PURPOSE AND NEED

US 51 BRIDGE REPLACEMENT

The purpose of the US 51 Bridge Project is to improve cross-river mobility between Wickliffe, Kentucky and Cairo, Illinois, by addressing the safety and reliability issues caused by the narrow lane widths, lack of shoulders and tight curve of the existing bridge and its approaches.

BRIDGE FACTS

- Constructed between 1936 and 1938
- Longest cantilever truss in Kentucky
- 5,865 ft long (2,380 ft truss spans)
- Only vehicular bridge crossing of the Ohio River west of Paducah
- Located within the New Madrid seismic zone
- Not designed for earthquake loads

THIS
86-YEAR-OLD
STRUCTURE
CARRIES US 51,
US 60, AND US 62
OVER THE
OHIO RIVER

BRIDGE GEOMETRIC DEFICIENCIES

- Narrow 10 ft lanes
- Narrow 1’ 3” shoulders
- Inadequate sight distance
- Sharp horizontal curve

BETWEEN 2019 AND 2024,
THERE WERE
20+
VEHICLE CRASHES
ON THE BRIDGE

OUR COMMITTMENT TO YOU DURING CONSTRUCTION

- The project will continue to assess and investigate the flooding conditions in this complex hydraulics area. The project team is aware and sensitive to the challenges the public is experiencing from flooding.
- The team will work to maintain traffic during construction to the extent possible and minimize existing bridge closure periods.

INSPECTION / REHABILITATION DATA

- Deck was replaced in 1980
- 1999 (Major Rehabilitation), 2020 (Overlay)
- Inspected every 2 years

NATIONAL BRIDGE INVENTORY INSPECTION ITEM	2012 CONDITION RATING	2018 CONDITION RATING	2022 CONDITION RATING
Deck	6	5	5
Superstructure	6	5	5
Paint Condition	7	6	5
Substructure	6	5	5

9 8 7 GOOD | 6 5 FAIR | 4 3 2 1 0 POOR

Condition inspections and ratings for the National Bridge Inventory (NBI) occur every two years. The existing bridge is safe, however, there are indicators that it is nearing the end of its life cycle.

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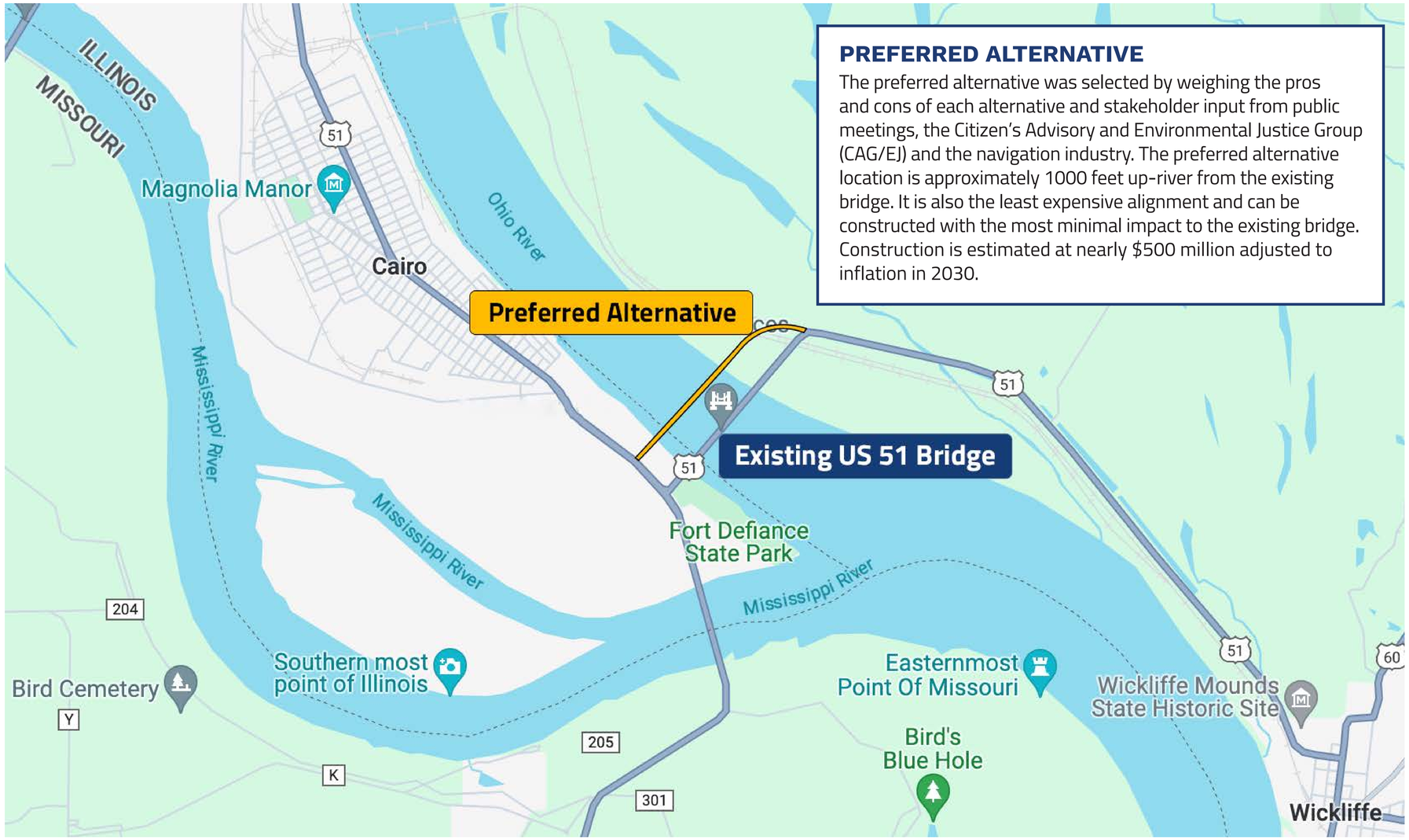
Federal Highway Administration

PREFERRED ALTERNATIVE

US 51 BRIDGE REPLACEMENT

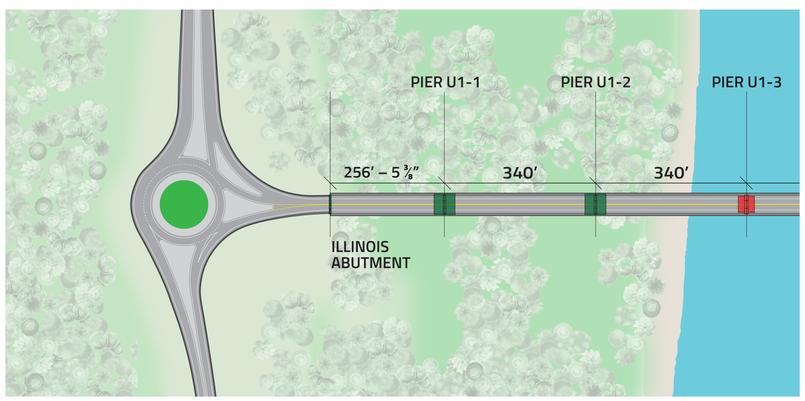


PREFERRED ALTERNATIVE

The preferred alternative was selected by weighing the pros and cons of each alternative and stakeholder input from public meetings, the Citizen's Advisory and Environmental Justice Group (CAG/EJ) and the navigation industry. The preferred alternative location is approximately 1000 feet up-river from the existing bridge. It is also the least expensive alignment and can be constructed with the most minimal impact to the existing bridge. Construction is estimated at nearly $500 million adjusted to inflation in 2030.

ROUNDABOUT INTERSECTION US 51 AND US 60/US 62

- A roundabout is a type of **circular intersection** where traffic flows in one direction around a central island. Priority is given to traffic already in the roundabout.
- Roundabouts are **more efficient** than traditional intersections with traffic signals or stop signs.
- Roundabouts **reduce conflict points** compared to traditional intersections lowering chances of vehicle-to-vehicle crashes.
- Roundabouts **cost less** long-term than traditional traffic signal intersections.



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PROJECT TIMELINE

US 51 BRIDGE REPLACEMENT

2013-2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032

PLANNING & ALTERNATIVE ANALYSIS

Public Open House
May 2013

PUBLIC & STAKEHOLDERS MEETINGS

PRELIMINARY ENGINEERING & ENVIRONMENTAL ANALYSIS

Environmental Document Approval
Feb 25, 2022

Bridge Type Study
Spring 2023

FINAL DESIGN & PERMITTING

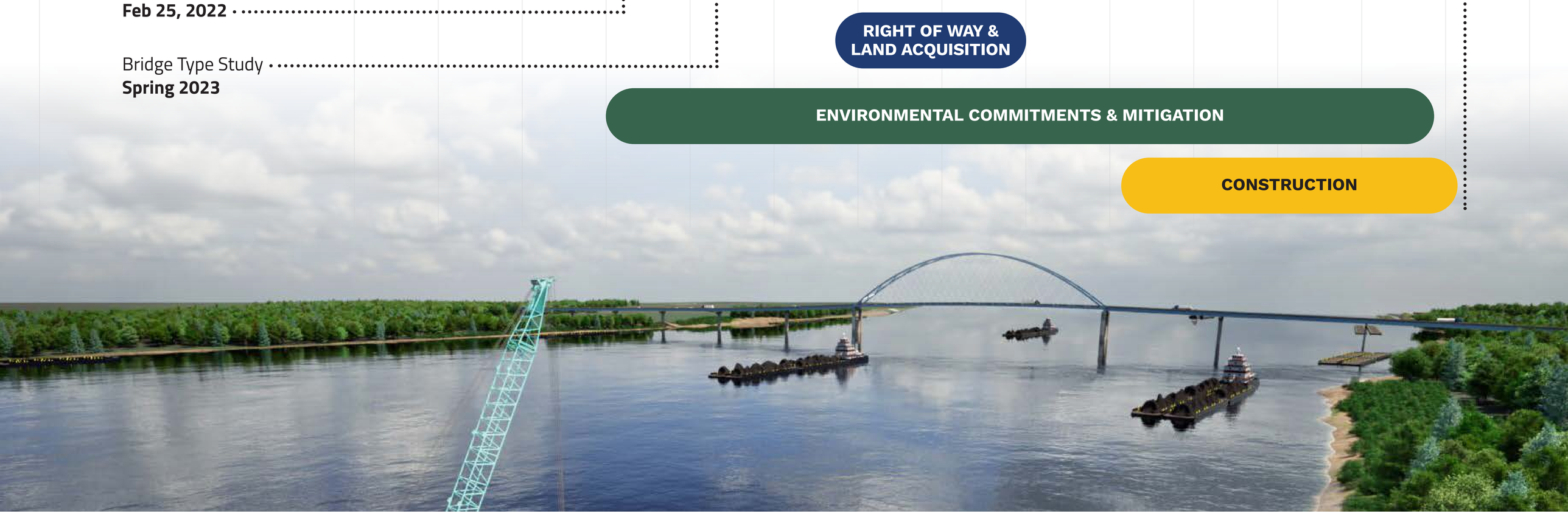
RIGHT OF WAY & LAND ACQUISITION

ENVIRONMENTAL COMMITMENTS & MITIGATION

CONSTRUCTION

Summer 2024

New Bridge Open for Traffic & Old Bridge Removal
TBD



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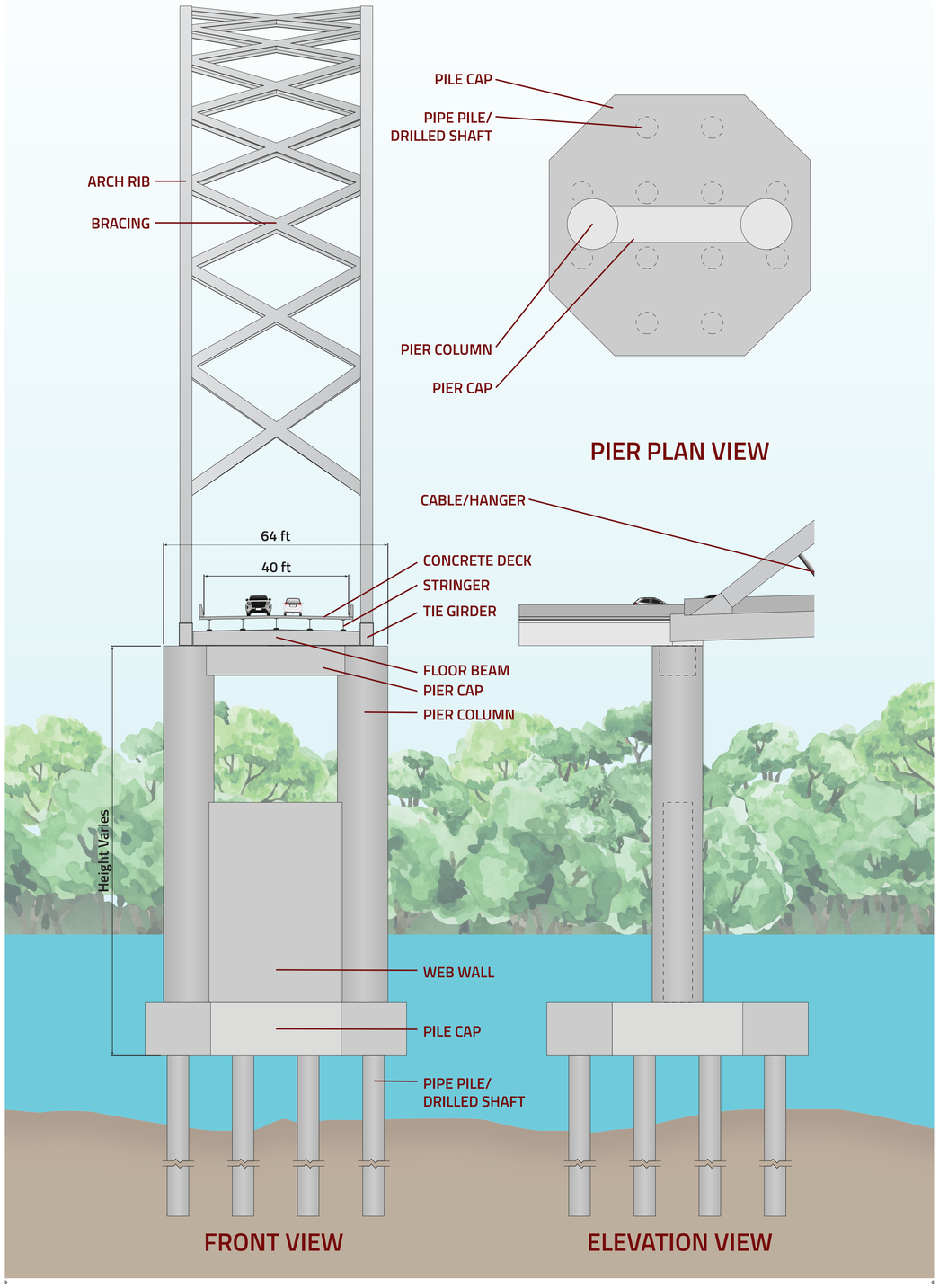
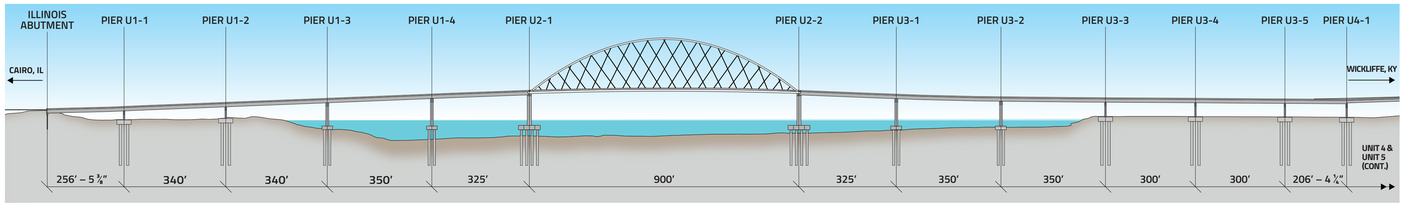
STRUCTURES

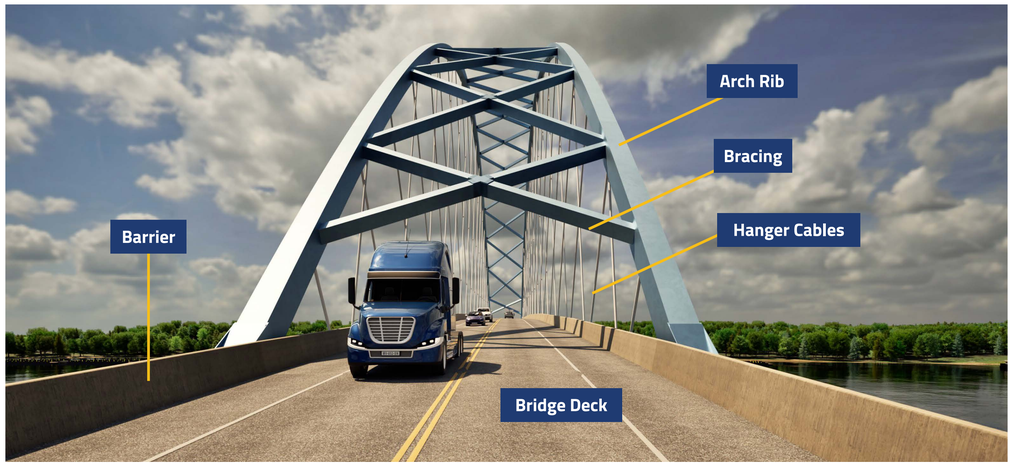
US 51 BRIDGE REPLACEMENT

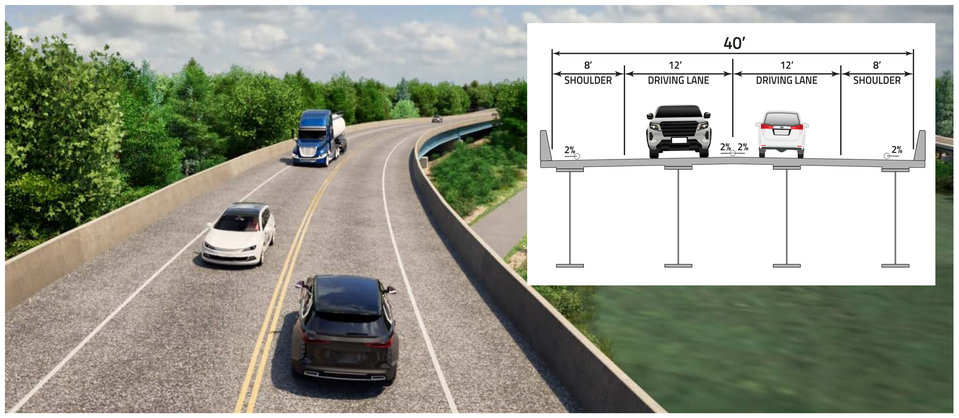




FINAL BRIDGE SELECTION

- A **tied arch bridge** has the least cost, better constructability, and long-term maintenance and inspection benefits.
- A **900-foot main span** will provide sufficient opening for river navigation and local fleeting requirements.
- **Modern design and construction techniques** will include network hanger cables for increased efficiency.
- **Network hanger cables** are inclined at an angle making a crossing pattern. This helps distribute the weight of trucks and other live loads more evenly to the arch, decreasing the overall demand and increasing efficiency.
- The bridge will be designed for a **100-year operational life** and to resist a **1000-year seismic/earthquake event**.





BRIDGE WIDTH

- Based on detailed traffic analyses, **two travel lanes** are warranted given the traffic count data and projected vehicle volumes.
- The bridge will be comprised of **2-12′ driving lanes with 8′ shoulders for a total width of 40′** which is significantly wider than the existing bridge's 22.5′ width.

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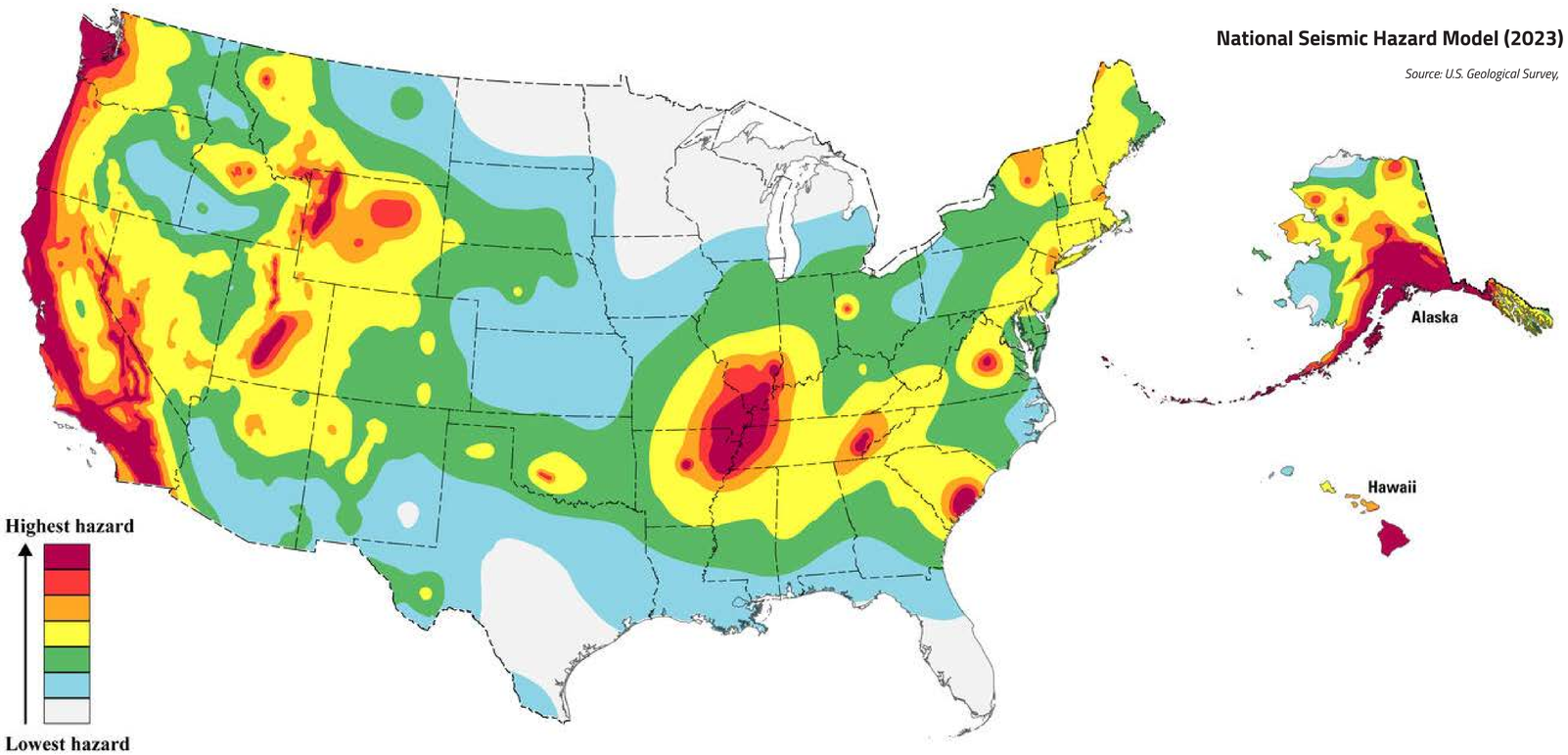
GEOTECHNICAL EXPLORATION

US 51 BRIDGE REPLACEMENT

- In 2024, geotechnical efforts will include barges and work in and around the river. Geotechnical exploration is the **process of sampling soils to understand their strength and ability to support the new bridge**.
- Drilling depths will approach **400 feet below the mud line** of the river.
- The drilling work will take place **24 hours a day, seven days a week** until the work is complete.
- The Ohio River Bridge is located within the **New Madrid seismic zone**. The existing bridge was built before seismic design was required.



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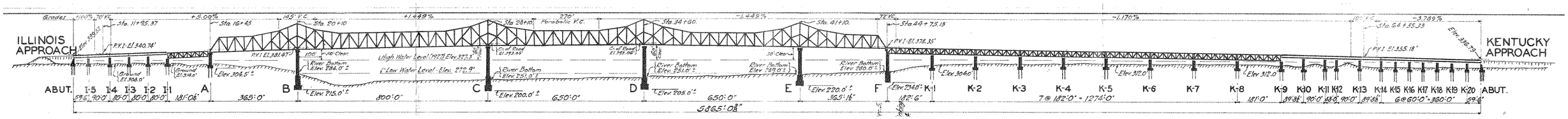
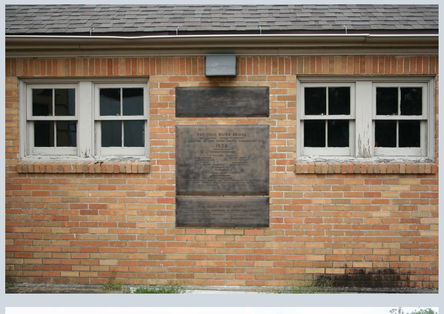
EXISTING BRIDGE HISTORY

US 51 BRIDGE REPLACEMENT



The Ohio River Bridge carries two lanes of traffic between Cairo, Illinois and Wickliffe, Kentucky. The bridge has a total length of 5,865 feet. The mains spans are five steel Cantilever Warren trusses that total 2,830 feet in length. The main spans are flanked by Warren deck truss approaches at each end; the approach spans on the Illinois side are 570 feet in length, while the Kentucky approach spans are 2,684 feet in length.

It was constructed in 1936-1938 by the Cairo Bridge Commission as a toll facility. The engineering company responsible for the bridge design and construction was Modjeski, Masters and Case. The Missouri Valley Bridge and Iron Company constructed the substructure. The Mount Vernon Bridge Company was responsible for construction of the superstructure.



THE OHIO RIVER BRIDGE TOLL HOUSE

MARKER INSCRIPTION:

"THE OHIO RIVER BRIDGE
Cairo, Illinois Wickliffe, Kentucky
Completed November 11, 1938
FREED OF TOLLS NOVEMBER 11, 1946
by
The Cairo Bridge Commission

The Ohio River Bridge was conceived and built in the public interest by the Cairo Bridge Commission with the cooperation of the Federal Emergency Administration of Public Works and the Highway Departments of Illinois and Kentucky. The Bridge was operated and maintained by the Commission and as a result of the untiring efforts of many public spirited citizens, the Commission was able to repay all cost from tolls and the Highway Departments of Illinois and Kentucky jointly accepted the bridge as a part of the state highway systems to be maintained as a toll free facility."

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FUTURE VIEWS

US 51 BRIDGE REPLACEMENT









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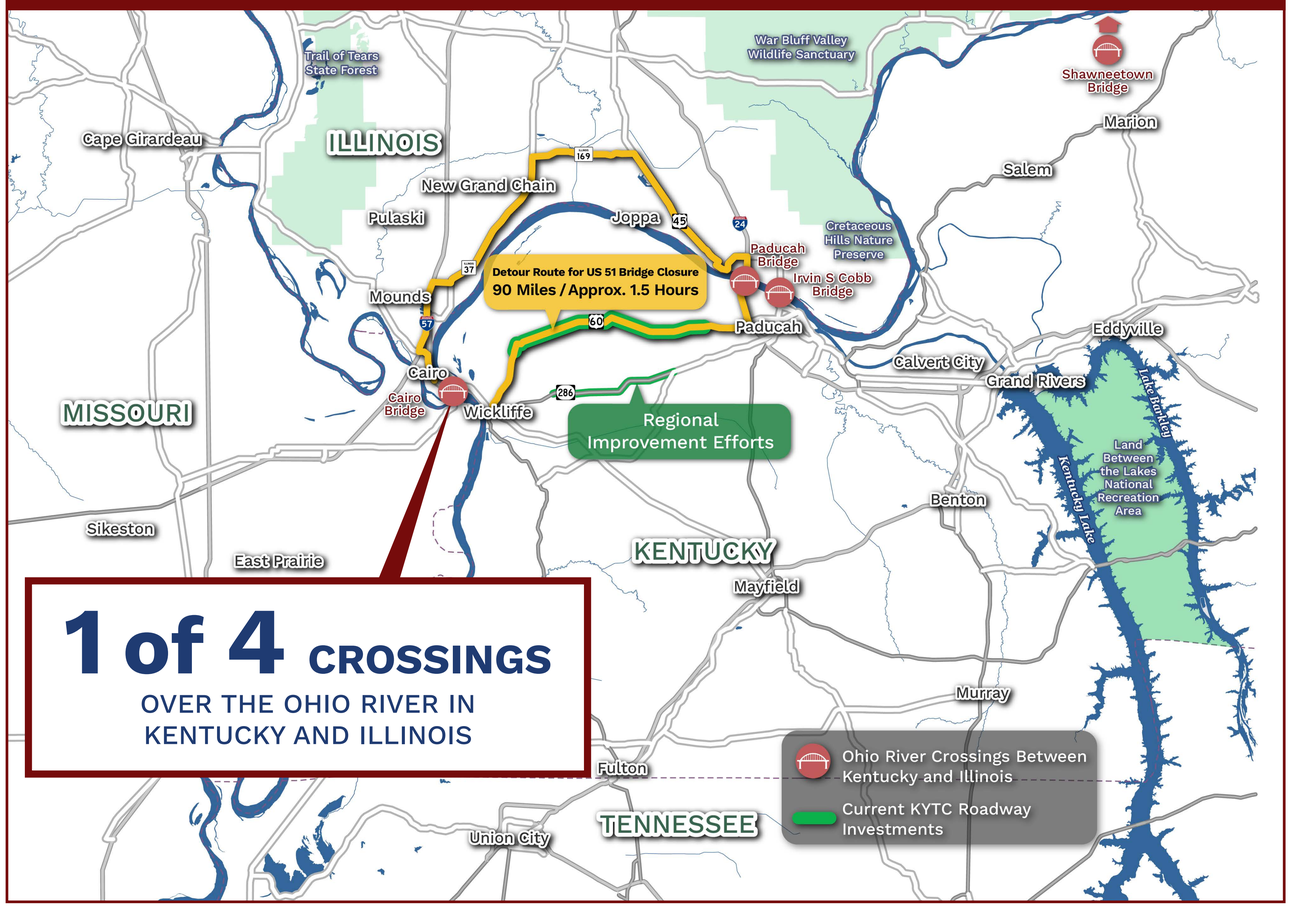
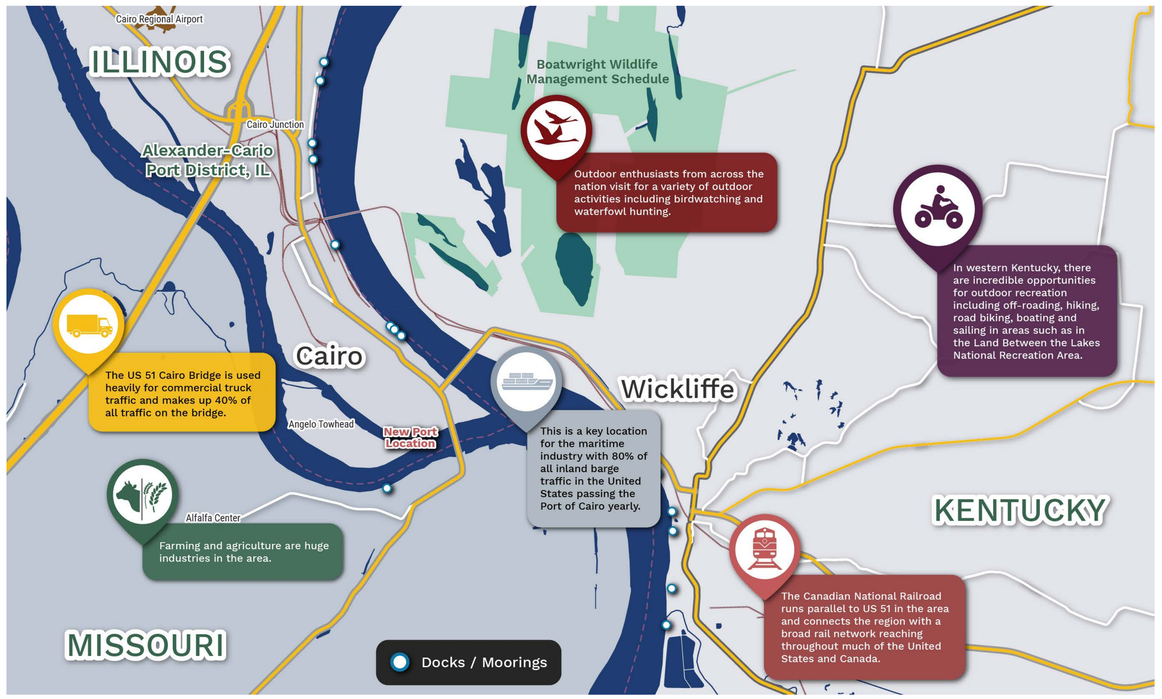
REGIONAL IMPORTANCE

US 51 BRIDGE REPLACEMENT

The 86-year-old structure carries US 51, US 60, and US 62 over the Ohio River. The bridge is one of just four highway crossings of the Ohio River between Kentucky and Illinois, making it a vital crossing to the region. The driving width of the bridge deck is less than 23 feet and it carries a high percentage of commercial truck traffic. Currently, the bridge does not allow oversized or overweight permit loads and does not accommodate pedestrian or bicycle traffic. Construction is estimated at nearly $500 million.



1 of 4 CROSSINGS
OVER THE OHIO RIVER IN KENTUCKY AND ILLINOIS



ABOUT THE REGION

- This is a **key location for the maritime industry** with 80% of all inland barge traffic in the United States passing the Port of Cairo yearly.
- The **Canadian National Railroad** runs parallel to US 51 in the area and connects the region with a broad rail network reaching throughout much of the United States and Canada.
- **Outdoor enthusiasts** from across the nation visit for a variety of outdoor activities including birdwatching and waterfowl hunting.
- In western Kentucky, there are incredible **opportunities for outdoor recreation** including off-roading, hiking, road biking, boating, and sailing.
- The US 51 Cairo Bridge is used heavily for **commercial truck traffic** and makes up 40% of all traffic on the bridge.
- **Farming and agriculture** are huge industries in the area.

40%
COMMERCIAL TRUCK TRAFFIC DAILY

80%
OF INLAND BARGE TRAFFIC
PASSES THE PORT OF CAIRO EVERY YEAR

90 MILE DETOUR
(APPROX. 1.5 HOURS)
WHEN THE BRIDGE IS UNAVAILABLE

$500M
ESTIMATED COST
FOR CONSTRUCTION OF THE NEW BRIDGE

"The Cairo area is a vital connecting point for the country where the Upper and Lower Mississippi Rivers connect to the Ohio River. This creates a natural interchange point for tow boats to exchange barges to fleeting areas and other boats to continue the flow of goods throughout the system and supply the country...The location of this project is crucial in allowing safe transit for boats and barges transiting the Cairo harbor...There are thousands of boats that transit under this bridge per month safely."

- Allen Tappan, Waterfront Service Company President

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