

Mack-Blackwell Transportation Center - MarTREC

Regional Economic Impact Study for the McClellan- Kerr Arkansas River Navigation System

Executive Summary - October 2015

Heather Nachtmann, Ph.D.

ACKNOWLEDGEMENTS

This project was funded by the Arkansas State Highway and Transportation Department through the Mack-Blackwell Transportation Center. The work was conducted in conjunction with the Arkansas Waterways Commission, Oklahoma Department of Transportation, and the University of Arkansas at Little Rock. This material is based upon work supported as a match project for the U.S. Department of Transportation under Grant Award Number DTRT13-G-UTC50.

DISCLAIMER

The contents of this report reflect the views of the authors, who are responsible for the facts and the accuracy of the information presented herein. This document is disseminated under the sponsorship of the U.S. Department of Transportation's University Transportation Centers Program, in the interest of information exchange. The U.S. Government assumes no liability for the contents or use thereof.

For a copy of the full project report, please contact the Maritime Transportation Research and Education Center at martrec.uark.edu or 479-575-6021



Executive Summary

The McClellan-Kerr Arkansas River Navigation System contributes total impacts of \$8.5 billion in sales, \$289 million in taxes, and 55,872 jobs to the national economy.

The McClellan-Kerr Arkansas River Navigation System (MKARNS), located in Oklahoma and Arkansas, contains 445 miles of waterway and is a crucial part of the United States' transportation system. The MKARNS strategically connects the heartland of the United States with the rest of the world via the Mississippi River and Port of New Orleans. We investigate the regional economic impacts of the MKARNS in order to inform waterway stakeholders of the system's value.

Our study considers multiregional economic impacts from hydropower energy generation, USACE O&M expenditures, private sector investment expenditures, port activities, shippers' activities, transportation cost savings, and recreation benefits related to the MKARNS. Our findings show the MKARNS contributes total impacts of \$8.5 billion in sales, 55,872 jobs, and \$289 million in taxes to the national economy. The findings of this study can inform future MKARNS investment decisions resulting in sustainable growth in the regional and national economies.

This executive summary contains results from two parallel studies, MBTC 4001 Regional Economic Impact Study for the McClellan Kerr Arkansas River Navigation System project report (Nachtmann, et al., 2015) and Final Report FHWA-OK-14-16 (Robinson, et al., 2014).

55,872 jobs

445 navigable miles

\$8.5 billion in sales impacts

11.7 million tons

**As much freight as 221,896 trucks
or 57,693 railcars**

Tax impacts of \$289 million

Contacts and Acknowledgements

Project Reports

This executive summary is based on the work published in final report, Regional Economic Impact Study for the McClellan Kerr Arkansas River Navigation System, prepared in October 2015 for the Maritime Transportation Research and Education Center of the Mack-Blackwell Transportation Center at the University of Arkansas. The full report can be obtained at mar-trec.uark.edu or 479-575-6021.

The Oklahoma segment MKARNS results and multiregional variable input-output model utilized in this work are attributed to the November 2014 Oklahoma Department of Transportation final report, FHWA-OK-14-16 Regional Economic Impact Study for the McClellan-Kerr Arkansas River Navigation System, conducted by Robinson, et al. of the University of Arkansas at Little Rock.

Acknowledgements

I would like to recognize the dedication and participation of many individuals, without whom this research would not be possible. I am grateful to the Arkansas State Highway and Transportation Department for their financial support and cooperation. I sincerely thank my research assistants, Furkan Oztanriseven and Othman Boudhoum, who actively participated in every step of this research. I would also like to recognize Dennis Robinson's team consisting of Geoffrey Joseph, Melody Muldrow, and Vaughan Wingfield. I benefitted greatly from the efforts and dedication put forth by Gene Higginbotham, Executive Director of the Arkansas Waterways Commission, Deidre Smith, Waterways Branch Manager of the Oklahoma Department of Transportation, and Tyler Henry, Regional Economist of the Army Corps of Engineers-Tulsa District.

Contact Information

Heather Nachtmann, Ph.D.
Associate Dean for Research
College of Engineering
University of Arkansas
hln@uark.edu
(479) 575-6021

Gene Higginbotham
Executive Director
Arkansas Waterways Commission
gene.higginbotham@arkansas.gov
(501) 682-1176

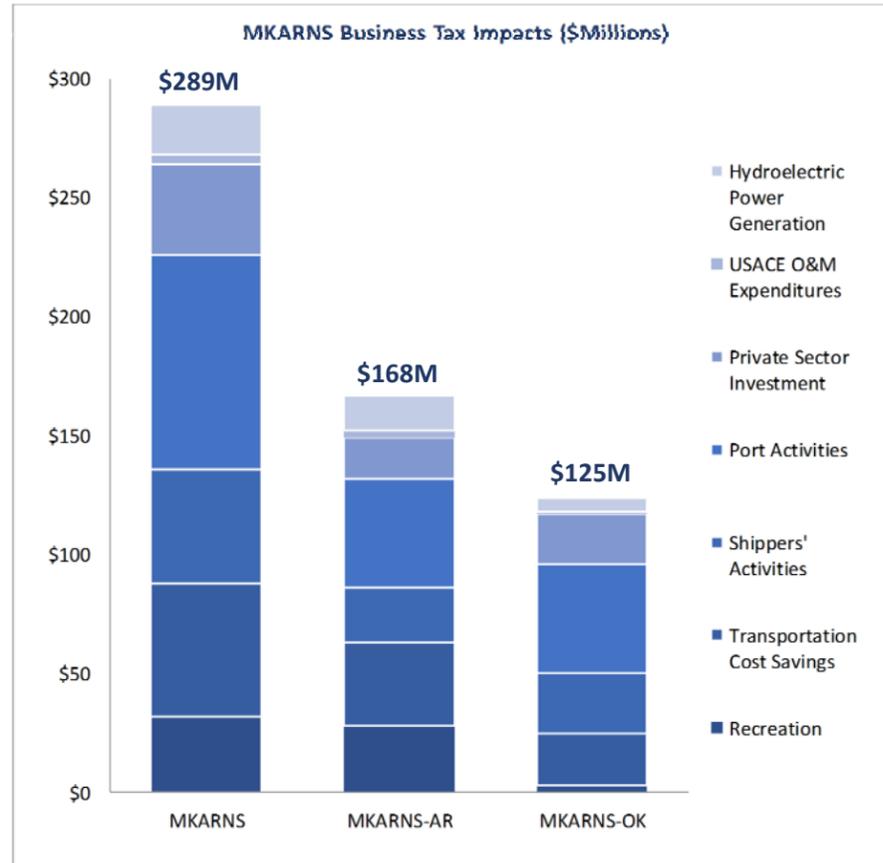


MKARNS Tax Impacts

We investigated the direct and indirect impacts of MKARNS operations on Business Taxes including taxes on sales, property, and production.

The total nationwide impact of the entire MKARNS operations on Business Taxes is \$289 million. On its own, the Arkansas segment of the MKARNS nationally contributes \$168 million, and while the Oklahoma MKARNS segment nationally contributes \$125 million. The combined impact is slightly less than the two segment impacts combined due to shared freight benefits.

Examining the MKARNS Business Tax impacts, we observe Port Activities and Transportation Cost Savings are the largest contributors to Business Tax impacts.



Benefits	Business Taxes (\$ Million)		
	MKARNS	MKARNS-AR	MKARNS-OK
Hydroelectric Power Generation	\$21	\$15	\$6
USACE O&M Expenditures	\$4	\$3	\$1
Private Sector Investment	\$38	\$17	\$21
Port Activities	\$90	\$46	\$46
Shippers' Activities	\$48	\$23	\$25
Transportation Cost Savings	\$56	\$35	\$22
Recreation	\$32	\$28	\$3
Total Impact	\$289M	\$168M	\$125M

McClellan-Kerr Arkansas Navigation System (MKARNS)

The McClellan-Kerr Arkansas Navigation System (MKARNS) is a 445 mile navigation system originating from the Tulsa Port of Catoosa and flowing in the southeast direction through Arkansas to the Mississippi River.

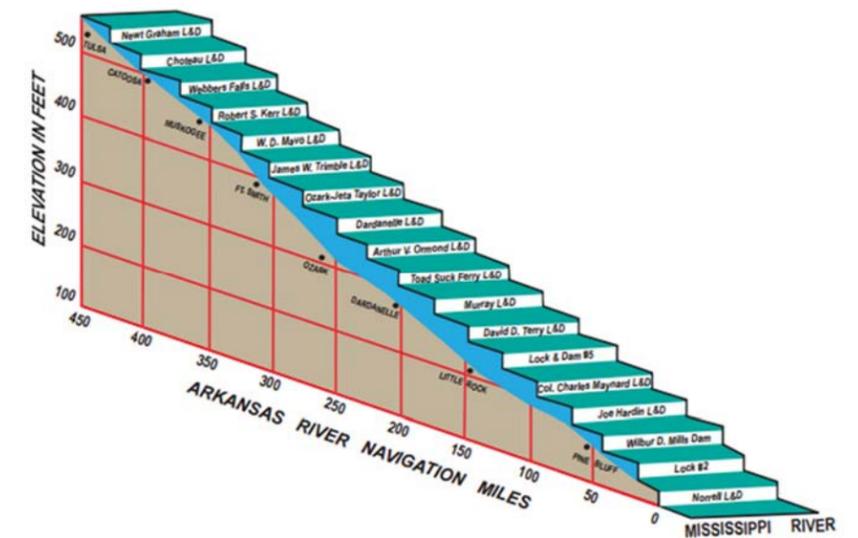
The MKARNS is a multi-beneficiary system providing navigation, hydropower generation, recreation, water supply, and fish and wildlife habitats.

There is a 420 foot drop in elevation from the Port of Catoosa to the Mississippi River. A series of eighteen locks and dams work together to maintain navigation throughout the system.

The MKARNS was classified as a high-use waterway system in February 2015 based on a 5-year average of 3.3 billion tons transported.



Map of MKARNS
Source: USACE



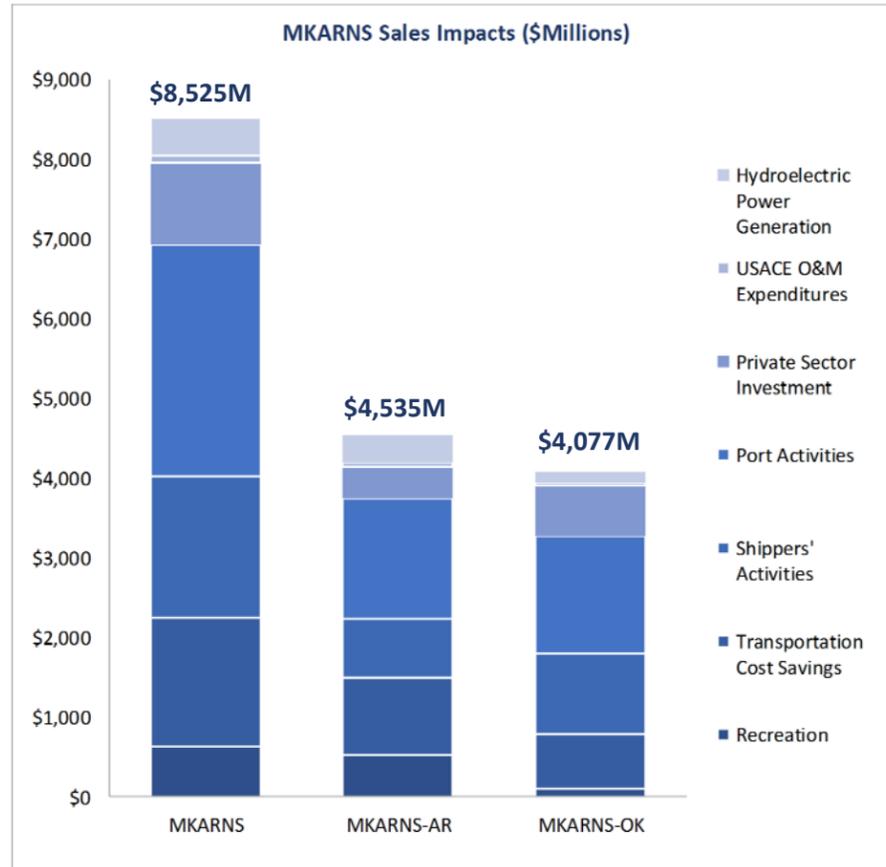
Map of MKARNS Elevation Change
Source: OKLADOT

MKARNS Sales Impacts

Here we report the total direct and indirect impacts on Sales revenue if the MKARNS was no longer in operation. Sales is defined as the revenue generated by firms whose operations are affected by the MKARNS.

The total MKARNS impact on Sales is \$8.525 billion nationwide. On its own, the Arkansas segment of the MKARNS nationally contributes \$4.535 billion, and while the Oklahoma MKARNS segment nationally contributes \$4.077 billion. The combined impact is slightly less than the two segment impacts combined due to shared freight benefits.

Examining the MKARNS Sales impact results, we observe Port Activities (\$2,904 million), Shippers' Activities (\$1,775 million), and Transportation Cost Savings (\$1,615 million) are the largest contributors to Sales impacts.



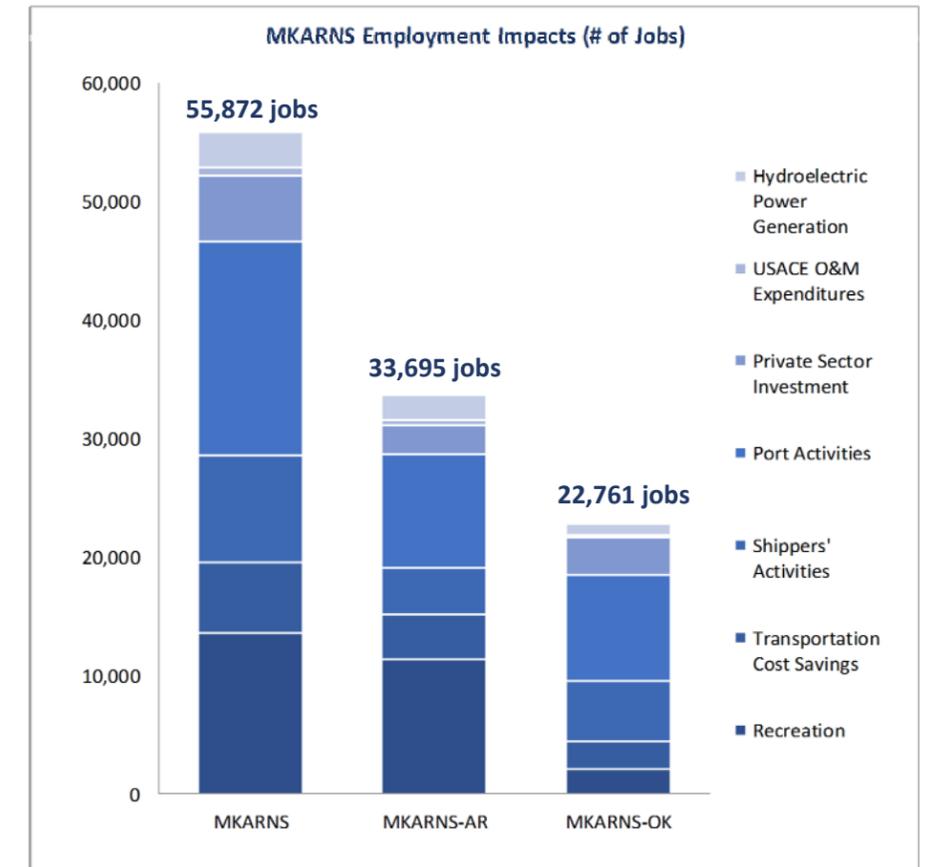
Benefits	Sales (\$ Million)		
	MKARNS	MKARNS-AR	MKARNS-OK
Hydroelectric Power Generation	\$474	\$335	\$135
USACE O&M Expenditures	\$94	\$60	\$34
Private Sector Investment	\$1,030	\$396	\$629
Port Activities	\$2,904	\$1,503	\$1,477
Shippers' Activities	\$1,775	\$744	\$1,018
Transportation Cost Savings	\$1,615	\$968	\$677
Recreation	\$634	\$528	\$106
Total Impact	\$8,525M	\$4,535M	\$4,077M

MKARNS Employment Impacts

Employment impacts are the jobs created directly by MKARNS activities due to purchases from businesses and individuals' local expenditures.

The total impact on Employment of the MKARNS is 55,872 jobs nationwide. On its own, the Arkansas segment of the MKARNS nationally contributes 33,695 jobs, and while the Oklahoma MKARNS segment nationally contributes 22,761 jobs. The combined impact is slightly less than the two segment impacts combined due to shared freight benefits.

The largest component of the entire MKARNS and MKARNS Oklahoma segment employment impacts are due to port activities (18,070 and 8,969 jobs respectively). The largest employment impact component of the MKARNS Arkansas segment is due to recreation (11,429 jobs).



Benefits	Employment (# of Jobs)		
	MKARNS	MKARNS-AR	MKARNS-OK
Hydroelectric Power Generation	2,986	2,146	887
USACE O&M Expenditures	663	434	229
Private Sector Investment	5,524	2,394	3,105
Port Activities	18,070	9,580	8,969
Shippers' Activities	9,077	3,980	5,073
Transportation Cost Savings	6,000	3,732	2,374
Recreation	13,552	11,429	2,123
Total Impact	55,872	33,695	22,761