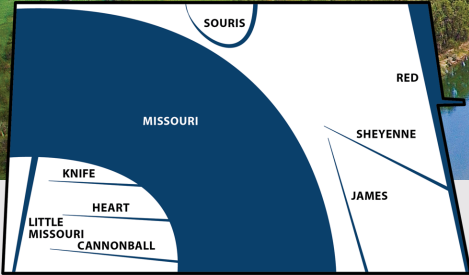




# THE MISSOURI RIVER BASIN: BACKGROUND & QUICK FACTS



Relative ND River Flows

## QUICK FACTS

**2,300+**

MILES LONG  
(LONGEST IN U.S.)  
*355 RIVER MILES IN ND*

**528,000**

SQ. MILE BASIN  
(LARGEST IN U.S.)  
*41,037 SQ. MILES IN ND*

**15<sup>TH</sup>**

LONGEST RIVER  
(WORLD'S)



ND's Missouri River System

The Missouri River was once free-flowing with meandering braided channels, sand bars, and expansive tree-covered riparian areas. The river's banks were ever-changing, and seasonal flooding was a common occurrence. Today, six dams and reservoir projects make up the Missouri River reservoir system. All of these dams were constructed by the federal government and are maintained and operated by the U.S. Army Corps of Engineers (USACE) for eight "Authorized Purposes" (see below).

## THE MISSOURI RIVER...

### 8 AUTHORIZED PURPOSES

- Flood Control
- Water Supply
- Recreation
- Irrigation
- Hydropower
- Water Quality
- Fish & Wildlife
- Navigation

### 117K ACRE-FEET

ND's average annual consumptive use of Missouri River water, or 0.7% of average flow past Bismarck.

### 85% OF ND'S POPULATION

To one day be served by large regional systems (NAWS, SWPP, RRVWSP, & WAWS) supplying Missouri River water.

### NOT COMPACTED

Even though it is one of the nation's largest rivers. A compact governs allocation of water between jurisdictions (i.e. states) within a basin.

Northwest Area Water Supply (NAWS) | Southwest Pipeline Project (SWPP) | Red River Valley Water Supply Project (RRVWSP) | Western Area Water Supply (WAWS)

# THE PICK-SLOAN PLAN








Leading up to the 1944 Flood Control Act (FCA), the USACE and Bureau of Reclamation's (BOR) competing interests in the Missouri River system paralleled those of the basin states. Upstream states (Montana, North Dakota, South Dakota, Wyoming, and Colorado) favored programs pursued by the BOR. They wanted secure water supply sources, irrigation development, and power generation. Downstream basin states (Nebraska, Iowa, Kansas, and Missouri) were more focused on flood control and navigation support. Entering the picture at this point were General Lewis Pick of the USACE and BOR District Engineer, Glenn Sloan.

The USACE submitted the Pick Plan in 1939, which envisioned a focus on new levees to support both flood control and navigation in the southern basin. The Pick Plan called for 1,500 miles of such levees, with 18 tributary dams and five mainstem dams. The Sloan Plan, developed in 1944, had a different vision - calling for

dams and river management to support 5.3 million acres of irrigation, with 85 tributary dams and only three mainstem dams. Embedded in the Sloan Plan were 17 power plants to support anticipated irrigation.

With a nudge from Congress, and to circumvent the government creating another federal agency based on the Tennessee Valley Authority, the USACE and BOR agreed on a joint plan - The Pick-Sloan Plan. The Pick-Sloan Plan provided authorization for approximately 100 dams (both tributary and mainstem) and for irrigation of 1.7 million acres of the arid west (mostly promised to the upstream states of Montana, North Dakota and South Dakota - but little actually materialized), and for extensive channelization of the river for navigation support downstream of Sioux City, Iowa.

## CONSUMPTIVE USE OF THE MISSOURI RIVER BY STATE

Acre-Feet Per Year				
	State	Total Permitted	Total Consumptive Use	% Used vs. Permitted
	Montana	132,000,000	NA	NA
	North Dakota	3,700,000	117,570	3.1%
	South Dakota	2,200,000	72,007	3.2%
	Nebraska	4,400,000	74,800	1.7%
	Iowa	NA	NA	NA
	Kansas	460,587	160,587	34.8%
	Missouri	NA	466,065	NA

NA - Not Available

# MISSOURI RIVER MAINSTEM DAMS

The first Missouri River system dam constructed was Fort Peck in Montana. Fort Peck was constructed under Congressional authorization from the Rivers and Harbors Act of 1935. Throughout the later part of the 1940s through the mid-1960s, the five remaining mainstem dams were built in cooperation between the USACE and the BOR under the Pick-Sloan Plan. The five remaining dams include Garrison, Oahe, Big Bend, Fort Randall, and Gavins Point. Along with each of the dams on the

Missouri River, reservoirs were also created. The reservoirs are Fort Peck Lake, Lake Sakakawea, Lake Oahe, Lake Sharpe, Lake Francis Case, and Lewis and Clark Lake.

The USACE operates the Missouri River dams under the guidance of the Master River Water Control Manual (Master Manual). The Master Manual was originally developed in 1960, however it has been modified as needed with the latest revision in 2004. The Master Manual incorporates management strategies for the multitude of purposes that the river system supports.



MISSOURI RIVER MAINSTEM DAMS & RELEASES			
	Operational Date	Mean Daily Release (CFS)	Mean Annual Release Volume (MAF)
Fort Peck	1940	9,200	6.6
Garrison	1955	22,000	15.8
Oahe	1962	24,600	17.7
Big Bend	1964	24,000	17.3
Fort Randall	1953	25,600	18.4
Gavins Point	1955	28,300	20.4

Cubic Feet Per Second (CFS) | Million Acre-Feet (MAF)

Period of record 1967 - 2020.

## PROTECTING ND'S INTERESTS

Since settlement of the west began, states and the federal government have been in a constant struggle to provide reliable sources of water for people, agriculture, industry, and other important uses. The development of countless water projects, such as dams, diversions, irrigation systems, etc, have been constructed in all western states. But in the face of increasing water demands to support growing populations, particularly during droughts, many western states are looking to the Missouri River as the answer.

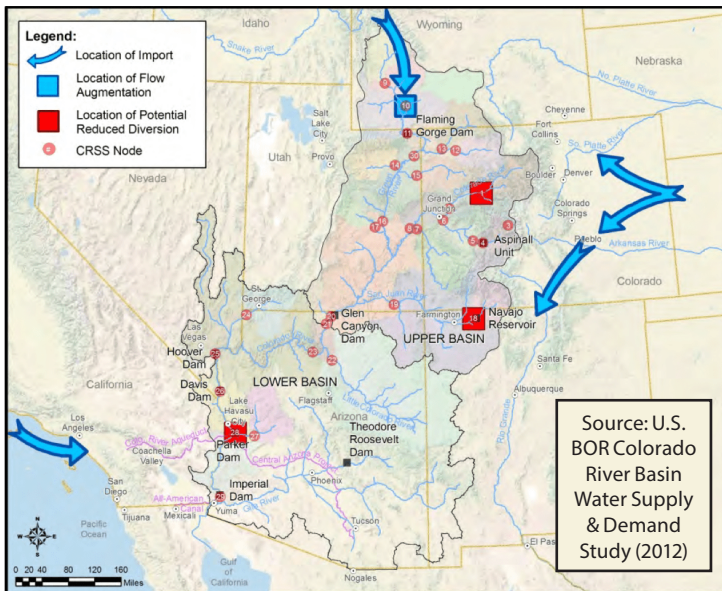
This is but another reason for North Dakota to remain focused on protecting its right to Missouri River water, and to put it to beneficial use for our citizens and economy. North Dakota must demonstrate that it can use Missouri River water, or other states like California, Arizona, and Colorado will.

## WORKING TOGETHER

To raise awareness about the importance of the Missouri River to North Dakota, there are multiple groups and efforts leading the way, such as the Missouri River Joint Water Board's Educate, Advocate, and Engage (EAE) Program, the Missouri River Advisory Council, and the Upper Missouri Water Association. In addition, the Department of Water Resources continues to work with these organizations and other basin states to ensure North Dakota's interests in the Missouri River are protected for generations to come.

## WESTERN U.S. DROUGHT & ADDRESSING WATER SHORTAGES

In response to decades-long water supply challenges in the west related to population growth and drought, both the BOR and USACE have studied options to divert Missouri River water west to mitigate shortages.



Source: [kansasaqueductcoalition.com](http://kansasaqueductcoalition.com)

**One option** in the BOR's 2012 Colorado River Basin Water Supply & Demand Study considers importing Missouri or Mississippi River system water to the Front Range (see figure).

- This option would involve large scale diversions.
- Minimum of 600,000 acre-feet per year.

**Another option**, originally studied in the early 1980s by the USACE to divert Missouri River water to western Kansas farmland, has been revived in recent years by various Kansas interests.

- This option is known as the "Kansas Aqueduct" project, and would mitigate water supply challenges experienced by western Kansas agricultural producers, and declining Ogallala Aquifer levels, through the import of Missouri River water.
- Up to 3.9 million acre-feet per year.



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