING USE PATTERNS. THESE MODIFICATIONS ARE CONSIDERED MANAGEMENT OPTIONS AND NOT NEW OR EXPANDED IMPROVEMENTS AS LONG AS TOTAL EXISTING FACILITIES FOR THE ENTIRE PROJECT ARE NOT INCREASED.

FACILITY DESIGN CRITERIA

FACILITY DESIGN CRITERIA

GENERAL

STANDARDS PERTAINING TO THE DESIGN OF RECREATION FACILITIES CITED IN CORPS OF ENGINEERS REGULATIONS AND GUIDELINES (I.E., EM 1110-2-400, EM 1110-2-410, ER 1110-2-102, ER 1110-2-400, EP 1110-1-6, AND WES INSTRUCTION RPT. R-80-1) ARE ADAPTED WHEN NECESSARY TO MEET THE UNIQUE RIVERINE FLOOD PLAIN CONDITIONS OF THE PROJECT. DESIGN PRINCIPLES CONTAINED WITHIN SUCH GUIDELINES PROVIDE THE BASIS FOR RECREATION DEVELOPMENT TO SATISFY ESTIMATED PUBLIC USE THAT IS COMPATIBLE WITH THE NATURAL RESOURCES. THE STANDARD OF QUALITY FOR PARK FACILITIES ALSO INCLUDES THE IMAGINATIVE AND INNOVATIVE APPLICATIONS OF PROJECT PERSONNEL AND THE PARK PRACTICE PROGRAM PUBLICATIONS (DESIGN) OF THE NATIONAL PARK SERVICE/NATIONAL RECREATION AND PARK ASSOCIATION.

DESIGN AND DEVELOPMENT OF RECREATION FACILITIES ARE ADVERSELY INFLUENCED BY THE FLOOD PLAIN CONSTRAINTS THAT ARE CHARACTERISTIC OF THE RIVERINE PROJECT LANDS. MAINTENANCE AND REPLACEMENT COSTS ARE HIGHER THAN NORMAL LIFE EXPECTANCIES FOR RECREATION FACILITIES BECAUSE OF THESE RIVERINE CHARACTERISTICS. AS A RULE, RECREATION FACILITIES ALONG THE RIVER ARE DESIGNED TO MINIMIZE FLOOD DAMAGES INVOLVING INUNDATION, EROSION, SILTATION, AND STRONG OVERFLOW CURRENTS. SOME FACILITIES CAN BE MADE MORE FLOOD RESISTANT/TOLERANT BY PRE-FLOOD PREPARATION MEASURES LIKE SANDBAGGING AND TEMPORARY REMOVAL. UNFORTUNATELY, THIS IS NOT ALWAYS A RELIABLE SOLUTION BECAUSE OF THE REMOTE AND ISOLATED LOCATIONS OF THE PARK AREAS AND THE UNPREDICTABILITY OF FLOOD EVENTS.

THE FOLLOWING DISCUSSION PRESENTS THE GENERAL DESIGN CRITERIA FOR RECREATION FACILITY DEVELOPMENT WITHIN CORPS-ADMINISTERED PUBLIC USE AREAS. INDIVIDUAL VARIATIONS MAY OCCUR BETWEEN THE PARKS BECAUSE OF PHYSICAL, MANUFACTURING, OR SPECIAL DESIGN PREFERENCE FACTORS INVOLVED AT THE TIME OF INSTALLATION OF SPECIFIC FEATURES. EACH CORPS-OPERATED PUBLIC USE AREA IS AN INDIVIDUAL PARK REQUIRING APPROPRIATE DESIGN ADAPTIONS FOR THE NATURAL AND PHYSICAL CHARACTERISTICS UNIQUE TO ITS LOCATION. PRIMARY DESIGN OBJECTIVES ARE TO MAKE FACILITIES HARMONIOUS WITH AND LEAST DESTRUCTIVE TO THE NATURAL ENVIRONMENT, WHILE PROVIDING SAFE, HEALTHY, AND MAXIMUM ENJOYMENT FOR THE INTENDED PUBLIC USE.

PROTECTION AND ENHANCEMENT OF THE NATURAL ENVIRONMENT IS A MAJOR CONSIDERATION IN THE DEVELOPMENT OF ANY OUTDOOR RECREATION FACILITY. CONSTRUCTION ACTIVITIES ASSOCIATED WITH PARK IMPROVEMENTS AND MAINTENANCE ACTIONS ARE TO BE PERFORMED IN A MANNER TO MINIMIZE ENVIRONMENTAL IMPACTS. APPROPRIATE MITIGATION, RESTORATION, AND PROTECTION MEASURES WILL BE CONSIDERED AS PART OF THE DEVELOPMENT, MANAGEMENT, AND DESIGN OF ANY PARK FACILITY.

PHYSICAL SETTING AND DEVELOPMENT (SEE FIGURE VIII-1)

SITING

THE CHARACTER OF EACH SITE AND ITS NATURAL FEATURES WILL BE FULLY APPRAISED SO THAT THE MOST SCENIC PARTS OF THE SITE OR AREA WILL REMAIN UNDEVELOPED FOR ENJOYMENT OF THE VISITOR. ONLY THE MOST ADAPTABLE TOPOGRAPHY WILL BE USED FOR THE SITING OF RECREATIONAL FACILITIES. A FORCED SITING (EXCESSIVE CUTS OR FILLS) WILL BE AVOIDED. LARGE CUTS OR FILLS WILL BE USED ONLY WHEN THE TERRAIN DOES NOT OFFER AN ALTERNATIVE,

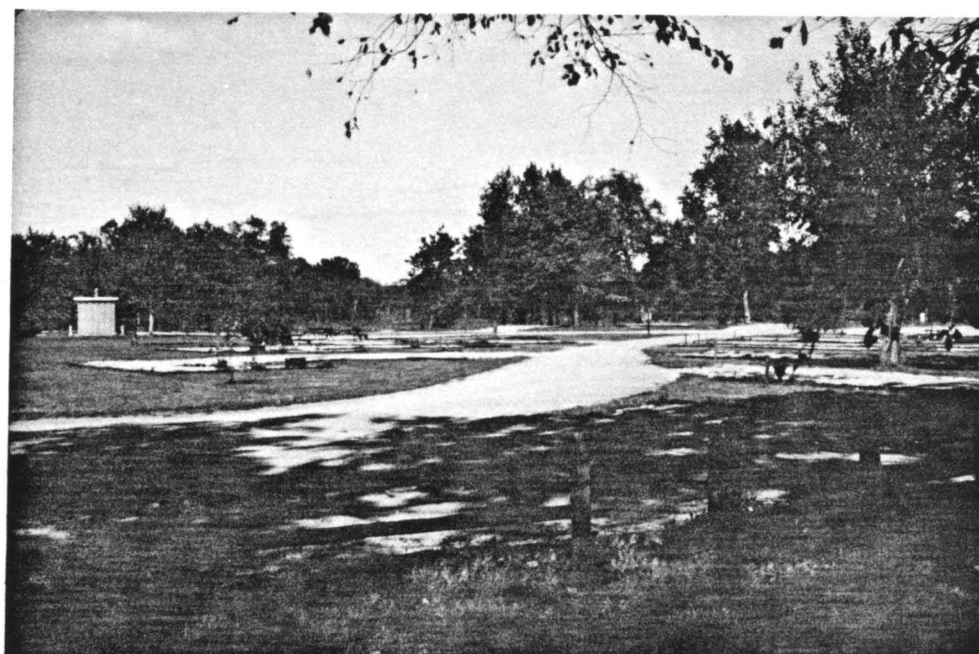


FIGURE VIII-1
MISSISSIPPI RIVER
TYPICAL PARK DEVELOPMENT

AND THEN ONLY FOR THE SITING OF A SPECIFIC FACILITY. DEVELOPMENT WILL BE HARMONIOUS WITH THE NATURAL SCENE. WHERE POSSIBLE, RECREATIONAL STRUCTURES, SANITARY FACILITIES, AND ACCESS ROADS WILL BE LOCATED ABOVE THE 100-YEAR FLOOD FREQUENCY ELEVATION. PERMANENT STRUCTURES SUBJECT TO FLOODING WILL BE FLOODPROOFED TO MINIMIZE FLOOD HAZARDS.

SITE CLEARING, PREPARATION, AND GRADING

THE ALTERATION OF THE EXISTING NATURAL CHARACTER OF A SITE WILL BE ACCOMPLISHED WITH A MINIMUM OF GRADING FOR A SPECIFIC RESULT. TYPICALLY, SITE PREPARATION IMPROVEMENT IS LIMITED TO THE CLEARING OF UNDERBRUSH AND GROUND COVER DEBRIS, AND REMOVAL OF SAPLINGS AND UNDESIRED TREE SPECIES TO PROVIDE OPEN SPACE NEEDED FOR FACILITY PLACEMENT OR GENERAL PUBLIC ACCESS. LIMITED GRADING NEEDED TO PROVIDE GOOD DRAINAGE IS PERMITTED AND WILL EMPHASIZE A "LAY-OF-THE-LAND" DESIGN. LAND FORMS (MOUNDS) MAY BE CREATED WITH EXCESS MATERIAL FOR ACCENTING OR SCREENING OF VARIOUS PARK FEATURES OR ACTIVITY AREAS.

LANDSCAPING

LANDSCAPE PLANTINGS, SEEDING AND MULCHING, AND SODDING WILL BE USED TO RECLAIM AREAS DISTURBED BY CONSTRUCTION OR OVERUSE. IT SHALL ALSO SERVE AS A MEANS TO PROVIDE BUFFERS, SHADE, AND ENHANCEMENT OF THE LANDSCAPE'S NATURAL CHARACTER. PLANTING SHOULD EMPHASIZE NATURAL LAND FORMS AND BE OF NATIVE PLANT SELECTION. WHEN CONSIDERING SCENIC ENHANCEMENT PURPOSES, PLANTINGS SHOULD EXPLAIN OR ACCENT THE EXISTING TOPOGRAPHY AND NOT OBSCURE IT.

RECREATION FEATURES (SEE FIGURE VIII-2)

PICNIC TABLES

PICNIC TABLES ARE REQUIRED TO ACCOMMODATE PICNICKING AND CAMPING ACTIVITIES. THE DESIGN OF PICNIC TABLE FURNITURE SHOULD CONSIDER ADAPTATIONS INVOLVING FLOODING, USER, AND NATURAL SETTING CHARACTERISTICS. ANCHORING DEVICES ARE DESIRABLE WHICH ALLOW LIMITED USER AND CARETAKER MOBILITY PREFERENCES AND ASSURE SECURITY OF THE FURNITURE. DENSITY OF PLACEMENT SHOULD NOT EXCEED 12 TABLES PER ACRE FOR DAY-USE AREAS, AND 1 TABLE PER CAMPSITE.

SHELTERS

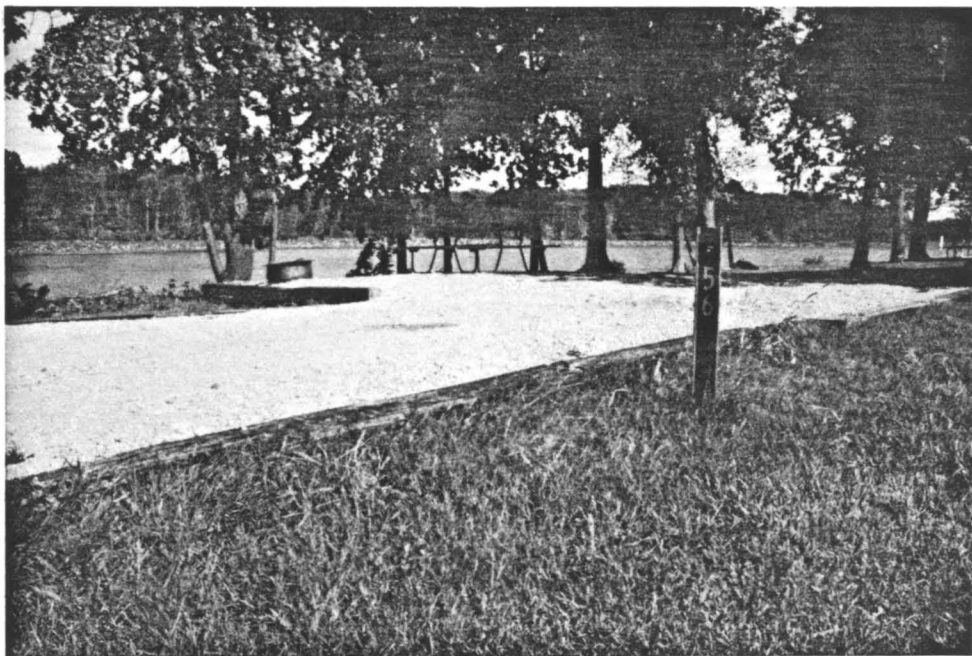
PICNIC SHELTERS ARE PROVIDED TO ACCOMMODATE GROUP-USE ACTIVITY, OR TO PROVIDE NEEDED COVER IN UNSHADED DAY-USE AREAS. THE STYLE, MATERIAL, AND ARCHITECTURAL DESIGN FOR PICNIC SHELTER STRUCTURES SHALL CONSIDER ECONOMICAL CONSTRUCTION, MAINTENANCE COSTS, AND DURABILITY. EACH STRUCTURE WILL BE FURNISHED WITH PICNIC TABLES AND COOKING GRILLS. LIGHTING AND ELECTRICAL SERVICES MAY BE PROVIDED AT STRUCTURES LOCATED WITHIN CONTROLLED (ON-SITE CARETAKER SUPERVISION) PUBLIC USE AREAS. A PICNIC SHELTER SHOULD BE PROVIDED FOR EVERY 225 PICNICKERS THAT VISIT ON A NORMAL SUMMER WEEKEND DAY.

GRILLS

COOKING GRILLS WILL BE PROVIDED FOR PICNICKING AND CAMPING USE. VARIATIONS IN DESIGN OF COOKING GRILLS ARE NUMEROUS. EASE OF UTILITY AND CONVENIENCE ARE PRIMARY CONCERNS IN SELECTING A FIXTURE. DENSITY WITHIN A DAY-USE AREA SHOULD BE NOT LESS THAN A RATIO



PICNIC SHELTER



CAMPER PAD

FIGURE VIII-2
MISSISSIPPI RIVER
TYPICAL RECREATION FEATURES

OF 1 FOR EACH 2 PICNIC TABLES, AND 2 FOR EACH GROUP-USE SHELTER. EACH INDIVIDUAL CAMPSITE WILL BE FURNISHED WITH A COMBINATION GRILL/FIRE RING FIXTURE.

FIRE RINGS

SPECIAL DEVICES ARE NEEDED TO PROVIDE FOR CAMPFIRE USES AT INDIVIDUAL CAMPSITES. SUCH DEVICES SHOULD ALSO BE ABLE TO SERVE AS A COOKING GRILL. PROVISION FOR A DESIGNATED FIREPLACE DISCOURAGES UNDESIRED MULTIPLE RANDOM PLACEMENT OF FIRES AT EACH SITE AND IS ALSO A SAFETY FEATURE FOR FIRE HAZARDS. VARIOUS COMMERCIAL DESIGNS ARE READILY AVAILABLE. A CAMPFIRE RING SHOULD BE PROVIDED FOR EACH CAMPSITE.

CAMPER PADS

FINAL CAMPSITE DESIGN OR CONSTRUCTION LAYOUT SHOULD BE PERFORMED ON-SITE IN THE FIELD AFTER INITIAL ACCESS RIGHT-OF-WAY CLEARING HAS BEEN COMPLETED. A KNOWLEDGEABLE PLANNER OR DESIGN TEAM SHOULD DETERMINE WHERE TO BEST PLACE INDIVIDUAL UNITS AND THE PHYSICAL CONFIGURATION OF THE UNIT IMPACT AREA. THE TYPE OF USER (I.E., ASSOCIATED PURPOSE OF VISIT - WATER ACCESS, FAMILY GROUP ACTIVITIES, PRIMITIVE ISOLATION, ETC.) FOR WHICH THE FACILITY IS INTENDED WILL REQUIRE DIFFERENT TYPES/STYLES OF DESIGN LAYOUTS NEEDED TO SATISFY SPECIAL USE INTERESTS AND EQUIPMENT ACCOMMODATIONS.

THE SIZE OF A CAMPING UNIT IS CONTINGENT ON THE PHYSICAL CONSTRAINTS OF THE SITE AND SPECIAL USER ORIENTATION CONSIDERATIONS. A MINIMUM OF FORCE SITING, EXTENSIVE GRADING FOR CUTS AND FILLS, WILL BE CONSIDERED FOR ANY INDIVIDUAL SITE. A GENERAL SITE SIZE SHOULD BE A MINIMUM OF 625 SQUARE FEET (25' X 25') FOR A SINGLE FAMILY UNIT. SMALLER UNIT SIZES ARE ACCEPTABLE IF NECESSARY TO CONFORM TO LAND FORM CONSTRAINTS. WITHIN

MAJOR INTENSIVELY DEVELOPED CAMPGROUND AREAS, CAMP UNITS SHOULD BE DESIGNED TO ALLOW USE BY CAMPERS WITH ALL TYPES OF EQUIPMENT. PROVISIONS SHOULD ALSO BE MADE FOR DUAL FAMILY OR SMALL MULTI-GROUP OCCUPANCIES. SPACING FOR TENT AND TRAILER CAMPING UNITS IS GENERALLY A DENSITY OF AT LEAST 10 UNITS PER ACRE. VEGETATION, TERRAIN, AND ASSOCIATED ACTIVITY USE ARE FACTORS TO CONSIDER IN DETERMINING DENSITY OF UNITS.

CONSTRUCTION OF AN "IMPACT AREA" TO ACCOMMODATE USER EQUIPMENT AND PRIMARY LIVING ACTIVITY WILL BE DEVELOPED FOR EACH CAMPING UNIT. THERE ARE THREE SUITABLE DESIGN STYLES OF CAMPING UNITS, WHICH ARE THE BACK-IN, THE PULL-THROUGH, AND THE PULL-OFF STYLES. THE BACK-IN UNIT IS THE MOST SPACE EFFICIENT AND PREFERRED STYLE OF THE THREE. THE SPUR FOR THE RECREATION VEHICLE/UNIT SHOULD BE A MINIMUM OF 10-12 FEET WIDE AND, WHEN POSSIBLE, 50-60 FEET LONG. THE LIVING SPACE AREA SHOULD BE LOCATED OPPOSITE OF THE DRIVER'S SIDE (RIGHT SIDE OF VEHICLE) OF THE SPUR ENTRANCE FOR DIRECT EXIT FROM THE R.V. ONTO THE LIVING SPACE. THE IMPACT AREA SHALL BE OF A SUITABLE SURFACING MATERIAL (I.E., GRADIENT LIMESTONE OR ASPHALT PAVING FOR THE SPUR, AND A MANUFACTURED SAND - A FLAKED LIMESTONE ROCK WITH AN AGGREGATE SIZE OF ROUGHLY ONE-EIGHTH INCH FOR THE LIVING SPACE) TO WITHSTAND INTENSIVE USE AND EQUIPMENT LOADS. A BORDER (RAILROAD TIES) MAY BE NECESSARY TO DEFINE THE LIVING SPACE AREA LIMITS. MOST LARGE RECREATION VEHICLE UNITS REQUIRE LEVEL SURFACE ACCOMMODATIONS, SO THAT RAMPING ACCESS MAY BE A MAJOR CONSIDERATION IN ROUGH TERRAIN LOCATIONS.

PLAYGROUNDS/GAME FIELDS

PLAYGROUNDS WILL BE PROVIDED AT EACH CAMPING AREA AND PICNIC AREA AS DEMAND WARRANTS. THE AREA SHOULD BE SUITABLY SURFACED (SAND OR GRAVEL) AND PROVIDE VARIOUS PLAY EQUIPMENT SUCH AS SWINGS, CLIMBERS, AND SLIDES. WHERE THE TOPOGRAPHY ALLOWS, GAME

FIELDS WILL ALSO BE PROVIDED IN RECREATION AREAS. THE FIELDS SHOULD BE 2 TO 3 ACRES IN SIZE, HAVE A MAXIMUM GRADE OF 5 PERCENT, AND WILL BE CLEARED AND THEN SEEDED WITH DURABLE GRASSES.

SWIMMING BEACHES

TYPICAL SWIMMING ACTIVITY ALONG THE RIVER OCCURS AT NATURAL OR MAN-MADE (DREDGE DISPOSAL SITES) SAND BEACHES LOCATED ON ISLAND SHORELINES. SINCE MOST OF THESE SITES ARE ACCESSIBLE ONLY BY BOAT, DEVELOPMENT OF SUPPORT FACILITIES IS PROHIBITED BECAUSE OF CONTROL, MAINTENANCE, AND CONSTRUCTION CONSTRAINTS. LIMITED SANITARY FACILITIES (TRASH CONTAINERS) COULD BE PROVIDED AT THE MORE POPULAR REMOTE SITES FOR PERIODIC PICKUP AND ENCOURAGEMENT OF USER SELF-MAINTENANCE. PERMANENT PLACEMENT OF SUPPORTING FACILITIES IS ALSO DISCOURAGED BECAUSE OF THE INCONSISTENT (UNCONTROLLED VEGETATIVE GROWTH AND PLIANT RIVER CONDITIONS) NATURE AND STABILITY OF SUCH SITES.

SUPPORTING SANITARY FACILITIES WILL BE PROVIDED AT DESIGNATED SWIMMING BEACHES LOCATED WITHIN CONTROLLED (ON-SITE CARETAKER SUPERVISION) PUBLIC USE AREAS. BEACH AREAS WILL BE SIZED RELATIVE TO AREA DEMAND, SITE LIMITATIONS, AND DESIGN CAPACITY OF MAJOR FACILITIES IN CONJUNCTION WITH DAY-USE OR CAMPING PURPOSES. BEACH AREAS SHOULD INCLUDE SAFETY BUOYS, SIGNS AND MARKERS, AND APPROPRIATE LIFESAVING EQUIPMENT. DEVELOPED BEACHES SHOULD HAVE A MAXIMUM GRADE OF 4-5 PERCENT, A MINIMUM WIDTH OF 125 FEET, BATH-CHANGEHOUSE WITH OUTDOOR SHOWERS, A POTABLE WATER SOURCE, TOILETS, TRASH CONTAINERS, AND MINIMUM 30-CAR PARKING SPACES.

CHANGEHOUSES

A CHANGEHOUSE FACILITY SHALL BE PROVIDED AT DESIGNATED SWIMMING BEACHES WITHIN CORPS-OPERATED PUBLIC USE AREAS. INDIVIDUAL DESIGN OF THE FACILITY WILL DEPEND UPON ASSOCIATED USER NEEDS OF THE AREA. PROVISIONS FOR INCORPORATION OF TOILET FACILITIES AND INDOOR SHOWERS MAY BE DESIRED TO ACCOMMODATE OTHER USER ACTIVITY AND SUPPORT. THE ARCHITECTURAL STYLE OF THE STRUCTURE WILL BE HARMONIOUS WITH THE NATURAL SETTING AND CONSIDER UTILITY, ECONOMICAL CONSTRUCTION, MAINTENANCE COSTS AND DURABILITY. EXTERIOR MATERIALS WILL BE OF A COLOR, TEXTURE, AND FORM THAT IS IN CHARACTER WITH THE NATURAL ENVIRONMENT.

AMPHITHEATERS

AMPHITHEATERS WILL BE PROVIDED IN CORPS-OPERATED PUBLIC USE AREAS WHERE THE DEMAND WARRANTS THE NEED AND WHERE THE FACILITY(S) WOULD COMPLEMENT THE INTERPRETIVE PROGRAM. THE INDIVIDUAL DESIGN OF THE FACILITY WILL DEPEND UPON THE USER NEEDS, SIZE OF PUBLIC USE AREA, TOPOGRAPHY, SOILS, AND THE NATURAL SURROUNDINGS OF THE RECREATION AREA. THE GROUND WITHIN THE AMPHITHEATER SHOULD BE VEGETATED WITH A COMBINATION OF DURABLE GRASS SPECIES, OR COVERED WITH A WOODCHIP OR GRAVEL SURFACE. THE MAXIMUM GRADE SHOULD NOT EXCEED 5-9 PERCENT.

ENTRANCE STATIONS

ENTRANCE STATIONS MAY BE PLACED ALONG THE MAIN ACCESS ROAD INTO CORPS FEE-OPERATED CAMPGROUNDS TO PROVIDE CONTROLLED ACCESS AND FEE COLLECTION CONVENIENCE. THE ARCHITECTURAL STYLE OF THE STATIONS WILL COMPLEMENT THE NATURAL SURROUNDINGS OF THE

CAMPGROUNDS AND CONSIDER ECONOMICAL CONSTRUCTION, MAINTENANCE COST AND DURABILITY. EXTERIOR MATERIALS WILL BE OF A COLOR, TEXTURE, AND FORM THAT ARE IN CHARACTER WITH THE NATURAL ENVIRONMENT OF THE CAMPGROUND. THE STATION WILL BE EQUIPPED WITH CORPS RADIO AND COMMERCIAL PHONE FOR SECURITY AND EMERGENCY PURPOSES.

ACCESS FEATURES (SEE FIGURE VIII-3)

CIRCULATION ROADS

BASIC DESIGN CONSIDERATIONS FOR ALL PORTIONS AND MODES OF ACCESS AND CIRCULATION TO AND ABOUT RECREATION AREAS AND FACILITIES ARE PRESENTED IN CORPS ENGINEERING MANUAL EM 1110-2-410, DATED 31 DECEMBER 1982. IN GENERAL, PRIMARY RECREATION SITE PURPOSES INVOLVING CONSERVATION, ENJOYMENT, AND INTERPRETATION ARE BETTER SERVED BY ONE-WAY ROADS THAN BY TWO-WAY ROADS. LONG, OPEN TANGENTS SHOULD NOT BE DESIGNED WITHIN THE MAIN PARK CIRCULATION AREA. THE HORIZONTAL AND VERTICAL ALIGNMENT SHOULD RESPECT THE TERRAIN, WITH "GRASS ROOT" GRADES, SO THAT THE ROAD IS LAID LIGHTLY ON THE LAND. HEAVY EARTHWORK IN CUT AND FILL SECTIONS SHOULD BE AVOIDED. GUARDRAILS AND CABLES WILL BE INSTALLED ALONG ROADWAYS WHERE PUBLIC SAFETY REQUIRES SUCH PROTECTION. THE EXTENT OF DRAINAGE DITCHING WILL BE RESTRICTED TO A MINIMUM WITH EMPHASIS PLACED ON SHEET FLOW AND NATURAL DRAINAGEWAY TERRAIN CHARACTERISTICS. IN FORESTED AND WOODED TERRAIN, CLEARING LIMITS SHOULD BE CAREFULLY CONTROLLED AND SELECTIVE CUTTING SHOULD BE USED TO PRODUCE VARIATION AND INDENTATION IN THE TREE LINE. THE DESIGN OF ALL STRUCTURES-BRIDGES, GRADE SEPARATION STRUCTURES, DRAIN HEADWALLS, ETC., SHOULD CONSIDER NATIVE/NATURAL MATERIALS TO THE MAXIMUM EXTENT SO AS TO BE HARMONIOUS AS WELL AS FUNCTIONAL AND EASILY MAINTAINED.



FIGURE VIII-3
MISSISSIPPI RIVER
TYPICAL ACCESS FEATURES

PARKING LOTS

PARKING FACILITIES ARE PROVIDED AT CORPS PUBLIC USE AREAS TO SERVE MANY AND VARIED TYPES OF VEHICLES AND PURPOSES. THE SIZE OF THE FEATURES RANGES FROM INDIVIDUAL TO SEVERAL HUNDRED SPACES. FUNCTIONAL, DIMENSIONAL, AND GEOMETRICAL DESIGN GUIDELINES ARE CONTAINED IN EM 1110-2-410. GENERAL PRIMARY IMPORTANCE OF CONSIDERATION FOLLOWS THE USUAL PHILOSOPHY THAT SUCH INTRUSIONS INTO THE NATURAL AND RECREATIONAL ENVIRONMENT ARE MINIMIZED AS MUCH AS POSSIBLE. THE NATURAL TERRAIN IS OF PRIMARY CONTROL IN LOCATION, SIZE, AND DESIGN OF SUCH FACILITIES.

BOAT LAUNCHING RAMPS

BOAT LAUNCHING RAMPS ARE NEEDED FOR ACCESS TO THE RIVER FOR SUCH USES AS PLEASURE BOATING, FISHING, WATER-SKIING, HUNTING, AND WATER PATROL PERSONNEL. AS CAN BE VISUALIZED BY THESE PURPOSES, RAMPS SERVE A WIDE VARIETY OF BOAT VESSELS AND WATER CRAFT. PROPER BOAT RAMP DESIGN WILL CONSIDER CHARACTERISTICS OF THE USER, THE WATER BODY (WATER FLUCTUATION, CURRENT, AND WAVE ACTION), AND THE TERRAIN (SOILS, SLOPE, AND EXPOSURE) FEATURES. TYPICAL DESIGN CONTROLS FOR A RAMP ARE: (1) A MINIMUM LOWER LIMIT OF 4 FEET BELOW THE NORMAL POOL LEVEL, (2) AN UPPER LIMIT OF 3 FEET ABOVE THE NORMAL POOL LEVEL, (3) A MINIMUM GRADE OF 12 PERCENT AND A MAXIMUM OF 16 PERCENT, (4) A MINIMUM 75-FOOT DIAMETER VEHICULAR TURNAROUND, AND (5) A TEXTURED SURFACE OF 6-INCH REINFORCED CONCRETE OVER A 6-INCH CRUSHED STONE BASE. RIPRAP PROTECTION, CONCRETE WALKWAYS, AND HANDICAPPED AIDS ARE OTHER DESIGN FEATURES OF CONSIDERATION. MINIMUM SUPPORT FACILITIES FOR EACH BOAT RAMP INCLUDE ONE TRASH CONTAINER PER LANE, AND 10 CAR-TRAILER PARKING SPACES PER LANE. EM 1110-2-410 ALSO PROVIDES DESIGN GUIDANCE FOR RAMP FACILITY CONSTRUCTION.

TRAILS

THE PURPOSES OF PROVIDING TRAILS IN RECREATION AREAS ARE FOR VISITOR ENJOYMENT, EDUCATION, OR EXERCISE. IN ADDITION, TRAILS MAY ALSO SUPPORT FIRE CONTROL AND SPECIAL ADMINISTRATIVE ACCESS. TRAILS MAY BE DESIGNED WITH ONE OR MORE TYPES OF USE AND USERS (ELDERLY, YOUNG, OR HANDICAPPED) IN MIND. MULTIPURPOSE DESIGN TO PERMIT AN INTERCHANGE OF TRAIL EXPERIENCES AND USERS IS PREFERRED. HOWEVER, SEPARATION OF VEHICULAR (ATV, MOTOCROSS, ETC.), EQUESTRIAN, AND HIKING ACTIVITY USES IS A SPECIAL DESIGN EXCEPTION. A CAREFUL ANALYSIS IS REQUIRED OF EACH TYPE CONSIDERING VOLUME OF USE, KINDS OF USERS, EXPERIENCE DESIRED, GUIDED OR SELF-GUIDED, SEASONAL, AND LIMITATIONS BECAUSE OF TERRAIN OR ADMINISTRATIVE CONSTRAINTS. APPROPRIATE SIGNS FOR INTERPRETIVE, DIRECTIONAL, OR SAFETY PURPOSES WILL BE POSTED AS WARRANTED. SPECIFIC DESIGN REQUIREMENTS ARE CONTAINED WITHIN EM 1110-2-410 FOR THE VARIOUS TYPES OF TRAIL DEVELOPMENTS.

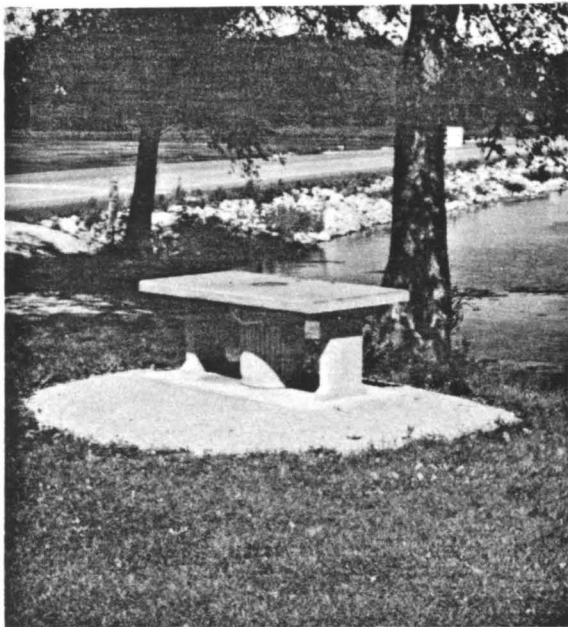
SANITARY FEATURES (SEE FIGURE VIII-4)

WATER SUPPLY

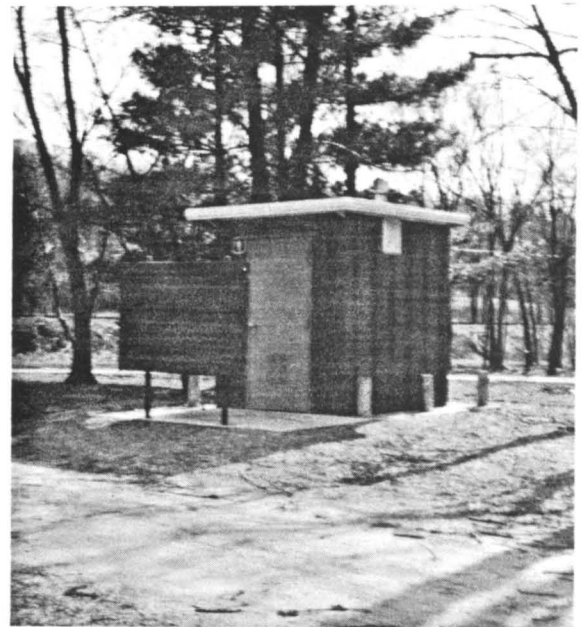
WELLS USUALLY PROVIDE THE WATER SUPPLIED AT THE CORPS-OPERATED PUBLIC USE AREAS. IF AVAILABLE, USE OF EXISTING MUNICIPAL SERVICE IS PREFERRED. WATER QUALITY OF THE WELLS IS PERIODICALLY TESTED TO ASSURE COMPLIANCE WITH APPROPRIATE STATE HEALTH STANDARDS FOR PUBLIC CONSUMPTIVE USE. WATER TREATMENT SYSTEMS WILL BE APPLIED TO MEET REQUIRED HEALTH CRITERIA. THE QUALITY IS PRESENTLY SUFFICIENT, WHEREBY NO PERMANENT TREATMENT MEASURES ARE NECESSARY. A PRESSURIZED DISTRIBUTION SYSTEM IS PROVIDED IN INTENSIVELY DEVELOPED AREAS HAVING WATERBORNE SANITARY SUPPORT FACILITIES. WATER STORAGE



WATERBORNE TOILETS



FISH CLEANING STATION



VAULT TOILET

FIGURE VIII-4
MISSISSIPPI RIVER
TYPICAL SANITARY FEATURES

FACILITIES MAY BE REQUIRED TO PROVIDE SUPPLY DEMANDS TO MEET A WEEKLY PEAK DAY-USE CONSUMPTION. MINIMUM OPERATING LEVEL OF WATER STORAGE AND DISTRIBUTION LINE SIZE SHALL BE THAT A PRESSURE OF 25 PSI EXISTS AT EACH BUILDING REQUIRING FLUSH VALVES.

WASTE DISPOSAL

VAULT TOILETS. SEALED HOLDING VAULTS ARE PROVIDED AT AREAS WHERE WATERBORNE COLLECTION SYSTEMS ARE NOT AVAILABLE, OR AS NEEDED FOR SUPPORT FACILITIES IN CONJUNCTION WITH SUCH SERVICE. SUCH HOLDING TANKS ARE IN CONFORMANCE WITH APPLICABLE STATE HEALTH STANDARDS. THE WASTE FROM THESE VAULTS IS COLLECTED BY TRUCK, AND DISPOSED OF AT STATE APPROVED SANITARY SITES. DURING FLOOD CONDITIONS, THESE TANKS ARE EMPTIED OF WASTE AND PUMPED FULL OF WATER TO SECURE THE STRUCTURES AND TO PREVENT POLLUTION OF THE RIVER. THE ARCHITECTURAL STYLE OF THE STRUCTURE WILL BE HARMONIOUS WITH THE NATURAL SETTING AND WILL CONSIDER UTILITY, ECONOMICAL CONSTRUCTION, MAINTENANCE COSTS, SANITARY REQUIREMENTS, AND DURABILITY.

WATERBORNE TOILETS. A WATERBORNE COMFORT STATION CONTAINING TOILET AND SHOWER FACILITIES MAY BE PROVIDED IN DESIGNATED FEE-COLLECTION CAMPGROUNDS. TYPICAL SEWAGE TREATMENT FACILITIES SUPPORTING THESE UNITS ARE SEPTIC TANKS WITH ABSORPTION FIELDS. WHEN AVAILABLE, CONNECTION TO EXISTING MUNICIPAL SERVICE IS PREFERRED. THE ARCHITECTURAL STYLE OF THE STRUCTURE WILL BE HARMONIOUS WITH THE NATURAL SETTING AND WILL CONSIDER UTILITY, ECONOMICAL CONSTRUCTION, MAINTENANCE COSTS, AND DURABILITY. EXTERIOR MATERIALS WILL BE OF A COLOR, TEXTURE, AND FORM THAT IS IN CHARACTER WITH THE NATURAL ENVIRONMENT.

TRAILER DUMP STATIONS. SANITARY WASTE DUMPING STATIONS FOR CAMPING TRAILERS AND BOATS SHOULD BE PROVIDED AT LOCATIONS CONVENIENT TO THE USER. SEWAGE COLLECTION OR TREATMENT MEANS FOR SUCH FACILITIES INCLUDE EITHER SEALED VAULTS OR SEPTIC TANKS WITH ABSORPTION FIELDS. SUCH FACILITIES ARE DESIGNED IN ACCORDANCE WITH THE GUIDANCE OF APPLICABLE STATE HEALTH LAWS, INCLUDING WATER-FLUSHING DEVICES.

FISH CLEANING STATION. A SANITARY WASTE FACILITY TO ACCOMMODATE FISH CLEANING ACTIVITY SHOULD BE PROVIDED AT POPULAR FISHERMAN ACCESS LOCATIONS WITHIN THE PUBLIC USE AREA. A DESIGNATED COLLECTION FOR SUCH WASTE DISPOSAL IS A DESIRABLE SANITARY FEATURE. SPECIAL FEATURES SUCH AS LIGHTING AND WATER SERVICES OR CANOPY COVER SHOULD BE CONSIDERED FOR SUCH FACILITIES WHICH ARE LOCATED WITHIN SUPERVISED (ON-SITE CARETAKER) PUBLIC USE AREAS.

REFUSE DISPOSAL. SPECIFIC RECOMMENDATIONS AND SCHEDULES FOR SOLID WASTE COLLECTIONS AND DISPOSAL ARE DEVELOPED BY THE OPERATIONS DIVISION AND THE PROJECT PARK MANAGER. REFUSE IS COLLECTED THROUGH THE USE OF CONTRACTS WITH LOCAL PRIVATE HAULERS. THE SOLID WASTE WILL BE DISPOSED OF IN A STATE OR ENVIRONMENTAL PROTECTION AGENCY (EPA) APPROVED LANDFILL, OR BY ANY OTHER METHOD OF REFUSE DISPOSAL AND RECOVERY WHICH MEETS WITH THE APPROVAL OF THE CORPS OF ENGINEERS, APPROPRIATE STATE HEALTH AGENCIES, AND THE EPA.

WASTE WATER DRAINS/BASINS. SPECIFIC DISPOSAL FACILITIES FOR WASTE WATER WILL BE PROVIDED FOR CAMPER SANITARY CONVENIENCE. PLACEMENT OF A MINIMUM OF ONE FOR EACH FOUR CAMP UNITS AT OR NEAR DRINKING WATER SUPPLIES SHALL BE CONSIDERED. A DESIGNATED COLLECTION FOR WASTE WATER DISPOSAL IS A DESIRED SANITARY FEATURE FOR CONCENTRATED PUBLIC USE AREAS, AND REDUCES ADVERSE ENVIRONMENTAL IMPACTS ASSOCIATED WITH SUCH INTENSIVE ACTIVITY.

SAFETY FEATURES

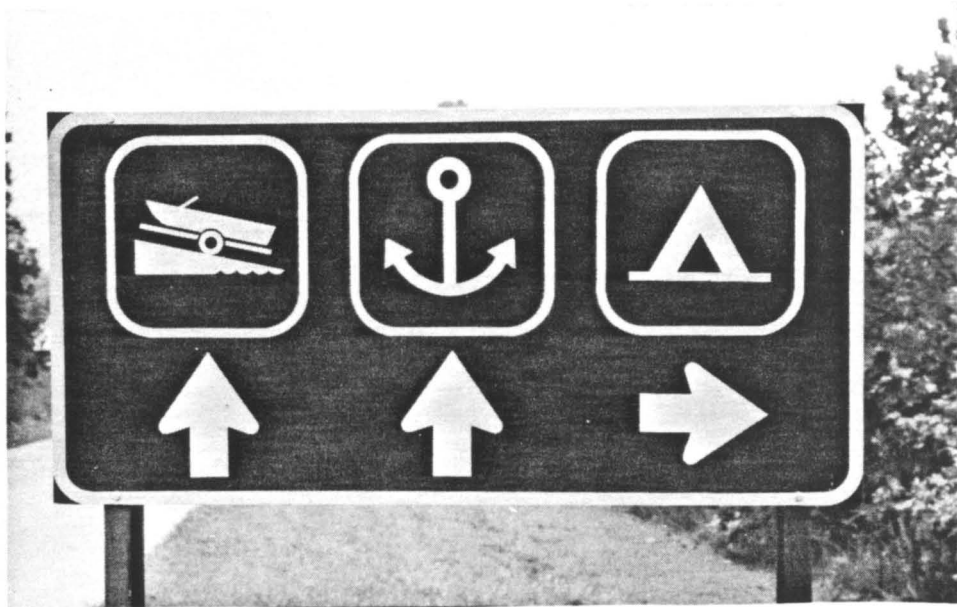
SIGNS (SEE FIGURE VIII-5)

GENERAL. SIGNS ARE USED THROUGHOUT THE RECREATION AREAS TO INFORM AND GUIDE VISITORS AND FOR THEIR SAFETY AND ENJOYMENT OF THE RECREATION EXPERIENCE. THE SIGNAGE SYSTEM FOR THE PROJECT CONFORMS TO THE REQUIREMENTS OF THE NORTH CENTRAL DIVISION SIGN HANDBOOK (NCDP-113-2-1). THE UNIVERSAL RECREATION SYMBOLS DEVELOPED BY THE NATIONAL PARK SERVICE ARE ALSO USED WHEREVER APPLICABLE.

TRAFFIC CONTROL. APPROPRIATE TRAFFIC SIGNAGE IS USED THROUGHOUT THE PROJECT TO ENSURE THE SAFETY OF PEDESTRIANS AND TO DIRECT VEHICULAR TRAFFIC. SUCH SIGNS CONFORM TO THE AMERICAN NATIONAL STANDARDS INSTITUTE STANDARD D6.1, MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

RULES AND REGULATIONS. POSTING OF PARK RULES AND REGULATIONS WILL BE LOCATED IN EASILY ACCESSIBLE AREAS WHERE VISITORS WILL BE ABLE TO VIEW THEM. BEACHES, PICNIC AREAS, CAMPGROUNDS, BOAT RAMPS, AND INFORMATION AREAS ARE TYPICAL LOCATIONS FOR THESE SIGNS.

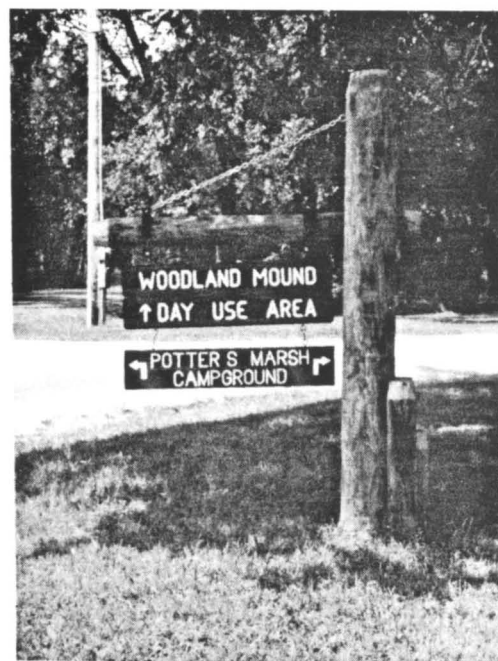
DIRECTIONAL. OFF-SITE SIGNAGE IS NEEDED TO DIRECT VISITORS TO PUBLIC USE AREAS. THE LOCATION AND TYPE OF THESE SIGNS WILL BE COORDINATED WITH THE APPROPRIATE STATE DEPARTMENTS OF TRANSPORTATION AND THE COUNTY OR CITY OFFICIALS RESPONSIBLE FOR SIGNAGE ALONG ROADS WITHIN THEIR JURISDICTIONS.



UNIVERSAL RECREATION SYMBOLS



ENTRANCE



INFORMATIVE

FIGURE VIII-5
MISSISSIPPI RIVER
TYPICAL PARK SIGNAGE

ENTRANCE. AT THE ENTRANCE TO EACH PUBLIC ACCESS AREA, THE NAME OF THE PARK AND THE MAJOR TYPES OF FACILITIES PROVIDED ARE TO BE IDENTIFIED. TYPICALLY, FACILITIES ARE IDENTIFIED BY THE USE OF THE UNIVERSAL RECREATIONAL SYMBOL.

INFORMATIVE. VARIOUS SIGNAGE IS NEEDED TO PROVIDE VISITOR DIRECTION TO RECREATIONAL FACILITIES WITHIN AN AREA. THESE SIGNS USE THE UNIVERSAL RECREATION SYMBOL IN CONJUNCTION WITH A DIRECTION ARROW. ALSO, LARGE DISPLAY TYPE INFORMATION SIGNS ARE PROVIDED TO ORIENT VISITORS TO RECREATION AREAS, TO IDENTIFY REGIONAL PUBLIC SERVICE FACILITIES, AND TO POST ANNOUNCEMENTS CONCERNING PARK SPONSORED PROGRAMS.

INTERPRETIVE. SPECIFIC SIGNAGE IS PROVIDED FOR INTERPRETIVE GUIDANCE TO VISITORS CONCERNING AREAS OF CULTURAL OR HISTORIC SIGNIFICANCE, EXPLANATION OF ON-SITE PROJECT OPERATION FEATURES, OR IDENTIFICATION OF UNIQUE NATURAL FEATURES. THESE SIGNS AND MARKERS TYPICALLY APPEAR ALONG TRAILS, ROADWAYS, AND THE SHORELINE, AND ARE MADE OF NATURAL MATERIALS AND COLORS SO AS TO BE HARMONIOUS WITH THE NATURAL SURROUNDINGS.

NAVIGATION AIDS. STANDARD COAST GUARD NAVIGATION AIDS AND CONTROL BUOYS WILL BE USED TO MARK RECREATIONAL BOAT ACCESSES AND BOATING HAZARDS AS WARRANTED. PRIOR TO INSTALLATION, COORDINATION WITH APPROPRIATE STATE ENTITIES AND THE U.S. COAST GUARD WILL BE REQUIRED TO ASSURE COMPLIANCE WITH THEIR JURISDICTIONAL CONTROLS. BUOYS MAY ALSO BE USED TO INFORM BOATERS OF VARIOUS SPEED CONTROL AREAS, PROHIBITED ACCESS AREAS, OR SPECIAL SCENIC WATER ROUTES.

LIGHTING AND TELEPHONES

AS DEEMED NECESSARY, LIGHTING WILL BE PROVIDED AT VARIOUS FACILITIES FOR THE SAFETY, SECURITY, AND CONVENIENCE OF VISITORS. LOW LEVEL NIGHT LIGHTING WILL BE PROVIDED AROUND SUCH AREAS AS ENTRANCE STATIONS, TOILET BUILDINGS, AND BOAT RAMPS. ADEQUATE

SECURITY LIGHTING WILL BE PROVIDED FOR CORPS ADMINISTRATIVE, MAINTENANCE, AND OPERATIONAL BUILDINGS AND STRUCTURES. IN ADDITION, PUBLIC TELEPHONE SERVICE WILL ALSO BE PROVIDED AT CONTROLLED (ON-SITE CARETAKER SUPERVISION) RECREATION AREAS AT EASILY ACCESSIBLE LOCATIONS.

ELECTRIC POWER SUPPLY IS FURNISHED BY THE LOCAL POWER COMPANIES. SERVICE LINES WITHIN THE PARK BOUNDARY WILL BE DISTRIBUTED UNDERGROUND WHEN ECONOMICALLY FEASIBLE. ELECTRICAL LINES WILL BE WITHIN ROAD CLEARING LIMITS OR PLACED ON A BENCH IN TRENCHES SHARED WITH OTHER UTILITY LINES TO MINIMIZE NATURAL DISTURBANCE. TRANSFORMERS AND DISTRIBUTION PANELS WILL BE PROVIDED WHERE NECESSARY AND APPROPRIATELY SCREENED TO BLEND WITH THE NATURAL SETTING.

VISITOR SAFETY CONTROLS

IN LOCATIONS WHERE DANGEROUS SITUATIONS EXIST, PROTECTIVE FENCING AND BARRICADES WILL BE LOCATED TO PREVENT ACCESS OR TRAVEL TO SPECIFIC ON-SITE AREAS.

ELDERLY AND HANDICAPPED

THE MAJORITY OF RECREATION FACILITIES IN THE PARKS ARE SUITABLE FOR USE BY THE ELDERLY. IN THE DESIGN AND CONSTRUCTION OF RECREATIONAL FACILITIES, SPECIAL FEATURES ARE CONSIDERED TO PROVIDE CONVENIENT ACCESS FOR THE HANDICAPPED AS SPECIFIED IN ER 1110-2-102. THESE CONSIDERATIONS ALSO MAKE THE FACILITIES SAFER AND MORE CONVENIENT FOR THE ELDERLY.

SPECIAL PROBLEMS

SPECIAL PROBLEMS

COST-SHARING INTEREST

LOCAL GOVERNMENT RESPONSE TO COST-SHARING OPPORTUNITIES IN NEW RECREATIONAL OR FISH AND WILDLIFE IMPROVEMENTS HAS BEEN A CONSISTENT LACK OF INTEREST. THE HIGH DESIGN AND CONSTRUCTION COSTS ASSOCIATED WITH FEDERAL PARTICIPATION AND THE LACK OF PERMANENT REAL ESTATE RIGHTS HAVE BEEN PRIMARY DISCOURAGEMENTS FOR NON-FEDERAL SPONSORS. RECENTLY, NON-FEDERAL INTERESTS HAVE ALSO BEEN RELUCTANT TO ACCEPT THE FINANCIAL BURDEN OF FULL OPERATION AND MAINTENANCE COSTS OF EXISTING FEDERAL PARKS. OTHER FACTORS DISSUADING NON-FEDERAL SPONSORS IN EXISTING OR NEW DEVELOPMENT ALONG THE RIVER ARE:

- * REMOTENESS OF POTENTIAL SITES WHICH RESULT IN HIGH MAINTENANCE AND SECURITY COSTS.
- * MAJOR USE OF THE FACILITY BEING FROM NON-SPONSOR BASED POPULATION.
- * INABILITY OF FEDERAL INTEREST TO COST-SHARE IN REVENUE PRODUCING FACILITIES.
- * HIGH MAINTENANCE AND REPLACEMENT COSTS ASSOCIATED WITH FLOOD PLAIN LOCATIONS.

CHANGING RECREATION DEMANDS AND ECONOMIC CONDITIONS MAY CREATE INTEREST IN THIS PROGRAM IN THE FUTURE. FOR THIS REASON, ELIGIBLE NON-FEDERAL SPONSORS WILL BE KEPT AWARE OF THE COST-SHARING OPPORTUNITIES, AND THE AVAILABILITY OF ASSUMING ADMINISTRATION OF EXISTING RECREATION FACILITIES.

UNCONTROLLED ACCESS

THE USE AND ACCESSIBILITY OF PROJECT RESOURCES ARE CHARACTERISTICALLY AN OPEN SYSTEM WITH LIMITED OPPORTUNITY FOR CONTROLLED MANAGEMENT. THE LACK OF A CONTINUOUS SHORELINE OWNERSHIP AND UNINHIBITED BOATING ACCESSIBILITIES ARE TYPICAL FACTORS ALONG THE RIVER WHICH PROHIBIT INTENSIVE MANAGEMENT CONTROL OF THE RESOURCES. THIS FREEDOM OF USE AND ACCESS TO REMOTE OR ISOLATED AREAS ARE MAJOR ATTRACTIONS OF THE RECREATION EXPERIENCE ON THE RIVER. THE PUBLIC PREFERS THIS LACK OF CONTROL, AND ENJOYS THE PRIMITIVE AND UNDEVELOPED SANDY BEACHES FOR THEIR SECLUDED AND NATURAL CONDITIONS. AS THE POPULARITY AND USE OF THE MORE FAVORED AREAS INCREASE, MANAGEMENT MEASURES MAY NEED TO BE TAKEN TO ASSURE HEALTHY AND SANITARY CONDITIONS, AND TO PREVENT ABUSE AND DESPOILMENT OF THE NATURAL QUALITIES. MANAGEMENT CONTROLS SUCH AS USER PERMITS, TIME RESTRICTIONS, AND PATROL ARE POTENTIAL CONSIDERATIONS. UNCONTROLLED DISPERSED RECREATION ACTIVITY IS A GENERALLY PERMISSIVE USE OF CORPS ADMINISTERED LANDS WHERE SUCH ACTIVITY DOES NOT DIRECTLY INTERFERE WITH OTHER DESIGNATED MANAGEMENT PROGRAMS.

ANOTHER PROBLEM ASSOCIATED WITH UNCONTROLLED ACCESS OR USE OF PROJECT LANDS IS THE PREVENTION, IDENTIFICATION, AND ENFORCEMENT OF PRIVATE ENCROACHMENTS. PRIVATE DEVELOPMENT AND ACTIVITY ARE INCREASING ADJACENT TO PUBLIC LANDS AND TYPICALLY RESULT IN ENCROACHMENTS. OFTEN THIS CAN BE ATTRIBUTED TO POORLY MARKED BOUNDARIES, LACK OF PHYSICAL DELINEATIONS, AND DIMINISHING NATURAL BUFFERS. ACCURATE FIELD DEFINITION OF PROJECT PROPERTY BOUNDARIES WOULD ALSO BENEFIT OTHER AGENCIES RESPONSIBLE FOR ADMINISTRATION OF PROJECT LANDS. ESTABLISHMENT OF PROJECT BOUNDARIES IS CRITICAL TO ASSURE OVERALL MANAGEMENT CONTROL AND PROPER ADMINISTRATION. THE SUPPORT TO SURVEY, MONUMENT, AND POST THE PROJECT BOUNDARY TO DETECT AND PREVENT ENCROACHMENTS SHOULD BE PURSUED TO AID IN SUCH MANAGEMENT PROBLEMS.

RECREATION, OPERATION, AND MAINTENANCE

WITHIN RECENT YEARS, ECONOMIC EVALUATIONS ^{1/} OF ALL RECREATION AREAS IN RELATION TO COST EFFICIENCY HAVE BEEN DEVELOPED. PRIMARY CONCERN WAS TO IDENTIFY RECREATION AREAS THAT WERE marginally BENEFICIAL TO OPERATE. IN ADDITION, THE ANALYSIS SERVED TO DIRECT DEVELOPMENT OF QUALITY RECREATION EXPERIENCES IN THOSE AREAS THAT COULD BE EFFICIENTLY MAINTAINED. THIS EFFICIENCY EVALUATION IS TO BE MADE OF EACH CORPS-MANAGED RECREATION AREA AT INTERVALS OF NOT MORE THAN 3 YEARS.

THE PROCEDURE DEVELOPED FOR DETERMINING EFFICIENCY OF RECREATION AREAS INVOLVES THE COMPARISON OF A "TARGET COST" PER RECREATION DAY OF USE TO ACTUAL COST PER RECREATION DAY OF USE. THE METHODOLOGY CONSIDERS BOTH DEVELOPMENT AND MANAGEMENT COSTS. A KEY ELEMENT IN THE METHODOLOGY IS THE ESTABLISHMENT OF A TARGET COST PER RECREATION DAY OF USE. TARGET COSTS ARE BASED UPON THE UNIT DAY VALUE SYSTEM, DESCRIBED IN THE WATER RESOURCE COUNCIL PRINCIPLES AND STANDARDS FOR PLANNING FOR WATER RESOURCE PROJECTS, AND ESTABLISHED ON A CASE-BY-CASE BASIS. THE ACTUAL COST DETERMINATION INCLUDES ONLY THOSE COSTS THAT WOULD BE ELIMINATED IF THE RECREATION AREA DID NOT EXIST.

THE ANALYSIS PREPARED FOR THE MISSISSIPPI RIVER RESULTED IN THE CLOSURE OF THE COTTONWOOD POINT PUBLIC USE AREA IN 1981, WHICH WAS LOCATED IN POOL 22. THIS AREA WAS PREVIOUSLY LICENSED TO THE CITY OF HANNIBAL, AND RELINQUISHED BY THEM IN 1981. OF THE REMAINING 21 CORPS-OPERATED PUBLIC USE AREAS, THE PARK-N-FISH FACILITY RANKED NINETEENTH IN COST EFFICIENCY. THE JOHN HAY AND LOCK AND DAM 22 AREAS RANKED THIRD AND SIXTH, RESPECTIVELY. IF ADDITIONAL FUNDING AND MANPOWER REDUCTIONS ARE

^{1/} BROWN, C. METHODOLOGY FOR DETERMINING EFFICIENCY OF RECREATION AREAS, U.S. ARMY CORPS OF ENGINEERS - NORTH CENTRAL DIVISION, 1981.

EXPERIENCED, THE PARK-N-FISH AREA MAY BE DESIGNATED FOR CLOSURE, OR PARTIAL CLOSURE MEASURES WITH REMOVAL OF SANITARY FACILITIES AND DISCONTINUING MAINTENANCE AND PATROL CONTRACTS.

PRIVATE RECREATIONAL LEASES

HISTORY

SECTION 4 OF THE FLOOD CONTROL ACT OF 1944, AS AMENDED (16 U.S.C. 460d), AUTHORIZED THE SECRETARY OF THE ARMY TO GRANT LEASES OF LANDS AT WATER RESOURCE DEVELOPMENT PROJECTS FOR SUCH PERIODS, AND UPON SUCH TERMS, AND FOR SUCH PURPOSES AS HE MAY DEEM REASONABLE IN THE PUBLIC INTEREST. SOME OF THE COTTAGE SITE AND RESIDENTIAL LEASES ALONG THE MISSISSIPPI RIVER RESULTED BECAUSE COTTAGES AND HOMES LOCATED ON THE PROPERTY AT THE TIME OF GOVERNMENT ACQUISITION WERE ALLOWED TO REMAIN UNDER A LEASE. THE MAJORITY OF THE COTTAGE SITE LEASES RESULTED WHEN THE GOVERNMENT ADVERTISED CERTAIN SITES TO BE DEVELOPED AS RECREATIONAL COTTAGE SITES IN THE EARLY FIFTIES. THESE LEASES WERE OBTAINED BY COMPETITIVE BIDDING AND THE INITIAL LEASES WERE FOR A MAXIMUM TERM OF 25 YEARS; HOWEVER, THE LEASE AGREEMENT PROVIDES FOR REVOCATION AT WILL BY THE GOVERNMENT. THE LESSEES WERE REQUIRED TO CONSTRUCT A RECREATIONAL DWELLING ON THE LEASE AREA WITHIN 2 YEARS FROM THE DATE THE LEASE WAS ISSUED.

PHASE-OUT POLICY

IN 1966, THE CHIEF OF ENGINEERS ESTABLISHED A POLICY TO PHASE OUT ALL COTTAGE SITE AND RESIDENTIAL LEASES ON FEDERAL LANDS ACQUIRED FOR THE UPPER MISSISSIPPI RIVER NINE-FOOT CHANNEL PROJECT. THE POLICY WAS ESTABLISHED FOR TWO MAJOR REASONS.

ONE REASON IS TO ELIMINATE BUILDINGS FOR HUMAN HABITATION FROM THE FLOOD PLAIN TO MINIMIZE THE FLOOD HAZARD. MANY OF THESE LEASES ARE IN THE FLOOD PLAIN. THE CONTINUED LEASING OF LANDS WITHIN THE FLOOD PLAIN FOR CONSTRUCTION AND MAINTENANCE OF HABITABLE STRUCTURES IS CONTRADICTORY TO THE NATIONAL PROGRAM FOR MANAGING FLOOD LOSSES AND EXECUTIVE ORDER 11988 WHICH REQUIRE FEDERAL AGENCIES TO MANAGE GOVERNMENT-OWNED LANDS IN A MANNER WHICH WILL REDUCE THE RISK OF FLOOD LOSS, TO MINIMIZE THE IMPACT OF FLOODS ON HUMAN SAFETY, HEALTH AND WELFARE, AND TO RESTORE AND PRESERVE THE NATURAL AND BENEFICIAL VALUES SERVED BY FLOOD PLAINS. THE CORPS OF ENGINEERS HAS PUBLISHED A REGULATION (TITLE 33, CFR, CHAPTER 11, PART 240) TO IMPLEMENT THE EXECUTIVE ORDER. THIS REGULATION SPECIFIES THAT THE CORPS WILL REFRAIN FROM OUTGRANTING LANDS FOR USES WHICH ARE INCOMPATIBLE WITH GOOD FLOOD PLAIN MANAGEMENT PRACTICES.

THE OTHER MAJOR REASON FOR THE PHASE-OUT POLICY IS TO ELIMINATE PRIVATE LEASES FROM PUBLIC LAND AND THEREBY PROMOTE THE CONCEPT OF PROVIDING MAXIMUM OVERALL USE OF GOVERNMENT LAND FOR GENERAL PUBLIC PURPOSES SUCH AS RECREATION, CONSERVATION, AND MANAGEMENT OF FISH AND WILDLIFE RESOURCES, CONSERVATION, AND MANAGEMENT FOR FOREST RESOURCES, AND PRESERVATION OF NATURAL AND SCENIC AREAS, RATHER THAN FOR PRIVATE OR SEMI-PRIVATE PURPOSES. THE U.S. FISH AND WILDLIFE COORDINATION ACT OF 1958, AS AMENDED (16 U.S.C. 661 ET SEQ.), PROVIDES THAT WILDLIFE CONSERVATION RECEIVE EQUAL CONSIDERATION AND BE COORDINATED WITH OTHER FEATURES OF WATER RESOURCE DEVELOPMENT PROGRAMS. THE FOREST CONSERVATION ACT OF 1960 (16 U.S.C. 580 m-n) PROVIDES FOR THE MANAGEMENT OF FOREST RESOURCES ON LANDS AT WATER RESOURCE DEVELOPMENT PROJECTS UNDER THE JURISDICTION OF THE CHIEF OF ENGINEERS, TO DEVELOP TIMBER RESOURCES AND TO INCREASE THE VALUE OF SUCH AREAS FOR CONSERVATION, RECREATION, AND OTHER BENEFICIAL USES. THE FEDERAL WATER PROJECT RECREATION ACT OF 1965 (16 U.S.C. 460L-12), PROVIDES THAT FULL

CONSIDERATION BE GIVEN TO THE OPPORTUNITIES WHICH WATER RESOURCE DEVELOPMENT PROJECTS AFFORD FOR OUTDOOR RECREATION AND FOR FISH AND WILDLIFE ENHANCEMENT AND THAT, WHEREVER ANY PROJECT CAN SERVE EITHER OR BOTH OF THESE PURPOSES, IT SHALL BE CONSTRUCTED, OPERATED, AND MAINTAINED ACCORDINGLY. THEREFORE, IT WAS CONSIDERED THAT THE CONTINUED LEASING OF THESE LANDS FOR PRIVATE USE WAS CONTRARY TO THE LAWS WHICH REQUIRE THAT THESE LANDS BE MADE AVAILABLE FOR AND BE MANAGED FOR PUBLIC PURPOSES.

SINCE THE TIME THE PHASE-OUT POLICY WAS ESTABLISHED, THE TREND HAS BEEN FOR FEDERAL LAWS, REGULATIONS, AND POLICIES TO REINFORCE THE BASIC PRINCIPLES OF ELIMINATING FLOOD PLAIN DEVELOPMENT, PROMOTING PUBLIC RECREATIONAL USE OF FEDERAL LANDS, AND PROTECTING FISH AND WILDLIFE RESOURCES, AND NATURAL AND SCENIC AREAS. THERE IS ALSO AN INCREASING TREND TOWARD DEVELOPING PRIVATELY-OWNED LANDS ALONG THE MISSISSIPPI RIVER, AND GOVERNMENT-OWNED LANDS ARE RAPIDLY BECOMING THE ONLY NATURAL AREAS ALONG THE RIVER. THIS PLACES INCREASED PRESSURE ON FEDERAL AGENCIES TO PRESERVE THESE AREAS. STATE AND OTHER FEDERAL AGENCIES RESPONSIBLE FOR CONSERVATION AND MANAGEMENT OF THE NATURAL RESOURCES ALONG THE MISSISSIPPI RIVER HAVE GENERALLY SUPPORTED THE POLICY TO ELIMINATE THESE PRIVATE LEASES FROM PUBLIC LAND.

IMPLEMENTATION OF POLICY

THE POLICY WAS ANNOUNCED TO ALL LESSEES BY LETTER DATED 26 JANUARY 1967. THE ORIGINAL POLICY STATED THAT EXISTING LEASES WOULD BE RENEWED FOR ONLY ONE 5-YEAR PERIOD. SINCE SOME LEASES EXPIRED IN 1967 AND OTHERS EXPIRED AS LATE AS THE EARLY EIGHTIES, THE POLICY WAS REVISED TO PROVIDE A MORE EQUITABLE TREATMENT OF ALL LESSEES. THIS ALSO ALLOWED MORE TIME FOR AMORTIZATION OF THE INVESTMENT WHICH LESSEES HAD MADE ON THE LEASE AREAS. THE REVISED POLICY STATED THAT LEASES WOULD BE EXTENDED TO A COMMON

EXPIRATION DATE OF 30 NOVEMBER 1988, PROVIDED THE LAND WAS NOT NEEDED FOR HIGHER PRIORITY PUBLIC USE, AND FURTHER PROVIDED THAT THE LESSEE MUST MAINTAIN THE LEASED PREMISES IN ACCORDANCE WITH THE LEASE. THIS REVISED POLICY WAS ANNOUNCED TO ALL LESSEES BY LETTER DATED 2 NOVEMBER 1967. A LETTER WAS SENT TO ALL LESSEES ON 14 MARCH 1975 REMINDING THEM OF THE POLICY. ON 15 OCTOBER 1981, ANOTHER REMINDER WAS MAILED WHICH ALSO INDICATED APPROVAL WOULD NO LONGER BE GRANTED FOR ANY FURTHER IMPROVEMENTS OR RECONSTRUCTION OF SEVERELY DAMAGED STRUCTURES. PUBLIC LAW 97-140 SUBSEQUENTLY EXTENDED THE EXPIRATION DATE UNTIL 31 DECEMBER 1989. NOTICE OF THIS TIME EXTENSION WAS MADE TO ALL LEASE HOLDERS ON 7 APRIL 1982.

FUTURE USES OF LEASED AREAS

THE CORPS RECREATION-RESOURCE MASTER PLANS FOR MANAGEMENT OF PROJECT LANDS ALONG THE MISSISSIPPI RIVER DESIGNATE MANAGEMENT OBJECTIVES FOR EACH PARCEL OF LAND THAT WILL BEST UTILIZE AND PROTECT THE RESOURCES FOR THE OVERALL PUBLIC GOOD. THE MAJORITY OF PROJECT LANDS ARE DESIGNATED FOR FISH AND WILDLIFE, RESERVE FOREST, OR LOW-DENSITY RECREATIONAL USE. THE CORPS OF ENGINEERS HAS AGREEMENTS WITH THE U.S. FWS AND VARIOUS STATE CONSERVATION AGENCIES TO MANAGE LANDS ALONG THE RIVER FOR CONSERVATION AND ENHANCEMENT OF FISH AND WILDLIFE RESOURCES. A MAJORITY OF THE COTTAGE SITE LEASE AREAS WILL LIKELY BE INCLUDED IN THOSE AGREEMENTS WHEN THE LEASES EXPIRE IN 1989. THESE AREAS WILL ALSO BE OPEN TO THE GENERAL PUBLIC FOR RECREATIONAL USES SUCH AS HIKING, HUNTING, FISHING, AND SIGHTSEEING.

SIMILAR ACTION BY OTHER AGENCIES

THE CORPS OF ENGINEERS IS NOT THE ONLY FEDERAL AGENCY THAT HAS RECOGNIZED THE NEED TO ELIMINATE PRIVATE RECREATION LEASES ON FEDERAL LANDS. IN PARTICULAR, THE U.S. DEPARTMENT OF THE INTERIOR HAS ISSUED RULES REGARDING CABIN SITES ON PUBLIC CONSERVATION AND RECREATION AREAS UNDER THE JURISDICTION OF THE VARIOUS AGENCIES WITHIN THAT DEPARTMENT (TITLE 43, CFR, PART 21). THOSE REGULATIONS ARE SIMILAR TO THE CORPS POLICY IN THAT THEY REQUIRE ELIMINATION OF CABIN SITE LEASES IN PUBLIC RECREATION OR CONSERVATION AREAS, WHERE THE CABIN SITES ARE DETERMINED TO BE INCONSISTENT WITH THE GENERAL PUBLIC NEEDS FOR THAT AREA. THE REGULATION REQUIRES THAT CABIN SITE PERMITS BE EXTENDED NO MORE THAN 5 YEARS AFTER THE DATE THE DETERMINATION IS MADE AND ALSO PROVIDES FOR A 20-YEAR AMORTIZATION PERIOD WHERE A SUBSTANTIAL IMPROVEMENT WAS MADE ON THE AREA. SUBSEQUENT TO THAT REGULATION, THE U.S. FWS ESTABLISHED A REGULATION THAT NO NEW CABIN SITE PERMITS BE ISSUED AND NO EXISTING CABIN SITE PERMITS BE RENEWED ON NATIONAL WILDLIFE REFUGE AREAS (TITLE 50, CFR, CHAPTER 1, PART 26.35).

SUMMARY

THE PHASE-OUT POLICY OF PRIVATE RECREATIONAL LEASES HAS NOT BEEN AN ARBITRARY DECISION, AND IS BASED ON FEDERAL LAW AND POLICIES CONCERNING SOUND RESOURCE STEWARDSHIP RESPONSIBILITIES. LESSEES HAVE BEEN PROVIDED APPROPRIATE ALLOWANCES FOR AMORTIZATION OF PRIVATE INVESTMENTS AND HAVE ENJOYED A PRIVILEGED OPPORTUNITY TO USE PUBLIC PROPERTY. THE NEED FOR AND APPROPRIATENESS OF THIS TYPE OF USE ARE NO LONGER ACCEPTABLE ON PROPERTY MANAGED FOR PUBLIC PURPOSES.

IT SHOULD BE EMPHASIZED THAT THIS POLICY APPLIES ONLY TO COTTAGE SITE AND RESIDENTIAL LEASES ON LANDS WHICH THE GOVERNMENT OWNS. WITH THE GREAT DEAL OF PUBLICITY GIVEN TO THIS POLICY, PEOPLE WHO HAVE HOMES AND COTTAGES ON PRIVATE LAND HAVE EXPRESSED FEARS THAT THEY WILL ALSO BE REQUIRED TO MOVE. THE CORPS OF ENGINEERS HAS NO AUTHORITY OR PLANS TO ACQUIRE HOMES OR COTTAGES ON PRIVATE LAND IN CONNECTION WITH THE MISSISSIPPI RIVER NINE-FOOT CHANNEL PROJECT.

BARGE FLEETING

FLEETING AREAS ARE THOSE AREAS WHERE BARGES ARE MOORED OTHER THAN AT COMMERCIAL LANDING FACILITIES, DOCKS, OR TERMINALS. SUCH TEMPORARY STORAGE OCCURS WHEN SPACE DURING LOADING AND UNLOADING AT A TERMINAL FACILITY IS INSUFFICIENT TO HANDLE A COMPLETE TOW, WHICH USUALLY CONSISTS OF UP TO 15 BARGES. THIS IS SIMILAR IN PURPOSE TO THE SWITCHING YARDS USED BY THE RAILROADS. FLEETING IS RECOGNIZED AS A NECESSARY COMMERCIAL USE OF THE RIVER WHICH WILL LIKELY INCREASE ALONG WITH THE PROJECTED FUTURE GROWTH OF COMMERCIAL TRAFFIC; HOWEVER, FLEETING IS MORE A FUNCTION OF EXISTING USE AND NOT A FACTOR IN CREATING NEW GROWTH. THERE ARE BASICALLY TWO TYPES OF FLEETING AREAS:

- * PERMITTED - AREAS SPECIFICALLY DESIGNATED FOR FLEETING THROUGH FORMAL APPLICATION AND APPROVAL UNDER A FEDERAL OR STATE PERMIT PROGRAM. FLEETING ASSOCIATED PERMITS ARE REQUIRED BY THE CORPS OF ENGINEERS, UNDER SECTION 10 OF THE RIVERS AND HARBORS ACT OF 1899, WHEN FIXED MOORING DEVICES OR OTHER CONSTRUCTION ACTIVITY WITHIN NAVIGABLE WATERS ARE INVOLVED. AT PRESENT, THERE IS NO SPECIFIC REGULATION AUTHORITY FOR FLEETING ACTIVITIES BY EITHER FEDERAL OR STATE (ILLINOIS AND MISSOURI) AGENCIES.

- * NON-PERMITTED - THESE ARE TRADITIONAL LOCATIONS THAT EITHER HAVE BEEN ESTABLISHED PRIOR TO PERMIT AUTHORITY OR ARE NOT SUBJECT TO PERMIT REQUIREMENTS. IN SUCH AREAS, THE COMMON MOORING DEVICES ARE TREES. BOTH THE CORPS AND COAST GUARD HAVE VERY LIMITED REGULATORY POWERS IN THESE AREAS. THE PRIMARY ENFORCEMENT MEASURES ARE PREVENTION OF NAVIGATION HAZARDS (I.E. LIGHTING REQUIREMENTS ON FLEETED BARGES).

IN RECENT YEARS, STATE AND FEDERAL AGENCIES HAVE BEEN CONCERNED WITH THE IMPACTS AND DEMANDS OF BARGE FLEETING ON THE UPPER MISSISSIPPI RIVER. THE COMMERCIAL TRANSPORTATION WORK GROUP OF GREAT II ADDRESSED SUCH CONCERNS AS PART OF THEIR STUDY 2/ EFFORT. AN ANALYSIS MADE OF EXISTING FLEETING OPERATIONS INDICATED ADEQUATE CONDITIONS IN ALL BUT THREE (16, 17, AND 19) POOLS. THIS INVENTORY INCLUDED BOTH PERMITTED AND NON-PERMITTED AREAS, AND IDENTIFIED TWO NON-PERMITTED AREAS (TOTAL CAPACITY OF 24 BARGES) OPERATING IN POOL 22.

IN 1979, THE MARK TWAIN REGIONAL ADVISORY COMMISSION MADE A STUDY 3/ OF RIVERFRONT PROPERTY, INVOLVING MARION AND RALLS COUNTIES IN MISSOURI, THAT IDENTIFIED POTENTIALLY SUITABLE AREAS FOR DEVELOPMENT BY RIVER-DEPENDENT INDUSTRIES. THE ANALYSIS ASSIGNED SUITABILITY RATINGS (PRIME, CONDITIONAL, AND NOT SUITABLE) TO STUDY SEGMENTS ACCORDING TO PHYSICAL/ENVIRONMENTAL CHARACTERISTICS, TRANSPORTATION NETWORK, UTILITIES, AND PRESENT LAND USE. WITHIN MARION AND RALLS COUNTIES THERE WERE THREE PRIME AND FIVE CONDITIONAL SUITABLE AREAS IDENTIFIED. SPECIFIC SITE DEVELOPMENT WOULD BE DEPENDENT UPON PRIVATE OR OTHER ORGANIZATIONAL CONCERNS, AND WAS BEYOND THE SCOPE AND INTENT OF THE STUDY. THE STUDY RESULTS INDICATE THAT FAVORABLE FACTORS EXIST WITHIN THE STUDY AREA FOR POTENTIAL DEVELOPMENT OF RIVER-DEPENDENT INDUSTRIES.

2/ GREAT RIVER ENVIRONMENTAL ACTION TEAM II (GREAT II), COMMERCIAL TRANSPORTATION WORK GROUP APPENDIX, FINAL REPORT, DECEMBER 1980.

3/ MARK TWAIN REGIONAL ADVISORY COMMISSION, RIVERFRONT INDUSTRIAL DEVELOPMENT POTENTIAL FOR LOCATION ALONG THE MISSISSIPPI RIVER: LEWIS, MARION, RALLS, AND PIKE COUNTIES, MISSOURI, AUGUST 1979.

AVAILABILITY OF PROJECT LANDS FOR COMMERCIAL PORT OR FLEETING PURPOSES WILL BE CONSIDERED IF SUITABLE PRIVATE PROPERTY IS NOT AVAILABLE. REQUESTED USE OF GOVERNMENT LANDS FOR SUCH PURPOSES WOULD BE COORDINATED WITH LOCAL, STATE, AND OTHER FEDERAL INTERESTS FOR REVIEW AND GENERAL ACCEPTABILITY ON A CASE-BY-CASE BASIS. COMMERCIAL USE OF GOVERNMENT LANDS REQUIRES PAYMENT OF A FAIR MARKET RENTAL VALUE FOR THE USE.

HISTORIC FLEETING AREAS LOCATED ON PROJECT PROPERTY ARE TO BE FORMALLY ESTABLISHED THROUGH APPROPRIATE REGULATORY PERMIT OR REAL ESTATE AGREEMENT PRACTICES. PERMANENTLY INSTALLED SHORE OR IN-WATER MOORING DEVICES SHALL BE REQUIRED. ESTABLISHMENT OF FLEETING AREAS SHALL CONSIDER JOINT USER PROVISIONS VERSUS TRADITIONAL INDIVIDUAL USE PURPOSES.

MOORING FACILITIES

DURING 1982, THE CORPS OF ENGINEERS INVESTIGATED 4/ THE NEED AND ECONOMIC JUSTIFICATION OF PROVIDING SAFE MOORING FACILITIES FOR COMMERCIAL RIVER TRAFFIC AT HAZARDOUS LOCATIONS FOR SAFETY OR EMERGENCY NAVIGATION PURPOSES. THE STUDY INDICATED A NEED FOR CONSTRUCTION OF TEMPORARY/EMERGENCY MOORING FACILITIES BY THE FEDERAL GOVERNMENT TO PROVIDE A SAFE AND EFFICIENT NAVIGATION SYSTEM. IT ALSO DETERMINED THAT SUFFICIENT CONGRESSIONAL AUTHORITY ALREADY EXISTS FOR FEDERAL CONSTRUCTION OF SUCH FEATURES. THE TYPES OF FACILITIES TO BE CONSTRUCTED WOULD DEPEND UPON THE SPECIFIC LOCATIONS AND USE OF THE FACILITIES. FOUR BASIC AREAS WHERE SUCH MOORING FACILITIES COULD BE UTILIZED ARE: AT NAVIGATION STRUCTURES, AT BRIDGES, WITHIN NAVIGATION POOLS, AND WITHIN REACHES OF OPEN RIVER.

4/ U.S. ARMY ENGINEER DISTRICT - ST. LOUIS, MISSISSIPPI RIVER NAVIGATION SYSTEM, ADEQUATE MOORING FACILITIES FOR WATERCRAFT - 81181, SEPTEMBER 1982.

THE CORPS HAS PURSUED THE PLACEMENT OF EMERGENCY AND TEMPORARY MOORING FACILITIES UNDER EXISTING OPERATION AND MAINTENANCE AUTHORITY. SUCH FACILITIES ARE JUSTIFIED ON A LINE ITEM BASIS IN THE FEDERAL BUDGET REQUEST FOR THE PURPOSE OF SAFETY, EMERGENCY MOORING, AND PROJECT EFFICIENCY NEEDS. THESE TYPES OF FACILITIES HAVE BEEN PLACED IN THE VICINITY OF PROJECTS AND THE APPROACH CHANNELS. SUCH CONSTRUCTION IS BEING UNDERTAKEN NEAR THE LOCK AND DAM 21 AND 22 INSTALLATIONS.

BOUNDARY SIGNAGE

PUBLIC AWARENESS PROBLEMS CONCERNING USE AND ACCESS CONTROLS FOR PROJECT LANDS HAVE RESULTED FROM POOR SIGNAGE AS WELL AS THE LACK OF BOUNDARY MARKINGS. THE NEED FOR PROPER BOUNDARY MARKING AND SURVEYING WAS DISCUSSED PREVIOUSLY IN THIS SECTION UNDER THE UNCONTROLLED ACCESS ISSUE. IN ADDITION TO THIS CONCERN, FEDERAL LAND MANAGEMENT AGENCIES HAVE OBLIGATIONS TO ANNOUNCE THE BOUNDARIES OF PUBLIC PROPERTIES THAT ARE AVAILABLE FOR PUBLIC USE THROUGH CONSPICUOUS MARKERS, AND TO COMMUNICATE THE FACT THAT CERTAIN REGULATIONS ARE ENFORCED WHICH PROVIDE FOR THE PROTECTION OF THE RESOURCES.

THE AGENCY WHICH HAS ADMINISTRATIVE RESPONSIBILITY FOR LAND MANAGEMENT IS RESPONSIBLE FOR POSTING SUCH MARKERS AND SIGNAGE WHERE APPROPRIATE. SUCH SIGNAGE SHOULD CONVEY A MESSAGE WHICH IS CONSISTENT WITH THE LAND USE DEFINITION CONTAINED WITHIN THIS MASTER PLAN FOR THE ASSIGNED DESIGNATION. ALTHOUGH VISITORS NEED TO BE INFORMED OF THE RESTRICTIONS AND PROHIBITIONS APPLIED FOR THE SAFEGUARDING OF THE RESOURCE VALUES, SIGNAGE SHOULD AVOID CONVEYING UNNECESSARY ACCESS RESTRICTIONS. ANNUAL MANAGEMENT PLANS OF OTHER AGENCIES MANAGING PROJECT LANDS SHOULD ADDRESS THIS ISSUE WITH REGARD TO (1) THE PROPER WORDAGE, (2) POSTING REQUIREMENTS, AND (3) IMPLEMENTATION SCHEDULE. A SIMILAR PROGRAM SHOULD BE DEVELOPED FOR COE ADMINISTERED LANDS IN THE OPERATIONAL MANAGEMENT PLAN FOR THE PROJECT.

OPERATIONAL MANAGEMENT PLAN

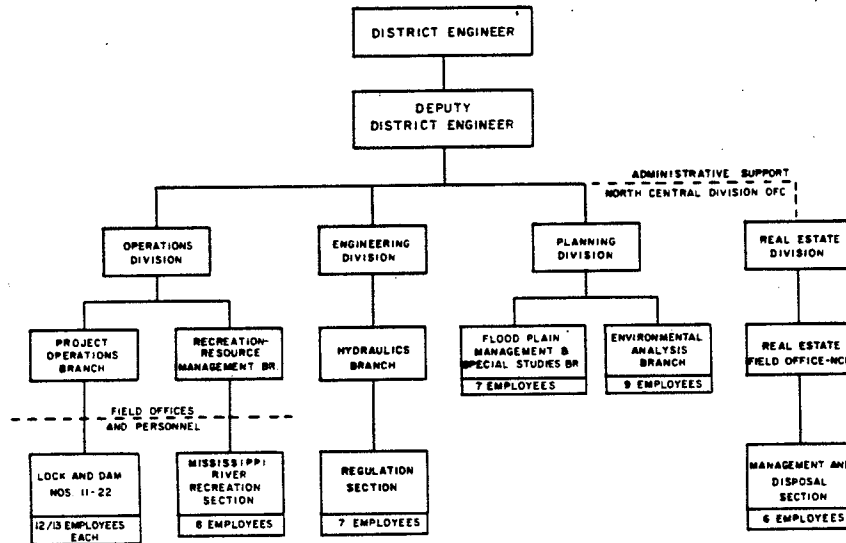
OPERATIONAL MANAGEMENT PLAN

SPECIFIC OPERATION AND ADMINISTRATION REQUIREMENTS FOR NATURAL RESOURCES AND PARK MANAGEMENT ARE PREPARED SEPARATELY BY OPERATION DIVISION ELEMENTS, CONSISTENT WITH THE APPROVED MASTER PLAN. PRESENT ADMINISTRATIVE GUIDELINES DIRECT THE PREPARATION OF A SINGLE DOCUMENT, OPERATIONAL MANAGEMENT PLAN (OMP), FOR UPDATE OF THE PRESENT INDIVIDUAL MANAGEMENT APPENDIXES. THE OMP WILL CONSIST OF TWO PARTS WHICH INCORPORATE THE TOPICS ADDRESSED UNDER THE FORMER INDIVIDUAL PLANS: (1) NATURAL RESOURCE MANAGEMENT AND (2) PARK MANAGEMENT. THE OMP FOR THE RIVER WILL COVER THE ENTIRE SYSTEM WITHIN THE ROCK ISLAND DISTRICT IN ONE DOCUMENT, AND IS PRESENTLY UNDER PREPARATION. FOLLOWING IS A SUMMARY DISCUSSION OF THE CONTENTS AND SCOPE OF EXISTING PLANS. SUBSEQUENT UPDATE WILL BE MADE UPON COMPLETION AND APPROVAL OF THE OMP.

PROJECT RESOURCE MANAGEMENT PLAN

THE PROJECT RESOURCE MANAGEMENT PLAN (APPENDIX A) IS A SEPARATELY PREPARED DOCUMENT OF THE RECREATION-RESOURCE MASTER PLAN. THE PURPOSE OF THE PLAN IS TO PROVIDE PROCEDURAL GUIDANCE TO PROJECT PERSONNEL CONCERNED WITH PHYSICAL RESOURCE ADMINISTRATION AND MANAGEMENT. THE INITIAL PLAN WAS PREPARED IN MARCH 1978, AND UPDATES ARE SCHEDULED ON A 5-YEAR BASIS, AS NEEDED. MAJOR ISSUES ADDRESSED IN THE PLAN ARE: OPERATIONAL CONCEPTS AND POLICIES, STAFFING AND ORGANIZATION, PARK ADMINISTRATIVE AND MAINTENANCE FACILITIES, LAW ENFORCEMENT, CONCESSION ACTIVITIES, ENCROACHMENTS, VISITOR INTERPRETATION AND EDUCATION, PEST CONTROL PROGRAM, AND ADMINISTRATIVE POLICIES AND PROCEDURES FOR PARK PERSONNEL.

THE FOLLOWING CHART IDENTIFIES ORGANIZATIONAL ELEMENTS OF THE ROCK ISLAND DISTRICT WHICH ARE DIRECTLY INVOLVED IN PROJECT ADMINISTRATION AND MANAGEMENT ON THE MISSISSIPPI RIVER. ONLY THE FIELD OFFICE STAFFING IS INVOLVED FULL-TIME FOR THE PROJECT. THE OTHER ELEMENTS INCLUDE SIMILAR RESPONSIBILITIES FOR OTHER PROJECTS WITHIN THE ROCK ISLAND DISTRICT.



ROCK ISLAND DISTRICT ORGANIZATIONAL CHART

FOREST, FISH, AND WILDLIFE MANAGEMENT PLAN

THE FOREST MANAGEMENT PLAN (APPENDIX B) AND THE FISH AND WILDLIFE MANAGEMENT PLAN (APPENDIX D) HAVE BEEN COMBINED, AND PREPARED AS A SEPARATE DOCUMENT OF THE RECREATION-RESOURCE MASTER PLAN. THIS MANAGEMENT PLAN WAS COMPLETED AND APPROVED IN APRIL 1982. COORDINATION IS PERFORMED ANNUALLY CONCERNING THE IMPLEMENTATION OF THE INITIAL 5-YEAR PROGRAM PRESCRIBED WITHIN THE PLAN. THE PLAN EMPHASIZED FORESTRY MANAGEMENT OBJECTIVES FOR ALL PROJECT LANDS AND REPRESENTS THE WILDLIFE MANAGEMENT OBJECTIVES ONLY FOR LANDS DIRECTLY UNDER CORPS ADMINISTRATION. INTENSIVE MANAGEMENT

PLANS CONCERNING FISHERIES AND WILDLIFE ON PROJECT LANDS AND WATERS LICENSED TO OTHER PUBLIC AGENCIES FOR SUCH PURPOSES REMAIN THE RESPONSIBILITY OF THOSE RESPECTIVE INTERESTS. GENERAL OBJECTIVES OF THE MANAGEMENT PLAN ARE:

- * TO MANAGE FOR A HEALTHY DIVERSE FOREST RESOURCE WITH EMPHASIS ON MAINTAINING HABITAT THAT SUPPORTS THE GREATEST VARIETY AND NUMBERS OF SELF-SUSTAINING WILDLIFE SPECIES WHILE CONSIDERING OTHER RESOURCE DEMANDS SUCH AS RECREATION, AESTHETICS, AND FIBER PRODUCTION.

- * TO TAILOR MANAGEMENT OF THE MISSISSIPPI BOTTOMLAND FORESTS TO MEET THE HABITAT DEMANDS OF MORE SPECIFIC WILDLIFE SPECIES AS MANAGEMENT OBJECTIVES BECOME KNOWN DURING COORDINATION WITH THE U.S. FWS OR APPROPRIATE STATES. MANAGEMENT OF THE BOTTOMLAND FORESTS MUST STILL BE CONSISTENT WITH SOUND FOREST MANAGEMENT PRINCIPLES, INCLUDING MAINTAINING OPTIMUM SIZE CLASS DIVERSITY, SOUND STAND STRUCTURES, AND TREE SPECIES SITE COMPATABILITY ON AN OVERALL UNIT BASIS. DURING THE INTERIM PERIOD, THE BOTTOMLAND FOREST WILL BE MANAGED TO OBTAIN THE WIDEST DIVERSITY OF WILDLIFE HABITAT, EXCEPT AT SITES WHERE SPECIFIC WILDLIFE DEMANDS HAVE BEEN POINTED OUT DURING COORDINATION. EXAMPLES INCLUDED IN THE PLAN ARE HERON NESTING SITES, EAGLE ROOSTING AND PERCHING AREAS, AND WOOD DUCK NESTING HABITAT.

SPECIFIC MANAGEMENT OBJECTIVES FOR FORESTRY AND WILDLIFE ARE:

- * TO PROMOTE AND MAINTAIN A REGULATED FLOOD PLAIN FOREST RESOURCE BY STRIVING FOR A BIOLOGICALLY SOUND OPTIMUM MIX OF TREE SIZE CLASS DISTRIBUTION AND SPECIES.

- * TO ATTAIN A SUSTAINED AND REGULATED YIELD OF FOREST PRODUCTS.

- * TO DEVELOP A DETAILED COMPREHENSIVE DATA BASE, FROM STAND MAPPING AND FIELD EXPERIENCE TO BE USED IN FUTURE FOREST MANAGEMENT DECISIONS.

- * TO PROTECT HABITAT FOR ALL ENDANGERED SPECIES FOUND OCCURRING ON LAND COVERED BY THIS PLAN. ENHANCEMENT OF THE HABITAT, SUCH AS PROVIDING PERCHING AND ROOSTING TREES FOR FEEDING AND RESTING BALD EAGLES, WILL BE DONE USING A SPECIAL MANAGEMENT ZONE IN COOPERATION WITH APPROPRIATE STATE AND U.S. FWS PERSONNEL.

- * TO MANAGE HABITAT TO PROVIDE RESTING AND FEEDING SITES FOR MIGRATORY BIRDS AND RESIDENT/MIGRATORY BIRDS SUCH AS THE WOOD DUCK.

- * TO MAINTAIN, THROUGH PROTECTION AND SPECIFIC MANAGEMENT PRESCRIPTION, COLONIAL NESTING SITES FOR SUCH WILDLIFE AS THE GREAT BLUE HERON.

* TO MAINTAIN HABITAT THAT WILL SUPPORT THE GREATEST VARIETY OF GAME AND NONGAME MAMMALS.

SPECIFIC FOREST MANAGEMENT GOALS FOR POOL 22 ARE TO: (1) ENHANCE WILDLIFE COVER AND FOOD SOURCES; (2) ENHANCE NATURAL RECREATION AND AESTHETIC QUALITIES; (3) MAINTAIN AND RESTORE MAST PRODUCING HARDWOODS IN SUITABLE HIGHER AREAS; AND (4) ESTABLISH DIVERSITY OF AGES AND SPECIES. THINNING AND IMPROVEMENT CUTS, AND TIMBER STAND IMPROVEMENT PRACTICES REPRESENT 81 PERCENT (1,840 ACRES) OF THE TOTAL INITIAL FOREST MANAGEMENT PRACTICES PROPOSED WITHIN THE POOL. HARVESTING PRACTICES RANGE BETWEEN 5- TO 60-ACRE MAXIMUM CUTS WITHIN THE VARIOUS MANAGEMENT UNITS. TOTAL ACREAGE AFFECTED BY INTENSIVE MANAGEMENT PRACTICES IS APPROXIMATELY 43 PERCENT OF THE TOTAL CORPS-OWNED LAND IN POOL 22.

POOL 22 CONTAINS MIXED STANDS OF PECAN, OAK, AND PERSIMMON AT VARIOUS SCATTERED SITES. HOWEVER, HEAVY GROUND LAYER VEGETATION, HARSH GROWING CONDITIONS, AND HISTORIC HARVEST PRACTICES HAVE LIMITED MAST TREE PRODUCTION. SENSITIVE WILDLIFE RESOURCES IN THIS POOL ARE THE ACTIVE HERON ROOKERY ON ARMSTRONG ISLAND, AND THE BALD EAGLES AND SONGBIRDS ON FABIVS ISLAND. AS A RESULT OF THESE CONDITIONS, MANAGEMENT PRACTICES ON EITHER ISLAND WILL NOT BE IMPLEMENTED UNTIL FURTHER MONITORING AND EVALUATION ARE ACCOMPLISHED AND FULLY COORDINATED.

FIRE PROTECTION PLAN

THE FIRE PROTECTION PLAN (APPENDIX C) FOR THE PROJECT WAS COMPLETED AND APPROVED IN JUNE 1980. THE PLAN PROVIDES PROCEDURAL GUIDANCE TO PROJECT PARK STAFF PERSONNEL CONCERNING GRASS AND FOREST FIRE PREVENTION, PRESUPPRESSION AND SUPPRESSION FUNCTIONS,

AND TRAINING REQUIREMENTS FOR PERSONNEL CONCERNING SUCH INTERESTS. ANY COOPERATIVE AGREEMENTS OR PROCEDURAL ARRANGEMENTS WITH LOCAL INTERESTS FOR FIRE PROTECTION PURPOSES ARE ALSO IDENTIFIED IN THE PLAN.

PROJECT SAFETY PLAN

THE PROJECT SAFETY PLAN (APPENDIX E) WAS COMPLETED AND APPROVED IN APRIL 1980. THE PLAN IDENTIFIES COMMON RECURRING HAZARDS OR UNSAFE CONDITIONS CONCERNING PARK AND RESOURCE MANAGEMENT ACTIVITIES, AND INDICATES THE PRECAUTIONARY ACTIONS TO BE TAKEN TO PREVENT, REDUCE, OR CONTROL SUCH HAZARDS. EM 385-1-1, GENERAL SAFETY REQUIREMENTS, AND APPLICABLE CORPS REGULATIONS (385 SERIES) ESTABLISH THE SAFETY PROGRAM REQUIREMENTS FOR ALL CORPS OF ENGINEERS ACTIVITIES AND OPERATIONS. APPLICABLE PROVISIONS AND INSTRUCTIONS ARE IMPLEMENTED AND ENFORCED FOR BOTH CORPS PERSONNEL AND THE VISITING PUBLIC.

LAKESHORE MANAGEMENT PLAN

A LAKESHORE MANAGEMENT PLAN (APPENDIX F), AS SPECIFIED IN TITLE 36, CHAPTER III, PART 327.30, OF THE CODE OF FEDERAL REGULATIONS, IS CONTAINED IN ATTACHMENT III - SHORELINE MANAGEMENT PLAN, AS ADAPTED FOR THE PROJECT. THE SHORELINE MANAGEMENT PLAN ESTABLISHES THE ROCK ISLAND DISTRICT POLICY CONCERNING PRIVATE EXCLUSIVE USE PERMITTED ON CORPS-ADMINISTERED PROJECT LANDS AND WATERS. ATTACHMENT III REPRESENTS THE POLICY GUIDANCE FOR SUCH MANAGEMENT PRACTICES, AND THE LAND-USE ALLOCATION MAPS PREPARED FOR THE PROJECT LANDS INCORPORATE THE APPLICABLE SHORELINE MANAGEMENT AREA DESIGNATIONS.

CULTURAL RESOURCE MANAGEMENT PLAN

THIS PLAN WILL PRESCRIBE MANAGEMENT RESPONSIBILITIES AND PROCEDURES FOR THE TREATMENT OF CULTURAL PROPERTIES LOCATED ON PROJECT LANDS. APPROPRIATE REQUIREMENTS FOR LOCATING, INVENTORYING, IDENTIFYING, EVALUATING, AND TREATING CULTURAL PROPERTIES WILL BE MADE IN COMPLIANCE WITH THE NATIONAL HISTORIC PRESERVATION ACT (NHPA) OF 1966 (AS AMENDED), EXECUTIVE ORDER 11593, AND THE ARCHEOLOGICAL AND HISTORIC PRESERVATION ACT OF 1974 AND IN CONSULTATION WITH RESPECTIVE STATE HISTORIC PRESERVATION OFFICERS (SHPO) AND THE ADVISORY COUNCIL ON HISTORIC PRESERVATION (ACHP). THE FOLLOWING PROCEDURES ARE INVOLVED IN THE PREPARATION OF THIS PLAN:

- * PERFORM A PROFESSIONAL INVENTORY TO LOCATE CULTURAL PROPERTIES ON PROJECT LANDS.
- * APPLY NATIONAL REGISTER CRITERIA FOR DETERMINING ELIGIBILITY OF KNOWN RESOURCES.
- * DETERMINE IF ANY ONGOING PROJECT MANAGEMENT ACTIVITIES WILL DAMAGE OR HAVE ADVERSE EFFECTS ON ANY CULTURAL PROPERTIES.
- * DEVELOP ALTERNATIVE ACTIVITIES, PROGRAMS, OR ACTIONS THAT WILL REDUCE OR MITIGATE KNOWN AND POTENTIAL ADVERSE EFFECTS.
- * PREPARE MEMORANDUM OF AGREEMENT^a (MOA) IN CONSULTATION WITH THE SHPO AND ACHP THAT IDENTIFY PROJECT REQUIREMENTS TO COMPLY WITH THE NHPA.
- * PREPARE IMPLEMENTATION SCHEDULE TO SATISFY THE MOA REQUIREMENTS.

THE DETAILS OF THIS PLAN ARE UNDER PREPARATION AND WILL BE A PART OF THE SCHEDULED OPERATIONAL MANAGEMENT PLAN DEVELOPMENT. SYSTEMATIC CULTURAL SURVEY INVESTIGATIONS ARE BEING PERFORMED AT THIS TIME AND WILL BE COMPLETED FOR PROJECT LANDS AS FUNDS ARE AVAILABLE. IN THE ABSENCE OF SUCH EFFORTS OR UNTIL THE DESCRIBED CULTURAL PLAN IS COMPLETED, THE FOLLOWING PROCEDURES SHOULD BE TAKEN:

- * RECREATION AREAS WHICH ARE SCHEDULED FOR DEVELOPMENT, IMPROVEMENTS OR EXPANSION SHOULD BE SURVEYED BY AN ARCHAEOLOGIST BEFORE CONSTRUCTION BEGINS. SURVEYS SHOULD CONCENTRATE ON RELATIVELY UNDISTURBED LAND SLATED FOR BOAT RAMPS, SLOPE CHANGES, STAIRWAYS AND PARKING LOTS, AS WELL AS CAMPING AREAS NEEDING NEW CAMPING PADS, ELECTRIC, WATER AND SEWER FACILITIES. SINCE CLEARING AND GRUBBING ACTIVITIES MAY ADVERSELY IMPACT CULTURAL RESOURCES, ANY AREAS REQUIRING THESE ACTIVITIES MUST BE SURVEYED TO DETERMINE THE PRESENCE OF ANY ARCHAEOLOGICAL SITES.
- * AREAS DESIGNATED FOR COMMERCIAL DEVELOPMENT MAY REQUIRE ARCHAEOLOGICAL SURVEYS IF PLANS CALL FOR THE USE OF RELATIVELY UNDISTURBED LAND, NEW RIGHT-OF-WAY, NEW CONSTRUCTION OR EXPANSION INTO UNDISTURBED LAND. RIPRAPPING, SLOPE CHANGES, DISPOSAL OF CHANNEL FILL AND PLACEMENT OF PARKING LOTS MAY ALSO NEED TO BE SURVEYED ARCHAEOLOGICALLY BEFORE CONSTRUCTION.
- * AREAS SET ASIDE FOR WILDLIFE, FORESTRY AND NATURAL RESOURCES ALSO MAY REQUIRE ARCHAEOLOGICAL SURVEYS FOR CERTAIN ACTIVITIES. THESE ACTIVITIES INCLUDE: NEW ROAD OR TRAIL BUILDING, NEW PARKING LOTS, AND CLEARING AND GRUBBING.

THESE UNDERTAKINGS SHOULD BE COORDINATED AND REVIEWED BY THE SHPO FOR FORMAL COMPLIANCE AND CONCURRENCE PRIOR TO IMPLEMENTATION OF PROPOSED ACTIVITIES.

THE FOLLOWING LIST IDENTIFIES INTENSIVE/SYSTEMATIC SURVEY INVESTIGATIONS UNDERTAKEN TO DATE INVOLVING PROJECT LANDS.

<u>SURVEY ACTIVITY</u>	<u>DATE COMPLETED</u>	<u>AMOUNT (\$)</u>
1. ARCHAEOLOGICAL AND GEOMORPHOLOGICAL SURVEY OF MISS. R. POOL 12	Nov 82	44,000
2. ARCHAEOLOGICAL AND GEOMORPHOLOGICAL SURVEY OF MISS. R. POOL 16.	Nov 82	38,000
3. ARCHAEOLOGICAL AND GEOMORPHOLOGICAL SURVEY OF MISS. R. POOL 11.	Dec 84	64,000
4. INTENSIVE ARCHAEOLOGICAL INVESTIGATIONS OF 11-Jd-126, MISS. R. POOL 12.	Nov 82	18,000
X 5. DATA RECOVERY AT 11-Jd-126, MISS. R. POOL 12X	Oct 83	—
6. INTENSIVE SURVEY OF 17 SELECTED RECREATION AREAS, MISS. R. POOLS 12-22.	Dec 84	35,000
X 7. DATA RECOVERY AT 47-Gt-24, GRANT RIVER PUBLIC USE AREA, MISS. R., POOL 11.	Dec 84	49,000
8. ARCHITECTURAL-HISTORICAL AND ENGINEERING STUDY OF LOCK AND DAM COMPLEXES 11-22, MISS. R. NINE-FOOT NAVIGATION PROJECT.	Dec 84	18,000

CONCLUSIONS

CONCLUSIONS

THIS PLAN PRESENTS THE LAND RESOURCE MANAGEMENT POLICIES, OBJECTIVES, AND USES FOR FEDERAL LANDS WITHIN POOL 22 BASED UPON AVAILABLE INFORMATION AND SUPPORTING AUTHORITY TO DATE. THESE GUIDELINES ARE TO BE FOLLOWED FOR THE RESOURCE ADMINISTRATION AND OPERATIONAL PRACTICES INVOLVING RESOURCE MANAGEMENT. MANY ISSUES IDENTIFIED IN THE PLAN WILL REQUIRE MORE INTENSIVE AND DETAILED COORDINATION PRIOR TO INDIVIDUAL IMPLEMENTATION. ADDITIONAL COORDINATION IS NECESSARY FOR THE GENERAL MANAGEMENT OR INDIVIDUAL ACTIONS IDENTIFIED IN THE PLAN, WHICH CAN BE ACCOMPLISHED COOPERATIVELY THROUGH SPECIFIC OR RELATED ON-GOING COORDINATION PROCESSES/PROGRAMS.

SPECIFIC FEATURES OF THE PLAN IDENTIFYING LAND-USE DESIGNATIONS, SHORELINE MANAGEMENT, PRIVATE USE POLICIES, RECREATION POTENTIALS, AND MANAGEMENT OR DEVELOPMENT ACTIONS OF OTHERS REPRESENT THE BEST USE AND OBJECTIVES FOR THE PROJECT RESOURCES RELATIVE TO THE GENERAL PUBLIC AND NATIONAL INTEREST INVOLVED. THIS PLAN SHALL SERVE AS THE BASIS FOR THE PREPARATION OF MANAGEMENT APPENDIXES AND FOR THE ARTICULATION OF DETAILED MANAGEMENT ACTIVITIES CONCERNING PROJECT RESOURCES WITHIN POOL 22.

THE PLAN IDENTIFIES A BALANCED APPROACH FOR MEETING CURRENT AND FUTURE PUBLIC DEMANDS ON THE RESOURCE WHILE MAINTAINING INHERENT ENVIRONMENTAL VALUES. WHEN APPROVED, IT WILL BE A FULLY COORDINATED PLAN FOR MANAGEMENT AND DEVELOPMENT OF EXISTING AND POTENTIAL FACILITIES AND ACTIVITIES FOR CORPS-ADMINISTERED PROJECT LANDS.

**LISTING OF FEDERAL LEGISLATIVE
AUTHORITIES**

ATTACH. 1

MISSISSIPPI RIVER - POOL 22
RECREATION-RESOURCE MASTER PLAN
LISTING OF FEDERAL
LEGISLATIVE AUTHORITIES

ATTACHMENT I

1. NAVIGATION
2. ENVIRONMENTAL
3. CULTURAL
4. RECREATION
5. FISH AND WILDLIFE

MISSISSIPPI RIVER - POOL 22
RECREATION-RESOURCE MASTER PLAN
LISTING OF FEDERAL LEGISLATIVE AUTHORITIES
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**SYSTEMS AND TECHNIQUES FOR
RECREATION DATA COLLECTION**

MISSISSIPPI RIVER - POOL 22
RECREATION-RESOURCE MASTER PLAN

SYSTEMS AND TECHNIQUES
FOR
RECREATION DATA COLLECTION

ATTACHMENT II

1. RECREATION - RESOURCE MANAGEMENT SYSTEM
2. SURVEY AND DATA COLLECTION TECHNIQUE

MISSISSIPPI RIVER - POOL 22
RECREATION-RESOURCE MASTER PLAN
SYSTEMS AND TECHNIQUES FOR RECREATION DATA COLLECTION
ATTACHMENT II

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SYSTEMS AND TECHNIQUES FOR RECREATION DATA COLLECTION

RECREATION-RESOURCE MANAGEMENT SYSTEM

GENERAL

THE RECREATION-RESOURCE MANAGEMENT SYSTEM (RRMS) IS A CORPS OF ENGINEERS AUTOMATIC DATA PROCESSING (COMPUTER) SYSTEM DESIGNED FOR COLLECTING AND ANALYZING ANNUAL RECREATION FACILITY AND RECREATION-RESOURCE MANAGEMENT INFORMATION FOR EACH PROJECT HAVING AN ANNUAL VISITATION OF 5,000 RECREATION DAYS OF USE OR MORE. THE OFFICE, CHIEF OF ENGINEERS, ANNUALLY FURNISHES THE NATIONAL PARK SERVICE AND THE DEPARTMENT OF AGRICULTURE INFORMATION COLLECTED BY THIS SYSTEM FOR INTEGRATION INTO NATIONWIDE REPORTS. DATA FROM THIS SYSTEM IS USED IN THE PERFORMANCE OF THE CORPS' RECREATION-RESOURCE MANAGEMENT MISSION AND IS PROVIDED TO OTHER FEDERAL, STATE, AND LOCAL AGENCIES, MEMBERS OF CONGRESS, ORGANIZATIONS, INDIVIDUALS, AND THE NEWS MEDIA. AN ANNUAL UPDATE IS PERFORMED FOR SUPPLEMENTAL, MAINTENANCE, AND CORRECTIONAL DATA PURPOSE.

RRMS COMPONENTS

THERE ARE EIGHT TRANSCRIPT PARTS WHICH ARE PRESENTED IN EXHIBITS AII 1-8. BASIC REPORTING DATA CONTAINED WITHIN THESE PARTS INCLUDE: PROJECT LOCATION AND DESCRIPTION (PART I); PROXIMITY TO STANDARD METROPOLITAN STATISTICAL AREAS, RECREATION EXPENDITURES, AND VISITATION USE STATISTICS (PART II); FACILITY INVENTORY, PLANTING PROGRAM, AND RESOURCE MANAGEMENT REPORT SCHEDULES (PART III); PERSONNEL SUPPORT, GOLDEN AGE

PASSPORT DATA, AND LAND/WATER USE ALLOCATIONS AND ADMINISTRATION (PART IV); PROJECT MANAGER INFORMATION (PART V); VISITOR ASSISTANCE (PART VI); RECREATION AREA DESCRIPTIONS (PART VII); AND, CONCESSION AND FEE AREA INFORMATION (PART VIII). ER 1130-2-414 PROVIDES THE GUIDANCE FOR THE USE OF THE RRMS.

RECREATION DATA COLLECTION

VISITATION DATA CONTAINED WITHIN THE RRMS (PARTS II AND III) ARE USED FOR ANALYSIS OF THE RECREATION USE CHARACTERISTIC AND FUTURE USE PREDICTIONS FOR THE PROJECT. STANDARD REPORTING PROCEDURES AND CRITERIA FOR SELECTED USE DATA ARE AS FOLLOWS:

RECREATIONAL DAYS OF USE. THE MONTHLY AND TOTAL ANNUAL ESTIMATED NUMBER OF RECREATIONAL DAYS OF USE EXPERIENCED AT THE PROJECT FOR THE CALENDAR YEAR COVERED IS REPORTED. A "RECREATION DAY OF USE" IS DEFINED AS A VISIT BY ONE INDIVIDUAL TO A RECREATION DEVELOPMENT OR AREA FOR RECREATION PURPOSES DURING ANY REASONABLE PORTION OR ALL OF A 24-HOUR PERIOD. THE VISITATION DOES NOT INCLUDE THOSE PEOPLE PASSING OVER, THROUGH, OR ALONG THE PROJECT, OR STOPPING MOMENTARILY TO VIEW A PROJECT AREA OR STRUCTURE. TO COUNT AS A "RECREATION DAY," THE PURPOSE OF THE VISIT MUST BE SPECIFICALLY TO USE OR VIEW THE PROJECT AREA.

PERCENT OF ACTIVITY USE. THIS DATA REPRESENTS THE PERCENT OF VISITOR PARTICIPATION FOR THE SELECTED ACTIVITIES. THE TOTAL ACTIVITY USE WILL BE GREATER THAN 100 PERCENT OF THE TOTAL RECREATION DAYS OF USE SINCE THE AVERAGE VISITOR NORMALLY PARTICIPATES IN MORE THAN ONE ACTIVITY PER VISIT. THE DATA FIELD FOR BOATING REFERS TO PLEASURE BOATING, AND IS EXCLUSIVE OF ANY OTHER BOAT-ASSOCIATED ACTIVITY (I.E., FISHING FROM THE BOAT OR WATER-SKIING).

RCS: DAEN-CWO-39(R2)

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EXHIBIT AII-1
RRMS TRANSCRIPT

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EXHIBIT AII-2
RRMS TRANSCRIPT

RCS: DAEN--CWO--39(R2)

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EXHIBIT AII-3
RRMS TRANSCRIPT

RCS: DAEN--CWO-39(R2)

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Page 4

EXHIBIT AII-4
RRMS TRANSCRIPT

EXHIBIT A11-5
RRMS TRANSCRIPT

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EXHIBIT AII-6
RRMS TRANSCRIPT

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EXHIBIT AII-8
RRMS TRANSCRIPT

FAMILY DAY USE. THIS FIGURE REPRESENTS THE AVERAGE WEEKEND DAY ATTENDANCE, DURING THE PEAK MONTH OF VISITATION FOR THE PROJECT, FOR FAMILY DAY USE ACTIVITIES. THE FOLLOWING CRITERIA ARE USED TO DETERMINE THIS ATTENDANCE: THE "TOTAL DAY USE VISITATION FOR THE PEAK MONTH" TIMES THE "PERCENT OF WEEKEND ATTENDANCE" (DETERMINED FROM SURVEY DATA) DIVIDED BY THE "NUMBER OF HOLIDAYS AND WEEKEND DAYS IN THAT MONTH." THIS FIGURE ALSO REPRESENTS THE DESIGN LOAD VISITATION FOR DETERMINING DAY USE FACILITIES.

FAMILY CAMPING. THIS FIGURE IS DETERMINED SIMILAR TO THE DAY USE DATA GUIDANCE ABOVE, EXCEPT IT REPRESENTS CAMPING PARTICIPATION USE. IT ALSO IS CONSIDERED THE DESIGN LOAD VISITATION BASE FOR SUCH FACILITIES.

FACILITY INVENTORY. INCLUDED IN THIS DATA FIELD IS AN EVALUATION TO DETERMINE THE NUMBER OF UNITS NEEDED TO SUPPORT RECORDED VISITATION. THE FOLLOWING ANALYSIS IS USED FOR DETERMINING PICNICKING, CAMPING, AND BOAT LAUNCHING UNITS:

X PICNICKING. THE GIVEN FACTORS OF EVALUATION ARE THAT A FAMILY UNIT CONSISTS OF 3.2 PERSONS, THAT 40 PERCENT OF ALL DAY USERS DESIRE DEVELOPED PICNIC SITES, AND THAT EACH PICNIC SITE IS USED BY TWO FAMILY UNITS PER DAY (TURNOVER FACTOR). THESE FACTORS ARE THEN INCLUDED IN THE FOLLOWING CALCULATION TO DETERMINE THE NUMBER OF FAMILY DAY USE UNITS NEEDED TO SUPPORT THE DESIGN LOAD DAY VISITATION. MULTIPLY VISITATION OF THE PEAK MONTH (M) TIMES THE PERCENT OF VISITORS ON HOLIDAYS AND WEEKENDS (.55) TIMES 40 PERCENT AND DIVIDE BY THE NUMBER OF WEEKEND DAYS AND HOLIDAYS (10). THIS FIGURE (DL) IS THEN DIVIDED BY 3.2 TO GET THE NUMBER OF FAMILY UNITS (FU) AND BY 2 TO REFLECT THE TURNOVER RATE TO EQUAL AN INSTANT DESIGN LOAD (IDL) OF FAMILY DAY USE UNITS. X

PICNICKING FORMULA

$$\frac{(M) (.55) (.40)}{10} = DL \quad \frac{DL}{3.2} = FU \quad \frac{FU}{2} = IDL$$

X CAMPING. THE GIVEN FACTORS OF EVALUATION ARE THAT A FAMILY UNIT CONSISTS OF 3.2 PERSONS, THAT EACH FAMILY UNIT DESIRES A DEVELOPED SITE, AND THAT EACH CAMPING UNIT IS OCCUPIED ONLY ONCE PER DAY (NO TURNOVER FACTOR). THE CALCULATION FORMULA FOR DETERMINING THE NUMBER OF FAMILY UNITS NEEDED TO SUPPORT THE DESIGN LOAD DAY VISITATION IS AS FOLLOWS: MULTIPLY CAMPING VISITATION FOR THE PEAK MONTH (CM) TIMES THE PERCENT OF CAMPER WHO VISIT ON WEEKENDS OR HOLIDAYS (.60) AND THEN DIVIDE BY THE NUMBER OF HOLIDAYS AND WEEKEND DAYS (10). NEXT, DIVIDE THIS FIGURE (DL) BY 3.2 WHICH WILL RESULT IN THE NUMBER OF FAMILY UNITS (FU).

CAMPING FORMULA

$$\frac{(CM) (.60)}{10} = DL \quad \frac{DL}{2} = FU$$

X BOAT LAUNCHING. THE NUMBER OF BOAT LAUNCHES ON AN AVERAGE WEEKEND DAY DURING THE PEAK MONTH IS DETERMINED FROM PROJECT VISITATION SURVEY DATA. A STANDARD DESIGN LOAD FOR A BOAT LAUNCHING LANE IS 40 LAUNCHES PER DAY.

SURVEY AND DATA COLLECTION TECHNIQUE

GENERAL

THE PRIMARY METHOD OF OBTAINING VISITOR ATTENDANCE IS MADE BY VEHICLE COUNT OF RECREATION TRAFFIC ENTERING CORPS-OPERATED RECREATION AREAS. OCCASIONAL ON-SITE PERSONAL INTERVIEWS (SURVEY) OF THE VISITORS ARE ALSO PERFORMED TO OBTAIN OTHER STATISTICAL INFORMATION AND TO CALIBRATE THE CONVERSION OF THE VEHICLE COUNT TO RECREATION DAYS OF USE. ANALYTICAL TECHNIQUES DEVELOPED AND DESCRIBED BY THE WATERWAYS EXPERIMENT STATION ^{1/} (WES) ARE BEING IMPLEMENTED TO IMPROVE AND STANDARDIZE ESTIMATION OF RECREATION VISITATION DATA FOR THE PROJECT.

METHODOLOGY

TRAFFIC METERING IS A COMMON TECHNIQUE USED TO ESTIMATE PROJECT VISITATION, AND IS RELATIVELY A SIMPLE CONCEPT TO APPLY. THE BASIC ASSUMPTION IS THAT ALL VISITORS ARRIVE AT A PROJECT BY AUTOMOBILE AND ARE THEREBY COUNTED AS THEY ENTER. FACTORS ARE THEN APPLIED TO THIS VEHICLE COUNT TO ARRIVE AT A VISITOR ATTENDANCE ESTIMATE. SUCH FACTORS INVOLVE ESTABLISHMENT OF THE AVERAGE NUMBER OF OCCUPANTS PER VEHICLE AND ADJUSTMENT FOR MULTIPLE VEHICLE AND NONRECREATION VEHICLE COUNTING. THIS MEASUREMENT IS SUPPLEMENTED WITH INFORMATION OBTAINED FROM OTHER SOURCES (RANGER OBSERVATIONS, ON-SITE VISITOR SURVEY, OR USER REGISTRATION DATA) TO IMPROVE THE QUALITY OF THE DATA. A DETAILED EXPLANATION OF THE PROCEDURE AND METHODOLOGY IS CONTAINED IN THE ABOVE REFERENCED WES REPORT.

^{1/} U.S. ARMY ENGINEER WATERWAYS EXPERIMENT STATION, A HANDBOOK FOR CONDUCTING RECREATION SURVEYS AND CALCULATING ATTENDANCE AT CORPS OF ENGINEERS PROJECTS, TECHNICAL REPORT R-79-1, MAY 1979.

DATA COLLECTION TECHNIQUE

See rewrite

TRAFFIC COUNTS ARE GATHERED MONTHLY FOR EACH CORPS RECREATION FACILITY BY USING A MAGNETIC LOOP COUNTER. THE COUNTER REGISTERS A VEHICLE UPON ITS ENTRANCE AND EXIT OF THE RECREATION AREA. SURVEY OBSERVATIONS FOR THE TRAFFIC ARE USED TO DETERMINE LOAD FACTOR (AVERAGE NUMBER OF PEOPLE PER VEHICLE) AND THE PERCENTAGES OF USE BY NONRECREATION VEHICLES (NRV'S) AND RETURN RECREATION VEHICLES (RRV'S). RETURN RECREATION VEHICLES ARE DESCRIBED AS THOSE TRAVELING TO AND FROM A RECREATION AREA AS A PART OF THE ORIGINAL VISIT PARTICIPATION. NONRECREATION TRAFFIC INCLUDES MAINTENANCE, COMMERCIAL, AND SIGHTSEERS THAT DO NOT ARRIVE TO PARTICIPATE IN RECREATION OR FOR SPECIFIC SCENIC ENJOYMENT PURPOSES. THESE FACTORS ARE DETERMINED FOR EACH RECREATION AREA, SINCE THE USE CHARACTERISTICS DIFFER SIGNIFICANTLY FOR THESE REMOTE AREAS. THE CALCULATION FACTORS FOR THE RECREATION AREAS LOCATED IN POOL 22 ARE AS FOLLOWS:

CALCULATION FACTORS

<u>AREA</u>	<u>PEOPLE/VEHICLE</u>	<u>NRV'S/RRV'S</u>
JOHN HAY	2.9	.36
PARK-N-FISH	2.8	.29
L/D 22	2.4	.14

MISSISSIPPI RIVER - POOL 22
RECREATION-RESOURCE MASTER PLAN

SHORELINE MANAGEMENT PLAN
(COMPONENT OF OPERATIONAL MANAGEMENT PLAN)

ATTACHMENT III

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2. OBJECTIVE
3. MEMORANDUM OF UNDERSTANDING
4. DEFINITIONS
5. SHORELINE USE DESIGNATIONS
6. ADMINISTRATIVE POLICIES
7. MANAGEMENT POLICIES
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MISSISSIPPI RIVER - POOL 22
RECREATION-RESOURCE MASTER PLAN

SHORELINE MANAGEMENT PLAN
ATTACHMENT III

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SHORELINE MANAGEMENT PLAN

PURPOSE

THIS PLAN IDENTIFIES SPECIFIC SHORELINE MANAGEMENT PROCEDURES THAT WILL BE APPLIED IN DEALING WITH PRIVATE EXCLUSIVE USE ON PROJECT ADMINISTERED LANDS AND WATERS IN THE ROCK ISLAND DISTRICT, IN ACCORDANCE WITH TITLE 36, CHAPTER III, PART 327.30, CODE OF FEDERAL REGULATIONS. THE PROVISIONS CONTAINED IN THIS SHORELINE MANAGEMENT PLAN DO NOT APPLY TO COTTAGE SITE AND RESIDENTIAL LEASES OR OTHER HABITABLE STRUCTURES. THESE STRUCTURES WILL BE PHASED-OUT BY 31 DECEMBER 1989 AS EXPLAINED IN SECTION IX OF THE MASTER PLAN.

OBJECTIVE

THE ALLOCATION OF PROJECT LANDS FOR PRIVATE RECREATION USE IS NOT CONSISTENT WITH THE INTENT OF CURRENT RESOURCE MANAGEMENT POLICIES. HOWEVER, AT PROJECTS WHERE SUCH COMMITMENTS CURRENTLY EXIST, SUCH ACTIVITIES MAY BE ALLOWED TO CONTINUE SUBJECT TO A SPECIFIED MANAGEMENT PLAN. IT IS THE OBJECTIVE OF THE CORPS TO MANAGE PRIVATE EXCLUSIVE USE ON PROJECT LANDS TO THE DEGREE NECESSARY TO GAIN MAXIMUM BENEFITS TO THE GENERAL PUBLIC. A COROLLARY OF THIS OBJECTIVE IS THE PROTECTION AND RESTORATION OF DESIRABLE ENVIRONMENTAL CHARACTERISTICS OF THE NATURAL SHORELINE, AND THE COMPATIBLE USE WITH OTHER AUTHORIZED PROJECT PURPOSES.

MEMORANDUM OF UNDERSTANDING

IN OCTOBER 1980, THE U.S. ARMY CORPS OF ENGINEERS (NORTH CENTRAL DIVISION) AND THE U.S. FWS (NORTH CENTRAL REGION) ENTERED INTO AN AGREEMENT DETAILING CONDITIONS FOR A MORATORIUM ON PERMITS FOR NEW PRIVATE RECREATION STRUCTURES ON NATIONAL REFUGE LANDS LOCATED ON THE UPPER MISSISSIPPI RIVER. THIS TEMPORARY ACTION REMAINS IN EFFECT UNTIL EACH AGENCY HAS COMPLETED THEIR RESOURCE MANAGEMENT PLAN, OR OCTOBER 1985, WHICHEVER COMES FIRST. THE PURPOSE OF THIS TEMPORARY RESTRICTION IS TO ALLOW FOR A FULL ASSESSMENT OF MANAGEMENT OPTIONS PRIOR TO ANY ADDITIONAL ESTABLISHMENT/COMMITMENT OF PUBLIC LANDS FOR PRIVATE EXCLUSIVE USE. AUTHORIZED PRIVATE STRUCTURES LOCATED ON FEDERAL REFUGE LANDS ARE NOT AFFECTED BY THIS AGREEMENT, NOR DOES THE AGREEMENT APPLY TO PRIVATELY OWNED LANDS OR TO ALL FEDERAL LANDS. IT APPLIES ONLY TO THOSE FEDERAL LANDS WHICH ARE A PART OF THE UPPER MISSISSIPPI RIVER FISH AND WILDLIFE REFUGE OR THE MARK TWAIN NATIONAL WILDLIFE REFUGE.

DEFINITIONS

SHORELINE USE PERMIT

REAL ESTATE INSTRUMENT THAT AUTHORIZES A STRUCTURE(S) OR A SPECIFIED ACT(S) AT A DESIGNATED LOCATION ON GOVERNMENT LAND, BUT GRANTS NO PROPERTY RIGHTS IN REAL ESTATE, OR ANY OTHER EXCLUSIVE PRIVILEGES.

PRIVATE RECREATION STRUCTURE

PRIVATELY OWNED STRUCTURE(S) INTENDED PRIMARILY FOR INDIVIDUAL, FAMILY, OR LIMITED GROUP USE. THIS TERM DOES NOT INCLUDE STRUCTURES INTENDED FOR GENERAL PUBLIC OR COMMERCIAL USE. TYPICAL STRUCTURES INCLUDE:

- | | |
|-----------------------------|--------------------------------------|
| 1. BOAT DOCKS | 10. SAFETY FENCES |
| 2. BOAT HOUSE (BOAT GARAGE) | 11. WALKWAYS/BRIDGES |
| 3. BOAT LIFTS | 12. STEPS |
| 4. BOAT RAMPS | 13. PUMPS |
| 5. MARINE RAILS | 14. UTILITY LINES |
| 6. BOAT WINCHES | 15. WELLS |
| 7. BOAT ROLLERS | 16. SKI FLOATS/JUMPS |
| 8. BOAT STORAGE RACKS | 17. LANDINGS/LONG-TERM MOORING SITES |
| 9. STORAGE SHEDS | |

ASSOCIATED ACTIVITIES

ACTIVITIES WHICH OFTEN OCCUR IN CONNECTION WITH PRIVATE RECREATION STRUCTURES. THEY INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

1. PLANTING (TREES, SHRUBS, SEEDING)
2. EROSION CONTROL MEASURES

PRIVATE EXCLUSIVE USE

THE USE, OVER AN EXTENDED PERIOD OF TIME, OF CORPS ADMINISTERED PROJECT LAND OR WATER AREA FOR PLACEMENT AND/OR USE OF ANY PRIVATE RECREATIONAL FACILITIES, OR SUCH ASSOCIATED USE ACTIVITIES.

SHORELINE USE DESIGNATIONS

GENERAL

THE FOLLOWING DESCRIBED SHORELINE MANAGEMENT CLASSIFICATIONS OF USE HAVE BEEN INCORPORATED IN THE DEFINITIONS FOR DESIGNATED LAND-USE CATEGORIES CONTAINED IN THE MASTER PLAN (SEE SECTION VII). BASIC MANAGEMENT ACTIVITIES WILL BE CONSISTENT WITH THESE DESCRIBED PURPOSES. THE CORRESPONDING LAND-USE ALLOCATION CATEGORIES ARE ALSO REFERENCED.

LIMITED DEVELOPMENT AREAS

SHORELINE AREAS WHERE PRIVATE EXCLUSIVE USE PRIVILEGES OR FACILITIES MAY BE PERMITTED. THIS IS THE ONLY CLASSIFICATION UNDER WHICH SUCH USE IS ALLOWED. THE CORRESPONDING LAND-USE CATEGORY IS RECREATION-LOW DENSITY (SPECIAL USE).

PUBLIC RECREATION AREAS

SHORELINES WITHIN DESIGNATED OR DEVELOPED RECREATION AREAS. COMMERCIAL RECREATION CONCESSIONAIRE FACILITIES ARE PERMITTED IN THESE AREAS. THE CORRESPONDING LAND-USE CATEGORY IS RECREATION-INTENSIVE USE.

PROTECTED SHORELINE AREAS

SHORELINE AREAS DESIGNATED PRIMARILY TO PROTECT SCENIC, ENVIRONMENTAL, FISH AND WILDLIFE VALUES. PHYSICAL PROTECTION OF THE SHORELINE TO PREVENT EROSION PROBLEMS MAY

BE PERMITTED AFTER DUE CONSIDERATION OF THE EFFECTS OF SUCH ACTIONS ON ENVIRONMENTAL AND PHYSICAL CHARACTERISTICS OF THE AREA. NO PRIVATE RECREATIONAL FACILITIES ARE PERMITTED. CORRESPONDING LAND-USE CATEGORIES ARE RECREATION-LOW DENSITY (PUBLIC USE), AND WILDLIFE MANAGEMENT/RESERVE FOREST LAND.

PROHIBITED SHORELINE AREAS

SHORELINE AREAS ALLOCATED FOR PROTECTION OF ECOSYSTEMS OR THE PHYSICAL SAFETY OF THE PUBLIC. NO PRIVATE RECREATION FACILITIES AND MODIFICATION OF LAND FORM AND VEGETATIVE COMMUNITIES ARE PERMITTED IN THESE AREAS. THE CORRESPONDING LAND-USE CATEGORIES ARE PROJECT OPERATIONS AND NATURAL AREA.

ADMINISTRATIVE POLICIES

REAL ESTATE INSTRUMENTS

ALL PERMITTED PRIVATE EXCLUSIVE USE FACILITIES OR ASSOCIATED ACTIVITIES WILL BE COVERED BY A LICENSE OR OTHER LEGAL GRANT ISSUED BY THE REAL ESTATE DIRECTORATE. CONDITIONS OF SUCH AGREEMENTS SHALL BE CONSISTENT WITH, BUT NOT LIMITED TO, PROVISIONS CONTAINED IN TITLE 36, CHAPTER III, PART 327.30, APPENDIX C, OF THE CODE OF FEDERAL REGULATIONS.

PERMIT APPLICATIONS

APPLICATIONS FOR ANY PRIVATE WATERFRONT RECREATION FACILITIES WILL BE MADE TO THE DISTRICT AND REVIEWED WITH FULL CONSIDERATION OF THE POLICIES SET FORTH IN THE MASTER PLAN AND THE SHORELINE MANAGEMENT PLAN. APPLICANTS FOR A PERMIT SHALL, PRIOR TO THE START OF CONSTRUCTION, SUBMIT FOR APPROVAL PLANS AND SPECIFICATIONS OF THE FACILITY PROPOSED, INCLUDING: ENGINEERING DETAILS, STRUCTURAL DESIGN, ANCHORAGE METHOD, CONSTRUCTION MATERIALS, THE TYPE, SIZE, LOCATION AND OWNERSHIP OF THE FACILITY, THE EXPECTED DURATION OF THE USE AND AN INDICATION OF THE WILLINGNESS TO ABIDE BY THE RULES AND REGULATIONS AND THE CONDITIONS OF THE PERMIT. PERMIT APPLICATIONS SHALL ALSO IDENTIFY AND LOCATE LAND-BASED SUPPORT FACILITIES WHICH MAY REQUIRE A REAL ESTATE INSTRUMENT.

PERMITS WILL BE ISSUED FOR PERIODS OF ONE TO FIVE YEARS, BUT ARE REVOCABLE BY THE DISTRICT ENGINEER WHENEVER HE DETERMINES THAT THE PUBLIC INTEREST REQUIRES SUCH REVOCATION OR THAT THE PERMITTEE HAS FAILED TO COMPLY WITH CONDITIONS OF THE PERMIT. SPECIFIED ACTS PERMITS WILL BE ISSUED AS NECESSARY, FOR SHORT TERMS (PERIOD OF ACTION), TO PROVIDE FOR CORRECTIVE MEASURES SUCH AS PLANTING AND EROSION CONTROL.

TRANSFER OF PERMITS

ALL SHORELINE USE PERMITS ARE NON-TRANSFERRABLE. UPON SALE OR OTHER TRANSFER OF THE PERMITTED FACILITY OR THE DEATH OF THE PERMITTEE, THE PERMIT IS NULL AND VOID.

TERMINATION CONDITIONS

THE DISTRICT ENGINEER MAY REVOKE ANY PERMIT OR LICENSE FOR PRIVATE RECREATIONAL USE IF AT ANY TIME IT IS DETERMINED THAT, IN THE SOLE AND ABSOLUTE DISCRETION OF THE DISTRICT ENGINEER OR HIS AUTHORIZED REPRESENTATIVE, A PERMITTED OR GRANDFATHERED PRIVATE RECREATIONAL USE IS NOT IN THE PUBLIC INTEREST, OR THAT A PERMIT OR LICENSE CONDITION HAS NOT BEEN MET.

ONLY LAWFUL PERMITTED PRIVATE RECREATION USES OR STRUCTURES WILL BE ALLOWED TO REMAIN ON CORPS ADMINISTERED LAND. ANY UNAUTHORIZED USE OR STRUCTURE WILL BE DEALT WITH AS AN ENCROACHMENT ON PUBLIC PROPERTY UNDER ENFORCEMENT PROVISIONS CONTAINED IN TITLE 36, CHAPTER III, PART 327.20, OF THE CODE OF FEDERAL REGULATIONS.

EXISTING LAWFUL PERMITTED PRIVATE RECREATION STRUCTURES LOCATED OUTSIDE OR DETERMINED IN EXCESS OF DENSITY ALLOWANCE OF DESIGNATED USE AREAS WILL BE ALLOWED TO REMAIN UNTIL DECEMBER 31, 1989, PROVIDED THAT SUCH USES DO NOT PRESENT A THREAT TO LIFE OR PROPERTY, THAT THE STRUCTURES ARE MAINTAINED IN USABLE CONDITION, AND THAT CONDITIONS OF THE PERMIT OR LICENSE ARE MET. AFTER DECEMBER 31, 1989, THE GRANDFATHERING PROVISIONS SET FORTH IN THIS PLAN ARE APPLICABLE.

GRANDFATHERING PROVISIONS

A USE OR STRUCTURE MAY REMAIN UNDER PERMIT UNTIL REPLACEMENT IS REQUIRED. THE THRESHOLD BEYOND WHICH ANNUAL MAINTENANCE AND REPAIR WILL BE DEEMED TO CONSTITUTE REPLACEMENT IS 30 PERCENT OF THE FAIR MARKET VALUE OF A STRUCTURE.

A USE OR STRUCTURE MAY REMAIN UNDER PERMIT UNTIL THE DEATH OF THE PERMITTEE AND HIS OR HER SPOUSE.

A USE OR STRUCTURE MY REMAIN UNDER PERMIT UNTIL THE SALE OR OTHER TYPE OF TRANSFER OF LEGAL OWNERSHIP OR CESSATION OF USE OF THE FACILITY.

MANAGEMENT POLICIES

DENSITY OF DEVELOPMENT

THE DENSITY OF PRIVATE FLOATING RECREATION FACILITIES IS ESTABLISHED FOR EACH LIMITED DEVELOPMENT USE AREA WITHIN THE INDIVIDUAL POOL MASTER PLANS. SUCH DENSITIES ARE CONSISTENT WITH ECOLOGICAL AND SCENIC CHARACTERISTICS OF THE NATURAL SHORELINE. IN ALL CASES, THE DENSITY OF DEVELOPMENT SPECIFIED IN THE PLANS IS NOT MORE THAN 50% OF THAT SHORELINE ALLOCATED AS LIMITED DEVELOPMENT AREA. IN THOSE CASES WHERE CURRENT DENSITY OF DEVELOPMENT EXCEEDS THE DENSITY LEVEL ESTABLISHED, THE DENSITY WILL BE REDUCED ACCORDING TO PROVISIONS SET FORTH HEREIN.

WHEN PRIVATE FLOATING BOAT MOORAGE FACILITIES ARE DESIRED, COMMUNITY MOORING FACILITIES WILL BE ENCOURAGED IN AN EFFORT TO REDUCE THE PROLIFERATION OF INDIVIDUAL FACILITIES. IT IS THE POLICY TO ISSUE ONLY ONE PERMIT FOR A COMMUNITY BOAT MOORING FACILITY WITH ONE PERSON DESIGNATED AS THE PERMITTEE AND RESPONSIBLE FOR ALL MOORAGE SPACES OF THE FACILITY. IF, FOR EXTENUATING CIRCUMSTANCES, THIS APPROACH IS NOT FEASIBLE, INDIVIDUAL PERMITS MAY BE GRANTED FOR INDIVIDUAL MOORAGE SECTIONS OF THE COMMUNITY MOORAGE FACILITY. THE LATTER METHOD IS STRONGLY DISCOURAGED.

PERMIT REQUIREMENTS

THE USE OF BOAT MOORING FACILITIES WILL BE LIMITED TO THE MOORING OF BOATS AND THE STORAGE OF GEAR ESSENTIAL TO THE OPERATION OF THE WATERCRAFT.

THE INSTALLATION OF SLEEPING ACCOMMODATIONS, COOKING FACILITIES, HEATING FACILITIES, TOILET AND SHOWER FACILITIES, REFRIGERATION, TELEVISION, AND OTHER ITEMS CONDUCTIVE TO HUMAN HABITATION IN PRIVATE RECREATION FACILITIES IS PROHIBITED. PRIVATE FLOATING RECREATION FACILITIES SHALL NOT BE USED FOR HUMAN HABITATION.

NO PRIVATE FLOATING FACILITY WILL EXCEED THE MINIMUM SIZE REQUIRED TO MOOR THE OWNER'S BOAT OR BOATS PLUS THE MINIMUM SIZE REQUIRED FOR AN INCLOSED LOCKER FOR THE STORAGE OF OARS, LIFE PRESERVERS, AND OTHER ITEMS ESSENTIAL TO THE OPERATION OF THE WATERCRAFT.

ALL PRIVATE FLOATING RECREATION FACILITIES WILL BE CONSTRUCTED IN ACCORDANCE WITH PLANS AND SPECIFICATIONS APPROVED BY THE DISTRICT ENGINEER OR HIS AUTHORIZED REPRESENTATIVE.

THE SIZE OF ALL STRUCTURES WILL BE KEPT TO A MINIMUM TO LIMIT ENCROACHMENT OF THE WATER SURFACE.

THE PROCEDURES SET FORTH HEREIN REGARDING THE ISSUANCE OF PERMITS FOR INDIVIDUAL FACILITIES SHALL ALSO APPLY TO THE ISSUANCE OF PERMITS FOR NON-COMMERCIAL COMMUNITY PIERS.

WHERE FACILITIES ARE ANCHORED TO THE SHORE, THEY SHALL BE SECURELY ANCHORED BY MEANS OF MOORINGS WHICH DO NOT OBSTRUCT THE FREE USE OF THE SHORELINE OR UNDULY DAMAGE VEGETATION.

BOAT MOORING BUOYS AND FLOTATION UNITS OF FLOATING FACILITIES SHALL BE CONSTRUCTED OF MATERIAL WHICH WILL NOT BECOME WATERLOGGED OR SINK WHEN PUNCTURED OR CAUSE CHEMICAL POLLUTION.

THE COLOR AND MARKING OF ALL BOAT MOORING BUOYS WILL CONFORM TO THE UNIFORM STATE WATERWAY SYSTEM, AND THE TOP OF THE BUOY WILL BE NO LESS THAN 18 INCHES ABOVE THE WATERLINE.

ALL PRIVATE FLOATING RECREATION FACILITIES WILL BE PLACED SO AS NOT TO INTERFERE WITH NAVIGATION.

PERMITS FOR PRIVATE BOAT PIERS OR BOATHOUSES AND MOORING FACILITIES WILL BE ISSUED ONLY WHEN THE OWNER FILES A PERMANENT ADDRESS AND TELEPHONE NUMBER WITH THE RESOURCE MANAGER AT WHICH HE MAY BE REACHED IN CASE OF EMERGENCY WHEN HE IS NOT ON SITE.

THE DISTRICT ENGINEER OR HIS AUTHORIZED REPRESENTATIVE IS AUTHORIZED TO PLACE SPECIAL CONDITIONS IN THE PERMIT DEEMED NECESSARY. IT MAY BE DESIRABLE IN SOME LOCATIONS TO ESTABLISH A MINIMUM SURVEILLANCE INTERVAL TO BE OBSERVED BY THE FACILITY OWNER OR HIS REPRESENTATIVE.

RECREATIONAL VESSEL REQUIREMENTS

THE FOLLOWING REQUIREMENTS APPLY TO ALL RECREATIONAL VESSELS MOORED TO LANDS UNDER THE JURISDICTION OF THE CORPS OF ENGINEERS.

EACH VESSEL, WHEN NOT IN ACTUAL USE, MUST BE TIED TO A MOORING STRUCTURE AUTHORIZED BY A DEPARTMENT OF THE ARMY PERMIT, WHERE APPLICABLE, AND A SPECIAL USE LICENSE OR LEASE AGREEMENT, EXCEPT DURING TEMPORARY MOORING PERIODS OF 14 DAYS OR LESS IN CONNECTION

WITH BOAT OUTINGS. TEMPORARY MOORING TO TREES OR OTHER NATURAL FEATURES OR BEACHING A VESSEL AT ANY ONE LOCATION WILL BE LIMITED TO 14 DAYS DURING ANY 30-DAY PERIOD.

EACH VESSEL MUST DISPLAY A VALID STATE REGISTRATION NUMBER AND MUST BE EQUIPPED ACCORDING TO U.S. COAST GUARD REGULATIONS AND APPLICABLE STATE BOATING REGULATIONS.

VESSELS (EXCEPT CANOES, ROWBOATS, AND SAILBOATS) MUST HAVE ATTACHED A MOTOR OF SUFFICIENT HORSEPOWER TO SAFELY PROPEL THE VESSEL IN PROJECT WATERS AND THE VESSEL MUST BE READILY MOBILE.

ONLY QUICK-DISCONNECT TEMPORARY ELECTRIC LINES, WATER LINES, AND TELEPHONE LINES TO THE VESSEL WILL BE ALLOWED. NO PERMANENT UTILITY HOOKUPS WILL BE PERMITTED.

ALL MOORING EQUIPMENT SUCH AS LINES, CHAINS, AND CABLES MUST BE ATTACHED IN SUCH A MANNER THAT THEY CAN BE DISCONNECTED WITHIN A FEW MINUTES TIME. LOCKS MAY BE USED ON MOORING EQUIPMENT TO PROVIDE SECURITY.

AN OWNER OF ANY VESSEL MOORED ON GOVERNMENT LAND MUST PROVIDE ADEQUATE SURVEILLANCE OF THE VESSEL AT ALL TIMES TO ENSURE THAT IT IS PROPERLY MOORED AND SECURED.

ALL VESSELS MUST BE REMOVED FROM THE WATER EACH YEAR PRIOR TO RIVER FREEZE UP AND THE VESSELS MAY NOT BE RETURNED TO THE WATER UNTIL THE SPRING THAW.

VESSELS MOORED AT APPROVED AUTHORIZED MOORING STRUCTURES MAY ONLY BE USED FOR OVERNIGHT OCCUPANCY WHEN SUCH USE IS INCIDENTAL TO RECREATIONAL BOATING. OVERNIGHT OCCUPANCY OF THESE VESSELS WILL BE LIMITED TO 14 DAYS DURING ANY 30-DAY PERIOD. VESSELS MAY NOT BE USED AS A PLACE OF HABITATION OR RESIDENCE.

FLOTATION FOR THE VESSEL WILL EITHER BE COMPOSED OF A HARD SHELL MATERIAL SUCH AS A PLASTIC, FIBERGLASS, OR METAL PLATE TYPE HULL, OR HARD SHELL PONTOONS APPROPRIATELY

SIZED FOR THE WEIGHT OF THE VESSEL. FLOTATION DEVICES CONSISTING OF UNPROTECTED STYROFOAM TYPE MATERIALS, BARRELS OR METAL DRUMS, ARE UNACCEPTABLE. THESE MATERIALS CAN EITHER BE EASILY PIERCED, BREAK APART, OR FLOAT OUT FROM UNDER THE VESSEL WHILE IT IS UNDERWAY AND WOULD LITTER THE RIVER AND CAUSE THE VESSEL TO BECOME A SAFETY HAZARD TO THE OCCUPANTS AS WELL AS OTHER BOATERS.

ALL TOILETS ON VESSELS MUST MEET APPLICABLE STATE REQUIREMENTS. WASTE WATER FROM TOILETS, SINKS, LAVATORIES, SHOWERS, OR OTHER WASTE WATER, MUST BE CAPTURED IN A HOLDING TANK AND MUST BE DISPOSED OF IN A PROPER MANNER TO PREVENT CONTAMINATION AND POLLUTION OF THE RIVER.

VESSELS ARE FURTHER SUBJECT TO REGULATIONS CONTAINED IN TITLE 36, CHAPTER III, PART 327, OF THE CODE OF FEDERAL REGULATIONS. COPIES OF THESE REGULATIONS ARE AVAILABLE FROM ANY CORPS OF ENGINEERS DISTRICT OFFICE.

REMOVAL OF FACILITIES

THE FACILITIES OF PERMITTEES WHICH ARE NOT REMOVED WHEN SPECIFIED IN THE PERMIT OR WHEN REQUESTED AFTER TERMINATION OF THE PERMIT WILL BE TREATED AS UNAUTHORIZED STRUCTURES PURSUANT TO TITLE 36, CHAPTER III, PART 327.20, OF THE CODE OF FEDERAL REGULATIONS.

POSTING OF PERMITS

EACH PERMITTEE WILL BE ASSIGNED A SITE NUMBER, AND THE PERMITTEE WILL BE REQUIRED TO POST A SIGN BEARING THE SITE NUMBER ON EACH STRUCTURE AUTHORIZED AT THE SITE.

PLAN IMPLEMENTATION

THIS PLAN REPRESENTS THE ROCK ISLAND DISTRICT POLICY STATEMENT CONCERNING SHORELINE MANAGEMENT CONDITIONS FOR THE MISSISSIPPI RIVER POOLS 11-22. INDIVIDUAL POOL RECREATION RESOURCE MASTER PLANS CONTAIN THE PHYSICAL SHORELINE MANAGEMENT PLAN FOR RESOURCE MANAGEMENT ADMINISTRATION. THE SHORELINE MANAGEMENT CONDITIONS AND PLANS BECOME EFFECTIVE UPON COMPLETION AND APPROVAL OF THE LAND-USE ALLOCATION MAPS FOR THE INDIVIDUAL POOLS.

LETTERS OF COORDINATION

MISSISSIPPI RIVER - POOL 22
RECREATION-RESOURCE MASTER PLAN

LETTERS OF COORDINATION

ATTACHMENT IV

MISSISSIPPI RIVER - POOL 22

RECREATION-RESOURCE MASTER PLAN

LETTERS OF COORDINATION
ATTACHMENT IV

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12 OCT 1984	LETTER FROM NCR IN RESPONSE TO COMMENTS PROVIDED BY U.S. FISH AND WILDLIFE SERVICE (FWS) ON DRAFT PLAN.
5 OCT 1984	LETTER FROM FWS CONCERNING ENDANGERED SPECIES COORDINATION FOR PROPOSED ORTON-FABIUS CHUTE DEVELOPMENT.
15 AUG 1984	LETTER FROM NCR PROVIDING SUMMARY OF PUBLIC MEETING HELD 10 APR 84.
9 AUG 1984	LETTER FROM NCD REAL ESTATE OFFICE COORDINATING REQUESTED LEASE ARRANGEMENTS FOR ORTON-FABIUS CHUTE AREA.
23 MAY 1984	LETTER FROM MISSOURI DOC REQUESTING LEASE FOR PROPOSED ORTON-FABIUS CHUTE ACCESS AREA.
23 APR 1984	LETTER FROM U.S. FWS PROVIDING COMMENT ON THE DRAFT PLAN.
12 APR 1984	LETTER FROM MISSOURI DOC PROVIDING COMMENT ON THE DRAFT PLAN.
12 APR 1984	LETTER FROM U.S. FWS PROVIDING COMMENT ON THE DRAFT PLAN.
10 APR 1984	HANDOUT PROVIDED BY CITIZEN-TAXPAYERS AT THE PUBLIC MEETING.
10 APR 1984	ANNOUNCEMENT OF PUBLIC MEETING HELD 10 APR 84, FOR REVIEW OF DRAFT PLAN.
30 MAR 1984	LETTER FROM MISSOURI OFFICE OF ADMINISTRATION PROVIDING COMMENT ON DRAFT PLAN.
29 FEB 1984	LETTER FROM NCR DISTRIBUTING DRAFT PLAN FOR AGENCY AND PUBLIC REVIEW.
18 DEC 1981	LETTER FROM COUNTY CLERK OF PIKE COUNTY, ILLINOIS, CONCERNING INTEREST TO ASSUME FULL RESPONSIBILITY FOR CORPS OF ENGINEERS PUBLIC USE AREAS LOCATED IN PIKE COUNTY.
24 SEP 1981	LETTER TO MISSOURI DOC CONCERNING PROPOSED LEASE OF FABIUS ISLAND AREA FOR PARK AND RECREATION PURPOSES. (INCLOSURES WITHDRAWN)

11 AUG 1980 LETTER FROM U.S. FWS, MARK TWAIN REFUGE, PROVIDING REQUESTED INFORMATION FOR MASTER PLAN PREPARATION. (ATTACHMENTS WITHDRAWN)

7 JUL 1980 LETTER FROM NCR REQUESTING INFORMATION NEEDED FOR PREPARATION OF PLAN. (MAILING LIST WITHDRAWN)

21 FEB 1980 LETTER FROM MISSOURI DOC PROVIDING REQUESTED INFORMATION CONCERNING ENDANGERED SPECIES.

6 FEB 1980 LETTER FROM QUINCY COLLEGE, QUINCY, ILLINOIS, PROVIDING REQUESTED INFORMATION CONCERNING ENDANGERED SPECIES.

21 DEC 1979 LETTER FROM NCR CONCERNING RESULTS OF PUBLIC MEETING PARTICIPATION. (MAILING LIST WITHDRAWN)

20 DEC 1979 LETTER FROM MISSOURI DOC PROVIDING REQUESTED INFORMATION FOR MASTER PLAN PREPARATION.

27 NOV 1979 LETTER FROM MISSOURI DEPARTMENT OF NATURAL RESOURCES (DNR) PROVIDING REQUESTED INFORMATION FOR MASTER PLAN PREPARATION. (ATTACHMENTS WITHDRAWN)

19 NOV 1979 LETTER FROM U.S. FWS, REGIONAL OFC, PROVIDING REQUESTED INFORMATION CONCERNING ENDANGERED SPECIES.

10-11 OCT 1979 PUBLIC MEETING ANNOUNCEMENT REQUESTING PUBLIC INPUT IN PREPARATION OF THE MASTER PLAN.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mark Twain National Wildlife Refuge
Great River Plaza
311 N. 5th Street, Suite 100
Quincy, Illinois 62301

IN REPLY REFER TO:

May 28, 1985

Colonel William C. Burns, Jr.
Corps of Engineers, Rock Island District
Clock Tower Building
Rock Island, Illinois 61204-2004

Dear Colonel Burns:

This letter will provide comments concerning the Pool 22 Land Use Allocation and the proposed changes in land use classification to "project operations". The recent meetings with Corps officials helped to clear up several points and provided additional information not presented in the original proposal. The following comments are reflections of those meetings and are intended to reiterate our position that wildlife and riverine habitat values be protected:

1. It is our understanding that although certain designated tracts will be reallocated to "project operations", the actual land use and programs administered by the state conservation agencies will remain essentially unchanged.
2. All dredging and disposal be in accordance with GREAT II On-Site Inspection Team procedures.
3. Maps developed for this and future plans on other pools should show potential disposal sites as well as the GREAT II areas.
4. We understand that use of these proposed "project operations" lands for barge fleeting will include only properly permitted fleeting activities and that these will be fully coordinated through the Public Notice procedure as well as full coordination with the appropriate conservation agencies.

Thank you for the opportunity to comment.

Sincerely yours,

Robert H. Stratton, Jr.
Project Leader

CF:

PD orig

PD-C

PD-E 1

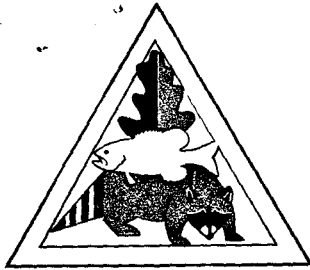
✓ PD-F 1

PD-P 1

PD-R

NOTE:

cc: T.Groutage, RIFO
W.Dieffenbach
J.Beverlin, IDOC
R.Berry, Upper Miss



MISSOURI DEPARTMENT OF CONSERVATION

MAILING ADDRESS:
P.O. Box 180
Jefferson City, Missouri 65102-0180

STREET LOCATION:
2901 North Ten Mile Drive
Jefferson City, Missouri

Telephone 314/751-4115
LARRY R. GALE, Director

May 22, 1985

Colonel William C. Burns, Jr.
District Engineer
Rock Island District, Corps of Engineers
Clock Tower Building
P. O. Box 2004
Rock Island, Illinois 61204-2004

Re: Planning Division
Pool 22 Land Use Allocation

Dear Colonel Burns:

Members of our respective staffs exchanged letters and participated in a meeting at Quincy, Illinois on March ¹²22, 1985 concerning the reallocation of Corps of Engineers lands in Mississippi River Pool 22. It is still somewhat difficult for us to understand the need for reallocating land use toward more "project operations" since such reallocation can presently be made for "higher purposes" and/or "navigation servitude" as needed. In addition, it is our understanding that actual land use of tracts to be reallocated "project operations" will remain essentially unchanged.

With that in mind, we concur in the reallocation of lands for Mississippi River Pool 22 as outlined in Mr. James Schnerre's February 11, 1985 letter provided wildlife values are assured. To assure those values are protected and consultation with us on "project operations activities" are conducted with minimal adverse impacts, the following points delineate our position:

1. Except in emergency situations, all proposed dredged material disposal will be fully coordinated through the On-Site Inspection Team.
2. Placement or repair of dikes, closing dams and riprap on project operations or cooperative agreement lands or waters will be fully coordinated in an effort to minimize impacts.
3. Coordination of activities related to lock and dam structures, administrative facilities and navigation activities, such as barge fleeting, mooring structures, and commercial port facilities will continue.

COMMISSION

JEFF CHURAN
Chillicothe

CARL DISALVO
St. Louis

JOHN B. MAHAFFEY

RICHARD T. REED

5/31

Colonel William C. Burns, Jr.
May 22, 1985
Page Two

4. Designation of GREAT dredge material disposal sites and project operations sites designated for future possible disposal should be differentiated on land use allocation maps.
5. Management activities, such as forest management of lands, designated Project Operations will be coordinated with the appropriate state agency.

We are hopeful that this response to recent correspondence clarifies our position. We appreciate the cooperation and patience of your staff in discussions of this matter.

Sincerely,

Larry R. Gale

LARRY R. GALE
DIRECTOR

cc: Mr. Tom Groutage
U. S. Fish and Wildlife Service
Rock Island, Illinois

Mr. Robert Stratton
U. S. Fish and Wildlife Service
Quincy, Illinois

CF:

PD

PD-C

PD-E

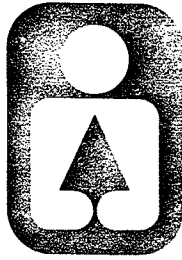
PD-F

PD-P

PD-R

NOTE:

Illinois



Department of Conservation

life and land together

LINCOLN TOWER PLAZA • 524 SOUTH SECOND STREET • SPRINGFIELD 62701-1787

CHICAGO OFFICE - ROOM 100, 160 NORTH LASALLE 60601-3184

David Kenney, Director - James C. Helfrich, Assistant Director

May 17, 1985

Colonel Wm. C. Burns
District Engineer
U. S. Army Corps of Engineers
Clock Tower Building
Rock Island, IL 61201

Dear Colonel Burns:

The Recreation-Resource Master Management Plan for Mississippi River Pool 22 has been brought to my attention for review. The draft dated February, 1984 had the general consent of the Illinois Department of Conservation. The changes proposed in the February 11, 1985 letter to Jerry Beverlin and the subsequent explanation letter of April 18, 1985 have caused me great concern. The concern comes from the apparent changes in the Corps of Engineers' zoning uses.

I certainly understand that your primary objective is to keep the Mississippi River a navigable waterway. This waterway is of significant national as well as state commercial value. It would appear that, after general consent was received by the Corps of Engineers from the other agencies involved, an increase of 13.2 times the original acreage scheduled for Project Operations Lands is now required. This represents a significant loss of land for wildlife and forestry management. (See tables A and B.)

I wonder if it would be possible to further discuss this after seeing a detailed breakdown of the contemplated uses for Project Operation Lands such as specifically where fleeting and mooring is to be allowed on Pool 22.

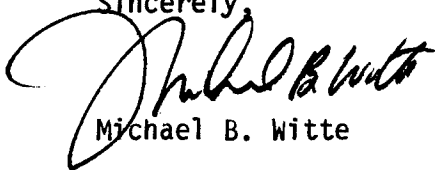
-continued-

Burns, Colonel Wm. C.
May 17, 1985
Page 2

At this time, the Department of Conservation would have to consider not managing Project Operation Lands for wildlife or forestry purposes since there quite obviously could be diametrically opposed plans for this land by the Corps of Engineers and the Illinois Department of Conservation.

I would certainly hope that you will allow input to these changes in your plan by the other governmental agencies involved and by the general public. I have enclosed a list of specific areas of concern with the new plan. If I can be of further assistance, please contact me.

Sincerely,

A handwritten signature in cursive script, appearing to read "Michael B. Witte".

Michael B. Witte

DMT/mc
Enclosures

cc: Tom Groutaga, USFWS



DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
CLOCK TOWER BUILDING - P.O. BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF:

October 12, 1984

Planning Division

Mr. Larry R. Gale
Director
Missouri Department of Conservation
P.O. Box 180
Jefferson City, Missouri 65102-0180

Dear Mr. Gale:

Preparation of our final Recreation-Resource Master Plan for Mississippi River-Pool 22 has been initiated. Response to your comments provided April 12, 1984, on the draft plan is attached. Copies of the final plan will be distributed upon approval of our higher authority, which is anticipated during early 1985.

Thank you for your participation in this planning effort.

Sincerely,

Arthur J. Klingerman
Chief, Planning Division

Enclosure

Copies Furnished:

Mr. Robert H. Stratton, Jr.
Project Leader
Mark Twain National Wildlife Refuge
Great River Plaza
311 N. 5th Street, Suite 100
Quincy, Illinois 62301

Mr. Tom Groutage
Field Supervisor
U.S. Fish and Wildlife Service
Rock Island Field Office (ES)
1830 Second Avenue
Rock Island, Illinois 61201

Rock Island Districts Responses To
Missouri Department of Conservation's Comments
on Draft Pool 22 Recreation-Resource Master Plan

<u>CMT No.</u>	<u>Rpt Ref</u>	<u>Response</u>
1	p. I-5	Future cost-sharing interest noted. Notation in report is not warranted until a formal expressed interest is made.
2-4	pp. IV-6,8, 10.	Suggested narrative corrections will be made.
5	p. IV-13	Coordination will be made with State interests to update referenced State endangered and threatened species.
6	p. V-4	Marion City is the actual reference in the cited source, however, Marion <u>County</u> is the more appropriate reference.
7	Project Maps	a.-d. Suggested administrative changes are noted for future consideration in updating Cooperative Agreement assignments. The final master plan will indicate existing assignments, and then subsequently revised after formal agreement is made on General Plan revisions for pools 11-22. Project lands (tract A-1) associated with L/D 21 acquisition were removed for future identification as part of Pool 21 for consistency with overall mapping efforts.



DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
CLOCK TOWER BUILDING - P.O. BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF:

October 12, 1984

Planning Division

Mr. Robert H. Stratton, Jr.
Project Leader
Mark Twain National Wildlife Refuge
Great River Plaza
311 N. 5th Street, Suite 100
Quincy, Illinois 62301

Dear Mr. Stratton:

Preparation of our final Recreation-Resource Master Plan for Mississippi River-Pool 22 has been initiated. Responses to comments provided by your office on April 12, 1984, and April 23, 1984, on the draft plan are enclosed.

Copies of the final plan will be distributed upon approval of our higher authority, which is anticipated during early 1985.

Thank you for your participation in this planning effort.

Sincerely,

Arthur J. Klingerman
Chief, Planning Division

Enclosures

Copies Furnished:

Mr. Tom Groutage
Field Supervisor
U.S. Fish and Wildlife Service
Rock Island Field Office (ES)
1830 Second Avenue
Rock Island, Illinois 61201

Mr. Bill Dieffenbach
Missouri Department of Conservation
P.O. Box 180
Jefferson City, Missouri 65102

Rock Island District's Response to
Mark Twain NWL Refuge's Specific Comments
on Draft Pool 22 Recreation-Resource Master Plan

<u>Report Reference</u> (page/plate no.)	<u>Response</u>
Sect. III-3	Additional clarification of O&M costs will be made.
Sect. IV-6	Ecological descriptions are intended as general description of the biological elements and not a source document for official citing. Notation will be made in the plan of source material when applicable. Suggested narrative correction concerning bald eagle occurrences will be made.
Sect. IV-8	Wild celery and rice are not typical in Pool 22, and recorded sitings are not available. Narrative correction will be made accordingly.
Sect. IV-8	See response to Sect. IV-6 comments.
Sect. IV-11	Pesticide applications administered by the Corps are reviewed by OCE. Suggested coordination should be undertaken as part of the annual forestry management program review.
Sect. IV-12	See comment to Sect. IV-6 above. The general content of this statement is considered appropriate for the context of the report.
Sect. IV-19 and VI-17	Narrative corrections will be made as indicated.
Plates 22-3A, 5A, 7A, and 8A	Suggested administrative changes are noted for further consideration in updating Cooperative Agreement assignments. The final plan will indicate existing assignments, and then subsequently revised after formal agreement is made on General Plan revisions for Pools 11-22.
Plate 22-4A	Suggested State concurrence and public use concerns are noted. Any formal regulatory permit or lease proposal review will be coordinated concerning authorized barge fleeting use proposed on 11s-6.
Sect. VII-16	A lease to the MDOC is in process for limited facility development as referenced in the plan. The final plan will be revised to indicate the area leased to the State, and development according to submitted State plans. Potential facility development indicated in the draft plan will be deleted in recognition of the intervening management change for the area. Any future State improvements for the area will be coordinated for the environmental concerns prior to approval.

Rock Island District's Response to
U.S. FWS Rock Island Field Office (ES) Comments
on Draft Pool 22 Recreation-Resource Master Plan

<u>Comment No.</u>	<u>Report Ref.</u>	<u>Response</u>
1	general	All available inventory data will be considered for cite reference as appropriate. However, the master plan discussions concerning ecological elements are primarily intended for general descriptive content and not documented source purposes.
2	p. II-5	The navigation channel has been maintained at a dredged width of 400 feet since 1935. This is applicable to the entire system.
3.	p. IV-6	Discussion of Mississippi River Flyway will be incorporated in final plan. Suggested narrative correction will be made.
4-6	p. IV-9, 14, and V-3	Referenced information will be considered as indicated.
7	p. V-7	Sediment information documented in GREAT II studies will be considered for incorporation in final as appropriate. Source for Table 5-3 is as stated, which was sponsored by the UMRBC (see p. VI-2 of draft plan).
8	p. V-9	Clarification of dredge disposal site selection and status will be made as indicated.
9	p. V-10	Correction will be made as indicated.
10	p. V-17	Variances in rates are attributed to seasonal weather and pool level conditions, and administrative and technical reporting changes to improve data accuracy.
11	p. V-21	The duck blind program of IDOC is considered an administrative action and does not involve permanent facility development. Appropriate discussion in this section of the plan concerns <u>potential</u> facility development which has been officially expressed to date, involving project lands.

Rock Island District's Response to
U.S. FWS Rock Island Field Office (ES) Comments
on Draft Pool 22 Recreation-Resource Master Plan

<u>Comment No.</u>	<u>Report Ref.</u>	<u>Response</u>
12-14	p. VI-11, 17, and 19	Suggested narrative corrections will be made in final plan.
15	p. VI-20	Intent of discussion is to identify all the technical work groups of the UMRCC. Review will be made to check official status of such groups for appropriate reference.
16	p. VI-24	Since this concern was initiated as part of the Cooperative Agreement Annual Management Plan review process, principle coordination will involve the respective State conservation and national refuge interests. District elements have been requested to respond to this concern. Full coordination will be made of any action considered.
17	p. VII-1	Explanation will be added of the methodology used to determine zoning assignments.
18	p. VII-4	Restricted public use for natural areas will be either by posting or ranger patrol as appropriate. Management restrictions will be by administrative review conditions of proposed activities.
19	Plates	Initial assignment strategy considered dredge disposal activity as a permitted occasional use of project lands and not a designated/committed physical resource management objective. Reconsideration has been given to this approach, and the final plan will be revised to assure appropriate allocation of needed future project operations and low density recreation uses of project lands. Such changes will be coordinated with management agencies prior to final preparation.
20	Plate 5A, and 9A	Such information is not desired for specific public identification because of security or protection purposes of the resources involved. Identification is intended for administrative awareness purposes, with detailed data a concern of the respective management interests. Information is provided discreetly within the plan concerning such resource concerns.

Rock Island District's Response to
U.S. FWS Rock Island Field Office (ES) Comments
on Draft Pool 22 Recreation-Resource Master Plan

<u>Comment No.</u>	<u>Report Ref.</u>	<u>Response</u>
21	p. VIII-3	Referenced environmental concerns will be added as part of general discussion in Section VIII.
22	p. VIII-7	Beach development discussion concerning dredge disposal sites and criteria is being added in Section V, page V-9 for additional explanation of such concern. Appropriate discussion in this Section is intended for general beach improvements within Corps managed public recreation areas.
23	p. X-4	Review will be made as suggested.
24	EA	Specific description of habitats for recreation areas are contained in the plan as referenced in the EA. Any mitigation concerns were expressed in the EA. Future EA preparations for other remaining Master Plan efforts will include specific habitat discussion for recreation areas.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

IN REPLY REFER TO:

ROCK ISLAND FIELD OFFICE (ES)

1830 Second Avenue, Second Floor

Rock Island, Illinois 61201

COM: (309) 793-5800

FTS: 386-5800

3-84-I-MO-115-RI

October 5, 1984

Colonel William C. Burns
District Engineer
U.S. Army Engineer District
Rock Island
Clock Tower Building - P.O. Box 2004
Rock Island, Illinois 61204-2004

Dear Colonel Burns:

This is in reference to Mr. Klingerman's letter of September 24, 1984 describing construction of a boat ramp at Upper Mississippi River mile 321.2R, Marion County, Missouri. Based on this assessment we concur with your determination that the proposed project will have no affect on endangered species of the project area.

This letter provides comment only on the endangered species aspect of the project. Comments on other aspects of the project under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et. seq.) may be sent under separate cover.

Sincerely,

Thomas M. Groutage
Field Supervisor

cc: Missouri Department of Conservation (Dieffenback)

cf:
PD (orig)
PD-E



DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
CLOCK TOWER BUILDING - P.O. BOX 2004
ROCK ISLAND, ILLINOIS 61204-2004

REPLY TO
ATTENTION OF:

August 15, 1984

Planning Division

SEE ATTACHED DISTRIBUTION LIST

Dear Concerned Citizen:

As you will recall, on April 10, 1984, the Corps of Engineers conducted a public meeting in the Hannibal, Missouri, Holiday Inn. The purpose of the workshop was to inform the public of the Pool 22 Master Plan update, to encourage an exchange of information, and to receive public comments on the anticipated management of Pool 22 resources.

The master plan was designed to serve as a guide for the short- and long-term management and development of project resources. Specific features of the plan identify land use designations, including shoreline management; recreation development potentials; private use policies; and general management of Corps project lands.

The meeting was attended by 103 people, including representatives of the city, Federal and State agencies, local businesses, and the public. Attendees were urged to ask questions and contribute their ideas.

Meeting participants concurred that master plan resources should be conserved and enhanced. As alternatives to several of the Corps' master plan proposals, a citizen-taxpayer group submitted a list of recommendations for operation and maintenance of the river. These alternatives have been reviewed for consideration in the master plan report. Our responses to these issues are provided on the attached enclosure.

During the meeting, we were asked to provide additional information on the following:

a. Mooring/Guard Cells: Two cells were constructed at Lock and Dam 22 as protection to the lock structure and to assist tow entry into the lock. One cell is 140

feet downstream of the lock wall, and the second, 1,800 feet upstream of the lock wall. Total cost of these cells was \$376,256.

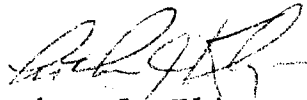
b. Wingdam Repairs: Repair of existing wingdams is considered routine maintenance, and repair costs per feature are not specifically recorded. A major effort has been made to reduce annual dredging requirements by repairing structures which have been on the District's backlog of maintenance items. An estimated cost of such work in Pool 22 for the last 3 years (1981-83) is \$1,415,100.

c. Timber Sales: Timber sales for 1978-83 totaled \$20,436. These sales were solely for the purpose of timber and related wildlife habitat improvement.

A summary of the primary issues and concerns expressed at the meeting is covered in the attached response to alternative proposals presented by the citizen-taxpayers interest. If you have any additional questions, please address them to:

District Engineer
U.S. Army Engineer District, Rock Island
ATTN: Planning Division
Clock Tower Building - P.O. Box 2004
Rock Island, Illinois 61204-2004

Sincerely,



Arthur J. Klingerman
Chief, Planning Division

Enclosure

RESPONSES TO
CITIZEN-TAXPAYERS ALTERNATIVE PROPOSALS

Alternative A. The cost of maintaining the Mississippi River for private commercial users should be borne in greater proportion by those private commercial users. This includes the costs of channel maintenance and marking, dam operation, damages to Government property such as bridges and dams, and rental fees for barge tie-up and staging areas.

Response: The costs of operating and maintaining the 9-foot navigation system is an authorized Government expenditure beyond the scope of the Pool 22 Master Plan. Commercial and private interests are liable for any damages to Government property for which they are at fault. Authorized use of project lands for commercial purposes is based on a fair market value. Issues involving project lands and associated commercial navigation interests, activities, and authorities are referenced in the plan.

Alternative B. The Recreation-Resource Master Plan shall comply with President Reagan's Executive Order 12291, which directs that all agencies shall weigh potential benefits against potential costs to society when promulgating new regulations or reviewing existing regulations, and that regulatory objectives shall be chosen to maximize the net benefits to society, and provide proof of compliance.

Response: Executive Order 12291 does not apply to the master plan as the plan is not a regulatory document. The master plan is an agency administrative document in regard to Federal land resource management. The master plan management guidance is directed to assure maximum net benefit to the general public.

Alternative C. Inform the President and the Congress of the potential economic impact and resulting societal losses which would be accomplished by the elimination of private campsites which compose but .77 percent of the public land in Pool 22 and .5 percent in the Rock Island District.

Response: The master plan is an internal management document and is, therefore, not provided directly to Congress and the President. The master plan has, however, addressed these public concerns, and has been distributed to public officials and agencies for comment.

Alternative D. Offer long-term leases at a reasonable fee to existing campsite lessees, and secure a waiver of any claim against the United States by such a lessee for damages arising on account of flooding.

Response: A change in the existing campsite lease policy is beyond the authority of the master plan.

Alternative E. Require greater attention and positive action by the Corps in connection with ecological effects caused by channel maintenance activities, with the objective of eliminating and correcting activities which reduce the water surface, cause filling of non-navigational pools, damage the environment and ecosystem of fish and other wildlife, and otherwise detract from the Mississippi as a natural resource.

Response: These issues are being evaluated by an interagency On-Site Inspection Team designed to evaluate channel maintenance activities. The specific concerns mentioned are being considered by the group in its selection of dredge disposal sites. Separate dredge disposal plans are being developed to address these issues as they pertain to each dredge site.

Alternative F. Upon a determination that the privileged opportunity to use public land for campsite purposes is no longer acceptable for public purposes, as stated in the Corps' Environmental Assessment for the Master Plan, commercial use of Government land should be found to be equally unacceptable.

Response: It is beyond the scope of the master plan to implement this recommendation. All District actions, including the proposals of the master plan, must comply with congressional legislation. Such legislation is considered to be in the overall best interest of the public.

Alternative G. Take no further steps in the implementation of any master plan until the foregoing proposals have been included and subjected for approval to the citizen-taxpayers who live in the affected areas.

Response: The expressed concerns of individuals effected by the master plan will be considered and noted in the master plan report. However, for the reasons already given, inclusion of the foregoing proposals is not feasible.

Alternative H. "The Public's Best Interest," a byword in Corps plans, includes consideration by the Corps of one of the most endangered species of all, the American citizen-taxpayer, who is forced to pay his taxes to pay the salaries of bureaucrats who in turn tell him how they are going to manage his river with his money. It is time for "The Public's Best Interest" to mean just that.

Response: The Corps of Engineers seeks, to the maximum extent possible, to respond to public needs and preferences. We also have the responsibility to coordinate with other agencies, organizations, officials, and groups in order to gain a complete understanding of the issues, opportunities, and consequences associated with a study. We seek to balance the needs and preferences of each of these groups so as to advance the Nation's overall public interest.

August 9, 1984

NCD Real Estate Field Office

SUBJECT: Mississippi River Pool No. 22, Proposed Park
Lease on Government Land

Mr. Larry R. Gale
Director, Missouri Department
of Conservation
P.O. Box 180
Jefferson City, Missouri 65102-0180

Dear Mr. Gale:

This is in response to your May 23, 1984, letter and to Mr. Bill Dieffenbach's June 20, 1984, telephone conversation with Mr. Wayne Johanson of this office.

Enclosed is one copy of the application you submitted for a public park and recreational lease on Government land for proposed development along Orton-Fabius Cuts, Mississippi River Pool No. 22. The application that we received was unsigned. Please sign the application, have the other appropriate officials sign the certificate of authority and return the application and certificate to us. We will need the signed materials for submitting the proposed lease to our higher authority for approval.

We also request that you submit a development program as we requested in our September 24, 1981, letter. A revised draft copy of the proposed lease is enclosed for your review and approval. Please note that, for the reasons stated in your recent letter, we have included Tract No. FM-87 and FM-88 in the proposed lease. Tract No. FM-151 is an "assessment" tract which the Government does not own in fee title. Therefore, we cannot include that land in the lease.

If the terms of the proposed lease are satisfactory, please advise us in writing of your approval of the lease. The enclosed nondiscrimination assurances should also be executed and returned for use as Exhibit "B" to the lease.

From speaking with Mr. Diffenbach, we understand that even though the site plans previously submitted to our Mr. Collins are marked "preliminary," you anticipate using these plans for developing the area. The plans have been reviewed by the interested office elements and are approved, providing the required lease, Department of the Army permit, and levee district permit are obtained. Our Regulatory Functions Branch is processing your Department of the Army permit application.

If you or your representatives have any questions on the proposed lease, please contact either Mr. Richard Mattson or Mr. Johanson of this office, telephone 309/788-6361, Ext. 6292.

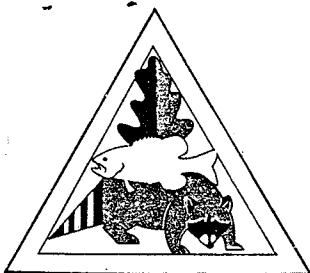
Sincerely,

ORIGINAL SIGNED BY

W. M. Tait
Chief, NCD Real Estate Field Office

Enclosures

CF:
Dist File (RE-R)
NCDRE
✓ PD-F
PD-E
OD-R
OD-S



MISSOURI DEPARTMENT OF CONSERVATION

MAILING ADDRESS:
P.O. Box 180
Jefferson City, Missouri 65102-0180

STREET LOCATION:
2901 North Ten Mile Drive
Jefferson City, Missouri

Telephone 314/751-4115
LARRY R. GALE, Director

May 23, 1984

Lt. Colonel Arthur E. Miller
Acting District Engineer
Rock Island District, Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Attn: Mr. Francis Collins

Dear Colonel Miller:

In our continuing effort to develop a river access site at Fabius Island, Upper Mississippi River mile 321+, members of my staff met with the Marion County Drainage District Board of Supervisors on May 16, 1984. At that meeting, the Board of Supervisors gave tentative approval for a levee crossing for our planned river access development. Some of the Drainage District Board's concerns included their desire that there be no camping on the area.

My letter of March 8, 1984, and subsequent staff contact with Mr. Francis Collins of your staff indicate that we should pursue a license to the lands on which the access will be developed. The development will be on Tracts 152 and 87 in navigation pool 22. Under Missouri law, it will be necessary for us to have license to the adjacent tract if we are to control camping in this area. Therefore, we are requesting a 25-year license to Tracts 87, 152 and 88. There appears to be some confusion over the existence of a Tract 151. If Tract 151 would seem necessary for our purposes, license to it is also requested.

In the next few weeks, we will submit an application for a U. S. Department of Army, Section 404 Permit. The cooperation of your staff in providing access is appreciated. If you or your staff have questions, please contact William H. Dieffenbach at the above address.

Sincerely,

LARRY R. GALE
DIRECTOR

cc: Mr. Robert Stratton, Jr.
U. S. Fish and Wildlife Service
Quincy, Illinois

COMMISSION

JEFF CHURAN
Chillicothe

CARL DISALVO
St. Louis

JOHN B. MAHAFFEY
Springfield

RICHARD T. REED
East Prairie



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mark Twain National Wildlife Refuge
Great River Plaza
311 N. 5th Street, Suite 100
Quincy, Illinois 62301

IN REPLY REFER TO:

April 23, 1984

District Engineer
Department of the Army
Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Attn: Larry McLean, Planning Division

Dear Sir:

Tom Groutage, Field Supervisor of the Fish and Wildlife Service Rock Island office, and his staff have carefully reviewed the Pool 22 Recreation-Resource Master Plan. Their comments are attached with the request that they be considered by your office in preparing the "final" plan.

Sincerely yours,

Robert H. Stratton, Jr.
Project Leader

Attachments

cc: John Ellis, RF-2
w/incoming
Bill Dieffenbach, MDOC
Dan Troemper, IDOC

The following are our comments on the "Draft Recreation-Resource Master Plan, Mississippi River, Pool 22" and accompanying environmental assessment:

1. General We agree with the comments provided by the Missouri Department of Conservation and you (letters dated April 12, 1984) and will not repeat those comments herein. However, we would especially like to reemphasize the need for referencing scientific information.

The draft report discusses the environmental setting of Pool 22. A copy of Pool 22 narratives from the "Resources Inventory for the Mississippi River" will be forwarded to the Corps when it is completed next week. These narratives should be helpful in describing the important aquatic habitats of the pool and in updating their information base. The accompanying maps may be inspected at our office at the Corps' convenience.
2. Page II-5 It is our understanding that the Rock Island District maintains the navigation channel 300 feet wide except at bends and other hazardous sites where the channel is maintained at a greater width.
3. Page IV-6 This section should take the opportunity to discuss the importance of the Mississippi River Flyway. Also, we do not consider actively farmed agricultural land to provide suitable habitat for songbirds and predatory birds. Without the presence of adjacent habitats, these species' life requisites would not be satisfied.
4. Page IV-9 See Resource Inventory narratives for additional mussel survey information.
5. Page IV-14 See Resource Inventory narratives for recent occurrences of endangered species.
6. Page V-3 See Resource Inventory narratives for updated terminal information. This information was provided to us by the Regulatory Functions staff.

OPTIONAL FORM NO. 10
(REV. 1-80)
GSA FPMR (41 CFR) 101-11.6
5010-114

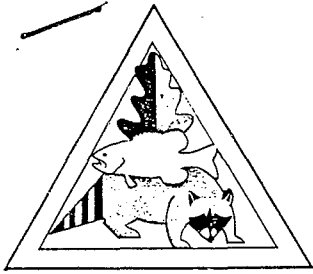
7. Page V-7 Some discussion is needed on the eminence of the loss of backwater habitat due to sedimentation. The Side Channel Work Group of GREAT II estimated that 22-49% of the backwaters of Pool 22 will be lost over the next 50 years. Also, is the source for Table 5-3 the Upper Mississippi River Basin Commission?
8. Page V-9 There are now 35 acceptable alternative sites for dredged material disposal (6 were eliminated as economically infeasible by the River Resources Coordinating Team). The nine primary sites, including the beach nourishment site, are the preferred sites. In addition, it should be noted that other alternative disposal sites may exist in the pool. It is the responsibility of the On Site Inspection Team to apply the site selection priorities in determining the most acceptable disposal site.
9. Page V-10 The asterisk note should be amended to read "S-represents the reduced acreage that would be required if temporary stockpile provisions were implemented at the site."
10. Page V-17 Why do the activity percentages vary so widely?
11. Page V-21 The Illinois Department of Conservation duck blind allocation program should be discussed.
12. Page VI-11 The fish and wildlife component of the GREAT II Main Report should be included. This is both a recreation and resource management plan.
13. Page VI-17 It should be Upper Mississippi River National Wildlife and Fish Refuge.
14. Page VI-19 The FWS is also the designated chairman of the On Site Inspection Team. See the Channel Maintenance Handbook.
15. Page VI-20 For the UMRCC, state and cooperating agency representatives participate on technical sections for fish, wildlife, recreation and water use, and law enforcement. Delete pollution and publications.
16. Page VI-24 When/how will the issue of water level management be addressed? We would appreciate being informed of the District's investigations into this matter.
17. Page VII-1 The reader should be apprised of the methodology used to complete this plan.
18. Page VII-4 How will "activities be limited or prohibited" in natural areas?

19. Plates No primary dredged material sites have been categorized as project operations. This does not appear to be consistent with the definition. How will future disposal sites that are used but not identified in the plan be categorized? In addition, the location of the symbol pointers for the primary sites should not infer a specific site or tract. Often these alternative sites cover a large area. Note that the pointer for the primary site at Northeast Missouri Power is misplaced.
20. Plate 5A&9A Supporting data for natural area designations should be included on the plate or should be specifically discussed by tract in the text.
21. Page VIII-3 Potential environmental impacts and mitigation requirements should also be considered in future recreation development.
22. Page VIII-7 Beach development and maintenance should be in accordance with the GREAT II Channel Maintenance Handbook.
23. Page X-4 See Resource Inventory narratives for all potential sensitive areas.
24. EA The environmental assessment should include an evaluation of the habitat impacted by the proposed developments and inclusion of appropriate mitigation measures.

Please provide these comments to the Corps and provide copies to Dick Lutz, IL DOC; and Bill Dieffenbach, MO DOC. If you have any questions do not hesitate to contact me.



cc: AH
PSW (Schotzko)



MISSOURI DEPARTMENT OF CONSERVATION

MAILING ADDRESS:
P.O. Box 180
Jefferson City, Missouri 65102-0180

STREET LOCATION:
2901 North Ten Mile Drive
Jefferson City, Missouri

Telephone 314/751-4115
LARRY R. GALE, Director

April 12, 1984

Colonel Bernard P. Slofer
District Engineer
Rock Island District, Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Re: Draft Master Plan
Mississippi River - Pool 22

Dear Colonel Slofer:

Thank you for the opportunity to offer comments on the Draft Recreation Resource Master Plan for Mississippi River Pool 22 dated February 1984. We are most appreciative of the efforts of your staff in providing early and ongoing coordination on this subject. My letter of November 16, 1983 outlined our early comments concerning this effort. Comments on the above referenced draft are:

1. Page 1-5, last paragraph.
At some future date we may be interested in cost-sharing in development at Bay de Charles or other cooperative lands.
2. Page IV-6, last paragraph.
(a) Bald eagles are more than "occasional migrants."
Page VII-6 more accurately portrays the status
of bald eagles in Pool 22.
IV-16
(b) The yellow-shafted flicker is one common woodpecker. The "sparrow" group is made up of several species.
3. Page IV-8, paragraph 1.
We doubt that wild rice and wild celery are "typical" of Pool 22.
4. Page IV-10, last paragraph.
Delete yellow perch. The species has not been seen by our river biologist in more than 10 years on the river.

cf:

~~PD~~

PD

COMMISSION

JEFF CHURAN
Chillicothe

CARL DISALVO
St. Louis

JOHN B. MAHAFFEY
Springfield

RICHARD T. REED
East Prairie

Missouri Department Of Conservation

Colonel Bernard P. Slofer

April 12, 1984

Page Two

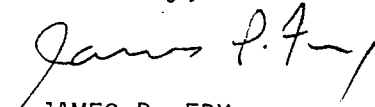
5. Page IV-13.
The list of endangered and threatened species for Missouri should be revised. Members of my staff would be available to provide input for Missouri.
6. Page V-4, Table 5-2.
Is "Marion City" an accepted name for "Northeast Power Cooperative?"
7. Project Maps.
Comments provided at an early coordination meeting indicated a need to attempt to consolidate management responsibilities in various reaches of the Pool 22. Comments aimed at reaching that goal are:
 - (a) To consolidate management, we recommend the Corps of Engineers assume responsibility for Tract MIS-7, Plate 22-3A.
 - (b) Because of our plans to develop access on Tract FM-152, Cooperative Agreement management responsibilities for that tract plus FM 87 and FM 88 would seem appropriate (Plate 22-8A).
 - (c) To consolidate management, we suggest the Corps of Engineers assume responsibility for Tract MIS-9 and MIS-10 (Plate 22-9A).
 - (d) We are somewhat confused by the management pattern between Lock and Dam 21 and the Fabius River. The draft maps provided at the October 23, 1983 meeting at Ted Shanks Wildlife Area indicate cooperative agreement management of Tract FM 162 and all accretions. If that is the case then we assumed all lands upstream of the Fabius River would be under the cooperative agreement. We also note that Plate 22-9A does not show the land between Lock and Dam 21 and Tract FM 161. We believe management by cooperative agreement would be appropriate for Tract A-1.

I am hopeful that these comments will assist you in finalizing the Recreation Master Plan for Pool 22. If you or your staff have questions, please contact William H. Dieffenbach of this office.

Missouri Department Of Conservation

Colonel Bernard P. Slofer
April 12, 1984
Page Three

Sincerely,



JAMES P. FRY
ACTING DIRECTOR

cc: Robert H. Stratton, Jr.
U. S. Fish and Wildlife Service
Quincy, Illinois

Thomas Groutage
U. S. Fish and Wildlife Service
Rock Island, Illinois



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mark Twain National Wildlife Refuge
Great River Plaza
311 N. 5th Street, Suite 100
Quincy, Illinois 62301

IN REPLY REFER TO:

April 12, 1984

District Engineer
Department of the Army
Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Attn: Larry McLean, Planning Division

Dear Sir:

Staff of the Mark Twain National Wildlife Refuge have reviewed the February, 1984 draft copy of the Pool 22 Recreation-Resource Master Plan and offer the following text/plate-specific comments for your consideration.

Please reference our November 10, 1983, letter and the GENERAL COMMENTS section wherein we discussed and recommended the need for continued FWS involvement with the states of Illinois and Missouri in General Plan program review. This remains a valid and, we feel, appropriate exercise of review responsibility by our agency. Our understanding is that both Illinois and Missouri concur with this position.

Our position on accreted lands remains unchanged; generally, that for administrative purposes these areas should be considered as a part of the lands they adjoin and should be managed by the respective agency. This has been the operating "fact of life" for most of these areas and would only be clarified by adoption into the Master Plan.

Specific comments are as follows:

Section III-3: it is recommended that the Corps of Engineers (COE) provide a more detailed background on the recreation area O&M costs; as presently listed, the acreage figure (9 acres) and costs for each of the three areas do not seem reasonable. We would also recommend a careful review of trends and anticipated needs before embarking on any substantial expansion of these areas.

Section IV-6: the river otter is listed as a species that "... may also inhabit the environs ...". Is a wild population documented or is this statement based on the Missouri Department of Conservation (MDOC) restocking efforts in Pool 24?

Bald eagles are more that "occasional migrant visitors".

They more properly could be classified as common seasonal residents or some similar designation that takes into consideration the winter and early spring use of river habitat.

A page footnote or bibliography listing source material for flora and fauna would be helpful and lend strength to the listing of various species.

Section IV-8: if wild celery does occur in Pool 22, a specific location of beds would be helpful and would lend support to work on canvasback and other diving duck populations.

Section IV-10: the fisheries section gives a fairly detailed listing of species and preferred habitats. Again, a footnote listing the source material would be beneficial.

Section IV-11: are "all pesticide uses" reviewed by COE or just those applied to project operations lands. With the increased selectivity and toxicity of new formulations, it is recommended that these uses be closely monitored by all four agencies charged with land management.

Section IV-12: the statement "The project area or adjacent environs (bluff slopes) possess suitable habitat for these species." taken together with Table 4-2 may be misleading. Is habitat suitable in quantity or in quality or in both for representative populations of species listed or does it just occur as a habitat type in the Pool 22 area? The recommendation would be to either clarify with acreage figures and population estimates or delete this statement from the text.

Section IV-19: add to the last sentence "...involving the project lands is submitted THROUGH THE FWS to the Corps of Engineers for review." to more properly identify the review process of GP management programs.

Section VI-17: sentence seven should read "... the Mark Twain National Wildlife Refuge (encompassing Pools 16-22) ..."

Plate 22-3A: we recommend and would concur with MDOC that Tract MIS-7 be changed to show that it will be administered by the COE. This would more closely tie this tract with other COE parcels in the immediate area and eliminate the need for MDOC personnel to monitor a disjunct tract.

Plate 22-4A: that land south of the John Hay Recreation Area in Pike County, Illinois, tract FI-13, has been proposed as an expansion area for recreation-low density public use, specifically for a nature or hiking trail. Subject to

concurrence by the Illinois Department of Conservation (IDOC) we would see this as a proper land use but would add that uses of the adjoining Shucks Island tract, IIS-6 be limited to those activities that do not impact, negatively, on this expansion. Dredge disposal or barge fleeting on the northern tip of Tract IIS-6 would be two activities that should receive careful review prior to authorization.

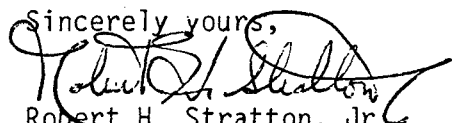
Plate 22-5A: from the plate description, it would seem more appropriate to include Tracts FI 43,44,45A, 45B, 45D, a portion of 46 and 47 in the cooperative agreement with IDOC for their administration. We were pleased to see the addition of tract IIS-15 as a "natural area" to provide protection for an expanding heron rookery on Armstrong Island.

Plate 22-7A: Consideration should be given to including all of tracts FI88, FI94, and the accreted island immediately south of Goose Island under the cooperative agreement responsibility of IDOC. This would incorporate these tracts with the larger adjoining areas already administered by IDOC and simplify administrative and onsite monitoring of programs.

Plate 22-8A: to better address and compliment MDOC's plans for the development of their public use and wildlife management programs, tracts FM 76,77,78,79,81,87,88,152,154, and 156 should be considered for their administration under terms of the cooperative agreement.

Section VII-16: the last sentence of the second paragraph concerning the Fabius Island development and possible conflicts with bald eagle useage is misleading. It's difficult to accept as fact that we can continue to push (displace) eagles, or any wildlife for that matter, into "surrounding habitat" and still maintain viable populations. In many cases displaced birds have already been DISPLACED a number of times, and to further disrupt their use patterns and habitat without documented evidence of no impact would be at the least, unwise in the short term and may, in the overall assessment of species requirements, totally unacceptable. Further study is recommended prior to development of the planned facility.

We are pleased to have had the opportunity to review and comment of the Pool 22 R-R Master Plan. These comments and recommendations represent the views of the Mark Twain National Wildlife Refuge staff only; other Divisions within our agency may provide comments under separate cover and may detail other concerns that their review staff deem appropriate.

Sincerely yours,

Robert H. Stratton, Jr.
Project Leader

The tax-paying citizens of the Mississippi River Pool 22 area are of the opinion that their voices are not being heard or heeded by the U.S. Army Corps of Engineers, that Presidential policies are being paid lip-service only by the bureaucratic agencies who are responsible for planning and implementing Mississippi River policies, and that facts and common sense are being cast by the wayside in planning the management of public resources, to be financed by tax dollars. Accordingly, the following observations and alternative proposals are offered for consideration by the Corps and other interested government agencies and officials:

OBSERVATIONS

FIRST: The Mississippi River is an invaluable public resource which lends itself to both private and public uses. Public uses are easily identifiable, by the very definition of the words. Private uses, on the other hand, may amount to commercial as well as non-commercial activity. All such uses are compatible under existing factual and legal circumstances.

SECOND: The cost of managing all uses of the public domain which lies within Pool 22, and the other river pools, is borne by the tax-payers of this country, be they individual or corporate. Almost 50% of the Corps' Rock Island District river management budget is composed of channel maintenance and lock and dam operation. Inasmuch as the taxes collected directly and indirectly from the commercial users of the river do not begin to pay for the multi-million dollar benefits they receive, it can be fairly said that this part of the Corps' budget is a direct subsidy to the bargeline operators.

THIRD: Maintaining a navigable waterway such as the Mississippi River is certainly in the best interests of our nation, in that the market access that the river provides is of unquestioned value to producers and manufacturers of products and goods destined for national and international markets; the stimulation of commerce, with the resulting jobs and tax dollars, should not be impeded, and in fact deserves governmental support.

*Public Meeting
Handout*

FOURTH: So long as governmental stimulation of commerce is at taxpayer expense, it stands to reason that taxpayers should have a substantial voice in river management, which includes both the planning and implementation of controlling policies.

FIFTH: For many years, the U.S. Army Corps of Engineers has been responsible for managing the river resource, and of late has conducted public hearings and requested public input as to proper resource management, at least insofar as public recreational use is concerned.

SIXTH: The Phase-out Policy applicable to private campsite leases, cited on pages IX-4 to 6 of the Recreation-Resource Master Plan, cites two reasons for its existence: Executive Order 11988, which directs federal agencies to manage government lands in a manner which will reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by flood plains; and certain federal laws which purportedly promote the notion that the elimination of such campsites is necessary to provide the maximum overall use of government land for general public purposes such as recreation, conservation, and management of fish and wildlife resources, conservation, and management for forest resources, and preservation of natural and scenic areas, rather than for private or semi-private purposes.

SEVENTH: The recreational nature of most campsites, coupled with an assumption of risk of flood loss by anyone who maintains property within the flood plain, provides a situation which is not inconsistent with the Corps' stated Phase-out Policy: Because the campsites in Pool 22 amount to approximately .77% of the federally owned land therein, it cannot be said that their presence interferes with the public use of that land; it is abundantly clear that campsite use is one of the most intense recreational uses which the flood plain land enjoys; and the risk of loss is willingly accepted by campsite users, who can waive any potential claim against the federal government for losses attendant to flooding.

EIGHTH: Executive Order 12291 of Feb. 17, 1981, provides in part that: In promulgating new regulations, all agencies shall not undertake regulatory action unless the potential benefits to society for the regulation outweigh the potential costs to society.

NINTH: Both the Corps' use of their budget to provide a subsidy for bargelines without taxpayer input or concern for economic benefit derived, and its interpretation of federal orders and laws to suit its purposes without regard to consideration of the economic and/or recreational impact in eliminating the campsites, are inconsistent with Executive Order 12291.

TENTH: It is time for the Corps of Engineers to take into account more than just the commercial interests which use nearly half of its budget, and account to the citizen-taxpayers who have an equal voice in equal use of the Mississippi River; the economic loss posed by the elimination of the campsites, as disclosed by a recent survey, will detrimentally affect local governmental bodies, commercial enterprises, utilities and other providers, anywhere from 15 to 30 million dollars, while equal sums are freely spent in the same Rock Island District for channel maintenance and dam operation for the benefit of private commercial interests, the barge lines.

ELEVENTH: The channel maintenance activities by the Corps subsequent to the construction of navigation dams and dikes has systematically detracted from the ecosystem by eliminating the amount of water surface, the depth of non-channel pools, free access to sloughs and backwaters, and fish spawning areas, all in the name of maintaining the navigation channel for private enterprise and at the cost of the ecosystem and recreational uses.

ALTERNATIVE PROPOSALS

A. The cost of maintaining the Mississippi River for private commercial users should be borne in greater proportion by those private commercial users. This includes the costs of channel maintenance and marking, dam operation, damages to government property such as bridges and dams, and rental fees for barge tie-up and staging areas.

B. The Recreation-Resource Master Plan shall comply with President Reagan's Executive Order 12291, which directs that all agencies shall weigh potential benefits against potential costs to society when promulgating new regulations or reviewing existing regulations, and that regulatory objectives shall be chosen to maximize the net benefits to society, and provide proof of compliance.

C. Inform the President and the Congress of the potential economic impact and resulting societal losses which would be accomplished by the elimination of private campsites which compose but .77% of the public land in Pool 22 and .5% in the Rock Island District.

D. Offer long-term leases at a reasonable fee to existing campsite lessees, and secure a waiver of any claim against the United States by such a lessee for damages arising on account of flooding.

E. Require greater attention and positive action by the Corps in connection with ecological effects caused by channel maintenance activities, with the objective of eliminating and correcting activities which reduce the water surface, cause filling of non-navigational pools, damage the environment and ecosystem of fish and other wildlife, and otherwise detract from the Mississippi as a natural resource.

F. Upon a determination that the privileged opportunity to use public land for campsite purposes is no longer acceptable for public purposes, as stated in the Corps' Environmental Assessment for the Master Plan, commercial use of government land should be found to be equally unacceptable.

G. Take no further steps in the implementation of any Master Plan until the foregoing proposals have been included and subjected for approval to the citizen-taxpayers who live in the affected areas.

H. "The Public's Best Interest," a byword in Corps plans, includes consideration by the Corps of one of the most endangered species of all, the American citizen-taxpayer, who is forced to pay his taxes to pay the salaries of bureaucrats who in turn tell him how they are going to manage his river with his money. It is time for "The Public's Best Interest" to mean just that.

REMINDER OF PUBLIC MEETING

4/3/84

PURPOSE: The Rock Island District, Corps of Engineers, is in the process of updating the resource Master Plan for Mississippi River Pool 22. A Master Plan document serves as a guide for the short and long term management and development of project resources. Specific features of the plan identify land use designations (including shoreline management), private use policies, recreation development potentials, and general administrative practices for Corps-administered project lands.

The purpose of the meeting is to provide you an opportunity to examine and comment on the draft Pool 22 Master Plan. The meeting will consist of a formal presentation and an exchange of information with the specialists who formulated the Master Plan.

WHO IS INVITED: All interested persons are invited and urged to be present. This includes representatives of Federal and non-Federal agencies; businesses; civic, ecological, environmental, recreation, and fish and wildlife organizations; and other interests.

WHERE: Holiday Inn
4141 Market Street
Hannibal, Missouri

WHEN: April 10, 1984

7:00 p.m.

FOR MORE INFORMATION: Department of the Army
Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

PHONE: 309/788-6361, Ext. 6386

ANNOUNCEMENT

(date)

OF

PUBLIC MEETING

PURPOSE: The Rock Island District, Corps of Engineers, is in the process of updating the resource Master Plan for Mississippi River Pool 22. A Master Plan document serves as a guide for the short and long term management and development of project resources. Specific features of the plan identify land use designations (including shoreline management), private use policies, recreation development potentials, and general administrative practices for Corps-administered project lands.

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WHERE: Holiday Inn
4141 Market Street
Hannibal, Missouri

WHEN: April 10, 1984

7:00 p.m.

FOR MORE INFORMATION: Department of the Army
Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

PHONE: 309/788-6361, Ext. 6386

Christopher S. Bond
Governor



State of Missouri
OFFICE OF ADMINISTRATION

Post Office Box 809

Jefferson City

65102

March 30, 1984

John A. Pelzer
Commissioner

Perry M. McGinnis, Director
Division of Budget and Planning

District Engineer
U.S. Army Engineer District, Rock Island
ATTN: Planning Division
Clock Tower Building
Rock Island, Illinois 61201

Dear Sir:

Subject: 84030016 - Recreation Resource Master Plan
Mississippi River Pool 22

The Missouri Federal Assistance Clearinghouse, in cooperation with state and local agencies interested or possibly affected, has completed the review on the above project application.

None of the agencies involved in the review had comments or recommendations to offer at this time. This concludes the Clearinghouse's review.

A copy of this letter is to be attached to the application as evidence of compliance with the State Clearinghouse requirements.

Sincerely,

Lois Pohl, Coordinator
Missouri Clearinghouse

LP:cm

cf:

PD

PD-F



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

February 29, 1984

REPLY TO
ATTENTION OF:

Planning Division
Flood Plain Management/Special
Studies Branch

SEE DISTRIBUTION LIST

Enclosed for review and comment or reference is the draft revision of the Recreation-Resource Master Plan for Pool 22 of the 9-foot Navigation project, Mississippi River. The plan serves Corps of Engineers needs for administrative and physical management and development guidance concerning project resources, as well as coordination of such project concerns with other agencies and the public.

Preparation of the plan is based upon applicable Federal regulations and programs concerning natural resource practices and policies. Updating of the plan was needed to provide proper administrative guidance and management objectives concerning the natural resources of the project consistent with these directives and current resource conditions. The last revision was partially completed in 1969 for Pool 22.

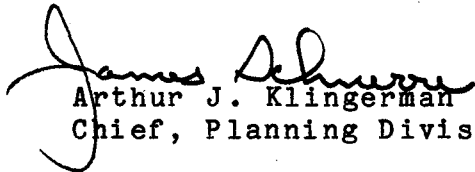
Cooperative effort is made to assure complementary and compatible management of project resources with planning, management, and development concerns of other interests that are either directly or indirectly involved. The level of coordination accomplished to date varies in relation to responses received from earlier efforts, level of administrative responsibility of the individual interests, and the documented actions or planning of such interests. The continued coordination process of this plan and future associated implementation actions will be fully pursued and incorporated in the final plan or supplemental future revisions, as warranted.

An Environmental Assessment (EA) has been prepared to address impacts related to plan implementation. The EA is being reviewed in conjunction with this draft plan circulation. A review period of 60 days is being provided to allow response and comment of these documents. In addition, a public meeting will be scheduled during the

review period to assist public and agency review. Any comments or additional information concerning the enclosed document or related actions should be sent to the following:

District Engineer
U.S. Army Engineer District, Rock Island
ATTN: Planning Division
Clock Tower Building
Rock Island, Illinois 61201

Sincerely,


Arthur J. Klingerman
Chief, Planning Division

Enclosure

OFFICE OF
COUNTY CLERK OF PIKE COUNTY

PITTSFIELD, ILLINOIS 62363

Phone 217-285-6812

CARROL K. HOOVER
COUNTY CLERK

DEPUTIES
MAURINE BOREN
DONNA HOOVER
BETTY CLOUGH
MARY WHITE

December 18, 1981

Colonel Bernard P. Slofer
Rock Island District, Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Dear Colonel Slofer:

Reference is made to your letter regarding the possibility of Pike County taking over operation and maintenance of recreation facilities currently operated by the Rock Island District of the Corps of Engineers.

The letter explained that your inquiry was not an offer to enter into a cost share agreement. The intent is for the County to assume full responsibility for operation, maintenance and replacement of facilities. The sites mentioned that are in the Pike County limits are as follows: John Hay at River Mile 309.1 and Park-N-Fish at River Mile 301.1.

The Pike County Board met on November 24, 1981 and held discussion on the contents of the letter received from your office. The Board adopted the County budget for the new fiscal year beginning December 1, 1981 and ending November 30, 1982. They were faced with the problem of finding sufficient revenue to meet the needs of the budget. Federal Revenue Sharing funds have been a great help to this County. The Board realizes there is no way to know how long the County will continue to receive Revenue Sharing.

The Pike County Board was in full agreement that the County should not attempt to assume the responsibility for operation, maintenance and replacement of the facilities as was requested in the letter from your office.

The Pike County Clerk was directed to write a letter informing you of the decision made by the County Board.

Very truly yours



Carrol K. Hoover
Pike County Clerk

CKH:dh



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

REPLY TO
ATTENTION OF:

NCDRE-R

24 SEP 1981

Mr. Larry R. Gale, Director
Missouri Department of Conservation
P.O. Box 180
Jefferson City, Missouri 65102

RE: Mississippi River Pool No. 22, Public
Park and Recreational Lease Application

Dear Mr. Gale:

This is in response to your 2 June 1981 letter.

We have reviewed your preliminary plan to construct public boat launching and parking facilities on an area of Government land near Fabius Island. This office agrees in concept to your plan to provide the facilities under a lease agreement with the Department of the Army. However, we cannot enter into a lease agreement until more detailed information is submitted to us.

Inclosed is a draft of lease prepared by this office in accordance with our regulations. Please review the draft lease and return it unexecuted to us along with a letter indicating your concurrence with the terms of the proposed lease. You will note that the lease requires that the premises be developed in accordance with a general development plan. The sketch you inclosed as Exhibit "C" to your application does not show sufficient detail for us to approve the plan. Therefore, you are requested to submit a detailed development plan which indicates the area to be used for initial construction and future construction, location of roads and parking areas, water and sanitation facilities, waterfront and boat launching facilities, and any other facilities to be provided at the site. The general development plan should be accompanied by a development program listing the items of construction proposed in each of the next 5 years, stating the source of development funds, and indicating a proposed program for operation and maintenance. The development program should also list the number of personnel to be assigned for management of the area. An example of a development program is inclosed for your information.

Your application does not indicate that any facilities will be constructed on tract numbers FM-87 and FM-88. We therefore have not included those areas in the proposed lease draft. If your future development plan shows that you plan to use the extra area for development, we will revise Exhibit A to show the additional area.

NCDRE-R

Mr. Larry R. Gale

24 SEP 1981

You should also submit a copy of the legislative authority of the Missouri Department of Conservation to lease, develop, operate, and maintain public parks. Five copies of the nondiscrimination assurances, which will become "Exhibit B" to the lease, are also inclosed for your execution. Please execute all five copies and return four copies to this office. The fifth copy is furnished for your records.

After we have received the requested information and have approved the development plan, we will submit the proposed lease to our higher authority for approval. Any questions regarding the proposed lease should be referred to Mr. Richard Mattson (telephone number 309/788-6361, Ext. 6263) of this office. We look forward to working with you and your personnel in the development of the area for use by the public.

Sincerely,

3 Incl

1. Lease draft
2. Dev. Program Example
3. Nondiscrimination
Assurances (quint)

W. M. TAIT
Chief, NCD Real Estate Field Office



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mark Twain National Wildlife Refuge
Great River Plaza
311 N. 5th Street, Suite 100
Quincy, Illinois 62301

IN REPLY REFER TO:

August 11, 1980

Mr. Doyle W. McCully, P. E.
Chief, Engineering Division
Rock Island District
Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Dear Mr. McCully:

Although the schedule for the Mississippi River Pool 22 Master Plan revision has been delayed the following preliminary information is being provided relative to plans and unique wildlife values of the pool.

The current 1980 Annual Management Plans for the states of Missouri and Illinois should be referred to for generalized reporting and plans for the management of Cooperative Agreement lands.

The respective plans should be on file in the Rock Island office:

1. Missouri Department of Conservation - Upper Mississippi Wildlife Area, March 25, 1980.
2. Illinois Department of Conservation - Mississippi River Fish and Waterfowl Management Area, May 12, 1980.

Known unique wildlife values for Pool 22 area include use by endangered bald eagles, waterfowl, and colonial nesting birds.

A recent analysis of the pool was made as to known important areas for bald eagles. Copies of that summary are attached.

Although there are no consistently used major concentration areas for waterfowl, the pool is important to that migratory resource. A unique feature involving other migratory birds is the existence of a great-blue heron/egret rookery located on Armstrong Island between River Mile 312 and 313. Every effort should be made to protect that important nesting site.

General information guidance, and direction provided by the GREAT II Plan, now in draft stage, should be considered in any master plan revision by pool. Additionally, subsequently planned meetings to discuss the timber inventory and timber management recommendations will be required to address specific needs and approaches to management of resources in Pool 22.

Sincerely yours,

Howard A. Lipke

Howard A. Lipke
Refuge Manager

Attachments



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

REPLY TO
ATTENTION OF:

NCRED-PB

7 JUL 1980

SEE MAILING LIST

Gentlemen:

In the spring of 1979 Peco Enterprises of Davenport, Iowa, was awarded a contract with the Rock Island District - US Army Corps of Engineers, to prepare a Master Plan for Mississippi River - Pool 22. The contract required the contractor to contact various government and private organizations to obtain information on their existing or future plans or activities in the Pool 22 area. Of particular value would be information on recreation, fish and wildlife, aesthetics, natural areas, forest, zoning, commercial fleeting areas, and the archaeological and historical resources within the Pool 22 area.

Within the past year, numerous organizations within the Pool 22 area have received two letters from the contractor requesting comments, recommendations, or plans that the respective organization may have on how the river resources should be managed. Unfortunately the response to these letters has been less than desired. As a result the Rock Island District is again requesting your organization's input in order to assist the contractor in developing a comprehensive and viable Master Plan for Pool 22. Please inform us by letter, if your organization has any existing or future plans or activities that should be incorporated into the Master Plan.

One of the major topics to be addressed in the Master Plan is recreation. The document will address the management practices and plans for existing and future recreational areas within the pool. Under Public Law 89-72 non-Federal Government entities have the opportunity to participate with the Corps of Engineers in a 50/50 cost sharing program for the initial development of recreational facilities within Federal boundaries. Under the cost sharing program, state, county, or local government entities would be required to accept the cost of the management and maintenance of the facility. In addition, existing Federal recreational facilities and improvements installed prior to FY 1976 may be made available to non-Federal Government entities for management, operation, and maintenance. As a result the John Hay and Park-N-Fish recreational areas could be managed by a non-Federal government agency, providing they are willing to assume the operation, management, and maintenance responsibilities.

NCRED-PB

Other major elements of concern to be addressed in the plan have been previously referenced in the first paragraph of this letter. Once again, if your organization has any existing or future plans and/or recommendations dealing with these topics, please inform the Rock Island District. A negative response would also be appreciated.

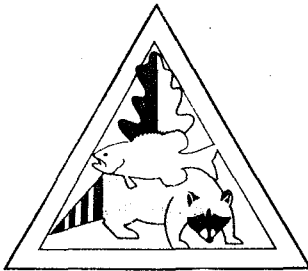
Please send all letters of correspondence or inquires to the following address:

District Engineer
US Army Engineer District, Rock Island
Corps of Engineers
ATTN: ED-PB-EA
Phone 309/788-6361, Ext. 349
Clock Tower Building
Rock Island, Illinois 61201

Sincerely,


DOYLE W. McCULLY, P.E.
Chief, Engineering Division

Copy furnished:
PECO Interprise
ATTN: Mr. R. Latko, Sr.
320 LeClaire Street
Davenport, Iowa 52801



MISSOURI DEPARTMENT OF CONSERVATION

MAILING ADDRESS:
P.O. Box 180
Jefferson City, Missouri 65102

STREET LOCATION:
2901 North Ten Mile Drive
Jefferson City, Missouri 65101

Telephone 314/751-4115
LARRY R. GALE, Director

February 21, 1980

Colonel Frederick W. Mueller
District Engineer
U. S. Army Engineer District
Rock Island Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Re: NCRED-P

Dear Colonel Mueller:

Several members of my staff received copies of a January 27, 1980 letter requesting information on endangered species in Upper Mississippi River Pool 22. I am pleased to be of assistance on this important matter. The following information was provided by my staff:

- a. Indiana Bat - Myotis sodalis: Because their summer distribution is not restricted to caves, this mammal tends to be widely distributed. Riparian habitat in Northern Missouri where they are found is important for both the Indiana and gray bat. While we cannot say for certain that the Indiana bat forages over the Mississippi River, they have been encountered in western Marion County.
- b. Gray Bat - Myotis grisescens: A significant gray bat maternity colony is located in Fisher Cave, approximately 8.5 miles southwest of Lock and Dam 22. This colony is the only known gray bat colony in Northeast Missouri. While we do not know for certain that these bats forage over the Mississippi River, gray bats from a cave in Boone County fly towards the Missouri River which is 7 miles southwest of the cave.

Because gray bats depend primarily on insects with aquatic larva for food, any changes that may result in alteration of water quality and river bottom conditions may impact the gray bats.

COMMISSION

W. ROBERT AYLWARD
Kansas City

J. ERNEST DUNN, JR.
Kansas City

CARL DISALVO
St. Louis

JACK WALLER
Malden

Missouri Department Of Conservation

Colonel Fredrick W. Mueller
February 21, 1980
Page Two

- c. Bald Eagle - Haliaeetus leucocephalus: This bird is a common winter visitor to the Pool 22 area. Eagle usage of the pool tends to fluctuate with weather conditions. During mild periods, when the river is free of ice, the eagles disperse throughout the pool. When the river freezes, the birds tend to concentrate around open water immediately below the dams. Data on the occurrence of eagles at Lock and Dam 22 is as follows:

	Adults	Immature
U.S. Fish and Wildlife Service - Jan. 1980	3	4
U.S. Fish and Wildlife Service - Jan. 1979	6	2
Personal communications - Elton Fauks	Total Eagles	
January 20, 1979	32	
February 11, 1979	47	
February 5, 1977	36	
February 15, 1976	29	
February 8, 1975	17	

While we recognize that "one shot" type surveys may be misleading, and daily counts should be taken at standard locations, the information indicates the area is important for bald eagles.

We have no knowledge of recent or historic nesting of bald eagles along Pool 22. We caution that any activity that threatens large trees, particularly along the river banks, would have a negative impact.

- d. Higgins' Eye Pearly Mussel - Lampsilis higginsii: Members of my staff have not collected mussels from Pool 22; therefore, we have no recent records of Lampsilis higginsii from the area. Utterback (American Midland Naturalist, 1915) reported the animal from the Mississippi River near Hannibal.
- e. During the past 10 years Potamilus capax, a species not listed in your letter, has been collected immediately below Lock and Dam 22. This species was also reported from another site in Pool 24 several miles downstream.
- f. One species proposed for the endangered species list that has been found near the Mississippi River in Clark County

Missouri Department Of Conservation

Colonel Fredrick W. Mueller
February 21, 1980
Page Three

is the Illinois mud turtle Kinosternon flavescens spooneri.
The distribution of this animal is not well known. In the
last year, it has been reported from Lewis County and may
occur in the Pool 22 area.

I am hopeful that this information will meet your needs. The response is a
compilation of input from several staff members that received copies of your
request. I believe that your needs could be best met if you addressed all
future requests to me at the above address.

Sincerely,

Larry R. Gale
LARRY R. GALE
DIRECTOR

cc: U. S. Fish and Wildlife Service
Kansas City, Missouri

U. S. Fish and Wildlife Service
Rock Island, Illinois



— QUINCY COLLEGE - QUINCY - ILLINOIS — 62301

THE DEPARTMENT OF BIOLOGICAL SCIENCES

PHONE: AREA • 217 • 222 • 8020

February 6, 1980

Dr. Doyle W. McCully, P.E.
Chief, Engineering Division
Rock Island District, Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Dear Dr. McCully:

In reference to your letter concerning the revision of the Pool 22 Master Plan, I will have more information sometime in March, 1980.

We are currently studying the Bald Eagle from Lock and Dam 21 to about five miles south as part of our Design Location Study for the new Quincy, Illinois bridge. We are attempting to locate perching and roosting areas by observing their activities late in the evening and early in the morning. We started the study a little late because we were waiting for cold weather to cause the eagles to congregate. This has been a very atypical winter thus far and eagles have been scattered throughout the area.

We intend to do further fresh-water mussel studies early next summer. To date, we have not observed any Higgin's Eye Mussels, nor any endangered bats. If you will want any information about eagles for your assessment before March 30, 1980 please inform me and I will be glad to send you information we have accumulated at this time.

Sincerely,

A handwritten signature in cursive script, reading "George H. Schneider".

George H. Schneider
Assoc. Prof. of Biology

GHS:js



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

REPLY TO
ATTENTION OF:

NCRED-PB

21 DEC 79

MEETING SUMMARY

Mississippi River Master Plan
Pool 22

On 10 and 11 October 1979 the Rock Island District, Corps of Engineers conducted public meetings at the Holiday Inn of Quincy, Illinois, and Hannibal, Missouri, respectively. The purpose of these meetings was to inform the public on the Master Planning Process for the Pool 22 Master Plan Update, to encourage an exchange of information, and to receive public comment on the anticipated management and development of Pool 22 resources.

The meeting format was divided into four major sub-divisions: Introduction, Workshop Session, Audience Participation, and a Summary. The Introduction included an explanation of the meeting purpose, a slide presentation on the concepts of Master Planning, and a presentation on the resources of Pool 22. During the Workshop Session, the audience was divided into small discussion groups. Each group discussed nine issues of concern involving Pool 22 resources, ranging from wildlife management needs to aesthetics. In addition, each group had the opportunity to discuss other topics of concern. In the audience participation portion of the meeting a spokesperson from each discussion group presented the ideas and consensus on Pool 22 issues from that group to the audience. Following this portion of the meeting, those in attendance were given a chance to make a statement or address questions to the panel. During the summary it was stated that another public meeting would be held in February or March of 1980. This meeting will give the public the opportunity to review the draft copy of the revised Master Plan, ask questions, and voice their opinions.

The goal of the Pool 22 Master Plan is to formulate a program within the guidelines of current national policy for optimum utilization of the resources. This policy is directed toward insuring maximum lasting benefits for people of present and future generations and protecting the natural resources. In view of this goal and comments received, the following issues of concern were addressed:

Recreational Facility Needs

Numerous comments were made during the workshop session about the possibility of additional boat launching ramps on the Missouri side of the river, as well as primitive camping areas throughout the pool. In addition, mention was made about the possibility of marking canoe trails and setting up a program of boat safety training in the Pool 22 area. The need for additional launching ramps and primitive camping areas, as well as their possible locations, will be further studied. The possibility of offering boating safety courses is a management action which will also be investigated.

Wildlife Management

Questions were raised concerning the amount of land zoned for wildlife benefits and the quality of habitat available. In the existing Master Plan for Pool 22, certain areas were zoned for wildlife benefits. These, as well as other areas, will be reviewed to determine if their optimum utilization is for wildlife benefit and how much land needs to be set aside for wildlife use.

In response to requests from the public, the Corps will explore the possibility of planting more mast producing trees, and also will examine management techniques to increase the populations of deer, squirrel, and rabbit in the wildlife areas.

Commercial Needs and Uses

Several participants questioned the policy which allows commercial transport enterprises to use the river without payment of direct charges, such as tolls. This policy has been changed. In 1978 the 2nd Session of the 95th Congress passed Public Law 95-502. Section 4042 of this law outlines a schedule of taxes to be imposed on any liquid used during any calendar quarter, by any person, as a fuel in a vessel in commercial waterway transportation. The table is as follows:

If the use occurs -

The tax is -

After September 30, 1980 and before October 1, 1981	- 4 cents a gallon
After September 30, 1981 and before October 1, 1983	- 6 cents a gallon
After September 30, 1983 and before October 1, 1985	- 8 cents a gallon
After September 30, 1985	-10 cents a gallon

The practice of barge fleeting, as well as the designation of commercial use and fleeting areas, will be considered in the Master Plan process.

NCRED-PB

Forestry Management

At the present time, the dominant tree species found in the Pool 22 area are of low market value, thus making them undesirable for timber harvest. These same trees have some value in regard to wildlife and the scenic value of the Pool 22 area. With more intensive management of these areas, wildlife and aesthetic values will improve, in addition to lumber yields of moderate value. Therefore, the majority of forested areas could be managed for multiple benefits. A forestry survey has been completed in the Pool 22 area.

Improvement of Existing Recreational Facilities

Corps designated recreational areas in Pool 22 will be reviewed to see where, as well as what, improvements need to take place. Improvement of undeveloped areas will require participation of a non-Federal governmental agency for cost sharing and future management responsibilities.

Improved Access

Methods to improve the access to existing areas will be researched. Areas chosen for future recreational development will be those areas with good access as well as numerous other factors.

Aesthetics

As previously mentioned, many of the forested areas in the pool could be managed for multiple benefits. Those areas with unique or scenic aesthetic features will be zoned for future preservation. Many privately-owned lands along the river have been developed within the past 20 years. Within the near future it is possible that the only lands along the river that will be in a natural state are those areas owned by the Federal Government. Those areas should be preserved to insure the aesthetic, wildlife, and recreation benefits for the greatest number of people of present and future generations.

Erosion

The Mississippi River is a dynamic resource that is ever changing. As a result, certain forms of erosion occur as a natural event, while others can be related to the activities of man. Research is being done to reduce the amount of erosion that results from those activities. Forms of vegetative planting and the continued use of riprap have been used to reduce and alleviate erosion problems. The results of this research, as well as erosion control measures, will continue to be used in Pool 22 to reduce and control erosion.

Private Docks

Presently, there are areas of Government land where private boat docks and other minor boat access related structures can be authorized. The continuation of this policy and designation of any such sites will be considered in the Master Plan process. All private recreational docks require a special use license. The fee is \$30.00 for 3 years. The money from these fees is turned over to the General Fund of the United States.

Cottage Site Leases

The majority of attendees were primarily interested in the continuation of cottage site leasing past the 30 November 1988 phase-out date.

There are two basic reasons why the cottage site leases are being discontinued. Construction and maintenance of habitable structures within the flood plain was contradictory to the National Program for Managing Flood Losses (H.D. No. 465, 89th Congress, 2nd Session) as partially implemented by Executive Order 11296 dated 11 August 1966. This Executive Order was superseded by Executive Order 11988 which further emphasized the requirement for Federal agencies to manage Government-owned land in a manner which would reduce flood hazards to the greatest extent possible. Therefore, one basic reason for the phase-out policy is to eliminate buildings for human habitation from the flood plain to minimize the flood hazard.

In addition, the Federal Water Project Recreation Act of 1965 established development of the recreational potential at Federal water resource projects as a full project purpose, and the US Fish and Wildlife Coordination Act of 1958 provides that fish and wildlife conservation receive equal consideration with other project purposes. Consequently, another basic reason for the phase-out policy is to eliminate these private leases from public land and thereby promote the maximum overall use of Government land for general public purposes, such as recreation and fish and wildlife management, rather than for private or semi-private purposes. Therefore, in accordance with the forgoing, the Office of the Chief of Engineers directed on 25 November 1966 that no new leases for cottage site purposes be entered into and that existing cottage site leases be renewed for only one 5 year period. Since some leases expired in 1967 and others expire as late as the early 1980's, the Chief of Engineers revised the policy to extend all the leases to a common expiration date of 30 November 1988, provided the land was not needed for a higher priority public use, and further provided that the lessee maintain the leased premises in accordance with the lease. The revised policy was announced to all lessees by letter dated 2 November 1967 and the lessees were reminded of the policy by letter dated 14 March 1975.

NCRED-PB

The purpose of the Master Plan is to establish guidelines for managing the resources of all government-owned areas in Pool 22, including those presently leased to individuals for cottage sites.

Comments

To those who attended the 10 and/or 11 October public meetings, and to those who provided comments, we extend our appreciation for your interest in this important effort. For those who did not have the opportunity to fill out a comment sheet, a copy is inclosed. If you were unable to attend or desire to make further comments, we encourage you to complete the comment sheet.

1 Incl
As stated



MISSOURI DEPARTMENT OF CONSERVATION

MAILING ADDRESS:
P.O. Box 180
Jefferson City, Missouri 65102

STREET LOCATION:
2901 North Ten Mile Drive
Jefferson City, Missouri 65101

Telephone 314/751-4115
LARRY R. GALE, Director

December 20, 1979

Season's
Greetings

Colonel Frederick Mueller
District Engineer
U. S. Army Engineer District
Rock Island Corps of Engineers
Clock Tower Building
Rock Island, Illinois 61201

Re: Pool 22 Master Plan

Dear Colonel Mueller:

Members of my staff attended the public meeting concerning the Pool 22 Master Plan held in Quincy, Illinois and we offer the following comments. As the Missouri agency charged with management, control and restoration of all fish, wildlife and forestry resources, we recognize the need for a balanced land management approach.

You may be aware of our continuing effort to provide for forest management on Corps lands. The completion of the Forestry Appendix of the Pool 22 Master Plan offers the opportunity to outline acceptable silvicultural practices to improve timber resources for both wildlife and forest products.

We are interested in seeing wildlife management receive the same emphasis as forest management in planning for the Mississippi River pools. We encourage you to initiate work on the Wildlife Appendix to the Pool 22 Master Plan. In our mind, it is difficult to separate forest from wildlife management. Effective management of river resources can only be achieved by considering wildlife and their habitat together.

As an example, there is a real value in providing for wetland habitat in the Mississippi River pools. As the pools age and fill with sediment, the loss of natural wetlands must be compensated for by management of other suitable tracts as wetland. One area offering this opportunity is in the Bay de Charles

COMMISSION

W. ROBERT AYLWARD
Kansas City

J. ERNEST DUNN, JR.
Kansas City

CARL DISALVO
St. Louis

JACK WALLER
Malden

Missouri Department Of Conservation

Colonel Frederick Mueller

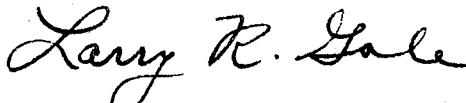
December 20, 1979

Page Two

tract, river mile 311-312. This Department will complete a detailed topographic survey this year of the Bay de Charles tract. The area has the potential for moist soil wetland management with the construction of low profile levees and utilizing the Bay de Charles Drainage District as a water source. Following the completion of the topographic survey, we will seek your approval to proceed with the management and restoration of the Bay de Charles area.

I am confident that by working together on this important planning effort, the land and water resources of Pool 22 can be protected and improved to provide a diverse environment for fish, wildlife and forest resources.

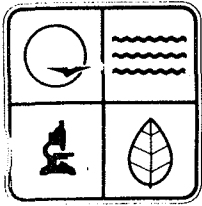
Sincerely,



LARRY R. GALE
DIRECTOR

cc: Missouri Department of Natural Resources
Jefferson City, Missouri

U. S. Fish and Wildlife Service
Rock Island, Illinois



November 27, 1979

Colonel Frederick W. Mueller, Jr.
District Engineer
Rock Island District
Corps of Engineers
1830 Second Avenue
Rock Island, Illinois 61201

ATTN: ED-PB-PF

Dear Colonel Mueller:

The Department of Natural Resources has the following recommendations and comments on the Pool 22 Resource Master Plan Study.

Recreation Resources

Potential recreation resources are under-utilized along the Missouri side of Pool 22 because of severely limited public access sites. We recommend that additional public access sites be acquired and developed. Barrier-free recreation facilities including picnic sites, camp sites, and a beach (or similar use facility) should be provided.

Scenic Resources

Pool 22 should be designated as a scenic resource section of the Mississippi River. The scenic resources should be protected by 100 yard wide buffer or corridor along the entire length of Pool 22 or along high quality zones. The scenic corridor should exclude future non-compatible development and protect and restore the fine riverine habitat. Riparian forests should be restored and allowed to mature and screen modern structures and industry so that the rich Mississippi River heritage is preserved. In addition to a river bank vegetation buffer strip, the islands in Pool 22 should be protected from cottage development and logging. Such practices adversely effect scenic resources and fish and wildlife resources that include Bald Eagles.

Fish and Wildlife Resources

We recommend the islands in Pool 22 be preserved as sanctuaries for migrating and breeding bird species, management of old growth forest stands on certain islands, particularly McDonald Island and smaller islands to the south, will favor over wintering habitat for the American Bald Eagle and other non-game species.

Remaining wetland habitats should be preserved for the benefit of both game and non-game species. Wetland preservation provides great hunting and fishing opportunities.

MISSOURI DEPARTMENT OF NATURAL RESOURCES

P.O. Box 176 Jefferson City, Missouri 65102 (314) 751-4422

Joseph P. Teasdale Governor
Fred A. Lafser Director

Colonel Frederick W. Mueller, Jr.
November 27, 1979
Page 2

Natural Areas

The Natural Area Survey recognized two high quality natural area sites along Pool 22 on Corps' property (see attached map and descriptions). These sites are glaciated bottomland forests with sloughs. We recommend these sites be inspected in the near future for natural area characteristics and if they are still of high quality, the current lessee, the Missouri Department of Conservation, designate and manage these sites as part of the Missouri Natural Areas System.

In addition, master plan emphasis should be placed on identification and preservation of rare and endangered species sites.

Archaeological, Historical, and Architectural Resources

The master plan for Pool 22 should address the effects of dredge spoil disposal on archaeological, and historical resources and the effects of shoreline erosion on archaeological sites.

The flood plains of Pool 22 contain numerous archaeological sites. A full cultural resources survey of Pool 22 should be undertaken as part of the Pool 22 Master Plan process.

The master plan for Pool 22 should address the Antiquities Act of 1906 (16 U.S.C. 431 et seq), The Historic Sites Act of 1935 (16 U.S.C. 461 et seq), the National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq), the National Environmental Policy Act of 1965 (42 U.S.C. 4321 et seq), The Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469 et seq), Executive Order 11593, The Advisory Council on Historic Preservation's regulations Protection of Historic and Cultural Properties (36CFR Part 800) and the Corps of Engineer Regulations "Identification and Administration of Cultural Resources" (33CFR Part 305).

Sincerely,

DEPARTMENT OF NATURAL RESOURCES



Fred A. Lafser
Director

FAL:crp

cc: Department of Natural Resources, DEQ
Missouri Department of Conservation



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Federal Building, Fort Snelling
Twin Cities, Minnesota 55111

IN REPLY REFER TO:

AFA-SE

NOV 19 1979

Colonel F. W. Mueller, Jr.
District Engineer
U. S. Army Engineer District
Rock Island
Clock Tower Building
Rock Island, IL 61201

Dear Colonel Mueller:

This is in response to your letter of November 8, 1979, NCRED-PB, regarding the proposed updating of the Pool 22 Master Plan, Mississippi River.

The following endangered species may be found in the project area:

Indiana Bat	<u>Myotis sodalis</u>
Gray Bat	<u>Myotis grisescens</u>
Bald Eagle	<u>Haliaeetus leucocephalus</u>
Higgin's Eye Pearly Mussel	<u>Lampsilis higginsii</u>

There is no Critical Habitat currently designated in the vicinity of the project.

In accordance with the Endangered Species Act of 1973, as amended, the Federal agency responsible for actions authorized, funded, or carried out in furtherance of a construction project that significantly affects the quality of the human environment, is required to conduct a biological assessment. The purpose of the assessment is to identify listed or proposed species likely to be adversely affected by their action and to assist the Federal agency in making a decision as to whether they should initiate consultation. Consultation can be initiated by writing to the Regional Director, Fish and Wildlife Service, Federal Building, Fort Snelling, Twin Cities, Minnesota 55111.

The biological assessment is to be completed within 180 days of initiation and before contracts are entered into or construction begun.

When conducting a biological assessment, the following steps should be taken:

1. Conduct an on-site inspection of the area affected by the proposed activity or program, which may include a detailed survey of the area to determine if species are present and whether suitable habitat exists for either expanding the existing population or potential reintroduction of populations.
2. Interview recognized experts on the species at issue, including those within the Fish and Wildlife Service, the National Marine Fisheries Service, State conservation departments, universities and others who may have data not yet found in scientific literature.
3. Review literature and other scientific data to determine the species' distribution, habitat needs and other biological requirements.
4. Review and analyze the effects of the proposal on the species, in terms of individuals and populations, including consideration of the cumulative effects of the proposal on the species and its habitat.
5. Analyze alternative actions that may provide conservation measures.

If there are any questions regarding the biological assessment or how it applies to the consultation process, please contact the Region 3 Endangered Species Office at 612-725-3596.

This letter provides comment only on the endangered species aspect of the project. Comments on other aspects of the project under the authority of and in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et. seq.) may be sent under separate cover.

Sincerely yours,



Thomas J. Kerze
Acting Regional Director

Don't Miss the Boat!



POOL 22 MASTER PLAN PUBLIC WORKSHOPS

PARTICIPATE: The Mississippi River Pool 22 is being examined to determine how project lands, water, forest, and other resources can be conserved, enhanced, developed, and administered in the public interest. The study will include an analysis of recreation, natural areas (possible control of wetlands in the Bayside/Charles area), wildlife management, reserve forest land, intensive forest management, fleeting, soil erosion, and the review of leased cottage and special permit areas. The results and recommendations of this study will be compiled in a new Master Plan for Resource Management Navigation Pool 22.

The purpose of the workshops is to provide you an opportunity to examine the Pool 22 issues and to make comments on how you feel the Pool should be designed and managed. The workshop will consist of displays, formal presentations, and the exchange of information with the specialists who will formulate the Master Plan.

ATTEND:

7:00 P.M.
10 OCTOBER 1979
HOLIDAY INN
200 MAINE ST.
QUINCY, IL

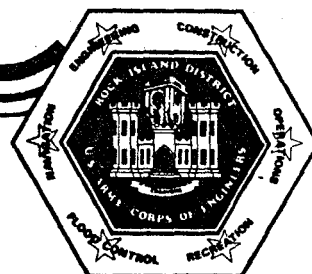
7:00 P.M.
11 OCTOBER 1979
HOLIDAY INN
4141 MARKET ST.
HANNIBAL, MO

**WHO IS
INVITED:**

All interested persons are invited and urged to be present. This includes representatives of Federal and non-Federal agencies; businesses, civic, ecological, environmental, recreation, and fish and wildlife organizations; property owners; and other interests.

FOR MORE INFORMATION CONTACT:

Department of the Army
Corps of Engineers
Clock Tower Building
Rock Island, IL 61201
(309) 788-6361 Ext. 285



DISTRIBUTION LIST

ADD TO MAILING LIST
FOR DISTRIBUTION

MR. JAMES C. SLIFER

ILLINOIS DEPT. OF TRANSPORTATION

DISTRICT 6

126 E. ASH ST.

SPRINGFIELD, IL. 62706

ATTN: BUREAU OF PLANNING

Chuck Petzring

217-785-5332

MR. M. J. MACCHIO

BUREAU CHIEF OF LOCATION AND ENVIRONMENT

ILLINOIS DEPT. OF TRANSPORTATION

2300 S. DIRKSEN

SPRINGFIELD, IL. 62764

MISSOURI HIGHWAY AND TRANSPORTATION COMMISSION

}

ADDRESS CORRECTIONS

Mark Twain Regional Advisory Commission
205 W. Dover Street
P.O. Box 175
Monroe City, Missouri 63456

Two Rivers Regional Council of Public Officials
Franklin Square
Fourth and State Streets
Quincy, IL 62301

ADD:
~~The Great River Road Association~~
Mississippi ^{River} Parkway Commission
201 Westport Office Building
220 S. Robert Street
St. Paul, MN 55107

DISTRIBUTION LIST FOR
RECREATION-RESOURCE MASTER PLAN
MISSISSIPPI RIVER - POOL 22

DISTRIBUTION -- EXTERNAL

NO. OF
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HONORABLE CHARLES H. PERCY, UNITED STATES SENATOR,
RM 117, 600 E. MONROE, SPRINGFIELD, IL 62701

HONORABLE ALAN J. DIXON, UNITED STATES SENATOR, PO
& FEDERAL COURTHOUSE, RM 108, 6TH & MONROE STS.,
SPRINGFIELD, IL 62701

HONORABLE JOHN C. DANFORTH, UNITED STATES SENATOR,
611 OLIVE, SUITE 1867, ST. LOUIS, MO 63101

HONORABLE THOMAS F. EAGLETON, UNITED STATES SENATOR
4039 FEDERAL OFFICE BLDG., ST. LOUIS, MO 63103

HONORABLE RICHARD J. DURBIN, REPRESENTATIVE IN
CONGRESS, 305-07 ILLINOIS STATE OFFICE BLDG., 531
HAMPSHIRE, QUINCY, IL 62301

HONORABLE HAROLD L. VOLKMER, REPRESENTATIVE IN
CONGRESS, FEDERAL BLDG., ROOM 370, HANNIBAL, MO
63401

STATE CONSERVATIONIST, SOIL CONSERVATION SERVICE,
USDA, SPRINGER FEDERAL BLDG., 301 N. RANDOLPH ST.,
CHAMPAIGN, IL 61820

2

DIVISION ADMINISTRATOR, FEDERAL HIGHWAY
ADMINISTRATION, 320 W WASHINGTON, ROOM 700,
SPRINGFIELD, IL 62701

2

FIELD SUPERVISOR, U.S. FISH & WILDLIFE SERVICE, 1830
SECOND AVE. - 2ND FLOOR, ROCK ISLAND, IL 61201

NATIONAL PARK SERVICE, ROCKY MT. REG OFC., ATTN:
JACK R. RUDY, IAS., DENVER, CO 80225

~~JERRY RASMUSSEN, COORDINATOR, UPPER MISS. RIVER
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*Mississippi River Parkway Commission, ~~Westport~~ Westport Ofc.
Bldg., 220 S. Robert ~~St.~~, St. Paul, MN 55107*

ENVIRONMENTAL ASSESSMENT

FINDING OF NO SIGNIFICANT IMPACT
FOR
RECREATION-RESOURCE MASTER PLAN
MISSISSIPPI RIVER, POOL 22

Having reviewed the information provided by this environmental assessment, and data obtained from cooperating Federal, State, and local agencies having jurisdiction by law or special expertise, and from the interested public, I find that implementation of the Recreation-Resource Master Plan, Mississippi River, Pool 22, will not have a significant adverse effect on the quality of the environment. Therefore, it is my determination that preparation of an Environmental Impact Statement is not required. This determination may be reevaluated if warranted by later developments.

Two basic alternatives were evaluated in addition to the preferred action: "no action," and "planning variations."

Factors that were considered in making a determination that an Environmental Impact Statement was not required are as follows:

1. Any negative impacts which would occur are minor or temporary in effect. Positive environmental and recreation impacts for project resources are long-term in nature.
2. No significant environmental, social, economic, or cultural impacts are anticipated as a result of plan implementation.
3. The plan provides practical and sound management guidance for future Federal resource management decisions for the project, which will result in an overall benefit to the general public.
4. Continued coordination will be made with Federal and State agencies to assure compliance with Federal regulations and programs, and appropriate protection, conservation, and/or mitigation of project natural and cultural resources.

15 June 84
Date

Arthur E. Miller
Arthur E. Miller
MTC, U.S. Corps of Engineers
Acting District Engineer



United States
Department of
Agriculture

Forest
Service

Northeastern Area
State & Private
Forestry

370 Reed Road
Broomall, PA 19008

Reply to: 1950

Date: March 27, 1984

Colonel Bernard P. Slofer
Corps of Engineers
Department of the Army
Clock Tower Building
Rock Island, Illinois 61201

Dear Colonel Slofer:

We have reviewed the Environmental Assessment, Recreation-Resource Master Plan, Mississippi River, Pool 22, Illinois and Missouri, February 1984 and extend our congratulations for a job well done. It is encouraging to see multi-purpose planning provided in public lands such as these. Your attention to the broad range of natural, social, economic and cultural resources is commendable. We offer our concurrence and support.

Sincerely,


THOMAS N. SCHENARTS
Area Director





UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO ATTENTION OF:

N-COE-F39026-IL

MAR 12 1984


Colonel Bernard P. Slofer
District Engineer
Rock Island District, Corps of Engineers
Attn: Planning Division
Clock Tower Building
Rock Island, Illinois 61201

Dear Colonel Slofer:

The U.S. Environmental Protection Agency, in accordance with its responsibilities under Section 309 of the Clean Air Act, has reviewed the Environmental Assessment and preliminary Finding of No Significant Impact for the proposed recreation - resource management plan for Mississippi River Pool 22.

Based on our review of these documents, we concur with your conclusions that this action will not affect human health nor significantly degrade the environment.

Sincerely yours,


Larry G. Reed, Deputy Director
Planning and Management Division

cf: P D F

PD



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

REPLY TO
ATTENTION OF:

February 29, 1984

Planning Division

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Enclosed for your review are the Environmental Assessment and draft statement of Finding Of No Significant Impact for updating of the Recreation-Resource Master Plan, Mississippi River, Pool 22. A Final Environmental Impact Statement, dated July 1974, was prepared for the operation of the Mississippi River 9-foot Channel Navigation Project. An Environmental Assessment, dated December 1981, was prepared for specific natural resource (forestry, fish and wildlife) management actions for the project (Pools 11-22). This assessment addresses the referenced master plan implementation which establishes management guidance for the development and use for both the short- and long-term productivity of project natural resources.

These environmental documents are being circulated for a 60-day review commencing from the date of this letter. This review period coincides with the review period for the action document. Any comment concerning these documents should be addressed to the following:

District Engineer
U.S. Army Engineer District, Rock Island
ATTN: Planning Division
Clock Tower Building
Rock Island, Illinois 61201

Sincerely,

Bernard P. Slofer
Colonel, Corps of Engineers
District Engineer

Enclosures

ENVIRONMENTAL ASSESSMENT RECREATION-RESOURCE MASTER PLAN



**US Army Corps
of Engineers**
Rock Island District



**MISSISSIPPI RIVER POOL 22
ILLINOIS AND MISSOURI
FEBRUARY 1984**



REPLY TO
ATTENTION OF:

NCRPD-F

DEPARTMENT OF THE ARMY
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS
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ENVIRONMENTAL ASSESSMENT

MISSISSIPPI RIVER - POOL 22
RECREATION - RESOURCE MASTER PLAN

ILLINOIS AND MISSOURI

FEBRUARY 1984

ENVIRONMENTAL ASSESSMENT
MISSISSIPPI RIVER - POOL 22
RECREATION - RESOURCE MASTER PLAN
ILLINOIS AND MISSOURI

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ENVIRONMENTAL ASSESSMENT

MISSISSIPPI RIVER - POOL 22 RECREATION - RESOURCE MASTER PLAN ILLINOIS AND MISSOURI

I. PURPOSE AND NEED FOR ACTION

The Rock Island District, Corps of Engineers, is in the process of updating the Master Plan for resource management of the land under its jurisdiction that was acquired for the 9-foot navigation channel project for the Upper Mississippi River. The original Master Plan for the project was prepared in 1947, and the latest revision was partially completed in 1969. A Master Plan document serves as a guide for the short- and long-term management and development of the project resources, in conformance with applicable Federal regulations and programs concerning natural resource practices. Periodic revision and updating of the plan is needed to ensure management remains consistent and compatible with current Federal laws and policies, as well as the resource base conditions and use demands.

The land acquisition within Pool 22 for the project purpose of navigation consisted of approximately 6,200 acres (890 acres inundated by project operations) of which the Rock Island District has direct management of only 735 acres (14%). The remaining area is managed by the respective state conservation agencies for fish and wildlife purposes through a Cooperative Agreement between the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service (FWS). Cooperative effort is made in plan preparations to assure complementary and compatible management of project resources with planning, management, and development concerns of other interests that are jointly responsible, directly or indirectly, for administration of project lands.

Analysis reflected in the plan, as determined from various Federal and non-Federal studies, indicates increasing public needs and interests in project resources. These demands will require more intensive and individual management efforts and attention in the future to avoid adverse environmental impacts and to assure proper productivity and availability of the resources. Guidance presented in the plan represents the best solutions to these concerns that can be made with available information and supporting authority. Plan implementation involves various agency opportunities and responsibilities, which will require continued cooperation and coordination effort. Approval of the plan establishes general administrative practices. Individual actions will require separate approval or additional authorization if not supported under these general conditions. The plan also serves to coordinate project programs with interested Federal, State, and local entities and the general public.

II. DESCRIPTION OF THE PROPOSED ACTION

A. Plan Content and Scope. The Recreation - Resource Master Plan, Pool 22, Mississippi River, is the administrative document covered by this assessment. Specific features of the plan identify land use designation (including shoreline management), private use policies, recreation development potentials, and general administrative practices for Corps-administered project lands. The plan provides and directs guidance to be followed for the resource administration and operational practices involving resource management and recreation development in accordance with supporting Federal policies and programs. This assessment incorporates the plan by reference as a source of information for description of both the resources and the planning issues/features under evaluation.

B. Land Use Allocation. The land use allocation system described in the plan establishes resource management guidance for project lands. Incorporated in these definitions are the Lakeshore Management allocations specified under Title 36, Chapter III, Part 327.30, Code of Federal Regulations. The five land use designations presented in the plan are as follows:

1. Project Operations. This classification is for land allocated to provide safe, efficient operation of the project for those authorized purposes other than recreation and fish and wildlife. Designated uses include project operation and maintenance structures, dredge disposal sites, and private or public commercial port facilities. Agricultural use will be permitted on an interim basis when not in conflict with specified uses. Limited interpretive and low density recreational uses will also be permitted if considered compatible and beneficial with existing features and purposes. Private recreation mooring facilities are not permitted in these areas for safety reasons. Such designated lands are considered as prohibitive access areas for shoreline management purposes.

2. Recreation - Intensive Use. This classification is for land allocated for use as developed public use areas having controlled intensive recreational activities, including recreational areas provided for commercial concessions (marinas) and public/civic organizational groups. No agricultural uses are permitted within these areas. Private recreation mooring facilities are also not permitted within such areas. Such designated lands are considered public recreation areas for shoreline management purposes.

3. Recreation - Low Density Use.

a. Public Use. This classification is for land allocated for unconfined or dispersed public recreation use, or for specific scientific/educational research purposes. Typical permitted uses and activities include ecological research and interpretive environmental education facilities, trails (hiking, horseback riding, or cross-country skiing), primitive (undeveloped) camping and swimming, and other similar dispersed recreation pursuits. Dredge disposal sites specifically recommended for

beach nourishment or enhancement purposes are included under this category. Agricultural use is permitted as an interim use when considered beneficial for maintenance of open space and/or scenic values. Private recreation mooring facilities are prohibited within these areas. Such designated lands are considered protected shoreline areas for shoreline management purposes.

b. Special Use. This classification is for land allocated for private and general public recreation access purposes. This designation includes permitted facilities such as water skiing jumps, boat docks, stairways, and other private recreational facilities. Modification of land form or vegetative characteristics is permitted only as necessary to provide safe access and for erosion protection. Permitted structural facilities are considered temporary, and an acceptable short-term effect on the environmental and physical characteristics of the area. Commercial agricultural use is prohibited within these areas. Private recreation mooring facilities are permitted within these areas based on conditions specified in Attachment III (shoreline management plan) of the plan. Such areas are considered limited development areas for shoreline management purposes.

4. Wildlife Management/Reserve Forest Land. This combined classification is for land allocated for fish and wildlife management purposes and related recreation opportunities and for vegetation control involving intensive forestry management objectives directed to improve timber quality and wildlife habit. Commercial fiber production is not a primary objective. Hunting, fishing, trapping, primitive camping, bird watching, photography, and canoeing are examples of related dispersed recreation uses. Management objectives are directed toward wildlife habitat, and propagation of game and nongame species. Designated portions of such lands are reserved as waterfowl sanctuaries ("closed areas") during migration periods, limiting certain uses. Agricultural uses are permitted on an interim basis on these lands for wildlife food supplement and vegetative management values. Private recreation mooring facilities are prohibited within these areas. These areas are designated as protected lakeshore areas for shoreline management purposes to protect existing scenic, environmental, fish and wildlife values.

5. Natural Area. This classification is for land allocated to preserve and protect: unique scientific, ecologic, and scenic resources; significant archeological and historical sites; and, threatened and endangered species habitat. Public use activities are limited or prohibited within these areas. No agricultural uses shall be permitted on these designated lands. Private recreation mooring facilities are prohibited in these areas. Such areas are considered prohibited access areas for shoreline management purposes.

The following table presents the land use allocation acreage within Pool 22. Acreage figures are based upon computations taken from the mapping used to illustrate such classifications in the plan and do not represent legal real estate computations.

TABLE EA-1
Mississippi River - Pool 22
Land-Use Allocation

<u>Allocation</u>	<u>Illinois</u>		<u>Sub-Total</u>	<u>Missouri</u>		<u>Sub-Total</u>	<u>Total</u>
	<u>Adams</u>	<u>Pike</u>		<u>Marion</u>	<u>Ralls</u>		
Project Operations	0	42.3	42.3	0	4.6	4.6	46.9
Recreation - Intensive Use	0	104.3	104.3	36.3	2.3	38.6	142.9
Recreation - Low Density Use							
Public Use	17.3	31.2	48.5	6.5	70.8	77.3	125.8
Special Use	0	0	0	29.0	6.9	35.9	35.9
Wildlife Management/							
Reserve Forest Land	2,862.3	1,013.0	3,875.3	1,772.0	2.8	1,774.8	5,650.1
Natural Area	208.4	0	208.4	245.6	0	245.6	454.0
Total			4,278.8			2,176.8	6,455.6

C. Private Use Policy. The use of project lands for private recreation purposes is not consistent with the intent of current resource management policies. However, at projects where such commitments currently exist, such activities may be allowed to continue subject to a specified management plan. Attachment III of the plan specifies shoreline management procedures that will be applied in dealing with private exclusive use on project administered lands. The provisions contained in this shoreline management plan do not apply to cottage site and residential leases or other habitable structures. Such existing leases will be phased out by 31 December 1989 as explained in Section IX of the plan. This policy is a separate action from the Master Plan implementation, and therefore, such impacts are only referenced in this assessment in relation to associated concerns within Pool 22. It is the objective of the Corps of Engineers to manage private, exclusive use on project lands to the degree necessary to gain maximum benefits to the general public. A corollary of this objective is the protection and restoration of desirable environmental characteristics of the natural shoreline and the compatible use with authorized project purposes.

Project lands are also made available to public agencies and individual interests under lease, permit, license, or easement for agricultural, industrial/commercial, public utility, scientific, or recreational purposes. These undertakings are at the full expense of the applicant for development, maintenance, and restoration, as specified in the terms of the agreement. Such uses may directly or indirectly restrict general public use of the lands. Availability of project lands for such special use is determined appropriate when suitable private property is not available for such purposes and when considered to be in the overall public interest and not to interfere with primary project purposes. Such uses are not to permit irretrievable or irreversible commitment of the natural resources and are revocable any time at the District Engineer's discretion.

There are presently 47 cottage site leases, 7 special use licenses, and 10 other interests for either right-of-way or commercial purposes. The cottage site leases involve approximately 48 acres, and the other interests total approximately 73 acres. Special use licenses do not convey property rights in real estate; however, a total of approximately 36 acres have been designated in the plan for such permitted use. In addition, approximately 38 acres classified as Project Operations in the plan are designated for commercial purposes.

D. Recreation Features.

1. Potential Development. Initially, general legislative authority allowed the Corps to construct, maintain, and operate public park and recreational facilities on lands acquired for project purposes. Subsequent legislation established cost-sharing procedures which are now applicable to any new areas of development or improvement (expansion) to existing areas. There have been no such cost sharing interests expressed to date during the coordination undertaken for the preparation of the plan. Therefore, none of the potential recreation facility

development identified in the plan is proposed for Federal sponsoring at this time. However, any new recreation facility improvements identified in the plan may be optionally pursued at full expense by other public interests.

The plan identifies three existing Corps operated and maintained public use areas and one new area for potential future recreation facility development. These improvements are in recognition of identified general project area needs and specifically expressed concerns of other interests. Corps public use areas were initially developed in the mid-sixties as minimum access points for boating and fishing pursuits. The total acreage for these areas is 9 acres, with potential future expansion improvements involving an additional 13.5 acres. A new 20-acre site near Fabius Island, Marion County, Missouri, is also presented in the plan.

2. Management Options. Major improvements or expansion of the existing Corps-operated and maintained public areas may be undertaken at full Federal expense if determined that significant cost efficiency for operation, maintenance, and replacement expansion will be achieved for the project. Site modifications may be necessary to establish management controls such as user fee collection. Also, a reallocation of facilities may be made between public use areas to concentrate maintenance expenses for cost efficiency, as well as to better accommodate existing public use patterns. These modifications are considered management options and not new or expanded improvements as long as total existing facilities for the entire project are not increased.

3. Routine Maintenance, Replacement, and Minor Upgrading. The ongoing maintenance, replacement, and minor upgrading of recreation facilities within existing public use areas is necessary to provide safe and quality enjoyment to the public and protection of the natural resources. Typical items covered under this activity are: in place replacement or rehabilitation of in-kind facility, (i.e., resurfacing of roads, trails, parking lots, camping spurs, and boat ramps; picnic tables, toilet buildings, shelters, or signage); installation of individual support facilities, (i.e., picnic shelters, playground equipment, sanitary system, camper pads, and electrical or water distribution), landscaping, minor erosion control measures for bank stabilization or vegetative improvement, and fencing and barrier posts; and caretaker and grounds maintenance (i.e., painting, mowing, repairs, etc.). Minor modification of facility siting may also be undertaken within the existing confines of the park to enhance user convenience, access, and enjoyment, and restoration or improvement of the natural environment.

E. General Corps of Engineers Resource Management Policy. Identified in the plan are resource management objectives which serve to direct project management and development activities in accordance with given administrative policies and conditions. Specific resource use objectives presented in the plan are in correlation with various regional and local studies that address problems, needs, and characteristics of the project area. Designated management actions reflect the best overall public interest of both present and future generations, on a basis that is equal for all

potential users. Administrative and management practices concerning the natural resources of the project are directed toward maximum benefit to the general public, consistent with economic, ecological, and aesthetic values set forth by Federal legislation. The following resource management objectives are supported or specifically addressed in the plan:

1. Assist in the development, conduct, safety, and efficiency of waterborne commerce (both commercial and recreational).
2. Operate and maintain project facilities and resources for maximum use and safety by the visiting public consistent with resource capacity limitations on a basis that is equal for all potential users.
3. Encourage non-Federal sponsorship for needed recreational and fish and wildlife enhancement, and seek to obtain appropriate public agency interest in assuming operation and maintenance of existing Corps-managed recreational areas.
4. Protect and manage project resources in a manner to assure public use and benefits consistent with optimum ecological values.
5. Participate in and develop educational, scientific, and social programs promoting the identification, conservation, or enhancement of environmental and cultural interests associated with project lands.
6. Implement an active forestry management plan on project lands to enhance overall quality of wildlife habitat and natural visual characteristics.
7. Survey lands and water prior to any planned significant action for identification of rare and endangered species or critical habitat areas, and designate such known habitat as undisturbed (natural) areas.
8. Undertake a systematic cultural survey of project lands to determine known locations of potential sensitive areas of significant resources, and to nominate any potentially eligible site to the national register of historic places.
9. Review and coordinate management plans and development actions to assure appropriate consideration by other concerned public agencies as needed.

III. ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

A. Ecological

1. Terrestrial. The project lands within Pool 22 represents the few remaining areas of undeveloped riverine bottomland forest comprising some 6,200 acres. A diverse community of wildlife inhabits

these environs on both a resident and migratory basis. A detailed list and description of flora and fauna associated with the project lands are referenced in the plan and a separately prepared Appendix B, Forestry, Fish and Wildlife Plan, Mississippi River, Pools 11-22. Supported management actions identified in the plan are expected to have a positive cumulative effect on ecological resources. However, certain individual actions involving limited recreation or commercial development may result in permanent displacement and losses, which are referenced as potential considerations in the plan. No large-scale habitat alterations are expected from any of the proposed land use management designations. Approximately 6,104 acres of project lands (95 percent) within Pool 22 are designated for wildlife conservation purposes. Management and administrative guidance are long-term implementation considerations. Identified potential recreation development, if implemented, would result in temporary disturbance to wildlife during construction and could affect some 13.5 acres of presently undisturbed habitat. Wildlife losses would be minimal with possible relocation or reestablishment within a short period. Losses to natural habitat conditions are offset by long-term benefits associated with designated wildlife conservation on remaining project lands, which includes conversion of 47 existing private, exclusive use areas (48.3 acres of cottage site leases) upon scheduled termination.

2. Aquatic. Aquatic conditions characteristic of Pool 22 are generalized and described in the plan. Land resource management and administrative guidance identified in the plan are considered to be beneficial to aquatic resources. Some adverse impacts are associated with identified potential recreation development features (i.e., boat launching ramps and private mooring/dock facilities) in the plan. Permitted uses associated with lands designated as Recreation - Low Density, Special Use (36 acres), may have adverse impacts upon aquatic resources as well as site specific actions such as boat ramps and commercial mooring facilities. Recreation developments are expected to have minor impacts on existing aquatic conditions considering the limited physical extent and historic use influences involved. In addition, the reduction of existing private exclusive use (48.3 acres of cottage site leases) on project controlled shorelines will provide offsetting aquatic benefits through restoration of natural shoreline and removal of in-kind structures. Additional individual environmental review and detailed considerations will be provided concerning impacts on aquatic resources through the issuance of required regulatory permit authority as part of future implementation requirements involving installation of boat launching facilities or commercial mooring facilities.

B. Social. The primary adverse social impact which is addressed in the plan is the land use allocation changes and conditions for private, exclusive use of project lands as referenced in Section II, paragraph c, of this assessment. There are presently 47 cottage site leases located within Pool 22, which involve 48.3 acres of project lands, that will be terminated as a result of this policy. The social impacts may be significant to the individuals involved and are unrelated in regard to implementation concerns of the Master Plan. Experience of leases terminated to date has indicated that many structures have been removed

intact and relocated on private land. This will not be feasible for all lease structures; therefore, additional hardships may likely occur in such instances. Such privileged opportunity to use public land has always been conditional to short-term availability and is no longer acceptable for public purposes. A general public benefit as a result of this policy is the reduction in both the perception and physical access restraints of private property rights concerning public lands used for such purposes. General public access will be enhanced as well as natural resources for the overall public benefit of present and future generations as a result of plan implementation.

The aesthetic values of the existing landscape will not be significantly altered and will remain primarily unchanged. Various supported physical actions would harmonize (texture, shape, and scale) with existing manmade features and natural rural and riverine settings, and therefore, have minimal adverse visual intrusion to present landscape patterns.

C. Economic. Property affected is administered by the Federal Government, and its use will remain primarily unchanged. The property is tax exempt, except for permitted private personal property improvements. No significant change in revenue and disbursement related to funds received for licenses, leases, and sales will occur as a result of plan implementations. Losses of approximately \$1,750 annually will occur as a result of the termination of cottage leases located in Pool 22. However, some long-term economic gains are possible in support of timber management harvesting practices as part of designated conservation objectives for the project resources. These impacts are not comparatively offsetting since revenues from such activities are deposited differently for Government disbursement purposes; nor is either impact interrelated or contingent upon the other concern. Simply, the overall general public interest is considered to be beneficial concerning future economic impacts. Other minor economic benefits related with potential increases in Government revenue is the overall increase of available special use license fees and rental fee for a potential barge fleeting activity involving project lands. Possible temporary employment and service opportunities may occur within the vicinity in relation to potential recreation and commercial development identified in the plan. Although no direct impact to the regional growth will likely occur as a result of implementation of the plan. No prime or unique farmland is affected, and no private farms will be displaced.

D. Cultural. Specific features of the plan do not have a significant impact upon any cultural sites listed on the National Register of Historic Places. A systematic cultural survey of project lands will be undertaken to fully evaluate impacts of project operation and management actions. Individual cultural surveys will be required for major actions prior to any construction disturbance. Coordination is maintained with the respective State Historic Preservation Officer to assure specific project actions do not adversely impact significant cultural resources. The Master Plan references and discusses recorded cultural sites within the project vicinity.

IV. ALTERNATIVES

A. No Revision. Under this alternative, resource management of the project lands would continue under the general guidance established by the existing plan approved in 1969. Project administration would be significantly restricted in performing proper resource management in accordance with present Federal programs and directives. Individual actions identified in the plan could be implemented independently as demand would dictate and would lack a comprehensive guidance available in an overall plan update. Environmental impacts would be unchanged and viewed incrementally rather than cumulatively with related concerns. This alternative is not preferred and does not satisfactorily provide administrative guidance needed for project resource management.

B. Planning Variations. There are basically two major features of the plan which offer any variation opportunities/considerations. These items are the resource management guidance (land use allocation) and proposed recreation improvements (physical site plans). Environmental analysis and comparison concerning potential variations of these features are restricted to alternative measures which could be implemented and are consistent with present authority and administrative guidance.

1. Resource Management. Each parcel of project acquired land was evaluated to determine its most appropriate land use classification. Theoretically, any given property could have been classified in any of the designated categories. Evaluation was based upon historic use, present physical conditions, known expressed authorized uses, and given resource management objectives/priorities. Potential options were coordinated, and preferred selection jointly determined with the appropriate administrative agency responsible for management of the lands involved.

Environmental impacts of alternative classification designations could be greater than the selected classifications, if a net increase was made in lands determined available for authorized development (recreational or commercial) purposes. Future changes will be evaluated to assure any unavoidable loss or disturbance occurring to natural or cultural resources would be minimal and that such actions are in the overall best interest of the general public. Appropriate coordination would be made of such actions prior to approval.

Environmental impacts of alternative classification designations could also be less than the selected classifications, if areas identified for authorized development (either existing or potential) purposes were determined not to be available for such uses. This alternative would be either a status quo condition or long-term reestablishment of natural conditions with removal of existing development not required for project operations. This alternative is not considered to be in the best overall interests of the general public, nor fully consistent with authorized project purposes concerning natural resource management.

The selected plan is considered the best balance of land use classifications for authorized resource management purposes of the project based on information and expressed interests available to date. Implementation of the plan will have an overall long-term enhancement effect on the natural resources of the project and benefit to general public interests. No significant adverse impact to the quality of man's environment will result.

2. Recreation Improvements. Various alternative options concerning this feature of the plan are no action, site relocation, or in-place design changes. These alternatives are oriented toward development concerns and assumes options involving another agency implementation would be identical in impact.

A no action alternative represents a status quo condition of development and management. Existing facilities are of minimal support to accommodate present public use. Public use pressures could result in overuse of existing facilities and cause adverse environmental impacts and would warrant more intense management to restrict and control such useage. This alternative would not be consistent with sound resource management objectives and authorized project purposes. Adverse impacts associated with identified improvements and/or management activities would be avoided.

Alternative design options and site locations would involve similar environmental impacts as indicated for identified improvements. Various options are limited by the constraints of existing accessibility and resource suitability characteristics. Primary design objectives are to make park facilities harmonious with and least destructive to the natural environment while providing safe, healthy, and maximum enjoyment for the intended public use. The locations of facilities were selected to best accommodate existing public use, complement expressed interest of non-Federal sponsors, and support economical and efficient management. Selected locations are considered environmentally and economically acceptable. Viable alternatives of design or siting would not significantly alter or enhance such considerations and may result in greater adverse environmental impacts.

V. COMPLIANCE WITH FEDERAL STATUTES
AND OTHER ENVIRONMENTAL REQUIREMENTS

STATUTE/REQUIREMENT

STATUS

	<u>COMPLIANCE</u>		<u>DATE OF COMPLIANCE/COMMENT</u>
	<u>YES</u>	<u>NO</u>	
National Historic Preservation Act	X		Coordination will be maintained with State interests concerning full compliance measures.
Preservation of Historical Archaeological Data Act	X		Surveys will be performed prior to any proposed construction.
Clean Air Act	X		Any proposed activity is to be in conformance with the provisions of this act.
Clean Water Act	X		Section 404(b)(1) evaluation will be completed for improvements affecting navigable waters.
Endangered Species Act	X		The U.S. FWS will be afforded review opportunity of any actions which may affect listed species or designated critical habitat.
Federal Water Project Recreation Act	X		Conforms with provisions of the act.
Fish and Wildlife Coordination Act	X		Coordination will be maintained with the U.S. FWS concerning fish and wildlife management and enhancement interests.
Land and Water Conservation Fund Act	X		LWCF funds are not involved in the plan implementation. The plan conforms with respective states' comprehensive outdoor recreation plans.
National Environmental Policy Act	X		Project Operation EIS was filed in May 1978. This assessment addresses specific features of the Pool 22, Rec. - Res. Master Plan for the project.

V. COMPLIANCE WITH FEDERAL STATUTES
AND OTHER ENVIRONMENTAL REQUIREMENTS (Cont'd)

<u>STATUTE/REQUIREMENT</u>	<u>COMPLIANCE</u>		<u>STATUS</u> <u>DATE OF COMPLIANCE/COMMENT</u>
	<u>YES</u>	<u>NO</u>	
Wild and Scenic Rivers Act	X		No designated wild and scenic rivers are involved.
Executive Order 11988 Floodplain Management	X		Conforms with principles and provision of this act.
Executive Order 11990 Protection of Wetlands	X		Any required permit review will be accomplished prior to implementation of activities which will affect wetland areas.
Analysis of Impacts on Prime or Unique Farmlands in Implementing NEPA (CEQ Memorandum 1980)	X		No designated prime or unique farmlands are involved.

VI. COORDINATION

Initial coordination has been completed with the U.S. Fish and Wildlife Service, Illinois Department of Conservation, and the Missouri Department of Natural Resources concerning the land use allocation plan for project lands under their direct management.

Initial coordination has also been made with other Federal agencies, State, county, local governmental agencies, and interested public organizations and the general public concerning preparation of the plan. Public workshops were held in October 1979 concerning initial preparation of the plan. Response to appropriate expressed concerns are specifically identified or addressed in the plan.

The draft plan has been made available to all interests for review and comment. A public meeting will be held to assist and solicit review of and comment on the plan.

This environmental assessment is being coordinated with appropriate Governmental and general public interests (see attached distribution list). A draft statement of Finding of No Significant Impact (FONSI) has accompanied distribution of this assessment and expresses anticipated final determination and conditions concerning compliance with NEPA.

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MISSISSIPPI RIVER - POOL 22

ENVIRONMENTAL ASSESSMENT

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