

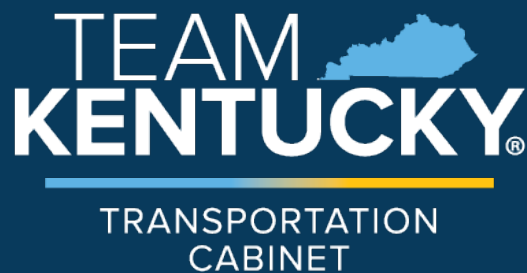


FHWA PEL QUESTIONNAIRE

US 60 Connectivity Study

Item 1-80250

Prepared for:



Prepared by:



April 2024



Contents

1. Background	1
1.1. PEL Sponsor	1
1.2. PEL Identifiers	2
1.3. PEL Study Team	2
1.4. PEL Study Description	3
1.5. PEL Activities	5
1.6. Studies & Projects in PEL Study Area	5
2. Methodology	6
2.1. PEL Scope	6
2.2. PEL Language	7
2.3. PEL Terminology	7
2.4. PEL Language & Terminology in NEPA	7
2.5. PEL Decision-making Process	8
2.6. PEL Applicability in NEPA	8
3. Agency Coordination	9
3.1. Agency Coordination Efforts	9
3.2. Transportation Agencies	13
3.3. Agency Coordination in NEPA	13
4. Public coordination	13
4.1. Public & Stakeholder Coordination	14
5. Purpose and Need for the PEL Study	17
5.1. Reason for Completing PEL	17
5.2. Draft Purpose & Need Statement, Study Goals & Objectives	17
5.3. Future Steps for Project-level Purpose & Need Statement	18
6. Range of alternatives	18
6.1. Alternative Types	18



6.2.	Screening Process.....	18
6.3.	Alternatives Not Advanced	19
6.4.	Alternatives Advanced to NEPA.....	19
6.5.	Alternatives Engagement Opportunities	19
6.6.	Alternatives Unresolved Issues	19
7.	Planning Assumptions and Analytical Methods.....	20
7.1.	Forecast Year	20
7.2.	Forecasting Methodology	20
7.3.	Consistency with Long-range Transportation Plan.....	21
7.4.	Future Year Assumptions.....	21
8.	Environmental Resources Reviewed.....	22
8.1.	Resources Review	22
8.2.	Resource Impacts	23
8.3.	Future Resource Considerations.....	23
8.4.	Use PEL Data in NEPA.....	29
9.	Environmental Resources Not Reviewed.....	30
10.	Cumulative Impacts.....	30
11.	Mitigation Strategies	30
12.	PEL Documentation Sharing.....	31
13.	Other issues	31
13.1.	Controversy.....	31
13.2.	Utility Problems	31
13.3.	Access	32
13.4.	Right-of-Way Issues	32
13.5.	Stakeholders	33
13.6.	Special or Unique Resources	33



Figures

Figure 1. Study Area 3

Figure 2. Seasonal Survey Considerations 34

Tables

Table 1. PEL Identifiers..... 2

Table 2. PEL Study Team 2

Table 3. Study Area Details 4

Table 4. Chronology of PEL Studies 5

Table 5. Resource Agencies 10

Table 6. Local Officials & Stakeholders..... 16

Table 7. Environmental Resources Reviewed 24



1. Background

To ensure this Planning and Environmental Linkages (PEL) Study meets the requirements of 23 CFR 450.212¹ and 23 CFR 450.318,² the Federal Highway Administration (FHWA) April 5, 2011, *PEL Questionnaire*³ has been completed to summarize the planning process and facilitate the transition from the planning study to a National Environmental Policy Act (NEPA) analysis, should a future project advance from this study. KYTC has not recommended funding future phases of this project in *Kentucky's FY 2024 – FY 2030 Recommended Highway Plan*.⁴

This documentation summarizes relevant planning information to reduce potential re-work. PEL studies typically serve as a valuable tool for creating efficiencies in the transportation project development process that supports agencies' efforts to accelerate project delivery.

The PEL process represents a collaborative and integrated approach to transportation decision-making that considers benefits and impacts of proposed transportation system improvements to the environment, community, and economy during the transportation planning process to inform the environmental review process.

PEL studies provide the public with an early opportunity to assess project components and provide meaningful input on potential future projects. This informs agency decision-makers recommendations for programs and projects to serve the community's transportation needs more efficiently.

1.1. PEL Sponsor

Who is the sponsor of the PEL study? (state DOT, Local Agency, Other)

Kentucky Transportation Cabinet (KYTC)

¹ <https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450/subpart-B/section-450.212>

² <https://www.ecfr.gov/current/title-23/chapter-I/subchapter-E/part-450/subpart-C/section-450.318>

³ https://www.environment.fhwa.dot.gov/env_initiatives/pel/pel_quest.aspx

⁴ <https://transportation.ky.gov/Program-Management/Pages/2024-Recommended-Highway-Plan.aspx>



1.2. PEL Identifiers

What is the name of the PEL study document and other identifying project information (e.g. sub-account or STIP numbers, long-range plan, or transportation improvement program years)?

PEL identifiers are included in Table 1.

Table 1. PEL Identifiers

PEL Study Title	US 60 Connectivity Study
KYTC Six-Year Plan Item No.	1-80250
Procurement Bulleting No.	2023-02-4
State / Federal Program Code	1546701P / N/A
Funding Code.	1100 C35 D625 01 FD04 1550 C004 E143

1.3. PEL Study Team

Who was included on the study team (Name and title of agency representatives, consultants, etc.)?

Primary study team members are listed in Table 2.

Table 2. PEL Study Team

	Agency	Name	Role
Agency Representatives	FHWA-KY Division	John Ballantyne	Planning, Environment, & System Performance Team Leader
	FHWA-KY Division	Mour Diop	Environmental Protection Specialist
	KYTC CO Planning	Steve De Witte	Strategic Planning Branch Manager
	KYTC CO Planning	Catherine Davis	Central Office Project Manager
	KYTC CO Planning	Dave Heil	Central Office Liaison
	KYTC DEA	Connor Ouellette	Environmental Project Manager
	KYTC D1	Kyle Poat	Chief District Engineer
	KYTC D1	Chris Kuntz	District Project Manager
	KYTC D1	Austin Hart	District Project Manager
	KYTC D1	Patsy Rawlins	District Liaison
Consultant Team	Stantec	Len Harper	Project Manager
	Stantec	Brian Aldridge	Roadway Corridor Planning
	Stantec	Taylor Perkins	Structures
	Stantec	Ellen Mullins	Biologist
	Qk4	Tom Springer	Environmental Project Manager
	Qk4	Lindsay Hoskins	Environmental Documentation & Coordination
	C2	Angela Blank	Community & Stakeholder Engagement
	C2	Parry Barrows	Community & Stakeholder Engagement

CO=Central Office; **D1**=District 1; **DEA**=Division of Environmental Analysis



1.4. PEL Study Description

Provide a description of the existing transportation facility within the corridor, including project limits, modes, functional classification, number of lanes, shoulder width, access control and type of surrounding environment (urban vs. rural, residential vs. commercial, etc.)

The PEL study area is shown in [Figure 1](#) and descriptions are provided in Table 3.

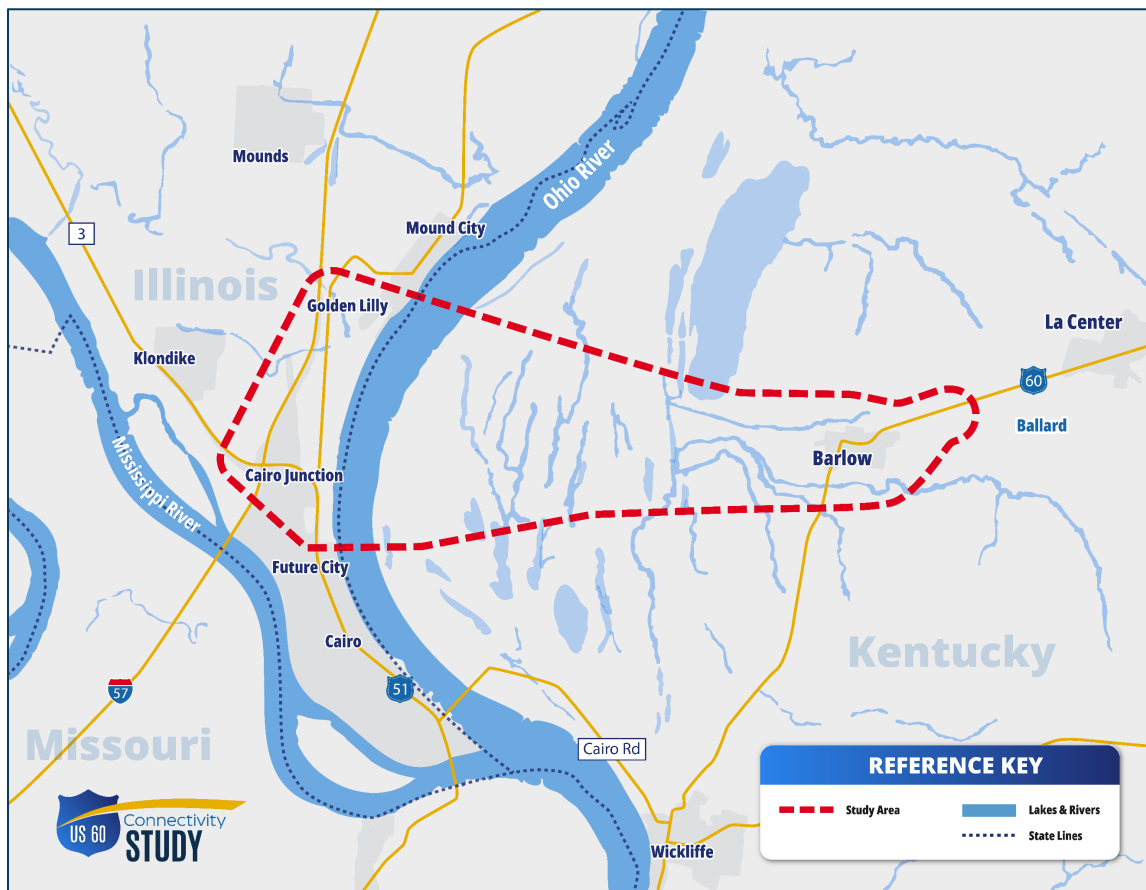


Figure 1. Study Area



Table 3. Study Area Details

PEL Study Area Description
Existing Transportation Facility
<p>In Kentucky, the local roadway network (US 60/US 62) provides the primary east-west connection from Wickliffe to Paducah and farther east.</p> <p>US 60 provides the only east-west designated truck route west of Paducah, Kentucky. It currently diverts south at Barlow, connecting to the US 51 Ohio River Bridge at Wickliffe, which provides the westernmost Ohio River crossing between Kentucky and Illinois.</p> <p>In Illinois, US 51 provides the primary north-south connection in the study area. It is a principal arterial, has four lanes, and is the main throughfare through Cairo, with approximately 2 miles of closely spaced, stop-controlled intersections in town.</p> <p>US 51 connects with I-57 which is the longest interstate highway in Illinois. It starts at the southernmost point of Illinois in Cairo, runs concurrently with US 51, and then parallels IL-37 as it travels north through the center of the state.</p>
Project Limits
I-57 north of Cairo, Illinois to the west and US 60 near Barlow, Kentucky to the east.
Modes
Vehicular
Functional Classification
Rural Principal Arterials
Number of Lanes & Lane Widths
Two Lanes; 11- 12-foot-wide lanes
Shoulder Widths
Varies; narrow
Access Control
By Permit
Surrounding Environmental
<p>The study area is predominately in Ballard County, Kentucky and extends west over the Ohio River into Alexander County, Illinois.</p> <p>Ballard County is in far western Kentucky, at the confluence of the Ohio and Mississippi rivers. The land use in the study area is primarily undeveloped or agricultural. The area is frequently flooded, and much is preserved for conservation—primarily as a Wildlife Management Area.</p> <p>Alexander County is the southernmost Illinois county. In the study area, it is more developed than Kentucky. It has several small residential communities, and some commercial and industrial developments. Density increases south of the study area in Cairo, which has historically been a disadvantaged area with high concentrations of minority persons.</p>



1.5. PEL Activities

Provide a brief chronology of the planning activities (PEL study) including the year(s) the studies were completed.

PEL studies timelines by month are shown in Table 4.

Table 4. Chronology of PEL Studies

		2023												2024		
Task		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M
1	Project Management															
2	Data Collection															
3	Purpose & Need															
4	Traffic Forecasts															
5	Geotech & Seismic Overview															
6	PEL Environmental/Socioec															
7	Design Concepts & Estimates															
8	Meetings & Coordination ¹															
9	Report Preparation															
¹ The study team held monthly coordination meetings. See Section 3 for a summary of agency and public coordination activities.																

1.6. Studies & Projects in PEL Study Area

**Are there recent, current, or near future planning studies or projects in the vicinity?
What is the relationship of this project to those studies/projects?**

Ongoing projects (KYTC Item #1-115.00, 1-115.10, and 1-118.00) would collectively reconstruct about 6 miles of US 60 near the Ballard/McCracken County line (east of the study area), from east of LaCenter to the existing four-lane section east of Kevil. This project is currently in the Right-of-Way and Utility phases. The FY 2022–2028 *State Highway Plan* has construction funds programmed in FY 2024.

The US 51 Bridge Replacement Project (Item No. 1-1140), south of the study area, would replace the Ohio River crossing immediately north of its current alignment. As the US 51 project has advanced, questions have arisen concerning whether a more northern Ohio River crossing might provide advantages over this crossing location. Because major river crossings are costly and remain in service for many decades, this PEL study was conducted to determine if relocating the Ohio River crossing further north to this study area would offer more long-term value to the traveling public.



2. Methodology

The consultant team was selected to provide engineering services to complete a PEL Study in accordance with FHWA regulations and guidelines.

The initial study scoping meeting was held between the consultant team and the KYTC multi-disciplinary project team in October 2022. A follow-up environmental scoping meeting was held with KYTC DEA to specify the level of environmental reviews completed for the PEL.

2.1. PEL Scope

What was the scope of the PEL study and the reason for completing it?

Given the known environmental resources within the study area, the study was completed as a PEL to take a collaborative and integrated approach to the transportation decision-making process by considering the potential environmental benefits and impacts during the planning phase.

This PEL study process followed FHWA PEL guidance regarding the integration of transportation planning documentation to be incorporated into the future NEPA process. Specifically, the study process included the following,

- Pursuant to 23 United States Code (USC) Section 168, this planning study was developed through a process conducted pursuant to applicable Federal law.
- This planning study was developed in consultation with the appropriate Resource Agencies.
- The planning process included broad multidisciplinary consideration of regional transportation needs and potential effects, including effects on the human and natural environment.
- The planning process included public notice that the resulting planning study recommendations may be adopted during a subsequent environmental review process in accordance with Section 168.
- The planning documents will be made available for public review and comment.

Specifically, the PEL study scope included,

- Collecting, summarizing, and verifying existing data to create an inventory of roadway items and possible constraints.
- Identifying project study goals and developing draft purpose and need statement.



- Identifying, developing, screening, and refining multiple potential Ohio River crossings.
- Conducting traffic forecasting.
- Conducting public, stakeholder, and resource agency coordination activities.
- Reviewing the human and environmental resources and identifying potential issues, impacts, and mitigation requirements
- Clearly documenting all analyses, findings, and decisions in a technical report.

2.2. PEL Language

Did you use NEPA-like language? Why or why not?

NEPA-like language is used in this planning-level document to enhance its usefulness as a resource and to enable its further development during the NEPA process.

2.3. PEL Terminology

What were the actual terms used and how did you define them? (Provide examples or list)

Purpose and Need: The purpose and need statement identifies the merits of the project. By defining why the expenditure of public funds is necessary and worthwhile, the statement allows decision makers to weigh the proposed action against the potential impacts.

Alternative Concepts: Potential Build and No-Build options within the study area.

Logical Termini: A project's logical termini are rational end points for a transportation improvement (typically points of major traffic generation at intersecting roadways).

2.4. PEL Language & Terminology in NEPA

How do you see these terms being used in NEPA documents?

Purpose and Need: The study goals and objectives would inform a future project's purpose and need statement, which may evolve from the draft statement provided in [Section 5.2](#).

Alternative Concepts: The planning phase screening process of the alternative concepts could be referenced in a future NEPA document.



Logical Termini: The justification for the logical termini could be used in a future NEPA document.

2.5. PEL Decision-making Process

What were the key steps and coordination points in the PEL decision-making process? Who were the decision-makers and who else participated in those key steps? For example, for the corridor vision, the decision was made by state DOT and the local agency, with buy-in from FHWA, the USACE, and USFWS and other resource/regulatory agencies.

KYTC and its partners engaged key stakeholders, including elected officials in Kentucky and Illinois, regional leaders, resource agencies, economic development parties, and the public to inform study decisions. See [Section 3](#) for a summary of agency and public coordination activities.

KYTC served as the decision-maker, providing guidance via calls, emails, and at the monthly study team coordination meetings. The consultant team provided technical details and professional expertise to facilitate KYTC decision-making.

2.6. PEL Applicability in NEPA

How should the PEL information be presented in NEPA?

In accordance with 23 USC 168,⁵ environmental studies completed during a PEL study may be adopted during a subsequent environmental review process. These studies are intended to inform future analyses and document the project history and decision-making process, particularly regarding the corridor screening process, resource agency coordination, public involvement, and development of the project's purpose and need.

Considering the large study area and high-level planning reviews, future project-specific analyses would be required should a project advance from this study. Environmental documentation developed through this PEL process may be applied to future NEPA documentation within a 5-year period from the approval of this document.

⁵ <https://www.fhwa.dot.gov/map21/docs/title23usc.pdf>



3. Agency Coordination

A *Resource Agency Coordination Plan (RAC Plan)* compliant with USC Title 23 Section 139, the environmental review process as described in FHWA's environmental regulations 23 CFR Section 771, and NEPA requirements was prepared for this PEL.

The goal of the *RAC Plan* was to support efficient environmental reviews for project decision-making and comply with the One Federal Decision Act of 2021 via the following steps:

- Identifying the early agency coordination efforts to minimize potential duplication of planning and NEPA processes.
- Establishing the timing and form of agency involvement.
- Defining the purpose and need for the project.
- Determining the range of alternatives to be investigated.
- Reviewing environmental impact assessment methodologies and findings, as well as informing the study team of potential avoidance, minimization, and mitigation activities, as appropriate.
- Forming a strong line of communication between the study team and Resource Agencies to accelerate any subsequent environmental reviews and permitting processes.

3.1. Agency Coordination Efforts

Provide a synopsis of coordination with Federal, tribal, state and local environmental, regulatory and resource agencies. Describe their level of participation and how you coordinated with them.

The agencies invited to engage throughout the course of the study are listed in Table 5.



Table 5. Resource Agencies

Agency	
Lead	Federal Highway Administration
	Kentucky Transportation Cabinet
Participating Agencies	Barlow House Museum Foundation
	Federal Emergency Management Agency (FEMA)
	Horseshoe Lake State Fish & Wildlife Area
	Illinois Department of Natural Resources (IDNR)
	Illinois Division of Water Resource Management (IDNR/OWR)
	Illinois Environmental Protection Agency
	Illinois Historic Preservation Division
	Illinois State Water Survey
	KDFWR – Boatwright Wildlife Management Area
	Kentucky Department for Environmental Protection
	Kentucky Department of Fish & Wildlife Resources (KDFWR)
	Kentucky Division of Water (KDOW)
	Kentucky Energy and Environment Cabinet
	Kentucky Geological Survey
	Kentucky Heritage Council – Historic Preservation
	National Park Service (NPS)
	Natural Resources Conservation Service (NRCS)
	Pulaski-Alexander Soil & Water
	Purchase Area Development District
	US Army Corps of Engineers (USACE), Regulatory and Property Branches
	US Coast Guard
	US Environmental Protection Agency (USEPA)
	US Fish and Wildlife Service (USFWS)

There were two hybrid RAC meetings and a final online survey effort to review key study findings and provide opportunities for the resource agencies to provide feedback to the study team. Prior to the RAC meetings, FHWA was engaged to review study findings and coordination items. Key coordination milestones include,



- **Existing Conditions Review** (March 2023): The meeting reviewed existing environmental resources with the Resource Agencies and provided an opportunity for Resource Agencies to identify any additional resources and associated environmental requirements.

Forty-three (43) Resource Agency representatives attended. Key information regarding land ownership, mitigation, and funding stipulations within the Boatwright Wildlife Management Area (WMA) was provided. Appropriate contacts and regulating agencies were updated based on feedback. Ecological concerns, archaeological potential, and conservation areas were discussed. This information informed the development of the initial study corridors.

- **Wildlife Management Area Review** (August 2023): An interim meeting with the KDFWR and the USFWS identified additional Boatwright WMA protections to consider.

Eight (8) Resource Agency representatives attended. Funding information was provided to the project team. The process for working through mitigation, public hunting land impacts, ecotourism impacts, and habitat impacts were discussed. Due to the magnitude of impacts, the KDFWR indicated the statutory 1:1 mitigation requirement to offset public hunting land impacts would not likely offset project impacts. Should a project advance, coordination with KDFWR would be needed to determine what level of mitigation would be appropriate.

- **Initial Corridor Concepts Review** (August 2023): This meeting requested Resource Agencies verify the environmental “red flags” and understand the benefits and impacts of the initial corridors.

Fourteen (14) Resource Agency representatives attended. Constructability and flooding concerns were voiced.

After the meeting, the KDFWR shared additional information about the species and unique habitat present, ongoing work within the Boatwright WMA, and serious concern about the potential significant adverse impacts to fish and wildlife, public property, and the sportsmen and women of Kentucky.

The USACE Louisville District Regulatory Division emphasized that a project should minimize impacts to aquatic resources, endangered species, and historic properties as much as possible. It was also noted that other planned area projects may be negatively impacted by the mitigation requirements of a project of this scale.



- **Refined Alternative Concepts Review** (January 2024): This final coordination effort provided Resource Agencies with the public's opinion of the refined corridors and potential impacts. Resource Agencies were asked to provide opinions on the refined conceptual corridors ability to meet the study goals, preferred concept, and any avoidance, minimization, or mitigation efforts to be considered.
 - Of the agencies that commented on final study findings,⁶ most believe the relocation of the Ohio River crossing to the study area would enhance regional mobility but **would not** remain sensitive to environmental resources. Majority preferred the US 51 bridge replacement project advance to construction. About half of the responses noted mitigation for the significant environmental impacts would be challenging, if even feasible. If a corridor were to advance from this study, the Resource Agencies recommended the following avoidance, minimization, and/or mitigation efforts be considered,
 - Outstanding State Resource Waters are present and mussel surveys should be completed for any concepts that advance.
 - Avoidance of the Emergency Watershed Protection Program - Floodplain Easements (EWPP-FPE) held by NRCS.
 - Complete avoidance of the study area was recommended, noting concern for the potential catastrophic negative effects to the ecology, specifically considering the interconnections of the wetland habitat and recreational public lands.
 - Avoidance and minimization of impacts to aquatic resources, wildlife habitat, and historic/cultural resources. Specifically:
 - Endangered Species habitats (forested, wetland, and riparian)
 - Waters of the U.S. (rivers, streams, wetlands)
 - Wetland/waterfowl habitat restoration and mitigation.

The KDFWR expressed serious concerns about a potential corridor within the study area. Noting that many of the significant impacts would be unmitigable.

⁶ Eleven responses were received from agencies representatives of Ballard County Extension Office, Kentucky Department of Fish & Wildlife Resources, Kentucky Division of Water, KYTC DEA, U.S. Army Corps of Engineers, U.S. Department of Agriculture Natural Resources Conservation Service, and U.S. Fish & Wildlife Service



3.2. Transportation Agencies

What transportation agencies (e.g. for adjacent jurisdictions) did you coordinate with or were involved during the PEL study?

The Illinois Department of Transportation (IDOT) was included in key coordination efforts throughout the study process. Although they did not elect to have a representative participate as a member the study team.

In a letter dated December 19, 2023, the IDOT Secretary of Transportation indicated that, "At this time, IDOT has no plans to participate in the funding of the US 60 corridor and Ohio River crossing between Barlow, Kentucky and I-57 north of Cairo."

3.3. Agency Coordination in NEPA

What steps will need to be taken with each agency during NEPA scoping?

Considering the environmental resources present and documented agency concerns, Resource Agencies in Kentucky and Illinois should be engaged during NEPA scoping should a project advance from this study. A Scope Verification Meeting with both Kentucky and Illinois FHWA Divisions would be expected.

4. Public coordination

A *Public Information Plan (PIP)* was developed for this study to establish the goals and strategies for engaging with the public and key stakeholders within and near the study area. Comments and concerns were collected and documented to create an Administrative Record to satisfy PEL guidance.

The goals for study's *PIP* included,

- Communicating the study's goals, benefits, and schedule to stakeholders and the public at-large.
- Responding quickly and clearly to community and stakeholder inquiries and concerns.
- Fostering trust and credibility between the project team, stakeholders and public at-large.
- Identifying and building a master list of project stakeholders and their contact information (i.e. elected officials, local businesses).



- Establishing an inclusive and collaborative relationship with the community and key stakeholders throughout the public involvement process.
- Developing partnering activities to help with gathering information from stakeholders.
- Evaluating potential issues to address specific study concerns and develop solutions.
- Providing forums for the public to learn more about the project, ask questions and share feedback.
- Proactively sharing study/project information and opportunities for educating and gathering input from stakeholders and public at-large.
- Delivering a clear, comprehensive study that has broad public understanding and can inform future decisions on transportation projects in the area.

4.1. Public & Stakeholder Coordination

Provide a synopsis of your coordination efforts with the public and stakeholders.

Public involvement was an integral part of the PEL study, including Local Official/ Stakeholder (LO/S) Coordination meetings, public meetings, and study website updates.⁷

The LO/S identified and invited to engage throughout the study are listed in Table 6.

- **Initial Corridor Concepts Review** (June 2023): Two in-person Local Official Stakeholder (LO/S) meetings were held (one in Kentucky; one in Illinois) to provide an overview of the PEL study and obtain feedback on the potential benefits and impacts of constructing a new US 60 Ohio River crossing in the study area.

Thirty-eight (38) LO/S attended. Concerns about the future of Wickliffe, KY and Cairo, IL were noted as both cities rely on the traffic that currently passes through their communities and they would be bypassed if a new crossing were constructed within the study area and the existing US 51 bridge closed. Attendees also expressed concerns over the potential short and long-term damage that the newly proposed crossing would have on the local environment and ecological systems.

Two representatives expressed support for the newly proposed crossing, citing the potential for economic growth and improved regional mobility.

⁷ us60connectivitystudy.com



- **Refined Alternative Concepts Review** (November 2023): A joint (KY & IL) LO/S meeting was held on November 29, 2023, to review the refined corridor concepts.

Twenty-five (25) LO/S attended. While about half thought a new US 60 connection would enhance regional mobility and economic development, nearly 80% preferred the US 51 bridge replacement project.

Public information meetings were held on November 29, 2023, in Barlow, Kentucky and November 30, 2023, in Cairo, Illinois to share information and solicit input on the study. Collectively, 331 people attended. KYTC received 815 total responses about the project, 83 percent of which were against the idea of relocating the Ohio River crossing from the US 51 corridor to the US 60 study area. Most who submitted comments do not believe the relocation of the Ohio River crossing to this study area would enhance economic development opportunities or regional mobility. Additional qualitative comments against the US 60 Connectivity Study shared common themes concerning local wildlife preservation and recreational use within the study area, 84 percent visit the study area for recreation. Project cost and overall economic impact of the region were also cited as recurring concerns.



Table 6. Local Officials & Stakeholders

Elected Officials		Transportation Agencies	Public Safety & Emergency Responders	Business & Tourism Organizations, Recreation Clubs, & Interested Parties
Kentucky	Illinois	Kentucky	Kentucky	Kentucky
Ballard County Attorney	Alexander County Assessor	Ballard County Road Department	Ballard County EMS	Ballard County Chamber of Commerce
Ballard County Fiscal Court	Alexander County Board Chairman	Ballard County Schools	Ballard County Office of Emergency Management	Ballard County Economic Development and Industrial Boards
Ballard County Judge/Executive	Alexander County Board Members	Ballard County Senior Citizens	Ballard County Sheriff	Ballard County Extension Office
Ballard County PVA	Alexander County Board Vice Chairman	Barkley Regional Airport	Barkley Regional Airport Police	Davis Brothers & Heritage Farms
Barlow City Clerk	Alexander County Circuit Clerk	KYTC District 1	Barlow City Fire House	Flint Land Company
Barlow City Council	Alexander County Clerk	Midwest Aviation	Kentucky State Police	Go Capitol
Governor of Kentucky	Alexander County State Attorney	P&L Railroad	Kevil Fire Department	Grassy Lake Hunting Club
Kentucky State House	Alexander County Treasurer	Paducah Area Transit	LaCenter Fire Department	Green Timber Duck Club
Kentucky State Senate	Cairo City Council	Purchase Area Development District	LaCenter Police Department	Kentucky Hillbilly BBQ
Kentucky U.S. Senator	Governor of Illinois	Western Kentucky Riverport	LaCenter Rural Fire Department	Illinois
Kevil City Clerk	Illinois State House	Illinois	McCracken County Office of Emergency Management	Cairo Chamber of Commerce
Kevil City Council	Illinois State Senate	Alexander County Highway Department	Paducah Fire Department	Cairo Economic Development
LaCenter City Clerk	Illinois U.S. Senator	Alexander County Schools	Wickliffe Fire Department	
LaCenter City Commissioner	Mayor of Cairo	Alexander Railroad Company	Wickliffe Police Department	
Mayor of Barlow	Mayor of Mound City	Alexander-Cairo Port District	Illinois	
Mayor of Kevil	Mayor of Mounds	American Commercial Barge Line	Alexander County Emergency Management	
Mayor of LaCenter	U.S. Congress, Illinois District 12	Cairo Public Utility	Alexander County EMS	
Mayor of Paducah	Missouri	Cairo Regional Airport	Alexander County Sheriff	
Mayor of Wickliffe	Mayor of Charleston	Cairo School District	Alexander County Sheriff's Department	
Mayor Pro Tem of Paducah		IDOT Region 5	Cairo Auxiliary Fire Department	
McCracken County Fiscal Court		Murphy's Trucking	Cairo Police Department	
Paducah City Commissioners		Shawnee Terminal Railway Co	City of Cairo Fire Department	
U.S. Congress, Kentucky District 1		Southern Five Regional Planning District & Development Commission	Horseshoe Lake Volunteer Fire Department	
Wickliffe City Attorney		Waterfront Services Co	Mounds Fire Department	
Wickliffe City Clerk		Missouri	Olive Branch Police Department	
Wickliffe City Council		Missouri Department of Transportation	Tamms Fire Department	



5. Purpose and Need for the PEL Study

Since the study area intersected a highly environmentally sensitive area, the study was completed as a *PEL* to take a more thorough review at the planning level.

5.1. Reason for Completing PEL

What was the scope of the PEL study and the reason for completing it?

South of the study area is the existing 86-year-old narrow two-lane structure carrying US 51, US 60, and US 62 across the Ohio River between Wickliffe, Kentucky and Cairo, Illinois. The US 51 Bridge Replacement Project (Item No. 1-1140)⁸ would replace the crossing immediately north of its current alignment. As the US 51 project has advanced, questions have arisen concerning whether a more northern Ohio River crossing might provide advantages over the currently proposed crossing location.

Because major river crossings are generational projects and remain in service for many decades, the US 60 Connectivity Study was conducted to determine if relocating the Ohio River crossing to the study area would offer more long-term value to the traveling public.

5.2. Draft Purpose & Need Statement, Study Goals & Objectives

Provide the purpose and need statement, or the corridor vision and transportation goals and objectives to realize that vision.

The **goals** of a project within the US 60 Connectivity Study area are to:

- Enhance Regional Mobility
- Provide Economic Development Opportunities
- Remain Sensitive to Environmental Resources

The **purpose** of the US 60 Connectivity project is to improve regional mobility by providing a more direct east-west cross-river corridor between I-24 in Kentucky and I-57 in Southern Illinois.

⁸ <https://us51bridge.com/>



Insufficient east-west mobility supports the **need** for this project.

See the *PEL Environmental Technical Report, Section 3* for additional information supporting these statements.

5.3. Future Steps for Project-level Purpose & Need Statement

What steps will need to be taken during the NEPA process to make this a project-level purpose and need statement?

The draft purpose and need statement developed can be used as a project-level purpose and need statement. As it is a living statement until a NEPA document is signed, additional information from engineering studies, local officials, and/or the public should further inform the development of this statement at the project level.

6. Range of alternatives

Planning teams need to be cautious during the alternative screen process; alternative screening should focus on purpose and need/corridor vision, fatal flaw analysis, and possibly mode selection. This may help minimize problems during discussions with resource agencies. Alternatives that have fatal flaws or do not meet the purpose and need/corridor vision will not be considered reasonable alternatives, even if they reduce impacts to a particular resource. Detail the range of alternatives considered, screening criteria, and screening process, including:

See the *PEL Environmental Technical Report, Section 4* for additional information on the alternative concepts considered.

6.1. Alternative Types

What types of alternatives were looked at? (Provide a one or two sentence summary and reference document.)

Build and No-Build alternative concepts were considered to compare with the ongoing US 51 bridge replacement project (1-1140) south of the *PEL* study area.

6.2. Screening Process

How did you select the screening criteria and screening process?

The study team selected the screening criteria and process based on the study's goals



and objectives. Environmental resources, including land ownership, conservation easements, and restrictive laws were considered along with local official and resource agency input. Tier 2 corridors were refined to avoid or minimize potential impacts to as many areas of concern as possible.

6.3. Alternatives Not Advanced

For alternative(s) that were screened out, briefly summarize the reasons for eliminating the alternative(s) (During the initial screenings, this generally will focus on fatal flaws).

No alternatives were screened out. Initial Tier 1 corridors were combined and refined to Tier 2 concepts which strived to avoid environmental resources. Tier 2 concepts could still be considered. However, given the myriad environmental challenges, opposition from IDOT, and the \$1.3 billion needed to construct a project within the US 60 study area, KYTC has not recommended funding future phases of this project in *Kentucky's FY 2024 – FY 2030 Recommended Highway Plan*.⁹

6.4. Alternatives Advanced to NEPA

Which alternatives should be brought forward into NEPA and why?

Should a project advance from this study, both Tier 2 concepts should be brought forward into the NEPA process. They are viable options that could meet the draft purpose and need statement.

6.5. Alternatives Engagement Opportunities

Did the public, stakeholders, and agencies have an opportunity to comment during this process?

Yes, see [Section 3](#) and [Section 4](#) for details on the public, stakeholder, and agency coordination process.

6.6. Alternatives Unresolved Issues

Were there unresolved issues with the public, stakeholders, and/or agencies?

⁹ <https://transportation.ky.gov/Program-Management/Pages/2024-Recommended-Highway-Plan.aspx>



Yes, environmental regulatory issues were identified through resource agency coordination. Many noted mitigation for the significant environmental impacts would be challenging, if even feasible. Working with these agencies through the NEPA process would be crucial.

The majority of the public and stakeholders preferred the US 51 bridge replacement project (1-1140) over a potential corridor through this *PEL* study area. Many noted serious environmental (natural and human environment) concerns.

IDOT has indicated strong opposition to a project through this study area, including potential Environmental Justice (EJ) impacts to Cairo. At this time, they've indicated they have no interest in helping fund a US 60 corridor and Ohio River crossing between Barlow, Kentucky and I-57 north of Cairo.

7. Planning Assumptions and Analytical Methods

Traffic forecasts were developed based on population trends, historical traffic data, a sub-area traffic assignment model, and economic analysis. Planning assumptions and analytical methods are further explained in the *Traffic Forecasting Technical Report and Economic Analysis Report*, which are included as Appendix A of the final report.

7.1. Forecast Year

What is the forecast year used in the PEL study?

2045

7.2. Forecasting Methodology

What method was used for forecasting traffic volumes?

In order to assess the impacts to travel demand for a new US 60 Ohio River crossing, a special "sub-area traffic assignment model was developed from data derived from the Kentucky Statewide Traffic Model (KYSTM) and the Illinois Statewide Travel Demand Model (ISTDM). Ultimately, the traffic forecasts were developed based on population trends, historical traffic data, the sub-area traffic assignment model, and economic analysis.



7.3. Consistency with Long-range Transportation Plan

Are the planning assumptions and the corridor vision/purpose and need statement consistent with each other and with the long-range transportation plan? Are the assumptions still valid?

The planning assumptions and corridor vision/purpose and need statement are consistent with each other and the long-range transportation plan and remain valid.

The 2045 network in the subarea model included planned and committed projects from Kentucky, Illinois, and Missouri. Examples include the planned reconstruction of approximately six miles of US 60 from the existing four-lane section near the Ballard/McCracken County line to just east of LaCenter. These projects are listed in Kentucky's 2022-2028 Enacted Highway Plan.

- Item No. 115.0 – Paducah–Wickliffe Road: improve US 60 from Stafford Road to Bethel Church Road (Construction = \$10 million)
- Item No. 1-118.0 – Improve US 60 from Humphrey Creek bridge to 0.4 mile west of Hester Sullivan Road (Right-of-Way Acquisition = \$4.4 million, Utility Relocations = \$10 million, Construction = \$9 million).

7.4. Future Year Assumptions

What were the future year policy and/or data assumptions used in the transportation planning process related to land use, economic development, transportation costs, and network expansion?

Based on a review and comparison of future year socioeconomic projections between the Kentucky Statewide Traffic Model (KYSTM) and the Illinois Statewide Travel Demand Model (ISTDM), it was determined that the ISTDM was best suited for reflecting future year forecast trends outside Kentucky while the KYSTM was best suited for reflecting future year forecast trends inside Kentucky. Socioeconomic data from the KYSTM was used for the Kentucky zones and data from the ISTDM was used for the Illinois and Missouri zones.

An Economic Analysis was also completed to identify potential direct and indirect benefits to the local economies and population that would likely result from the proposed US 60 crossing. This analysis considered regional trends and projections of population and employment, and differences between traffic assignments of the two crossing location scenarios from the subarea model. It also reviewed changes in the



pattern of economic development near Maysville, Kentucky before and after the construction of the new US 68 Ohio River bridge in 2000. While the analysis provided estimated changes in population and employment for each of the Traffic Analysis Zones (TAZs) from the subarea model in its analysis area, the overall assessment of the analysis is that by 2045, a new crossing in the US 60 corridor would result in an approximate four percent increase in population and employment in the region, as compared to the baseline population and employment associated with the existing crossing location.

8. Environmental Resources Reviewed

For each resource or group of resources reviewed, provide the following:

See the ***PEL Environmental Technical Report*** for additional information on the environmental review process completed for the PEL Study. The ***PEL Environmental Technical Report*** identifies potential benefits and impacts (direct and indirect) to environmental resources and provides recommendations for future avoidance, minimization, and/or mitigation efforts that could influence the environmental and overall decision-making process.

8.1. Resources Review

In the PEL study, at what level of detail was the resource reviewed and what was the method of review?

In the PEL study, Geographic Information System (GIS) databases, research, windshield surveys, and limited field assessments within accessible areas of public-owned right-of-way were performed to identify environmental resources within the study area.

The specific environmental reviews completed for the study area include,

- ***PEL Environmental Technical Report***
 - ***Socioeconomic Analysis***
 - ***Ecological Report***
 - ***Cultural Resources Literature Review and Archaeological Overview***
 - ***Phase I Environmental Site Assessment***

Project-specific analyses would be required should a project advance from this study.



See Table 7 for a summary of the resources reviewed and method of review.

8.2. Resource Impacts

Is this resource present in the area and what is the existing environmental condition for this resource?

See Table 7 for details on potential resources present in the study area.

8.3. Future Resource Considerations

What are the issues that need to be considered during NEPA, including potential resource impacts and potential mitigation requirements (if known)?

See Table 7 for a summary of potential resource impacts and future project recommendations to be considered should a Build concept advance beyond the planning phase.

Future recommendations are provided for planning purposes only, a Scope Verification Meeting with both Kentucky and Illinois FHWA Divisions would be expected to accurately determine the level of analysis required for each resource type. Resource Agencies should be included in scoping needs for their respective review areas.

See [Section 11](#) and *PEL Environmental Technical Report, Section 7.7* for potential mitigation considerations. See *Ecological Report, Section 6.2* for mitigation assumptions.

See [Section 13](#) for other potential issues to be considered during NEPA.



Table 7. Environmental Resources Reviewed

Resource	Method of Review	Present in Study Area	Future Recommendations
Air Quality	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.8.1</i> • <i>PEL Environmental Technical Report, Section 5.3</i> 	Yes—in attainment for all criteria pollutants.	<ul style="list-style-type: none"> • Project would need to be included in both Kentucky and Illinois' Statewide Transportation Improvement Programs (STIP). • An <i>Air Quality Impact Analysis</i>, including at least qualitative Mobile Source Air Toxics (MSAT) analysis would be expected. A quantitative Greenhouse Gas (GHG) & Climate Change Impact Analysis would likely be required.
Archaeology	<ul style="list-style-type: none"> • <i>Cultural Resources Literature Review and Archaeological Overview</i> • <i>PEL Environmental Technical Report, Section 5.6</i> 	Likely—there is a moderate to high probability for both prehistoric and historic archaeological sites to be identified within the area that could be determined to be eligible for listing in the National Register of Historic Places (NRHP).	<ul style="list-style-type: none"> • A project site specific survey, report, determination of eligibility and effects, and coordination with the respective State Historic Preservation Officers (SHPO) would be required to fully assess potential impacts. • There is high potential for Phase II Archaeology Testing and Phase III Data Recovery.
Native American	<ul style="list-style-type: none"> • <i>PEL Environmental Technical Report, Section 5.6</i> 	Likely—a section of the Trail of Tears National Historic Trail runs through the study area.	<ul style="list-style-type: none"> • Tribal Consultation would likely be required during the NEPA process.
Cemeteries	<ul style="list-style-type: none"> • <i>Cultural Resources Literature Review and Archaeological Overview</i> • <i>PEL Environmental Technical Report, Section 5.6</i> 	Yes—none identified within conceptual corridors.	<ul style="list-style-type: none"> • Field assess to verify.
Community	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.4, 3.6, & 6.1</i> • <i>PEL Environmental Technical Report, Section 5.2</i> 	Yes—within and adjacent to study area. The travel distances may be shortened for some, lengthened for others, or bypassed completely.	<ul style="list-style-type: none"> • <i>Community Impact Assessment</i> is recommended to further assess potential impacts to Environmental Justice (EJ) communities. • If community resources are displaced, a goal should be to relocate within the existing community.
Construction Impacts	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Sections 3.4, 3.6, & 6.1</i> • <i>PEL Environmental Technical Report, Section 5.11</i> 	Yes—construction activities would have both positive and negative impacts to consider.	<ul style="list-style-type: none"> • Construction phasing should be coordinated with the barge industry to ensure safe passage during construction of an Ohio River crossing. • Construction phasing should be coordinated with the KDFWR and USFWS since much of the area serves as wildlife refuge from mid-October to mid-March. • Construction phasing and activities should plan for adverse weather patterns, the area is frequently flooded. • Minimize impacts to the extent practicable, in accordance with KYTC and IDOT standards and specifications, and best management practices.
Cultural Historic	<ul style="list-style-type: none"> • <i>Cultural Resources Literature Review and Archaeological Overview</i> • <i>PEL Environmental Technical Report, Section 5.6</i> 	Yes—there are NRHP listed and potentially eligible sites.	<ul style="list-style-type: none"> • A project site specific survey, report, determination of eligibility and effects, and coordination with the respective SHPOs would be required to fully assess potential impacts should a Build alternative advance.



Resource	Method of Review	Present in Study Area	Future Recommendations
Ecological	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4</i> • <i>PEL Environmental Technical Report, Section 5.5</i> 	Yes—the study area intersects an ecologically rich area.	<ul style="list-style-type: none"> • A <i>Biological Assessment</i> would likely be required. Adverse effects would be anticipated, and a <i>Biological Opinion</i> would also likely be required. • Seasonal survey restrictions and hunting seasons would affect field assessment timeframes.
Ecotourism Impacts	<ul style="list-style-type: none"> • <i>Ecological Report, Section 6.5</i> • <i>PEL Environmental Technical Report, Section 5.5.5</i> 	Yes—the ecology and recreational opportunities in the study area provide ecotourism benefits. The significant alteration or loss of major aquatic habitat features within the study area could impact the ecotourism value of the area.	<ul style="list-style-type: none"> • Ecotourism impacts should be further quantified and considered.
Human Disturbance Impacts	<ul style="list-style-type: none"> • <i>Ecological Report, Section 6.4</i> • <i>PEL Environmental Technical Report, Section 5.5.5</i> 	Yes—human disturbance in this primarily undisturbed area would aid in deforestation and habitat fragmentation within the region. This could possibly result in species' abandonment of area. A new roadway would increase the risk of vehicular wildlife collisions. Roadside debris, trash, and maintenance agents (salts, pesticides, etc.) would be harmful to the species and habitats.	<ul style="list-style-type: none"> • The indirect and cumulative human disturbance impacts should be further considered.
Migratory Birds	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.1.5, 5.1.2, & 6.1.2</i> • <i>PEL Environmental Technical Report, Section 5.5.2</i> 	Yes—the Boatwright WMA serves as waterfowl refuge mid-October to mid-March, three eagle nests were identified in the study area.	<ul style="list-style-type: none"> • Plane flyover would be recommended to identify nests. • There is high potential an avian 'take' permit would need to be acquired from the Secretary of the Interior via the USFWS Atlanta Office. • Coordination with KDFWR's avian staff is often required for development of avoidance and minimization measures or requests for a permit to take in regard to any bird species in Kentucky.
Threatened & Endangered Species	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4, 5.1, 5.2, 6.1, & 6.2</i> • <i>PEL Environmental Technical Report, Section 5.5.1</i> 	Yes—there are federally-listed threatened and endangered species, state-listed species, and species of greatest conservation concern within the study area.	<ul style="list-style-type: none"> • Initial bathymetric survey may assist in identification of habitat potential and help guide the technical mussel survey. Ohio River tributaries and connected backwater sloughs may serve as suitable habitat conditions for freshwater mussels. • A <i>Biological Assessment</i> would likely be required. Adverse effects would be anticipated, and a <i>Biological Opinion</i> would also likely be required. • Seasonal survey restrictions and hunting seasons would affect field assessment timeframes. • Consider both State's Wildlife Action Plans and lists of Species of Greatest Conservation Need.
Environmental Justice	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 4</i> • <i>PEL Environmental Technical Report, Section 5.2.3, 7.3, & 7.7.2</i> 	Yes—there are both low-income and minority populations present within and adjacent to the study area.	<ul style="list-style-type: none"> • An <i>Environmental Justice Impact Analysis</i> would be recommended to fully assess potentially disproportionately high and adverse impacts. • Enhanced EJ public involvement should be conducted to engage these persons and better understand impacts.
Hazardous Materials	<ul style="list-style-type: none"> • <i>Phase I Environmental Site Assessment (ESA)</i> 	Yes—potential hazmat sites were identified within the study area.	<ul style="list-style-type: none"> • While a <i>Phase I ESA</i> has been completed for the study area, the project area should be reevaluated to better identify sites/properties of concern that may need further investigation.
Land Use	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3 & 6.4</i> • <i>PEL Environmental Technical Report, Section 5.1</i> 	Yes—land use impacts in the study area would be significant. Much of the study area is preserved for recreational or conservation purposes.	<ul style="list-style-type: none"> • Continued resource agency and public coordination would be required to further understand impacts and identify mitigation measures.



Resource	Method of Review	Present in Study Area	Future Recommendations
Commercial	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3.2</i> • <i>PEL Environmental Technical Report, Section 5.1.6</i> 	Yes—there are businesses within and adjacent to the study area that would be directly and indirectly impacted. Commercial businesses that benefit from pass through traffic in communities that would be bypassed would likely be adversely affected.	<ul style="list-style-type: none"> • A <i>Community Impact Assessment</i> and <i>Environmental Justice Analysis</i> would be recommended to better assess the indirect business impacts to communities that may be bypassed.
Farmland	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3.2</i> • <i>PEL Environmental Technical Report, Section 5.1.5</i> 	Yes—farmland impacts would be unavoidable in this primarily rural, undeveloped area.	<ul style="list-style-type: none"> • Formal consultation with the USDA-NRCS would be required.
Protected Lands	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.3, 5.3, & 6.3</i> • <i>Socioeconomic Analysis, Section 3.3</i> • <i>PEL Environmental Technical Report, Section 5.1</i> 	Yes—there are many protected properties within the study area. The Build corridors have been designed to avoid all, except the Boatwright WMA. Impacts to the WMA would be unavoidable.	<ul style="list-style-type: none"> • Continued avoidance of protected properties (aside from the Boatwright WMA) would be recommended. • A <i>Community Impact Assessment</i> would be recommended to further assess impacts to protected recreational areas.
Axe Lake Swamp State Nature Preserve	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.3.2</i> • <i>Socioeconomic Analysis, Section 3.3</i> 	Yes—Build corridors have been designed to avoid impacting this property.	<ul style="list-style-type: none"> • Continued avoidance of impacting this property would be recommended.
Barlow City Park	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3</i> 	Yes—Build corridors have been designed to avoid impacting this property.	<ul style="list-style-type: none"> • Continued avoidance of impacting this property would be recommended.
Boatwright Wildlife Management Area	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.3.1, 5.3, & 6.3</i> • <i>Socioeconomic Analysis, Section 3.3</i> • <i>PEL Environmental Technical Report, Section 5.1.1, 5.1.2, 7.7.3, & 7.7.4</i> 	Yes—the Boatwright WMA intersects the entire central portion of the study area, impacts would be unavoidable.	<ul style="list-style-type: none"> • Continued coordination with the KDFWR to identify minimization and mitigation measures. • A <i>Community Impact Assessment</i> would be recommended to further assess impacts to the recreational community—this area serves as a regional public hunting land and fishing destination. It also provides passive recreational opportunities. • Ecotourism, indirect, and cumulative impacts should be further assessed. • Designated areas within the Boatwright WMA serve as waterfowl refuge from mid-October to mid-March; field surveys should be planned around the seasonal survey considerations identified in Figure 2.
Cypress Creek National Wildlife Refuge	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.3.3</i> • <i>Socioeconomic Analysis, Section 3.3</i> 	Yes—Build corridors have been designed to avoid impacting this property.	<ul style="list-style-type: none"> • Continued avoidance of impacting this property would be recommended.
IDNR Property	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3</i> 	Yes—Build corridors have been designed to avoid impacting this property.	<ul style="list-style-type: none"> • Continued avoidance of impacting this property would be recommended.
NRCS Emergency Watershed Protection Programs – Floodplain Easements	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.3.4</i> • <i>Socioeconomic Analysis, Section 3.3</i> 	Yes—Build corridors have been designed to avoid impacting this property.	<ul style="list-style-type: none"> • Continued avoidance of impacting this property would be recommended.



Resource	Method of Review	Present in Study Area	Future Recommendations
NRCS Wetlands Reserve Program	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.3.4</i> • <i>Socioeconomic Analysis, Section 3.3</i> 	Yes—Build corridors have been designed to avoid impacting this property.	<ul style="list-style-type: none"> • Continued avoidance of impacting this property would be recommended.
USACE-Owned Lands	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3</i> • <i>PEL Environmental Technical Report, Section 7.6.5</i> 	Yes—Build corridors have been designed to avoid impacting this property.	<ul style="list-style-type: none"> • Continued avoidance of impacting this property would be recommended.
Public Hunting Lands	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3</i> • <i>PEL Environmental Technical Report, Section 5.1.1, 7.4, & 7.7.4</i> 	Yes—the entire Boatwright WMA is public hunting lands.	<ul style="list-style-type: none"> • Continued coordination with the KDFWR to identify mitigation opportunities in accordance with KRS 150.0241.¹⁰ • Ecotourism impacts should be further quantified and considered.
Section 4(f)	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3, 3.4.8, & 6.4</i> • <i>PEL Environmental Technical Report, Section 5.1.2, 5.6, 5.7, 7.1, & 7.7.3</i> 	Yes—the entirety of the Boatwright WMA is protected by Section 4(f). There is also potential to identify NRHP eligible properties that would also be protected. Other Section 4(f) properties in the study area include Barlow Park, Axe Lake Swamp State Nature Preserve, and Cypress Creek National Wildlife Refuge.	<ul style="list-style-type: none"> • Should a future project utilize federal transportation dollars, Section 4(f) would apply. An <i>Individual Section 4(f) Evaluation</i> would be anticipated. This documentation requires legal sufficiency review by FHWA's legal counsel and the finalization of a NEPA document could not proceed without FHWA approval. • The added time to navigate this process should be accounted for in project schedules. • Continued avoidance of impacts to Barlow Park, Axe Lake Swamp State Nature Preserve, and Cypress Creek National Wildlife Refuge. • Continued coordination with the KDFWR to identify minimization and mitigation measures.
Section 6(f)	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3</i> • <i>PEL Environmental Technical Report, Section 5.8</i> 	Yes—the Cypress Creek National Wildlife Refuge received Land & Water Conservation Fund (LWCF) monies. Build corridors have been designed to avoid impacting this property.	<ul style="list-style-type: none"> • Continued avoidance of impacting this property would be recommended. • Direct coordination with the Department of Local Government would need to occur to verify this is the only Section 6(f) property.
Residential	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.3.3</i> • <i>PEL Environmental Technical Report, Section 5.1.7</i> 	Yes—residential relocations would likely be required. Relocations could be members of an EJ community. Residential clusters may also be present.	<ul style="list-style-type: none"> • A <i>Community Impact Assessment</i> and <i>Environmental Justice Analysis</i> would be recommended to better assess potential impacts.
Noise	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.8.2</i> • <i>PEL Environmental Technical Report, Section 5.4</i> 	Yes—There are noise sensitive receptors in the vicinity of potential corridors.	<ul style="list-style-type: none"> • Should a future project utilize federal transportation dollars, it would be considered a Type I project and require a <i>Traffic Noise Impact Analysis</i>. • FHWA's <i>Synthesis of Noise Effects on Wildlife Populations</i> should be considered.¹¹

¹⁰ <https://apps.legislature.ky.gov/law/Statutes/statute.aspx?id=52187>

¹¹ https://www.fhwa.dot.gov/environment/noise/noise_effect_on_wildlife/



Resource	Method of Review	Present in Study Area	Future Recommendations
Visual Resources	<ul style="list-style-type: none"> • <i>Socioeconomic Analysis, Section 3.7</i> • <i>PEL Environmental Technical Report, Section 5.10</i> 	Yes—rural residential areas and the Boatwright WMA would likely have visual impacts.	<ul style="list-style-type: none"> • Assess the potential impacts to visually sensitive areas, including indirect and cumulative impacts to species that currently flock to this mostly undisturbed area.
Waters	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.2, 4.4, 5.2, & 6.2</i> • <i>Socioeconomic Analysis, Section 3.8</i> • <i>PEL Environmental Technical Report, Section 5.5.4 & 7.6</i> 	Yes—the study area intersects several water sources. The area is commonly referred to as Barlow Bottoms and is frequently flooded (nearly 400 acres of swamp/marsh fall within the study area). In addition to the Ohio River, there is an abundance of water resources within the study area.	<ul style="list-style-type: none"> • Avoid, minimize, and reduce impacts where possible. • Significant mitigation costs should be anticipated. • Several permits would be required and the review processes should be accounted for in project scheduling. • Early field delineation and jurisdictional determination submitted to the USACE Louisville District Office could help to better assess potential impacts, mitigation options, and permits. • A USACE Section 404 and Section 10 permit would be required. • A Section 408 permit may also be required if a project would impact a Civil Works project or USACE-owned lands. • A US Coast Guard Bridge Permit would be required. The US Coast Guard would comment on the construction phasing and timeline. • Section 401 permits from KDOW and IDNR/OWR would be required. Note: The Clean Water Act (CWA) Interstate/Neighboring Jurisdictional review process adds time and either state could object to issuance of the license or permit and request a public hearing. It is recommended the KDOW and IDNR/OWR be made aware of the full project scope. • A Stormwater Pollution Prevention Plan (SWPPP), including an erosion and sediment control plan would be required. This plan requires submission and approval by KDOW and IDNR.
Streams	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.2.1, 5.2.1, 6.2.1 & 7</i> • <i>PEL Environmental Technical Report, Section 5.5.4 & 7.7.1</i> 	Yes—there are many mapped streams within the study area and project impacts would likely be significant.	<ul style="list-style-type: none"> • Avoid, minimize, and reduce impacts where possible. • Significant mitigation costs should be anticipated. • Check for new mitigation tools and guidelines—Kentucky is currently in initial development of a Kentucky-specific Stream Qualification Tool (SQT).
Wetlands	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.2.1, 5.2.1, 6.2.1 & 7</i> • <i>PEL Environmental Technical Report, Section 5.5.4 & 7.7.1</i> 	Yes—there are many mapped wetlands within the study area and project impacts would likely be significant.	<ul style="list-style-type: none"> • Avoid, minimize, and reduce impacts where possible. • Significant mitigation costs should be anticipated. • Based on current regulatory programs, acquisition of sufficient compensatory mitigation for the anticipated volume of wetland impacts would be difficult to identify and coordinate.
Open Waters, Lakes, and Ponds	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.2.1, 5.2.1, & 6.2.1</i> • <i>PEL Environmental Technical Report, Section 5.5.4</i> 	Yes—there are many mapped open waters, lakes, and pond within the study area and project impact would be likely.	<ul style="list-style-type: none"> • Avoid, minimize, and reduce impacts where possible. • Significant mitigation costs should be anticipated. • Field assess to determine if any open waters, lakes, ponds, or reservoirs provide potential wetland fringe features.
100-Year Floodplain	<ul style="list-style-type: none"> • <i>Ecological Report, Section 4.2.1, 5.2.1, & 6.2.1</i> • <i>PEL Environmental Technical Report, Section 5.5.4</i> 	Yes—about 70% of the study area is within FEMA's floodplains.	<ul style="list-style-type: none"> • A substantial length of the approach roadway within Kentucky would need to be constructed on structure to avoid raising the floodplain in the area.



8.4. Use PEL Data in NEPA

How will the planning data provided need to be supplemented during NEPA?

Considering the environmental resources present, the potential for significant adverse impacts to the human and natural environment, and known public opposition, should a project advance from this study, the level of NEPA documentation is anticipated to be an Environmental Impact Statement (EIS), likely resulting in a Record of Decision (ROD). Future NEPA reviews would require additional field assessments. Additional resources would likely be identified beyond those currently known. Supporting NEPA documentation would likely include:

- Environmental Justice and Community Impact Analysis
- Air Quality Impact Analysis, including:
 - Qualitative Mobile Source Impact Analysis
 - Quantitative Greenhouse Gas and Climate Change Impact Analysis
- Traffic Noise Impact Analysis
 - Traffic Noise Impact to Wildlife Considerations
- Biological Assessment, likely resulting in a Biological Opinion
- Waters of the US Jurisdictional Determination
- Phase I Archaeology Survey. Considering the area's rich history and known sites, there is high potential for:
 - Phase II Archaeology Testing
 - Phase III Data Recovery
- Historic Architectural Eligibility and Effects Analysis
- Individual Section 4(f) Evaluation
- Reevaluation of the UST Phase I Environmental Site Assessment

A Scope Verification Meeting with both Kentucky and Illinois FHWA Divisions would be expected. Resource Agencies should be included in scoping needs for their respective review areas.



9. Environmental Resources Not Reviewed

List environmental resources you are aware of that were not reviewed in the PEL study and why. Indicate whether or not they will need to be reviewed in NEPA and explain why.

Planning-level reviews were completed for all known environmental resources as detailed in Table 7 within the study area.

See [Section 8.4](#) for details on the anticipated NEPA reviews.

10. Cumulative Impacts

Were cumulative impacts considered in the PEL study? If yes, provide the information or reference where the analysis can be found.

Yes, see [PEL Environmental Technical Report, Section 7.5](#). Cumulative impacts would be anticipated from a project within the study area.

A future project would need to further consider potential impacts, especially with respect to the Boatwright WMA.

11. Mitigation Strategies

Describe any mitigation strategies discussed at the planning level that should be analyzed during NEPA.

Various mitigation measures would likely be required for unavoidable adverse effects. They should be identified through coordination with governing resources agencies, representatives, and impacted persons/properties.

Some suggested minimization and mitigation measures for a future project to consider are provided in [PEL Environmental Technical Report, Section 7.7](#).

Mitigation for a project of this scale and quantity of anticipated adverse environmental impacts would be substantial and could not be fully estimated at the planning level. Mitigation would likely be required to offset adverse impacts to public hunting lands, the Boatwright WMA, ecotourism, Section 7 threatened and endangered species, NRHP-eligible properties, environmental justice populations, and waters of the US.



12. PEL Documentation Sharing

What needs to be done during NEPA to make information from the PEL study available to the agencies and the public? Are there PEL study products which can be used or provided to agencies or the public during the NEPA scoping process?

The PEL documentation is publicly available on KYTC's website, [KYTC Planning Studies & Reports](#).¹² All study products could be used during the NEPA scoping process.

13. Other issues

Are there any other issues a future project team should be aware of? Examples: Controversy, utility problems, access or ROW issues, encroachments into ROW, problematic land owners and/or groups, contact information for stakeholders, special or unique resources in the area, etc.

Yes, there are several issues a future project team should be aware of as detailed below.

13.1. Controversy

There was notable opposition to a project through this study area from several stakeholders as detailed in [Section 13.5](#) and 83 percent of the public comments.

Enhanced public involvement activities would be expected to navigate known public opposition and the EIS process. A project-specific *Public Involvement Plan (PIP)* would be necessary.

13.2. Utility Problems

In Kentucky, the land use in the study area is primarily undeveloped or agricultural. Illinois is more developed than Kentucky's study area, but no major utility impacts have been identified.

¹² <https://transportation.ky.gov/Planning/Pages/Planning-Studies-and-Reports.aspx?District=District%201#SearchByProject>



13.3. Access

Access for field surveys would likely be challenging. The area is frequently flooded and much of the land is preserved for conservation. Landowners and hunting clubs in the area would likely not be receptive to field crews surveying private property.

13.4. Right-of-Way Issues

There are several right-of-way challenges. Land use impacts would be significant (approximately 200 acres) and much is preserved for recreational and conservation purposes.

Landowners

Landowners have expressed concerns about the project team impeding their property during the data gathering phase and the potential for their property to be taken by the state to construct a new roadway.

Protected Properties – Section 4(f)

Complete avoidance of Section 4(f) properties within the study area is not achievable. Working through this process with the Officials with Jurisdiction would be challenging.

Public Hunting Lands

Per Kentucky Revised Statute (KRS) 150.0241, Kentucky has a “No Net Loss” policy that requires states to “maintain at least the same level of available public hunting land that currently exists;” this includes private owned lands that are managed by the commission.¹³ The statute further stipulates replacement hunting lands shall be expeditiously found, and to the greatest extent possible, be located within the same commission district and consistent with the hunting discipline allowed on the closed land. Finding replacement acreage that meets these stipulations could be challenging. Considering the quantity of potential impacts, early coordination with the KDFWR not 1:1 replacement acreage may not be sufficient to offset the adverse impacts to public hunting lands within the Boatwright-WMA.

Protected Properties – Eminent Domain

According to the Fifth Amendment to the *Constitution of the United States*, the

¹³ <https://apps.legislature.ky.gov/law/Statutes/statute.aspx?id=52187>



government cannot seize private property without just compensation.¹⁴ Kentucky's eminent domain law (KRS 416.540) defines "condemn" as a "means to take private property for a public use...."¹⁵ According to case law, a property already devoted to a public use usually cannot be taken for another public use that will totally destroy or materially impair or interfere with the former use.¹⁶ Thus, because all the protected properties, except the NRCS conservation easements, are publicly owned and it is assumed a roadway through these conservation areas would interfere with the former use, eminent domain could not be exercised to acquire the publicly owned lands.

13.5. Stakeholders

Stated opposition for this project was received from several stakeholder groups including the Illinois Department of Transportation (IDOT), Kentucky Department of Fish and Wildlife Resources (KDFWR), Kentucky Division of Water (KDOW), Western Kentucky Wildlife Association, Ducks Unlimited, mayors from the Disadvantaged Communities of Wickliffe and Cairo, and Director of the Ballard County Chamber of Commerce.

13.6. Special or Unique Resources

Environmental Justice

Early coordination with local officials in Cairo and Wickliffe indicates they believe any Build alternative would adversely affect their communities. Similarly, the Illinois Department of Transportation has indicated concern for a project within this study area to disproportionately affect the EJ community of Cairo, noting its residents rely on the US 51 bridge to reach necessities such as healthcare and gas. Enhanced Environmental Justice (EJ) coordination efforts would be necessary to effectively engage with these populations to better understand impacts.

¹⁴ <https://constitution.congress.gov/constitution/amendment-5/>

¹⁵ <https://apps.legislature.ky.gov/law/statutes/statute.aspx?id=45368>

¹⁶ <https://casetext.com/case/state-ex-rel-md-heights-etc-v-campbell>



Seasonal Survey Restrictions

There are multiple seasonal survey restrictions and hunting seasons which could affect field assessment timeframes as shown in [Figure 2](#). The Boatwright WMA serves as waterfowl refuge from mid-October to mid-March.

Seasonal Considerations for Ecological Surveys:												
	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
Bats	Inactive season					Maternity season				Inactive season		
Fishes				Fish spawning season			Fish survey season					
Mussels				Mussel survey season, temperature dependent								
Migratory Birds			Migratory birds survey season									
Resident Birds	Resident birds survey season (year-round)											
Stream/Wetland	Year-round (growing season preferred)											
Swan Lake Unit	Waterfowl Refuge									Waterfowl Refuge		

Kentucky Hunting Seasons:										*Boatwright WMA hunting allowed Wed-Sun only			
Waterfowl	Various waterfowl									Goose	Teal/ Duck		Various waterfowl
Deer	Deer									Deer			
Turkey				Turkey									
Fishing	Fishing season (year-round)												

Figure 2. Seasonal Survey Considerations

In addition to the Ohio River mainstem, its tributaries and connected backwater sloughs may also serve as suitable habitat conditions for freshwater mussel species. With the large expanse of the Ohio River system, an initial bathymetric survey may assist in identification of habitat potential and help guide the technical mussel survey's distribution of quantitative and qualitative efforts across the landscape to confirm less suitable areas and focus primary efforts towards areas displaying more suitable habitat conditions. With potential for migration between the Ohio River and perennial wetlands in flooding, selection of a survey area would need to be coordinated with the USFWS and may include focus on the Ohio River and its adjacent perennial tributaries.

A plane flyover survey would be recommended to identify all bald eagle nests and egret or heron rookies within the study area or corridor(s).