McClellan-Kerr Arkansas River Navigation System

Oklahoma's Greatest Liquid Asset

Governor's Water Conference
October 31, 2017

Oklahoma's Greatest Liquid Asset

RAINFALL

- **More Than 230,000 Square Miles of Drainage Basin (Colorado; New Mexico; Texas; Kansas; Missouri; Arkansas; Oklahoma)**
- **More Than 3200 Miles of River Flow Into Upstream Reservoirs (Arkansas; Canadian; Grand; Verdigris; Illinois)**

McCLELLAN - KERR
Arkansas River Navigation System
Waterway to the World

Governor's Water Conference
October 31, 2017

DAM LUCKY

Pensacola

Hudson

Fort Gibson

Oologah Keystone Eufaula

Tenkiller

Governor's Water Conference
October 31, 2017

The MKARNS

Authorized in 1946

Construction Completed in 1970

$1.2 Billion Federal Investment

Largest Civil Works Project in American History.

Governor's Water Conference
October 31, 2017

McClellan-Kerr Arkansas River Navigation System

(MKARNS)

Conservation and Beneficial Use of Natural Resources

Navigation **Flood Control**

Hydropower

Municipal and Industrial Water Supply

Wildlife Conservation

Recreation

Governor's Water Conference
October 31, 2017

Maintenance of the MKARNS… Who?

SM

McCLELLAN - KERR
Arkansas River Navigation System
Waterway to the World

Governor's Water Conference
October 31, 2017

The MKARNS:

Protects Millions of Acres of Land From Floods

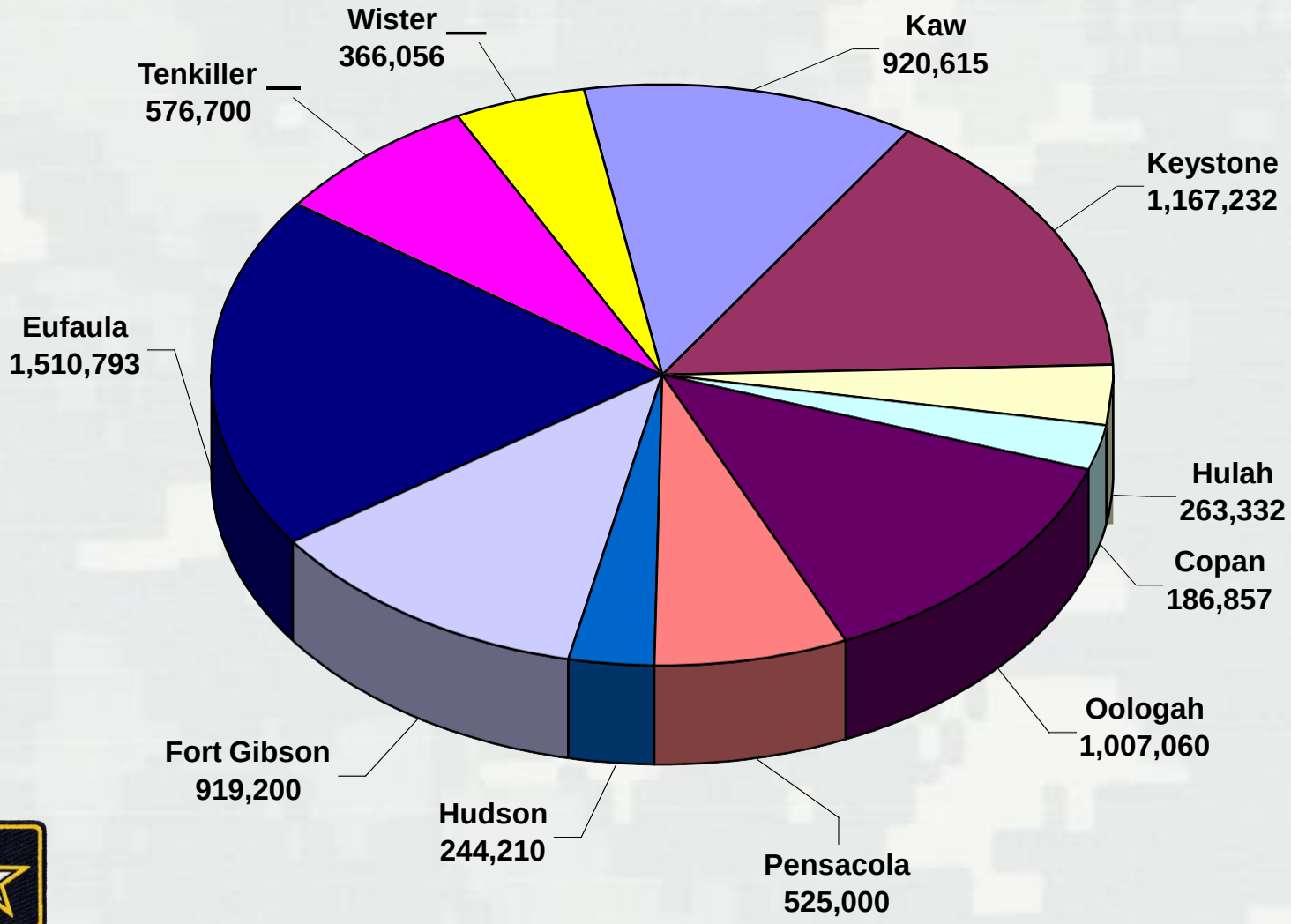
In 2016, it is estimated that the Arkansas River Basin Projects prevented $525 Million in flood damages within the Tulsa and Little Rock Corps Districts.
Cumulative damages prevented are estimated to be $14.9 Billion.

Governor's Water Conference
October 31, 2017

System Flood Storage - 11 Reservoirs

Based on Conservation Pool Elevations

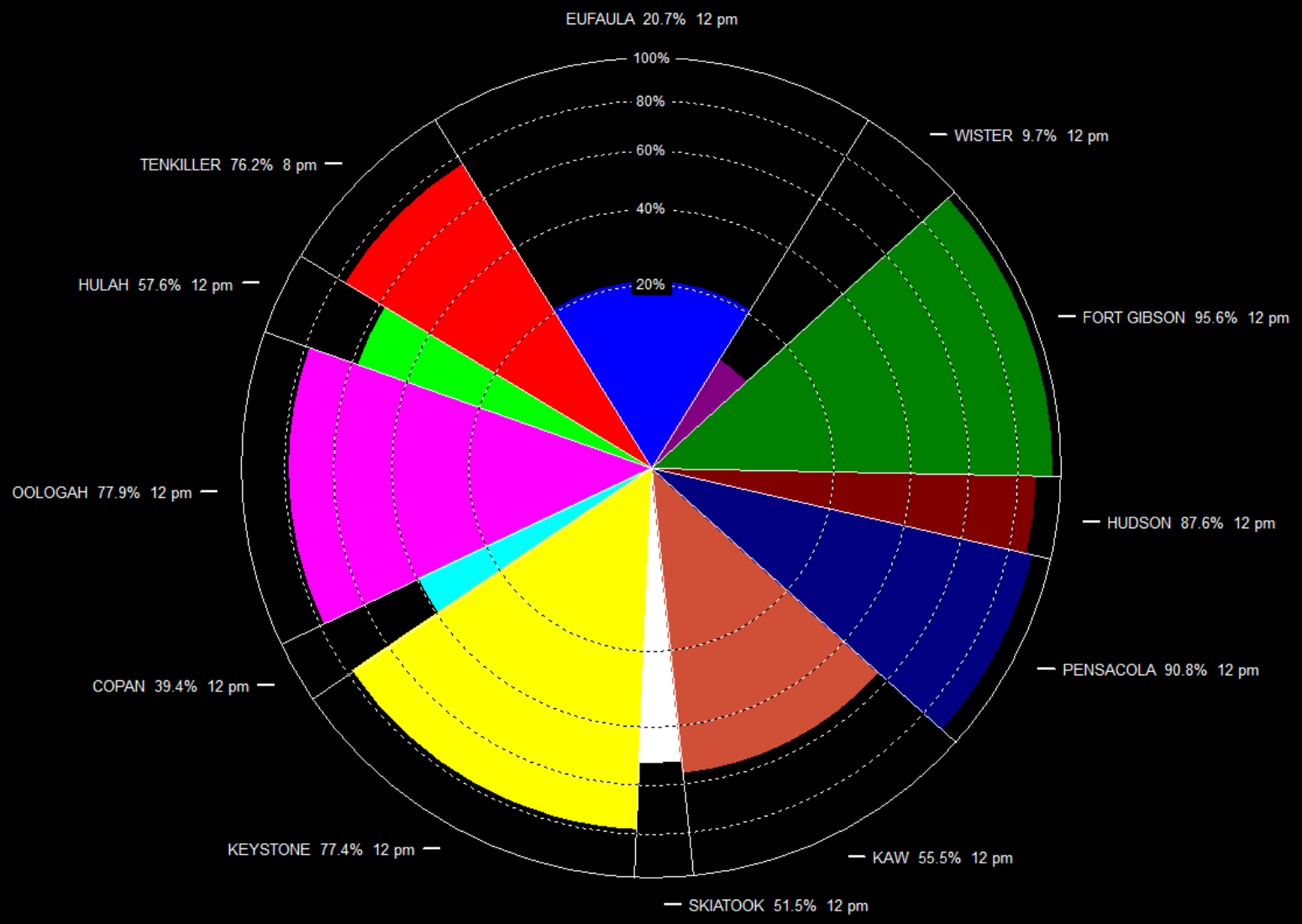
Total Flood Storage = 7,687,055 ac-ft



LOWER ARKANSAS

Flood Control Storage - 05MAY17

Total System Flood Storage Utilized = 63.25 %



US Army Corps of Engineers®
Tulsa District

26MAY2015 Lake Eufaula releases as much as 172,000 cubic ft per second (twice the rate of water going over Niagara Falls.)

The MKARNS:

Generates Electricity for Millions of Households

Governor's Water Conference
October 31, 2017

The USACE operates eight dams in the Arkansas River Basin that Generate Hydropower.

These eight projects account for:

- **Electric Service to over 7 million people.**
- **2.5 Million kilowatt-hours per year.**
- **A return of 37.4% of the total construction cost of the eight projects to the U.S. Treasury.**

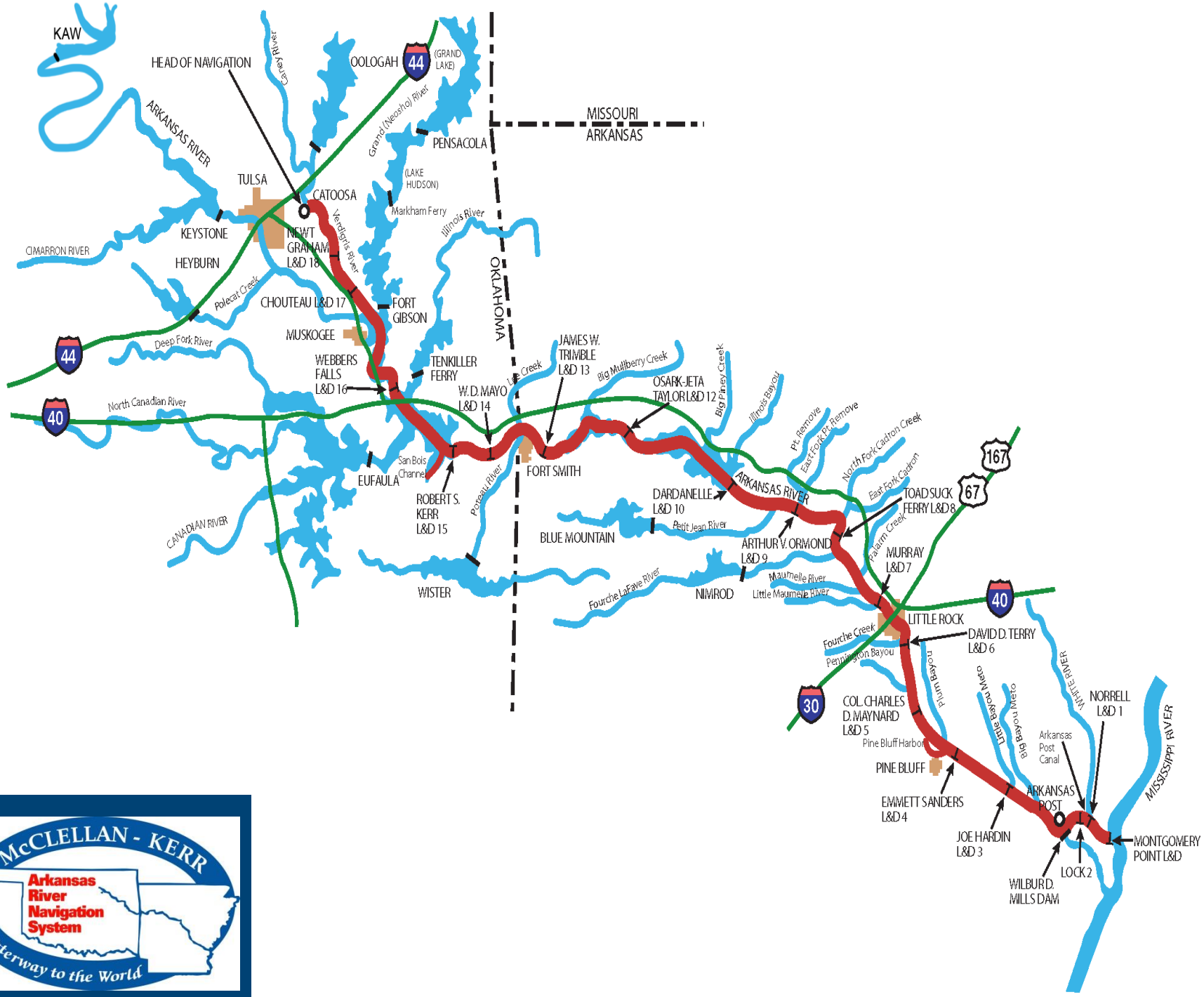
In addition to the eight USACE dams, there are seven non-federal hydropower plants on the Arkansas River and it's tributaries.

The MKARNS:

Provides NAVIGATION!

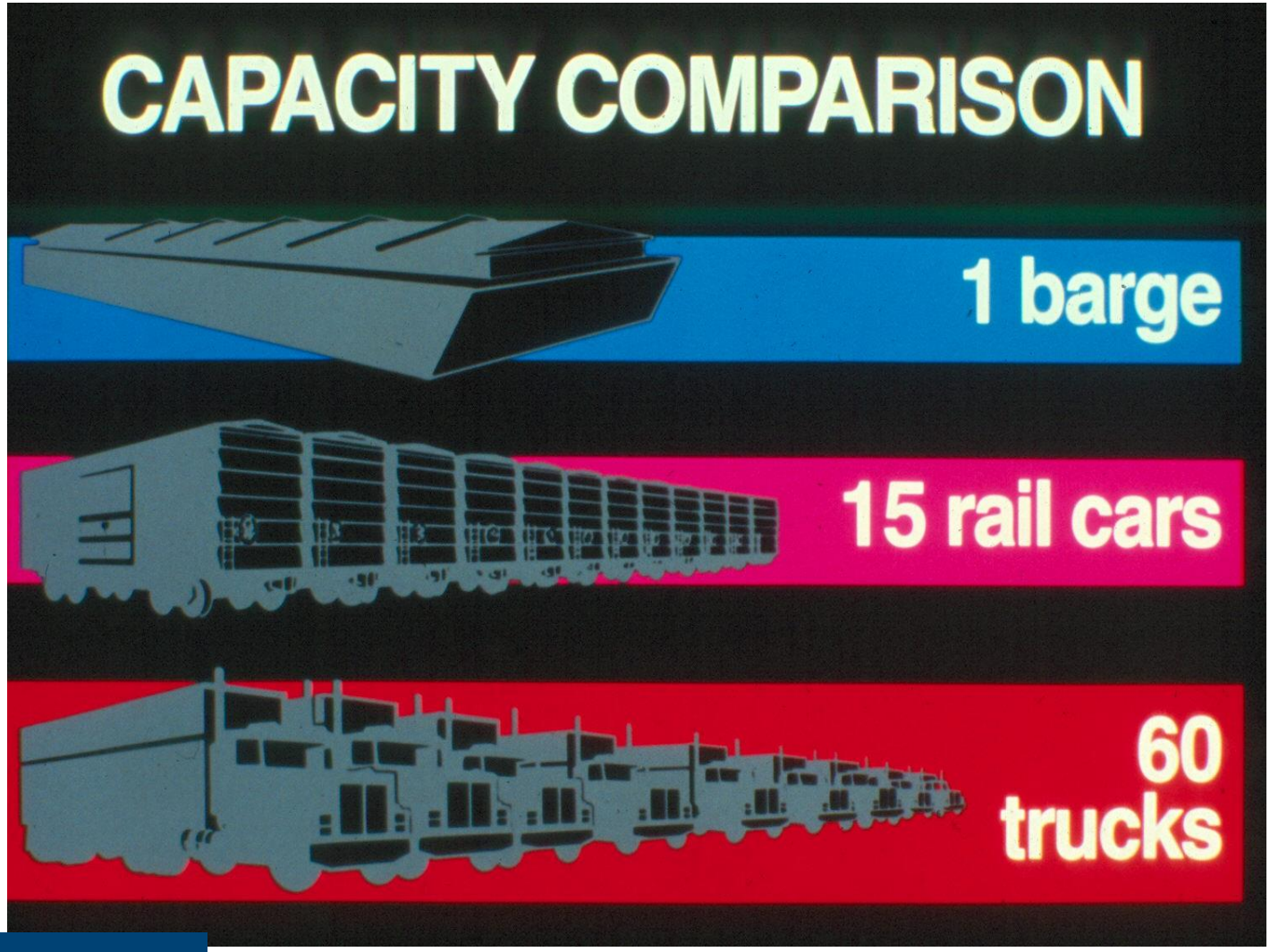
445 navigable miles of inland waterway bringing the advantages of the most efficient, greenest, and cost-effective form of transportation to Arkansas, Oklahoma, and surrounding states.

Governor's Water Conference
October 31, 2017



McCLELLAN - KERR
Arkansas River Navigation System
Waterway to the World

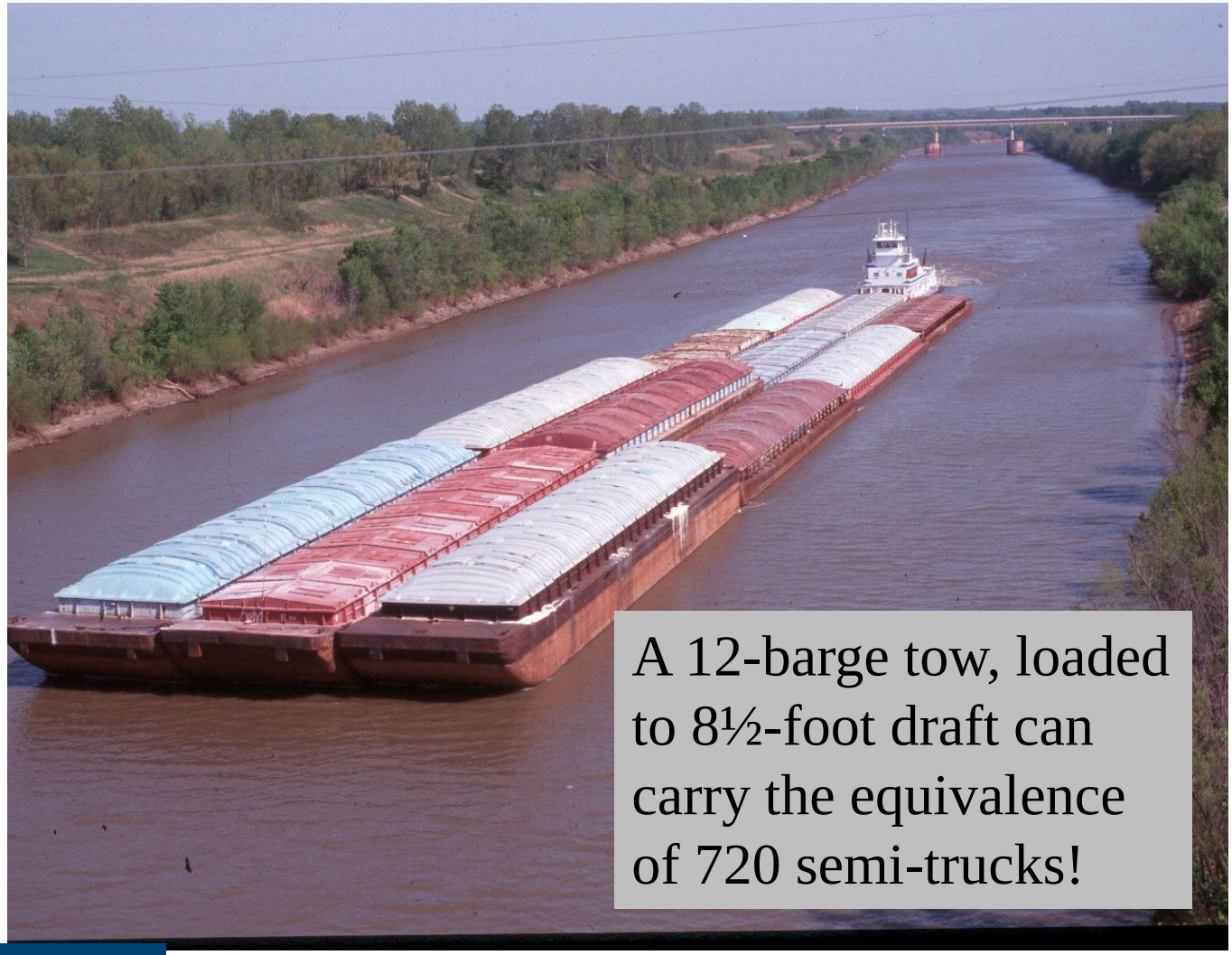
Importance of Waterway Transportation



McCLELLAN - KERR
Arkansas River Navigation System
Waterway to the World

Governor's Water Conference
October 31, 2017

Importance of Waterway Transportation



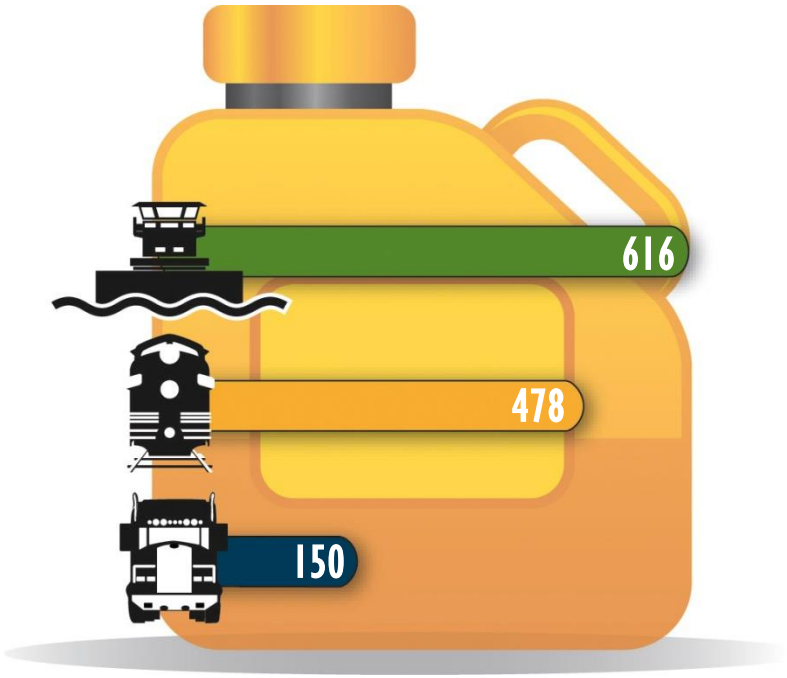
McCLELLAN - KERR
Arkansas River Navigation System
Waterway to the World

Governor's Water Conference
October 31, 2017

Moving Freight Efficiently Throughout America

Transporting freight by water is also the most energy-efficient choice.

Barges can move one ton of cargo 616 miles per gallon of fuel. A rail car would move the same ton of cargo 478 miles, and a truck only 150 miles.

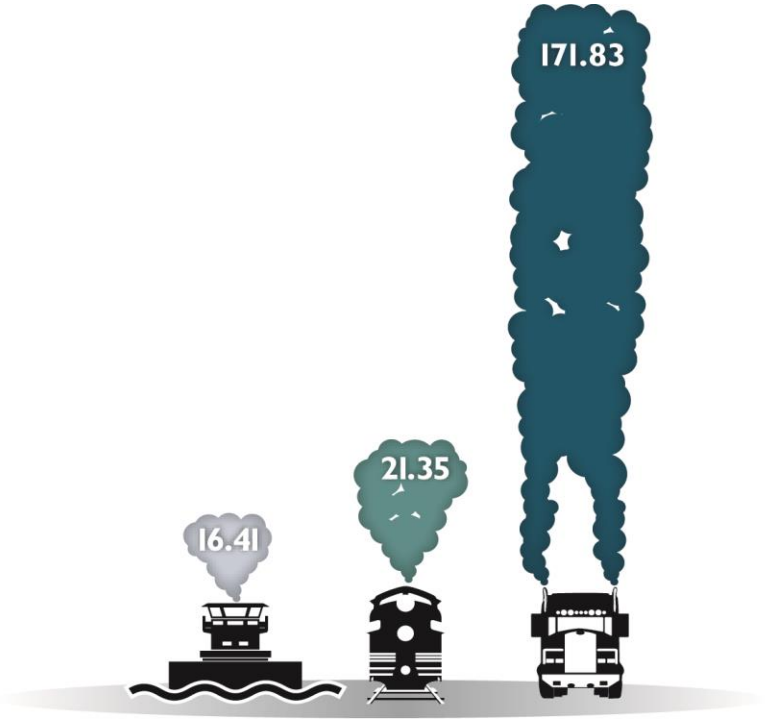


Ton-miles Traveled per Gallon of Fuel

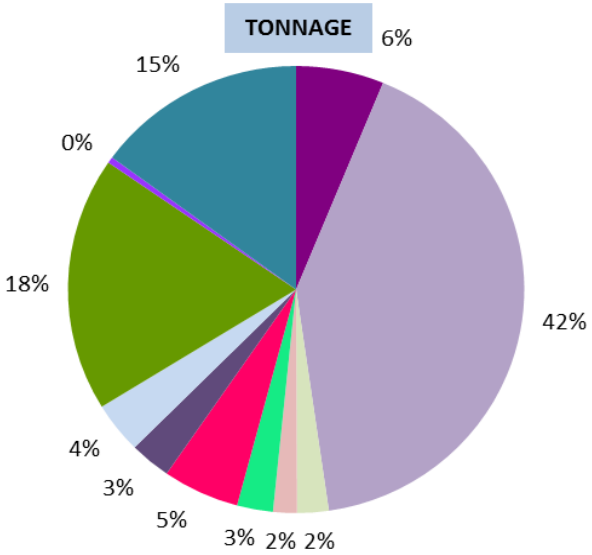
The Greener Way to Move America's Cargoes

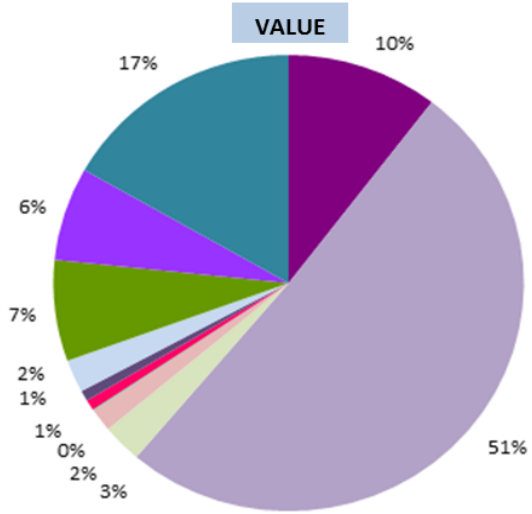
Barges have the smallest carbon footprint among other transportation modes.

To move an identical amount of cargo by rail generates 30% more carbon dioxide than by barge, and 1,000% more emissions by trucks than by barge.



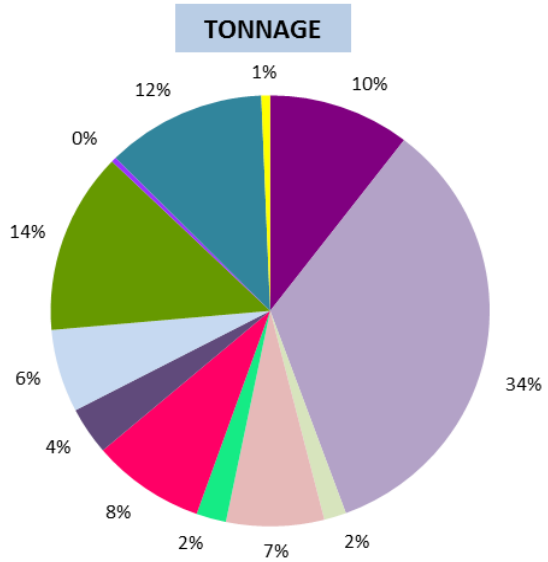
Tons of CO_2 per Million Ton-miles

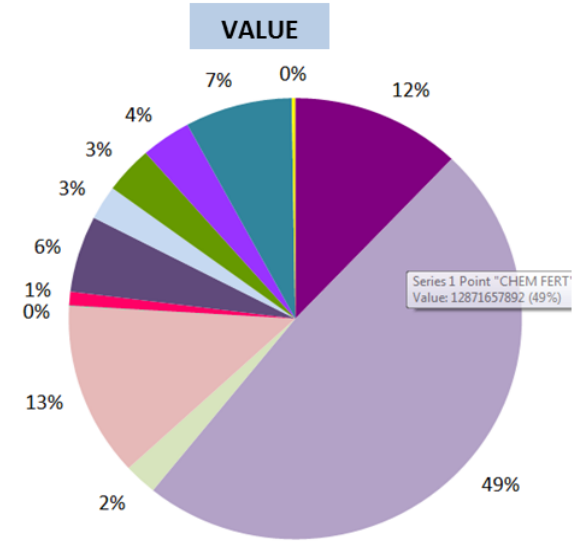




CY16 COMMODITY COMPARISON ON THE OKLAHOMA SEGMENT OF THE McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM (MKARNS) 5,928,612 (TONS) / $1,996,731,024 (VALUE)

	TONNAGE	VALUE
IRON/STEEL	369,350	$ 207,992,066
CHEM FERT	2,458,714	1,014,121,176
OTHER CHEM	132,191	54,523,500
PETRO PROD	100,200	32,958,786
SAND/GRAVEL/ROCK	151,200	1,253,448
COKE & COAL	322,200	14,982,300
MINERALS/BLDG MAT'S	172,600	14,954,870
FOOD/FARM PROD	219,400	46,427,234
WHEAT	1,090,600	142,934,036
EQUIP/MACH	26,457	132,285,000
SOYBEANS	885,700	334,298,608
TOTALS:	5,928,612	$1,996,731,024

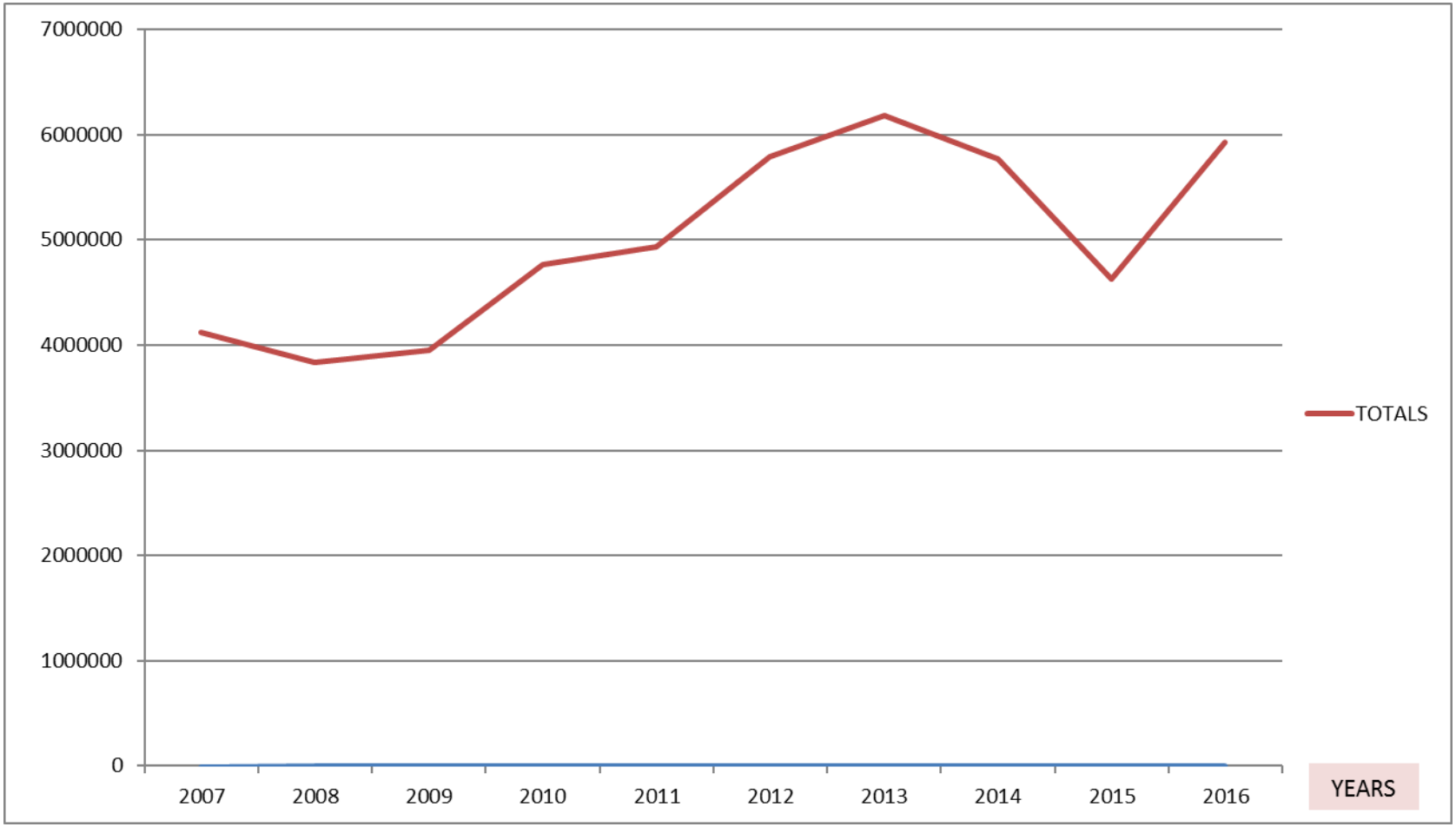




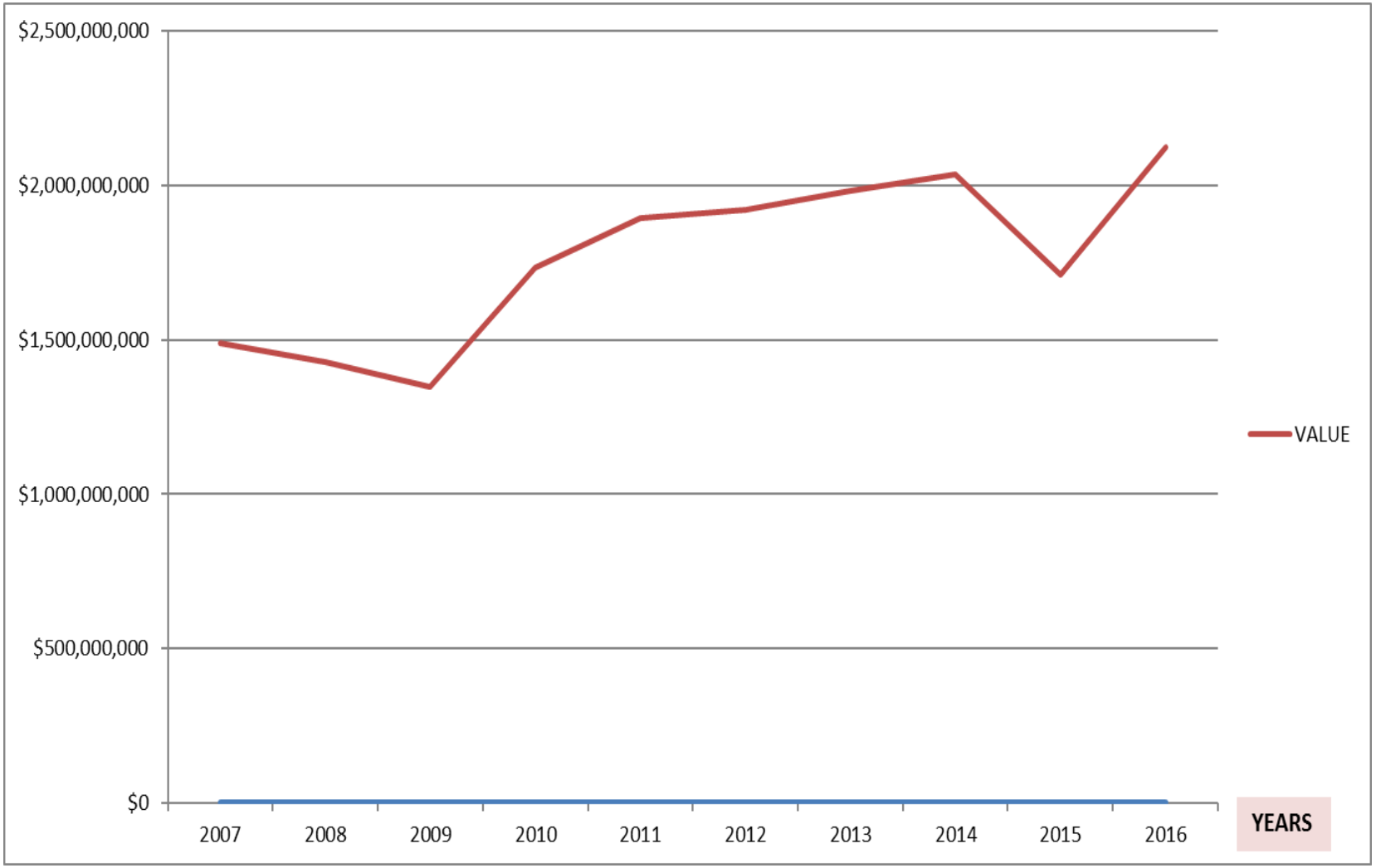
CY07 - CY16 10 YEAR COMMODITY COMPARISON BY TON ON THE OKLAHOMA SEGMENT OF THE McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM (MKARNS) 49,905,160 (TONS) / $26,182,355,447 (VALUE)

	TONNAGE	VALUES
IRON/STEEL	5,228,815	$3,184,348,335
CHEM FERT	16,965,183	12,769,014,637
OTHER CHEM	806,934	607,346,944
PETRO PROD	3,629,316	3,370,944,994
SAND/GRAVEL/ROCK	1,100,200	9,120,658
COKE & COAL	4,191,500	264,148,330
MINERALS/BLDG MAT'S	1,770,800	1,456,394,460
FOOD/FARM PROD	3,100,100	656,012,161
WHEAT	6,845,082	913,202,390
EQUIP/MACH	185,018	925,090,000
SOYBEANS	5,755,312	1,961,352,776
MISC	326,900	65,379,762
TOTALS:	49,905,160	$26,182,355,447

10 YEAR LINE CHART ON TONNAGE TOTALS ON THE OKLAHOMA SEGMENT OF THE MKARNS FROM CY07 THRU CY16



10 YEAR LINE CHART ON VALUE TOTALS ON THE OKLAHOMA SEGMENT OF THE MKARNS FROM CY07 THRU CY16



Tulsa Port of Catoosa -
head of navigation

Bruce OAKLEY Inc.

Oakley's Port 33

35-Acre Original Facility

Bruce OAKLEY Inc.

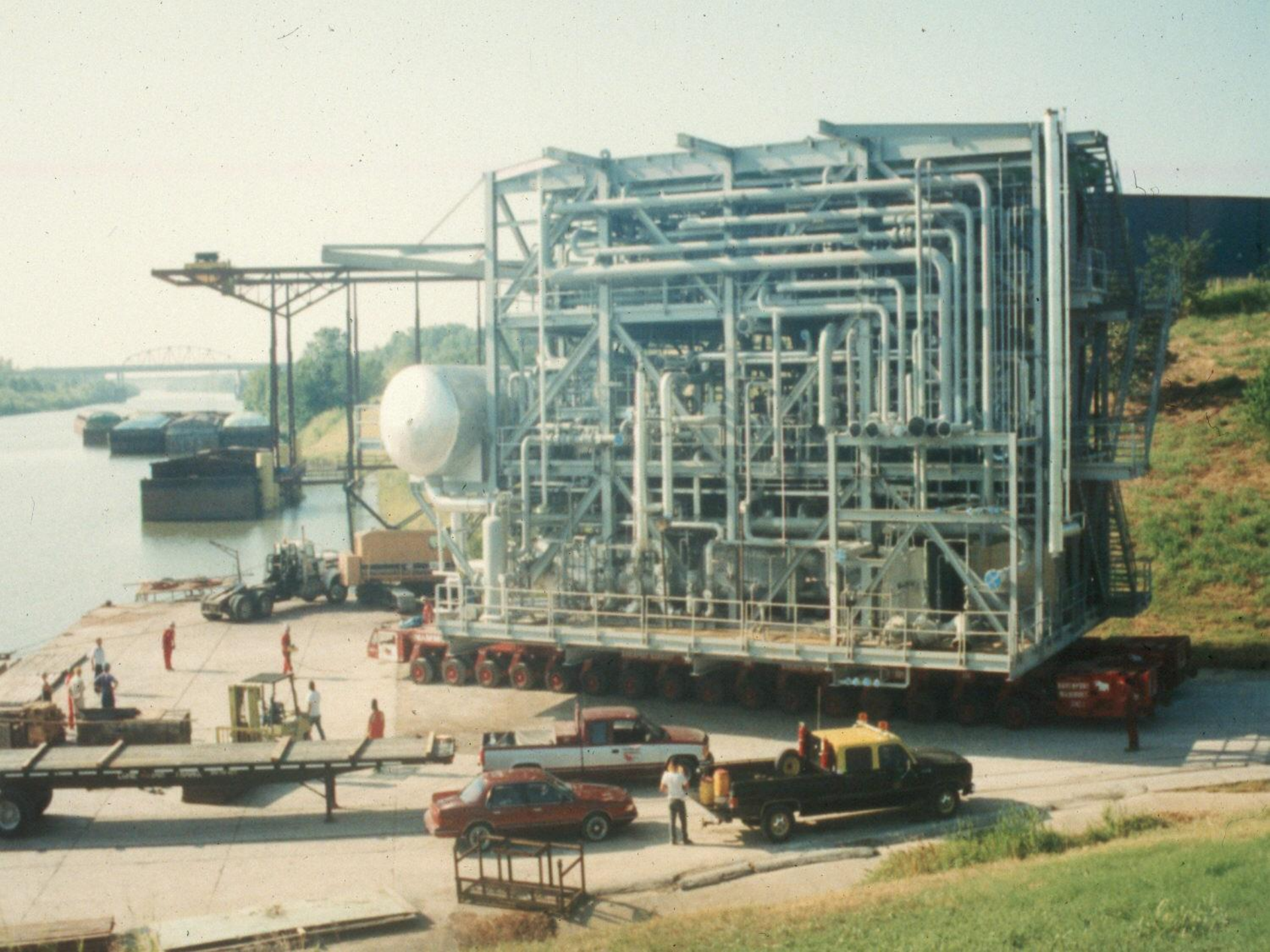
Oakley's Port 33

Port 33 – South Facility

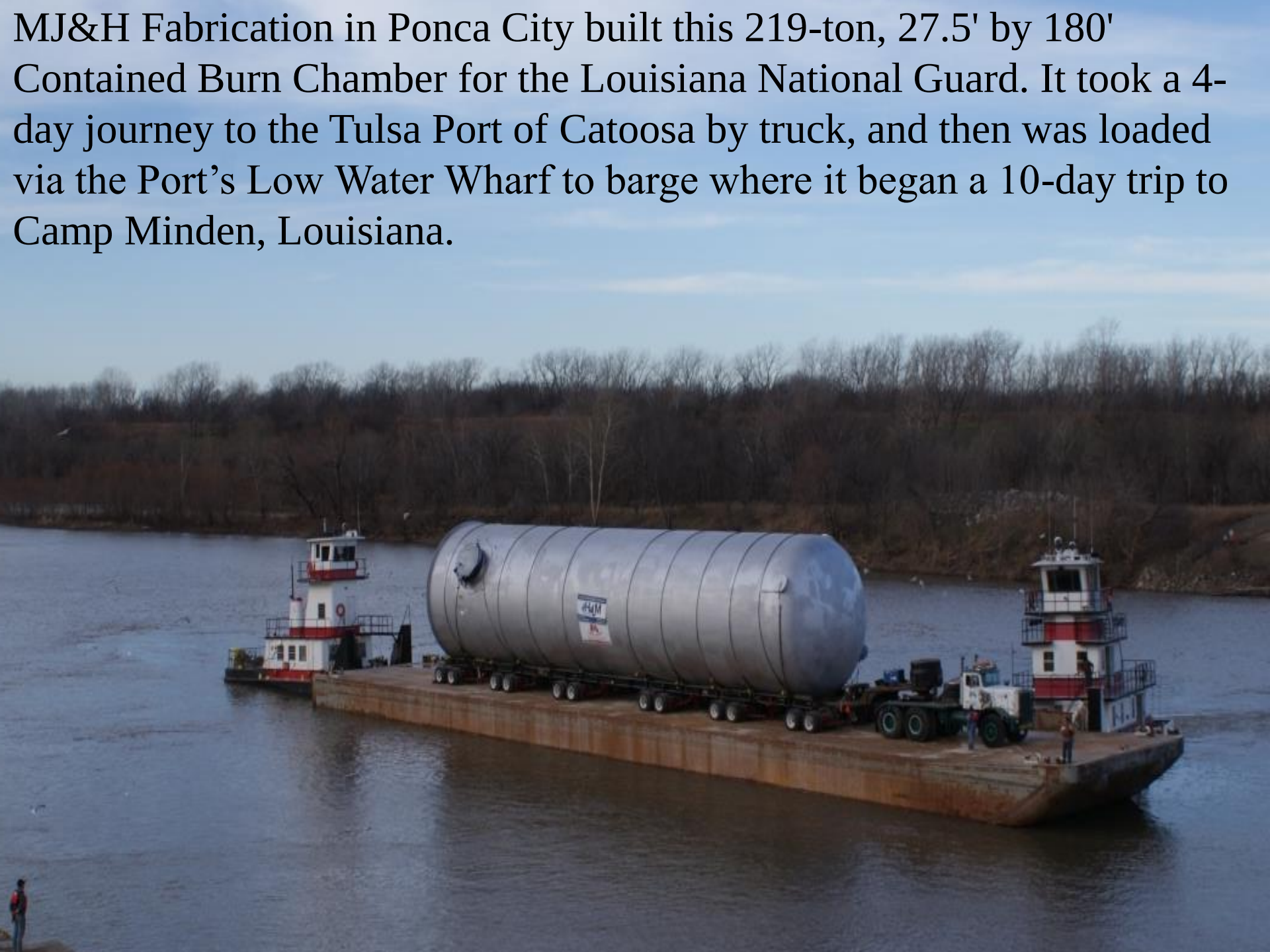
80-Acre New Development

PORT OF
MUSKOGEE

This regenerator head was built in Tulsa by HSI and was shipped to a Chevron plant in Pascagoula, Mississippi by barge. The dimensions were 30 feet high by 42 feet wide, and it weighed 250 tons.



MJ&H Fabrication in Ponca City built this 219-ton, 27.5' by 180' Contained Burn Chamber for the Louisiana National Guard. It took a 4-day journey to the Tulsa Port of Catoosa by truck, and then was loaded via the Port’s Low Water Wharf to barge where it began a 10-day trip to Camp Minden, Louisiana.



TURNER
TURNER
CBY 243
16 9:57AM

The McClellan-Kerr Arkansas River Navigation System
Vital Statistics

Port of Muskogee to the Tulsa Port of Catoosa

Investment:	**$5 Billion**
Jobs:	**8,000**
Annual Payroll:	**$350 Million**
Total Annual Barge Tonnage:	**5.5 Million Tons (4,000 barges annually)** ***Enough cargo for 240,000 trucks, long enough to stretch 2,640 miles***

Governor's Water Conference
October 31, 2017

The River Center,
Three Forks Harbor and Marina

Arkansas River Flotilla

Arkansas River Flotilla

100-metric ton Marine Travel Lift

Bassmaster Elite Series

"…unless and until we can change our federal resourcing model, which in my view is fundamentally unsustainable, or shut down some of our projects or defund some of our projects, the reliability quotient is going to continue to go down."

-Maj. Gen. John Peabody, Deputy Commanding General for Civil and Emergency Operations, USACE;

Governor's Water Conference
October 31, 2017

Priorities for the MKARNS:

- **Three Rivers/Melinda Structure**
- **Backlog of Critical Maintenance – more than $143 million**
- **12-Foot Channel**

Governor's Water Conference
October 31, 2017