

## Chapter 1

### 1.1. PROJECT AUTHORIZATIONS

The Mississippi River Nine-Foot Channel Navigation Project was originally authorized by the River and Harbor Act of 1930 (Seventy-First Congress, Session 2, Chapter 847). 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 administrative portion of the Project associated with this Master Plan is Pools 11 through 22 and associated Corps lands.

### 1.2. PROJECT PURPOSES

#### *Navigation*

The Nine-Foot Channel Navigation Project and attendant locks and dams were originally constructed for the sole purpose of a continuous navigable channel of a minimum 9-foot depth and 400 foot width from the Mississippi River. The locks and dams created a chain of pools to help achieve the minimum 9 foot channel depth. The Rock Island District dredges within the navigation pools and maintains channel training structures such as wing dams and side channel closing structures to ensure navigable depth and width.

Mississippi River Project has 12 locks and dams within its borders. Lock and dams are located at the following points on the river as shown in Table 1-1.

Table 1-1 Lock and Dam Locations.

Lock & Dam	Location	Upper Mississippi River Mile
LD 11	Dubuque, IA	583
LD 12	Bellevue, IA	556.7
LD 13	Fulton, IL	522.5
LD 14	Pleasant Valley, IA	493.3
LD 15	Rock Island, IL	483
LD 16	Illinois City, IL	457.2
LD 17	New Boston, IL	437.1
LD 18	Gladston, IL	410.5
LD 19	Keokuk, IA	364.2
LD 20	Canton, MO	343.2
LD 21	Quincy, IL	324.9
LD 22	Saverton, MO	301.2

#### *Natural Resources*

During the initial construction and subsequent improvements of the Nine-Foot Channel Navigation Project, approximately 93,600 acres of public lands were originally acquired within the Rock Island District. Current Mississippi River Project lands (**TBD**) along with the slack water pools created by the locks and dams attract thousands of people to fish, swim, boat, hunt, and observe the flora and fauna of the UMRS and associated floodplains.

Congress has authorized the Corps to develop recreational facilities and requires the consideration of fish and wildlife conservation at all Corps water resource projects. The Flood Control Act of 1944, as amended, authorized the Corps to construct recreational developments at its water resource projects. In 1958, the Fish and Wildlife Coordination Act (FWCA) stated that fish and wildlife conservation should receive consideration equal to that of other project purposes and should be coordinated with other features of water resource development. In accordance with these laws, environmental stewardship and recreation are now major features of the Nine-Foot Channel Navigation Project for lands along the Mississippi River. The intent of the Corps is to provide optimal sustained use and public enjoyment while protecting the Project's natural resources.

The Corps operates and maintains recreation areas and provides stewardship of the natural resources on Project lands and waters. Other federal, state, public and private institutions and individuals also provide recreation facilities and services and natural resources management on outgranted Project lands.

In cooperation with the U.S. Fish & Wildlife Service (USFWS), Iowa Department of Natural Resources (IA DNR), Wisconsin Department of Natural Resources (WDNR), Illinois Department of Natural Resources (IL DNR), and Missouri Department of Conservation (MDC), **TBD acres** are made available for fish and wildlife management by General Plans and Cooperative Agreements. See Chapter 6 for additional information. The Fish and Wildlife Coordination Act of 1958 also requires that planning and project development is coordinated with the USFWS.

### *Recreation*

The Corps is the Nation's leading Federal provider of outdoor recreation opportunities. As host to about 370 million visitors a year, the Corps plays a major role in meeting the outdoor recreation needs of Americans. The Corps recreation projects contribute economically and socially to the communities in which they are located, providing a natural resource setting for visitors to reap the benefits of engaging in outdoor activities to their physical, mental, and emotional health. The Corps' Natural Resources Management Mission is to manage and conserve those natural resources, consistent with ecosystem management principles, while providing quality outdoor public recreation experiences to serve the needs of present and future generations. The Corps manages for long-term public access to, and use of, the natural resources in cooperation with other Federal, state, and local agencies as well as the private sector. The Corps integrates the management of diverse natural resources components such as fish, wildlife, forests, wetlands, grasslands, soil, air, and water with the provision of public recreation opportunities.

The Mississippi River Project offers a wide variety of recreational facilities including campgrounds, picnic areas, boat ramps, trails and other day use areas provided by the Corps, and lease-holders on over 60 outgranted areas. With 314 river miles, The Mississippi River Project provides ample space for water-based recreational activities such as paddle sports, boating, swimming, etc. The Corps leases land for private marina concessions and with partners, provides numerous boat ramps.

### 1.3. PURPOSE AND SCOPE OF THE MASTER PLAN

The Master Plan provides direction and guidance for appropriate uses, development, enhancement, protection, and conservation of the natural, cultural, and man-made resources on Mississippi River fee title lands and waters. It is a vital tool for the responsible stewardship of project resources for the benefit of present and future generations. A master plan is programmatic and identifies conceptual types and levels of activities, not designs, project sites, or estimated costs. It is specific to Corps lands and is not a plan for private lands or for other non-Corps public lands such as FWS fee title lands.

All actions by the Corps and the agencies and individuals granted leases to the Corps lands must be consistent with the master plan. Therefore, it must be kept current in order to provide effective guidance in the Corps decision-making.

The Master Plan is based on responses to regional and local needs, resource capabilities and suitability and expressed public interests consistent with authorized project purposes and pertinent legislation and regulations. It provides a District-level policy consistent with national objectives; other State and regional goals and programs. The plan is distinct from the project-level implementation emphasis of the Operational Management Plan (OMP). The Master Plan is a guide implemented through provisions of the OMP, specific Design Memorandums and annual management plans. Section 1.6 in this chapter provides a list of Mississippi River Master Planning documents and details which documents are superseded by the current version.

This Master Plan with Programmatic Environmental Assessment (EA) was prepared in accordance with the following guidance:

- Engineer Regulation (ER & EP) 1130-2-550, *Project Operations – Recreation Operations and Maintenance Guidance and Procedures*, 15 November 1996 (with changes 1 October 1999, 1 March 2002, 15 August 2002, 30 August 2008, 30 March 2009, 30 January 2013, and 30 September 2013).
- Engineer Regulation (ER & EP) 1130-2-540, *Environmental Stewardship Operations and Maintenance Policies*, 15 November 1996 (with changes 4 November 2002, 31 July 2005, 11 August 2008)
- ER 200-1-5, *Environmental Quality – Policy for Implementation and Integrated Application of the USACE Environmental Operating Principles and Doctrine*, 30 October 2003.
- ER 200-2-2, *Environmental Quality – Procedures for Implementing the National Environmental Policy Act*, 4 March 1988.
- ER 200-2-3, *Environmental Quality - Environmental Compliance Policies*, 30 October 1996, revised 29 October 2010.
- Engineer Manual 1110-1-400, *Engineering and Design – Recreation Facility and Customer Service Standards*, 1 November 2004.

- *ER 1165-2-400, - Water Resource Policies and Authorities: Recreation Planning, Development and Management Policies 9 August 1985.*
- *ER (ER & EP) 1130-2-500, - Partners and Support (Work Management Policies) 27 December 1996, Change 01 June 2006*
- *ER 405-1-12, - Real Estate Handbook, 20 November 1985, Change 15 May 2000*
- *ER 1130-2-406, - Shoreline Management at Civil Works Projects 31 October 1990.*
- *ER 1105-2-100, Planning Guidance, 22 April 2000 (with App D and G revised June 2004 and App F revised January 2006).*

The general objectives, scope, and format of this document follows regulations and guidelines as cited in ER 1130-2-550 and EP 1130-2-550. This Master Plan cannot resolve many broad based and long-term challenges associated with the UMRS. Examples of such challenges include artificially high amounts of sedimentation, water quality issues, balancing the growth of commercial activities with other needs, developments that are not on federal lands, and many others. However, the Corps will integrate a watershed perspective into opportunities and actions within its authority to operate and maintain the UMRS. Opportunities will be explored and identified where joint-use watershed resource management efforts can be pursued to improve the efficiency and effectiveness of the Corps Civil Works Programs. Participation will be solicited from federal, state and local agencies, organizations, and the local communities to ensure that their interests are incorporated into the formulation and implementation of the effort. The Corps and other appropriate agencies may address these problems in separate future studies.

#### *Separate Public Planning*

Despite what the name may suggest, the Master Plan is not a plan for Navigation, Emergency Management, Flood Risk Management, Environmental Restoration, Dredged Material Management Plan, or other Corps plans that are coordinated in separate authorizations, documents, and/or processes. It does not supplant planning for the Upper Mississippi River Restoration - Environmental Management Program (UMRR-EMP) as well as existing USFWS Comprehensive Conservation Plans (CCP) and Habitat Management Plans (HMP). The resource areas described in Chapter 5 therefore do not specifically include proposed plans for UMRR-EMP Habitat Rehabilitation and Enhancement Projects (HREP) or specific USFWS plans. Chapter 6 includes some additional information on UMRR-EMP HREPs and FWS CCPs and HMPs.

The FWS and state agencies managing Corps lands through the General Plan provide annual updates and plans yearly to the Corps as stipulated in the Cooperative Agreement. Established coordination procedures, public review, and legal environmental, cultural, and permit requirements and procedures remain in effect during Corps review of these plans. The implementation of plans by other agencies would not generally include Corps funding. The Future Management Recommendations in Chapter 5 do not specifically include general planning details by the other agencies that are consistent with the classification and with the Cooperative Agreement.

## 1.4. UPPER MISSISSIPPI RIVER SYSTEM WATERSHED DESCRIPTION

The Upper Mississippi River System (UMRS), includes all the commercially navigable waterways on the Mississippi River and tributaries above Cairo, IL (Figure 1-2), with the exception of the Missouri River and its tributaries. The Rock Island District is responsible for the middle portion of the Mississippi River between Guttenberg, IA and Saverton, MO (314 river miles).

On this portion of the UMRS, Mississippi River Project administrators **TBD acres** of public operational lands and maintains navigation through a series of 12 locks and dams, numerous channel regulating structures and by managing dredging operations on 314 miles of navigable waterway. Commercially, the Mississippi is one of the world's most important rivers. In addition to the primary navigation purpose, the pools behind the dams provide opportunities for a broad spectrum of outdoor recreation. Each pool area possesses a varied natural and recreation resources, often with high scenic, educational, scientific, environmental and cultural values. Protection and stewardship of these resources are major challenges for the Corps and its partners.



Figure 1-1. The Upper Mississippi River System showing Lock & Dam locations (MVR website).

### *The Mississippi River Basin*

The Mississippi River is one of the world's major river systems in size, habitat diversity, and biological productivity. It is the largest and second longest river in North America, flowing 2,340 miles from its source at Lake Itasca in the Minnesota North Woods, through the mid-continental United States, the Gulf of Mexico Coastal Plain, to its subtropical Louisiana Delta (Kammerer, 1990). "Mississippi" is an Ojibwa (Chippewa) Indian word meaning 'great river' or 'gathering of waters' – an appropriate name because the river basin, or watershed, extends from the Allegheny Mountains in the eastern United States to the Rocky Mountains, including all or parts of 31 states (Figure 1-3) and two Canadian provinces. The river basin measures 1,857,840 square miles, covering about 40 percent of the United States and about one-eighth of North America. Of the world's rivers, the Mississippi River System (which includes the Missouri River) ranks third in length, third in watershed area, and seventh in average discharge.

The Mississippi River and its adjacent forests and wetlands provide important habitat for fish and wildlife and include the largest continuous system of wetland in North America. The river supports a diverse array of wetland, open-water, and floodplain habitats. Most of the river and its floodplain (defined as the adjacent, generally flat surface that is periodically inundated by floodwaters overflowing the river's natural banks) have been altered by human development. Much of the watershed is intensively cultivated, and many tributaries deliver substantial amounts of sediment, nutrients, and pesticides into the river. Pollutants also enter the river from metropolitan and industrial areas.



Figure 1-2. The Mississippi River Basin shown on a United States map (MVD website).

## 1.5. MISSISSIPPI RIVER FLOODPLAIN

From river mile 614.0, the upper limit of the Rock Island District, to Muscatine, Iowa, mile 455.4, the course of the Mississippi River is through a comparatively narrow valley bordered by wooded hills and bluffs and affording picturesque scenery. Throughout the lower portion of the District, from Muscatine, Iowa, river mile 455.4, to Saverton, Missouri, river mile 302.7, the valley is generally wide and flat with extensive flood plain lands having been reclaimed for agricultural purposes. A system of levees provides flood protection to a major portion of these flood plain lands. Lands which were acquired in connection with the navigation project consist, for the most part, of a strip of land along each bank along with the islands or portions of islands in the river. In several instances all or portions of certain drainage districts were also acquired. Such lands are, in general, subject to overflow by the operation of the navigation pools and virtually all are subject to direct flooding during natural high water stages of the river. The river follows a meandering course with wide, sweeping bends. Its most important flow characteristics are the relatively regular annual cycles, and the infrequency of sudden rises of any magnitude.

### *Mississippi River Project Administration*

Mississippi River Project is located on the Mississippi River, and includes land in Iowa, Wisconsin, Missouri, and Illinois. The Corps of Engineers, Rock Island District is responsible for navigation, natural resource management including recreation management and environmental stewardship on the Mississippi River from MRM 614.0 near Guttenburg, IA to MRM 300.0 near Saverton, MO (Figure 1-4).

The administrative office for Mississippi River Project is located at Pleasant Valley, IA. Project-specific administration and maintenance facilities are located at each navigation facility. The Project also owns and operates the Mississippi River Visitor Center, which is located adjacent to the Lock & Dam 15 in Rock Island, IL. There are three additional ranger stations located at: Dubuque, IA; Thomson, IL; and Muscatine, IA. The Project manager and staff are responsible for all aspects of operations, maintenance and administration of all river navigation and water resource development projects and their natural, cultural, and recreational resources. The natural resource staff is responsible for natural resource management, outdoor recreation, administering service contracts, health and safety of visitors, visitor assistance, boundary surveys and marking, working with other federal and state and local agencies and informing the public of Corps activities. Navigation personnel are responsible for locking through of river vessels and maintenance/repairs of locks and dams structures. Navigation maintenance staff and contract personnel are responsible for maintaining and servicing all hydraulic structures, painting, and repair of facilities. Project navigation maintenance staff and District staff ensure needed dredging occurs to maintain proper channel depth and channel training structures are properly maintained and utilized.

## 1.6. PRIOR DESIGN MEMORANDA & PRIOR MASTER PLANNING DOCUMENTS

Prior to 1999, formal documents were prepared that defined engineering responsibilities, requirements, and procedures during the planning, design, construction, and operations phases of civil works projects. These formal documents were cited with Design Memorandum numbers as

a reference to the document and every water resources project has a series of DMs. This system is no longer used per ER1110-2-1150. A list of DMs previously submitted are available upon request.

The original Mississippi River Project Master Plan was approved in 1948, with revisions made in 1956 and 1969-1972. A Land Use Allocation Plan (LUAP) and Shoreline Management Plan (SMP) were approved in 1989. Table \*\*\* below lists those previous planning documents and details which are or have been superceded by more current master planning.

Table 1-2: Previous master planning documents noting which documents are still applicable.  
drafting

Master Recreation Plan (Basic)	Jun 1948	
Supplement. Timber Resources & Management	Oct 1955	
Master Plan (Revision)	Oct 1956	
Supplement No. 1, Thomson Causeway Public Use Area	Jun 1961	
Supplement No. 2, Dredging Access to State of IL Dept. of Conservation Public Facility at Miller's Hollow		
Supplement No. 3, Lock and Dam 21 Public Use Area	Sep 1962	
Supplement No. 4, Lock and Dam 20 Public Use Area	Jan 1965	
Master Plan (Revision for Resource Management)	Dec 1969	
Chapter 1 – General	Dec 1969	
Chapter 2 – Pool 11	Mar 1970	
Chapter 3 – Pool 12	Aug 1970	
Chapter 4 – Pool 13	Jan 1971	
Chapter 5 – Pool 14	Jan 1971	
Chapter 6 – Pool 15	Jan 1971	
Chapter 7 – Pool 16	Jan 1971	
Chapter 8 – Pool 17	Jan 1971	
Chapter 9 – Pool 18	Dec 1971	
Chapter 10 – Pool 19	Dec 1971	
Chapter 11 – Pool 20	Oct 1972	
Chapter 12 – Pool 21	Oct 1972	
Chapter 13 – Pool 22	Jun 1984	
Supplement. Plans for Expansion of Public Use Areas (7)	Mar 1977	
Appendix A. Project Resource Management Pools 11-22	Apr 1978	
Appendices B & D. Forest, Fish and Wildlife Management Pools 11-22	Apr 1982	
Appendix C. Fire Protection Pools 11-22	Feb 1980	
Appendix E. Project Safety Pools 11-22	Feb 1980	
Land Use Allocation Plan for Pools 11-22	Oct 1989	
Shoreline Management Plan for Pools 11-22	Oct 1989	
Supplement No.1 Land Reclassification from Operations: Recreation-Intensive Use to Operations: Wildlife Management/ Reserve Forest Land for the Smallpox Creek	Jun 2012	

Recreation Area		
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## 1.7. PERTINENT PROJECT INFORMATION

Table 1-3. Project information broken out by navigation pools of the river.

	Length of Pool (mi)	Pool Surface Area (ac)	Drainage Area (sq mi)	Original Acquisition	Current Emergent Fee Title (ac)	Emergent GP Lands (ac)	Total Shoreline (mi)	Federal Shoreline (mi)
Pool 11	32.1	19,613	81,600	9,514	4,809	4,308	312	170
Pool 12	26.3	10,500	82,400	8,631	5,865	4,291	280	203
Pool 13	34.2	29,103	85,500	25,285	10,233	7,632	503	274
Pool 14	29.2	10,450	88,400	6,615	5,100	4,480	277	151
Pool 15	10.2	3,740	88,500	4.45	11.35	TDB	38	7
Pool 16	25.7	12,047	99,400	7,005	4,746	2,610	231	49.5
Pool 17	20.1	8,312	99,600	11,379	7,039	7,476	202.5	178.2
Pool 18	26.6	16,300	113,600	10,115	9,879	5,380	279	249
Pool 19*	46.3	30,845	119,000	7.28	2.88	0	248	0
Pool 20	21.0	7,542	134,300	236	178	0	93	5.25
Pool 21	18.3	6,350	135,000	8,627	8,450	6,028	146	121
Pool 22	23.8	TBD	137,000	6,183	6,263	4,558	TBD	TBD