



**US 51 BRIDGE  
REPLACEMENT**



# Contractors' Information Meeting

**July 8, 2026**



IN COLLABORATION WITH:



# Agenda

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Project Background

Bridge Replacement Project Overview

Phase I Advanced Letting

Geotechnical Overview & Load Test Program

Provisions & Schedule

**NOTE:** *This presentation features preliminary information and is subject to change*



# About the Project

# Project Team

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IN COLLABORATION WITH:



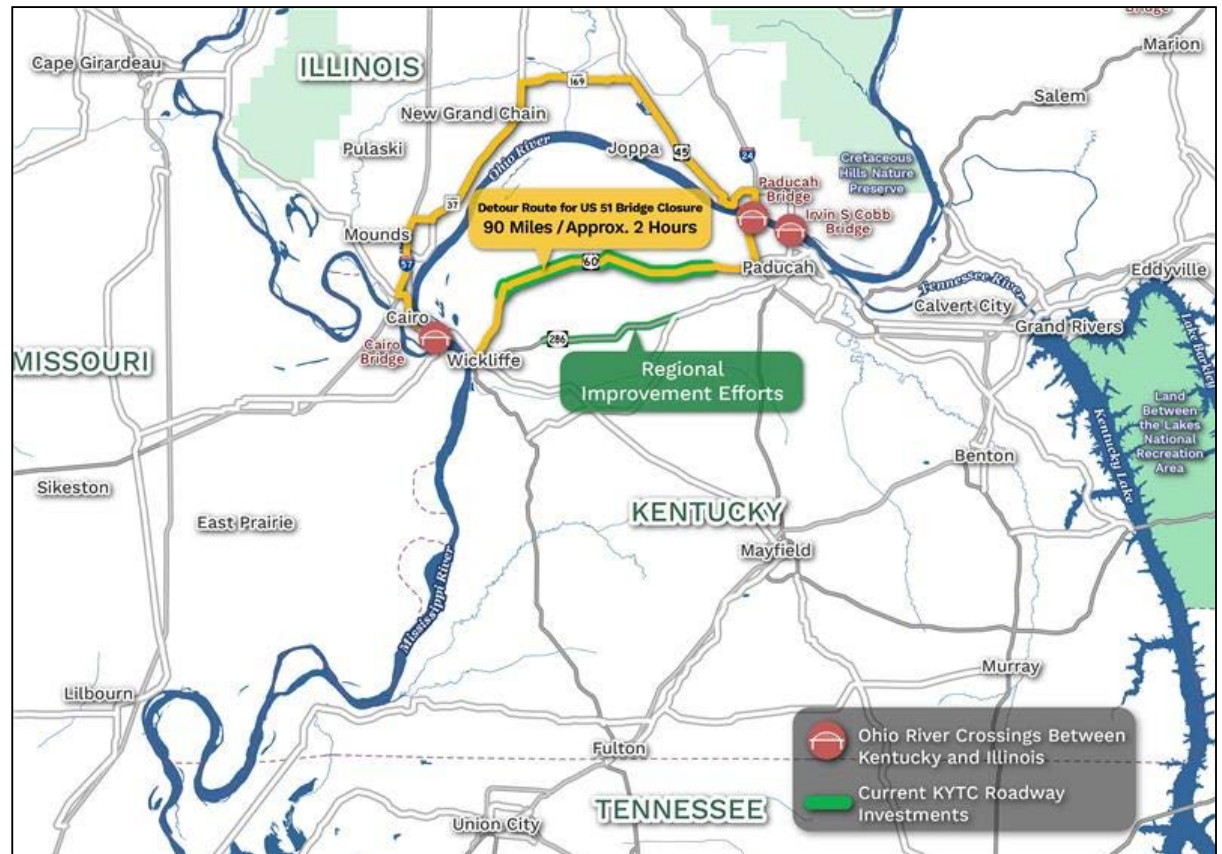
# Location Map



# Regional Importance



- The 1938 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.
- When the bridge is closed, the detour route is 90 miles and takes 2 hours.
- The project will maintain traffic during construction.



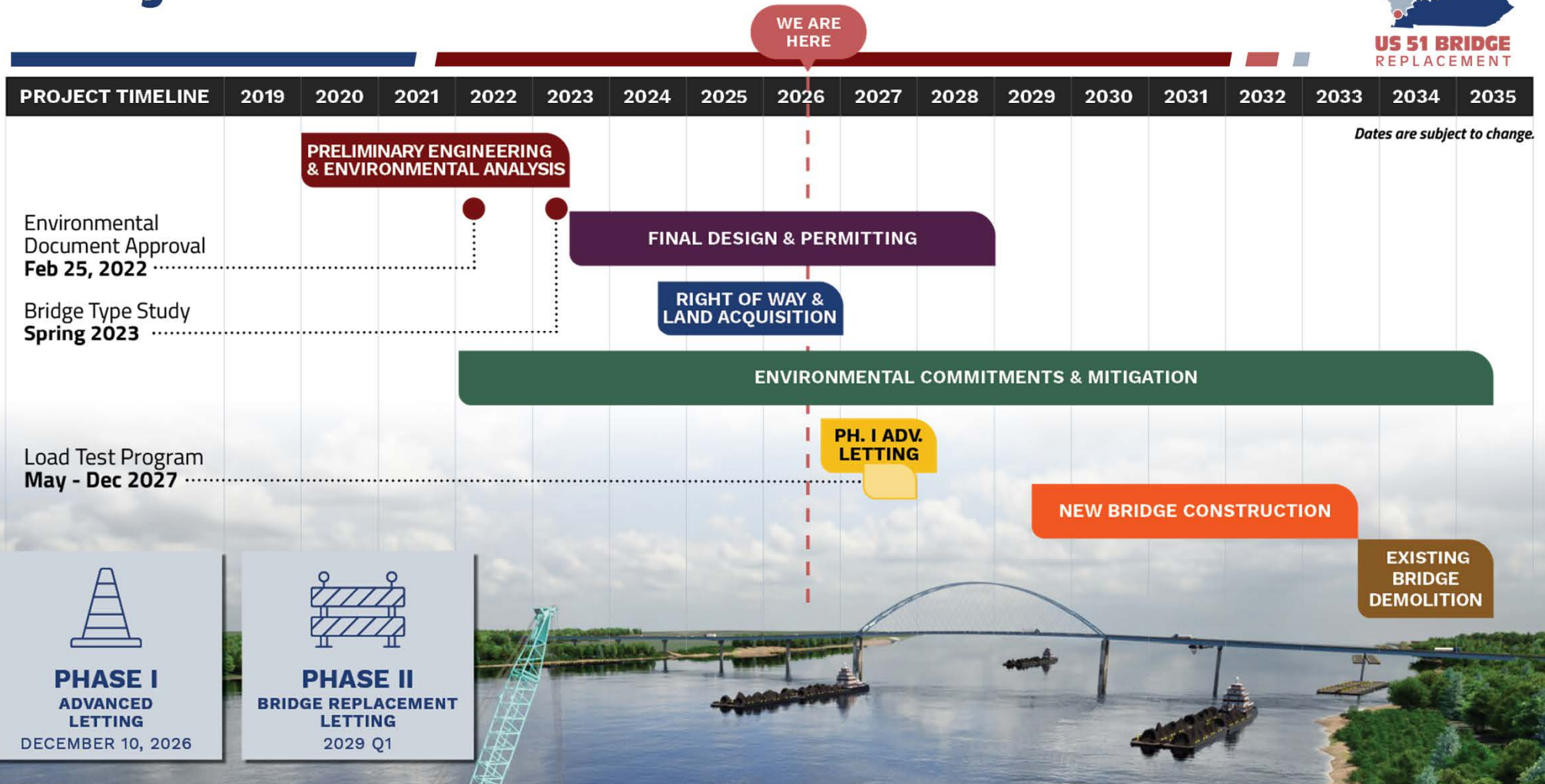
# Purpose & Need

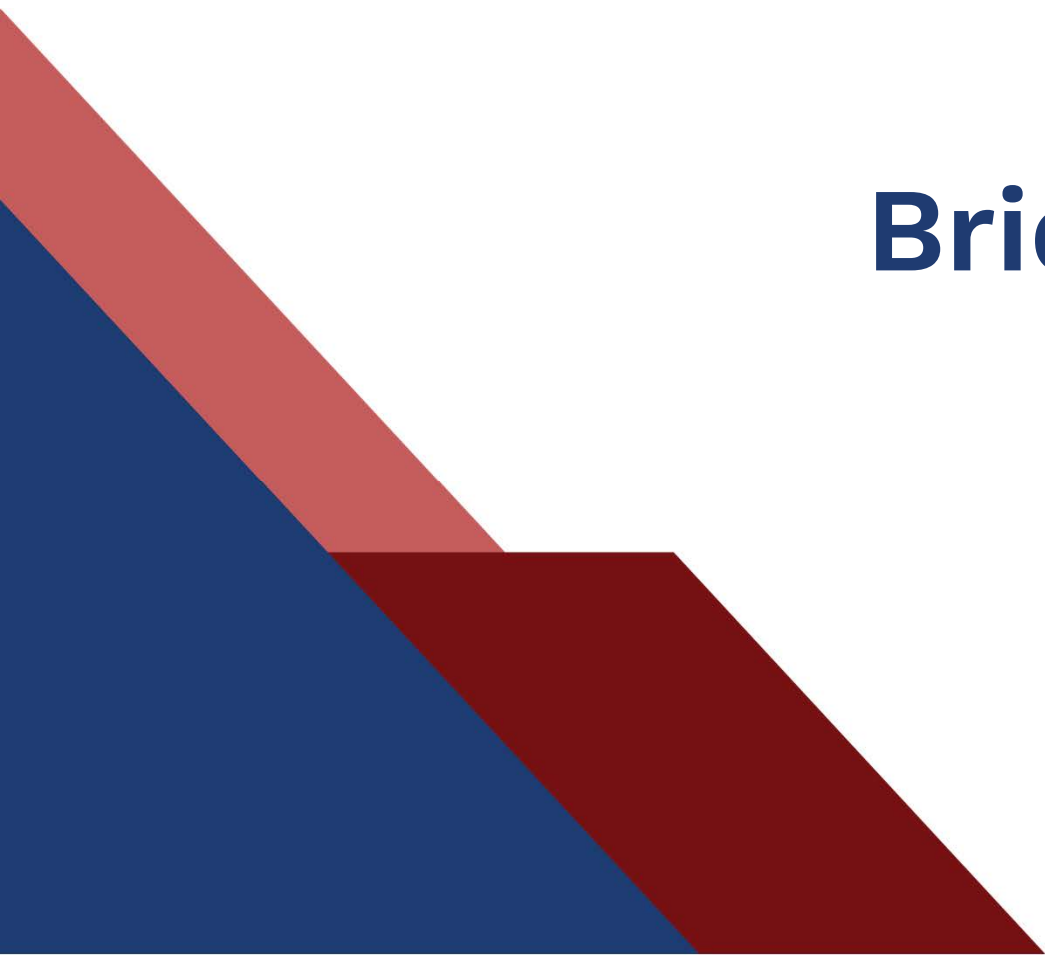


The purpose of the US 51 Bridge Project is to improve cross-river mobility between Wickliffe, Kentucky and Cairo, Illinois, by addressing the safety and reliability issues caused by the narrow lane widths, lack of shoulders, and tight curve of the existing bridge and its approaches.

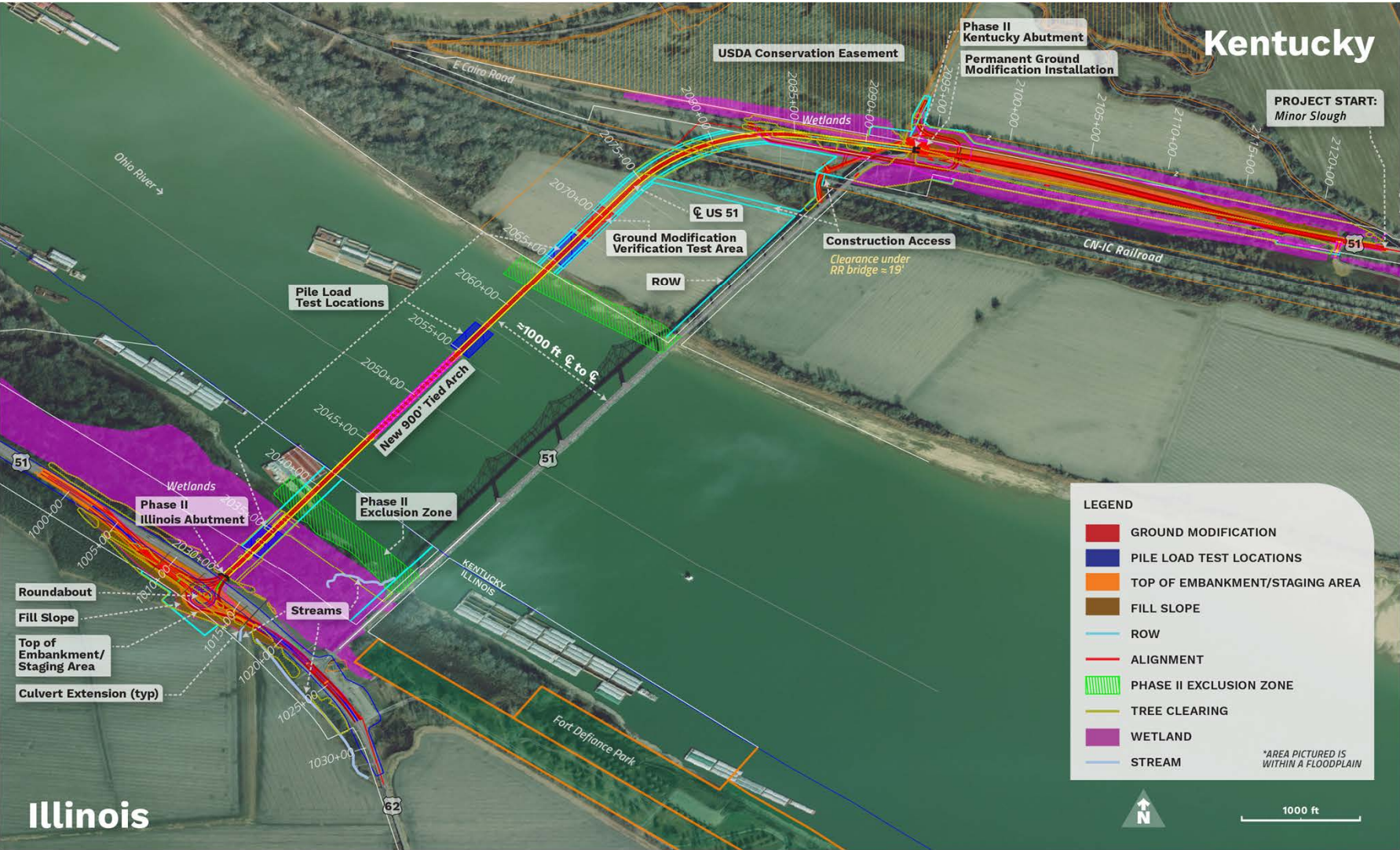


# Project Timeline





# **Bridge Replacement Project Overview**



# Roundabout Intersection

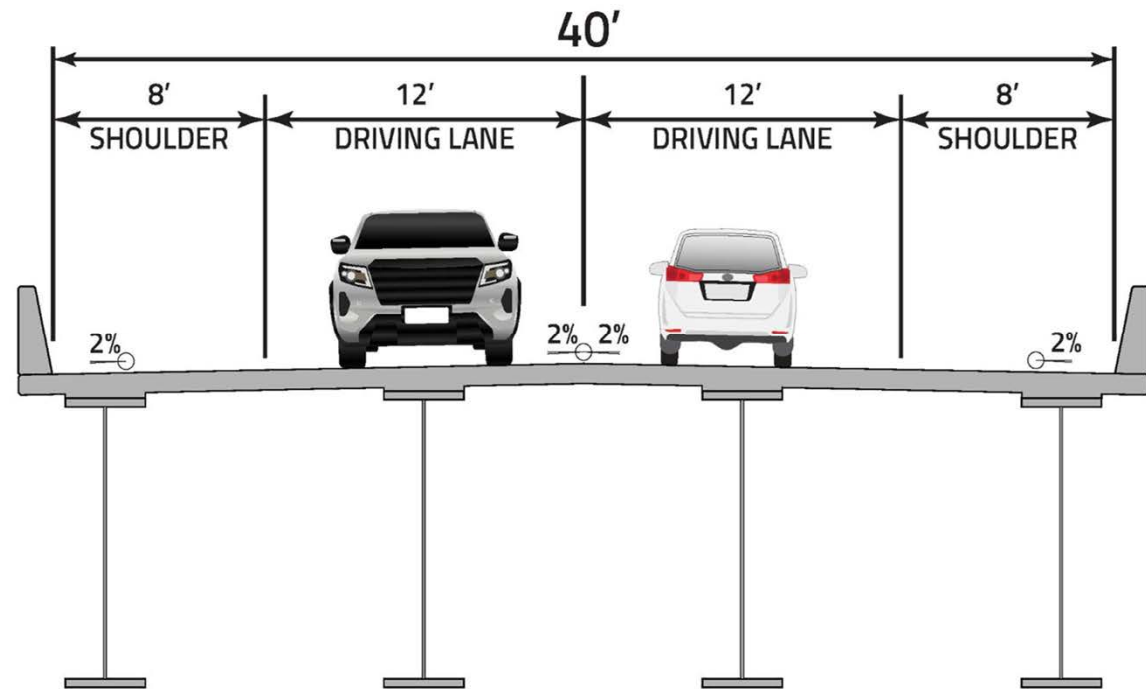


- Improves Safety
- Improved Traffic Flow
- Gateway/Focal point
- Accommodates WB-67 Truck Turning

# Typical Section



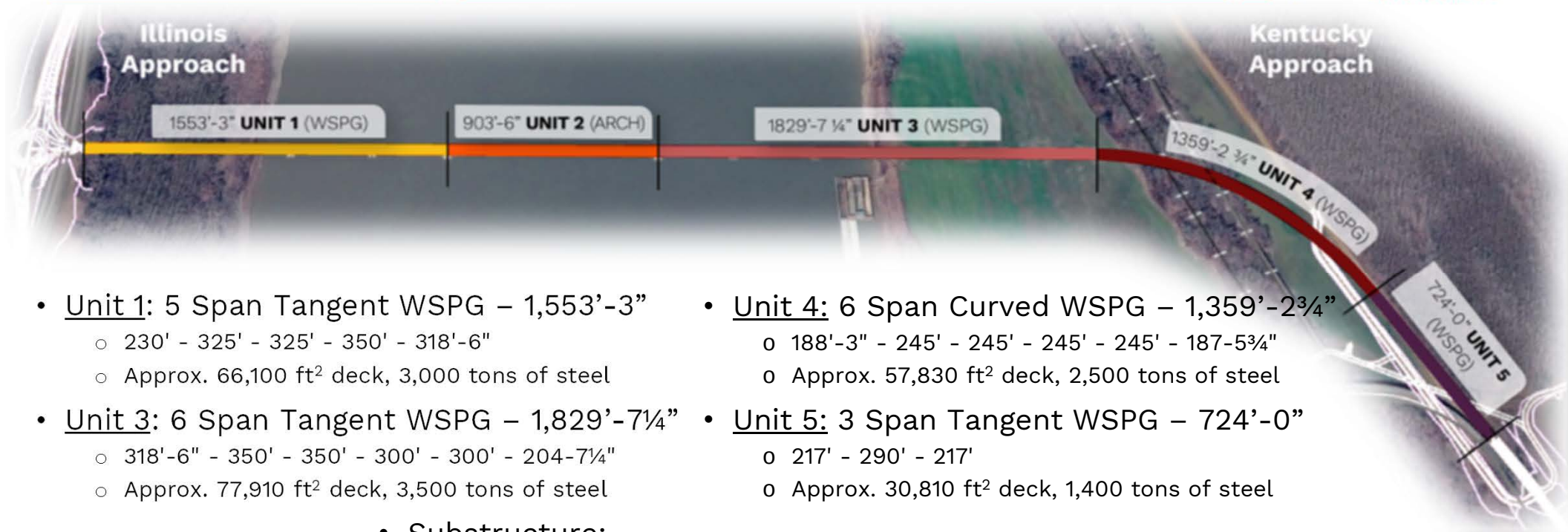
- Based on detailed traffic analyses, **two travel lanes** are warranted given the traffic count data and projected vehicle volumes.
- The bridge will be comprised of 2-12' driving lanes with 8' shoulders for a total width of 40' which is significantly wider than the existing bridge's 22.5' width.



# Bridge Units



# Approach Units (1, 3-5)

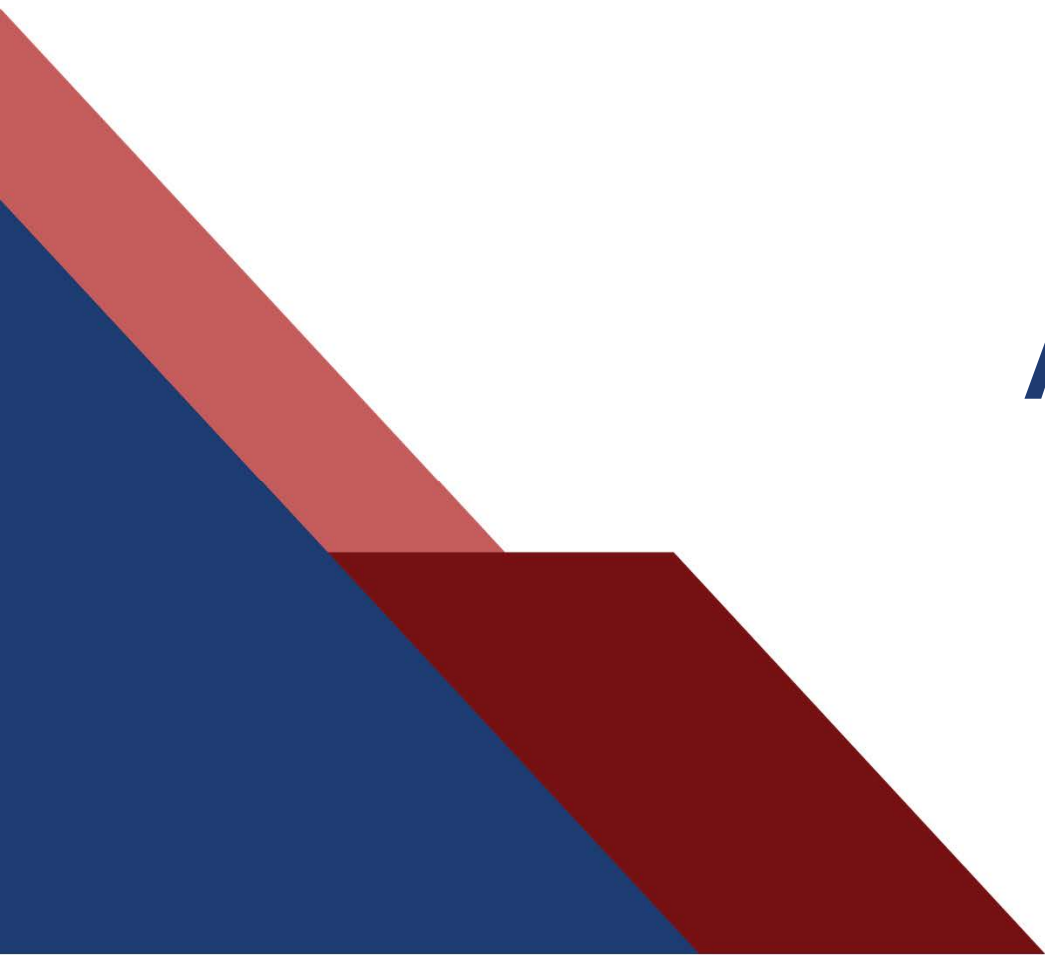


- Unit 1: 5 Span Tangent WSPG – 1,553'-3"
  - 230' - 325' - 325' - 350' - 318'-6"
  - Approx. 66,100 ft<sup>2</sup> deck, 3,000 tons of steel
- Unit 3: 6 Span Tangent WSPG – 1,829'-7¼"
  - 318'-6" - 350' - 350' - 300' - 300' - 204'-7¼"
  - Approx. 77,910 ft<sup>2</sup> deck, 3,500 tons of steel
- Unit 4: 6 Span Curved WSPG – 1,359'-2¾"
  - 188'-3" - 245' - 245' - 245' - 245' - 187'-5¾"
  - Approx. 57,830 ft<sup>2</sup> deck, 2,500 tons of steel
- Unit 5: 3 Span Tangent WSPG – 724'-0"
  - 217' - 290' - 217'
  - Approx. 30,810 ft<sup>2</sup> deck, 1,400 tons of steel
- Substructure:
  - 14 land hammerhead piers on 48" piles
  - 4 river (6 total) two-column bents on 72" piles
  - Spill-thru abutments on 48" piles with ground improvements

# Unit 2 – Tied Arch Bridge



The tied arch bridge was determined to have the **least cost, better constructability** and **long-term maintenance and inspection benefits** than the other considered bridge types.



# **Phase I Advanced Letting**

# Phase I Advanced Letting – Goals



1

Confirm geotechnical response through **Pile Load Testing Program** and utilize results for Final Design.

2

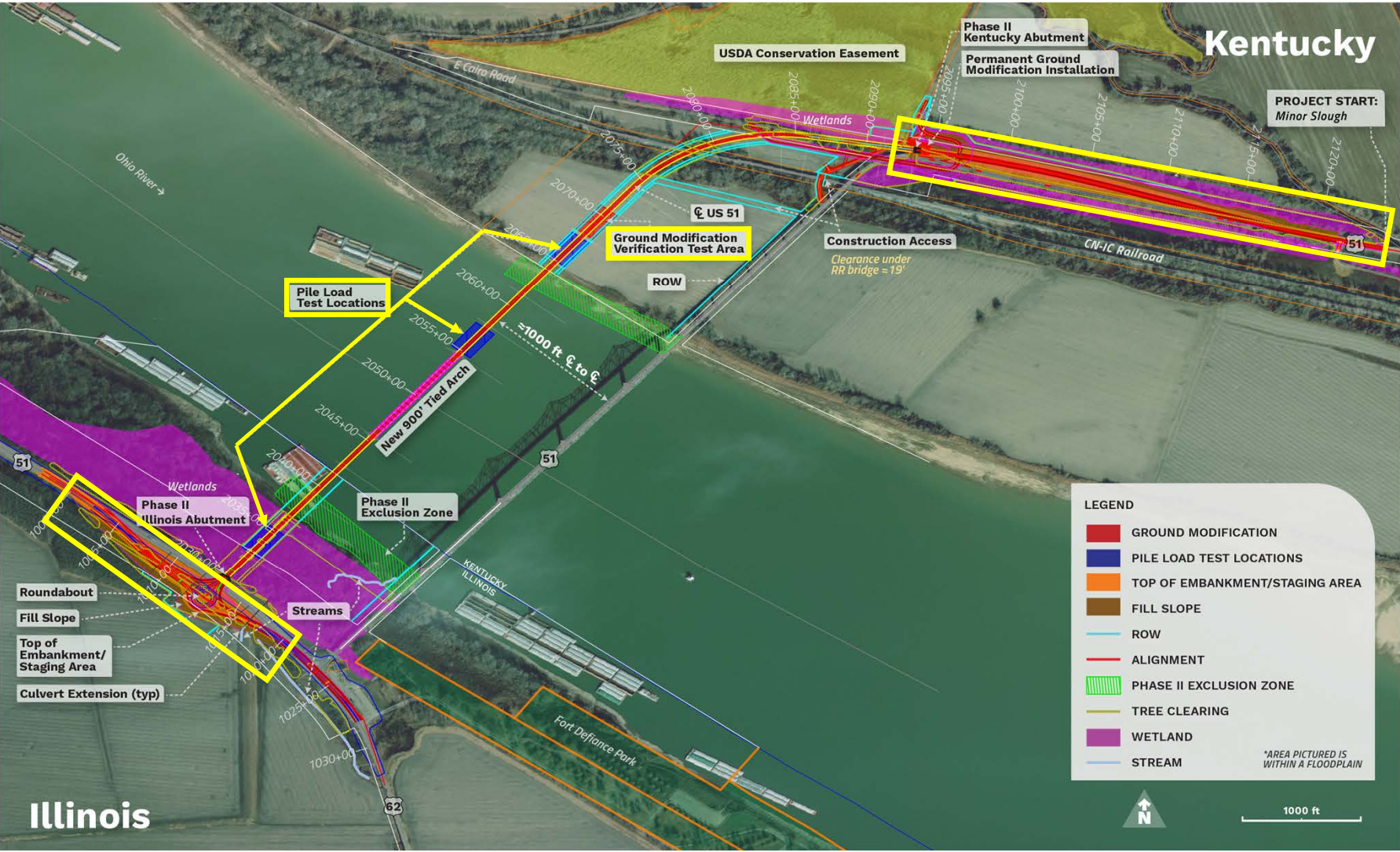
Demonstrate installation and drivability.

3

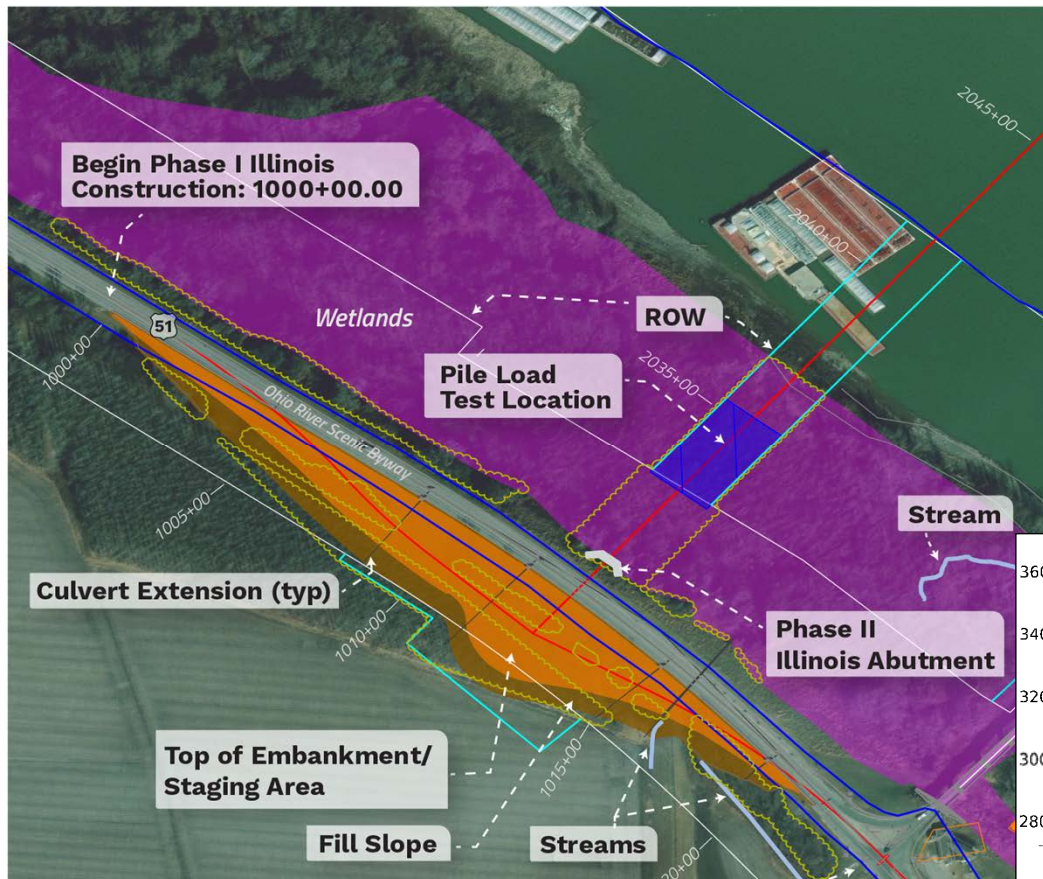
Measure performance of **Ground Improvements** and establish acceptance criteria for installation at KY abutment.

4

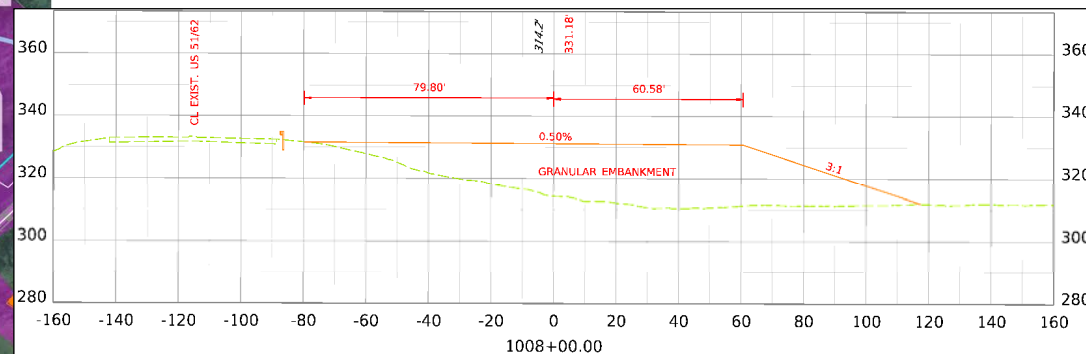
**Complete embankments** to allow settlement and provide project staging areas for Phase II.



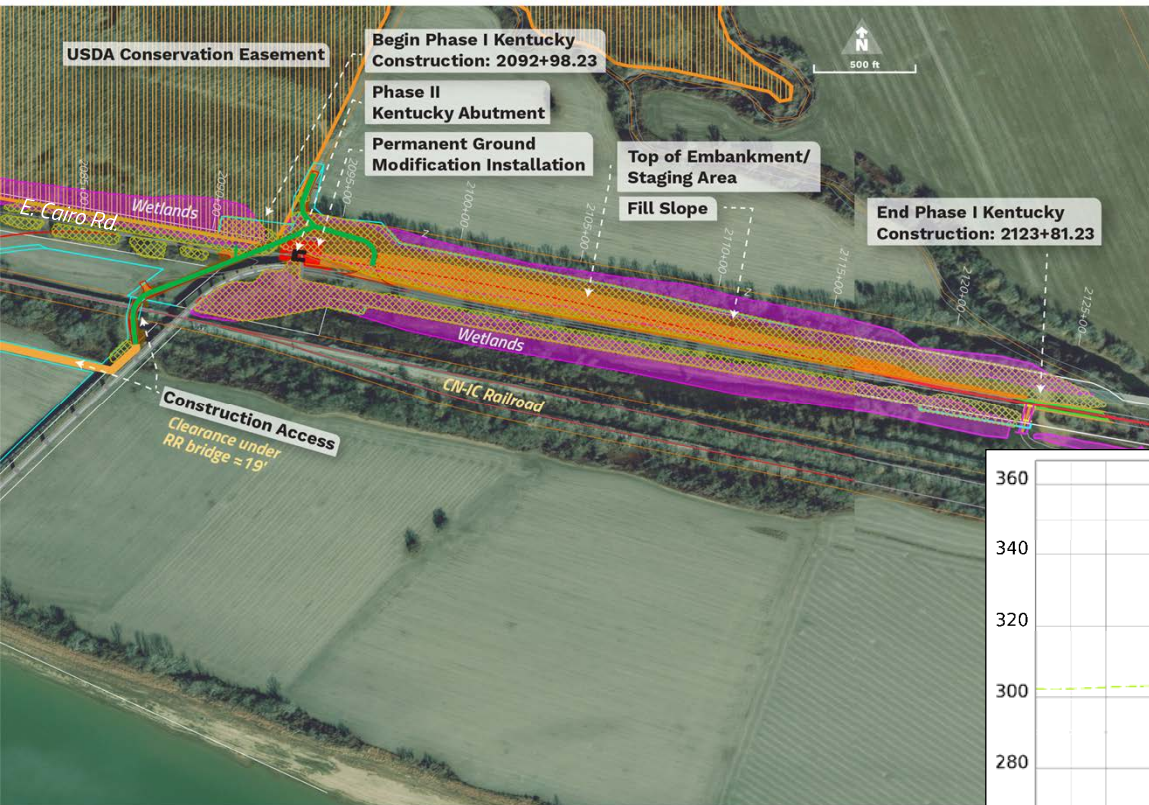
# IL Embankment/Staging Areas



- Construct Embankments
  - 120,000 CY Granular Embankment
  - Existing Cross Drain Extensions
  - No Ground Improvements
  - Settlement Monitoring
- Phase II Construction
  - Roundabout, Switch Traffic, Staging on Existing Alignment

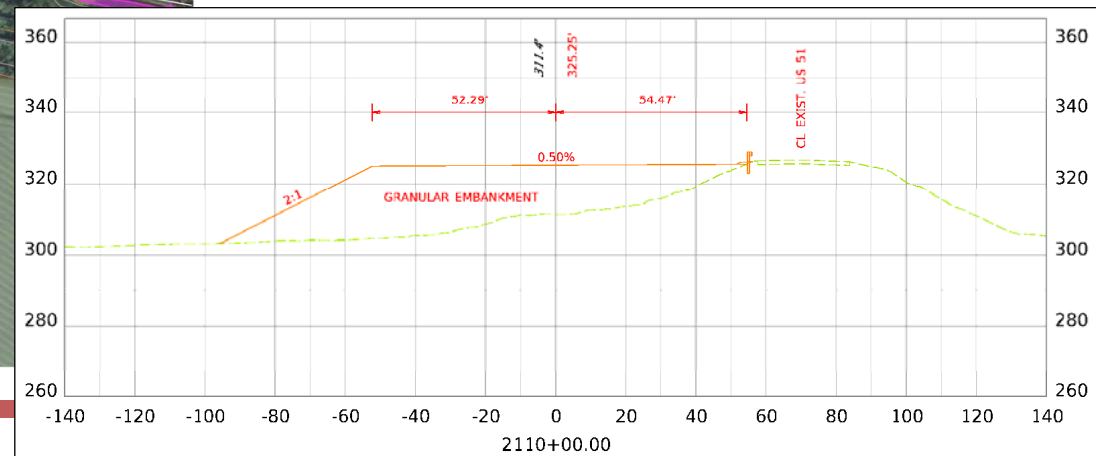


# KY Embankment/Staging Areas

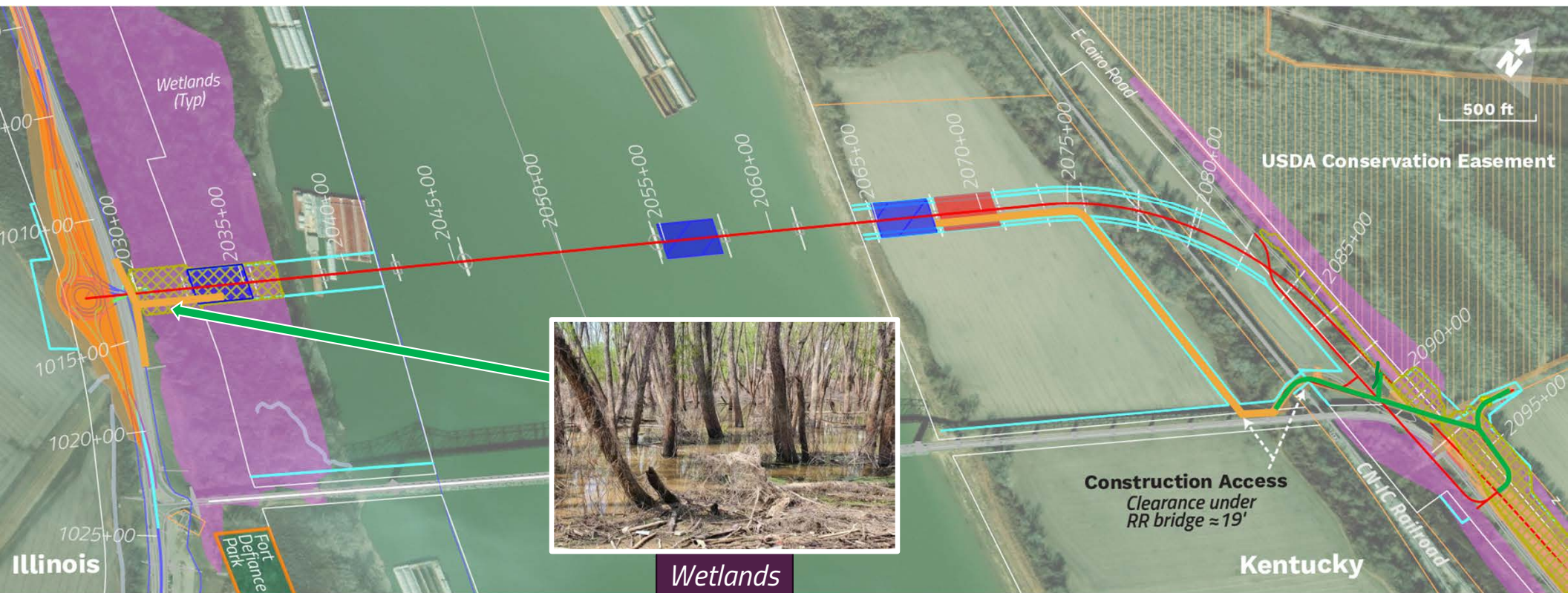


## • Construct Embankments

- 190,000 CY Granular Embankment
- Elevation ~325ft (above Major Flood)
- Ground Improvements Installed at KY Abutment Prior to Embankment Construction
- Settlement Monitoring



|                                                                                   |                                |                                                                                     |                          |
|-----------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|--------------------------|
|  | GROUND MODIFICATION            |  | PUBLIC ACCESS ROAD       |
|  | PILE LOAD TEST LOCATIONS       |  | CONSTRUCTION ACCESS ROAD |
|  | TOP OF EMBANKMENT/STAGING AREA |  | TREE CLEARING            |
|  | FILL SLOPE                     |  | WETLAND                  |





# **Geotechnical Overview**

# Evaluation of Subsurface Info

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- **Land-Based Soil Profile (based on subsurface info) Indicates:**
    - **Interbedded Clay/Silt and Sand/Gravel Alluvium (Cahokia Formation)**
      - Thickness approximately ranges between 20ft and 40ft, locally 15ft up to 50ft
      - Average SPT Blow Counts range from 2 bpf to 15 bpf, 30 bpf to 50 bpf in sand/gravel lenses
    - **Alternating Clay/Silt and Sand Gravel (Claiborne/Wilcox Formation)**
      - Thickness approximately ranges between 200ft and 280ft
      - Average SPT Blow Counts range from 20 bpf 100+ bpf. Frequent SPT Refusal
    - **Clay/Silt (Porters Creek Formation)**
      - Encountered approximately 250ft to 320ft below groundline. Not fully penetrated.
      - Average SPT Blow Counts range from 5 bpf to 15 bpf
-

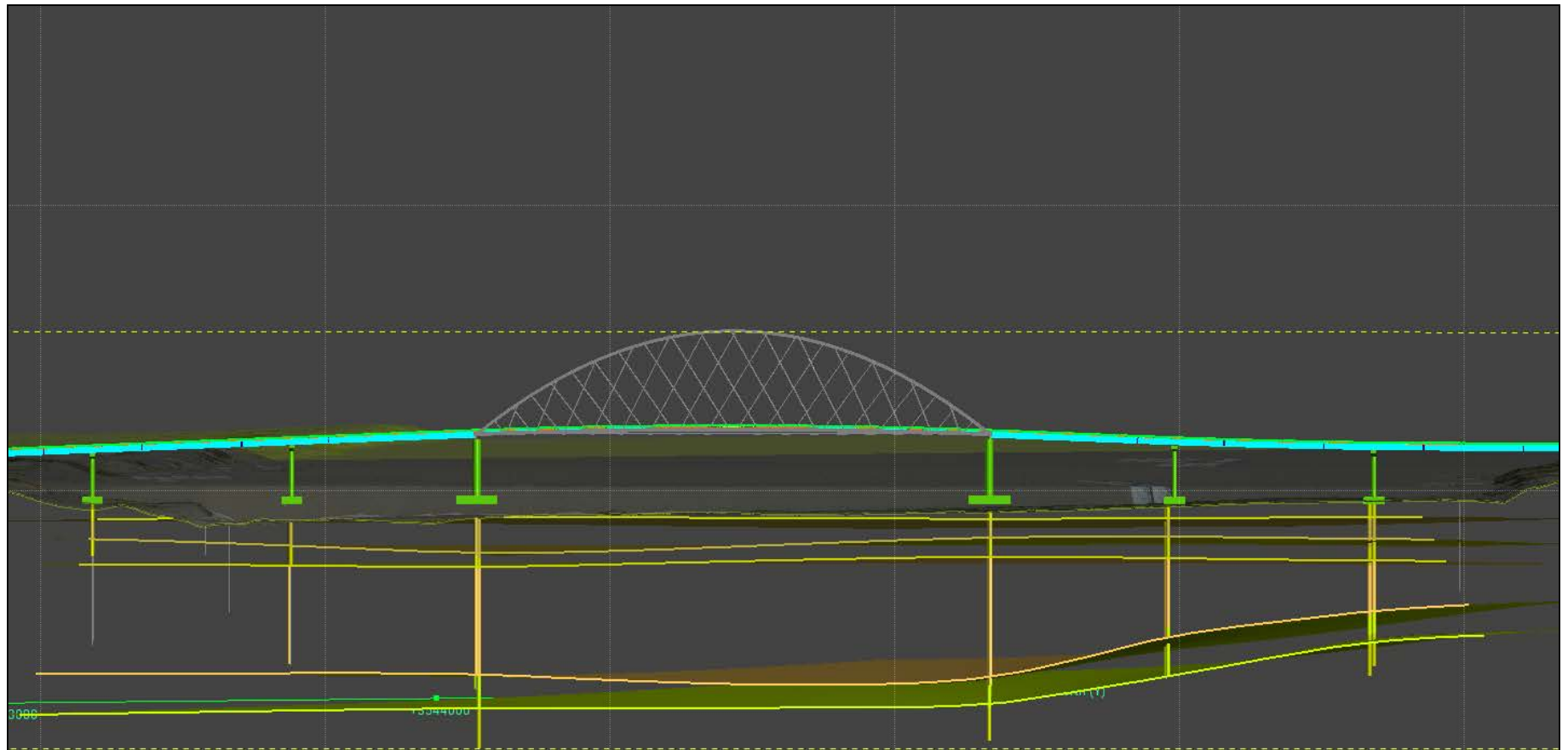
# Evaluation of Subsurface Info

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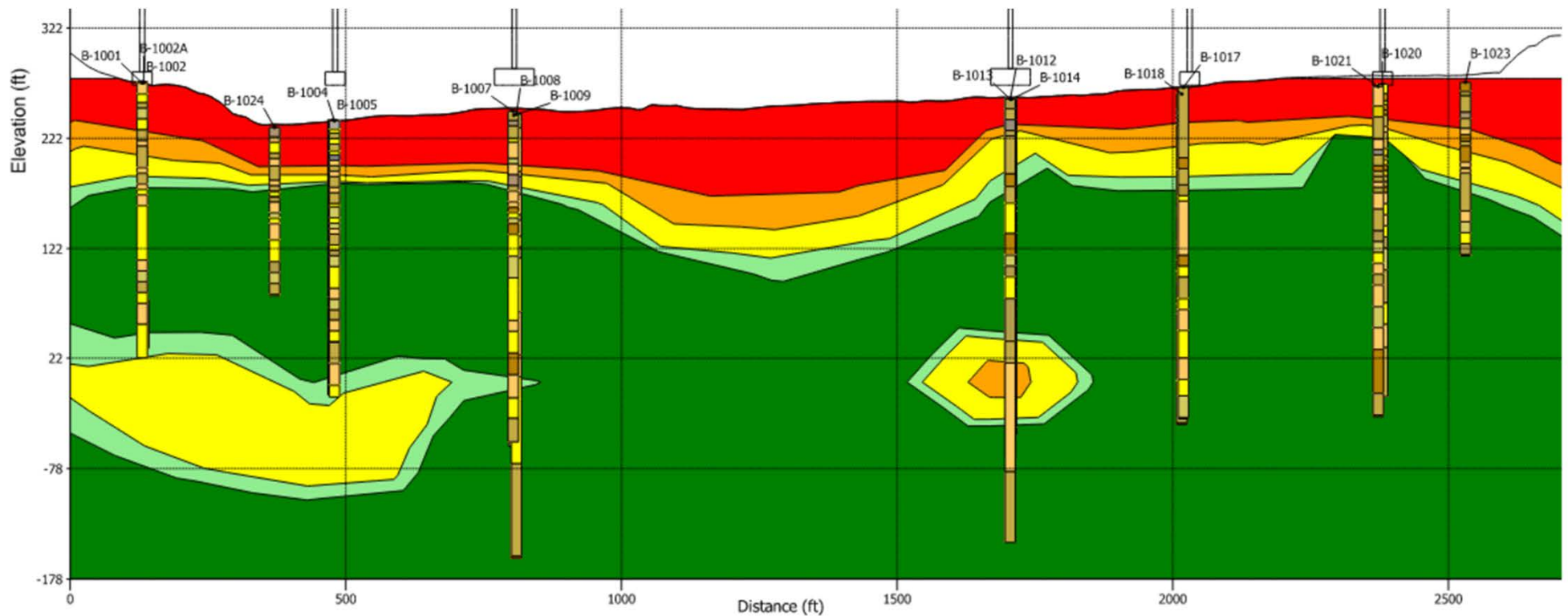


- **River-Based Soil Profile (based on subsurface info) Indicates:**
    - **Silty Clay to Silty Sand with Sand Lenses (Cahokia Formation)**
      - Thickness approximately ranges between 50ft and 100ft.
      - Average SPT Blow Counts range from 6 bpf (near mudline) to 55 bpf.
    - **Clean to Silty Sands and Gravels (Claiborne/Wilcox Formation)**
      - Thickness approximately ranges between 85ft and 225ft.
      - Average SPT Blow Counts of 100+ bpf. Very Dense Sand Layer.
    - **Clay/Silt (Porters Creek Formation)**
      - Main Span borings terminated within this layer. Encountered approximately 250ft to 330ft below mudline.
      - Average SPT Blow Counts range from 13 bpf to 21 bpf.
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# River Subsurface Investigation



# Earthquake Induced Liquefaction



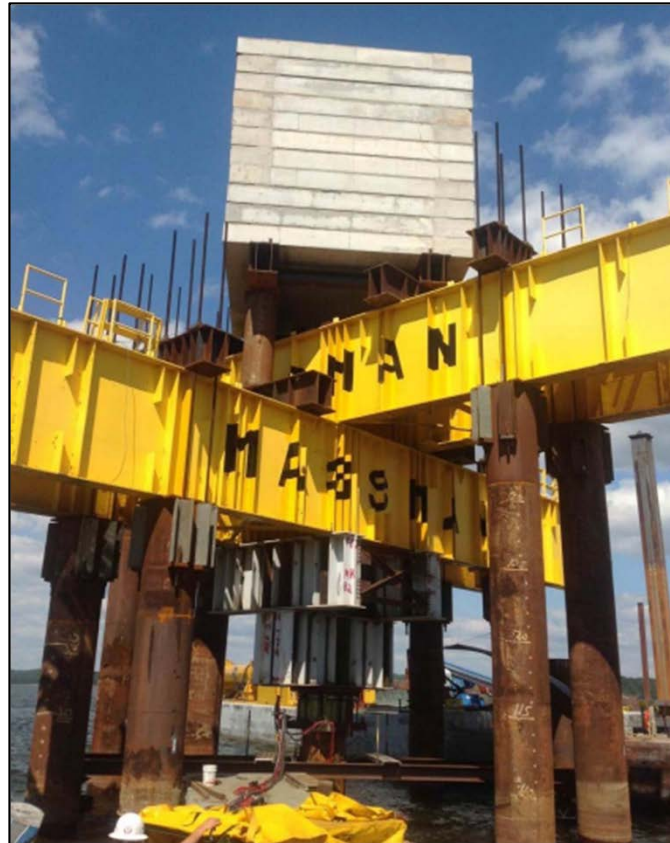


# **Pile Load Test Program Requirements**

# Pile Load Test Program



- Pipe Pile Testing Program
- Proof of Drivability and Resistances
- Constrictor Plate (Artificial Plug)
- Dynamic, Static and Pseudo-Static Testing
- Ground Improvement Test Area



# Pile Load Test Program Summary



| Test Pile No. | Location                | Pile Type | Pile Size (in.) | Nominal Wall (in.) | Order Length (ft) | Constrictor Plate | Initial Driving Criteria          |                                       | Extended Driving Criteria           |                                            | Testing Assignment |        |               |         |
|---------------|-------------------------|-----------|-----------------|--------------------|-------------------|-------------------|-----------------------------------|---------------------------------------|-------------------------------------|--------------------------------------------|--------------------|--------|---------------|---------|
|               |                         |           |                 |                    |                   |                   | Estimated Pile Tip Elevation (ft) | Target Nominal Axial Resistance (kip) | Approximate Pile Tip Elevation (ft) | Approximate Nominal Axial Resistance (kip) | Dynamic            | Static | Pseudo-Static |         |
|               |                         |           |                 |                    |                   |                   |                                   |                                       |                                     |                                            |                    |        | Axial         | Lateral |
| <b>PT-1</b>   | West Approach (IL Land) | LDOEPP    | 48              | 1.0                | 185               |                   | 135                               | 5000                                  | --                                  | --                                         | X                  |        | X             |         |
| <b>PT-2</b>   | Main Span (River)       | LDOEPP    | 72              | 1.5                | 175               | X                 | 165                               | 7500                                  | 150                                 | 8500                                       | X                  |        | X             | X       |
| <b>PT-3</b>   | Main Span (River)       | LDOEPP    | 72              | 1.5                | 220               |                   | 105                               | 7500                                  | --                                  | --                                         | X                  |        | X             |         |
| <b>PT-4</b>   | East Approach (KY Land) | LDOEPP    | 48              | 1.0                | 190               |                   | 125                               | 5800                                  | --                                  | --                                         | X                  | X      |               |         |
| <b>PT-5</b>   | East Approach (KY Land) | LDOEPP    | 48              | 1.0                | 190               |                   | 125                               | 5800                                  | --                                  | --                                         | X                  |        | X             | X       |
| <b>PT-6</b>   | East Approach (KY Land) | LDOEPP    | 48              | 1.0                | 175               | X                 | 155                               | 5500                                  | 140                                 | 5800                                       | X                  | X      |               |         |
| <b>PT-7</b>   | East Approach (KY Land) | LDOEPP    | 48              | 1.0                | 175               | X                 | 155                               | 5500                                  | 140                                 | 5800                                       | X                  |        | X             |         |

# Ground Improvement

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- **Type of Ground Improvement**
    - Rigid Inclusions (High Strength Cementitious Columns)
  - **Depth/Spacing Configurations to be Tested**
    - 5 ft & 6 ft CTC Spacing on Square Grid Pattern
    - Installation Depth of 70 ft for Rigid Inclusions
    - Pre- and Post-Installation CPT Soundings
      - Evaluate soil properties before and after installation in between columns
    - **Evaluate Installation Controls**
      - Duration, Energy, Crowd, Torque, Injection Pressure, Withdrawal Rates, Mix Design Verification
  - **Permanent Ground Improvements**
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# Pile Load Test Special Notes

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- Total of 5 Special Notes:

Pile Load Test  
Program

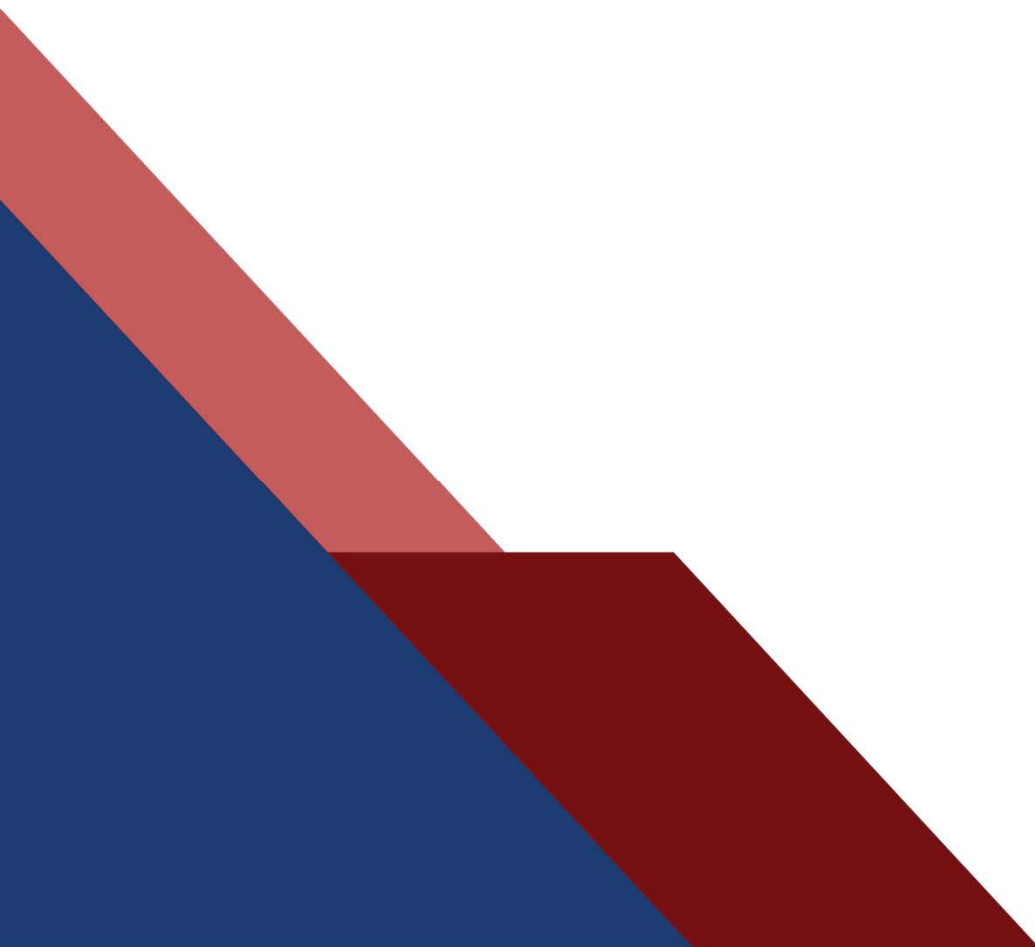
Dynamic Pile  
Testing

Static and Pseudo-  
Static Pile Testing  
(Axial and Lateral)

Vibration  
Monitoring

Ground  
Improvements

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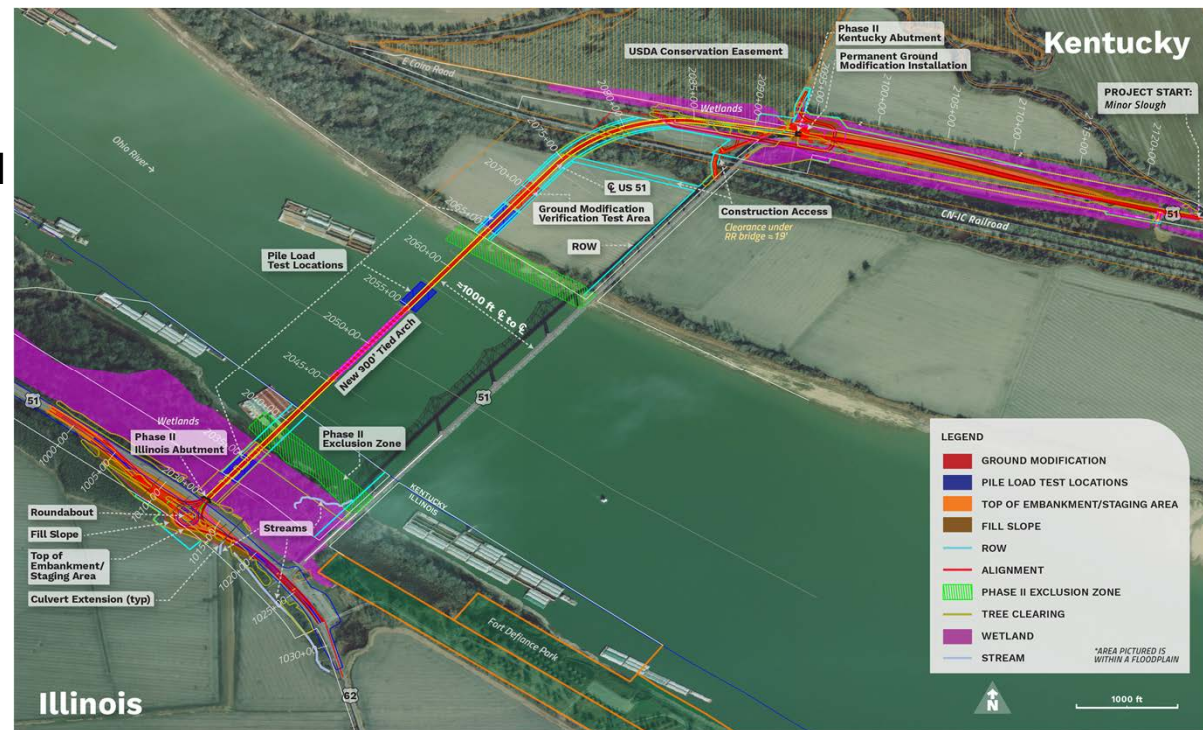


# **Provisions & Schedule**

# Environmental Restrictions



- Environmentally Cleared Areas
  - Project limits expected to be cleared
  - Outside of Project limits will not
    - Fort Defiance State Park
- Tree Clearing Restrictions
  - IL: April 1 – September 30
  - KY: May 15 – July 31
- Wetlands

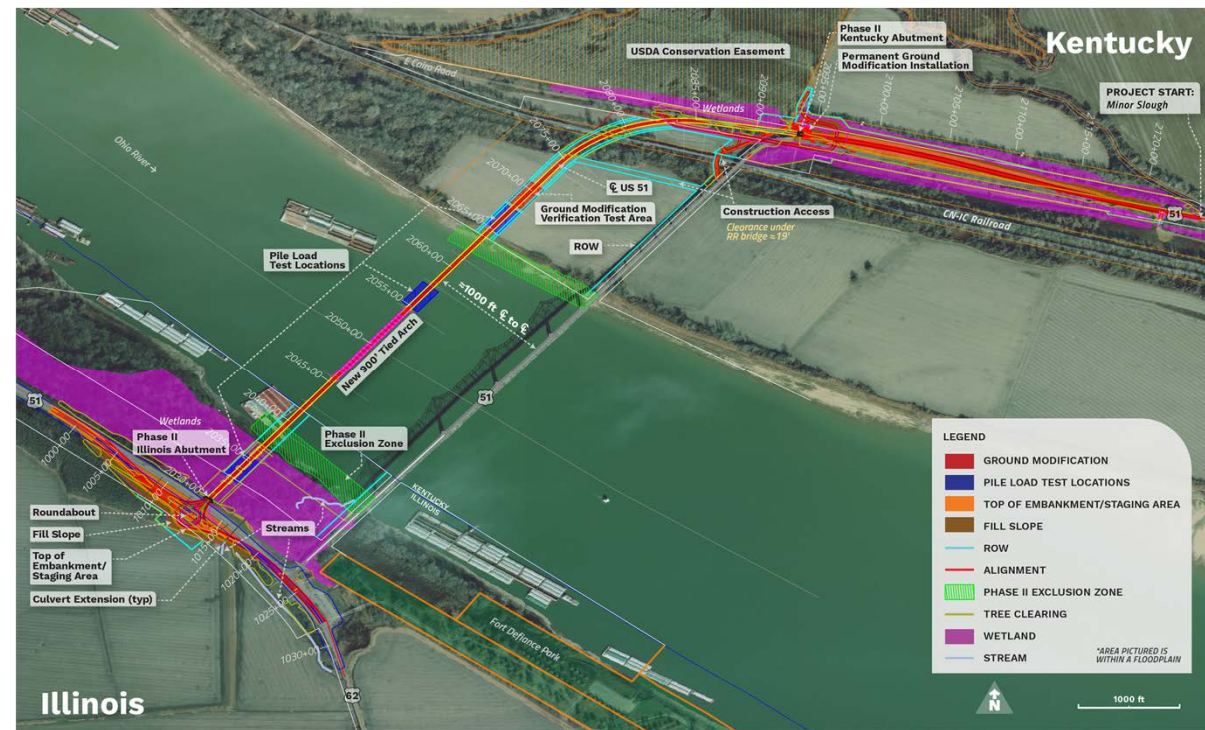


\*List is not all-inclusive

# Environmental Restrictions

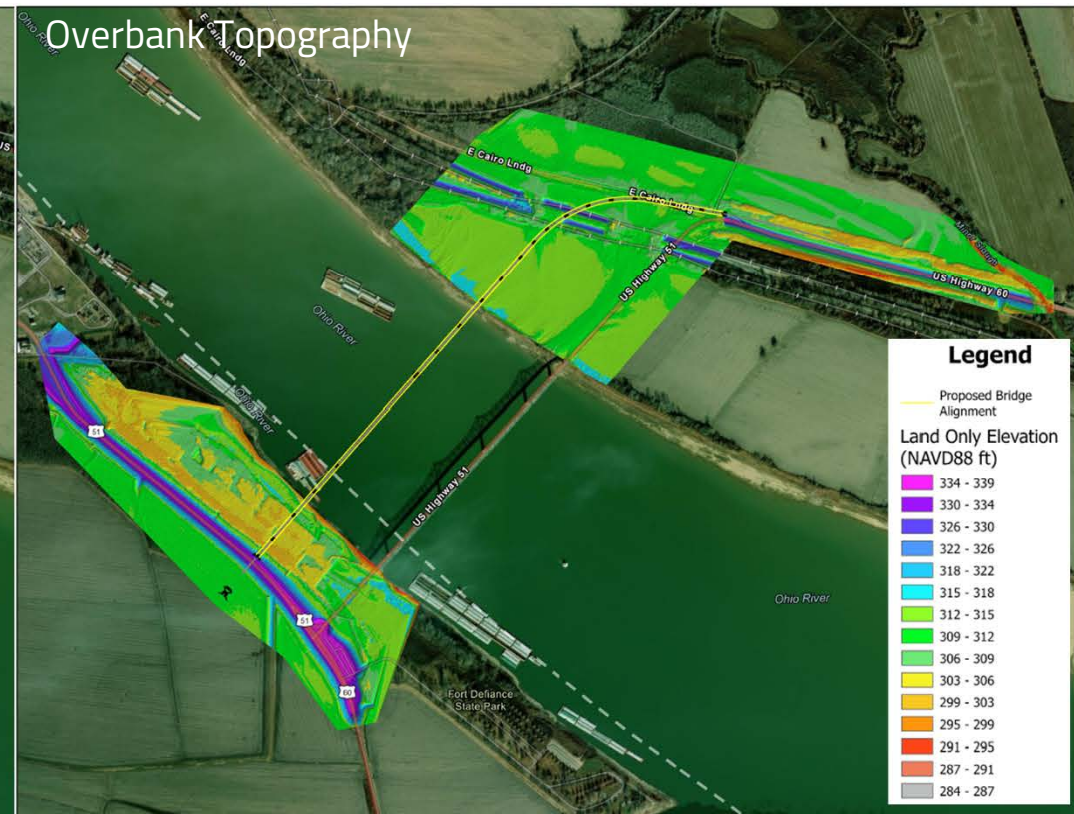
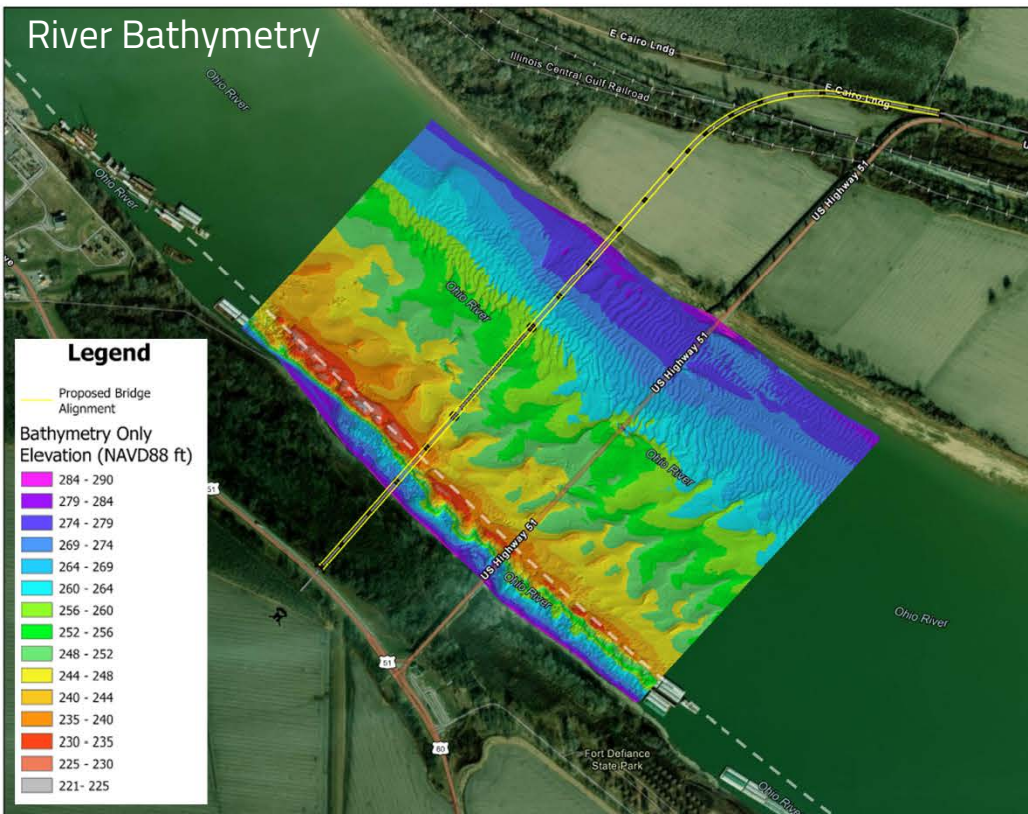


- IL - Stone Bank Protection/ACM
- IDNR Temporary Rise (3/4")
- Do Not Disturb Areas in River
- USDA Parcel
- Coordinate with USCG
- Migratory Birds



\*List is not all-inclusive

# Existing Site Conditions



# Prequalification & Wage Rates



- **Prequalification**

- Contractors wishing to place a bid on this project will need to be prequalified to perform the following major items of work:

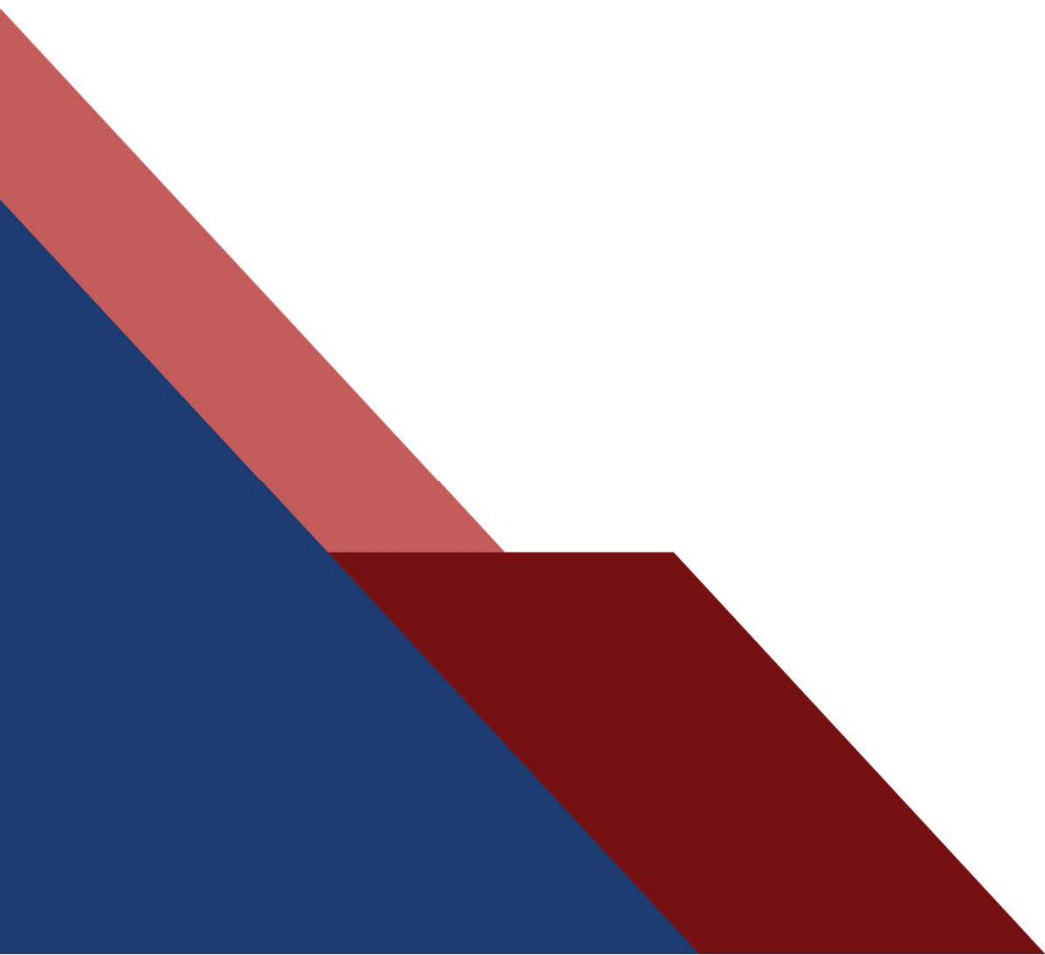
## KYTC Required Qualification Bridges - E5

- Subconsultant requirement – appropriate KYTC prequalification category or Specialty Subcontract if none are applicable.
  - **Kentucky** - Personnel are required to hold KEPSC-RI certificate. The earthwork contractor is required to have the qualifications to inspect and monitor BMPs.
  - **Illinois** - Encouraged IDOT Erosion Control Class.
- **Wage Rates**
    - Phase I - The contract will include both Illinois and Kentucky prevailing wage rates and be administered by the state line.
    - Phase II - TBD

# Letting Dates and Schedule



| Date                           | Submittal                                                                                              |
|--------------------------------|--------------------------------------------------------------------------------------------------------|
| June 8, 2026                   | Notice to Industry                                                                                     |
| July 8, 2026                   | Phase I Advanced Letting Industry Forum (Held at Murray State University, Paducah Campus)              |
| November 5, 2026               | Phase I Advanced Letting Advertisement Date                                                            |
| November 19, 2026              | Phase I Advanced Letting Pre-bid Meeting (Mandatory) (Held at Murray State University, Paducah Campus) |
| December 10, 2026              | Phase I Advanced Letting Date                                                                          |
| December 31, 2027              | Phase I Advanced Letting Load Test Program and Ground Test Verification Completion (including reports) |
| February 28, 2028              | Phase I Advanced Letting Project Completion                                                            |
| 2028 (summer)                  | Anticipated Phase II Bridge Replacement Letting Industry Forum                                         |
| 2029 (1 <sup>st</sup> quarter) | Anticipated Phase II Bridge Replacement Letting                                                        |



# Conclusion

# For More Information

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- US51bridge.com
- <https://transportation.ky.gov/Construction-Procurement/>
  - Direct questions to Construction Procurement.



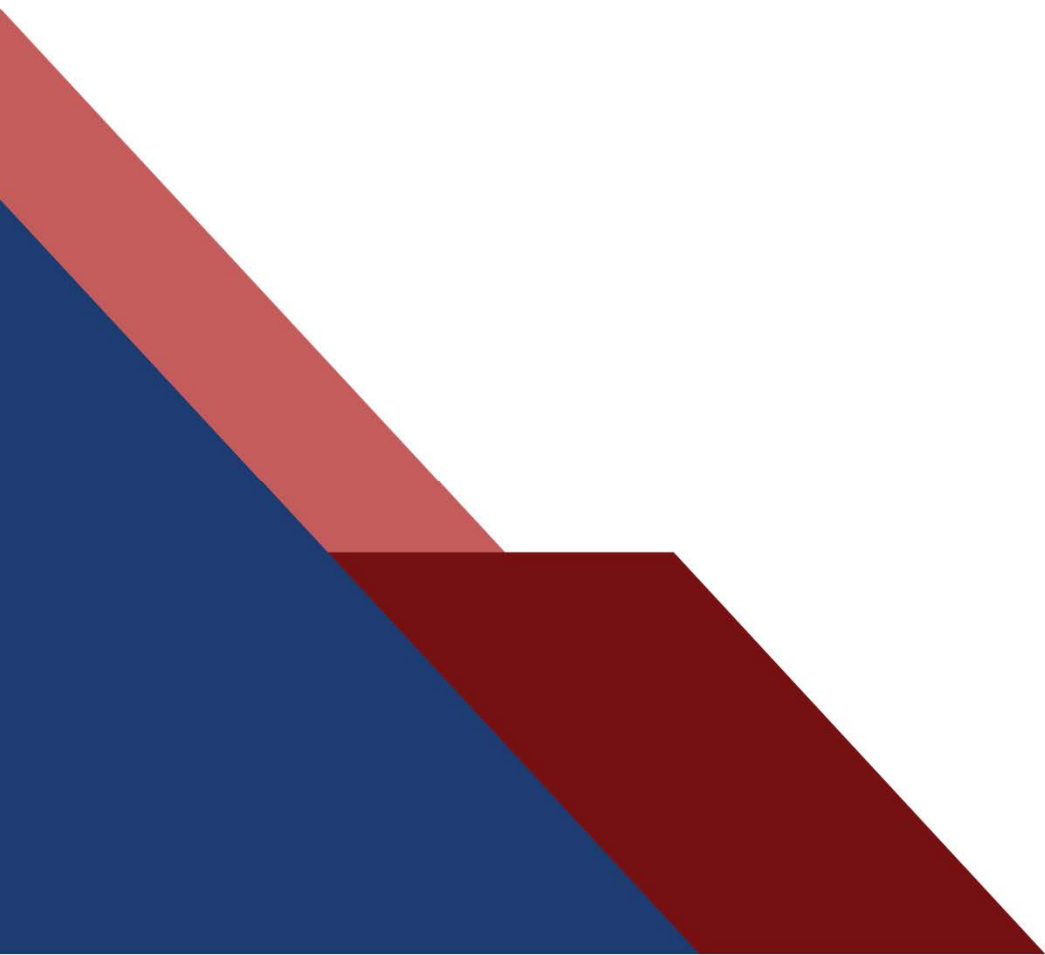
**KYTC  
Procurement  
Site**

*Updates posted  
as available.*

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**Questions/Comments?**



# Bullpen











