



McClellan-Kerr Arkansas River Navigation System Mooring Modernization Project *Port Infrastructure Development Program - 2022*

Applicant: Oklahoma Department of
Transportation (ODOT)

UEI Number: P14MNTH7JM37

EIN Number: 73-6017987

**Supporting information can be found
at:**

<https://oklahoma.gov/odot/progress-and-performance/federal-grant-awards/pidp.html>

PIDP Request Amount: \$15,500,000 (75.6%)

Local Match: \$5,000,000 (24.4%)

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Field Name	Guidance
Name of applicant	Oklahoma Department of Transportation (ODOT)
Is the applicant applying as a lead applicant with any private entity partners or joint applicants?	Bruce Oakley, Inc operator of Oakley's Terminal Muskogee (an extension of Oakley's Port 33).
What is the project name?	McClellan-Kerr Arkansas River Navigation System (MKARNS) Mooring Modernization Project
Project description	The MKARNS Mooring Modernization Project (the Project) will construct new mooring structures in the waterway that will replace existing obsolete anchors at the Tulsa Port of Catoosa, the Port of Muskogee and Oakley's Terminal Muskogee (an extension of Oakley's Port 33). The Project will invest in necessary mooring technologies to preserve the waterway's economic vitality and prepare for future freight traffic demand within the larger U.S. economy.
Is this a planning project?	No
Is this a project at a coastal, Great Lakes, or inland river port?	Inland River Port
GIS Coordinates (in Latitude and Longitude format)	36°14'28.68"N and 95°44'15.72"W
Is this application for a small project at a small port?	No
Is this project located in a noncontiguous State or U.S. territory?	No
Is this project in an urban or rural area?	Rural
Project Zip Code	74403
Is the project located in a Historically Disadvantaged Community or a Community Development Zone? (A CDZ is a Choice Neighborhood, Empowerment Zone, Opportunity Zone, or Promise Zone.)	Yes, the project is located in a Historically Disadvantaged Community at all improvement locations.
Has the same project been previously submitted for PIDP funding?	No
Is the applicant applying for other discretionary grant programs in 2022 for the same work or related scopes of work?	RAISE FY 2022

Field Name	Guidance
Has the applicant previously received TIGER, BUILD, RAISE, FASTLANE, INFRA or PIDP funding?	No
PIDP Grant Amount Requested	\$15,500,000
Total Future Eligible Project costs	\$20,500,000
Total Project Cost	\$20,500,000
Total Federal Funding	\$15,500,000
Total Non-Federal Funding	\$5,000,000
Will RRIF or TIFIA funds be used as part of the project financing?	N/A

Table of Contents

1	Project Description	1
	Transportation Challenges Addressed.....	2
	Limited capacity and Reliability at existing ports	2
	ODOT’s Commitment to Waterways	3
	Project Partners	4
	Detailed Statement of Work	4
	Current Project Status.....	5
	Design Status	5
	NEPA Status	5
2	Project Location.....	6
	Regional Significance.....	8
	Community Description	8
3	Grant Funds, Sources and Uses of Project Funds.....	9
4	Merit Criteria	10
	Achieving Safety, Efficiency or Reliability Improvements	10
	Loading and Unloading of Goods at a Port	10
	Movement of Goods Into, out of, or Within a Port	11
	Operational Improvements	12
	Environmental and Emissions Mitigation Measures	14
	Clean Energy	15
	Riverbank Stability	15
	Supporting Economic Vitality at the Regional or National Level	16
	Benefit Cost Analysis	16
	Economic Competitiveness	17
	Addressing Climate Change and Environmental Justice Impacts.....	19
	Climate Change	19
	Environmental Justice Activities	20
	Advancing Equity and Opportunity for All.....	21
	Advancing Equity	21
	Promoting Workforce Opportunities	21

Jobs and Local Rural Vitality	21
Leveraging Federal Funding to Attract Non-Federal Sources of Infrastructure Investment	22
5 Project Readiness.....	22
Technical Capacity	22
Project Schedule	22
Environmental Risk	23
Environmental Permits and Reviews.....	23
State and Local Approvals.....	24
USACE Approval	25
Risk Mitigation.....	25
6 Domestic Preference.....	26
7 Determinations.....	26
8 Appendices	28

List of Figures

Figure 1: Primary Project Partners.....	4
Figure 2: Oklahoma Ports	5
Figure 3: Project Location	6
Figure 4: Installation on the shoreline vs. within the River.....	16
Figure 5: Port Partner Waterway Commerce – 2021	18
Figure 6: Project Schedule	23

List of Tables

Table 1: Mooring Infrastructure Cost	9
Table 2: Project Cost.....	9
Table 3: Project Partners.....	24
Table 4: Project Risks and Mitigation Strategies.....	25

1 PROJECT DESCRIPTION

The McClellan-Kerr Arkansas River Navigation System (MKARNS) plays a vital role to the regional, state, and national economy. It serves as the primary navigable waterway in the State of Oklahoma. The MKARNS waterway originates in northeastern Oklahoma and flows southeast to the Mississippi River. The **MKARNS Mooring Modernization Project** (the Project) will construct new mooring structures in the waterway that will **replace existing obsolete** anchors at the Tulsa Port of Catoosa, the Port of Muskogee and Oakley’s Terminal Muskogee (an extension of Oakley’s Port 33). **The modernized mooring infrastructure** will enable safe harbor for mariners, increase reliability of structures in the event of a flood, and ensure the Oklahoma segment of the MKARNS **can continue to support the over 22,000 full and part-time jobs it provides.**¹

The primary goal of the Project is to implement reliable mooring infrastructure to ensure safe and efficient freight movement, protect Oklahoma’s roads and bridges, and promote long-term vitality of the waterway.

Oklahoma’s Marine Highway
MKARNS
M-40

The Project will replace existing barge tie-down structures that were not designed for the type of major flood events experienced in the region in recent years. It will enhance harbor safety by greatly reducing the risk of a barge becoming loose, which could result in damage to infrastructure in the waterway. These new mooring structures will also prepare ports for the forecasted increases in freight demand through the MKARNS segment in Oklahoma.

New mooring infrastructure will be an investment in long-term strength, security, and resiliency and will allow Oklahoma to continue as a major contributor to the U.S. and global markets. The MKARNS waterway links Oklahoma to a 12-state service area with various domestic ports along the U.S. inland waterways system and connects to foreign ports by way of New Orleans and the Gulf Intracoastal Waterway.

Freight movement by waterway in Oklahoma is forecasted to grow by 35 percent through 2045 and reach 8.5 million tons in 2045.¹

In 2021, Oklahoma’s waterborne commerce on the MKARNS totaled 4.9 million tons with a value of \$2.3 billion dollars. In addition, more than 10.6 million tons traversed the entire MKARNS waterway with **a value of more than \$3.6 billion dollars.** It is important to note that shipping cargo by water is the most energy efficient and the most economically competitive form of freight transportation.²

The Port of Muskogee, Tulsa Port of Catoosa, and Oakley’s Port 33 combined 3,100 acres of industrial park **employ nearly 9,000 workers** and **serve 86 percent of the tonnage** inland of Webbers Falls Lock and Dam on the MKARNS Oklahoma segment.³

¹ [Oklahoma Transportation 2021 Annual Report](#)

² [MKARNS 2022 Inland Waterway Fact Sheet](#)

³ Tonnage information was informed by each port location associated with this Project.

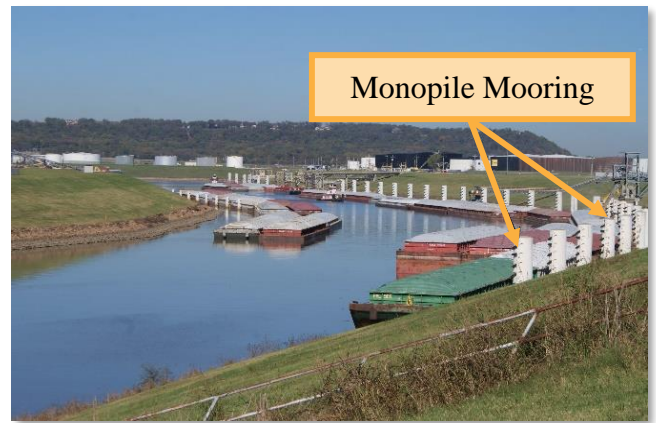
TRANSPORTATION CHALLENGES ADDRESSED

The Oklahoma Department of Transportation (ODOT), Tulsa Ports, Port of Muskogee, and Oakley’s Terminal Muskogee (Port Partners) all agree that this project is a top priority for the MKARNS Oklahoma Segment. The Project will:

- Provide mooring replacement structures that will better support forecasted freight demands;
- Reduce safety risks by replacing obsolete anchorage systems;
- Reduce fuel consumption and carbon emissions;
- Protect Oklahoma’s infrastructure and economy during flooding events; and
- Better maintain a state of good repair in the waterway by minimizing operations and maintenance costs.

LIMITED CAPACITY AND RELIABILITY AT EXISTING PORTS

The Project will replace existing obsolete anchors at the Tulsa Port of Catoosa, Port of Muskogee, and Oakley’s Terminal Muskogee, which will provide safer and more reliable structures to tie down barges. Existing anchorage structures at these port terminals are limited and cannot support the incoming growth of barges and vessels that move freight. Because capacity is limited, some vessels today are deadman⁴ anchored along the banks of the waterway creating safety hazards, inefficiencies, and congestion. The Project will provide mooring structures that are more supportive of the vessels and barges that move freight along the MKARNS.



June 2021: Mooring Infrastructure – Tulsa Port of Catoosa

The Tulsa and Little Rock Districts of the Army Corps of Engineers have identified a critical backlog of maintenance needs on the MKARNS. Any one of these critical maintenance items has a 50 percent probability of failure within the next 5 years.⁵ If any of these items fail, it will affect or potentially shut down the entire MKARNS, and the Army Corps of Engineers lacks a sufficient budget to maintain the infrastructure of the inland waterway system. The current cost of the **critical backlog of maintenance needs on the MKARNS alone is now approaching \$160.4 million dollars on the Oklahoma segment and approximately \$302 million dollars system wide.**⁶ The Project will provide modernized mooring structures along the MKARNS improving system-wide reliability.

⁴ An object, such as an anchor, piling, or concrete block, buried on shore that contains a tie to secure barges.

⁵ [Critical Need \(2013\)](#)

⁶ [MKARNS Top 30 Critical Backlog Maintenance Items FY24 Budget](#)

ODOT'S COMMITMENT TO WATERWAYS

The importance of this vital infrastructure to Oklahoma's economy is undeniable. ODOT and the Arkansas Waterways Commission jointly worked on a Regional Economic Impact Study that was conducted by the University of Arkansas Little Rock, Oklahoma State University and the University of Arkansas Mack-Blackwell Rural Transportation Center in Fayetteville. The study illustrates the estimated economic impact of the MKARNS to not only Oklahoma's and Arkansas' economies, but also the nation. Due to the commitment of the department to support the ports and the freight and shipping opportunities that are provided for the state, numerous transportation system improvement projects have been completed and are scheduled in their vicinities. Since 2000, the department has awarded 192 contracts, including right-of-way and utility relocation efforts, totaling in excess of \$701 million within a 10-mile radius of the Port of Catoosa and Oakley's Port 33. Further, within that same area an additional 43 projects totaling nearly \$247 million are scheduled for award in FFY 2021 through 2028, of which \$219.3 million are included in the 8-Year Construction Work Plan. Similarly, since 2000, the department has awarded 59 contracts, including right-of-way and utility relocation efforts, totaling \$116.7 million within a 10-mile radius of the Port of Muskogee. An additional 24 projects totaling over \$127.4 million are scheduled for award in FFY 2021 through 2028, of which \$100.7 million are included in the 8-Year Construction Work Plan for that same area.⁷

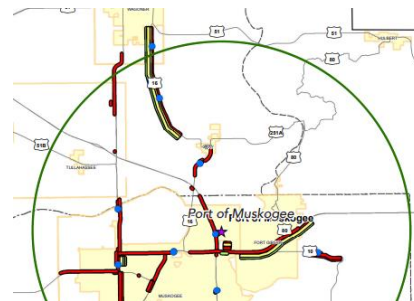
Port of Catoosa and Oakley's Terminal Muskogee



Active Projects (2021 to 2028)
\$247,245,251

Awarded Projects (since 2000)
\$701,689,672

Port of Muskogee



Awarded Projects (since 2000)
\$116,719,585

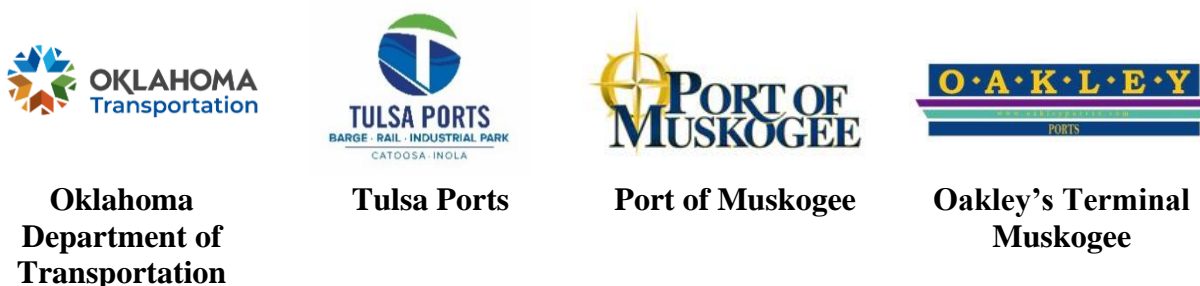
Active Projects (2021 - 2028)
\$127,471,698

⁷ [MKARNS Update – Page 50 \(2020\)](#)

PROJECT PARTNERS

A snapshot of Project partners is shown below in Figure 1 and a complete list of project supporters is provided in the Partnership section of the application.

FIGURE 1: PRIMARY PROJECT PARTNERS



To take best advantage of economies of scale, ODOT will coordinate and let the project for all three port locations. ODOT will enter into contractual agreements with each of the Port Partners. Upon completion of construction, each respective Port Partner will take over operations and maintenance of the new mooring structures in perpetuity.

DETAILED STATEMENT OF WORK

The requested Port Infrastructure Development Program (PIDP) grant funding will be used to construct modernized mooring structures at three locations: the Tulsa Port of Catoosa, the Port of Muskogee, and Oakley's Terminal Muskogee. Oakley's Terminal Muskogee is strategically located at the confluence of the Arkansas, Grand, and Verdigris Rivers in the Port of Muskogee. Oakley's Terminal Muskogee is an extension of Oakley's Port 33, located upstream just south of the Port of Catoosa.

The existing anchoring structures at the three locations vary between deadman anchors and dolphin moorings. Deadman anchors (located at Oakley's Terminal Muskogee in the Grand River) consist of lines connected to buried timbers or bridge beams which are installed on dry land and buried to make use of earth pressure to resist pull forces. Dolphin moorings in the waterway today (located at the Tulsa Port of Catoosa and Port of Muskogee) consist of a combination of vertical and horizontal "batter" wood piles.

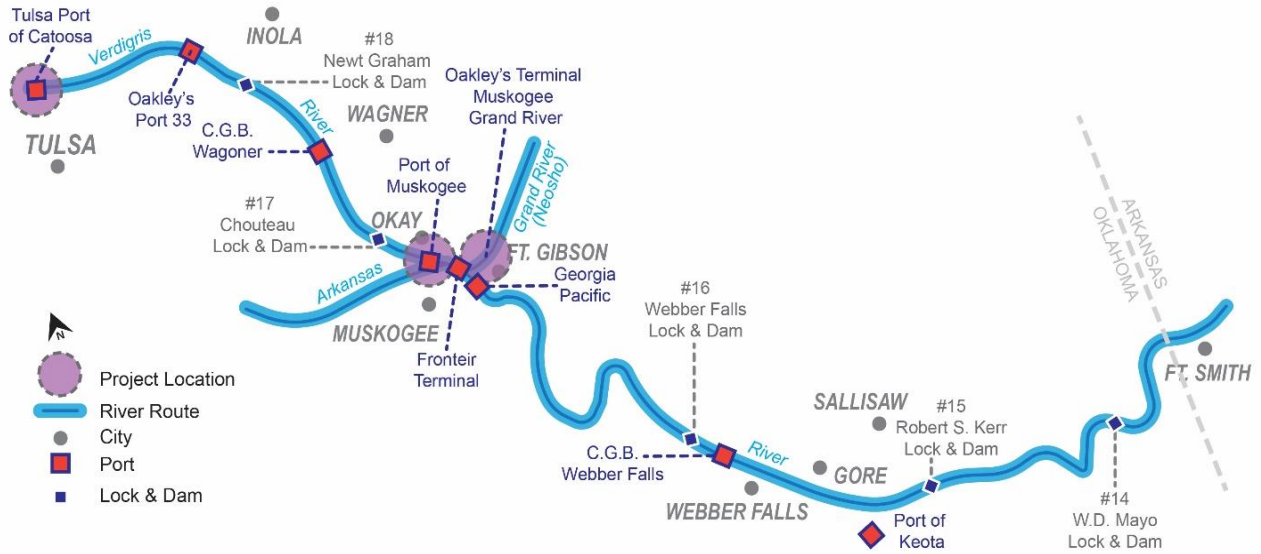
The Project includes the following improvements:

- Tulsa Port of Catoosa – The Project will remove and replace 6 dolphin structures with new mooring structures with associated gangway⁸ and platforms.
- Port of Muskogee – The Project will remove and replace 20 dolphin structures with new mooring structures with associated gangway and platforms.
- Oakley's Terminal Muskogee – The Project will remove and replace 6 deadman anchors with new mooring structures with associated gangway and platforms.

Figure 2 below highlights the three Project locations.

⁸ Merriam-Webster defines a gangway as a passageway or walkway.

FIGURE 2: OKLAHOMA PORTS



CURRENT PROJECT STATUS

To date, ODOT has contracted with a construction engineering company to develop preliminary plans and a cost estimate for this Project.

DESIGN STATUS

Preliminary design is complete. Final design is expected to be complete in October of 2022.

NEPA STATUS

The NEPA evaluation for the Project is in progress and expected to be complete by the end of 2022. As a port improvement project, an environmental assessment (EA) is required; however, there are minimal environmental risks and/or resource impacts because the project includes in-place replacement of older existing mooring infrastructure in the same sites.

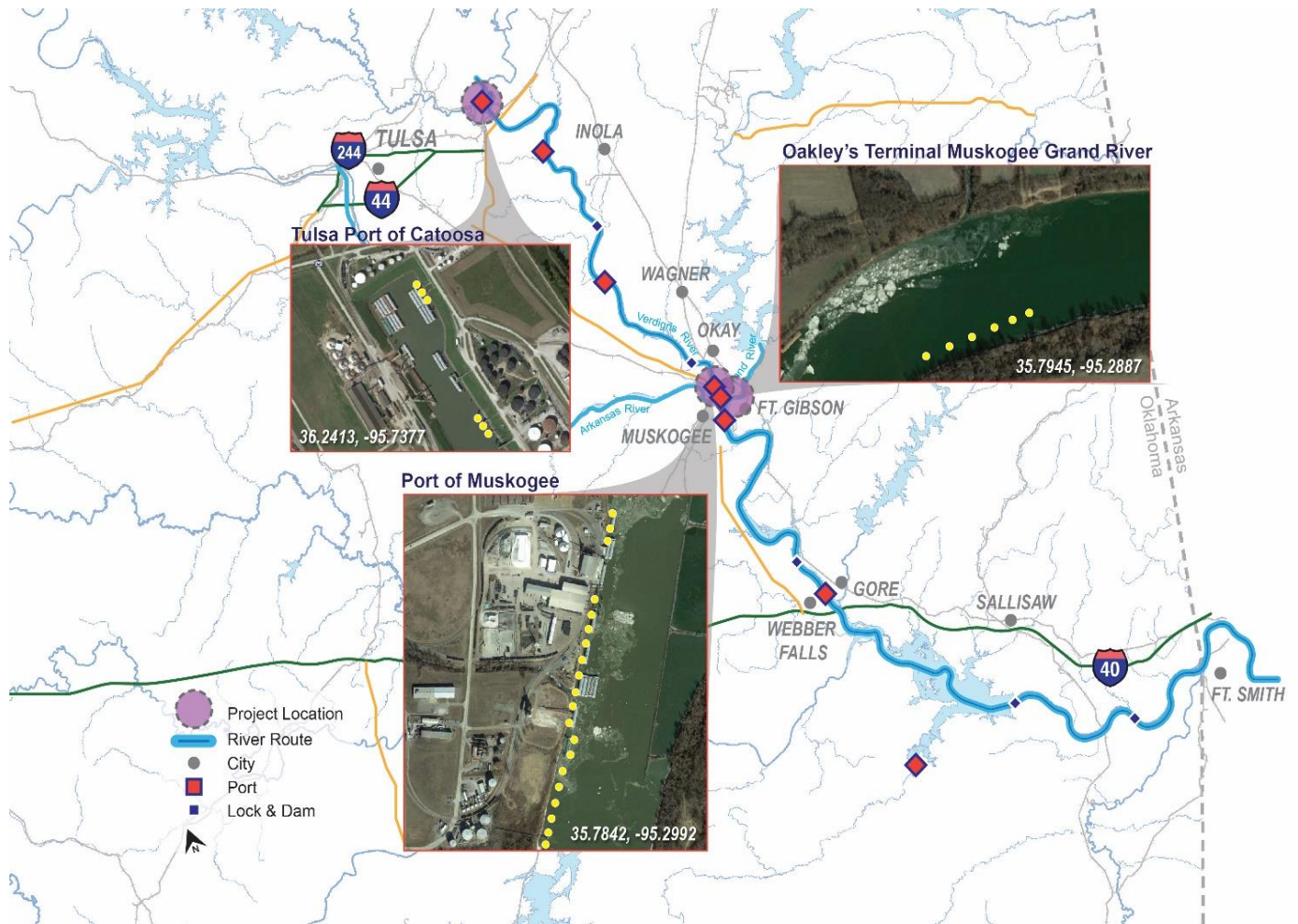


2 PROJECT LOCATION

The MKARNS is a 445-mile-long marine highway within contiguous segments of the Verdigris, Arkansas, and White Rivers. The MKARNS serves a 12-state region and is the most westerly inland ice-free waterway system in the Country. As such, the waterway provides access to port terminals for the transfer of freight from barge to either rail or truck. The MKARNS is synonymous with the Arkansas River in Oklahoma from the Port of Muskogee downstream to the State of Arkansas border. When traveling upstream from the Port of Muskogee, MKARNS leaves the Arkansas River to join the Verdigris River and terminates at Tulsa Port of Catoosa.

The Project will construct 32 mooring structures at the Tulsa Port of Catoosa, Port of Muskogee and at Oakley’s Terminal Muskogee, all of which are located in Northeast Oklahoma’s 2nd Congressional District. These three locations include the two largest public ports (Tulsa Port of Catoosa and Port of Muskogee), and Oakley’s Terminal Muskogee is an extension of the largest private port (Oakley’s Port 33) along the MKARNS waterway in Oklahoma. The specific geospatial coordinates of proposed mooring structures are provided in Figure 3 below.

FIGURE 3: PROJECT LOCATION



CONNECTIONS TO EXISTING TRANSPORTATION

The improvements to be provided at Oakley’s Terminal Muskogee directly support the tonnage processed by Oakley’s Port 33, as they are both owned and operated by Bruce Oakley, Incorporated.⁹ The Port of Muskogee, Tulsa Port of Catoosa, Oakley’s Terminal Muskogee, and Oakley’s Port 33 are important economic engines for the State of Oklahoma, making them key components of the regional and national freight transportation system. The Project will invest in necessary mooring technologies to preserve the waterway’s economic vitality and prepare for future freight traffic demand within the larger U.S. economy. Since the official opening of the MKARNS in 1971, the Port Authorities and State of Oklahoma have made strategic infrastructure investments to maintain ports and channel infrastructure in a state of good repair, promote the development of jobs, and improve transportation land access to ports.



The Infrastructure Investment and Jobs Act (IIJA) of 2021 designated a portion of US-412 in Arkansas and Oklahoma as a future interstate on the National Highway System. US-412 directly serves the Tulsa Port of Catoosa and Oakley’s Port 33 on the MKARNS. This designation will help attract new businesses, improve safety, enhance freight mobility, and better connect rural and urban communities.¹⁰ Furthermore, the Army Corps of Engineers released their plans to utilize funding from the IIJA to deepen the MKARNS channel from 9 feet to 12 feet. A deeper channel will allow for increased barge capacity up to 400 tons per barge. Additionally, the Port of Inola, located on the Oklahoma segment of the MKARNS, just recently completed the Sofidel America Manufacturing facility, a \$360 million dollar investment employing over 400 people and has direct access to barge transportation.¹¹

The Project Ports offer multimodal connections to rail, truck, air, and barge shipping. The ports’ central location provides connections to extensive networks across the nation, including truck access to either coast in about two days¹². Connections such as these make the Project ports an ideal spot for future growth along the MKARNS System. Infrastructure investments like the US-412 interstate designation, the deepening of the MKARNS channel, the Port of Inola manufacturing facility, and the MKARNS Mooring Modernization Project, will help continue to protect and support the growth of the MKARNS waterway system in Oklahoma.

⁹ [Bruce Oakley, Incorporated](#)

¹⁰ [U.S. 412 Interstate Designation \(2021\)](#)

¹¹ [Tulsa Port of Inola](#)

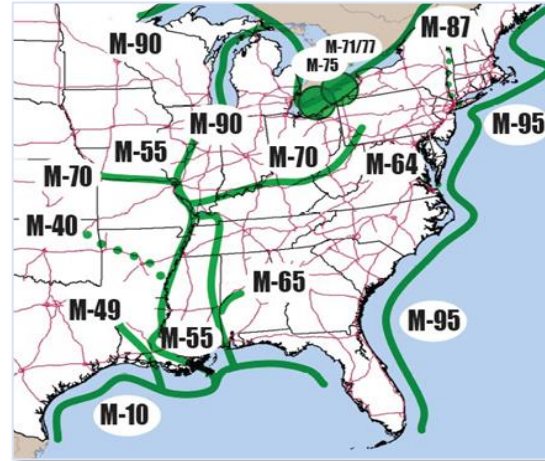
¹² [Transloading](#)

REGIONAL SIGNIFICANCE

There are three Foreign Trade Zones on the MKARNS at the ports of Little Rock, Muskogee, and Catoosa and at least 42 countries have commercial transactions via the MKARNS. In 2015, the waterway’s designation changed from a “moderate” to a “high-use” waterway which upgraded the “Marine Highway M40” from a “Connector” to a “Corridor” due to its five-year average of more than 3.3 billion-ton-miles traveled. As of 2021, the MKARNS waterborne commerce totaled 10.7 million tons and had a value of \$2.3 billion.¹³

Oklahoma supplies agricultural products and other goods throughout the U.S. and internationally. In total, Oklahoma shipped \$5.4 billion dollars’ worth of goods around the globe in 2020.¹⁴

The MKARNS and Oklahoma ports provide an efficient flow of goods from production to the U.S. and foreign markets. In addition to Oklahoma-produced goods, surrounding great plain states bring products to the MKARNS for shipment because it is an economical and efficient way to bring goods to market. In 2017, approximately half of the tonnage traversing Oklahoma ports was directly related to Kansas shipments (approximately 2.9 million tons).¹⁵ Top commodities traded on the MKARNS include, but are not limited to, iron, steel, chemical fertilizer, and soybeans.¹⁶



Eastern U.S. Marine Highways



MKARNS 50th Anniversary

COMMUNITY DESCRIPTION

The Project is considered a large project. The three port locations that will benefit from this Project are all inland river ports and considered rural.¹⁷ The Port of Muskogee (Muskogee County, Tract 4) is designated as an Area of Persistent Poverty (APP), a Historically Disadvantaged Community (HDC) and is located in a qualified Opportunity Zone (Zone ID 40101000400). Oakley’s Terminal Muskogee (Muskogee County, Tract 14) and the Port of Catoosa (Rogers County, Census Tract 504.08) are both categorized as Historically Disadvantaged Communities (HDC).¹⁸

¹³ [MKARNS 2022 Inland Waterway Fact Sheet](#)

¹⁴ [World’s Top Exports, Oklahoma’s Top 10 Exports](#)

¹⁵ [MKARNS Presentation](#)

¹⁶ [MKARNS 2022 Inland Waterway Fact Sheet](#)

¹⁷ [Federal Register Notice of Funding – Page 16](#)

¹⁸ [Areas of Persistent Poverty and Historically Disadvantaged Community Status Tool](#)

3 GRANT FUNDS, SOURCES AND USES OF PROJECT FUNDS

The cost of the Project is \$20.5 million dollars. ODOT is committed to leverage federal dollars with a local investment of \$5 million dollars in additional funding (a 24.4 percent local match) for this Project, which will be dedicated within the annual state appropriations. Because this Project is not in the ODOT 8-year work plan and does not have a dedicated revenue source outside of the \$5 million-dollar commitment, the Project cannot be completed in its entirety without the additional \$15.5 million dollar PIDP funding. Table 2 shows a complete cost breakdown for each mooring structure and the total project cost including mobilization and de-mobilization. All obligated PIDP funds would be used for project construction and construction contingency. In total, ODOT requests \$15.5 million dollars in PIDP funding, 75.6 percent of total project costs. Preliminary design for the Project is complete; and final design is expected to be complete in October of 2022. Costs were developed during preliminary design and were finalized for this design effort in March 2022.

TABLE 1: MOORING INFRASTRUCTURE COST

Item	Quantity	Unit Cost	Total	Local Match	Federal Funds
			100%	24.4%	75.6%
5 ft Diameter Monopile -Linear Feet	80	\$3,765	\$301,200	\$73,463.41	\$227,737
Pile Tremie Concrete Cubic Yards	55	\$500	\$27,500	\$6,707.32	\$20,793
Grout and Misc. Outfitting (lump Sum)	1	\$70,000	\$70,000	\$17,073.17	\$52,927
Rock Anchors / Rock Socket (Lump Sum)	1	\$32,250	\$32,250	\$7,865.85	\$24,384
Sub Total			\$430,950	\$105,109.76	\$325,840
30% Construction Contingency			\$130,000	\$31,707.32	\$98,293
Total Cost Per Structure			\$560,950	\$136,817.07	\$424,133

TABLE 2: PROJECT COST

Item	Quantity	Unit Cost	Total	Local Match	Federal Funds
			100%	24.4%	75.6%
Mooring Structures	32	\$560,950	\$17,950,400	\$4,378,146.34	\$13,572,254
Mobilization and De-mobilization	1	\$1,912,600	\$1,912,600	\$466,487.80	\$1,446,112
Demolition of Structures	26	\$24,500	\$637,000	\$155,365.85	\$481,634
Total Project Cost			\$20,500,000	\$5,000,000.00	\$15,500,000

4 MERIT CRITERIA

ACHIEVING SAFETY, EFFICIENCY OR RELIABILITY IMPROVEMENTS

LOADING AND UNLOADING OF GOODS AT A PORT

Modernized moorings will improve worker safety and minimize risk during mooring tie-down procedures. Mooring infrastructure provided by this Project requires less skill and physical force by captains and deckhands as they are securing barges. Securing a deadman anchor requires the captain to maneuver the barge towards the riverbank as the deckhand uses a long (approximately 20 ft) pike pole to retrieve a floating cell connected to the deadman anchor cable. The deckhand then must physically pull the cable to the deck to secure the barge. The process to secure a barge using a deadman anchor is physically strenuous for both the captain and deckhand. During the securing process, the deckhands' eyes are in front of the barge which can also be strenuous on the eyes during the night, high wind conditions, or pouring rain. The modernized mooring infrastructure proposed by the Project (either monopile or dolphin mooring) would allow captains to maneuver a barge alongside the mooring structure as the deckhand throws a line around the pipe to secure the barge, which is an easier and safer process than what is required to secure to a deadman anchor.



Existing Dolphin at the Port of Muskogee



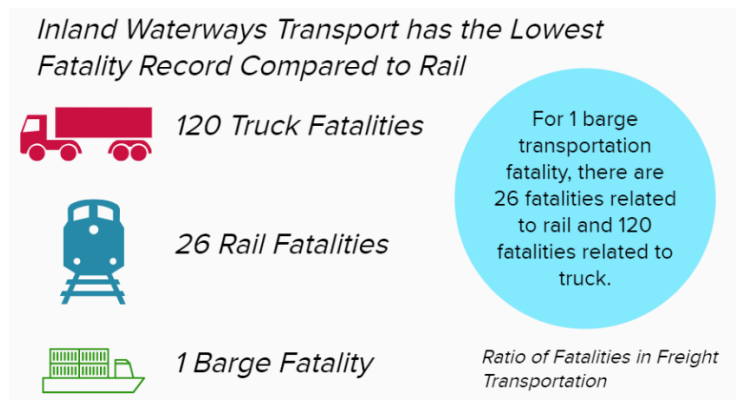
Existing Deadman Anchor wire at Oakley's Terminal Muskogee

MOVEMENT OF GOODS INTO, OUT OF, OR WITHIN A PORT

Continue to Support Safe Movement of Freight

The MKARNS is an integral part of the regional and national movement of freight and goods. By safely moving America’s cargo at the lowest cost, barge transportation plays a vital role in not only the nation’s economy, but in limiting truck traffic congestion and reducing safety risks on our nation’s roads.¹⁹

Inland waterway transportation has a low fatality and injury record compared to rail or truck freight movement. For each barge-related fatality, there are 26 rail-related fatalities and 120 truck-related fatalities.²⁰ For each barge-related injury, there are 96 rail-related injuries and 1,145 truck-related injuries.²¹ Inland waterways are one of the safest ways to move freight in our nation.

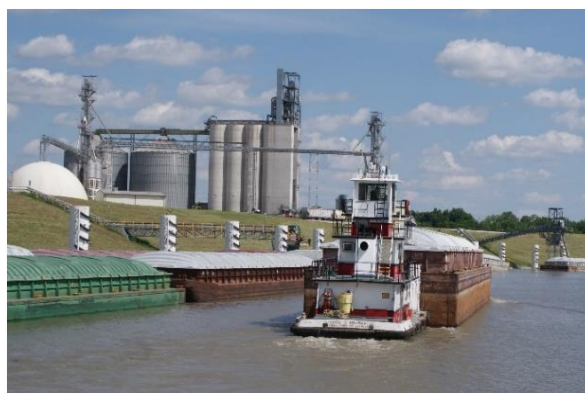


National Waterways Foundation (2001-2019 Statistics)

Supply Chain Improvements

The MKARNS is a 12-state navigable waterway capable of handling barges which traverse the entire inland waterway system from New Orleans and Houston to Pittsburgh and Minneapolis. Shipping by water is the most cost competitive form of freight transportation, and just about any type of cargo can be shipped by barge if there is large enough volume to move.²²

From September 2019 to December 2021, the average door-to-door shipping time for waterway freight doubled from 40 to 80 days.²³ Increased shipping demands have contributed to record-breaking supply chain issues resulting in out-of-stock products for stores, dealerships, grocery stores, and more. As demands continue to skyrocket, it has become increasingly more difficult for companies to make freight movement more environmentally friendly. Freight movement by barge provides the smallest carbon footprint for all modes of freight transportation²⁴. Future shipping demands and policy changes may require companies to consider greener shipping



June 2021: Tulsa Port of Catoosa

¹⁹ [Inland Marine Highway](#)

²⁰ [National Waterways Foundation \(2022\)](#)

²¹ [National Waterways Foundation \(2022\)](#)

²² [Shipping on the Waterway](#)

²³ [Door to Door Average Shipping Time for Ocean Freight Shanghai-Los Angeles](#)

²⁴ [National Waterways Foundation \(2022\)](#)

methods that lower their carbon footprint, making barge freight transportation a sustainable infrastructure investment²⁵

Modernized mooring structures will allow the Tulsa Port of Catoosa, Muskogee, and Oakley’s Terminal Muskogee to continue to provide a reliable and efficient method to ship bulk commodities through these locations. As the shipping industry continues to adjust to increased demands, new infrastructure will also help these locations to maintain good relationships with the businesses who already rely on them to support this increasing freight demand and create the opportunity for new connections with businesses in the future.

Oversized, Overweight Loads

In 2021, the MKARNS transported 1,010,204 tons of iron and steel and 32,064 tons of equipment and machinery.²⁶ Transporting these products and commodities usually requires an overweight and/or oversized load permit if transported by truck. Transporting these goods and commodities by barge provides greater efficiencies and cost-savings by eliminating the need for a permit and allowing greater tonnages to be transported in each load. New tie down structures will help the Project locations to continue to safely accommodate oversized and overweight loads and further reduce oversized loads on the highway, ensuring a more balanced transportation network.

OPERATIONAL IMPROVEMENTS

Port Resilience

The MKARNS opened as an official navigable waterway over 50 years ago. Ports constructed around this time included mooring technology that is now outdated, needing significant upgrades to remain operational. Modern tie down infrastructure will prepare the MKARNS in Oklahoma to handle potential future extreme flooding events and to support continuous growth on the “marine highway”. The design solution also considers detail by the Army Corps of Engineers (USACE) for proper tie down infrastructure on navigable rivers and includes detail to properly secure both loaded and unloaded barges.

Existing infrastructure was unable to safely anchor barges during the recent Oklahoma flood event in 2019. This event was devastating for ports and industries along the MKARNS segment of Oklahoma and Arkansas. The waterway reached river stages, elevations, and flows never previously experienced during the lifetime of the MKARNS, with flows reaching more than 675,000 cubic feet per second (cfs). Under normal conditions at the



Port of Muskogee in normal conditions



Port of Muskogee in 2019 flood event

²⁵ [National Waterways Foundation \(2022\)](#)

²⁶ [MKARNS 2022 Inland Waterway Fact Sheet](#)

Port of Muskogee, flows average 8,000 cfs.²⁷ The existing anchorage system, unchanged since its inception in the early 1970s, is not designed to support these recently experienced flows or water elevations.



*MKARNS dam near Webbers Falls
Source: The Waterways Journal*

During the barrage of floodwater flow in 2019, two barges broke loose from the Port of Muskogee and floated downstream. After catching the barges and re-securing the vessels to trees along the soggy riverbank, they broke free again and struck a dam structure at the Webbers Falls Lock and Dam before they sank. The waterway was closed for 104 days to recover these barges and provide waterway repairs. Fortunately, the dam maintained its integrity, but obsolete anchoring structures pose a risk to waterway infrastructure. Hundreds of barges were at-risk during this flood event because the deadman anchors and other fixed mooring structures were up to ten feet below the water’s surface.

In total, the damages to the dam structure cost more than \$310,000 in repairs, however, the damage could have been much worse. In 2002, the Oklahoma community experienced more extensive damage to infrastructure and devastating safety risks when a barge struck an I-40 bridge pier. While this situation did not arise from failed anchoring, it illustrates the potential devastating effects that could result from failed mooring structures. In total, this event resulted in 14 deaths, 11 injuries, \$24 million dollars in bridge reconstruction, a 64-day closure of the waterway, and major impacts on freight commerce and travel.²⁸

Critical Backlog of Maintenance

The most important priority for the MKARNS is to preserve the safe, reliable, and productive operation of the MKARNS system. The MKARNS currently faces a significant maintenance backlog. Critical maintenance needs are now approaching \$302 million dollars along the MKARNS system. Critical maintenance is described by the U.S. Army Corps of Engineers (USACE) as having a 50 percent chance of failure during the next five years.²⁹



Tulsa Port of Catoosa – Platform Critical Failure

²⁷ [National Waterways Conference \(2019\) - Page 8](#)

²⁸ [I-40 Bridge Collapse Kills 14](#)

²⁹ [The McClellan-Kerr Navigation System is in Danger](#)

The Tulsa Port of Catoosa completed a replacement study in 2019 which found that **all the evaluated dolphin structures showed signs of deterioration, with some in need of immediate repair or decommissioning.**³⁰ The

use of the existing structures poses an identified safety risk to the waterway, its infrastructure, and its users.

During flood events, hundreds of barges will be at risk due to the potential failure of mooring structures. These structures will be deemed obsolete as of 2025, and if no improvements are made, the system will be left without means to operate. The Ports are experiencing critical

failures that will continue to lower capacity to secure

barges for loading and unloading if no updated infrastructure is provided. Placing newly designed mooring structures at each designated project location will greatly reduce and nearly eliminate ongoing operations and maintenance costs associated with existing infrastructure repairs. The new mooring structures will have a lifespan of 75 years, thus providing an investment in a long-term solution.



Tulsa Port of Catoosa – Dolphin Structure

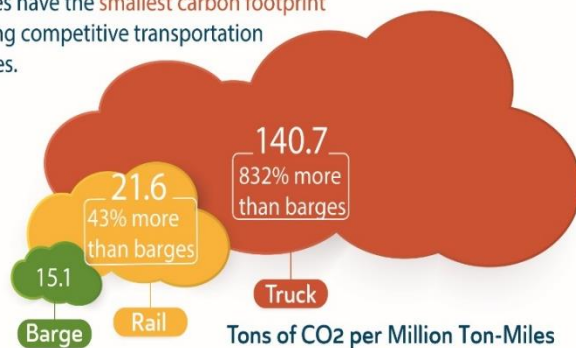
ENVIRONMENTAL AND EMISSIONS MITIGATION MEASURES

The Project will replace and update obsolete anchorage that will continue to allow freight movement by barge in Oklahoma. This investment will help encourage use of barges for the transport of goods and contribute to sustainable outcomes including reduced fuel consumption, reduced carbon emissions and pollutants, and improved air quality.

Agricultural commodities accounted for 73 percent of the total product moved on the Oklahoma segment of the MKARNS in 2015.³¹ Use of waterway freight movement is

the most energy efficient and least damaging mode of transportation for the environment.

Barges have the **smallest carbon footprint** among competitive transportation modes.



National Waterways Foundation

- **More energy efficiency per gallon of fuel.** Transporting freight by water is the most energy efficient choice. Barges can move one ton of cargo 675 ton-miles per gallon of fuel when compared to only 472 ton-miles for rail and 151 ton-miles for trucks. Ton-miles per gallon are a measure of how far each ton of cargo is carried by a single gallon of fuel.³²
- **Better for the environment** Barges have the smallest carbon footprint among other modes including rail and truck. To move an identical amount of cargo

³⁰ [Mooring Dolphin Report \(2019\)](#)

³¹ [MKARNS Update \(2020\)](#)

³² [National Waterways Foundation \(2022\)](#)

by rail generates 43 percent more carbon dioxide than by barge, and trucks generate over 800 percent more emissions.³³

- **Fewer vessels or vehicles required.** One full barge load of wheat is more than enough to provide a one-pound loaf of bread for every man, woman, and child living in Oklahoma in 2019.³⁴

CLEAN ENERGY

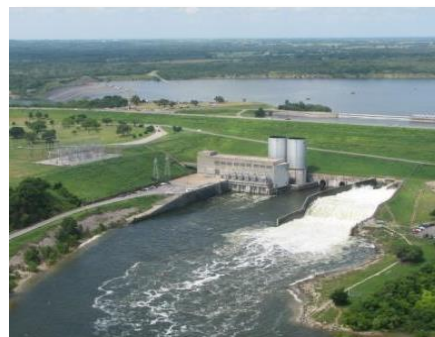
There are two hydropower plants on the MKARNS in Oklahoma that include 7 power generating units. These units provide clean energy to approximately 700,000 end users.³⁵ If the MKARNS were to become inoperable, as it was for 104 days in 2019, the hydropower plants would have to be supplemented by other means of power generation, such as natural gas. A study completed in 2015 describes the potential impacts if the MKARNS segment in Oklahoma were to become inoperable:

- Sales would decrease by \$72 million dollars;
- Nearly 470 full time and part time jobs would be lost;
- Business tax incomes would decrease by \$3 million dollars and;
- Oklahoma (GDP) would decrease by nearly \$38 million dollars.

These impacts highlight the importance of investing in infrastructure to ensure the MKARNS segment in Oklahoma remains in a state of good repair.³⁶ Minimizing risk to infrastructure in the waterway, including hydropower facilities, is a key benefit that the Project investment will provide.

RIVERBANK STABILITY

The Project will improve the riverbank stability by removing the deadman anchors at Oakley’s Terminal Muskogee and replacing them with modernized mooring structures. Deadman anchor construction (and repair) requires digging holes along the riverbank to place buried steel beams and timbers. Cables are attached to the foundations which are used as ties for barges and vessels. Continual repair, maintenance, and replacement of deadman anchors can lead to riverbank erosion as cables dig into the shore soil and as tension shifts or vibrates the anchor over time, which is illustrated in Figure 4 below. In addition, there are several endangered or threatened species within the Project area that include, but are not limited to, the Piping Plover, Whooping Crane, and American Burying Beetle. The mooring infrastructure implemented for this Project will be constructed in the river, minimizing further disturbance to habitats at Oakley’s Terminal. The Project will eliminate anchor-related disturbances to the shoreline and riverbank during routine maintenance, repair, or replacement.



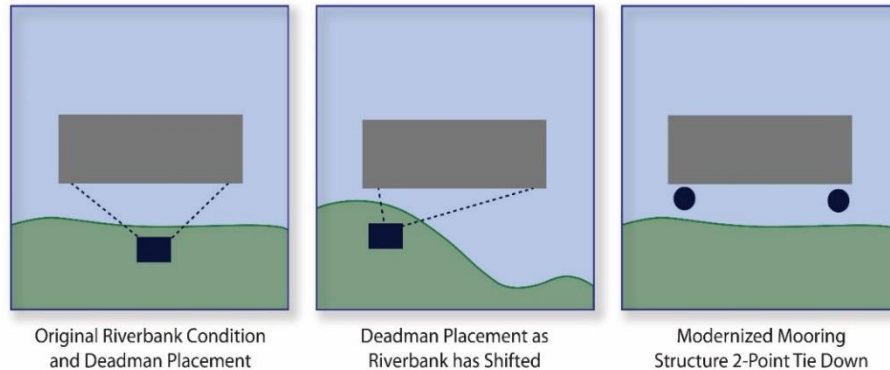
³³ [National Waterways Foundation \(2022\)](#)

³⁴ [National Waterways Foundation \(2022\)](#)

³⁵ [Oklahoma Transportation 2021 Annual Report](#)

³⁶ [MBTC Final Research Report – Page 24](#)

FIGURE 4: INSTALLATION ON THE SHORELINE VS. WITHIN THE



SUPPORTING ECONOMIC VITALITY AT THE REGIONAL OR NATIONAL LEVEL

BENEFIT COST ANALYSIS

The Project boasts a strong benefit-cost ratio (BCR) of **11.01** and an **internal rate of return of 36.1 percent**. At this rate, the proposed **total capital project cost of \$20.5 million (2020\$)** will produce a **positive net user benefit of about \$142.7 million dollars net present value (NPV)** over 20 years.

The Benefit Cost Analysis (BCA) shows that the Project will significantly improve safety in the event of a flood, reduce operations and maintenance (O&M) costs over time, and provide loss of use savings. The categories that demonstrate these savings are defined as follows:

Operations & Maintenance - Savings: Accounts for the duties and labor associated with yearly operations and repairs of the existing structures at each port location compared to the savings that would occur once the modernized mooring infrastructure is constructed.

Flood Damage - Benefits: Includes analysis and probability of the risk of flood or damage from a barge breaking loose in a flood event, the environmental impacts associated with the diversion of waterway cargo to rail or truck, and travel time impacts of a detour route if the waterway were inoperable due to a flood event.

Loss of Use - Benefits: The savings calculated for this category of the BCA include analysis of savings associated with total loss of use of the waterway. This accounts for the impacts to safety, environment, and the local economy.

Over the life of the Project, investment will produce the following benefits:

- **O& M Savings** **\$214,904 (NPV)**
- **Flood Damage Benefits** **\$23,055 (NPV)**
- **Loss of Use Benefits** **\$156.7 million (NPV)**

If the Project is not constructed, the MKARNS risks a loss of barge capacity due to degraded mooring structures. Under this assumption, many of the anchors will be unusable by 2025. Additionally, if tonnage had to be diverted due to closure of this segment of the MKARNS, it was assumed that 25 percent of the goods would not be moved. Of the remaining goods that can be moved, 75 percent would be diverted to rail and 25 percent would be diverted to trucks.

The BCA was prepared in accordance with the U.S. Department of Transportation (USDOT) 2022 Benefit Cost Analysis Guidance (revised version). The BCA dollar amounts were discounted by 7 percent to reflect the time value of money. Additional detail on the BCA methodology and results is located in Appendix A and B and on the [Project website in the BCA Technical Memorandum](#).

ECONOMIC COMPETITIVENESS

The primary goal of the Project is to ensure safe and efficient freight movement and to provide long-term vitality of the waterway. Modernized mooring structures will replace obsolete anchors and ensure the Oklahoma segment of the waterway is prepared for flooding events, today's freight demand, and future projected increases in demand for large and heavy vessels.

Efficiencies in Doing Business

Waterways provide great cargo capacity and move freight more safely and efficiently than truck or rail. This helps to save money for farmers, manufactures and consumers which encourages future growth and trade.³⁷ As of 2021, the Port of Catoosa, Muskogee, and Oakley's Terminal Muskogee serviced 86 percent of the total tonnage shipped inland of the Webbers Falls Lock and Dam on the MKARNS Oklahoma segment³⁸. Infrastructure improvements at these port locations are vital for cargo to continue to be shipped efficiently.

The Project will implement new tie down structures to improve efficiency and reduce wait times, which will save time and money for businesses that trade along the MKARNS system. Improved mooring structures will sustain a lowered risk factor during extreme weather conditions and allow vessels to remain secured. Overall, investments in modernized mooring structures will create long-term strength and security for Oklahoma's economy and will prepare the U.S. to remain competitive in the global goods movement market.³⁹

Local Economy

Local industries along the MKARNS manufacture bulk commodities that provide direct access to global markets. Oklahoma is a major producer of energy and agriculture, as well as manufactured goods. Northeast Oklahoma is home to the largest Maintenance, Repair, and Operation (MRO) facility in the world and is used to maintain American Airline airplanes. The facility alone employs more than 6,000 employees while the aerospace and defense industries in Oklahoma employ more than 120,000 employees statewide.⁴⁰ The aerospace industry is growing in Oklahoma and many of the manufactured goods needed to maintain this industry are shipped on the MKARNS.

³⁷ [MKARNS 2022 Inland Waterway Fact Sheet](#)

³⁸ Tonnage information was informed by ODOT and each Port location associated with this Project

³⁹ [MKARNS 2022 Inland Waterway Fact Sheet](#)

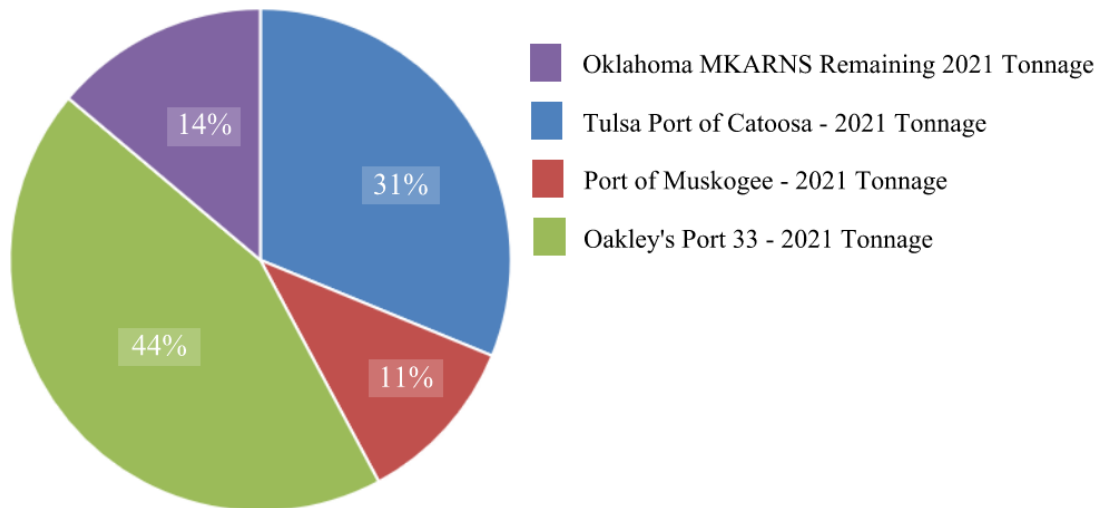
⁴⁰ [Aerospace and Industrial](#)

Forecasted Growth

The Project’s mooring infrastructure design will allow for storage of empty or full barges at any elevation, including the extreme conditions and elevations experienced in the 2019 flood event. The Project will replace retiring anchorage systems and construct 32 new moorings designed to be more stable in terms of the number of barges each structure can hold during flood events and high congestion times on the waterway.

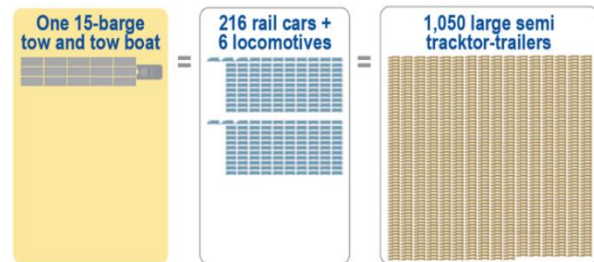
The three Port locations that will receive mooring modernization from this Project support the bulk of the total tonnage shipped on the Oklahoma MKARNS segment. In 2021, these locations totaled 86 percent of the total tons of cargo shipped inland of Webbers Falls Lock and Dam.⁴¹ Freight movement by waterway is expected to grow by 35 percent by 2045, making mooring structure improvements at these port locations vital for the Oklahoma system to continue to operate efficiently and support future growth.⁴² The 2021 proportional breakdown of waterway commerce along the MKARNS segment in Oklahoma by the Project Port Partners is shown below in Figure 5.

FIGURE 5: PORT PARTNER WATERWAY COMMERCE – 2021



Improved transportation for individuals

Waterway is an efficient way to move large amounts of freight. It would take the equivalent of 15 jumbo rail cars or 60 large semi-trucks to carry the same amount that could be supported by 1 barge.⁴³ Waterway travel on the MKARNS provides lower shipment prices (approximately 15 percent lower), thus waterway freight movement is preferred over rail or truck.



National Waterways Foundation

⁴¹ Tonnage information was informed by ODOT and each Port location associated with this Project

⁴² [Oklahoma Freight Transportation Plan \(2018-2022\)](#)

⁴³ [MKARNS 2022 Inland Waterway Fact Sheet](#)

If Oklahoma’s 4.9 million tons of waterborne commerce were transported by an alternative method, it would require 195,847 trucks to carry such load,⁴⁴ requiring more energy and generating more emissions. This would also vastly change the local roadway network for residents in the surrounding rural areas and the Tulsa metropolitan area. Waterway shipment reduces fuel consumption and CO₂ emissions by 40 percent when compared to rail and by 270 percent when compared to truck, providing better air quality and fewer vehicles on the roadways.

Investments in the Project will enhance mooring structure capabilities in the waterway to ensure that tie-down structures can continue to support this competitive system in Oklahoma and continue support of freight movement by waterway.

ADDRESSING CLIMATE CHANGE AND ENVIRONMENTAL JUSTICE IMPACTS

This Project directly aligns with **Executive Order 14008, Tackling the Climate Crisis at Home and Abroad (86 FR 7619)**, by delivering modern and sustainable infrastructure that promotes the use of the marine highway that can deliver goods in a reduced carbon footprint compared to freight-truck or rail. Additionally, given the volume of goods that pass through the MKARNS, **an average of 11 million tons of cargo or \$4 billion dollars each year**⁴⁵, this presents an opportunity for ‘good paying jobs’ for those working the boats, docks, and nearby facilities. Overall, this MKARNS Oklahoma segment supports over 22,000 full and part-time jobs⁴⁶.

CLIMATE CHANGE

Environmental sustainability is a priority and key asset of goods movement by waterway. Although the Project is not incorporated into a climate action plan, the investments in the Project will help maintain air quality standards, reduce the risk of loss of goods and improve congestion related emissions at each port, which will further improve the quality of life for local and regional economies.

A secure tie down method is important to reduce the risk of loss of goods to the water. The majority of the commodities shipped on the MKARNS consist of fertilizer, which is an environmental hazard to the fish and other wildlife inhabiting the river if a barge were to become loose.

The flood event of 2019 brought record water levels along the MKARNS in Oklahoma. The event required a four-month closure of the waterway, ultimately costing Oklahoma businesses and industry a total of \$20 million in state gross domestic product (GDP).⁴⁷ That event was categorized by the USGS to have an Annual Exceedance probability (AEP) of 0.6 percent, which defines the probability of another occurrence of an event with this magnitude to be more likely in a given year. Design of the moorings will be in conformance to USACE engineering standards for navigation and flood risk reduction to greatly reduce the risk of a barge becoming loose during extreme conditions.

⁴⁴ [MKARNS 2022 Inland Waterway Fact Sheet](#)

⁴⁵ [MKARNS Update \(2020\)](#)

⁴⁶ [Oklahoma Transportation 2021 Annual Report](#)

⁴⁷ [Webbers Falls \(2019\)](#)

The Project improvements will encourage continued use and growth of freight movement by waterway, which produces significantly less emissions than other modes of transport (truck and rail). Less idle time will be required at each location because of the efficiency in updating the tie down structure also creates reduced emissions. These savings ultimately reduce climate change impacts.

ENVIRONMENTAL JUSTICE ACTIVITIES

Access to Clean Energy

The MKARNS in Oklahoma provides benefits to approximately 700,000 end users by supplying them with clean hydropower energy. There are two hydropower plants in Oklahoma that include a total of seven power generating units.⁴⁸ Hydroelectricity qualifies as clean energy because it uses running water to produce electricity. Hydroelectricity is a key contributor to residents and businesses located in the Project area because it provides efficient, low-cost electricity to users. Operability of the MKARNS system is vital for Oklahoma’s hydroelectric plants to continue to provide energy for local users that rely on these plants for their work, homes, and other needs.

Efficient Movement of Goods with Reduced Costs

Communities cannot thrive without effective movement of goods. Waterways provide significant cargo capacity and move freight more safely and efficiently than truck or rail. This generates valuable cost savings for businesses, farmers, consumers, and shippers.⁴⁹ The Project will implement new tie down structures to improve efficiency and further support investment in the waterway which will help keep costs low for energy, manufactured goods, and food for everyday U.S. consumers. The Project will aid in continuation of the state’s economic growth and ability to compete within the national market.

Public Involvement Plan

The Project does not have a Public Involvement plan because these improvements will be constructed in the waterway, but ODOT has made it a priority to include key stakeholders such as the Ports and USACE to ensure the Project is meeting their expectations.

⁴⁸ Oklahoma Transportation 2021 Annual Report

⁴⁹ Regional Economic Impact Study (2015)



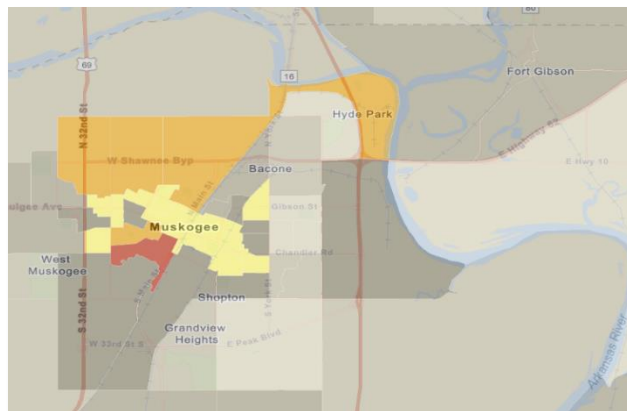
ADVANCING EQUITY AND OPPORTUNITY FOR ALL

ADVANCING EQUITY

The Project is strongly supported by the nearby Indian Nations. The Port of Muskogee is located within the historic tribal boundaries of the Cherokee and Muscogee Nations. Letters of Support for this Project have been provided by each of these Indian Nations and are available on the [Project website](#).

The Project is predominately located in Muskogee County, Oklahoma which has an estimated population of 66,146 according to the United States Census Bureau. Of this population, 44.5 percent are nonwhite, and 18.2 percent are persons in poverty.⁵⁰

The United States Census Bureau uses the Demographic Index as a combined calculation of both low income and people of color. The Environmental Justice Screening Map Displayed to the right shows the Demographic Index percentile for the Project Census Tract and surrounding Census Tracts located within Muskogee County.⁵¹ These populations as well as the surrounding community will benefit from the successful construction of this Project because it will continue to provide current and future jobs with local businesses that utilize the waterway to ship commodities.



Source: Environmental Justice Demographic Index Map (2022) – Muskogee County

PROMOTING WORKFORCE OPPORTUNITIES

ODOT is committed to ensuring compliance with domestic preference laws, promoting the hiring of local contractors, and facilitating participation by socially and economically disadvantaged businesses. Programs like ODOT’s [On-Boarding Program](#) provide resources to DBE’s, Small Businesses, and Women Owned Businesses, for the purpose of development into viable, self-sufficient businesses capable of competing for and performing on, federally assisted highway projects. Area contractors are well experienced in construction techniques required for the Project.

JOB AND LOCAL RURAL VITALITY

The waterway is an important contributor to jobs in the surrounding rural areas. In total, the Oklahoma MKARNS segment and ports support more than 11,000 jobs and directly contribute \$1.6 billion dollars to Oklahoma’s economy each year.⁵² The Project will improve the quality of life in the region by supporting the ports’ ability to continue to provide jobs, encourage outside markets to use Oklahoma ports for trade, and provide a safer way for workers to secure barges in the waterway.

Ports in Oklahoma process more than **6 million tons of cargo** each year, support **more than 11,000 jobs** and directly contribute **\$1.6 billion** to the state’s economy.⁴²

⁵⁰ [United States Census Bureau Muskogee, Oklahoma QuickFacts 2021](#)

⁵¹ [Environmental Justice Screening and Mapping Tool, 2022](#)

⁵² [MKARNS 50th Anniversary](#)

LEVERAGING FEDERAL FUNDING TO ATTRACT NON-FEDERAL SOURCES OF INFRASTRUCTURE INVESTMENT

ODOT is committed to leverage federal dollars with a local investment of \$5 million dollars in additional funding (a 24.4 percent local match) for this Project, which will be dedicated within the annual state appropriations. Because this Project is not in the ODOT 8-year work plan and does not have a dedicated revenue source outside of the \$5 million-dollar commitment, the Project cannot be completed in its entirety without the additional \$15.5 million dollar PIDP funding. If funding is awarded, upon completion of construction, each Port Partner will be responsible for the maintenance and operations costs of their respective modernized mooring structures.

5 PROJECT READINESS

TECHNICAL CAPACITY

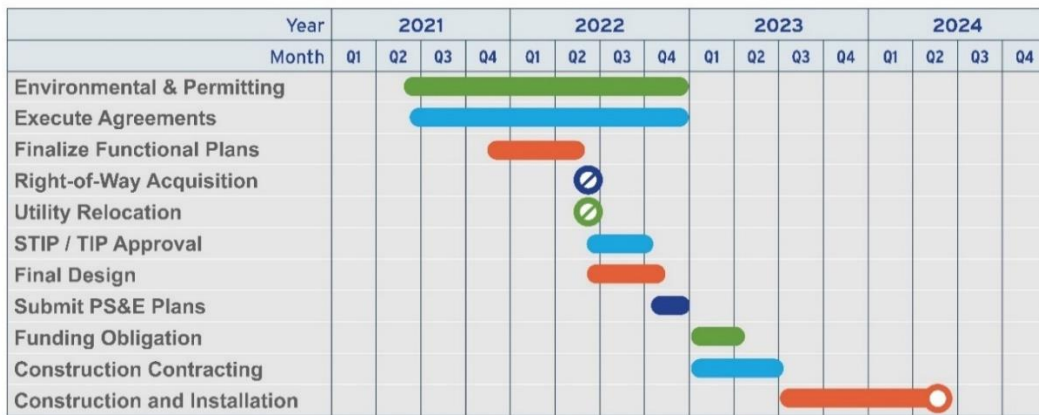
The Planning branch of ODOT provides assistance to various ODOT divisions to support applications for federal transportation grant assistance. ODOT has experience with INFRA (previously FASTLANE), BUILD, and RAISE grant applications.

ODOT and its partners have extensive experience in the MKARNS waterway. The technical feasibility of the mooring design is evidenced by decades of use on navigable rivers in the United States for mooring barges near bridges, locks, and dams. Monopiles have reliably performed under high flow conditions and flood conditions at sites across the nation. Design of the monopiles will be in conformance to USACE engineering standards for navigation and flood risk reduction structures. The standards for design from the USACE include provisions and standards for safe design of the line hooks and check posts, corrosion protection, and the uncertainty of hydraulic loads. USACE has guidance in the form of Engineering Manuals (EM's) that will be used for foundation design and reinforced concrete design of the monopiles. The engineering standards for design will include USACE publication EM 1110-2-2906 Design of Pile Foundations, EM 1110-2-2104 Design of Hydraulic Concrete Structures, and EM 1110-2-1604 Hydraulic Design of Navigation Locks.

PROJECT SCHEDULE

A detailed project schedule that includes all major project milestones has been prepared anticipating PIDP funding. See Figure 6 below.

FIGURE 6: PROJECT SCHEDULE



ENVIRONMENTAL RISK

The Environmental and Permitting (NEPA) process began in Quarter 2 of 2021. The Executive Agreement (EA) process follows a similar time frame beginning in the latter half of Quarter 2 of 2021 and ending at the end of Quarter 4 in 2022. An EA is required for this project because ODOT’s programmatic language for categorical exclusion does not include a provision for this Project type. Construction will occur in the waterway, which will require coordination with the Federal Highway Administration (FHWA). ODOT has confirmed that National Highway Freight Program funds will be eligible for this project and ODOT will be proceeding in coordination with FHWA in compiling an EA for the Project. Project adoption within the State Transportation Improvement Program (STIP) and Transportation Improvement Program (TIP) will start at the end of Quarter 2 in 2022 and end in Quarter 4 of 2022.

The schedule includes sufficient time to complete all reviews and approvals for PIDP funds to be obligated by the statutory deadline (September 30, 2024). Additionally, the schedule allows for construction to begin quickly upon obligation of funding with funds expended well in advance of the September 30, 2024 deadline. The effort to update the Oklahoma Freight plan has begun, and if the Project were to receive federal funding, it would be incorporated into the next update of the Oklahoma Freight Transportation Plan. The Project schedule will sufficiently accommodate all environmental reviews and permitting, state and local planning approvals, final design, and construction.

ENVIRONMENTAL PERMITS AND REVIEWS

Over the past year, ODOT has had extensive work sessions with the Maritime Administration (MARAD) and FHWA to discuss the approach on how to proceed with the EA and who would be the lead agency. With these discussions, ODOT has made strides to better understand the NEPA process while balancing the relationship to utilize FHWA Surface Transportation funds and having MARAD as a concurring agency on an FHWA Executive Agreement. Over the last ten years, ODOT has successfully completed 14 Environmental Assessments for various projects throughout Oklahoma and has an established team to handle the EA process⁵³. ODOT has

⁵³ NEPA Status Report provided by ODOT

confirmed that National Highway Freight Program funds will be eligible for this project and ODOT will be proceeding in coordination with FHWA in compiling an EA for the Project. The EA is expected to be completed by the end of 2022.

STATE AND LOCAL APPROVALS

ODOT, together with the Port Partners involved in this project including the Tulsa Port of Catoosa, Port of Muskogee, and Oakley’s Terminal Muskogee (an extension of Oakley’s Port 33), are committed to improving infrastructure conditions along the MKARNS to increase safety, reduce maintenance costs, and ensure operability of the waterway. ODOT will continue coordinating with the U.S. Army Corps of Engineers as their involvement and input will be key in successful delivery of this Project. The Tulsa District of the U.S. Army Corps of Engineers has provided a letter in support of the Project which identifies that the Project directly aligns with and maintains their mission to support and improve commercial navigation on the MKARNS.

ODOT and the Port Partners work closely with regional organizations and local municipalities, businesses, and freight stakeholders. More than a dozen entities have shown their support for the Project by providing letters of support. This includes the regional planning agency, Oklahoma Chamber of Commerce, USACE, local municipalities, and various industry stakeholders. The Project is also strongly supported by the nearby Indian Nations. The Port of Muskogee is located within the historic tribal boundaries of the Cherokee and Muscogee Nations. The Cherokee Nation, in fact, owns the bed and banks of the Waterway at the Port of Muskogee and in 1985, the Port entered a riverbed use agreement which authorized use of the riverbed property. Letters of Support can be found in Appendix C and in the Letters of Support section on the [Project website](#).

TABLE 3: PROJECT PARTNERS

Project Partners						
						
Oklahoma Department of Transportation	Tulsa Ports	Port of Muskogee	Oakley’s Terminal Muskogee & Oakley’s Port 33			
Congressional Delegation						
						
U.S. Senator Jim Inhofe	U.S. Senator James Lankford	U.S. Representative Frank Lucas	U.S. Representative Tom Cole	U.S. Representative Kevin Hern	U.S. Representative Markwayne Mullin	U.S. Representative Stephanie Bice
Indian Nations						
Creek Nation • Cherokee Nation • Chickasaw Nation						

USACE APPROVAL

All construction work on the MKARNS is required to obtain a General Permit (GU) from USACE, which is controlled by Section 404 regulations of the Clean Water Act. The Regional GU permit application requires basic information about the Project, including the nature of the construction activity, project purpose, and the amount of material that will be discharged into the water.

RISK MITIGATION

ODOT and the MKARNS Port Partners have carefully assessed and documented the potential Project risks and identified mitigation strategies for each:

TABLE 4: PROJECT RISKS AND MITIGATION STRATEGIES

Project Risk	Mitigation Strategy	Risk Category
Financial risk related to commitment of local match	ODOT and the Port partners have committed sufficient funds for the local Project match. Historically, ODOT has met every funding obligation for previous grant applications. It is important to note that no additional reviews or approvals are needed from State legislature once note of the award has been granted.	Low
USACE Coordination	ODOT and the Port partners have closely coordinated with USACE and will continue to throughout the design and construction process. Permits for the Project will be obtained through the U.S. Army Corps of Engineers.	Low
Critical Maintenance	The Tulsa and Little Rock Districts of the Army Corps of Engineers have identified a Critical backlog of maintenance needs on the MKARNS. This value increased to \$160.4 million dollars for the Oklahoma segment in 2021 demonstrating the need for improvements.	Medium
Environmental Risk	ODOT has selected a consultant to complete the NEPA documentation and requirements and final design plans. As a port improvement project, an environmental assessment (EA) is required; however, there are minimal environmental risks and/or resource impacts because the project includes replacement of older existing mooring infrastructure in the same sites. The Project would also require State Historic Preservation Office (SHPO) review and concurrence with the adjacent Indian Nations.	Medium
Cost of Materials	The Russian invasion of Ukraine has created an increase to the cost of construction and materials. Completing this Project in a timely fashion will ensure the least amount of impact to costs over time.	Medium
Schedule	The Project has an aggressive schedule to receive necessary approvals and permits before obligation of funding can be provided, which result in the construction of the Project.	Low

6 DOMESTIC PREFERENCE

ODOT utilizes standard specifications for construction for all projects. The Project will not require a waiver for the Buy America requirement. The Control of Material is listed in Section 106 of the standard specifications, which addresses compliance with Buy America. The Project will comply with Buy America provisions (Title 23 CFR 635.410), which states that all manufacturing processes, including the application of coating, for all steel or iron products permanently incorporated into the Project shall occur in the United States (U.S.). These requirements are in effect on all Contracts regardless of the use of federal funds. All referenced forms and letters must be obtained from the current version of the ODOT Construction Control Directive (CCD) No. 20140620 – Buy America.⁵⁴

7 DETERMINATIONS

Project Determination	Guidance
1. The project improves the safety, efficiency, or reliability of the movement of goods through a port or intermodal connection to the port.	The Project will replace and provide 32 new mooring structures at the combined locations of the Tulsa Port of Catoosa, Port of Muskogee, and Oakley’s Terminal Muskogee. These structures will create a safer tie down procedure for deckhands on the barges. The modernized structures will reduce the risk of a barge breaking loose during extreme flood events that are predicted to occur more frequently. This also reduces the risk of collisions with infrastructure in the waterway further protecting the resilience of the system. Overall, the Project will continue to allow these locations to provide an efficient method to load, unload, and ship bulk commodities that are vital to the success of Oklahoma’s economy.
2. The project is cost effective.	Please highlight the results of the benefit-cost analysis, as well as the analyses of independent project components, if applicable. The Department will base its determination on the ratio of project benefits to project costs 52 as assessed according to the Economic Vitality criterion. Note: This determination is not applicable to small projects at small ports.
3. The eligible applicant has the authority to carry out the project.	According to the statutes outlined in Title 69-4018 for the Waterways Branch of Oklahoma Department of Transportation Planning Division ODOT has the following authority to: <ul style="list-style-type: none"> • Assist and coordinate public and private entities in and with the development of river, port and harbor facilities; • Aggressively pursue federal funding for construction and maintenance projects of all necessary improvements to navigational systems;

⁵⁴ [ODOT Standard Specifications for Construction \(2019\)](#)

	<ul style="list-style-type: none"> • Receive and use any federal, state or private funds, donations and grants made available for the development, use and expansion of river transportation resources of this state; • Cooperate and enter into contracts with the federal government or any agency thereof or agencies of other states such as may be necessary to carry out the purposes of this section; • Provided that no such contract may obligate or potentially obligate any state funds or the full faith and credit of the State of Oklahoma unless express legislative authorization is given therefore; • Represent this state in the promotion of the development of commercial water transportation in this state and to cooperate with other states, other agencies of this state or agencies of the United States government, in any manner whatsoever, in an effort to develop the commercial use of the waterways in this state; • Do and perform all other functions for and on behalf of the state which may be necessary or desirable to accomplish the purposes of this section.
<p>4. The eligible applicant has sufficient funding available to meet the matching requirements.</p>	<p>The total cost of the project is \$20.5 million dollars. ODOT is committed to leverage federal dollars with a local investment of \$5 million dollars in additional funding (a 24.4 percent local match) for this Project, which will be dedicated within the annual state appropriations. In total, ODOT requests \$15.5 million dollars in PIDP funding, 75.6 percent of total project costs.</p> <p>Historically, ODOT has met every funding obligation for previous grant applications. It is important to note that no additional reviews or approvals are needed from State legislature once note of the award has been granted.</p> <p>Please reference the Grants, Funding, and Sources section of this narrative to review cost tables for the Project.</p>
<p>5. The project will be completed without unreasonable delay.</p>	<p>Funding obligation is expected by Quarter 1 of 2023. Construction is expected to start Quarter 3 of 2023, as shown in the Project Schedule section of this narrative. This is well in advance of the September 30, 2024 deadline.</p>
<p>6. The project cannot be easily and efficiently completed without Federal funding or financial assistance available to the project sponsor.</p>	<p>The scope, schedule and cost of the Project would be greatly impacted if funding is not awarded. At this time, there is not additional funding source identified outside of the \$5 million dollar commitment by ODOT. This would delay construction of the Project until another source of funding is identified.</p>

8 APPENDICES

Project resources are included in the application package as well as on the project website at:

<https://oklahoma.gov/odot/progress-and-performance/federal-grant-awards/pidp.html>

Appendix A – BCA Narrative

Appendix B – BCA Spreadsheet

Appendix C – Letters of Support

Appendix D – Additional Supporting Documentation

Specific items referenced in the application and uploaded onto the project website include:

- Benefit Cost Analysis Guidance 2022 (Revised)
- I-40 Bridge Collapse Kills 14 (August 2016)
- MBTC Final Research Report – Page 24 (October 2015)
- MKARNS 2022 Inland Waterways Fact Sheet
- MKARNS Update (2020)
- Mooring Dolphin Report (2019)
- FY24 MKARNS Top 30 Critical Backlog Maintenance List (March 2022)