

NEPA REEVALUATION STATEMENT #1

SECTION 1: KY 425 TO US 60 INTERCHANGE

REVISED INTERCHANGE DESIGN AND MINOR RIGHT-OF-WAY MODIFICATIONS IN HENDERSON COUNTY

JULY 2023







NEPA REEVALUATION STATEMENT #1 FOR

SECTION 1: REVISED INTERCHANGE DESIGN AND MINOR RIGHT-OF-WAY MODIFICATIONS

I-69 Ohio River Crossing Project
Vanderburgh County, Indiana and Henderson County, Kentucky
Designation Number: 1601700; KYTC Item No. 2-1088

The Indiana Department of Transportation (INDOT) and the Kentucky Transportation Cabinet (KYTC) completed a Final Environmental Impact Statement (FEIS) (FHWA-IN-EIS-20210143) and Record of Decision (ROD) for the I-69 Ohio River Crossing (ORX) project, which was approved by FHWA on September 16, 2021. The FEIS/ROD originally described the delivery of the project in two sections, which has been modified to be delivered in three sections at this time. Section 1 corresponds to the work within the Kentucky approach, Section 2 includes work within the Kentucky approach leading to the construction of the new bridge over the Ohio River and onto Indiana's approach, and Section 3 includes work on the Indiana approach. This reevaluation of the FEIS/ROD examines the potential impacts on the natural, human, and cultural environments due to the design changes to Section 1 that have occurred since the approval of the FEIS/ROD.

This reevaluation is prepared to reflect design changes within Section 1 of the project, which is wholly located within Henderson County, Kentucky. Section 1 will construct a 2.9-mile new alignment section of I-69 from the CSX railroad bridge north of KY 351, running north and east to the intersection with US 60 near Tillman-Bethel Road and the US 60 bridge over CSX, including construction of new interchanges at US 41 and US 60. Section 1 will also upgrade a 2.8-mile portion of the existing US 41 from KY 425 to the US 41 bridge over CSX railroad bridge north of KY 351, which will be redesignated as I-69, including reconstruction of the KY 351 interchange, removal of the KY 2084 interchange, and ramp improvements at the Audubon Parkway interchange.

Reevaluation Statement #1 focuses on design changes resulting from continued coordination with local officials and through the design-build procurement of the Section 1 construction contract. Modification to the design of the proposed interchange with US 60 is the most substantial change to the project; however, there are additional minor design changes to the proposed right-of-way to accommodate the refined design, roadway alignment revisions, infrastructure removal, and rehabilitation of several deteriorating bridges. Reevaluation Statement #1 supports the conclusion that the design changes listed herein will not have new impacts sufficient to require the preparation of a Supplement Environmental Impact Statement (SEIS) for the project pursuant to 23 CFR 771.129. Therefore, the FEIS/ROD for the I-69 Ohio River Crossing Project, and associated commitments and mitigations, remain appropriate and valid.

Approval		JERMAINE R HANNON	Digitally signed by JERMAINE R HANNON Date: 2023.08.23 14:27:45 -04'00'
Date of Approval	Printed Name	Signature	



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CHAPTER 1 – INTRODUCTION

The I-69 ORX project will complete the connection between the northern terminus of I-69 in Kentucky near KY 425 (Henderson Bypass) and the southern terminus of I-69 in Indiana near US 41, including a new bridge across the Ohio River. The Selected Alternative includes 11.2 miles of new interstate with 8.4 miles on new terrain and 2.8 miles of upgrades to US 41.

The I-69 ORX project is divided in to three sections for construction (see Figure 1-1). Section 1 is the southernmost portion of the project and the subject of this Reevaluation Statement #1. Section 1 will construct a 2.9-mile new alignment section of I-69 and will also upgrade a 2.8-mile portion of existing US 41, which will be redesignated as I-69. Section 1 is wholly located within Henderson County, Kentucky.

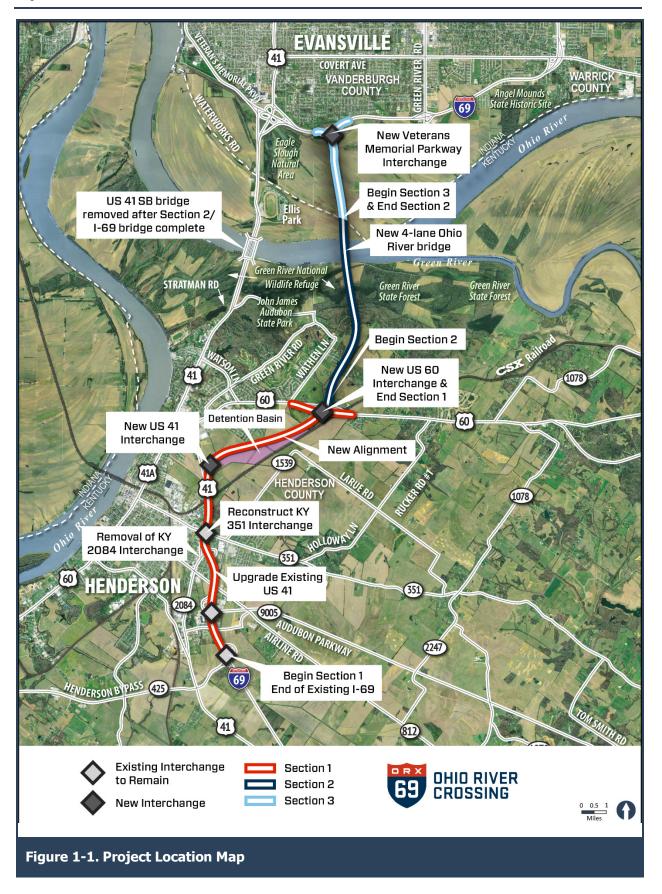
This reevaluation of the FEIS/ROD was prepared to document design changes in Section 1 of the project made following completion of the National Environmental Policy Act (NEPA) process. Changes to the design resulted from continued coordination with local officials and through the design-build procurement of the Section 1 construction contract.

Key changes in impacts resulting from the post-NEPA design efforts include:

- A net increase of 11 acres of new right-of-way for the project (increase of approximately 2%), the result of a substantial reduction of required right-of-way at the proposed US 60 interchange and adjustments at several parcels to accommodate the refined design.
- At the KY 351 interchange, an additional residential relocation as well as a reduction in work adjacent to a historic property and a stream.
- Overall minor reduction of impacts to streams, floodplains, and forested habitat throughout the corridor and slight increase of impacts to floodways and wetlands.
- An additional 10 acres of total impacts to farmlands (increase of approximately 2%)associated with the acquisition of new right-of-way required for the project, as most parcels contain farmland soils.
- A determination of No Adverse Effect to cultural resources resulting from the proposed design changes by the Kentucky State Historic Preservation Office (SHPO).

Reevaluation Statement #1 supports the conclusion that the design changes listed herein will not have new impacts sufficient to require the preparation of a Supplement Environmental Impact Statement (SEIS) for the project pursuant to 23 CFR 771.129. Therefore, the FEIS/ROD for the I-69 Ohio River Crossing Project, and associated commitments and mitigations, remain appropriate and valid.







CHAPTER 2 – PROJECT DESCRIPTION

2.1 PROJECT DESCRIPTION AND AREA

As part of the overall I-69 ORX project, Section 1 will construct a 2.9-mile new alignment section of I-69 from the CSX railroad bridge north of KY 351, running north and east to the intersection with US 60 near Tillman-Bethel Road and the US 60 bridge over CSX, including construction of new interchanges at US 41 and US 60. Section 1 also upgrades a 2.8-mile portion of existing US 41 from KY 425 to the US 41 bridge over CSX railroad bridge north of KY 351, which will be redesignated as I-69, including reconstruction of the KY 351 interchange, removal of the KY 2084 interchange, and ramp improvements at the Audubon Parkway interchange. The proposed design changes within Section 1 are described below in Section 2.5.

2.2 APPROVED ENVIRONMENTAL DOCUMENTATION

The Final Environmental Impact Statement (FEIS) (FHWA-IN-EIS-20210143) and Record of Decision (ROD) for the I-69 ORX project (referenced herein as "FEIS/ROD")were jointly issued by FHWA, INDOT, and KYTC on September 16, 2021.

2.3 SECTION 1 DESIGN-BUILD PROCUREMENT

In 2021 after publication of the FEIS/ROD, KYTC conducted a design-build procurement for the construction of Section 1 of the project. The outcome of the process was the successful award of a \$158-million contract to the Ragle, Inc./Stantec Consulting Services, Inc. design-build team (DBT). Early construction began in August 2022 and completion of the project is expected in 2025.

2.4 PUBLIC INVOLVEMENT

No specific public involvement activities have occurred for this Reevaluation Statement #1. The project website (https://i69ohiorivercrossing.com/) is updated to include project information related to the three sections of the project. Visitors to the site are encouraged to sign up to receive project updates, which provide news and traffic updates for Section 1 as construction proceeds.

2.5 DESCRIPTION OF DESIGN CHANGES

The most substantial physical change to Section 1 since the approval of the FEIS/ROD is a modification to the design of the proposed new US 60 interchange. In addition, there are minor changes to right-of-way to accommodate refined design, additional bridge improvements, and other ancillary design elements. For reference, mapping of the design changes is provided in Appendix A and summarized in Figure 2-1 below.

REVISED INTERCHANGE DESIGN AT US 60

• Roundabout Intersections – Following the approval of the FEIS/ROD, Henderson County and the City of Henderson requested that the design of three intersections be revised to convert them to roundabouts. The interchange ramp terminals would connect to a dogbone roundabout (i.e., an interconnected double roundabout). The adjacent intersection at Tillman-Bethel Road would be converted to a modern roundabout, which would modify the proposed right-of-way and construction limits.

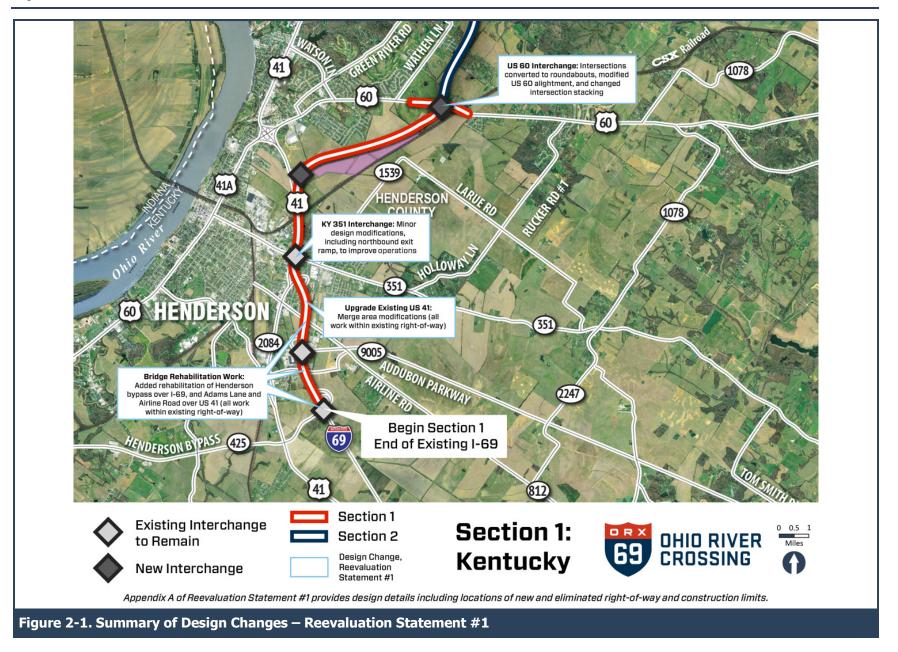


- Modified US 60 Alignment and Interchange Stacking During the design-build procurement process, an Alternative Technical Concept (ATC) was submitted and approved by KYTC to:
 - Realign the new US 60 roadway such that it would remain closer to the existing US 60 than what was proposed in the FEIS/ROD. Doing so would reduce the amount of right-of-way required and eliminate the need to replace the US 60 bridge over the CSX Railroad.
 - Reverse the vertical orientation of US 60 and I-69 such that I-69 would cross over US 60, instead of under, as proposed in the FEIS/ROD. Doing so would allow the section of US 60 within the project limits to be built at nearly the same grade as the existing road, which would reduce the amount of right-of-way and maintenance of traffic impacts. The overall elevation of the interchange would not substantively change.

ADDITIONAL MINOR CHANGES POST-NEPA

- Bridge Rehabilitation Work
 - KY 425/Henderson Bypass over I-69 A deck overlay would be added to the scope to extend the life of this bridge. All work would be within existing right-of-way.
 - Adams Lane over US 41 A deck overlay would be added to the scope to extend the life of this bridge. All work would be within existing right-of-way.
 - Airline Road over US 41 Superstructure replacement would be added to the scope to improve the condition of this bridge. All work would be within existing right-ofway.
- Merge Area Modifications Minor changes to the design of several ramp merge areas would be added to the scope to improve operations. All work would be within existing right-of-way.
- Roadway/Ramp Removal Areas Revised construction limits are proposed to reflect the activities that would be required to remove the existing ramps at the KY 2084 and KY 351 interchanges and to remove the Kimsey Lane bridge over existing US 41. All work would be within existing right-of-way.
- KY 351 Interchange Minor modifications to the design of the interchange are proposed
 to improve operations including to the northbound exit ramp, which would require the
 acquisition of one additional residential property. The proposed modifications also would
 reduce the construction limits in the northeast quadrant of the interchange adjacent to the
 William Soaper Farm, a NRHP-eligible property.
- US 41 Interchange Minor changes (reductions and additions) to the construction limits
 are proposed within this interchange. All would be within the right-of-way limits
 proposed within the FEIS/ROD.
- Other Right-of-Way Adjustments At several parcels, the ongoing right-of-way process since the publication of the FEIS/ROD would result in adjustments to the proposed rightof-way limits based on site conditions and to accommodate the refined design.







CHAPTER 3 – ENVIRONMENTAL CONSEQUENCES

This section presents the changes in impacts that would result from the proposed revisions subject to this Reevaluation Statement #1. Impacts within other sections of the project are not discussed and remain as reported in the FEIS/ROD. Table 3-1 provides a summary of impacts within Section 1 for the FEIS/ROD Selected Alternative, the revisions covered by this reevaluation, and the net difference between the two.

Table 3-1. Summary of Impacts – Reevaluation Statement #1

IMPACT CATEGORY	FEIS/ROD SELECTED ALTERNATIVE¹ - SECTION 1 REEVALUATION STATEMENT #1 - SECTION 1		DIFFERENCE		
	MIC				
Relocations					
Residential (units)	1	2	1		
Commercial (units)	0	0	0		
Farm Building	0	0	0		
Places of Worship	0	0	0		
Total Relocations	1	2	1		
New Right-of-Way (acres)	535	546	11		
Noise (number of impacted receptors) ²	148	141	0		
Managed Lands (number/acres)	0	0	0		
Aboveground Historic Resources	4	4	0		
Section 4(f) Use					
Public Parks, Recreation Areas, and Wildlife/ Waterfowl Refuges	0	0	0		
Historic Property	1	1	0		
Recognized Environmental Condition (REC) Sites	1	1	0		
Prime and Unique Farmland and Farmland of Statewide Importance (acres)	516.7	526.7	10.0		
Farmland (acres)	518.1	528.3	10.2		
NATURAL RESOURCES					
Wetlands (number/acres)	12 / 0.6	12 / 0.7	0 / 0.1		
Streams (number/linear feet)					
Perennial	2 / 636	2 / 255	0 / -381		
Intermittent	11 / 9,219	10 / 9,266	-1 / 47		



IMPACT CATEGORY	FEIS/ROD SELECTED ALTERNATIVE ¹ – SECTION 1	REEVALUATION STATEMENT #1 – SECTION 1	DIFFERENCE
Ephemeral	34 / 15,252	34 / 14,457	0 / -795
Total	47 / 25,107	46 / 23,978	-1 / -1,129
Open Water (number/acres)	0	0	0
Wellhead Protection Areas	0	0	0
Floodplain (acres)	334	315	-19
Floodway (acres)	75	76	1
Forested Habitat (acres)	15.2	13.3	-1.9

¹ The Selected Alternative from the FEIS/ROD was "Central Alternative 1B Modified (Selected)" as analyzed in those documents. This table includes impacts for Section 1 of the Selected Alternative only.

The following sections discuss anticipated changes in impacts to the natural, human, and cultural environments by comparing the post-NEPA design changes to the Selected Alternative evaluated in the FEIS and approved in the ROD. If not specifically included in the discussion below, there are not anticipated to be any changes to impacts – or associated mitigations and environmental commitments – as disclosed in the FEIS/ROD. Unless otherwise noted, the same datasets and assumptions as documented in the FEIS/ROD were utilized for this reevaluation. Reported impacts for socio-economic resources, including land use, farmlands, and cultural resources, represent the proposed new right-of-way limits; reported impacts to natural resources represent the proposed construction limits for the project.

3.1 TRAFFIC AND TRANSPORTATION

The post-NEPA design changes are not anticipated to negatively change impacts to the traffic and transportation network as evaluated in the FEIS/ROD. While the location of the proposed US 60 interchange has been modified, it would be closer to the existing alignment (i.e., less change to the existing roadway system) and the reversal of the vertical orientation of the roadways would not change the proposed access type nor traffic operations at the interchange. The new roundabouts at the US 60 interchange as well as improvements to several ramp merges along the interstate and ramp modifications at the proposed KY 351 interchange are anticipated to improve traffic operations at those locations. The post-NEPA design changes would not impact local roadways or safety in any new way, and access to/by public transportation would remain the same as well. Pedestrian and bicycle facilities would be accommodated in the same manner as committed to in the FEIS/ROD with no change to access or type of facilities provided.

3.2 SOCIAL

3.2.1 LAND USE AND ZONING

Impacts to existing land use consist of land required for a project that is not currently being used for transportation purposes; it does not include existing transportation right-of-way. Table 3.2-1

² Reported impacts for Reevaluation Statement #1 for Section 1 are based on the *Structural Noise Abatement Barrier Updates Technical Memorandum* that was conducted in accordance with the commitments and mitigation measures identified in the FEIS/ROD and per KYTC standard practice; see Section 3.2.5 for details. Note that noise impacts shown in Appendix A may represent more than one impacted receptor.



quantifies the number of acres of land where a change in use would occur due to construction of Section 1. The post-NEPA design changes would result in a net increase of 11 acres of acquired property. This increase is primarily in the agricultural category since most of the new right-of-way contains farmlands. There is an additional area that is agricultural in existing use and would be acquired in the north-west quadrant of the US 60 interchange for drainage needs. The difference in land use also accounts for the realignment of the proposed US 60 interchange closer to the existing alignment, which would require less additional right-of-way than identified in the FEIS/ROD. The difference in other categories is the result of smaller additions and decreases throughout the corridor. There would remain to be no changes to existing land use south of the KY 351 interchange along US 41 since the proposed transportation improvements in this area continue to remain within existing transportation right-of-way.

Table 3.2-1. Existing Land Use Impacts

CATEGORY	FEIS/ROD SELECTED ALTERNATIVE - SECTION 1	REEVALUATION STATEMENT #1 – SECTION 1	DIFFERENCE
Residential (acres)	6	7	1
Commercial (acres)	0	0	0
Industrial (acres)	0	0	0
Institutional (acres)	0	0	0
Parks and Recreation (acres)	0	0	0
Agricultural ¹ (acres)	526	534	8
Communications (acres)	2	3	1
State Forest (acres)	0	0	0
Vacant/Undeveloped (acres)	1	2	1
Total (acres)	535	11	11

¹ Agricultural land use impacts may differ from farmland impacts due to analysis methodology differences and datasets used. See Section 3.2.5 for farmland impacts.

3.2.2 RIGHT-OF-WAY AND RELOCATIONS

As shown in Table 3-1, the project would require 546 acres of new right-of-way, an increase of 11 acres (approximately 2%) compared to the FEIS/ROD Selected Alternative the result of a substantial reduction of required right-of-way at the proposed US 60 interchange and adjustments at several parcels to accommodate the refined design, including adjacent to the KY 351 interchange. Table 3.2-2 shows the number of relocations that would be required within Section 1. Post-NEPA design changes at the KY 351 interchange include minor modifications to the design of the northbound exit ramp to improve operations and would require the acquisition of one additional residential property (one residential unit). This additional acquisition does not change the findings within the FEIS/ROD. The Selected Alternative would require the fewest residential relocations (as compared to other build alternatives evaluated within that document). There is sufficient replacement housing in the area for these relocations, and none of the relocations would occur in areas with elevated concentrations of population subgroups. There are no changes to commercial or other relocations, of which there remain none.



Table 3.2-2. Relocations by Type

ТҮРЕ	FEIS/ROD SELECTED ALTERNATIVE - SECTION 1		SECTION 1 – REEVALUATION #1		DIFFERENCE	
	BUILDINGS	UNITS	BUILDINGS	UNITS	BUILDINGS	UNITS
	RESI	DENTIAL RE	LOCATIONS			
Apartment	0	0	0	0	0	0
Farm House	0	0	0	0	0	0
Mobile Home	0	0	0	0	0	0
House	1	1	2	2	1	1
Total	1	1	2	2	1	1
	СОМІ	MERCIAL RE	LOCATIONS			
Retail	0	0	0	0	0	0
Auto Dealer or Mechanic	0	0	0	0	0	0
Bar/Restaurant	0	0	0	0	0	0
Medical	0	0	0	0	0	0
Gas Station/ Convenience Store	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total	0	0	0	0	0	0
	0.	THER RELOC	ATIONS			
Place of Worship	0	0	0	0	0	0
Commercial Farm Facility	0	0	0	0	0	0

3.2.3 VISUAL/AESTHETICS

The Visual Impact Assessment (VIA) prepared for the FEIS/ROD examined potential impacts to residential, natural, rural, floodplain, and urban viewsheds associated with the project, and determined that the Selected Alternative would have a neutral or adverse visual quality change to all noted viewsheds and that viewers may become less sensitized to changes in views over time.

While the post-NEPA design changes at the US 60 interchange – which include roundabout intersections along US 60 and a modified US 60 alignment that reverses the vertical orientation of the interchange – would alter some visual physical factors within the project area, the predicted viewer response to the proposed infrastructure would remain the same as identified in the FEIS/ROD. The proposed condition would remain adverse for residential viewsheds in this area, and neutral for the Jackson McClain House/Farm by travelers through the area, as supported by the Kentucky SHPO concurrence of No Adverse Effect on this property due to the design revisions (see Section 3.5). The additional minor changes associated with the post-NEPA design, including the bridge rehabilitation work and the modifications to the US 41 interchange, would not alter the physical factors evaluated within the VIA, and therefore would not change the findings nor mitigations identified within the FEIS/ROD for this resource.



3.2.4 Noise

A *Noise Impact Analysis Addendum* was previously completed for the Selected Alternative and included in the FEIS/ROD that identified a total of four barriers that met the feasibility, reasonableness, and design goal criteria – three of which are located in Section 1 at Adams Lane, Vanguard Avenue, and Melwood Drive. Since the publication of the FEIS/ROD, a *Structural Noise Abatement Barrier Updates Technical Memorandum* (see Appendix B) was conducted in accordance with KYTC requirements to evaluate the potential for additional noise impacts on adjacent properties resulting from proposed design changes for Section 1 at these three locations, as summarized below. Note that the FEIS/ROD noise impact analysis evaluated two additional locations for proposed barriers within Section 1 – along South Arlington Drive and Taransay Drive – that did not meet reasonable/feasible criteria at that time; KYTC determined that no additional analysis at these locations was needed as part of this reevaluation because the revised design has not changed in those areas from what was analyzed at the time of the FEIS/ROD.

As documented in Appendix B, the noise receptors were first evaluated to determine if each was 1) impacted by the revised project design and 2) benefitted from the revised barrier. The goal is to evaluate benefits at any impacted receptors in accordance with state policy; however, some non-impacted receptors may also accrue benefits based on proximity and design. At the Adams Lane and Vanguard Avenue locations, the proposed barriers would be relocated from the edge of shoulder to placement nearer the highway right-of-way. At the Melwood Drive location adjacent to the revised design at the KY 351 interchange, a single barrier is proposed in place of the previously recommended two-barrier system. The revised barrier locations and impacted noise receptors are shown in the Appendix A mapping for Section 1. Overall, the revised design for the proposed barriers at these three locations would impact seven fewer receptors, as summarized in Table 1 above. Table 3.2-3 summarizes the revised barrier design within Section 1. As compared to the FEIS/ROD Selected Alternative, the revised design of the Adams Lane barrier would benefit more receptors and the Vanguard Avenue and Melwood Drive barriers would each benefit fewer receptors overall, but retain benefits for any impacted receptors. At all three locations, all impacted receptors would be benefitted by the revised barrier design. All three proposed barriers would remain feasible and reasonable based on KYTC policy while reducing length, height, and cost.

In accordance with KYTC policy and as documented in the FEIS/ROD commitments, final determination on the locations of noise barrier(s) will be made during the final design and permitting process as part of the design-build process, which would include coordination with property owners and/or tenants at that time.

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¹ KYTC considers a receptor impacted when its noise level is projected to exceed the relevant Noise Abatement Criteria, or increase by 10 decibels or more over the existing noise level. A benefited receptor is one that receives a noise reduction at or above the minimum threshold of 5 decibels due to noise abatement measures (i.e., a proposed noise barrier).



Table 3.2-3. Summary of Reasonable/Feasible Barrier Analysis

BARRIER	LENGTH	AVERAGE HEIGHT	DESIGN GOAL MET?	NO. BENEFITTED RECEPTORS ¹	TOTAL COST	FEASIBLE/ REASONABLE?
ADAMS LANE BARRIER						
FEIS/ROD – Section 1	1,140 ft	15.74 ft	Yes	24	\$529,155	Yes
Section 1 – Reevaluation #1	1,008 ft	14.81 ft	Yes	26	\$447,924	Yes
		VANGUARE	AVENUE BAR	RIER		
FEIS/ROD – Section 1	3,260 ft	15.68 ft	Yes	100	\$1,533,423	Yes
Section 1 – Reevaluation #1	3,024 ft	10.67 ft	Yes	73	\$967,614	Yes
		MELWOOI	D DRIVE BARR	IER		
FEIS/ROD – Section 1	2,000 ft	14.64 ft	Yes	33	\$933,612	Yes
Section 1 – Reevaluation #1	1,716 ft	16.59 ft	Yes	24	\$910,776	Yes

¹ While the revised design for the Vanguard Avenue and Melwood Drive barriers provide fewer total benefits than previously recommended in the FEIS/ROD, all impacted receptors would be benefitted. Additional detail regarding noise criteria and procedure is provided in Appendix B.

3.2.5 FARMLAND

The Selected Alternative would impact land covered by the Farmland Protection Policy Act (FPPA), as summarized in Table 3.2-4.

Table 3.2-4. Farmland Impacts

FARMLAND TYPE	FEIS/ROD SELECTED ALTERNATIVE - SECTION 1	SECTION 1 – REEVALUATION #1	DIFFERENCE
Total new acres to be acquired	535.2	546.4	11.2
Acres of farmland directly converted to transportation right-of-way	518.1	528.3	10.2
Acres from landlocked, remnant, or split parcels	36.5	60.9	25.2
Total acres of farm impacts	554.6	589.2	34.6
Total number of farms	19	19	0
Number of farms completely acquired	1	1	0
Number of uneconomic remnants	3	0	-3
Number of landlocked parcels	6	4	-2
Acres of prime farmland, unique farmland, and farmland of statewide importance to be converted	516.7	526.7	10.0
All areas are prime farmland (acres)	33.9	36.8	2.9
Farmland of statewide importance (acres)	14.6	13.6	-1.0
Prime farmland if drained (acres)	468.2	476.3	8.1



The increases are due to the additional acquisition of new right-of-way as part of the project, most of which contain farmland soils. Because several of the acquired parcels referenced above were identified in the FEIS/ROD as landlocked or remnant parcels or uneconomic remnants, their change in status to direct impacts would result in a decrease in acreage and number of landlocked/remnant parcels, as shown in the table.

The design changes associated with this Reevaluation Statement #1 would directly convert just under 530 acres of farmland to transportation right-of-way, which is approximately 10 more acres than identified in the FEIS/ROD. Per current data from the Natural Resources Conservation Service (NRCS), this would include approximately 527 acres of prime farmland (as detailed in the table), which would be approximately 10 acres more than the FEIS/ROD.

The evaluation of compliance with the FPPA uses the Farmland Conversion Impact Rating for Corridor Type Projects form NRCS-CPA-106, as outlined in 7 CFR § 658.4. For this project, the NRCS-CPA-106 form was submitted during the DEIS preparation and again for the Selected Alternative evaluated in the FEIS/ROD. The assessment criteria were scored according to the NRCS instructions and 7 CFR 658.5 in both Indiana and Kentucky. In Kentucky, the total amended score for the Selected Alternative was 122, well below the 160 point threshold that triggers the need for further coordination with NRCS and the consideration of minimization or mitigation measures. As such, the project was considered to have no significant impact to farmland and did not receive further consideration for farmland protection, and no further coordination with NRCS was required as part of the NEPA process at that time.

As required by the FPPA, the changes in impacts to farmland associated with Reevaluation Statement #1 have been coordinated with NRCS (see Appendix C). NRCS confirmed that the evaluation criteria for the soil types within the new areas of right-of-way would be equivalent and that the CPA-106 score would not be anticipated to change substantively (i.e., would remain well below 160 points); as such, resubmission of the CPA-106 form would not be required for this reevaluation.

3.3 ECONOMIC RESOURCES

The post-NEPA design changes are not anticipated to negatively change economic impacts as evaluated in the FEIS/ROD. There would be no change to impacts to employment, income, or commercial businesses. The design change at KY 351 would require the acquisition of one additional residential property, which would reduce annual property tax revenues. However, this is estimated at an additional decrease of \$1,214 per year, which would not change the reported 0.1 percent decrease for Henderson County as reported in the FEIS/ROD.

3.4 NATURAL ENVIRONMENT

3.4.1 WATER RESOURCES

Direct impacts to water resources are shown in Table 3-1 above. The post-NEPA design changes would result in fewer total impacts to rivers and streams (1,129 fewer feet impacted than documented in the FEIS/ROD), including a reduction in the number of intermittent streams



impacted (1 less, near the eastern project limit along US 60). These changes would otherwise impact the same overall perennial, intermittent, and ephemeral streams but in slightly different locations due to the multitude of minor additions and deductions associated with the change in construction limits throughout the corridor. The proposed design changes would not change impacts to open waters, special stream status, or groundwater/public water supplies, and would not change the findings nor mitigations identified within the FEIS/ROD for this resource.

3.4.2 FLOODPLAINS/FLOODWAYS

Post-NEPA design changes would result in minimal changes to the floodplain and floodway impacts as reported in Table 3-1 above: an additional 1 acre (total 76 acres) of floodway associated with the North Fork Canoe Creek and 19 acres fewer (total 315 acres) of floodplain than documented in the FEIS/ROD. The latter is comprised of 23 fewer acres of Zone A floodplain and 4 acres more of Zone AE floodplain. The majority of the change in impact is associated with the interchange redesign at US 60, as well as a multitude of minor additions and deductions associated with the change in construction limits throughout the corridor. The change in impact is beneficial/minimal in terms of overall impact and would not change the findings nor mitigations identified within the FEIS/ROD for this resource.

3.4.3 WETLANDS

The FEIS/ROD documented that the Selected Alternative as evaluated therein would impact the least amount of wetlands of all build alternatives evaluated at that time. The design changes per this Reevaluation Statement #1 would impact less than 1/10th of an additional acre of wetland (palustrine emergent) as shown in Table 3.4-1. This slight increase is in the area where the construction limits were revised in the post-NEPA design to better reflect activities required to remove existing ramps. The change in impact is minimal in terms of overall impact and would not change the findings nor mitigations identified within the FEIS/ROD for this resource.

Table 3.4-1. Wetland Impacts

RESOURCE	FEIS/ROD SELECTED ALTERNATIVE – SECTION 1	SECTION 1 – REEVALUATION #1	DIFFERENCE
Palustrine Forested Wetlands Number/Area (acres)	0/0	0/0	0/0
Palustrine Scrub-Shrub Wetlands Number/Area (acres)	1 / 0.2	1 / 0.2	0/0
Palustrine Emergent Wetlands Number/Area (acres)	11 / 0.4	11 / 0.5	0 / 0.1
Total Wetlands Number/Area (acres)	12 / 0.6	12 / 0.7	0 / 0.1
Wetland Mitigation Sites Number/Area (acres)	0	0	0
WRP Sites Number/Area (acres)	0	0	0



3.4.4 TERRESTRIAL WILDLIFE AND HABITAT

The acreage of each habitat type potentially impacted by the Selected Alternative is summarized in Table 3.4-2, with a net decrease of 5 acres to total habitat resulting from the proposed design changes associated with this Reevaluation Statement #1. The greatest increase in impacts as a result of the design changes would be a reduction of impacts to agricultural row crops and an increase in impacts to non-habitat and maintained and mowed areas, which would primarily occur as a result of the modified location of the US 60 interchange. The design changes overall would maintain a similar range of impacts to primarily these habitat types (i.e., agricultural row crops, non-habitat, and maintained and mowed areas) and their associated species within Section 1 and would not change the findings within the FEIS/ROD for this resource. Furthermore, maintained and mowed areas (i.e., the greatest increase in impacts as a result of Section 1 post-NEPA design changes) do not give the opportunity for potential for quality habitat to establish.

Table 3.4-2. Habitat Impacts

HABITAT TYPE	FEIS/ROD SELECTED ALTERNATIVE – SECTION 1	SECTION 1 – REEVALUATION #1 ¹	DIFFERENCE
Bottomland Hardwood Forest	0	0	0
Mixed Deciduous Forest	15.2	13.3	-1.9
Wetland Scrub-shrub	0	0	0
Upland Scrub-shrub	6.5	7.5	1.0
Old Field	14.9	15.2	0.3
Open Water	0	0	0
Riverine	0.0	0.0	0.0
Maintained and Mowed Areas	18.0	35.4	17.4
Residential	4.1	4.3	0.2
Agricultural Row Crops ¹	384.7	362.3	-22.4
Habitat Total	443.4	438	-5.4
Non-habitat (Commercial and Paved)	32.4	45.7	13.3

¹ Agricultural Row Crop impacts may differ from the farmland impacts due to analysis methodology differences and datasets used. See Section 3.2.5 for farmland impacts.

3.4.5 THREATENED AND ENDANGERED SPECIES

During the NEPA process, identification of threatened and endangered species and project-specific conservation measures for those species were coordinated with the United States Fish and Wildlife Service (USFWS), as documented in the *Biological Assessment (BA) for Multiple Species at the I-69 Ohio River Crossing Project* (Appendix K-4 of the FEIS) and subsequent *Biological Opinion (BO) on the Fat Pocketbook (Potamilus capax) and Sheepnose (Plethobasus cyphyus) and Conference Opinion on the Longsolid (Fusconaia subrotunda)* for the project (Appendix K-5 of the FEIS). For the entire corridor evaluated in the FEIS, a total of 17 species were identified, including 13 freshwater mussels, one bird, and three mammals (bats).



Per the project stipulations, consultation with USFWS would be re-initiated if the project is modified in manner not previously considered in the Biological Opinion; if new information reveals that the project may affect a listed species or designated critical habitat in a manner or extent not previously considered; or a new species is listed or critical habitat designated that the project may affect. The design changes for this Reevaluation Statement #1 would be in kind and are a similar nature to those evaluated in the FEIS/ROD. Further, the design changes would occur in areas that are not anticipated to provide habitat for any threatened and endangered species and, as shown in Table 3.4-2 in the previous section, would impact approximately 2 acres less of forested habitat (i.e., potential habitat for the listed bat species). On November 30, 2022, the USFWS published the final endangered species listing for the northern long-eared bat, which changes the legal status of this species from threatened to endangered; the final rule became effective on March 31, 2023. Based on the USFWS's Information for Planning and Consultation (IPaC) system, it was determined that Section 1 "may affect but is not likely to adversely affect" the northern long-eared bat. The concurrence letter from USFWS, dated May 24, 2023, is provided in Appendix D and states that consultation for this species with USFWS is complete.

Per the FEIS/ROD, potential construction impacts to both the Indiana bat and northern long-eared bat summer habitat will be addressed through the KYTC *Programmatic Conservation Memorandum of Agreement for the Indiana Bat,* which will dictate mitigation requirements for construction impacts and allows for use of the Imperiled Bat Conservation Fund (IBCF) for forest habitat removal for the entire I-69 ORX project corridor. Coordination with KYTC Division of Environmental Analysis (KYTC-DEA) indicates that a forthcoming update to the above-referenced programmatic agreement will similarly address mitigation associated with the uplisting of the northern long-eared bat.

The project commitments and mitigation measures related to threatened and endangered species identified in the FEIS/ROD would apply to Section 1 inclusive of the design changes and uplisting of the northern long-eared bat, including following the guidance provided in the KYTC programmatic agreement, adherence to seasonal tree clearing restrictions, survey of all structures and bridges prior to any work or demolition for presence of threatened and endangered bats, and continued coordination regarding threatened and endangered species, as needed.

3.5 CULTURAL RESOURCES

3.5.1 Section 106 Process

During the NEPA process, surveys of above-ground and below-ground resources were conducted with the findings shared with the Indiana and Kentucky State Historic Preservation Offices (SHPOs) and Consulting Parties. Through the Section 106 consultation process, it was determined that construction of the FEIS/ROD Selected Alternative (i.e., Central Alternative 1B Modified) would have an adverse effect on several historic properties, including:

 Henderson-Evansville US 41 Southbound Bridge – This bridge would be removed. Note: removal of this bridge is not part of the Section 1 construction project and would occur after Section 2/construction of the I-69 bridge is complete and operational.



- Audubon Memorial Bridge/ Henderson-Evansville US 41 Northbound Bridge The removal of the southbound bridge would alter the association of the "Twin Bridges" and impact this bridge's eligibility under Criterion C. The construction of the new I-69 Ohio River bridge would introduce a modern design bridge that would constitute an adverse effect by altering the historic setting. The northbound bridge would remain eligible under Criterion A. Note: the US 41 Northbound Bridge is not located within the Section 1 limits, and construction of the new I-69 Ohio River Bridge is not part of the Section 1 construction project.
- Jackson McClain House/Farm Construction of a new interstate interchange would visually alter and diminish the agricultural property's historic integrity of the setting and feeling. Additionally, construction of the interchange is projected to create future development at the new US 60 interchange that could cause an impact to the property.
- Ellis-Neville/Lee Baskett House Construction of a new interstate interchange would visually alter the feeling and setting of this property and create an adverse effect. Additionally, construction of the interchange is projected to create future development at the new US 60 interchange that could cause an impact to the property.

To resolve the adverse effect on these properties, consultation with the property owners and consulting parties was completed during the NEPA process and a Memorandum of Agreement (MOA) was executed on June 15, 2021. The executed MOA was included as Appendix L-3 of the FEIS/ROD. Mitigations include documentation of some historic properties, the development of context statements, and funding for local historic preservation projects.

Archaeological surveys completed to date have not identified any resources eligible for listing in the National Register of Historic Places (NRHP). Though not required for Section 1, additional surveys, including deep testing within the Ohio River floodplain, are planned as are additional marine surveys within the Ohio River as part of the overall project. These surveys and any additional surveys required to address changes in the project's design are covered under the MOA.

3.5.2 NEPA REEVALUATION STATEMENT #1 AND ADDITIONAL SECTION 106 COORDINATION

On August 22, 2022, KYTC sent the Kentucky SHPO a *Cultural Resources Impact Review Memorandum* to document the potential changes in impacts to Section 106 resources as a result of the post-NEPA design changes. In this memorandum, KYTC recommended an overall effect finding of No Adverse Effect associated with the design revisions to Section 1. On October 3, 2022, the SHPO responded and concurred with the recommended findings, but withheld comment on effects at three locations until further eligibility assessments could occur:

- Airline Road over US 41 (proposed superstructure replacement)
- Kimsey Lane over US 41 (proposed for removal)
- Additional residential property at KY 351 interchange (proposed for acquisition)

The above-mentioned resources are all over 50 years old and located within the previously defined Area of Potential Effects (APE) as documented in the FEIS/ROD. On October 20, 2022, KYTC submitted a Supplemental Information Cultural Resources Assessment Review Memorandum to



the Kentucky SHPO, which provided NRHP eligibility recommendations for these previously unevaluated resources and requested concurrence on KYTC's overall effect determination of No Adverse Effect resulting from the proposed modifications. On November 28, 2022, the SHPO responded and concurred.

Copies of the above-referenced documents, including the *Cultural Resources Impact Review Memorandum*, the *Supplemental Information Cultural Resources Assessment Review*, and both SHPO responses are provided in Appendix E.

ARCHAEOLOGICAL SURVEY. The majority of ground-disturbing activities associated with the construction of Section 1, inclusive of the proposed changes subject to this Reevaluation Statement #1, would occur on areas that were subject to previous archaeological survey. Additional archaeological work to identify, evaluate, and assess any previously unsurveyed areas is ongoing in accordance with the executed project's Section 106 MOA.

3.6 INDIRECT AND CUMULATIVE IMPACTS

The FEIS/ROD analyzed potential indirect and cumulative impacts in accordance with CFR Title 40 and determined that the Selected Alternative would be expected to generate induced development at the US 60 and US 41 interchanges, both of which are within Section 1. The type and nature of the design changes for this Reevaluation Statement #1 would not alter the potential for induced development/growth and secondary impacts at these locations, either in terms of parcels with potential for growth/impact nor type of potential development/impact to occur. Similarly, the magnitude and type of the design changes would not change the overall potential for cumulative impacts to or location of wetland, stream, forest, managed lands, aboveground historic, and farmland resources that could result from the project in combination with other past, present, and reasonably foreseeable future actions.

3.7 CONSTRUCTION IMPACTS

There are no changes to anticipated construction impacts to social and natural resources documented in the FEIS/ROD as a result of the design changes related to this Reevaluation Statement #1. As committed to in the FEIS/ROD, a detailed Maintenance of Traffic Plan/Traffic Management Plan will be developed in coordination with local government officials, emergency service providers, and schools, and the motoring public will be notified in advance of construction related activities such as road closures and detours. Such coordination and outreach have been ongoing during the design process to date via the project website, social media, and local news outlets and will continue through construction.

3.8 PROJECT COSTS

The FEIS/ROD developed project cost estimates for all build alternatives considered therein to provide a common point of comparison and an indication of the project's financial feasibility. Since that time, a price proposal was accepted as part of the Section 1 design-build procurement process and selection of the DBT (see Section 2.3); actual project costs are dictated by that contract.



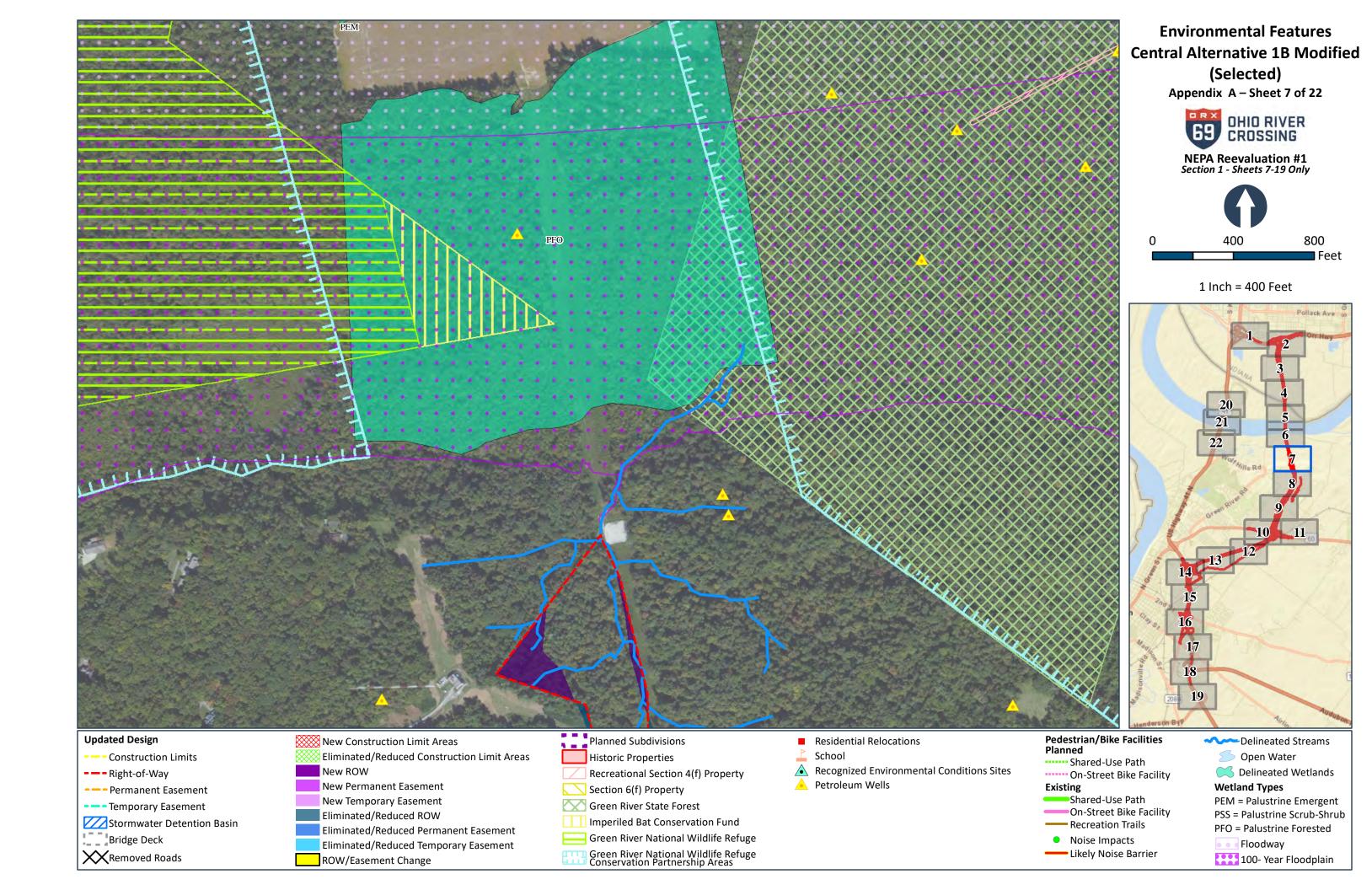
CHAPTER 4 – CONCLUSIONS

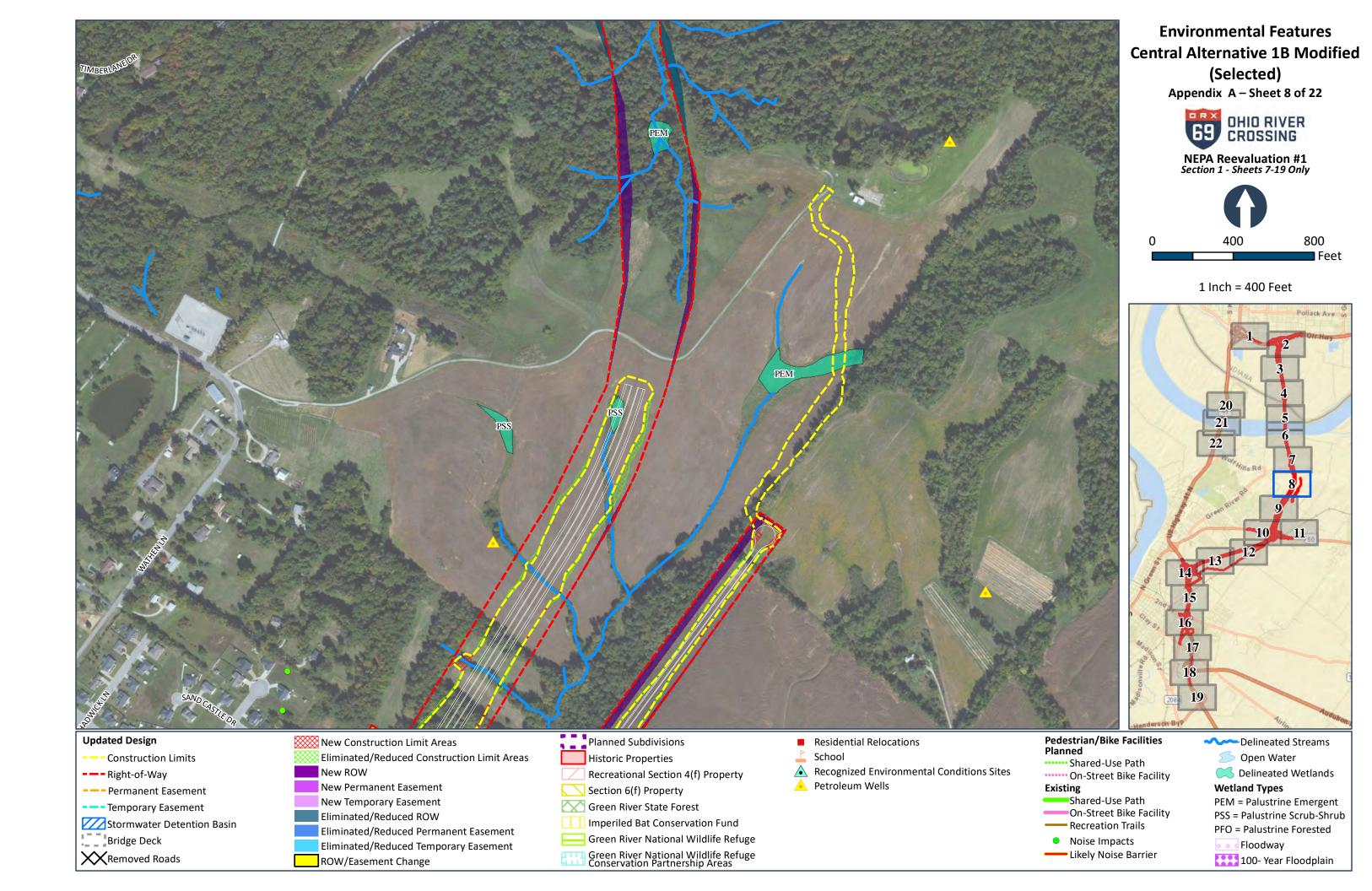
The analysis of the impacts from the post-NEPA design changes and associated right-of-way changes included in Section 1 supports the conclusion that these modifications will not cause significant environmental impacts that were not evaluated and mitigated for within the I-69 ORX FEIS/ROD. The proposed modifications offer no new information or circumstances relevant to environmental concerns, nor will the changes result in significant environmental impacts that were not discussed in the I-69 ORX FEIS/ROD. Additionally, no new environmental commitments or mitigations were identified as part of the modifications to the design of Section 1. The analysis in this reevaluation supports the conclusion that the design modifications for Section 1 will not have impacts sufficient to require the preparation of a Supplemental Environmental Impact Statement.

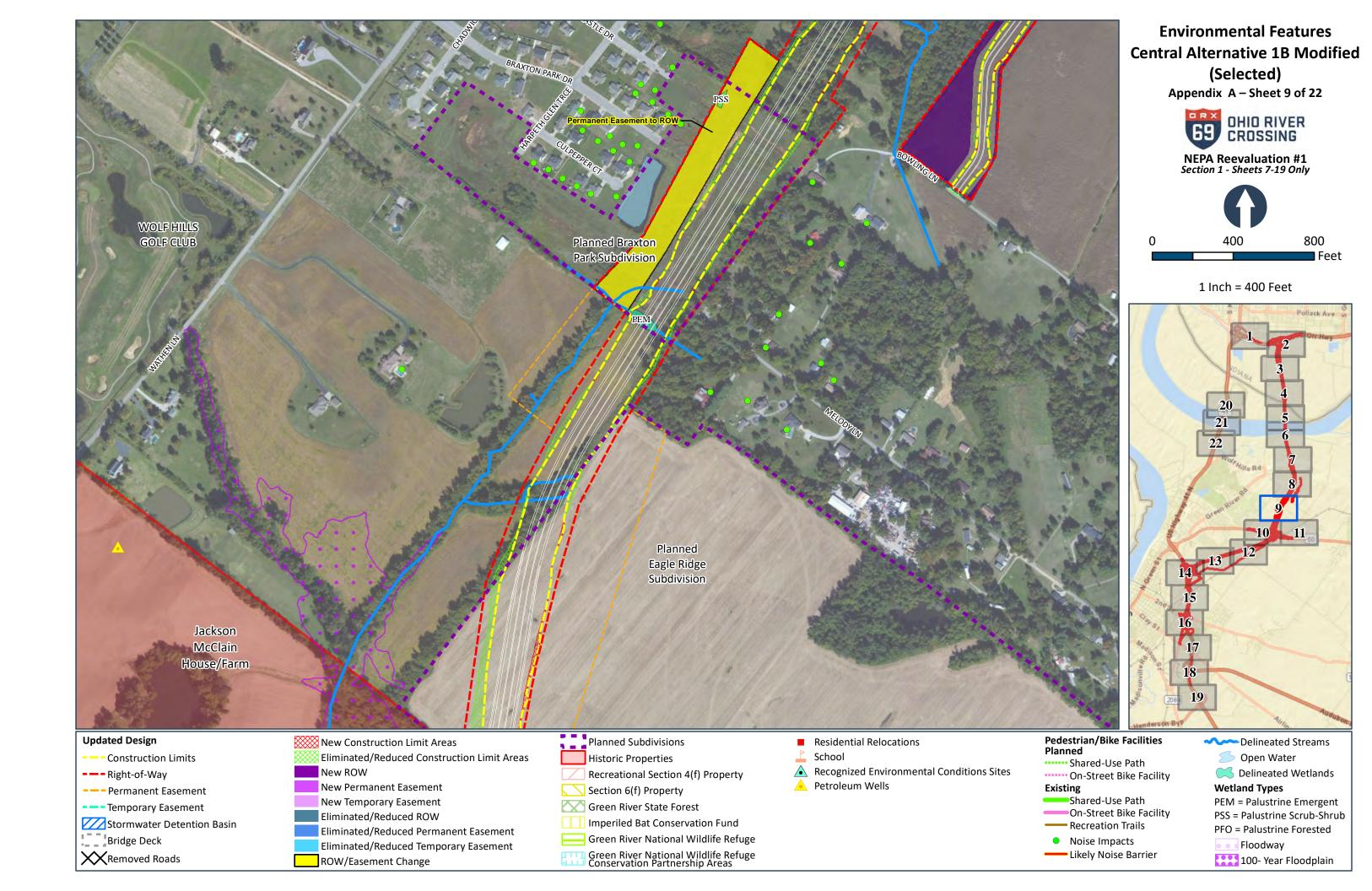


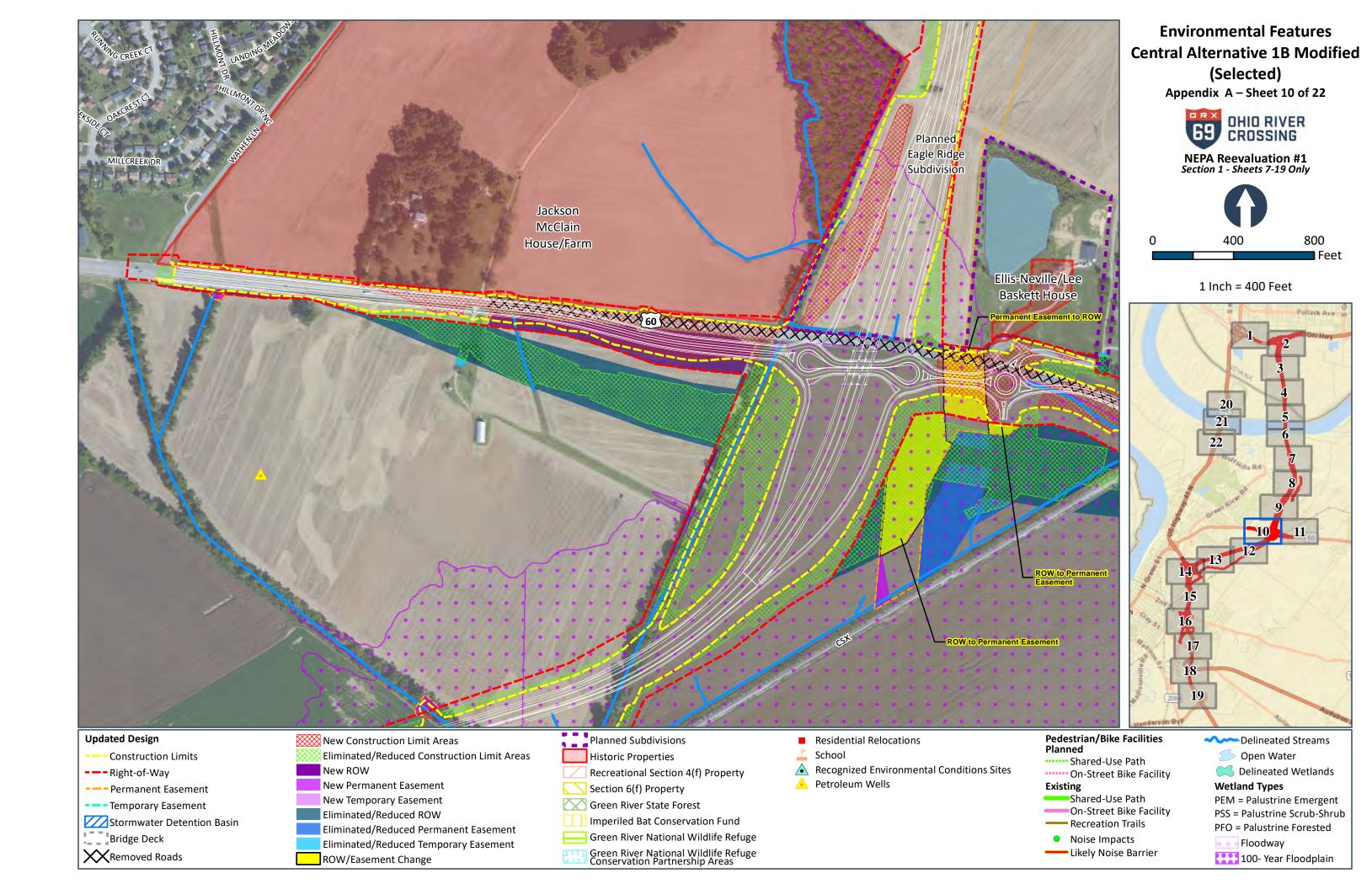
APPENDIX A

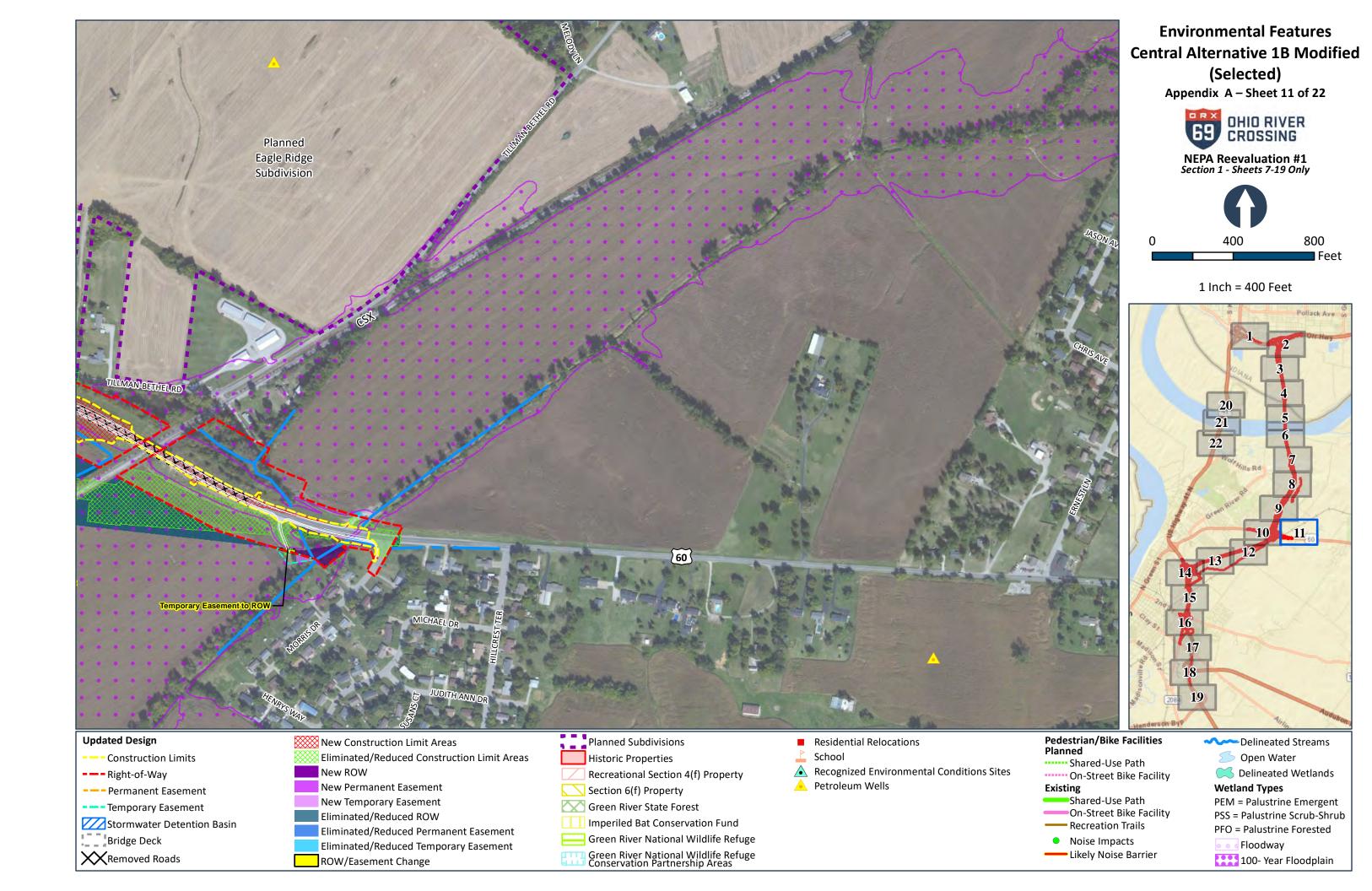
Reevaluation Statement #1 Maps Design Changes

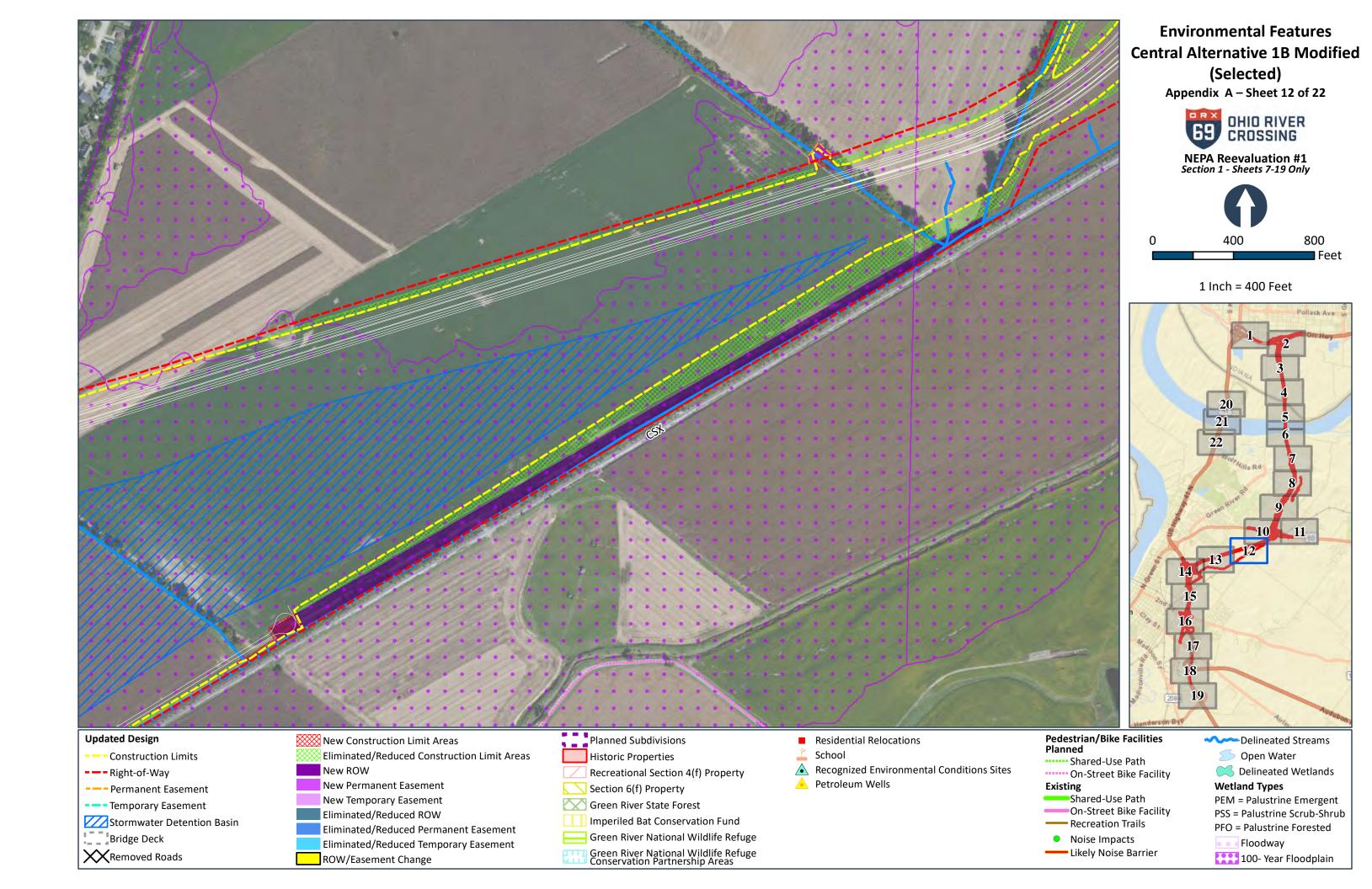


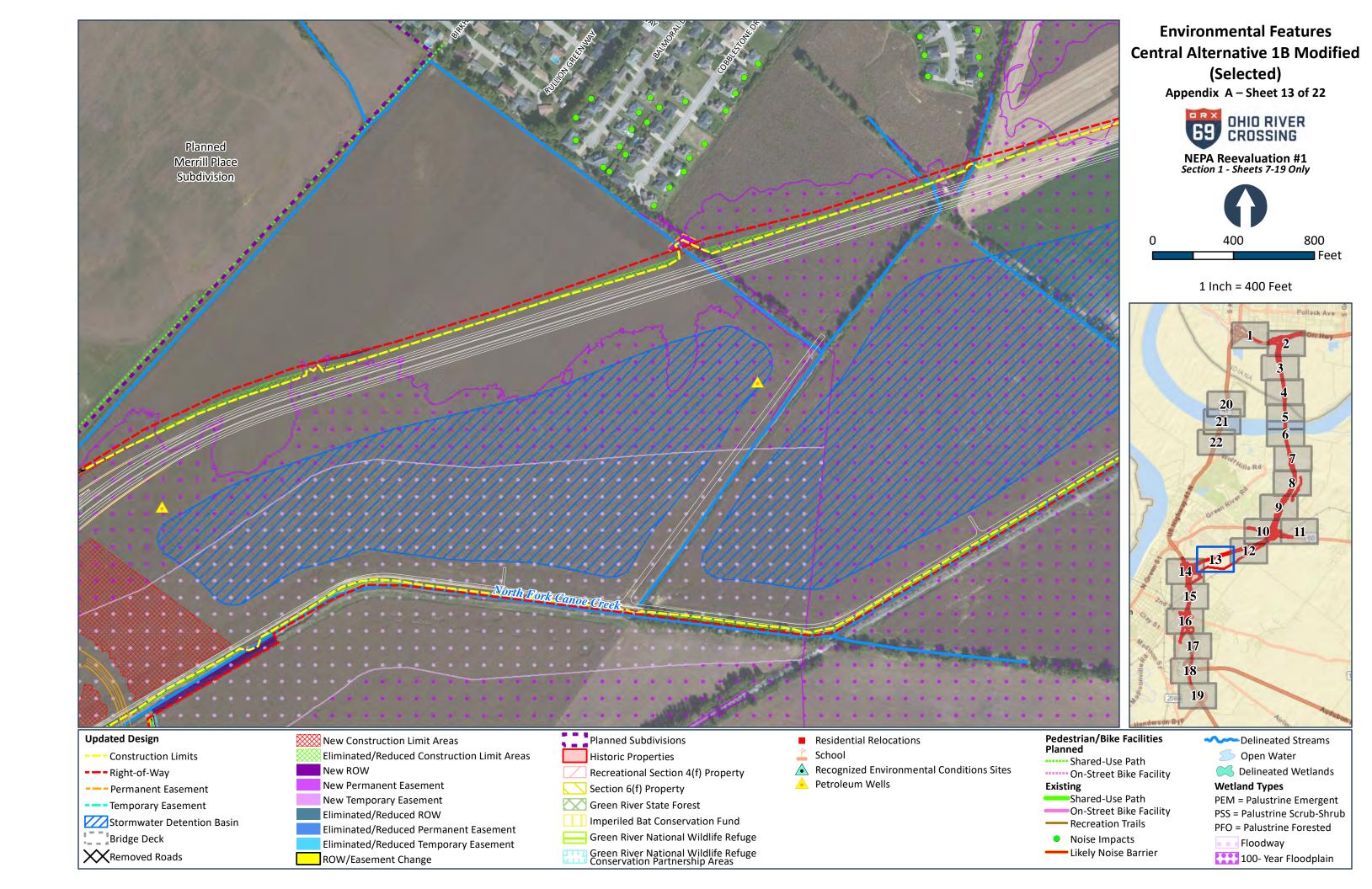


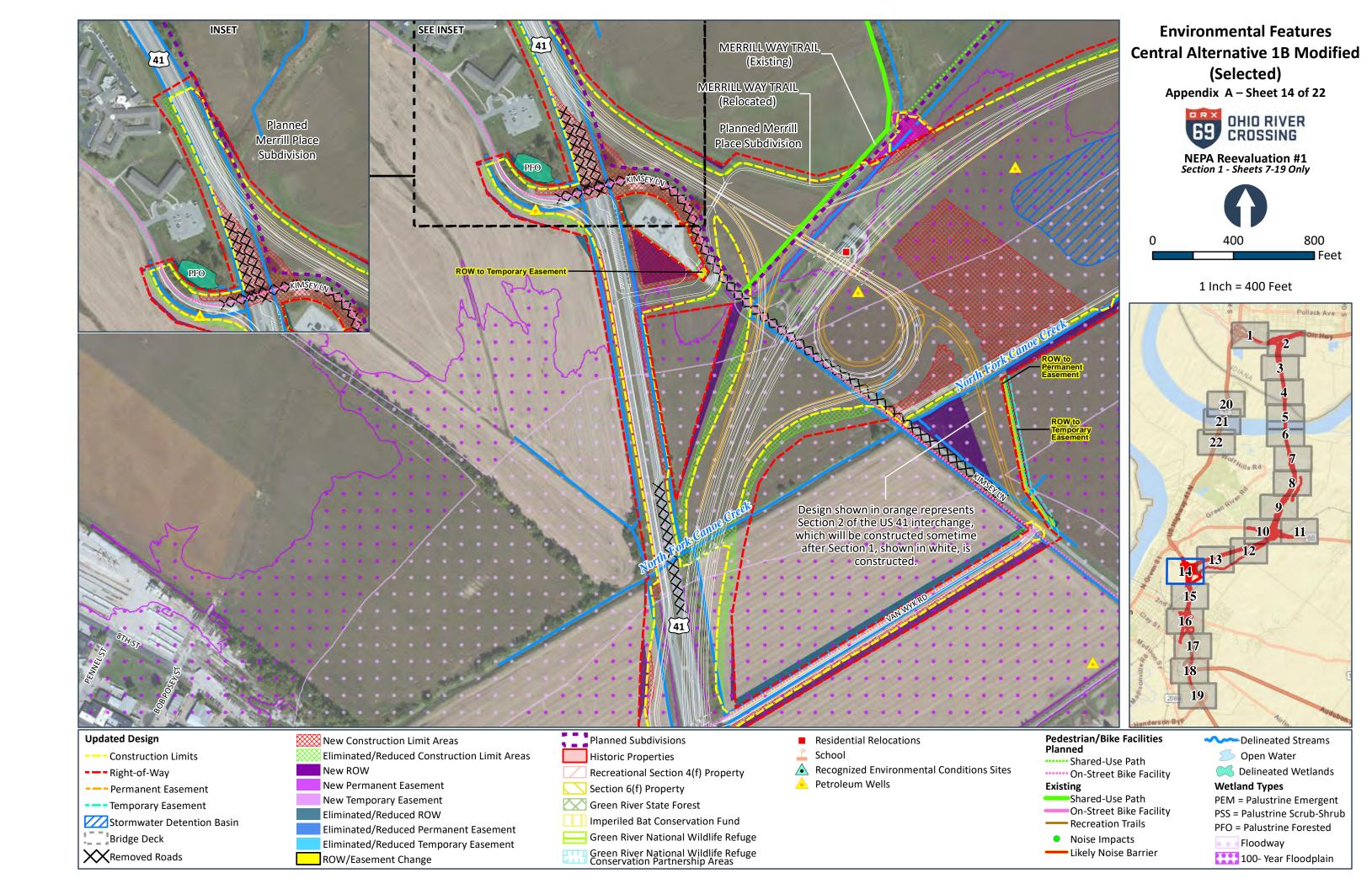


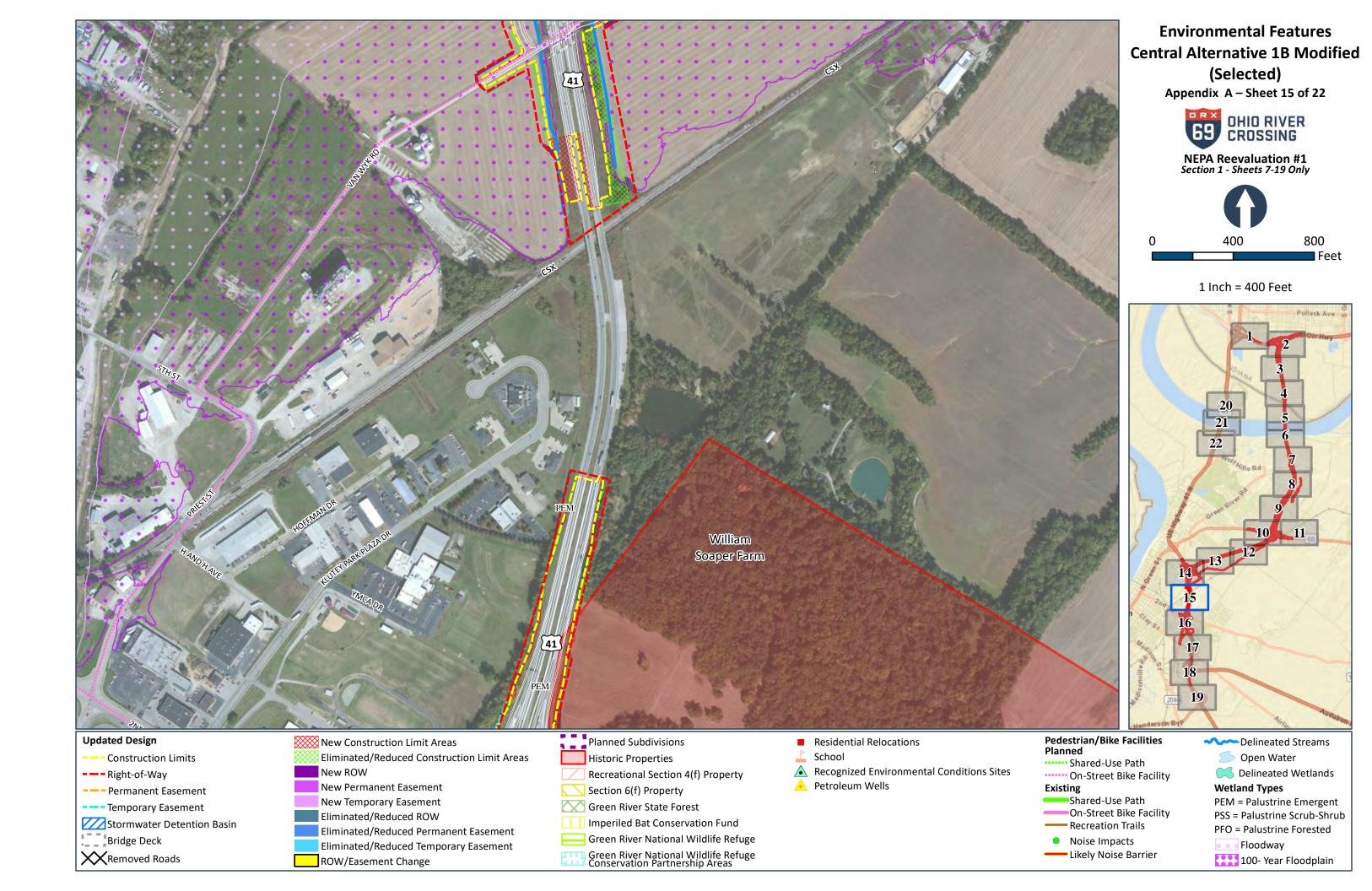


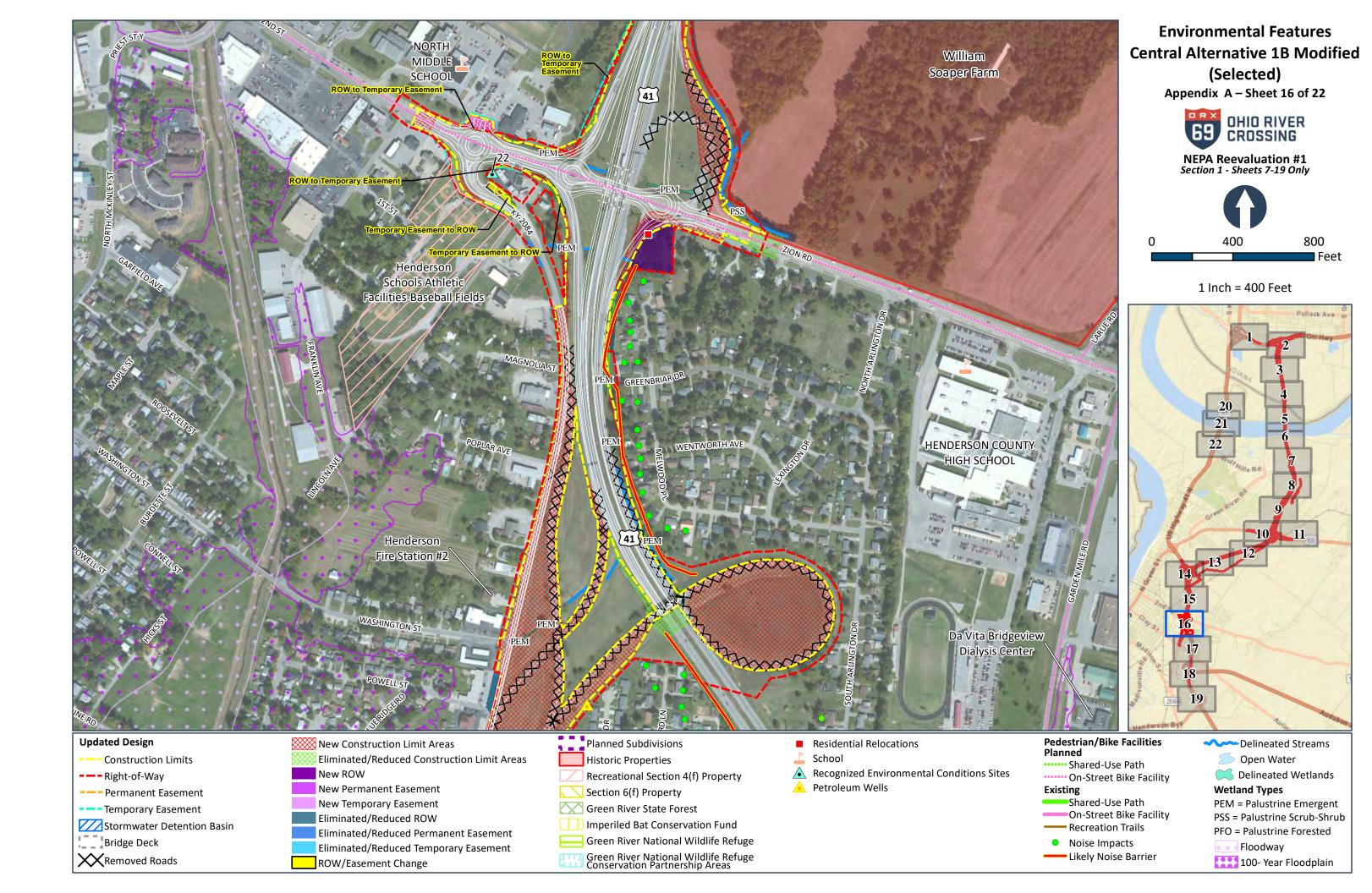


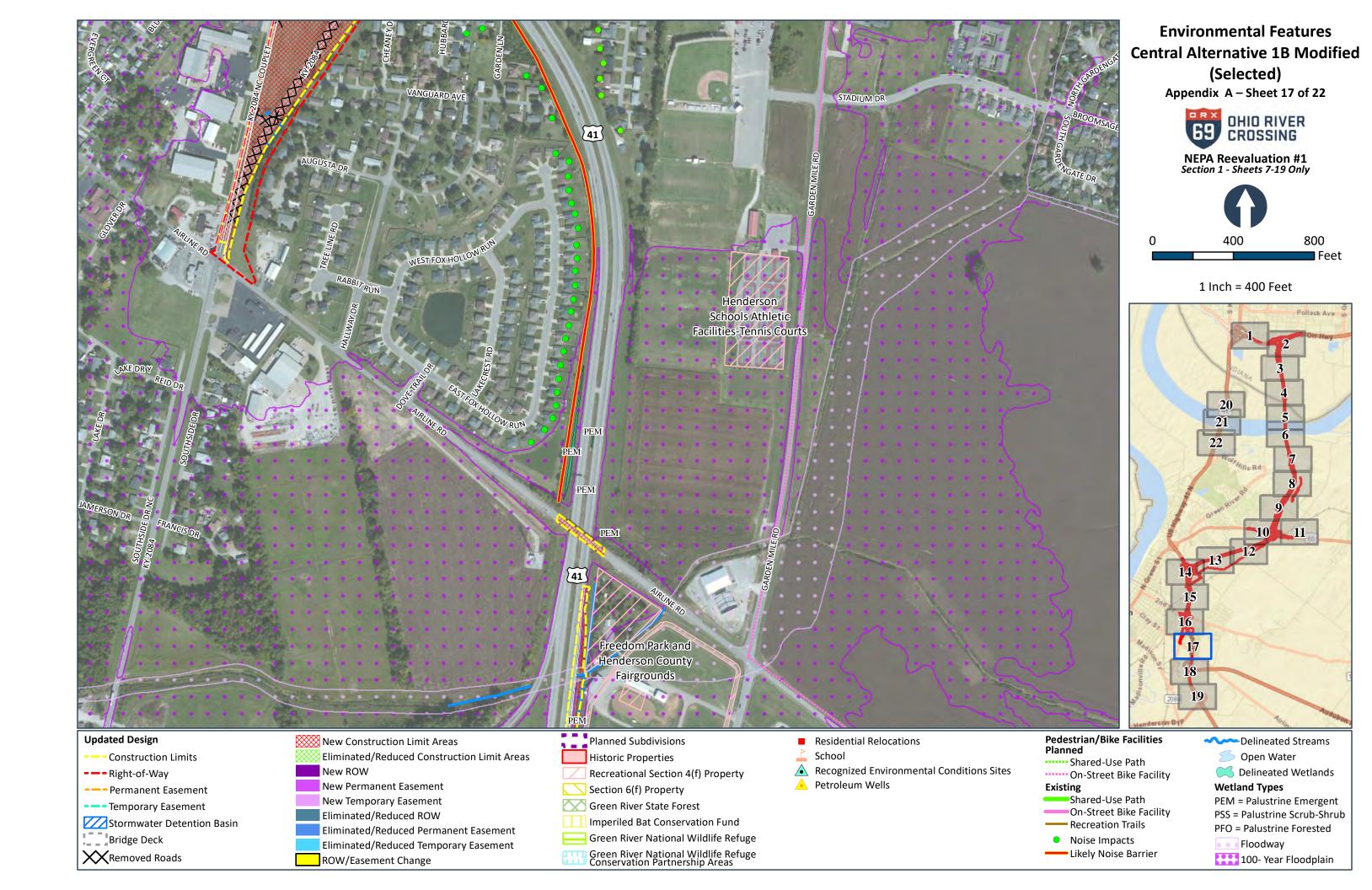


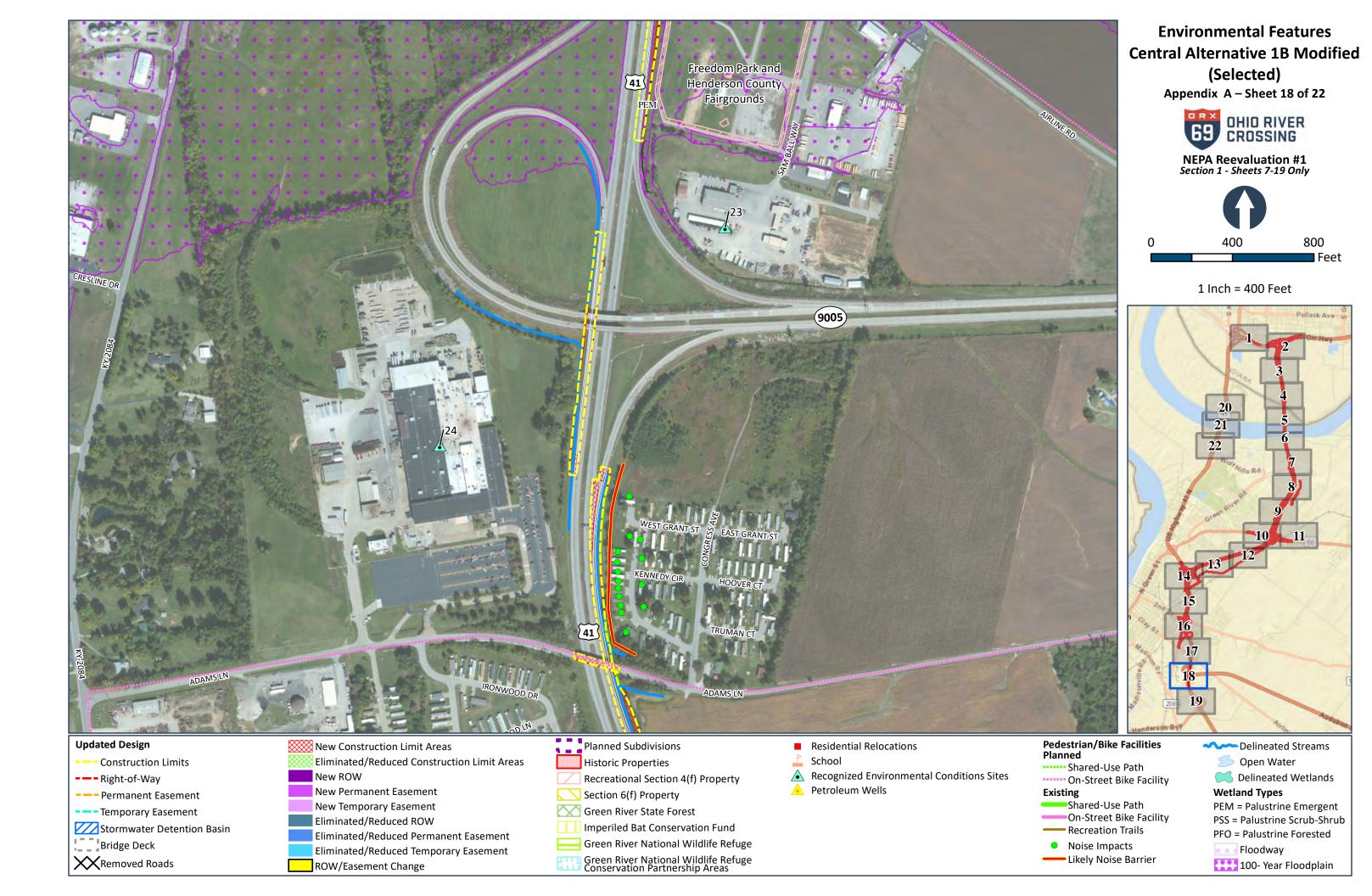


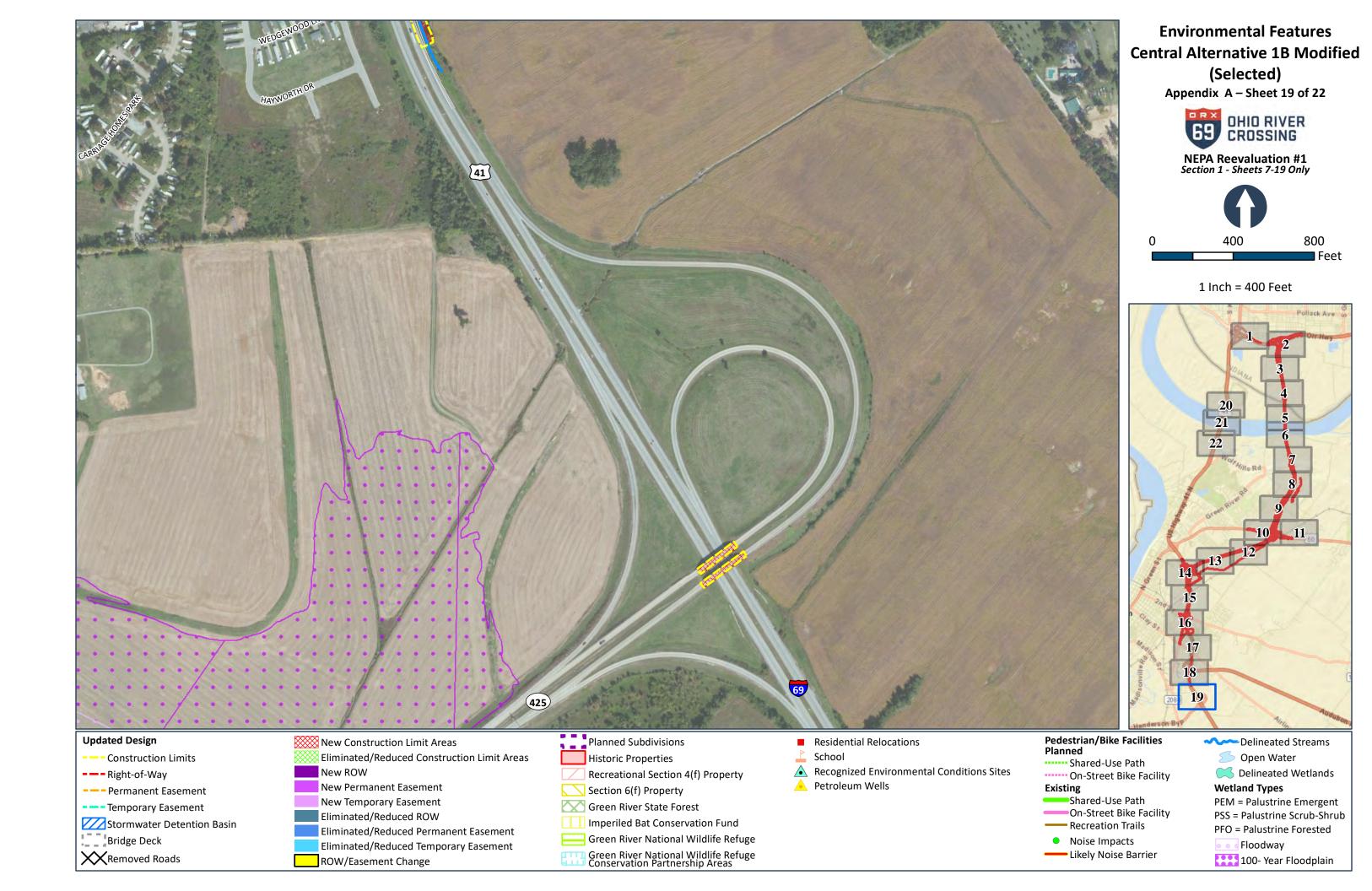














APPENDIX B

Structural Noise Abatement Barrier Updates Technical Memorandum - Section 1



To: Craig J. Craig From: Simon Binau

Noise Subject Matter Expert

Kentucky Transportation Cabinet

Division of Environmental Analysis

Senior Environmental Specialist
Stantec Consulting Services Inc.

Project: I-69 Ohio River Crossing (ORX) Project Date: May 30, 2023

REFERENCE: Structural Noise Abatement Barrier Updates

A Noise Impact Analysis Addendum (NIAA), dated May 11, 2021, was completed by HMB Professional Engineers Inc. in preparation of the Draft Environmental Impact Statement (DEIS) for the I–69 Ohio River Crossing (ORX) project in the Evansville, IN and Henderson, KY area. Since completion of that study, the project has undergone design revisions involving the US 41/KY 351 interchange which have prompted the reevaluation of the noise abatement barrier recommended by that analysis. Additional reevaluation was conducted for the proposed relocation of two additional noise barriers from their recommended placement along roadway edge of shoulder to nearer the highway right of way boundary (outside the clear zone) for improved safety and maintenance:

• Adams Lane: the 2021 NIAA recommended a noise barrier along the northbound US 41 auxiliary lane and exit ramp to Audubon Parkway edge of shoulder. Reported barrier cost (at \$30 per square foot) was \$529,155 with 24 benefited receptors (\$22,048 per benefited receptor).

This barrier was reevaluated for placement nearer the US 41 right of way boundary.

• **Vanguard Avenue**: the 2021 NIAA recommended a noise barrier along the southbound US 41 edge of shoulder between the KY 2084 ramp overpass to northbound US 41 and Airline Road (the KY 2084 ramp overpass is to be removed as part of the project). Reported barrier cost (at \$30 per square foot) is \$1,533,423 with 100 benefited receptors (\$15,334 per benefited receptor).

This barrier was re-evaluated for placement nearer the US 41 right of way boundary.

• **Melwood Drive**: the 2021 NIAA recommended a two-barrier system along the northbound US 41 edge of shoulder and that of its northbound exit to KY 351. Reported combined barrier system cost (at \$30 per square foot) is \$933,612 with 33 benefited receptors (\$28,291 per benefited receptor).

Since the completion of the 2021 NIAA, design revisions for the US 41/KY 351 (Zion Road) interchange area have altered proposed roadway geometry, prompting a reanalysis of pre-abatement Build-condition sound levels and the reevaluation of an updated noise barrier design (partially relocated nearer the highway right of way boundary).

On January 30, 2023, a meeting involving representatives from KYTC-Division of Environmental Analysis (Craig J. Craig, Noise Subject Matter Expert) and Stantec Consulting Services Inc. (Brian Aldridge, Simon Binau) was held to solicit concurrence and input from KTYC-DEA regarding updated noise barrier analysis and evaluation, as described above. The details and conclusions of this discussion are detailed in the attached Meeting Minutes.

Per this meeting, it was resolved that updated barrier analysis and evaluation for the area proximate to the recently revised roadway geometry (i.e., the Melwood Drive location) would be performed in compliance with current KYTC noise policy criteria (revised July 2022), while the evaluation of updated barrier concepts for the Vanguard Avenue and Adams Lane locations be subject to the July 2020 KYTC policy criteria in place at the time of the 2021 NIAA. Current KYTC policy establishes the cost reasonableness threshold at \$40,000 per benefited



receptor, using a barrier cost of \$32 per square foot. The cost reasonableness threshold for the KYTC policy in place at the time of the 2021 NIAA was \$35,000 per benefited receptor, using a barrier cost of \$30 per square foot. KYTC Design Goal for structural noise abatement, which requires a 7-dB(A) reduction for a minimum 50% of all front row benefited receptors, remains unchanged.

Evaluations find that each of the three updated noise abatement barrier concepts are feasible and reasonable for implementation per the applicable KYTC policy criteria described above. Details for these barrier updates are summarized below (alongside the barrier concepts recommended in the 2021 NAIA), followed by receptor sound level data for each location. Updated barrier locations and receptor impact/benefit status are depicted in the included exhibits.

ADAMS LANE Barrier

This update proposes relocating this barrier from edge of shoulder to placement nearer the highway right of way boundary. The proposed relocation benefits more receptors at shorter length and shorter average height, and at an \$81,231 lower cost. The updated analysis of predicted sound level attenuation for the relocated barrier design was performed using the receptor locations and pre-abatement Design Year (2045) Build-condition (DYB 2045) sound levels reported in the 2021 NIAA. Details of the previously recommended (2021 NIAA) and updated (2023 Update) barrier concepts, including the cost per benefited receptor (CBR), are provided below:

Design	Length	Avg. Height	Design Goal	Benefits	Cost/ft. ²	Cost	CBR	Feasible/Reasonable?
2021 NIAA	1,140 ft.	15.74 ft.	52.9%	24	\$30	\$529,155	\$22,048	Yes
2023 Update	1,008 ft.	14.81 ft.	83.3%	26	\$30	\$447,924	\$17,228	Yes

VANGUARD AVENUE Barrier

This update proposes relocating this barrier from edge of shoulder to placement nearer the highway right of way boundary. The proposed relocation is designed for placement upon a three to four-foot-tall foundation of graded earthen berm (using waste material from the removal of the adjacent KY 2084 ramp). This updated barrier concept provides fewer total benefits than previously recommended, but retains benefits for all impacted receptors at a shorter height, and at a \$565,809 lower cost. Supplemental sound level attenuation is provided by additional berm grading at the north terminus of this barrier using waste material as described above.

The updated analysis and evaluation of the relocated barrier was performed using the receptor locations and pre-abatement DYB 2045 sound levels as reported in the 2021 NIAA. Details of the previously recommended (2021 NIAA) and updated (2023 Update) barrier concepts are provided below:

Design	Length	Avg. Height	Design Goal	Benefits	Cost/ft.2	Cost	CBR	Feasible/Reasonable?
2021 NIAA	3,260 ft.	15.68 ft.	87.9%	100	\$30	\$1,533,423	\$15,334	Yes
2023 Update	3,024 ft.	10.67 ft.	93.9%	73	\$30	\$967,614	\$13,255	Yes

MELWOOD DRIVE Barrier

A full reanalysis of DYB 2045 conditions was required for the receptors at this location due to revised roadway geometry in the area of the US 41/KY 351 interchange. The revised roadway design displaces a previously impacted (but non-benefited) receptor (351-02-01-F). To accurately assess updated noise barrier concepts for this area, an updated Build-condition noise model was constructed which incorporates the revised roadway geometry. Updated analysis of DYB 2045 sound levels predicts nine fewer noise impacts at this location. Per





KYTC-DEA direction, updated barrier evaluation was performed using current KYTC noise policy criteria for noise barrier cost (\$32 per square foot) and reasonableness (\$40,000 per benefited receptor or less).

Instead of the previously recommended two-barrier system, this update proposes a single-barrier concept for the Melwood Drive location, designed for placement along highway right-of-way boundary for the southern portion of the barrier and transitioning to edge of shoulder along the proposed exit ramp from US 41 to KY 351 to the north. The transition to edge of shoulder is necessary to due to right of way constraints and the provision of access to overhead electrical utilities in the vicinity of Greenbriar Drive. An approximate 160-foot length of the south end of this barrier is designed for placement upon a foundation of graded earthen berm using waste material from the removal of the adjacent KY 2084 loop ramp. Maximum height of this berm foundation is approximately four to five feet.

This updated barrier concept provides fewer benefits than was previously recommended for earlier roadway design, but succeeds in benefiting all impacted receptors at a \$22,836 lower lost. Details of the previously recommended (2021 NIAA) and updated (2023 Update) barrier concepts are provided below:

Design	Length	Avg. Height	Design Goal	Benefits	Cost/ft. ²	Cost	CBR	Feasible/Reasonable?
2021 NIAA	2,000 ft.	14.64 ft.	69.5%	33	\$30	\$933,612	\$28,291	Yes
2023 Update	1,716 ft.	16.59 ft.	76.5%	24	\$32	\$910,776	\$37,949	Yes

All three updated barrier concepts are recommended for implementation. Updated barrier locations are shown on the included exhibits; sound level data for each location is provided below:

ADAMS LANE Barrier: Sound Level Information

NOIS	SE IMPACT ANALYS	SIS ADDENDDUM (2	021)	NOISE BARRIER	UPDATE (2023)
Receptor ID	DYB 2045 dBA Leq	dBA Leq with Barrier	Insertion Loss	dBA Leq with Barrier	Insertion Loss
KEN-01-01-F	70.3	61.9	8.4	60.2	10.1
KEN-02-01-F	70.6	61.9	8.7	60.4	10.2
KEN-03-01-F	70.9	62.2	8.7	60.5	10.4
KEN-04-01-F	72.4	62.4	10.0	60.9	11.5
KEN-05-01-F	67.0	60.6	6.4	61.8	5.2
KEN-06-01-F	65.0	60.0	5.0	59.5	5.5
KEN-07-01-F	63.8	59.4	4.4	59.3	4.5
KEN-08-01-F	62.9	58.8	4.1	59.3	3.6
KEN-09-01-F	61.9	58.1	3.8	58.4	3.5
KEN-10-01-F	60.9	57.5	3.4	57.7	3.2
KEN-11-01-F	59.9	56.8	3.1	57.1	2.8
KEN-12-01	66.8	60.4	6.4	59.3	7.5
KEN-13-01	65.4	59.5	5.9	58.2	7.2
KEN-14-01	64.5	59.0	5.5	57.6	6.9
KEN-15-01	63.6	58.6	5.0	57.1	6.5
KEN-16-01	62.5	57.9	4.6	56.4	6.1
KEN-17-01	61.9	57.5	4.4	56.1	5.8
KEN-18-01	67.1	60.1	7.0	62.1	5.0
KEN-19-01	65.6	59.2	6.4	62.2	3.4
KEN-20-01	64.4	58.6	5.8	61.3	3.1
KEN-21-01	63.2	57.9	5.3	57.5	5.7
KEN-22-01	62.2	57.4	4.8	58.7	3.5
KEN-23-01	66.9	60.0	6.9	59.8	7.1





NOIS	SE IMPACT ANALYS	SIS ADDENDDUM (2	021)	NOISE BARRIER	UPDATE (2023)
Receptor ID	DYB 2045 dBA Leq	dBA Leq with Barrier	Insertion Loss	dBA Leq with Barrier	Insertion Loss
KEN-24-01	65.5	59.3	6.2	59.4	6.1
KEN-25-01	64.3	58.6	5.7	58.7	5.6
KEN-26-01	63.1	58.2	4.9	58.1	5.0
KEN-27-01	62.0	57.4	4.6	57.3	4.7
KEN-28-01	61.1	56.9	4.2	57.0	4.1
WES-01-01-F	70.2	63.4	6.8	61.6	8.6
WES-02-01	65.8	62.1	3.7	60.4	5.4
WES-03-01	63.6	60.8	2.8	60.7	2.9
WES-04-01	61.7	59.1	2.6	58.0	3.7
WES-05-01	61.0	58.4	2.6	58.7	2.3
WES-06-01	60.4	57.9	2.5	59.1	1.3
WES-07-01-F	68.3	61.6	6.7	60.5	7.8
WES-08-01	66.1	60.7	5.4	62.0	4.1
WES-09-01	65.0	60.5	4.5	61.6	3.4
WES-10-01	63.1	59.4	3.7	58.0	5.1
WES-11-01	62.2	58.9	3.3	58.0	4.2
WES-12-01	61.4	58.3	3.1	57.1	4.3
WES-13-01	60.8	57.9	2.9	56.8	4.0
KEN-29-01-F	71.6	62.1	9.5	62.1	9.5
KEN-30-01-F	72.0	62.0	10.0	62.9	9.1
KEN-31-01-F	72.2	62.0	10.2	61.2	11.0
KEN-32-01-F	71.8	61.9	9.9	61.0	10.8

VANGUARD AVENUE Barrier: Sound Level Information

NOIS	SE IMPACT ANALYS	SIS ADDENDDUM (2	021)	NOISE BARRIER	UPDATE (2023)
Receptor ID	DYB 2045 dBA Leq	dBA Leq with Barrier	Insertion Loss	dBA Leq with Barrier	Insertion Loss
CHE-01-01-F	64.4	59.4	5.0	58.4	6.0
CHE-02-01	64.1	58.4	5.7	57.8	6.3
HUB-01-01-F	68.4	61.3	7.1	59.5	8.9
HUB-02-01	67.9	60.3	7.6	59.7	8.2
HUB-03-01	63.6	58.5	5.1	57.1	6.5
HUB-08-01-F	75.0	61.8	13.2	63.5	11.5
HUB-09-01-F	72.4	60.6	11.8	62.8	9.6
HUB-10-01-F	70.2	59.5	10.7	61.9	8.3
CHE-03-01	62.8	57.1	5.7	57.1	5.7
CHE-04-01	62.1	56.1	6.0	56.5	5.6
GAR-01-01-F	69.5	59.1	10.4	61.6	7.9
GAR-02-01-F	69.8	60.6	9.2	61.5	8.3
HUB-04-01	62.2	57.4	4.8	56.2	6.0
HUB-05-01	61.4	56.1	5.3	55.8	5.6
HUB-06-01	60.3	55.1	5.2	55.0	5.3
HUB-07-01	62.1	56.1	6.0	55.8	6.3
HUB-11-01-F	69.2	59.0	10.2	61.4	7.8
HUB-12-01	67.2	58.2	9.0	60.0	7.2
HUB-13-01	65.3	57.2	8.1	58.5	6.8
HUB-14-01	64.2	57.1	7.1	57.6	6.6
VAN-01-01-F	70.9	60.5	10.4	62.5	8.4
VAN-02-01	63.9	61.4	2.5	61.6	2.3



NOIS	E IMPACT ANALYS	SIS ADDENDDUM (2	021)	NOISE BARRIER	UPDATE (2023)
Receptor ID	DYB 2045 dBA Leq	dBA Leq with Barrier	Insertion Loss	dBA Leq with Barrier	Insertion Loss
VAN-03-01	64.5	56.5	8.0	57.6	6.9
VAN-04-01	63.4	56.7	6.7	57.0	6.4
AUG-02-01	62.2	56.2	6.0	57.2	5.0
AUG-01-01	62.2	58.2	4.0	58.9	3.3
VAN-16-01	63.8	57.5	6.3	58.6	5.2
VAN-17-01	65.0	58.2	6.8	59.5	5.5
VAN-18-01-F	70.6	62.1	8.5	63.5	7.1
VAN-15-01	62.2	55.2	7.0	56.1	6.1
VAN-19-01	60.2	54.6	5.6	54.7	5.5
HAL-02-01	58.6	53.6	5.0	53.5	5.1
VAN-20-01	59.7	54.4	5.3	54.1	5.6
HAL-03-01	57.3	52.7	4.6	52.2	5.1
AUGD-08-01	58.3	53.5	4.8	53.5	4.8
AUGD-09-01	57.3	53.3	4.0	52.5	4.8
AUGD-10-01	56.5	52.4	4.1	51.9	4.6
AUGD-13-01	55.6	50.8	4.8	51.1	4.5
AUGD-12-01	56.5	51.5	5.0	51.6	4.9
AUGD-11-01	59.8	54.6	5.2	54.9	4.9
AUGD-03-01	61.0	55.1	5.9	56.1	4.9
EFOR-29-01	60.5	53.7	6.8	54.6	5.9
EFOR-28-01	63.3	55.0	8.3	55.8	7.5
EFOR-01-01-F	69.8	59.2	10.6	60.0	9.8
EFOR-02-01-F	72.5	60.9	11.6	61.4	11.1
LAKR-01-01	62.0	55.5	6.5	56.2	5.8
WFOR-01-01	62.1	55.7	6.4	56.3	5.8
EFOR-35-01	61.5	55.2	6.3	55.8	5.7
EFOR-34-10	61.5	55.1	6.4	55.5	6.0
EFOR-33-01	61.3	54.7	6.6	55.3	6.0
EFOR-32-01	62.6	55.3	7.3	56.0	6.6
EFOR-30-01	60.1	53.9	6.2	54.8	5.3
EFOR-31-01	60.7	54.3	6.4	55.3	5.4
WFOR-03-01	60.9	53.6	7.3	54.4	6.5
WFOR-03-01 WFOR-04-01	57.6	51.7	5.9	52.1	5.5
WFOR-04-01 WFOR-05-01	56.9	52.0	4.9	52.2	4.7
WFOR-03-01			5.5		5.2
WFOR-06-01	56.6 56.9	51.1 51.7		51.4 52.0	4.9
			5.2		
WFOR-09-01	55.9	50.7	5.2	51.8	4.1
WFOR-08-01	57.1	51.1	6.0	52.2	4.9
EFOR-16-01-F	71.5	61.3	10.2	62.7	8.8
EFOR-15-01-F	71.8	61.3	10.5	62.8	9.0
EFOR-14-01-F	72.3	61.7	10.6	63.0	9.3
EFOR-13-01-F	73.0	62.2	10.8	63.2	9.8
EFOR-12-01-F	72.1	62.2	9.9	62.9	9.2
EFOR-11-01-F	72.6	62.7	9.9	62.6	10.0
EFOR-10-01-F	72.3	62.4	9.9	62.4	9.9
EFOR-09-01-F	72.3	62.2	10.1	62.3	10.0
EFOR-08-01-F	72.3	61.8	10.5	62.2	10.1
EFOR-07-01-F	72.4	61.7	10.7	62.1	10.3
EFOR-06-01-F	72.1	61.5	10.6	61.8	10.3
EFOR-05-01-F	71.6	61.1	10.5	61.5	10.1
EFOR-04-01-F	71.5	61.2	10.3	61.3	10.2



NOIS	SE IMPACT ANALYS	SIS ADDENDDUM (2	021)	NOISE BARRIER	UPDATE (2023)
Receptor ID	DYB 2045 dBA Leq	dBA Leq with Barrier	Insertion Loss	dBA Leq with Barrier	Insertion Loss
EFOR-03-01-F	72.1	61.2	10.9	61.6	10.5
LAKR-09-01	61.4	55.1	6.3	58.1	3.3
LAKR-08-01	61.7	55.0	6.7	58.0	3.7
LAKR-07-01	61.6	54.9	6.7	57.7	3.9
EFOR-43-01	60.1	54.2	5.9	56.1	4.0
EFOR-42-01	60.4	54.5	5.9	56.1	4.3
EFOR-41-01	60.4	54.5	5.9	55.9	4.5
EFOR-40-01	60.6	54.7	5.9	56.0	4.6
LAKR-06-01	61.6	55.1	6.5	57.4	4.2
LAKR-05-01	61.7	55.3	6.4	57.1	4.6
EFOR-39-01	60.9	54.9	6.0	56.4	4.5
LAKR-04-01	61.8	55.7	6.1	56.9	4.9
EFOR-38-01	60.9	54.9	6.0	55.7	5.2
EFOR-37-01	61.2	55.2	6.0	55.8	5.4
LAKR-03-01	61.9	55.7	6.2	56.7	5.2
LAKR-02-01	62.2	55.9	6.3	56.8	5.4
EFOR-36-01	61.4	55.2	6.2	55.6	5.8
WFOR-02-01	58.8	52.8	6.0	54.2	4.6
LAKR-18-01	58.6	52.5	6.1	53.9	4.7
EFOR-46-01	62.0	57.0	5.0	59.1	2.9
EFOR-47-01	61.1	56.6	4.5	58.4	2.7
EFOR-48-01	56.1	51.6	4.5	53.8	2.3
LAKR-10-01	61.2	55.2	6.0	58.2	3.0
EFOR-45-01	60.2	54.8	5.4	57.0	3.2
EFOR-44-01	60.3	54.8	5.5	57.1	3.2
EFOR-21-01-F	71.2	62.8	8.4	62.8	8.4
EFOR-20-01-F	72.5	62.3	10.2	62.1	10.4
EFOR-19-01-F	71.8	62.0	9.8	62.8	9.0
EFOR-18-01-F	71.2	61.6	9.6	63.0	8.2
EFOR-17-01-F	71.8	61.7	10.1	62.7	9.1
EFOR-27-01	58.4	55.8	2.6	57.1	1.3
EFOR-26-01	59.7	56.8	2.9	58.1	1.6
EFOR-25-01	61.0	57.7	3.3	59.0	2.0
EFOR-24-01-F	64.2	60.2	4.0	60.3	3.9
EFOR-23-01-F	67.5	62.3	5.2	61.4	6.1
EFOR-22-01-F	69.9	63.1	6.8	61.8	8.1
LAKR-17-01	58.5	52.4	6.1	54.3	4.2
LAKR-12-01	58.3	52.1	6.2	54.1	4.2
LAKR-13-01	58.0	52.0	6.0	54.3	3.7
LAKR-14-01	58.0	52.1	5.9	54.6	3.4
LAKR-15-01	57.9	52.0	5.9	54.7	3.2
LAKR-16-01	58.0	52.3	5.7	54.9	3.1
LAKR-11-01	58.2	53.6	4.6	55.7	2.5



MELWOOD AVENUE Barrier: Sound Level Information

NOISE	MPACT ANALYS	SIS ADDENDDUM	1 (2021)	NOISE E	ARRIER UPDATI	E (2023)
Receptor ID	DYB 2045 dBA Leq	dBA Leq with Barrier	Insertion Loss	UPDATED DYB 2045 dBA Leq	dBA Leq with Barrier	Insertion Loss
351-02-01-F	70.2	69.3	0.9	TAKE	TAKE	TAKE
351-04-01	66.4	64.4	2.0	65.8	65.2	0.6
351-05-01	65.5	64.0	1.5	64.5	64.1	0.4
351-06-01	63.8	62.4	1.4	62.7	62.3	0.4
351-07-01	63.3	62.7	0.6	63.6	63.5	0.1
351-08-01	62.4	61.9	0.5	63.6	63.6	0.0
351-09-01	60.5	59.8	0.7	60.2	60.1	0.1
351-10-01	59.8	59.1	0.7	59.9	59.7	0.2
351-11-01	59.6	59.0	0.6	59.6	59.5	0.1
ARL-03-01	59.1	58.7	0.4	59.3	59.2	0.1
ARL-01-01	61.6	61.4	0.2	63.3	63.2	0.1
ARL-02-01	58.3	58.1	0.2	58.6	58.6	0.0
ARL-04-01	56.6	56.4	0.2	56.4	56.3	0.0
ARL-04-01 ARL-05-01	54.7	54.4	0.2	54.4	54.3	
						0.1
ARL-06-01	56.0	55.4	0.6	55.3	55.0	0.3
MELW-01-01-F	70.9	65.6	5.3	69.4	64.0	5.4
MELW-02-01-F	73.1	64.2	8.9	71.3	61.9	9.4
MELW-03-01-F	72.4	63.1	9.3	70.3	62.0	8.3
MELW-04-01-F	72.0	62.8	9.2	70.2	62.1	8.1
MELW-05-01-F	71.7	62.6	9.1	70.0	62.2	7.8
GRED-05-02-F	72.8	63.0	9.8	71.2	62.5	8.7
GRED-06-02	71.0	63.1	7.9	68.9	62.9	6.0
MELW-23-01	66.6	64.1	2.5	65.3	63.5	1.8
MELW-24-01	65.2	62.9	2.3	64.1	62.5	1.6
MELW-25-01	64.9	62.1	2.8	63.7	61.7	2.0
MELW-26-01	64.9	62.7	2.2	63.5	61.5	2.0
GRED-07-01	66.3	61.3	5.0	64.1	60.9	3.2
GRED-08-01	65.7	61.9	3.8	63.8	61.4	2.4
GRED-09-01	64.1	61.0	3.1	62.3	61.0	1.3
GRED-10-01	63.3	60.9	2.4	61.7	60.9	0.8
GRED-11-01	62.1	60.1	2.0	60.6	59.9	0.7
GRED-12-01	60.7	59.3	1.4	59.4	58.9	0.5
GRED-13-01	60.0	58.7	1.3	58.8	58.4	0.4
GRED-14-01	58.9	57.9	1.0	57.8	57.6	0.2
GRED-15-01	58.3	57.4	0.9	57.3	57.1	0.2
GRED-16-01	57.7	56.9	0.8	56.8	56.6	0.2
GRED-17-01	57.2	56.4	0.8	56.4	56.1	0.2
GRED-17-01 GRED-18-01	56.7	56.2	0.5	55.9	55.7	0.3
GRED-10-01	74.2	65.1	9.1	73.0	61.7	11.3
GRED-01-02-F GRED-02-02	74.2 71.7	64.0	7.7	69.5	63.1	6.4
GRED-03-01	67.3	61.5	5.8	65.1	61.1	4.0
GRED-04-01	64.1	59.1	5.0	62.2	58.4	3.8
MELW-06-01-F	72.6	65.3	7.3	70.7	62.3	8.4
MELW-07-01-F	72.3	64.8	7.5	70.1	61.6	8.5
MELW-08-01-F	72.9	63.8	9.1	70.8	61.3	9.5
MELW-09-01-F	73.0	62.7	10.3	71.1	61.3	9.8
MELW-10-01-F	74.5	63.1	11.4	73.4	60.3	13.1
MELW-11-01-F	74.6	63.3	11.3	73.6	60.2	13.4
MELW-12-01-F	71.7	62.2	9.5	69.4	61.4	8.0





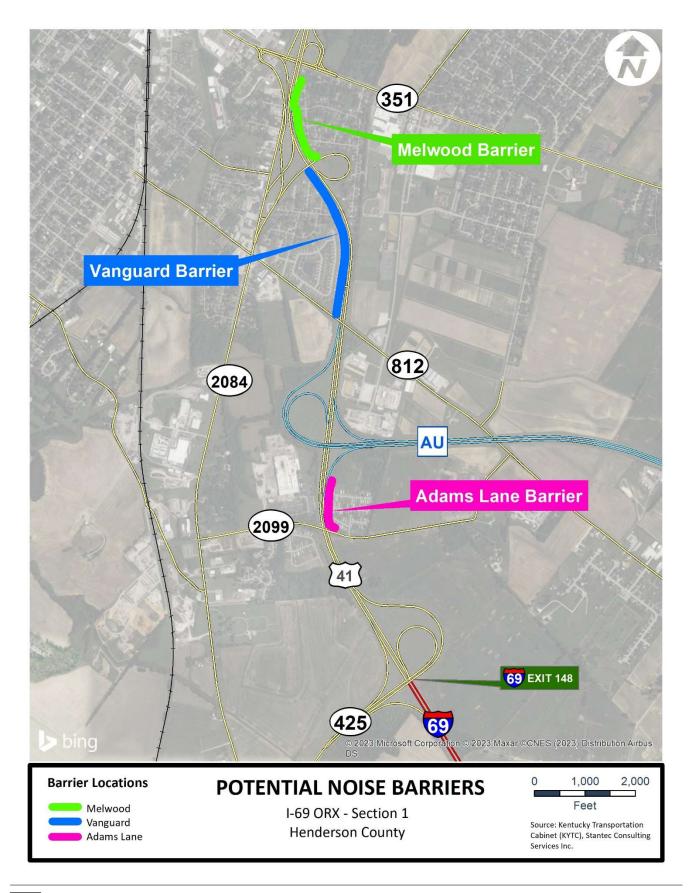
MELW-13-01-F	70.0	61.9	8.1	67.5	60.8	6.7
MELW-14-01-F	68.1	61.6	6.5	65.5	60.1	5.4
MELW-15-01-F	66.0	60.8	5.2	63.7	58.7	5.0
MELW-16-01-F	64.7	60.4	4.3	62.7	58.2	4.5
MELW-17-01-F	63.5	59.7	3.8	61.8	57.4	4.4
MELW-18-01-F	62.4	59.2	3.2	60.8	57.1	3.7
MELW-19-01-F	61.0	58.3	2.7	59.6	56.6	3.0
MELW-20-01-F	60.0	57.8	2.2	58.7	56.3	2.4
WEN-01-01	65.9	60.8	5.1	64.2	60.0	4.2
WEN-02-01	64.9	59.8	5.1	63.2	59.1	4.1
WEN-03-01	63.5	58.9	4.6	61.7	58.6	3.1
WEN-04-01	66.7	60.5	6.2	64.5	58.9	5.6
WEN-05-01	65.7	59.6	6.1	63.3	58.2	5.1
WEN-06-01	64.0	58.2	5.8	61.9	57.1	4.8
WEN-07-01	62.4	57.2	5.2	60.6	56.0	4.6
WEN-08-01	61.5	56.5	5.0	59.9	55.5	4.4
WEN-09-01	60.1	55.7	4.4	58.7	54.7	4.0
LEX-05-01	60.1	56.0	4.1	58.6	55.1	3.5
LEX-04-01	57.8	55.0	2.8	56.7	54.2	2.5
MELW-33-01 ¹				64.7	59.1	5.6
MELW-27-01	66.4	59.8	6.6	64.0	58.9	5.1
MELW-28-01	64.7	58.8	5.9	62.5	57.5	5.0
MELW-29-01	63.5	58.2	5.3	61.6	57.2	4.4
MELW-30-01	61.0	55.8	5.2	59.3	55.6	3.7
MELW-31-01	59.1	55.1	4.0	57.7	54.6	3.1
MELW-32-01	59.3	56.5	2.8	58.0	55.3	2.7

¹MELW-33-01 was added to this update to account for a previously unrepresented residence at 2231 Melwood Drive

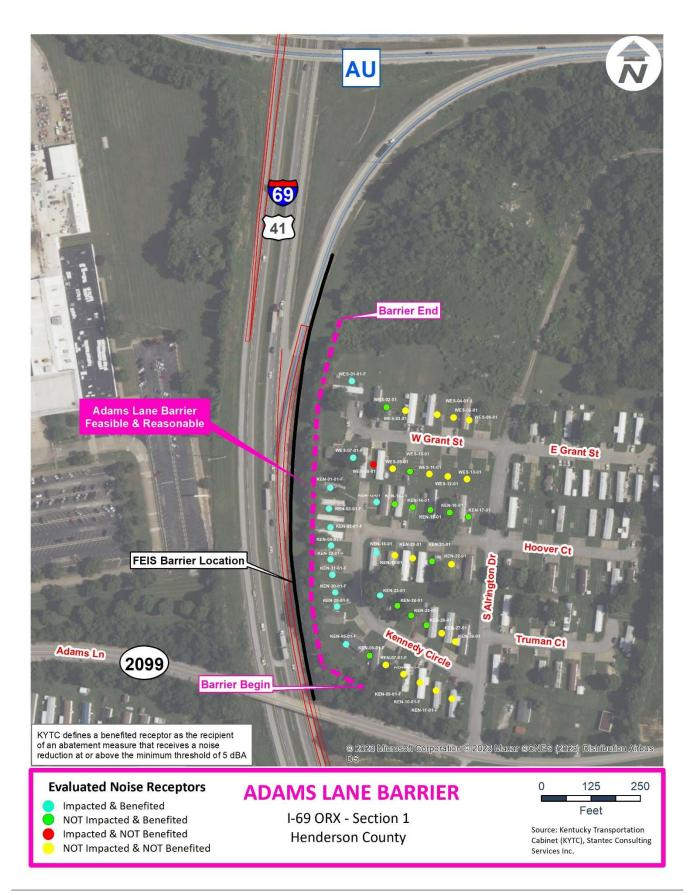
Noise Impacts
Benefited Receptors

Benefited Receptor Meets KYTC Design Goal

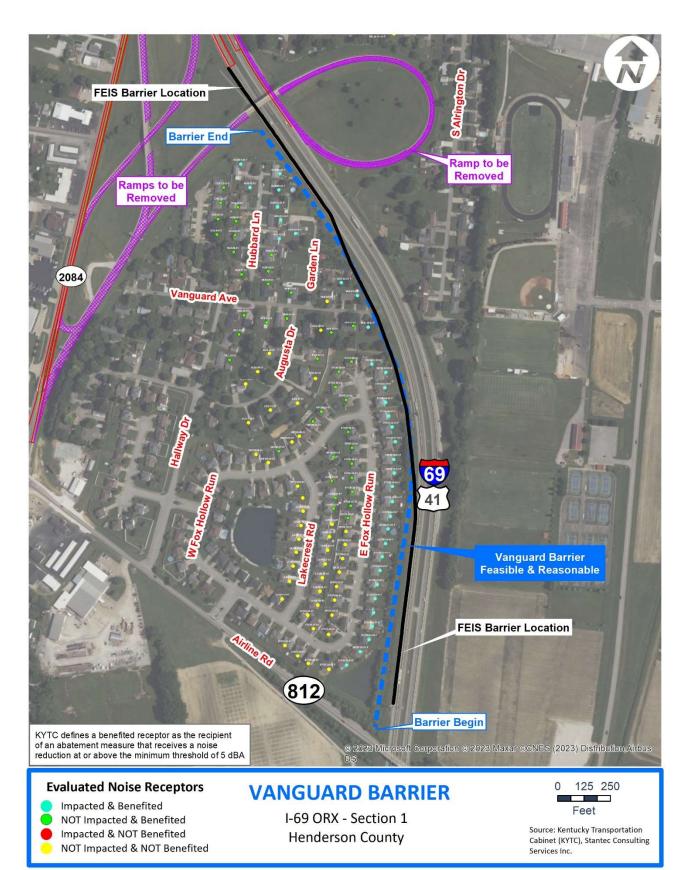




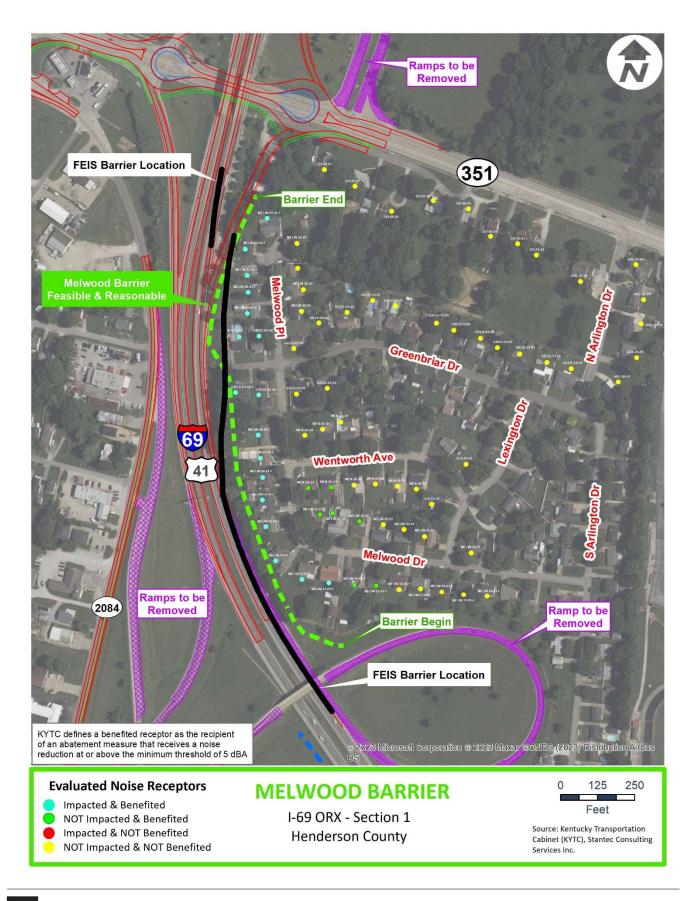














Meeting Minutes

TO: Emily Deason Steve Nicaise

> I-69 ORX Project Manager GEC Project Manager

KY Transportation Cabinet Parsons

FROM: Brian Aldridge

Stantec Consulting Services Inc.

DATE: January 30, 2023

SUBJECT: I-69 ORX – Section 1

Henderson County

KYTC Item No. 2-1088.2

Kentucky Transportation Cabinet, Division of Environmental Analysis (KYTC-DEA)

Noise Analysis Update Meeting

A meeting for the subject project was held via Microsoft Teams on January 30, 2023, at 11:00 a.m. EST. The following individuals were in attendance:

Craig J. Craig KYTC-DEA Noise Subject Matter Expert (SME)

Brian Aldridge Stantec Consulting Services Inc. Simon Binau Stantec Consulting Services Inc.

The purpose of the meeting was to discuss updates to the Noise Impact Analysis for I-69 ORX Section 1 with a specific focus on potential changes to three noise abatement barrier locations as recommended in the project Traffic Noise Analysis Addendum (HMB Professional Engineers, Inc., May 11, 2021), and to solicit concurrence and input from KTYC-DEA regarding updated barrier analysis and evaluation. These recommended noise barriers benefit noise-sensitive receptors along the east side of existing US 41 near the KY 351 (Zion Road) interchange ("Melwood" barrier), receptors along the west side of existing US 41 between the Airline Road overpass and the KY 2084 to northbound US 41 ramp overpass ("Vanguard" barrier), and receptors along the east side of existing US 41 just north of the existing Adams Lane overpass ("Adams Lane" barrier). The following enumerated items were discussed:

- Brian Aldridge provided a brief overview of Stantec's current involvement with the project, and a summary of the need for an updated noise analysis due to changes in the geometry of the proposed design (specifically those affecting the proposed interchange at KY 351) and other barrier constructability details.
- 2. Simon Binau summarized the justification for an updated analysis of Build condition noise impacts at the Melwood barrier location based on revised KY 351 interchange geometry, as well the associated revision of noise barrier placement and re-evaluation of barrier feasibility/reasonableness at this location.
- 3. Additional recommendations were presented for moving segments of the recommended Vanguard and Adams Lane barriers from edge of shoulder to nearer the highway right-of-way



- outside the clear zone, where possible, for improved safety and maintenance. Updated noise barrier analysis and evaluation is to be conducted for these revised barrier concepts.
- 4. Simon Binau advised that all proposed updates to the conceptual design and placement of these barriers would not affect the conclusions pertaining to overall feasibility and reasonableness of these recommended barriers, but would likely affect the number of non-impacted, benefited receptors at each barrier location.
- 5. KYTC-DEA concurrence was sought for these recommendations, along with input pertaining to whether updated barrier designs should be evaluated under current KYTC noise policy criteria (revised August 1, 2022) or the criteria of the policy in place (revised July 1, 2020) when the project Traffic Noise Impact Addendum was completed by HMB (2021).
- 6. Craig J. Craig of KYTC-DEA expressed concurrence with the above recommendations, and indicated that the updated noise analysis in the vicinity of revised roadway geometry (i.e., the Melwood barrier) be subject to current KYTC noise policy criteria, while evaluation of updated Vanguard and Adams Lane noise barrier designs be subject to previous policy (2020) criteria.
- 7. Stantec indicated that the findings from the updated noise analysis activities will be submitted in a technical memorandum, upon KYTC and Project Team concurrence on analysis findings and updated barrier recommendations.

The meeting ended at approximately 11:20 a.m. EST.



APPENDIX C

Additional NRCS Coordination

From: Brown, Perri - NRCS, Owensboro, KY

To: <u>Kleinman, Jennifer [US-US]</u>

Subject: [EXTERNAL] RE: [External Email] I-69 ORX: Section 1, Reevaluation - NRCS Coordination

Date: Friday, September 23, 2022 10:10:26 AM

Attachments: image001.png

Hi Jennifer,

Thank you for sending this information to me. After comparison of the new vs. eliminated ROW's and their soil types, I do not believe we need to reevaluate. The acreages of Prime Farmland you are eliminating and replacing them with are nearly equivalent. The evaluation criteria for the soil types within these locations are the same as well. With all that being said, I do not believe the Relative Value score with change much, if any at all.

Hope this helps, let me now if you need anything else from me.

Thank You,

Perri P. Brown

Resource Soil Scientist

USDA-NRCS

Owensboro, KY (270) 684-9286 Ext. 115

From: Jennifer.Kleinman@parsons.com <Jennifer.Kleinman@parsons.com>

Sent: Thursday, September 22, 2022 2:51 PM

To: Brown, Perri - NRCS, Owensboro, KY < Perri. Brown@usda.gov>

Subject: [External Email]I-69 ORX: Section 1, Reevaluation - NRCS Coordination

[External Email]

If this message comes from an unexpected sender or references a vague/unexpected topic;

Use caution before clicking links or opening attachments.

Please send any concerns or suspicious messages to: Spam.Abuse@usda.gov

Hi Perri.

I'm following up on the I-69 Ohio River Crossing (ORX) project in Henderson County. As I said when we talked earlier today, we are currently developing a reevaluation for the project, and would like to discuss the appropriate path forward for farmlands and if submission of a revised CPA-106 form is needed or not.

As background, since publication of the FEIS/ROD, a design-build team has been selected for construction of Section 1 of the project (the southernmost ~6 miles), and there have been some minor design changes resulting from continued coordination with local officials and through the design-build procurement. Key changes include a substantial reduction of required right-of-way at the proposed US 60 interchange, modest design changes to improve operations, and absorbing several uneconomic remnant parcels in to the project as direct impacts based on coordination with property owners. Several of those uneconomic remnants would be farmland and we do anticipate a net result of approximately 40 additional acres of impacts (approximate 6% increase).

I attached some basic mapping that shows the updated preliminary right-of-way as well as areas of new versus reduced right-of-way since the FEIS, on aerial background for Section 1 (excerpted from the FEIS appendix mapbook). I also attached the previous CP-106 form from coordination during the FEIS/ROD for ease of reference. We would not anticipate any change to the total Corridor Assessment Points in Part VI.

If there are any questions you have or additional information you would like to see, please feel free to give me a call. We are on an expedited schedule and would like to move the appropriate process forward as quickly as feasible.

Thank you, Jenny

JENNY KLEINMAN

Mobile: 412.654.2265

jennifer.kleinman@parsons.com



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NRCS-CPA-106 (Rev. 1-91)

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I (To be completed by Fed	leral Agency)		3. Date of Land Evaluation Request 4. Sheet 1 of					
1. Name of Project			5. Federal Agency Involved					
2. Type of Project			6. Coun	ty and State				
PART II (To be completed by NR	CS)		1. Date F	Request Received b	by NRCS	2. Person	Completing Form	
3. Does the corridor contain prime, uni- (If no, the FPPA does not apply - Do							Farm Size	
5. Major Crop(s)	, , , , , , , , , , , , , , , , , , , ,			nment Jurisdiction		7. Amount	of Farmland As D	efined in FPPA
, , , ,		Acres:		%		Acres:		%
Name Of Land Evaluation System U	Jsed	9. Name of Loc	cal Site Asse			10. Date La	and Evaluation Re	eturned by NRCS
PART III (To be completed by Fe	deral Agency)					idor For Se	gment	
				West 1	Wes	st 2 (Central 1A/B	Central 1B Modified
A. Total Acres To Be Converted Dire	-							<u> </u>
B. Total Acres To Be Converted Indi	rectly, Or To Receive	Services						
C. Total Acres In Corridor								
PART IV (To be completed by N	RCS) Land Evaluat	ion Informatio	n					
A. Total Acres Prime And Unique Fa	armland							
B. Total Acres Statewide And Local	Important Farmland							
C. Percentage Of Farmland in Cour	·							
D. Percentage Of Farmland in Govt.	Jurisdiction With Same	e Or Higher Rela	ative Value					
PART V (To be completed by NRCS	,							
value of Farmland to Be Serviced								
PART VI (To be completed by Fed Assessment Criteria (These criter	• • • • • • • • • • • • • • • • • • • •		Maximum Points					
1. Area in Nonurban Use			15					
Perimeter in Nonurban Use			10					
3. Percent Of Corridor Being Fai	rmed		20					
4. Protection Provided By State	And Local Governmen	t	20					
5. Size of Present Farm Unit Con	mpared To Average		10					
6. Creation Of Nonfarmable Farm	mland		25					
7. Availablility Of Farm Support	Services		5					
8. On-Farm Investments			20					
9. Effects Of Conversion On Far			25					
10. Compatibility With Existing A			10		-			
TOTAL CORRIDOR ASSESSMI	ENT POINTS		160					
PART VII (To be completed by Fe	deral Agency)							
Relative Value Of Farmland (From	n Part V)		100					
Total Corridor Assessment (From assessment)	Part VI above or a loca	al site	160					
TOTAL POINTS (Total of above	e 2 lines)		260					
1. Corridor Selected:	Total Acres of Farr Converted by Projection		3. Date Of S	Selection:	4. Was	s A Local Site	Assessment Use	<u>1</u> ed?
	,					YES	NO 🔲	
5. Reason For Selection: Central A would result in the fewest resid managed lands, Section 4(f) re When compared to Central Alt would reduce the economic im the Ohio River by keeping the	dential and comme esources, and sites ternative 1A, Centra pacts to traffic-dep	rcial relocations with RECs; pal Alternative pendent busing	ns; the few provide cro 1B Modifice esses alor	vest impacts to ess-river redund ed was identifien ng the US 41 co	wetland dancy for the dancy for the dancy for the dance danc	ls, streams r the regior Single Pre al strip and	, floodways, fonce the served Alterna I to local users	orested habitat, e lowest total cost ative because it s that regularly cro
and it would avoid disproportion Signature of Person Completing this	onate and adverse	effects to env	ironmental	justice popula	itions.	DATE		
						I		
NOTE: Complete a form for ea	ach segment with	more than on	e Alternat	e Corridor				

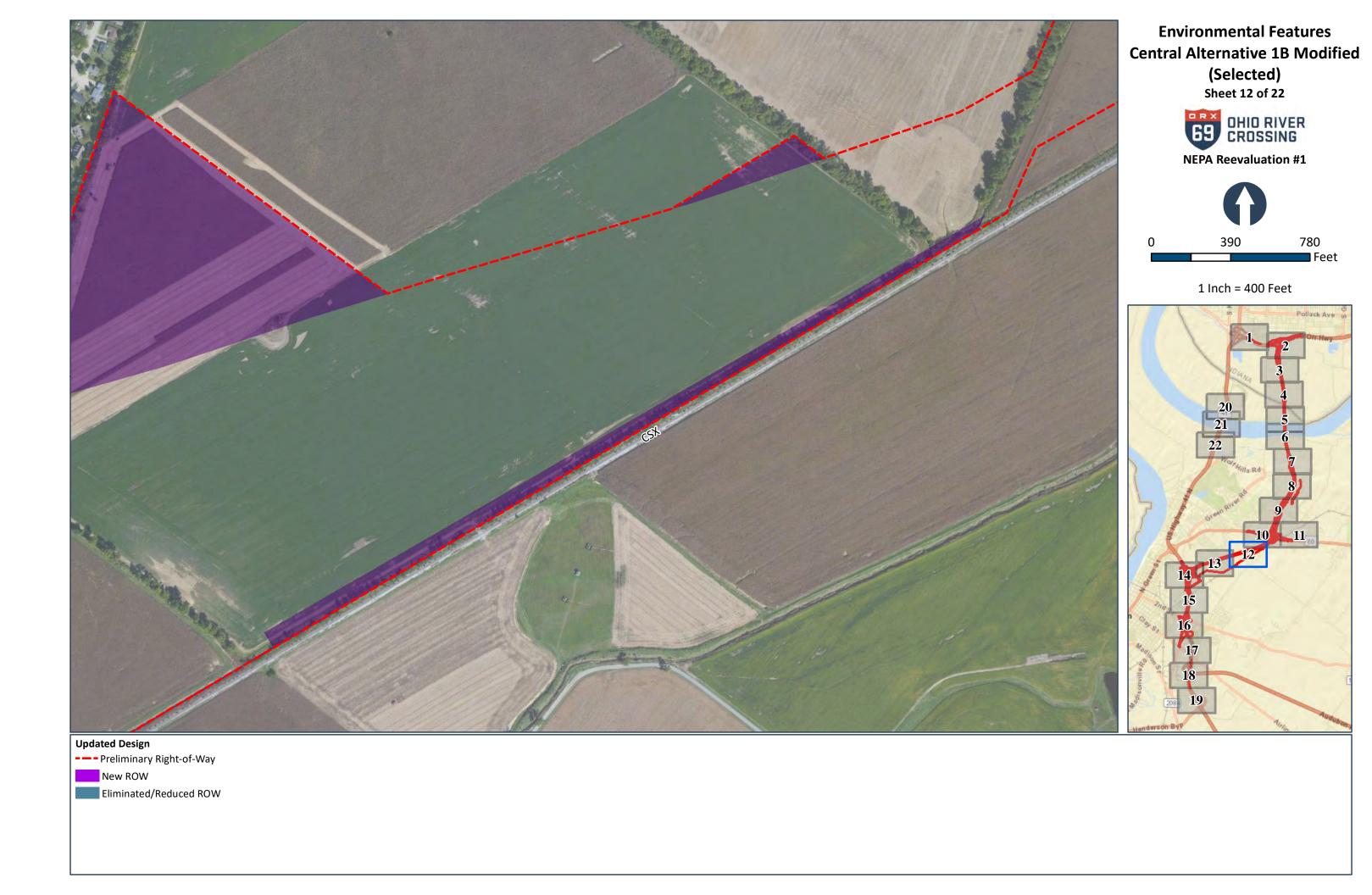


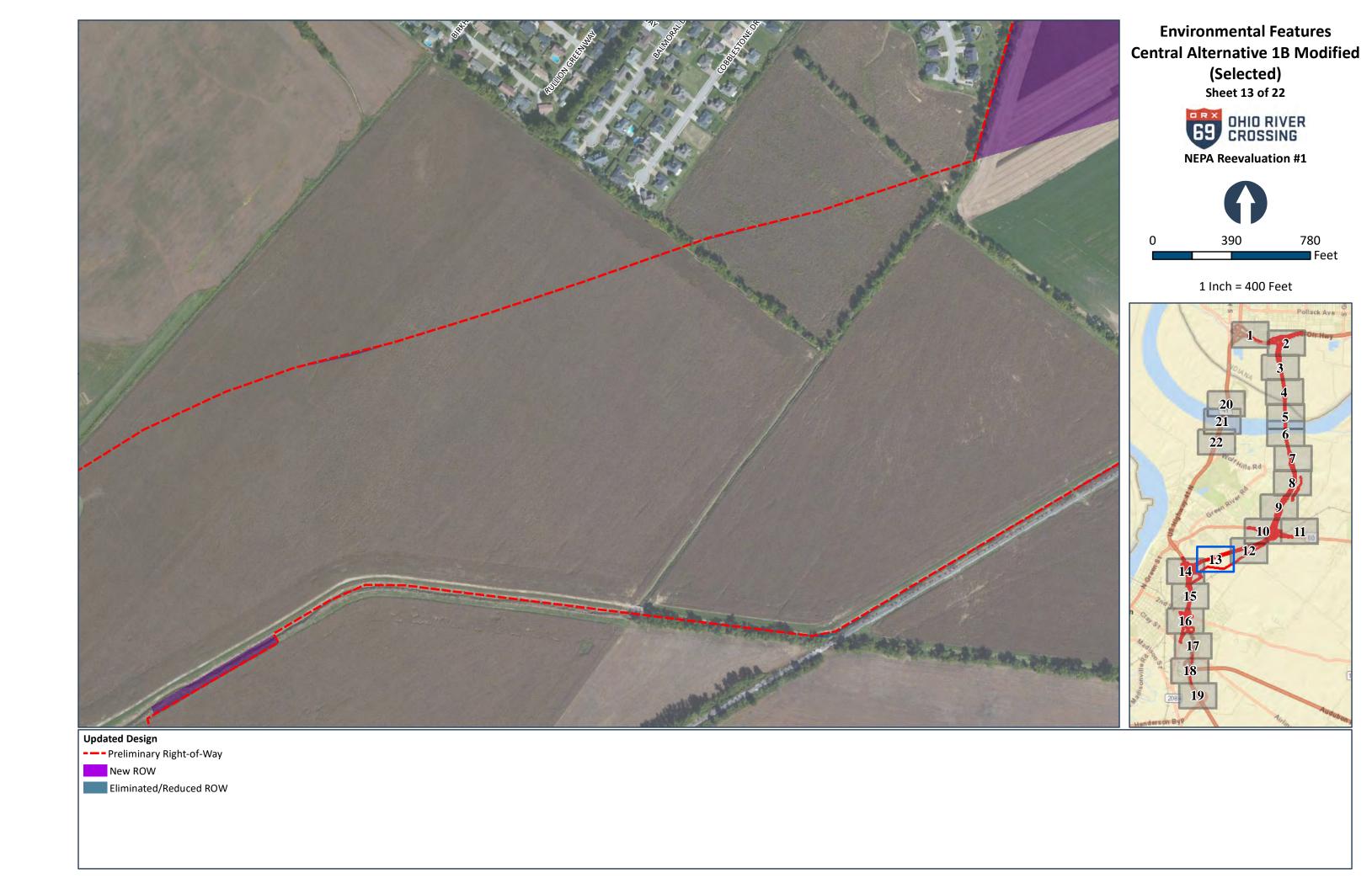








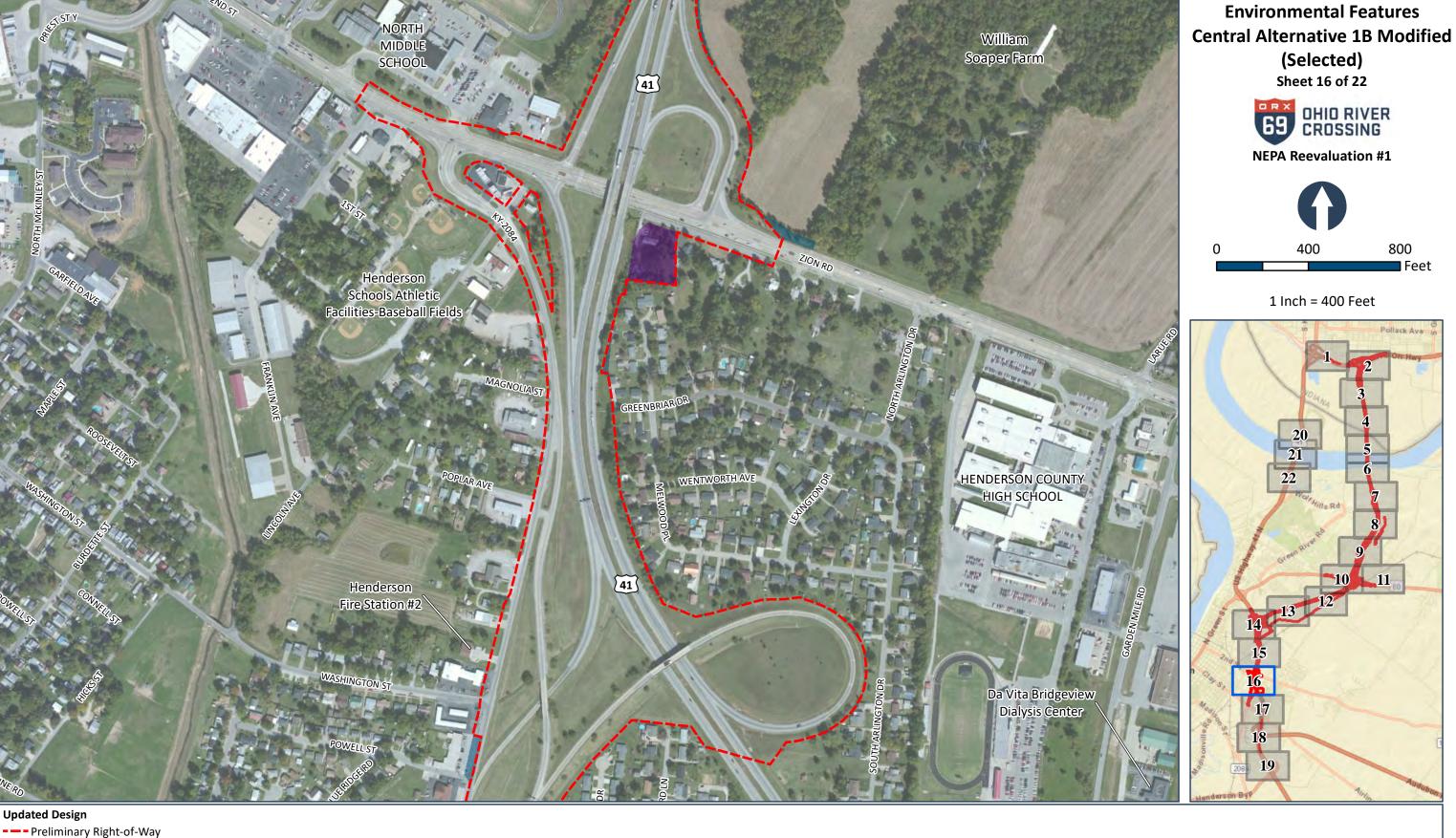








New ROW

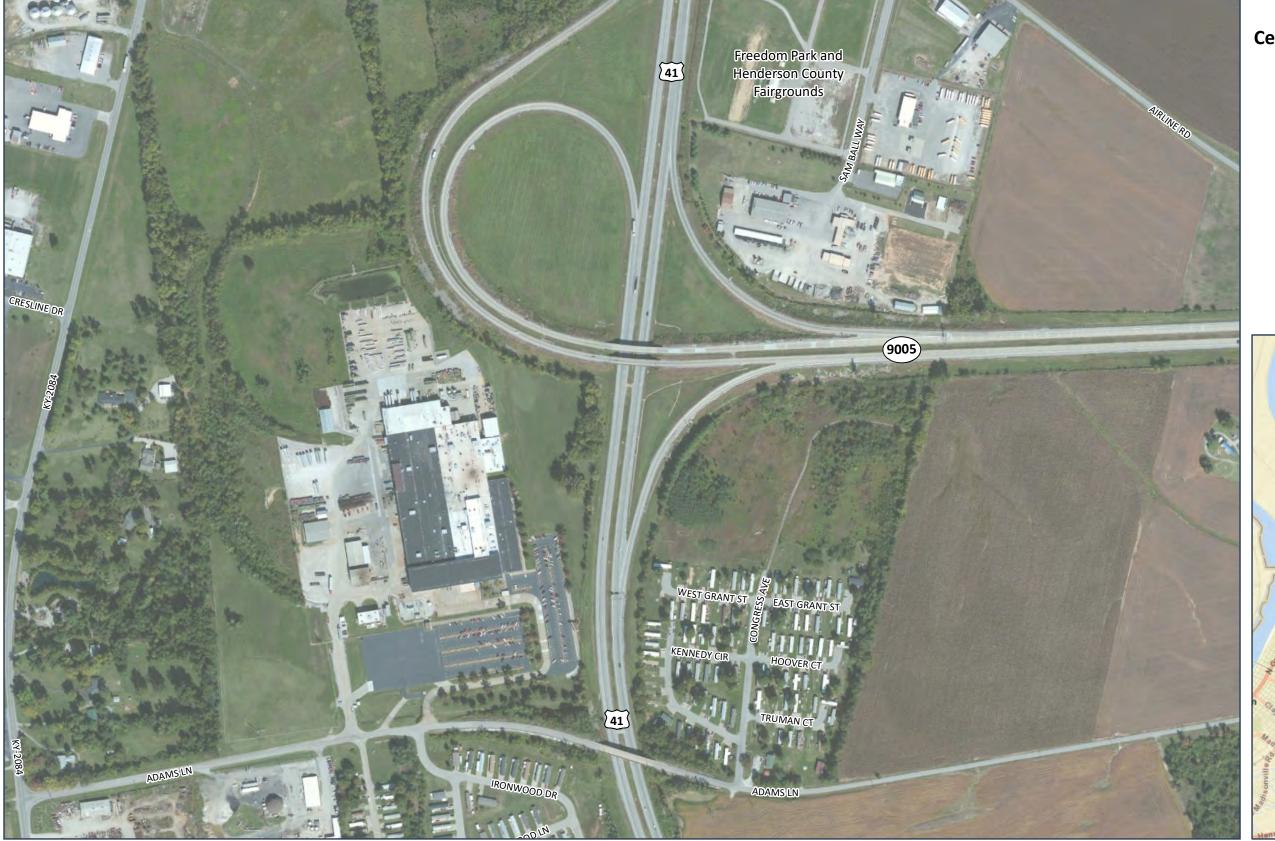


New ROW



---- Preliminary Right-of-Way

New ROW



Updated Design

---- Preliminary Right-of-Way

New ROW

Eliminated/Reduced ROW

Environmental Features Central Alternative 1B Modified (Selected) Sheet 18 of 22

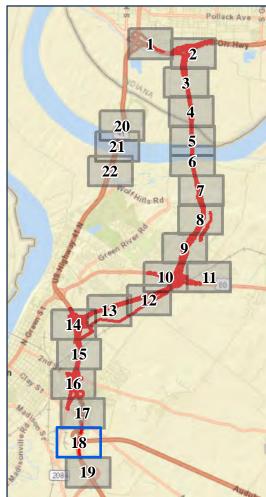


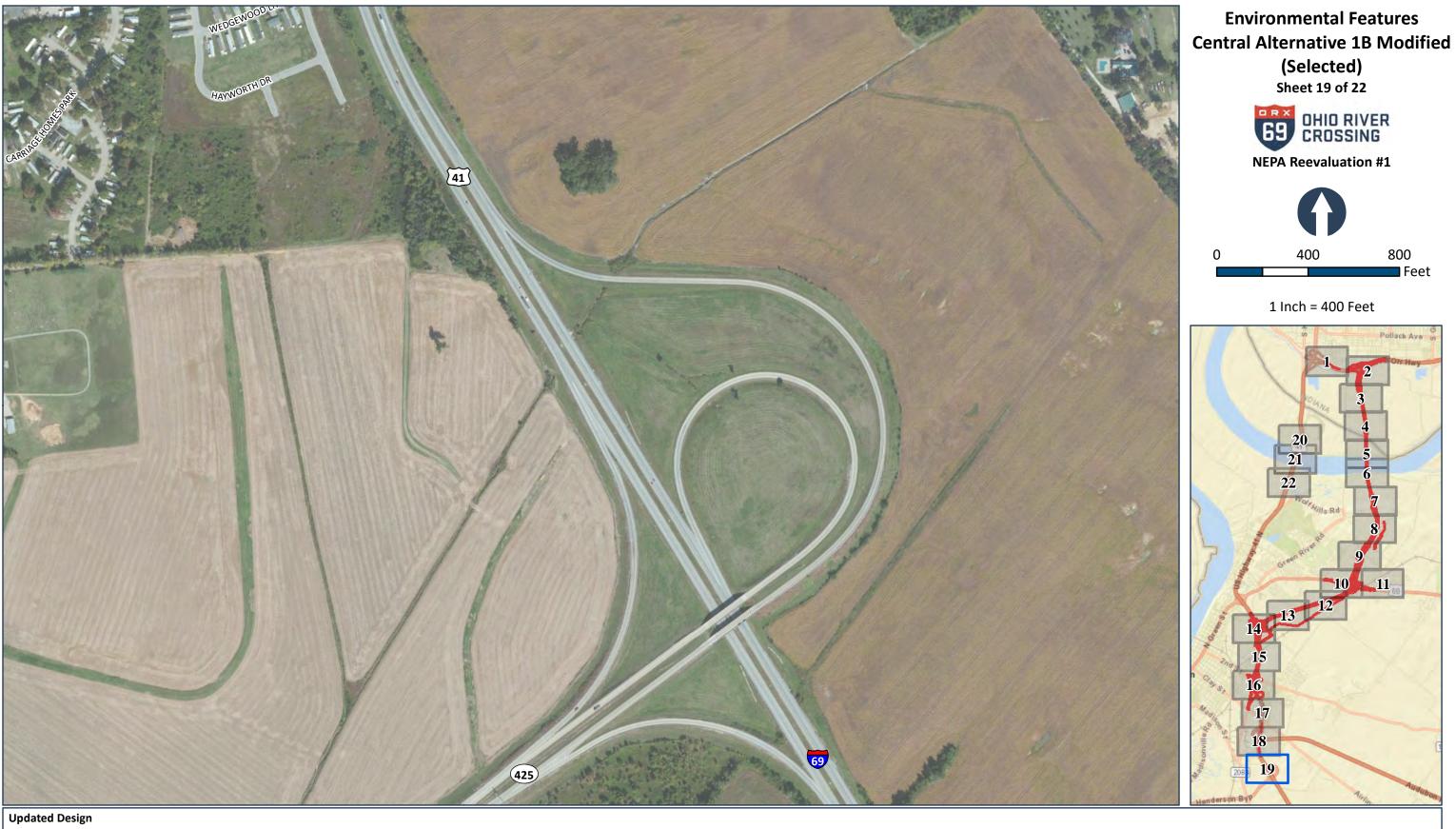


NEPA Reevaluation #1



1 Inch = 400 Feet





- Preliminary Right-of-Way

New ROW



APPENDIX D

Additional USFWS Coordination



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Kentucky Ecological Services Field Office J C Watts Federal Building, Room 265 330 West Broadway Frankfort, KY 40601-8670

Phone: (502) 695-0468 Fax: (502) 695-1024 Email Address: kentuckyes@fws.gov

In Reply Refer To: May 24, 2023

Project code: 2023-0085624

Project Name: KYTC #2-1088; Ohio River Crossing; section 1

Federal Nexus: yes

Federal Action Agency (if applicable): Federal Highway Administration

Subject: Federal agency coordination under the Endangered Species Act, Section 7 for 'KYTC

#2-1088; Ohio River Crossing; section 1'

Dear Nathan Click:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on May 24, 2023, for 'KYTC #2-1088; Ohio River Crossing; section 1' (here forward, Project). This project has been assigned Project Code 2023-0085624 and all future correspondence should clearly reference this number. Please carefully review this letter. Your Endangered Species Act (Act) requirements may not be complete.

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (DKey), invalidates this letter.

Determination for the Northern Long-Eared Bat

05/24/2023 2

Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the determination of "May Affect, Not Likely to Adversely Affect" the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that consultation on the Action is complete and no further action is necessary unless either of the following occurs:

- new information reveals effects of the action that may affect the northern long-eared bat in a manner or to an extent not previously considered; or,
- the identified action is subsequently modified in a manner that causes an effect to the northern long-eared bat that was not considered when completing the determination key.

15-Day Review Period

As indicated above, the Service will notify you within 15 calendar days if we determine that this proposed Action does not meet the criteria for a "may affect, not likely to adversely affect" (NLAA) determination for the northern long-eared bat. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the identified Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that we did not anticipate when developing the key. In such cases, the identified Ecological Services Field Office may request additional information to verify the effects determination reached through the Northern Long-eared Bat DKey.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Clubshell *Pleurobema clava* Endangered
- Fanshell *Cyprogenia stegaria* Endangered
- Fat Pocketbook *Potamilus capax* Endangered
- Gray Bat Myotis grisescens Endangered
- Indiana Bat Myotis sodalis Endangered
- Longsolid Fusconaia subrotunda Threatened
- Monarch Butterfly Danaus plexippus Candidate
- Northern Riffleshell *Epioblasma rangiana* Endangered
- Orangefoot Pimpleback (pearlymussel) *Plethobasus cooperianus* Endangered
- Pink Mucket (pearlymussel) *Lampsilis abrupta* Endangered
- Rabbitsfoot Quadrula cylindrica cylindrica Threatened
- Ring Pink (mussel) *Obovaria retusa* Endangered
- Rough Pigtoe Pleurobema plenum Endangered
- Whooping Crane Grus americana Experimental Population, Non-Essential

You may coordinate with our Office to determine whether the Action may affect the species and/ or critical habitat listed above. Note that reinitiation of consultation would be necessary if a new species is listed or critical habitat designated that may be affected by the identified action before it is complete.

If you have any questions regarding this letter or need further assistance, please contact the Kentucky Ecological Services Field Office and reference Project Code 2023-0085624 associated with this Project.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

KYTC #2-1088; Ohio River Crossing; section 1

2. Description

The following description was provided for the project 'KYTC #2-1088; Ohio River Crossing; section 1':

PE/ENVIRONMENTAL AND INITIAL FINANCING PLAN FOR FUTURE I-69 BRIDGE OVER THE OHIO RIVER BETWEEN HENDERSON AND EVANSVILLE NEAR US 41 BRIDGES

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.84334255,-87.56426719495354,14z



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

No

2. Do you have post-white nose syndrome occurrence data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed acoustic detections. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

No

3. Does any component of the action involve construction or operation of wind turbines?

Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.). *No*

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

Yes

6. FHWA, FRA, and FTA have completed a range-wide programmatic consultation for transportation- related actions within the range of the Indiana bat and northern long-eared bat.

Does your proposed action fall within the scope of this programmatic consultation?

Note: If you have **previously consulted** on your proposed action with the Service under the NLEB 4dRule, answer 'no' to this question and proceed with using this key. If you have **not yet consulted** with the Service on your proposed action and are unsure whether your proposed action falls within the scope of the FHWA, FRA, FTA range-wide programmatic consultation, please select "Yes" and use the FHWA, FRA, FTA Assisted Determination Key in IPaC to determine if the programmatic consultation is applicable to your action. Return to this key and answer 'no' to this question if it is not.

No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

Yes

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

No

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)? *No*

10. Have you determined that your proposed action will have no effect on the northern longeared bat? Remember to consider the <u>effects of any activities</u> that would not occur but for the proposed action.

If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer "No" below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project's action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a "no effect" determination for the northern long-eared bat.

Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer "No" and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

No

11. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

No

12. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?

(If unsure, answer "Yes.")

Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥3 inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

Yes

13. Will the action cause effects to a bridge?

Yes

14. Has a site-specific bridge assessment following <u>USFWS guidelines</u> been completed?

Note: For information on conducting a bridge/structure assessment, see Appendix D of the User's Guide for the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat and the associated Bridge/ Structure Bat Assessment Form. Additional resources can be found at: https://www.fws.gov/media/bats-and-transportation-structures-references-and-additional-resources and a training video is located at: https://www.youtube.com/watch?v=iuFwkT7q8Ws.

No

15. Will the proposed action result in the cutting or other means of knocking down, bringing down, or trimming of any trees suitable for northern long-eared bat roosting?

Note: Suitable northern long-eared bat roost trees are live trees and/or snags ≥ 3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities.

Yes

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

1.04

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the <u>inactive</u> (hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

0

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the <u>active</u> (non-hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

1.04

Will all potential northern long-eared bat (NLEB) roost trees (trees ≥3 inches diameter at breast height, dbh) be cut, knocked, or brought down from any portion of the action area greater than or equal to 0.1 acre? If all NLEB roost trees will be removed from multiple areas, select 'Yes' if the cumulative extent of those areas meets or exceeds 0.1 acre.

Yes

Enter the extent of the action area (in acres) from which all potential NLEB roost trees will be removed. If all NLEB roost trees will be removed from multiple areas, entire the total extent of those areas. Round up to the nearest tenth of an acre.

1.04

For the area from which all potential northern long-eared bat (NLEB) roost trees will be removed, on how many acres (round to the nearest tenth of an acre) will trees be allowed to regrow? Enter '0' if the entire area from which all potential NLEB roost trees are removed will be developed or otherwise converted to non-forest for the foreseeable future.

0

Will any snags (standing dead trees) ≥3 inches dbh be left standing in the area(s) in which all northern long-eared bat roost trees will be cut, knocked down, or otherwise brought down?

No

Will all project activities by completed by April 1, 2024?

No

05/24/2023

IPAC USER CONTACT INFORMATION

Agency: Kentucky Transportation Cabinet

Name: Nathan Click Address: 200 Mero Street

City: Frankfort

State: KY Zip: 40622

Email nathan.click@ky.gov

Phone: 5027825009

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration



APPENDIX E

Additional SHPO Coordination



MEMORANDUM

To: Jonna Mabelitini

cc: Danny Corbin, INDOT

Gary Valentine, KYTC

From: Dan Prevost, Parsons

Date: August 22, 2022

Subject: NEPA Reevaluation #1 Cultural Resources Impact Review

The purpose of this memo is to provide a summary of modifications proposed to the design of Section 1 of the I-69 Ohio River Crossing (ORX) project and the potential changes in impacts to Section 106 resources that may result.

Project Overview

The I-69 ORX Project will complete the connection between the northern terminus of I-69 in Kentucky near KY 425 (Henderson Bypass) and the southern terminus of I-69 in Indiana near US 41, including a new bridge across the Ohio River. The Final Environmental Impact Statement (FEIS) (FHWA-IN-EIS-20210143) and Record of Decision (ROD) for the project was approved on September 16, 2021, identifying Central Alternative 1B Modified as the Selected Alternative. The Selected Alternative includes 11.2 miles of new interstate with 8.4 miles on new terrain and 2.8 miles of upgrades to US 41.

The I-69 ORX project is divided in to three sections for construction. Section 1 is the southernmost portion of the project and will construct a 2.9-mile new alignment section of I-69 from the CSX railroad bridge north of KY 351, running north and east to the intersection with US 60 near Tillman-Bethel Road and the US 60 bridge over CSX, including construction of new interchanges at US 41 and US 60. Section 1 will also upgrade a 2.4-mile portion of the existing US 41 from KY 425 to the US 41 bridge over CSX railroad bridge north of KY 351, which will be redesignated as I-69, including reconstruction of the KY 351 interchange, removal of the KY 2084 interchange, and ramp improvements at the Audubon Parkway.

Section 106 Process

During the National Environmental Policy Act (NEPA) process, surveys of above-ground and below-ground resources were conducted with the findings shared with the Indiana and Kentucky State Historic Preservation Offices (SHPOs) and Consulting Parties. Through the Section 106 consultation process, it was determined that construction of Central Alternative 1B Modified would have an adverse effect on several historic properties, including:

 Henderson-Evansville US 41 Southbound Bridge (KHC Survey# HE-314) – This bridge would be removed.





MEMORANDUM - NEPA Reevaluation #1 Cultural Resources Impact Review

- Audubon Memorial Bridge/ Henderson-Evansville US 41 Northbound Bridge (KHC Survey# HE-118) The removal of the southbound bridge would alter the association of the "Twin Bridges" and impact this bridge's eligibility under Criterion C. The construction of the new I-69 Ohio River bridge would introduce a modern design bridge that would constitute an adverse effect by altering the historic setting. The northbound bridge would remain eligible under Criterion A.
- Jackson McClain House/Farm (KHC Survey# HE-3) Construction of a new interstate interchange would visually alter and diminish the agricultural property's historic integrity of the setting and feeling. Additionally, construction of the interchange is projected to create future development at the new US 60 interchange that could cause an impact to the property. *Note: This property is located within the Section 1 project limits for the subject memo.*
- Ellis-Neville/Lee Baskett House (KHC Survey# HE-36) Construction of a new interstate interchange would visually alter the feeling and setting of this property and create an adverse effect. Additionally, construction of the interchange is projected to create future development at the new US 60 interchange that could cause an impact to the property. *Note: This property is located within the Section 1 project limits for the subject memo.*

To resolve the adverse effect on these properties, consultation with the property owners and consulting parties was completed during the NEPA process and a Memorandum of Agreement (MOA) was executed on June 15, 2021. The executed MOA was included as Appendix L-3 of the FEIS/ROD. Mitigations include documentation of some historic properties, the development of context statements, and funding for local historic preservation projects.

Archaeological surveys completed to date have not identified any resources eligible for listing in the National Register of Historic Places (NRHP). Though not required for Section 1, additional surveys, including deep testing within the Ohio River floodplain, are planned as are additional marine surveys within the Ohio River as part of the overall project. These surveys and any additional surveys required to address changes in the project's design are covered under the MOA.

Section 1 Design-Build Procurement

In 2021, KYTC conducted a design-build procurement for the construction of Section 1 of the project. The outcome of the process was the successful award of a \$158 million contract to the Ragle, Inc./Stantec Consulting Services, Inc. design-build team (DBT). Early construction activities began in August 2022 and completion of the project is expected in 2025.

Design/Right-of-Way (ROW) Modifications

Through the design-build process and continued coordination and development of the project, a number of modest modifications have been made to the design of Section 1.

• US 60 Interchange Modifications





- Roundabout Intersections Following approval of the ROD, Henderson County requested that the design of three intersections be revised to convert them to roundabouts. The interchange ramp terminals would connect to a dogbone roundabout (i.e., an interconnected double roundabout). The adjacent intersection at Tillman-Bethel Road would be converted to a modern roundabout.
- Modified US 60 Alignment and Interchange Stacking During the design-build procurement process, an Alternative Technical Concept (ATC) was submitted and approved by KYTC to:
 - Realign the new US 60 roadway such that it would remain closer to existing US 60 than was proposed in the FEIS. Doing so would reduce the amount of ROW required and eliminate the need to replace the US 60 bridge over the CSX Railroad.
 - Reverse the vertical orientation of US 60 and I-69 such that I-69 would cross over US 60, instead of under as was proposed in the FEIS. The overall elevation of the interchange would not change substantively.

Additional Minor Changes

- o Bridge Rehabilitation Work
 - KY 425/Henderson Bypass over I-69 A deck overlay was added to the scope to extend the life of this bridge. All work would be within existing ROW.
 - Adams Lane over US 41 A deck overlay was added to the scope to extend the life of this bridge. All work would be within existing ROW.
 - Airline Road over US 41 Replacement of the superstructure was added to the scope to improve the condition of this bridge. All work would be within existing ROW.
- Merge Area Modifications Minor changes to the design of several ramp merge areas were made to improve operations. All work would be within existing ROW.
- o Roadway/Ramp Removal Areas Construction limits were revised to better reflect the activities required to remove existing ramps at the KY 2084 and KY 351 interchanges and to remove the Kimsey Lane bridge over existing US 41. All work would be within existing ROW.
- o KY 351 Interchange Minor modifications to the design of the northbound exit ramp were made to improve operations, and would require the acquisition of one additional residential property. Modifications also reduced the construction limits in the northeast quadrant of the interchange adjacent to the William Soaper Farm (KHC Survey# HE-5, NR 00000001595), a NRHP-eligible property.
- US 41 Interchange Minor changes to the construction limits (some reductions and some additions) were required; all would be within the ROW limits proposed within the FEIS.





MEMORANDUM - NEPA Reevaluation #1 Cultural Resources Impact Review

 Uneconomic Remnants – At several parcels, the ongoing ROW acquisition process since the publication of the FEIS/ROD identified remnant parcels that were of such size, shape, or condition as to be of substantially impaired economic viability to the property owner and therefore, would be acquired as part of the project.

NEPA Reevaluation and Section 106 Coordination

INDOT and KYTC are preparing a reevaluation of the NEPA document to address the changes described above in accordance with 23 CFR 771.129. As part of this process, Parsons has reviewed the substance and magnitude of each of the changes above to determine their impacts on cultural resources and provide recommendations to INDOT and KYTC regarding any additional documentation, coordination, or mitigation required as part of the Section 106 process.

Regarding cultural resources, Parsons recommends the determinations presented in Table 1 below.





MEMORANDUM – NEPA Reevaluation #1 Cultural Resources Impact Review

Table 1. NEPA Reevaluation #1 - Potential Changes in Impacts on Cultural Resources and Preliminary Recommendations

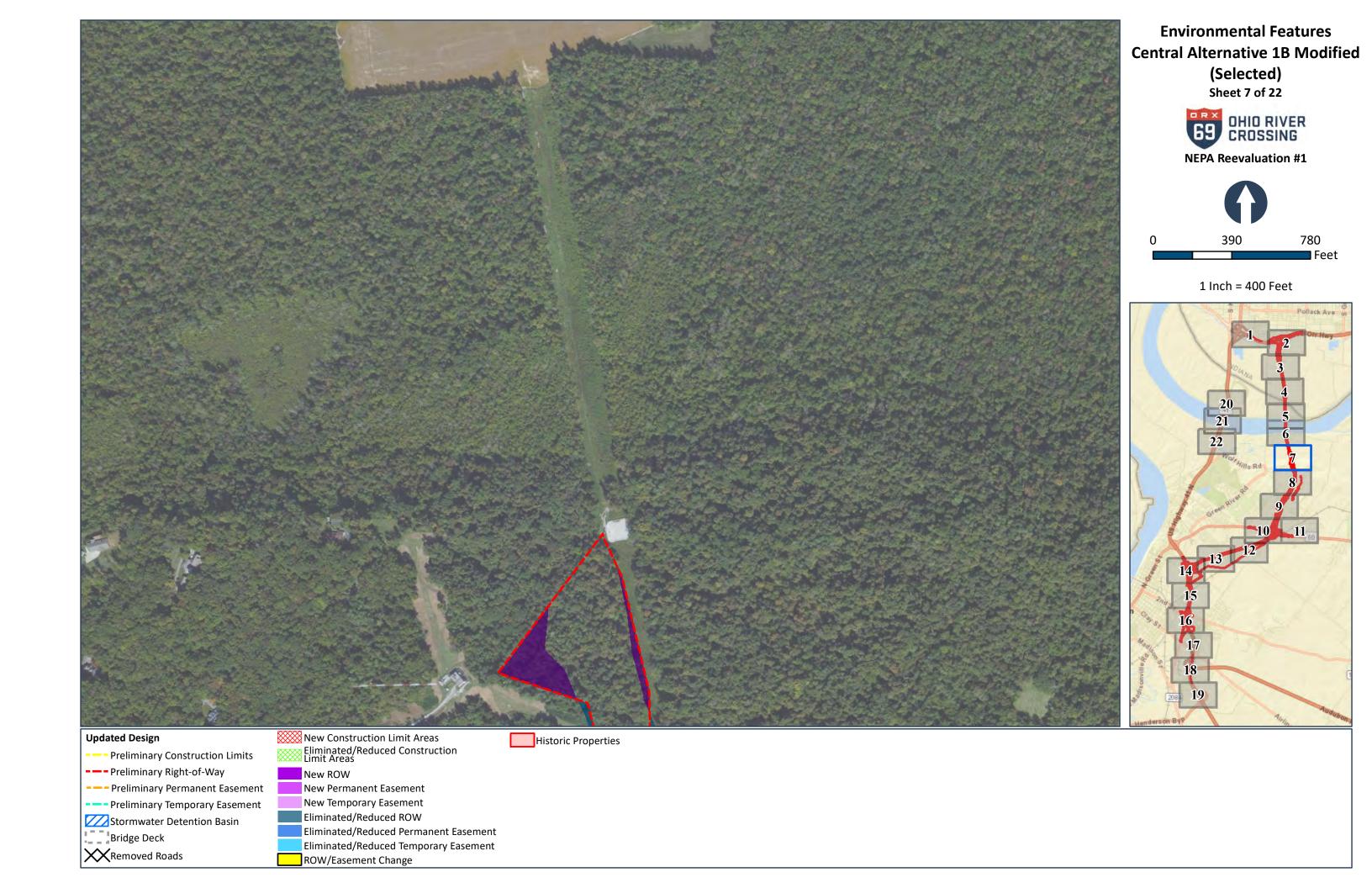
PROJECT MODIFICATION: REEVALUATION #1	RESOURCE TYPE	IMPACT REVIEW	MITIGATION REQUIREMENTS	DOCUMENTATION/ COORDINATION				
US 60 Interchange Modifications								
Roundabout Intersections	Above-Ground	The proposed changes would not encroach upon the NRHP boundary of the adjacent historic properties. The proposed roundabouts would not substantively change the setting/feeling compared to the FEIS design.	No change required	Review changes with Kentucky SHPO to confirm assessment				
	Below-Ground	The revised area of disturbance lies within the previously survey limits.	None	None				
Modified US 60 Alignment	Above-Ground	The modified alignment is located closer to existing US 60 compared to the FEIS design. The change in setting/feeling would be similar or reduced compared to the FEIS.	No change required	Review changes with Kentucky SHPO to confirm assessment				
	Below-Ground	The revised area of disturbance lies within the previously survey limits.	None	None				
Interchange Stacking	Above-Ground	The interchange height would not substantively change. No change in impacts.	No change required	Review changes with Kentucky SHPO to confirm assessment				
	Below-Ground	The revised area of disturbance lies within the previously survey limits.	None	None				
Additional Minor Changes								
Bridge Rehabilitation Work	Above-Ground	No NRHP-eligible resources in area.	None	None				
	Below-Ground	All work in previously disturbed soils.	None	None				

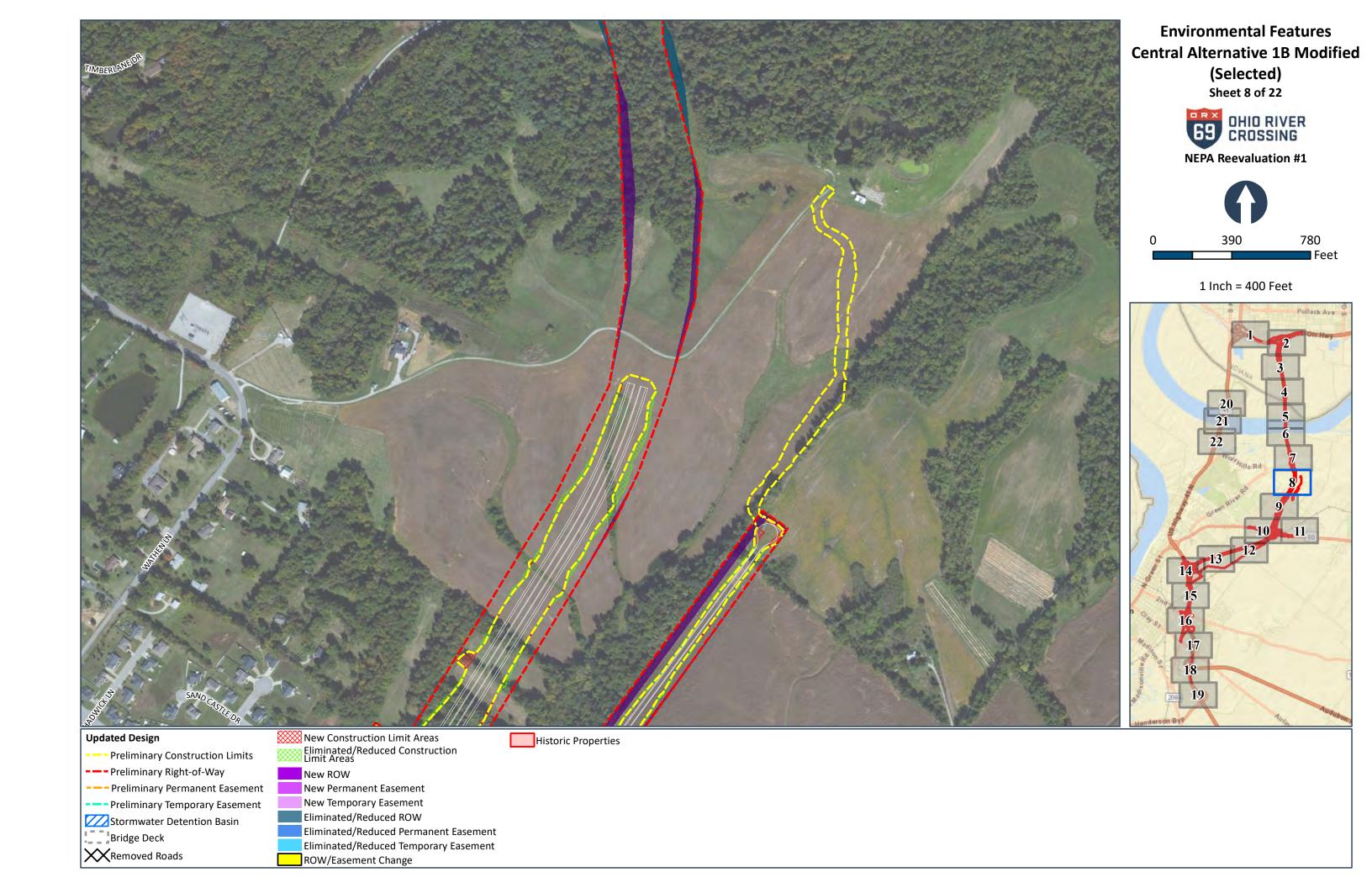
MEMORANDUM – NEPA Reevaluation #1 Cultural Resources Impact Review

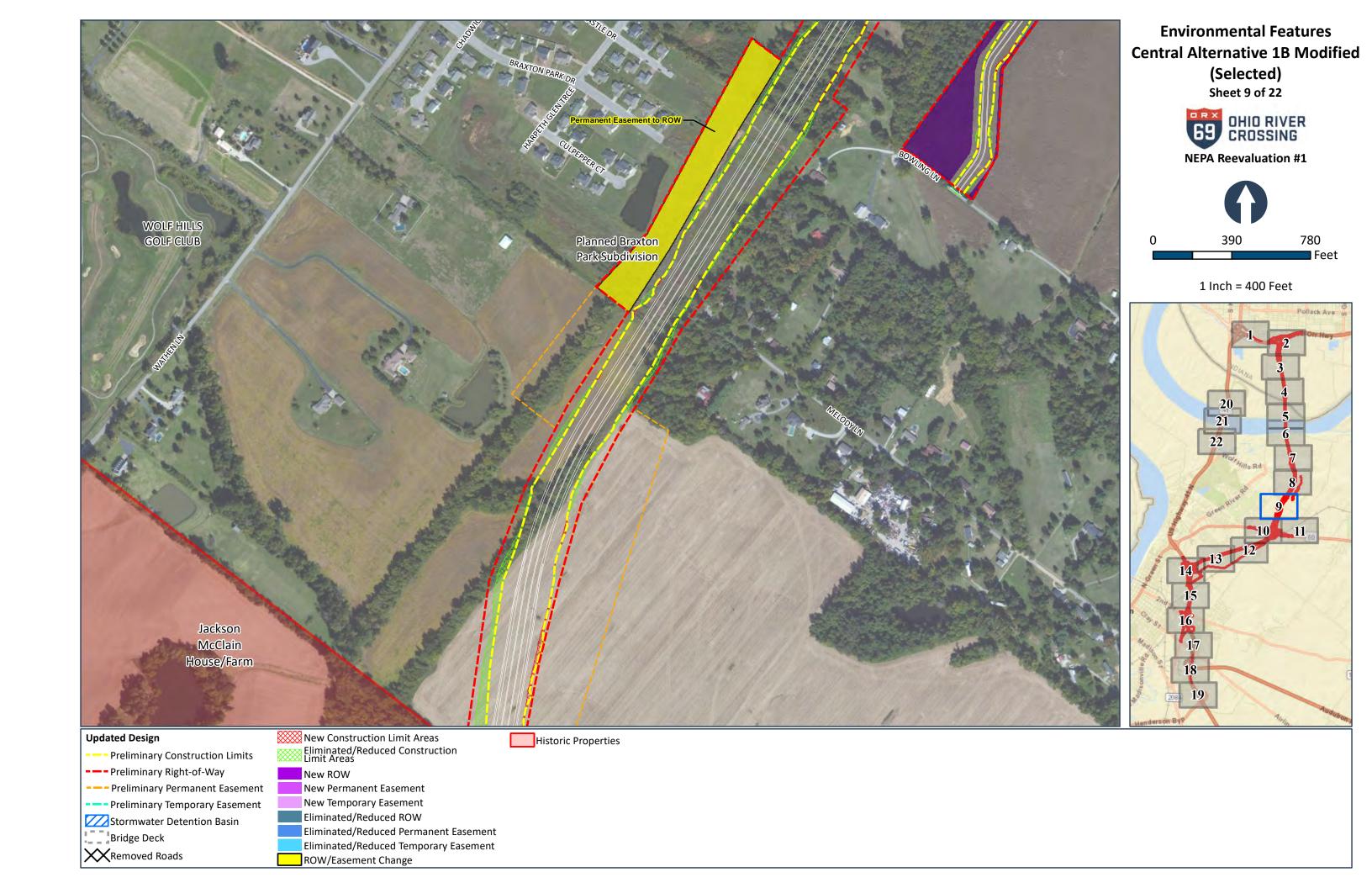
PROJECT MODIFICATION: REEVALUATION #1	RESOURCE TYPE	IMPACT REVIEW	MITIGATION REQUIREMENTS	DOCUMENTATION/ COORDINATION
Merge Area Modifications	Above-Ground	No NRHP-eligible resources in area.	None	None
	Below-Ground	Parsons to confirm that all work occurs in previously disturbed soils.	Follow MOA if additional surveys required and resources identified	Complete supplemental surveys and documentation if required
Roadway/Ramp Removal Areas	Above-Ground	Additional work areas would result in no change to setting/feeling.	None	None
	Below-Ground	Parsons to confirm that all work in previously disturbed soils.	Follow MOA if additional surveys required and resources identified	Complete supplemental surveys and documentation if required
KY 351 Interchange	Above-Ground	The proposed changes would not encroach upon the NRHP boundary of the adjacent historic property. The additional residential property to be acquired was previously surveyed and determined not NRHP-eligible. The proposed changes would not substantively change the setting/feeling compared to the FEIS design.	No change required	Review changes with Kentucky SHPO to confirm assessment
	Below-Ground	Parsons to confirm that all work in previously disturbed soils.	Follow MOA if additional surveys required and resources identified	Complete supplemental surveys and documentation if required
US 41 Interchange	Above-Ground	No NRHP-eligible resources in area.	None	None
	Below-Ground	Parsons to confirm that all work in previously disturbed soils.	Follow MOA if additional surveys required and resources identified	Complete supplemental surveys and documentation if required
Uneconomic Remnants	Above-Ground	There are no structures on any of the uneconomic remnants to be acquired and no work is proposed to occur on the properties.	None	None

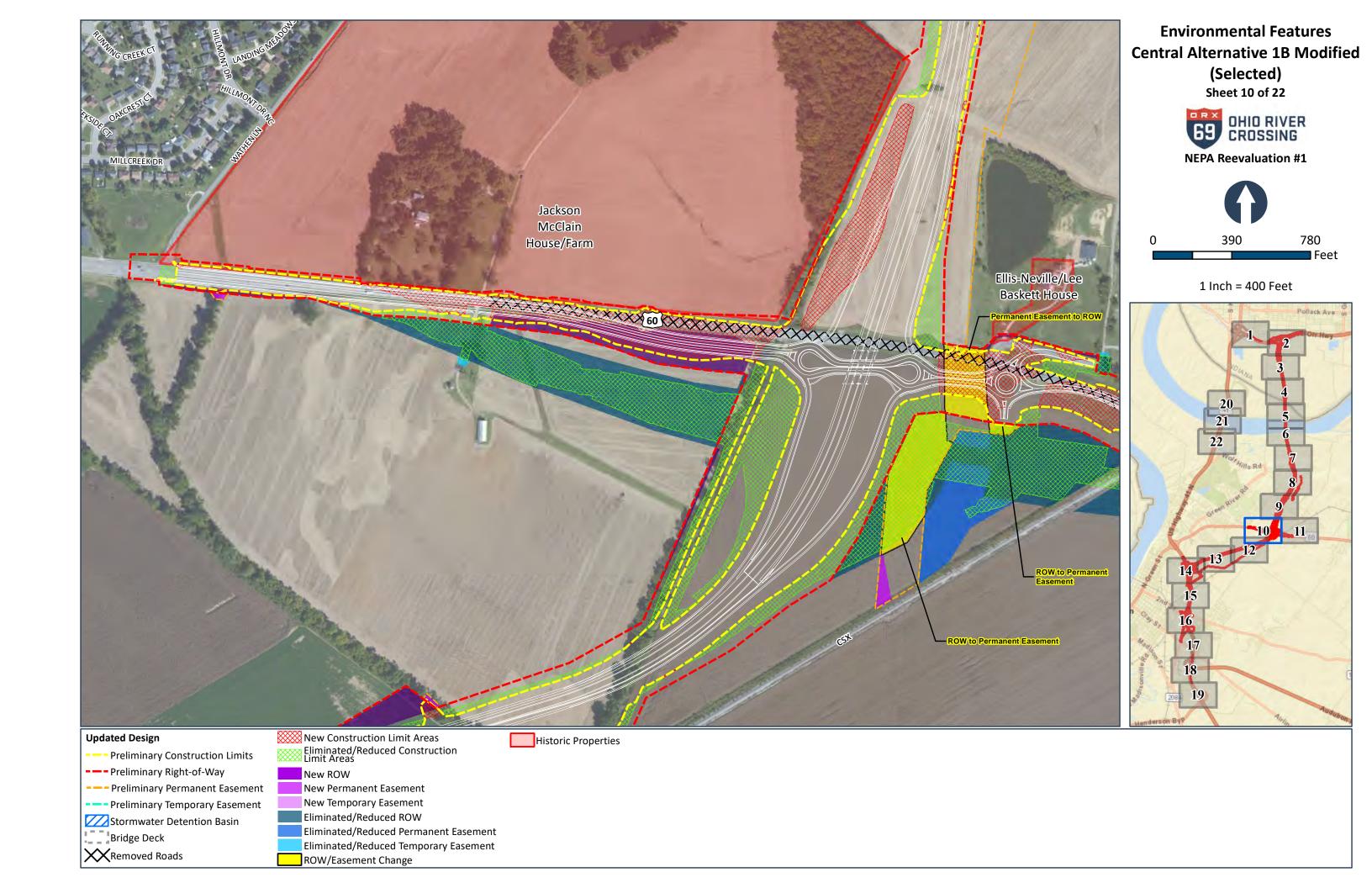
MEMORANDUM – NEPA Reevaluation #1 Cultural Resources Impact Review

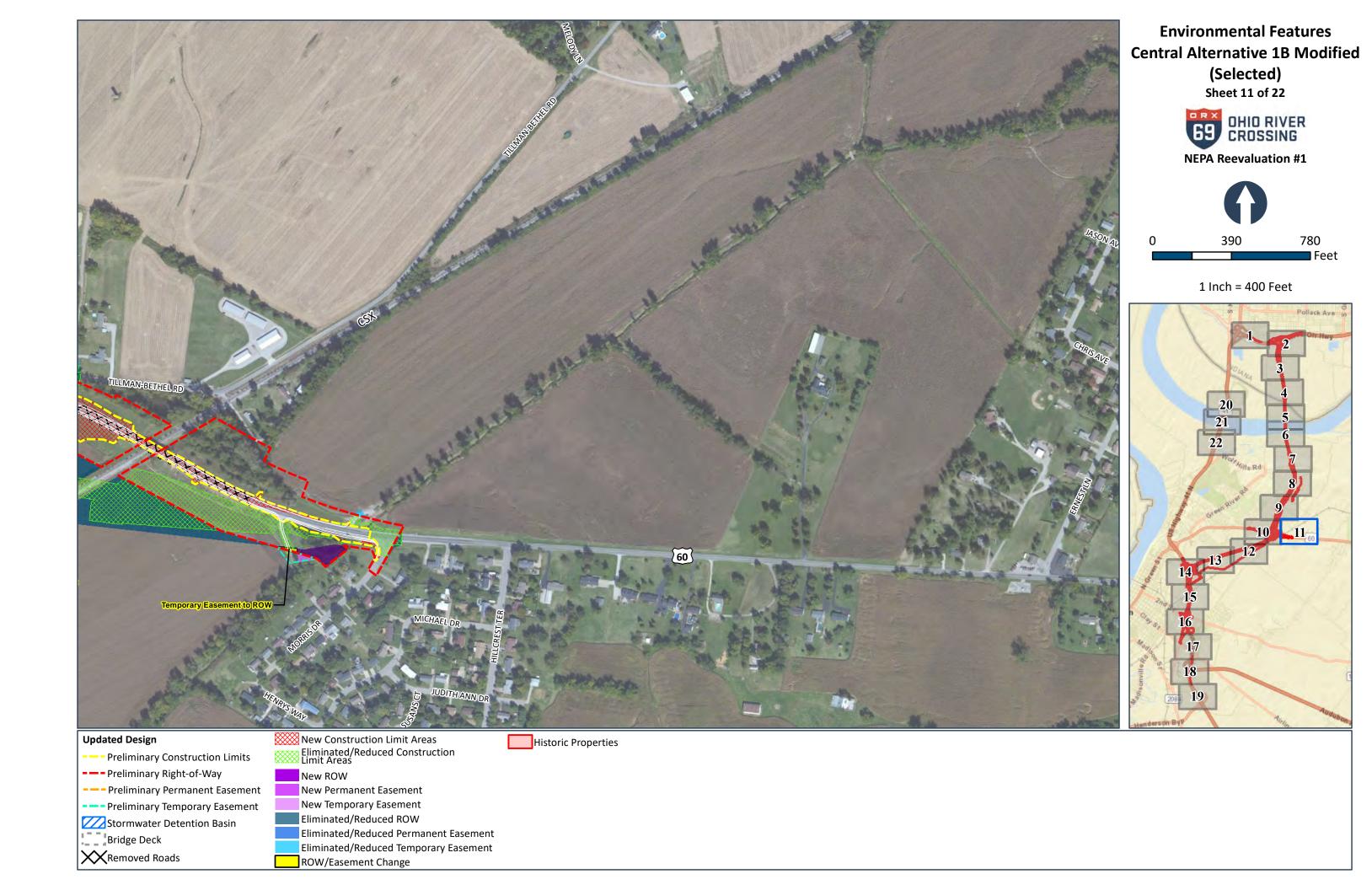
PROJECT MODIFICATION: REEVALUATION #1	RESOURCE TYPE	IMPACT REVIEW	MITIGATION REQUIREMENTS	DOCUMENTATION/ COORDINATION
	Below-Ground	Several of these remnant parcels lie outside of previous	Follow MOA where additional surveys required and resources identified	Complete supplemental surveys and documentation if required



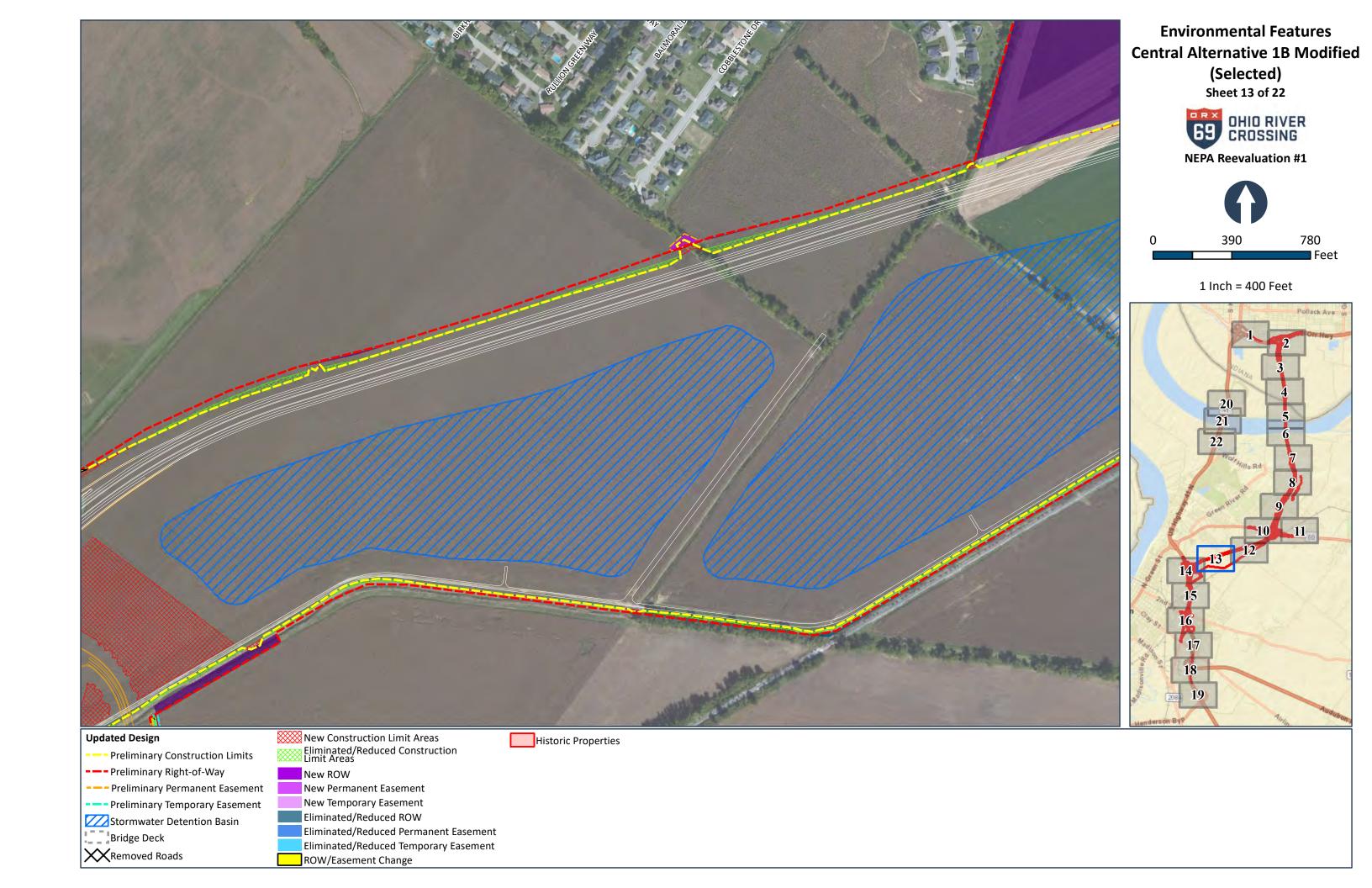


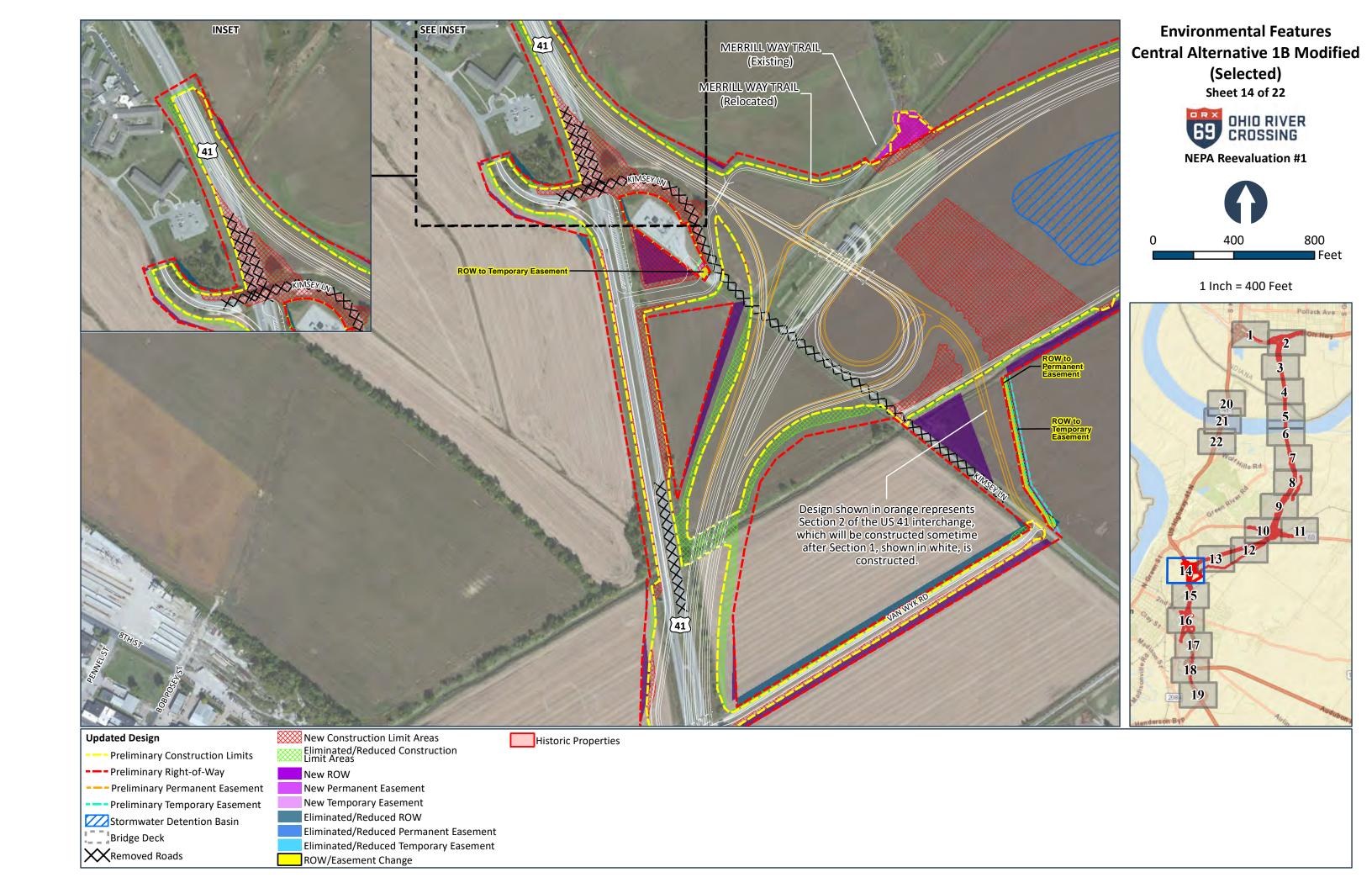


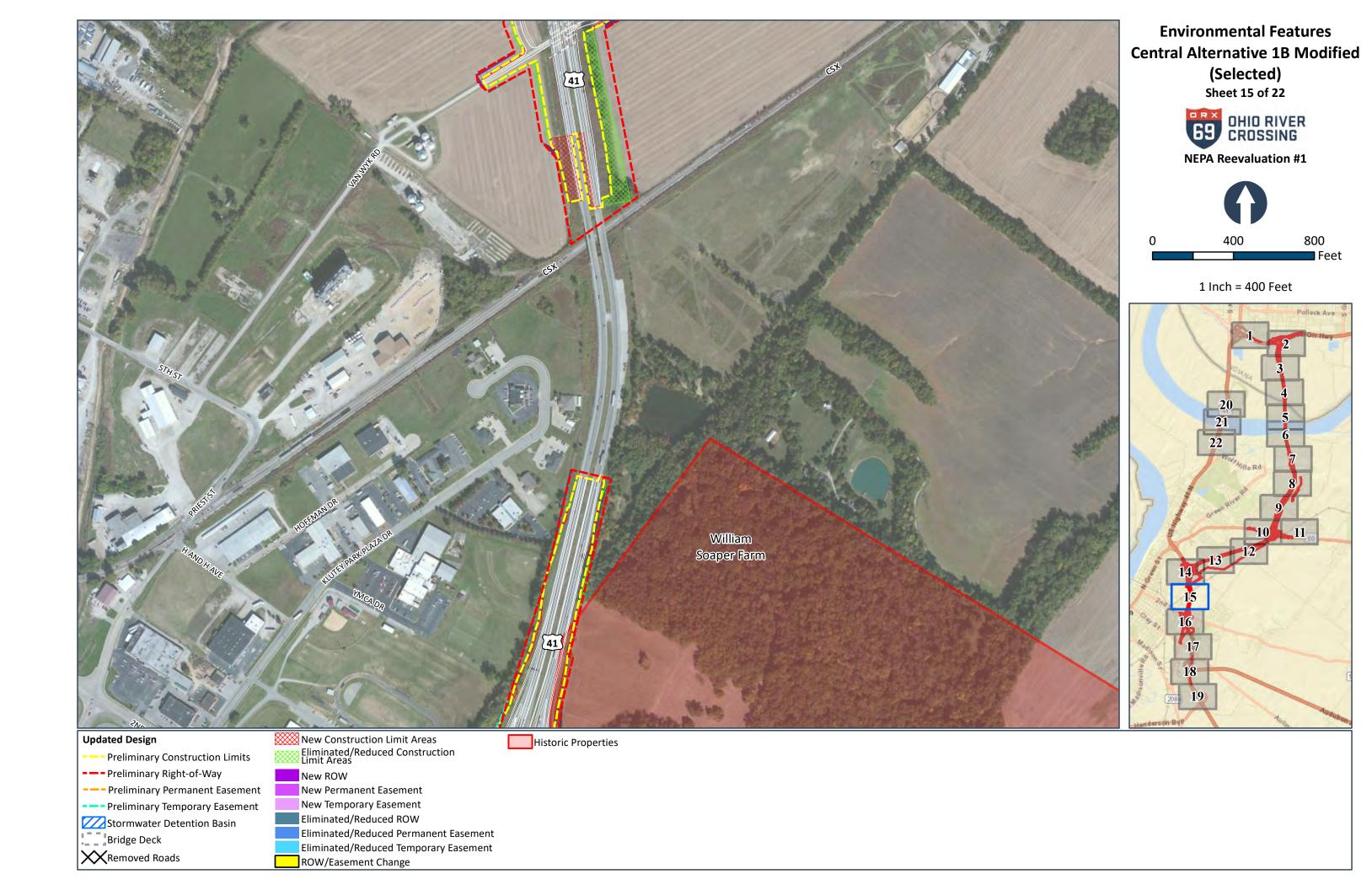


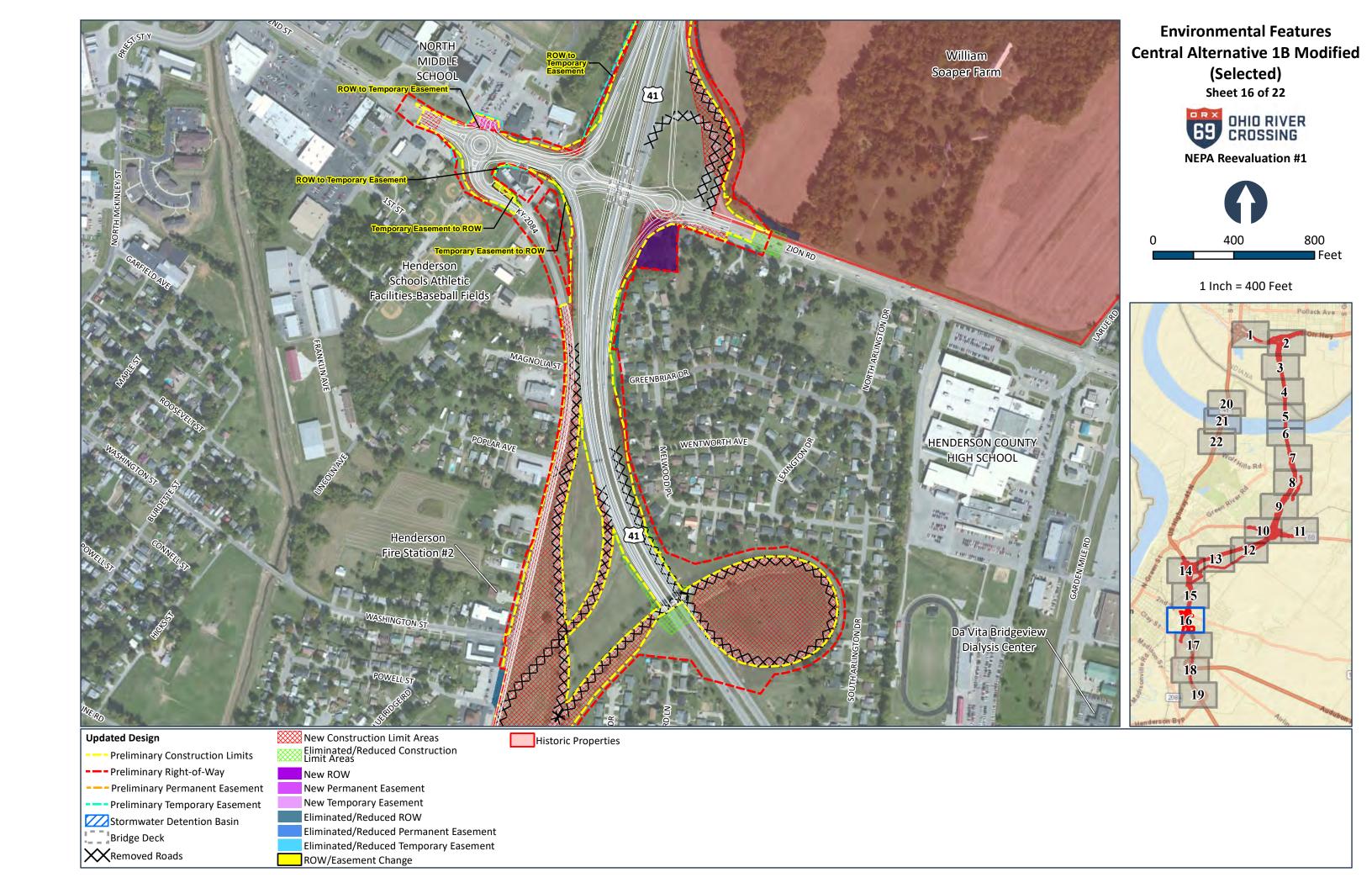


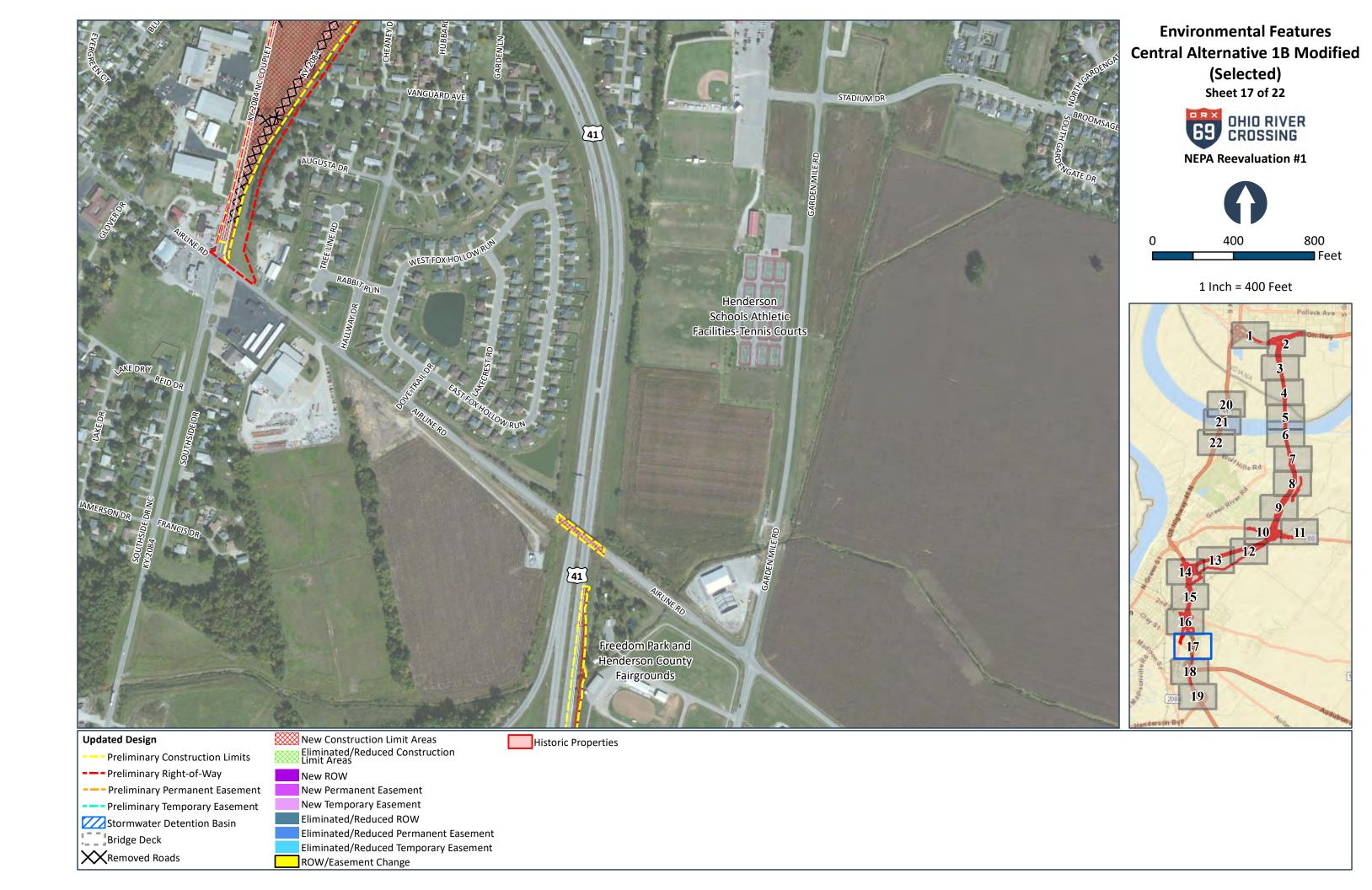




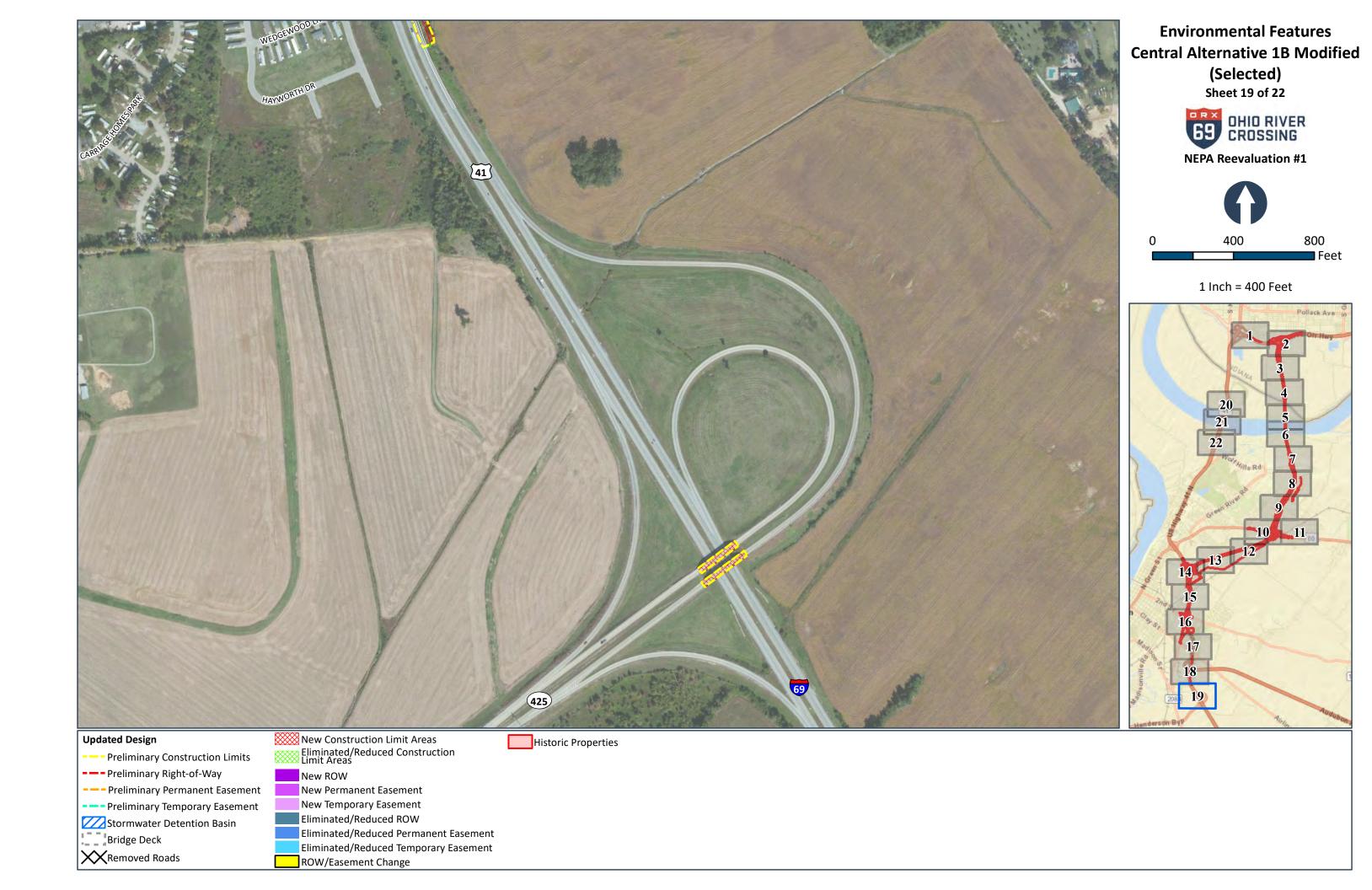














ANDY BESHEAR
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TOURISM, ARTS AND HERITAGE CABINET KENTUCKY HERITAGE COUNCIL

THE STATE HISTORIC PRESERVATION OFFICE

410 HIGH STREET FRANKFORT, KENTUCKY 40601 (502) 564-7005 www.heritage.ky.gov MICHAEL E. BERRY SECRETARY

CRAIG A. POTTS
EXECUTIVE DIRECTOR &
STATE HISTORIC
PRESERVATION OFFICER

October 3, 2022

Mr. Daniel R. Peake Division of Environmental Analysis Kentucky Transportation Cabinet 200 Mero Street Frankfort, KY 40622

Re: Design Changes to Section 1 of Project I-69 Ohio River Crossing Undetermined Historic-Age Properties Item No. 2-1088 Henderson County, Kentucky

Dear Mr. Peake,

Thank you for your digital submission of maps, memorandum from the consultant to KYTC capturing the summarization of project modifications and KYTC's letter that outlined KYTC's effects determination.

Our office understands that the submission proposes modifications to the design of Section 1 of the I-69 Ohio River Crossing (ORX) project and the potential changes in impacts to historic resources that may result.

We understand KYTC's effect determinations as outlined below:

#1: US 60 Interchange Modifications to include

- Converting three intersections to roundabouts. The changes would not encroach upon the NRHP boundaries of the adjacent historic properties (Jackson/McLain Farm and Ellis Neville/Lee Baskett House). KYTC has determined a finding of No Adverse Effect.
- Realign the new US 60 roadway such that it would remain closer to the existing US 60. KYTC has determined a finding of No Adverse Effect.
- Reverse the vertical orientation of US 60 and I-69 such that I-69 would cross over US 60, instead of under. The overall elevation of the interchange would not change substantively. KYTC has determined a finding of No Adverse Effect.

#2: Bridge Rehabilitation Work

- KY 425/Henderson Bypass over I-69- A deck overlay was added to the plans. KYTC has determined a finding of No Effect to Historic Properties.
- Adams Lane over US 41- A deck overlay was added to the plans. KYTC has determined a finding of No Effect to Historic Properties.
- Airline Road over US 41- Replacement of the superstructure was added to the plans. KYTC has determined a finding of No Effect to Historic Properties.



#3: Merge Area Modification at the KY 9005 interchange

- Northbound US 41 exit ramp to KY 9005.
- KY 9005 ramp to southbound US 41.
- KY 9005 ramp to northbound US 41.

All work would be within the existing ROW. There are no NRHP- eligible resources in the area. KYTC has determined a finding of No Effect to Historic Properties.

#4: Roadway/Ramp Removal Areas

Construction limits were revised to better reflect the activities required to remove existing ramps at the KY 2084 and KY 351 interchanges and to remove the Kimsey Lane bridge over existing US 41. All work would be within the existing ROW. The William Soaper Farm (KHC Survey# HE-5, NR 00000001595), is adjacent to KY 351, but the impacts will be minimized if existing ramps removed, A No Adverse Effect determination is recommended for these design changes.

#5: KY 351 Interchange

Minor modifications to the design of the northbound exit ramp were made to improve operations and would require the acquisition of one additional residential property that is not historic. Modifications also reduced the construction limits in the northeast quadrant of the interchange adjacent to the William Soaper Farm (KHC Survey# HE-5, NR 00000001595), a NRHP-eligible property. A No Adverse Effect is recommended for this change.

#6: US 41 Interchange

Some minor additions and reductions were added to the construction limits. There do not appear to be any historic age resources present. No Effect to Historic Properties has been recommended.

#7: Uneconomic Remnants

There are no structures on any of the uneconomic remnants to be acquired and no work is proposed to occur on the properties. KYTC has determined No Effect to Historic Properties.

We understand that KYTC has determined an overall effect finding of No Adverse Effect for the design changes. Based on our review, our office understands that there are multiple historic-age resources that have not been assessed for eligibility. Our comments for the proposed construction items are outlined below.

#1: US 60 Interchange Modifications

- We understand that Item #1 would have **No Adverse Effect** to historic properties.

#2: Bridge Rehabilitation Work

- For KY 425/Henderson Bypass over I-69 and Adams Lane over US 41 we understand that these bridges have not been assessed for eligibility. As such, our office is not asking for additional information as the proposed construction items would not likely impact integrity. As such, we would recommend that the work items would result in **No Adverse Effect.**
- For Airline Road over US 41 we understand that the superstructure is proposed to be replaced. As this bridge has not been assessed for eligibility our office is **withholding comment** on effects until more information can be provided to our office regarding eligibility.

#3: Merge Area Modification at the KY 9005 interchange

Based on our review, it appears that there are no historic-age structures present and **Concur** with KYTC's determination of **No Effect to Historic Properties** for the three locations outlined above.

#4: Roadway/Ramp Removal Areas

The location appears to be heavily developed with dense suburbanization. Although there is potential for subdivisions as historic resources, based on our review, the removal of roadway does not appear to have potential to impact historic resources. However, as the *Kimsey Lane bridge over existing US 41* is proposed for removal and has not yet been assessed for eligibility. We must **withhold comment** on effects at this time.

#5: KY 351 Interchange

- We understand that this item requires the acquisition of one additional residential property. It is our understanding that this property is of historic age and has not been assessed for eligibility. Therefore, we must **withhold our comments** on effects until our office has been provided with documentation and an eligibility determination from KYTC.



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JACQUELINE COLEMAN LT. GOVERNOR

#6: US 41 Interchange

Based on our review, it appears that there are above-ground resources in the area. However, they do not appear to be of historic age. Therefore, we Concur with KYTC's determination of No Effect to Historic Properties.

#7: Uneconomic Remnants

Based on our review, it appears that there are no above-ground resources in the area. Therefore, we Concur with KYTC's determination of No Effect to Historic Properties.

Before our office can concur with an overall effects finding for these proposed modifications to the plan, the SHPO requests an official eligibility determination from KYTC for Airline Road over US 41 bridge, Kimsey Lane bridge over existing US 41 and the Residential property associated with KY 351 interchange. We look forward to receiving KYTC's official eligibility determination along with a letter-report for our review of the undetermined resources and the below-ground review component of this undertaking.

Should you have any questions, please feel free to contact Matt Yagle of my staff at matthew.yagle@ky.gov.

Sincerely,

Executive Director and State Historic Preservation Officer

CP: my, KHC #66226

CC: Jonna Mabelitini (KYTC-DEA)





MEMORANDUM

To: Jonna Mabelitini

cc: Danny Corbin, INDOT

Gary Valentine, KYTC

From: Anu Kumar, Parsons

Date: October 20, 2022

Subject: NEPA Reevaluation #1 - Supplemental Information - Cultural Resources

Assessment Review

On August 22, 2022, KYTC sent the Kentucky SHPO a memorandum summarizing modifications proposed to Section 1 of the I-69 Ohio River Crossing (ORX) project and the resulting effect determinations on historic resources (see relevant maps in Appendix A). In their response letter dated October 3, 2022 (see Appendix D), the Kentucky SHPO stated that they are withholding their comment on the overall effects determination resulting from the proposed modifications until National Register of Historic Places (NRHP) eligibility evaluations were completed on the following three resources:

- 1. Residential property located at 2106-2104 Zion Road
- 2. Bridge carrying Kimsey Lane over US 41
- 3. Bridge carrying Airline Road over US 41

The above-mentioned resources are all over 50 years old and located within the previously defined Area of Potential Effects (APE) for the project included in Appendix L of the FEIS (see Appendix C).

The purpose of this letter report is to provide the Kentucky SHPO with the NRHP eligibility recommendations for these previously unevaluated resources that will be directly impacted by proposed design modifications and request concurrence on KYTC's overall effect determination of No Adverse Effect resulting from the proposed modifications.

Anu Kumar, an architectural historian with Parsons with credentials meeting the Secretary of Interior's Professional Qualification Standards, evaluated the three resources within the project's APE in accordance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and regulations implementing the Code of Federal Regulations 36 CFR Part 800 (Revised January 2001). The additional research and analysis undertaken to complete the NRHP evaluations is presented below and did not result in any of the three resources being recommended NRHP-eligible.





NRHP Eligibility Evaluations

All three resources were evaluated using the NRHP evaluation criteria established by the U.S. Department of Interior, National Park Service (USDOI-NPS) and outlined in National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation (USDOI-NPS, 1997). The bulletin states that to be eligible for inclusion in the NRHP, a resource must have sufficient integrity and meet at least one of the following:

- Criterion A: Association with events that have made a significant contribution to the broad patterns of our history.
- Criterion B: Association with the lives of persons significant in our past.
- Criterion C: Embody the distinctive characteristics of a type, period, or method of
 construction, or that represent the work of a master, or that possess high artistic values,
 or that represent a significant and distinguishable entity whose components may lack
 individual distinction.
- Criterion D: Yielded, or may be likely to yield, information important in prehistory or history.

There are seven attributes of integrity: location, design, setting, materials, workmanship, feeling and association. In evaluating the integrity, the type of resource weighs as a consideration. It should be noted that insufficient integrity is most often a disqualifying factor because it diminishes the ability of resource to convey significance. Allowances can, however, be made for non-period but historical alterations to some resources because of their rarity or uniqueness, but without any evidence of historical significance, such resources are usually deemed ineligible.

Residential Property at 2106 Zion Road, Henderson Township, Henderson, KY

Historic aerial photographs and topographic maps clearly show that prior to 1950, properties east of present-day Lincoln Avenue along Zion Road were mostly agricultural fields, although the appearance of the first few scattered post-World War II properties along Lincoln Avenue and Zion Road further east of the property indicates that suburbanization of Henderson had begun along primary roads leading out of town by 1950 (NETR, 1914, 1932, 1950 and 1952). By 1955, however, there were more houses constructed along KY 2084, Lincoln Avenue, and Zion Road, including the first house on this property that faced Zion Road. A second house was built to the rear of the first house sometime after 1958, but before 1970 (NETR, 1950, 1953, 1955, 1958 and 1970). No post World War II residential subdivisions were present in the immediate vicinity of the property until at least a decade later (NETR, 1932, 1950, 1953, 1955, 1970). This is also confirmed by a review of construction dates of adjacent properties and parcel information on the Henderson County Property Valuation Administrator's website (Schneider Geospatial, 2022).

This multi-dwelling residential property is clearly associated with broad local, state, and national trends of residential development associated with suburbanization in the decades immediately





following World War II. The 2017 and 2019 History/Architecture Survey reports prepared by Gray and Pape, Inc., for this project that were incorporated in Appendix L of the FEIS, presented these themes in the historic context along with NRHP evaluations of several individual houses and residential subdivisions that were constructed between the early 1950s through the early 1970s located within the project's APE, including several in the vicinity of this property (Burden et al., 2017; VanDyke et al., 2019).

Description:

This 1.4-acre property is located on the south side of Zion Road immediately east of the US 41 interchange. A frontage road and a wide concrete sidewalk with a small grassy buffer strip on either side separates the property from Zion Road. Access to the property is from this frontage road (see Photos 1 and 2, Appendix B). To the east is a c. 1952 house and to the south is a c. 1966 house located in a cul-de-sac within the post-World War II Eastgate Park Subdivision. Most houses in this subdivision were built between the late 1960s through mid-1970s (Schneider Geospatial, 2022).

The property has a c. 1952 ranch house, a c. 1959 vernacular house, and a c. 2016 single room workshop/storage shed, each of which are described below. An unpaved gravel driveway along the western edge of the property provides access from the frontage road to the two houses on the property. Concrete pads in the front and the back of the property provide multiple parking spots. Several trees shade an otherwise open front yard with a mowed lawn. The back yard has minimal lawn area and numerous mature trees that provide considerable shade. The south approach to the US 41 bridge over Zion Road is directly visible from the western edge of the property but trees and vegetation planted on the berm of the highway provide some privacy (see Photos 1 and 16, Appendix B).

The c. 1952 Ranch House

The ranch house, which faces Zion Road, is set is back approximately 75 feet south of the frontage road. It is a single-story, wood frame structure that sits atop a concrete foundation and has an integrated single-car garage. The house has no basement, but the main floor plan allows for 1,416 square feet of living space, which includes living/dining room, a kitchen, three bedrooms and one bathroom. There is a fireplace in the living room of the house and a chimney is visible at the junction of main house and garage building on the south side.

The main house has a low-pitch metal cross-gable roof with moderate eave overhangs, and a lower height side-gable roof over the attached garage. Much of the house is clad in red brick veneer. Vinyl siding is only used on the east gable wall of the house above the lower height garage roof and in the wall on the north elevation that is slightly setback and has the single panel glass front door and large picture glass window with double hung flankers. The setback allows for the concrete stoop leading to the front door to be covered by the main roof of the house. There are three additional double hung windows on the north elevation, including one on the gable wall, which is obscured by vegetation. The south elevation of the main house also has a picture glass





window with double hung flankers, a double hung window, a horizontal four pane window, and the garage has a casement window. There are also two half-lite doors on this elevation that lead out to the backyard, one from the living area of the house and the other from the garage. There is a storm door added to the door leading out from the living room. The west elevation has two horizontal 4-pane windows and a double hung window and the east gable wall of the garage has a 3x4 fixed pane window. All windows except those on the east and north gable walls are arranged asymmetrically across the elevations and are located at the cornice line (see Photos 1-9, Appendix B).

The c. 1959 Vernacular House

This vernacular house located approximately 190 feet south of the frontage road is a single-story, wood frame structure that sits atop a concrete block foundation. There is no garage attached to the house. Vehicles usually park on a concrete pad on the property approximately 20 feet away from the house on the western edge of the property. The house has no basement, but the main floorplan allows for 1,708 square feet of living space, which includes a living/dining room, a kitchen, three bedrooms and two bathrooms. There is no fireplace in the house.

The house has a metal cross-gable roof with moderate eave overhangs. The entire house is clad in vinyl siding except the permastone veneer clad wall on the north elevation with the front entrance and large picture glass window with horizontal 4-pane flankers. Steps lead up to the front porch with a gable roof that protects the replacement single panel glass front door. On this elevation, there is one additional double hung window on the gable wall (see Photos 3-10, Appendix B). The south elevation has a double hung window and a triple pane fixed window. Steps lead up to a half-lite back door at the southeast corner. The west elevation has three double hung windows and a hexagonal fixed window, which is now boarded up. The east elevation has a double hung window and a hexagonal window. All windows, except the one on the north gable wall, are arranged asymmetrically across the elevations and are located at the cornice line (see Photos 11-16, Appendix B).

The c. 2012 Storage Shed/Workshop

This structure replaced an above ground circular pool on the property sometime around 2016. It is located between the houses on the property and is a simple wood frame structure that sits on a concrete foundation. It has a total of 192 square feet covered space and a large, covered patio that is almost double the size at 384 square feet. The walls are vinyl sided and the structure like all others on the property has a metal roof (see Photo 10, Appendix B).

NRHP Recommendation:

<u>Criterion A</u>: The housing boom post-World War II and associated suburbanization were significant nationwide trends that were reflected in the economic, cultural, social, and architectural changes occurring throughout the country, including places like Henderson. The houses on the property were constructed during this period and are clearly associated with this trend. However, more than 40 million housing units were built across United States during the





30-year period following the end of World War II, and at least 30 million of these were single-family houses. Because they are so ubiquitous, not all postwar houses or even neighborhoods can be considered as significant examples of the response to housing needs following World War II. The mere association of the houses on this property with this time-period is not sufficient to convey significance under this criterion.

The houses on the property do not demonstrate a significant aspect of the suburban growth of Henderson. They were built prior to the construction of US 41 and hence are not directly related to important advances in transportation in the area. They were not built as part of a subdivision and do not demonstrate a planned response to housing shortages following World War II or impacts of government financing, standards, zoning, or legislation. Their construction did not introduce new community planning ideas or influence other developments in the region. Finally, they were not affiliated with an important historical event of that time-period related to social history such as racial integration and the extension of the American dream of suburban life or home ownership to a broader demographic of Americans.

Therefore, this multi-dwelling resource is not recommended eligible for inclusion in NRHP under Criterion A.

<u>Criterion B</u>: Research undertaken for this analysis did not demonstrate any specific association between this multiple-dwelling resource and a particular individual who made important contributions to the local, regional, or national history, especially contributions associated with residential development in Kentucky in the post-World War II era.

Therefore, this multi-dwelling resource is not recommended eligible for inclusion in the NRHP under Criterion B.

<u>Criterion C</u>: Houses dating from the 1950s are ubiquitous in the county, state, and nation and, therefore, to rise to the level of NRHP eligibility they must usually be part of planned community or neighborhood that displays innovative design and community planning concepts. Rarely, are they considered individually eligible unless they have high artistic value, are the work a master architect, builder, or craftsman or are excellent representative examples of an architectural style from the postwar period. Broad association with and representation of period styles is not sufficient to warrant eligibility of individual houses under Criterion C.

The houses on this property were built at least a decade before any planned communities or subdivisions developed in the area. They are not of high artistic value or the work a master architect, builder, or craftsman. They do not display innovative or unique design, outstanding craftsmanship, or use of quality materials in their construction that would set them apart from other homes of the era. They are not excellent representative examples of popular styles from the post-World War II period. Nor do they employ designs, plans, and materials that clearly illustrate prevailing concepts of homebuilding and design during the mid-20th century. They are not early examples of a building type that influenced future homebuilding trends locally or regionally. Nor





is there evidence that they were early or innovative examples from local or regional companies illustrating trends in mass production and cost saving efficiencies.

While both houses on the property embody some distinctive characteristics of the post-World War II building styles, they do not display the requisite exterior and interior character defining features associated with the style, form, or type to be considered architecturally significant. Additionally, their material integrity is significantly compromised due to the replacement of the original asphalt shingle roofs, visible in historic aerials, with incompatible replacement standing seam metal roofs. Also, the integrity of both houses has been further compromised by replacement of all original siding with new vinyl siding and replacement of all doors and most windows with double hung and fixed windows. The integrity of the property's setting has also been impacted by the construction of the frontage road that no longer allows the direct access to the property from Zion Road and the construction of a modern storage/workshop building in the yard between the two houses.

Therefore, the house is not recommended eligible for inclusion in the NRHP under Criterion C.

<u>Criterion D:</u> Given the period of this resource and the preponderance of documentation available related to construction and material technologies of the mid-20th century resources, it is not likely to yield important information regarding historic construction materials or technologies not already included in the historic record. The houses on the property are not uncommon in suburbs in the Midwest and architecturally they do not represent a uniqueness that would benefit from further investigation.

Therefore, this multi-dwelling resource is not recommended eligible for inclusion in the NRHP under Criterion D.

Summarizing, the property at 2106 Zion Road is not recommended eligible for the NRHP because it lacks significance under any of the NRHP criteria.

Bridges over US 41, Henderson Township, Henderson, KY

Previous bridge studies undertaken by KYTC in the 1980s's were focused on truss, suspension, and concrete arch bridges and hence were not reviewed in depth for this evaluation. However, in 1991, KYTC identified historic themes based on which, in 1996, they developed a historic context for bridges constructed in the state through 1950 and undertook an evaluation of the historic significance of 2,241 bridges on the state's highway system (Powell, 1991 and Hudson 1996). This report, titled *Historic Highway Bridges of Kentucky*, 1792-1950, was reviewed for this study because in addition to truss, suspension, and masonry and concrete arch bridges, it also included a context and evaluation of 146 more common concrete slab and beam or girder bridges. The 1996 study determined that only 55 of 2,241 bridges may be potentially eligible for inclusion in the NRHP (Hudson, 1996).





The two subject bridges over US 41, Structure No. 051B00048N and Structure No. 051B00111N, which will be impacted by the project, are types of concrete beam and girder bridges that were built in the 1960s and were, therefore, not evaluated for NRHP eligibility in the 1996 study. Both structures are common bridge types that fall within scope of the *Program Comment for Streamlining Section 106 Review for Actions Affecting Post-1945 Concrete and Steel Bridges* issued by the Advisory Council on Historic Preservation (ACHP) on November 2, 2012. The list of bridge types was developed by ACHP "based on the historic bridge context, FHWA's National Bridge Inventory (NBI), information developed in statewide bridge inventories across the county, and consultation with the National Conference of SHPOs and other stakeholders". The SHPOs and FHWA Divisions in all states were requested to identify especially important and significant examples of the post-World War II common bridge types.

The resulting list was not meant to be exhaustive, and the Program Comment states that FHWA Divisions may add to the list of exceptional bridges, as more information becomes available regarding the historic bridges in a state. The main intent behind the list was to be able to exclude readily recognizable exceptional bridges from the Program Comment. In Kentucky, the SHPO, FHWA, and KYTC identified a list of 16 post-1945 bridges statewide that should be exempt from the Program Comment. Structure No. 051B00048N and Structure No. 051B00111N are not on this list, but they have been evaluated for NRHP eligibility below because a statewide historic bridge inventory has yet to be developed in Kentucky so the list of exceptional post-1945 bridges cannot be considered complete.

Bridge carrying Kimsey Lane over US 41 (Henderson Bypass) - Structure No. 051B00048N

One of the most popular designs for reinforced concrete beam and girder bridges prior to the mid-1960s was the tee beam, which were first introduced in state highway systems throughout the country in the early 1920s and used extensively along highways across the state until the 1960s (Hudson, 1996).

American abolitionist and inventor, Thaddeus Hyatt, is credited for first coming upon the idea of the tee beam in the 1850s, but the modern reinforced concrete construction method of integrating separate elements of construction into a monolithic element, such as the slab and beam in a tee beam, was developed and patented by the French engineer, Belgian Francois Hennebique, at the turn of the 20th century (Lay, 1992).

The development of the tee beam type in the early 20th century reflected a better understanding by engineers of the forces of compression and tension within reinforced concrete bridges. The first designs consisted of three longitudinal beams, but to accommodate the increasing demands of traffic, state highway departments throughout the country, including Kentucky, updated standardized bridge plans in the 1930s with wider road widths, resulting in later examples usually consisting of four or more beams. They were generally used for single spans 25 to 60 feet long, but multiple spans allowed for the construction of much longer bridges (Mead & Hunt and Allee King Rosen & Fleming Inc., 2002; Hudson 1996).





Tee beam construction entailed the casting of concrete abutments on either bank of a crossing, with freestanding cast piers placed up to 50 feet apart between the abutments if more than one span was required. Wooden formwork encasing steel reinforcing rods was assembled for pouring the superstructure, which consisted of three or more longitudinal beams, a deck, and usually solid parapets flanking the sides of the deck that were cast together as one integrated unit for each span, supported by the abutments and piers. After the concrete cured, the wooden formwork was removed and used to construct the next span (USDOT-FHWA, 2022).

There are numerous concrete tee beam bridges from the 1920s and 1930s surviving in fair to poor condition in the state, but in Henderson County there is only one existing bridge from this time that carries KY 136 over Pond Creek Swamp. It was built in 1920, but due to the economic conditions in the 1930s, bridge building activity in the state and county slowed down until after the end of the Great Depression. However, from the 1940s through the 1960s, tee beam bridges gained popularity and were constructed in large numbers across the state, including in Henderson County. The surviving 25 tee beam bridges account for almost 15% of the 169 bridges and large culverts in the county that have a span greater than 20 feet. These bridges reached their peak popularity in the 1960s when 16 or 64% of the total surviving tee beam bridges in the county were built (Baughn, 2020)

Tee beam bridges were more economical to construct than concrete arch or slab bridges for lengths more than 25 feet, but like all cast-in-place concrete bridges, the assembly and subsequent dismantling of the required wooden formwork made their construction labor intensive. As such, by the 1960s, they began to be phased out in favor of prestressed concrete beam bridges and other designs (Hess and Frame, 1986; Mead & Hunt and Allee King Rosen & Fleming Inc., 2002).

Description:

This four-span, reinforced concrete, tee beam bridge is located about 1.2 miles north of Kimsey Lane junction with Larue Road (KY 1539). The spans carry two lanes of traffic on Kimsey Lane over four lanes of traffic on US 41. The NBI data and KYTC 2022 bridge inspection report both state that the structure was constructed in 1963. The structure has an overall length of 213.9 feet and the east and west approaches are about 239 feet each. The as-built plans of the bridge indicate that it has a vertical clearance of 16.5 feet, a maximum span length of 54 feet between the intermediate piers, and end spans between the pier and abutments that are 53 feet each. The bridge has combination railings composed of vertical face concrete parapets with tubular steel railings used with a 2.6-foot-wide sidewalk that is over a foot high present on either side of the bridge deck. There is no median on the bridge (see Photos 17-26, Appendix B).

The superstructure is comprised of five cast-in-place, reinforced concrete tee beams that support an integral deck slab that serves as the road surface. In cross section, the beams are deeper than their deck sections to either side of the top of the beams, which produces the T-shape that gives them their names. Steel reinforcement in the tee beam consists of steel rods that are typically set into the horizontal portion that comprises the deck (the top of the "T") and lower vertical section





of the beam (the stem). Transverse rods extend between the top and bottom of the beam and are tied together with U-shaped hangers resulting in an integrated slab and beam (KYTC, 1996).

The substructure of the bridge comprises of stub abutments that provide support for the ends of the superstructure and retain the roadway approach embankment and three capped three column piers that provide support for the superstructure at intermediate points along the bridge spans with a minimum obstruction to the flow of traffic.

<u>Bridge carrying Airline Road (KY812) over US 41 (Pennyrile Rarkway) –</u> Structure No. 051B00111N

The French engineer, Eugene Freyssinet, is credited with first developing concrete box girder bridges in the 1920s and coming up with the idea of prestressing concrete in the 1930s but the earliest examples of these innovative technologies were not built in the United States until the end of the Great Depression. Use of concrete box girder bridges became more widespread after World War II, but it was not until standardized plans were made available in the 1960s that their use along state highways in Kentucky became more common. The concrete box beam or girder bridge was an evolution of the tee beam bridge design, in which the tee beams are transformed into hollow cells by the addition of a continuous soffit across the bottom of the structure. The box girder deck was often constructed in situ in the 1950s and 1960s, but after the 1960s, with the widespread use of prestressed concrete, the entire superstructure was precast and prefabricated as a unit to allow for good quality control under factory settings (JRP Historical Consulting Services, 2003). In Henderson County, the earliest surviving non-reconstructed example of a prestressed concrete box girder was built in 1965 and carries Wathen Lane over a branch of the North Fork of Canoe Creek (Baughn, 2020).

The reinforced concrete box girder bridges were seen as an improvement over the more labor-intensive tee beam bridges because their rectangular shape simplified the exterior wooden formwork required, while the formwork for the interior of the cells, which would not be visible, could be constructed of inferior lumber and often left in place. This resulted in considerable cost savings, since the labor-intensive construction and removal of formwork, which constituted over 50% of the expense in reinforced concrete bridges (Hess and Frame, 1986), were not required. In addition, the box girder design could have a shallower depth and use less material for a given span than the tee beam. Span range was also longer for concrete box girder bridge as compared to a tee beam bridge resulting in comparatively lesser number of piers for the same valley width and hence results in economy. The box girder bridge also had greater rigidity in resisting torsion that proved advantageous for bridges with curved alignments or skewed 45 to 60 degrees. In addition to their physical design capabilities, the concrete box girder provided a new aesthetic quality that, at best, expressed the minimal and graceful qualities of Modernism. Concrete box girders helped emphasize the strength and monolithic character of reinforced concrete (Feldman, 2004).





The popularity of concrete box girder bridges continued to increase between the 1960s and 1980s and they were constructed in large numbers across the state, including in Henderson County. The surviving 80 concrete box girder bridges account for over 47% of the 169 bridges and large culverts in the county that have a span greater than 20 feet. These bridges continue to be built today and are the most popular highway bridge types, especially for larger spans. Just in Henderson County alone, of the 47 bridges built between 1990 and 2017, 35 bridges or 75 percent are prestressed concrete box girders (Baughn, 2020).

Description:

This two-span, cast in place, reinforced concrete, continuous box girder bridge built at a 30-degree skew, is located along Airline Road, about 0.5 miles southeast of the KY2084 junction. The NBI and KYTC bridge inspection report reveals that it was constructed in 1968. It carries Airline Road with two lanes of traffic over four lanes of traffic on US 41. The structure has an overall length of 228 feet and the east and west approaches are about 239.5 feet each. The as-built plans of the structure indicate that it has a minimum vertical clearance of 16.4 feet and a maximum span length of 92 feet between the abutments. Abutments on either end support an additional 22 feet of the bridge length each. Roadway width between curbs is 29.9 feet and deck width edge to edge is 34.8 feet. The bridge has concrete parapet and concrete railings used with a raised curb present on either side of the bridge deck. There is no median on the bridge. The concrete railing does not meet currently acceptable safety standards (see Photos 27-36, Appendix B).

The superstructure is comprised of cast in-situ continuous concrete box girders that support a reinforced concrete deck slab on top which serves as the road surface. The deck displays section loss, cracking, spalling and scour. In cross section the beams are deeper than their deck sections (KYTC, 1996). The substructure of the bridge is comprised of gravity abutments that are at a 90-degree angle to the seat of the bridge and provide support for the ends of the superstructure and retain the roadway approach embankment, and one reinforced concrete three-column pier that provides support at an intermediate point between the two bridge spans. The reinforced concrete three-column pier sits on a concrete barrier with a grassy buffer on either side and a concrete grade beam or strut between the columns at the base to provide protection against collision.

NRHP Recommendations:

<u>Criterion A</u>: Post-World War II roadway bridges in Kentucky, like other infrastructure, are inherently vital to the communities they serve due to their association with the state's transportation development, regional or local economic development, agricultural development, and community planning or military history. To be eligible for listing in the National Register under Criterion A, all bridges, that by their very nature are integral parts of the state's infrastructure, must have demonstrable importance directly related to important historic events and trends, with emphasis given to specific demand for such facilities and the social, economic, commercial, and/or industrial effects their construction had locally, regionally, or nationally. An indirect or inferential relationship such as the one displayed by the two bridges, Structure No.





051B00048N and Structure No. 051B00111N, is not adequate to support significance under Criterion A.

<u>Criterion B</u>: Research undertaken for this analysis did not demonstrate any specific association between Structure No. 051B00048N and Structure No. 051B00111N and any important achievements of an individual who made important contributions to the local, regional, or national history, especially contributions associated with bridge engineering or transportation development in Kentucky in the post-World War II era.

Therefore, Structure No. 051B00048N and Structure No. 051B00111N are not recommended eligible for inclusion in the NRHP under Criterion B.

<u>Criterion C</u>: Structure No. 051B00048N and Structure No. 051B00111N are not early examples of the tee beam or concrete box girder bridge types and do not display boldness of the engineering achievement, innovative design techniques or construction methods. They do not demonstrate individuality or variation from the several hundred such common bridge types built throughout Kentucky such as usual skew of more than 45 degrees or exceptional overall length as well as span lengths. They are not representative of the evolution of the tee beam or continuous box girder bridge types in the state or the transition between classes of resources. Neither bridge possesses high artistic value. They do not display any design principals of period styles such as Streamline Modern or any special aesthetic treatments such as cladding of the abutments or piers with stone or brick, decorative non-standard railings, or ornamental light fixtures. The bridges are not the work of a notable engineer or builder whose work is distinguishable from others by its style and quality and expresses a particular phase in the development of their career or an aspect of their work. Although they possess integrity, they are common examples of ubiquitous concrete girder bridge types present throughout the state.

Therefore, Structure No. 051B00048N and Structure No. 051B00111N are both not recommended eligible for inclusion in the NRHP under Criterion C.

<u>Criterion D</u>: Given the period of these resources and the preponderance of documentation available related to construction of the concrete tee beam and box girder bridge types, Structure No. 051B00048N and Structure No. 051B00111N are not likely to yield important information regarding historic construction materials or technologies not already included in the historic record though standardized state highway plans and specifications. Criterion D is most often applied to archaeological properties, and it is highly unlikely that any Kentucky bridges from the 1960s would be eligible under Criterion D.

Therefore, Structure No. 051B00048N and Structure No. 051B00111N are both not recommended eligible for inclusion in the NRHP under Criterion D.

Summarizing, both Structure No. 051B00048N and Structure No. 051B00111N are not recommended eligible for inclusion in the NRHP as they lack significance under any of the NRHP criteria and.





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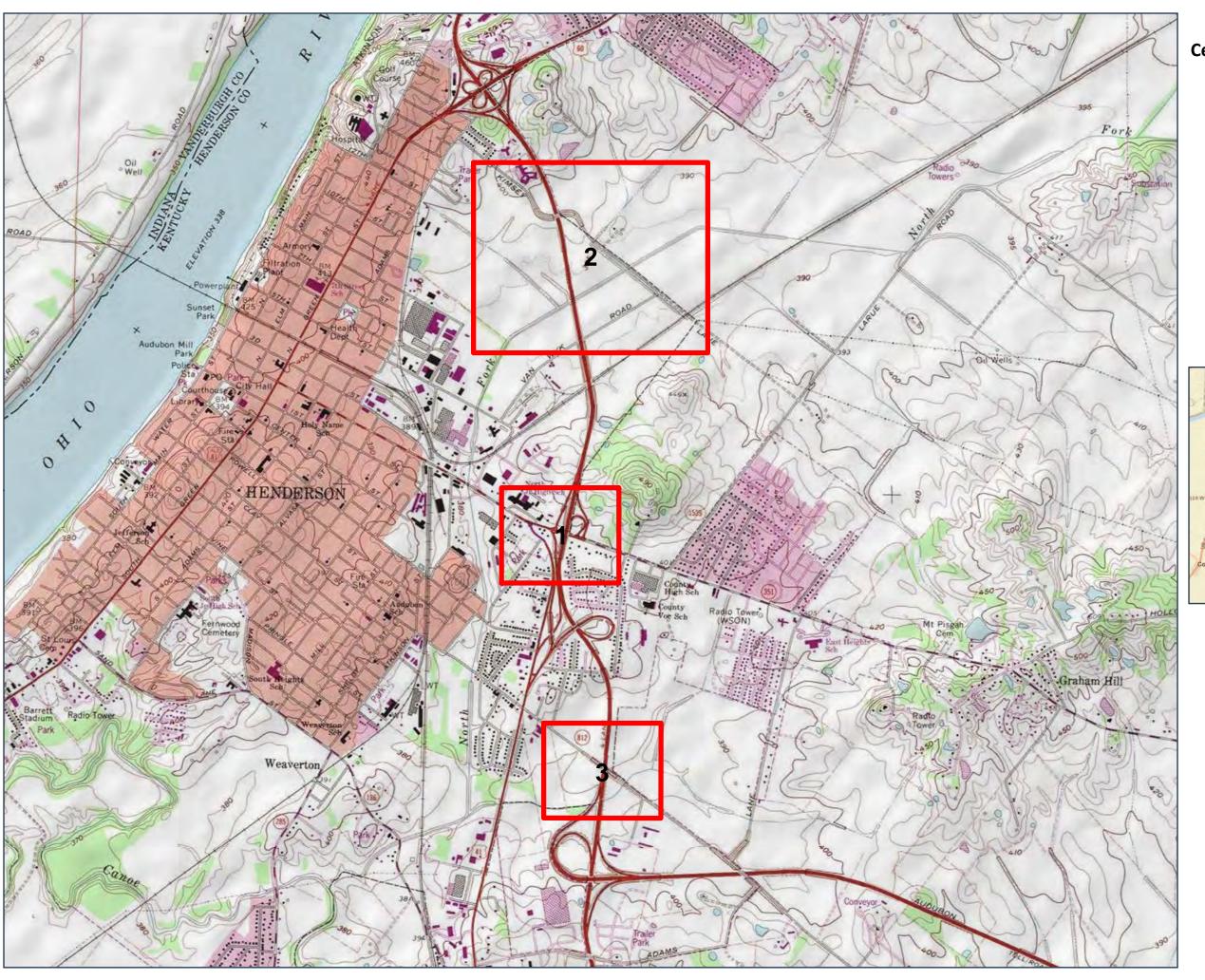
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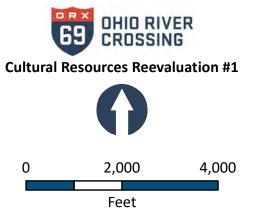


Appendix A

Project Location Map &
Central Alternative 1B Modified

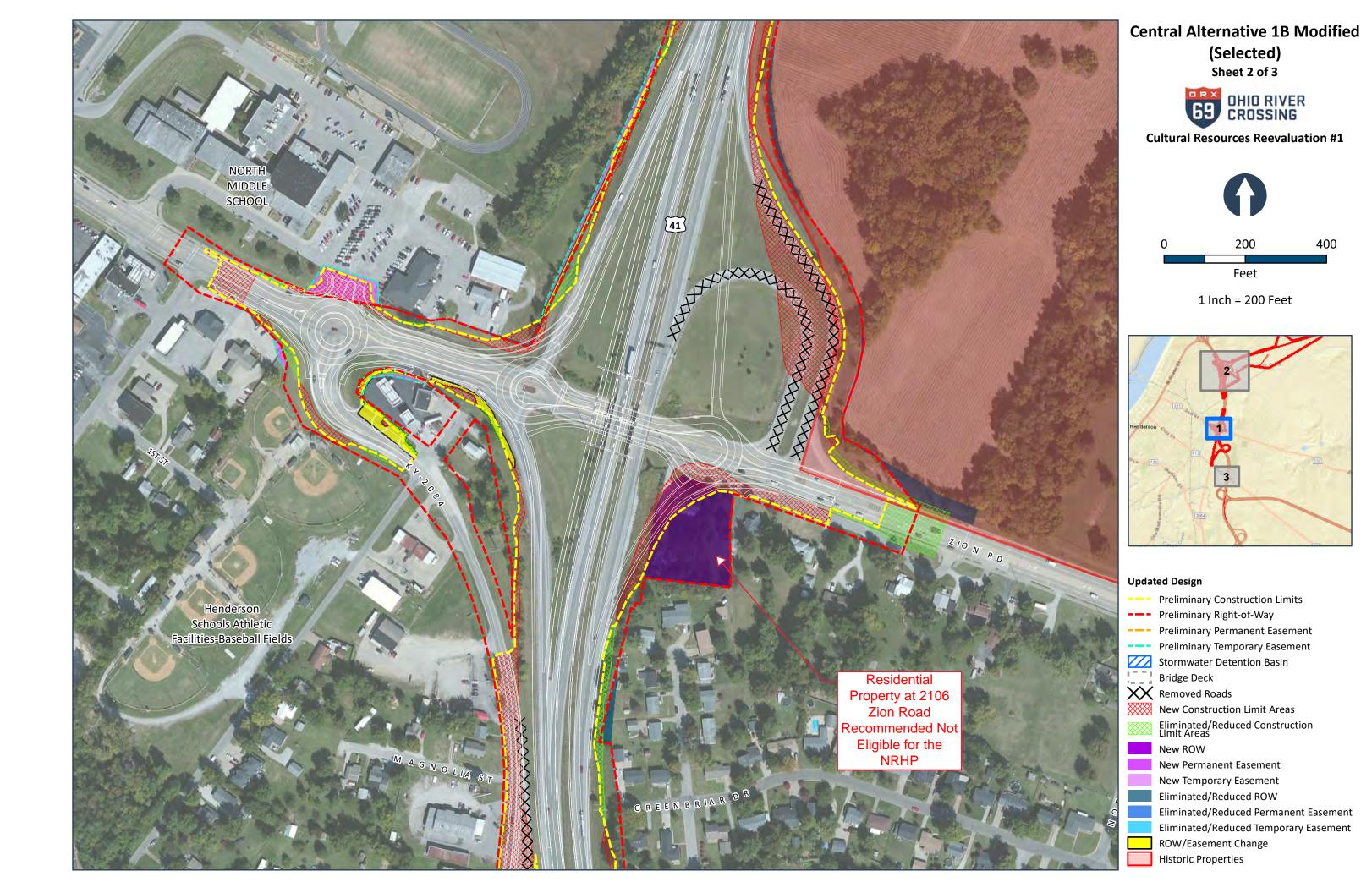


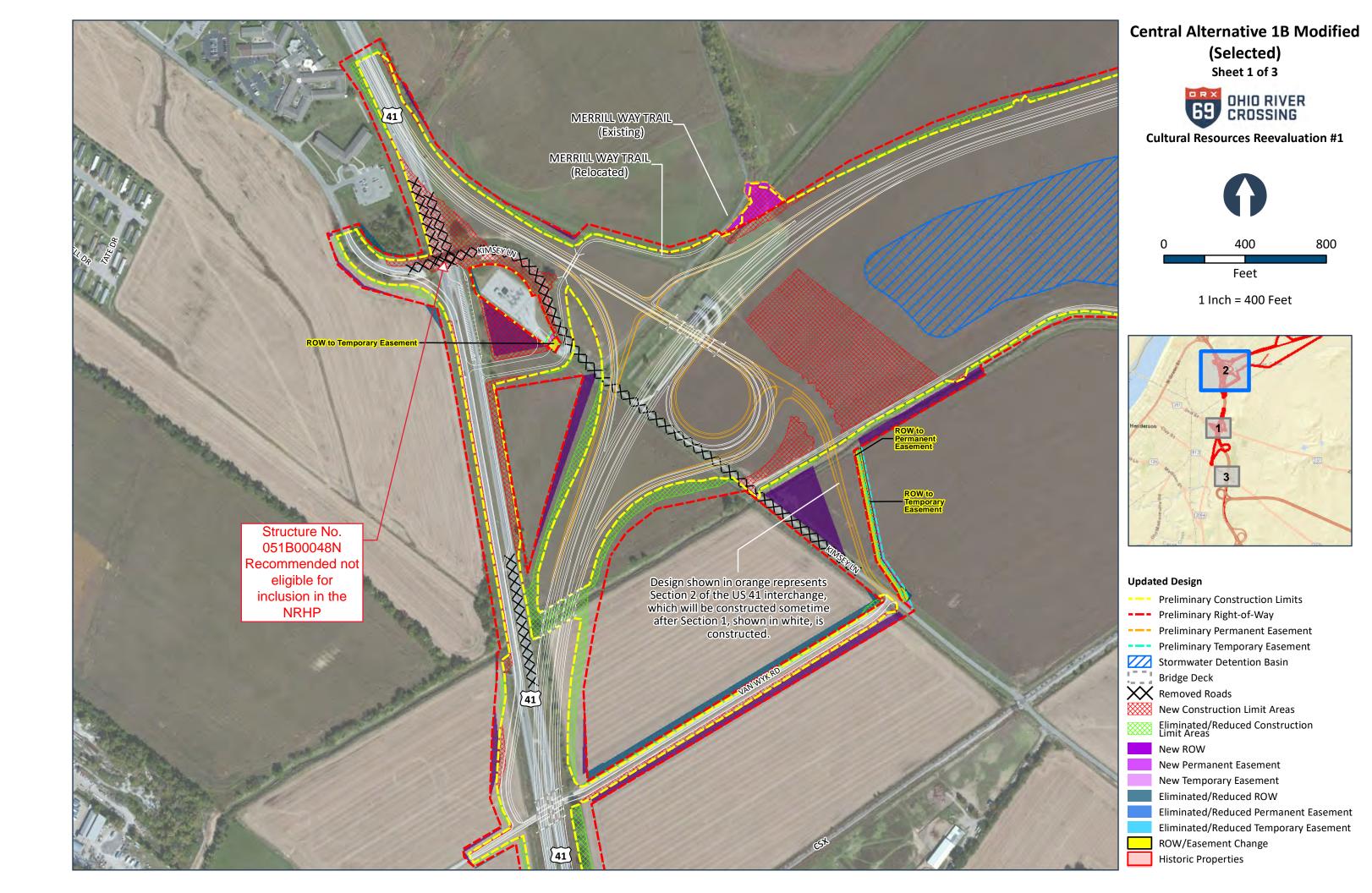
Project Location Map Central Alternative 1B Modified (Selected)



1 Inch = 2,000 Feet









Appendix B

Photo Keys & Photographs

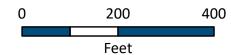


Photo Key Central Alternative 1B Modified (Selected) Sheet 2 of 3

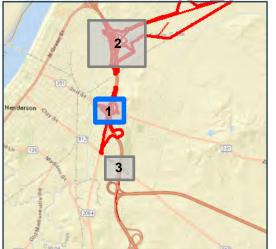


Cultural Resources Reevaluation #1





1 Inch = 200 Feet





1. Looking south from Zion Road at the sidewalk, frontage road and c. 1952 ranch house on 2106 Zion Road. Source: Google Map, 2022.



2. Looking southeast from Zion Road at the c. 1952 ranch house on 2106 Zion Road. Source: Google Map, 2022.



3. Looking south from Zion Road at the north elevation of c. 1955 house on the property. Source: 2019 Photograph from Henderson County Property Valuation Administrator's website. https://beacon.schneidercorp.com/ (accessed September 29, 2022).



4. Looking southeast from the concrete driveway towards the attached garage of c. 1955 house. Note vinyl siding on the wall with the picture window and the gable wall of the house where it meets the garage roof.



5. Looking southeast from the concrete driveway towards the attached garage of c. 1955 house. Note vinyl siding on the wall with the picture window and front door and the north gable wall obscured by vegetation.



6. Looking north at the south elevation of the c. 1955 house.



7. Looking north towards garage on the south elevation of the c. 1955 house.



8. Looking at the east elevation of the c. 1955 house.



9. Looking at the gable wall of the garage on the west elevation of the c. 1955 house.



10. Looking east at the c. 2016 storage/workshop building on the property located just south of the c. 1955 ranch house.



11. Looking south at the north elevation of the c. 1959 vernacular house on the southern edge of the property.



12. Looking southeast at the north and west elevations of the c. 1959 vernacular house the property. Source: 2019 Photograph from Henderson County Property Valuation Administrator's website.

https://beacon.schneidercorp.com/ (accessed September 29, 2022).



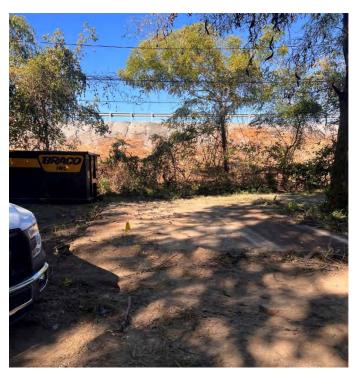
13. Looking at the backdoor on the southeast corner of the c. 1959 vernacular house on the property.



14. Looking at the south elevation of the c. 1959 vernacular house on the southern edge of the property.



15. Looking at the east elevation of the c. 1959 vernacular house on the southern edge of the property.



16. Looking at the west at parking pad in front of the c. 1959 vernacular house on the southern edge of the property. US 41 is visible from the backyard at this location.

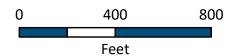


Photo Key Central Alternative 1B Modified (Selected) Sheet 1 of 3

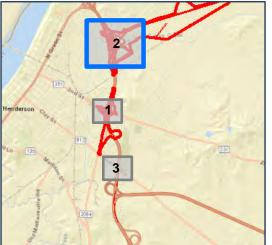


Cultural Resources Reevaluation #1





1 Inch = 400 Feet





17. Looking north from US 41 towards Structure No. 051B00048N



18. Looking south from US 41 towards Structure No. 051B00048N



19. Looking east from the west approach at Structure No. 051B00048N carrying Kimsey Lane over US 41.



20. Looking west from the east approach at Structure No. 051B00048N carrying Kimsey Lane over US 41.



21. Looking at Structure No. 051B00048N from the east approach.



22. Looking north from the bridge at bridge combination concrete parapet and metal piping railing. US 41 can be seen below.



23. Looking south at bridge combination concrete parapet and metal piping railing and US 41 can be seen below.



24. Looking at the one of the intermediate piers of the substructure supporting the tea beams and bridge deck above



25. Looking east at the intermediate pier of the substructure from the slope of the west abutment.



 $26. \quad Looking \ at \ the \ tee \ beams \ connection \ with \ the \ east \ abutment.$

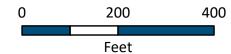


Photo Key Central Alternative 1B Modified (Selected) Sheet 3 of 3

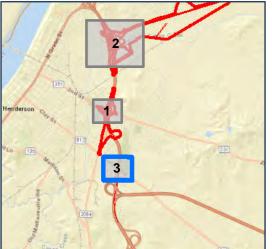


Cultural Resources Reevaluation #1





1 Inch = 200 Feet





27. Looking south from US 41 at Structure No. 051B00111N



28. Looking south from the median along US 41 at Structure No. 051B00111N



29. Looking north from US 41 at Structure No. 051B00111N



30. Looking West at Structure No. 051B00111N



31. Looking east at Structure No. 051B00111N



32. Looking south at concrete curb, parapet, and railing on the Structure No. 051B00111N and US 41 below.



 $33. \ Looking \ south \ at \ concrete \ curb, \ parapet, \ and \ railing \ on \ the \ Structure \ No. \ 051B00111N \ and \ US \ 41 \ below.$



34. Looking east at west abutment.



35. Looking west at intermediate pier of the substructure.

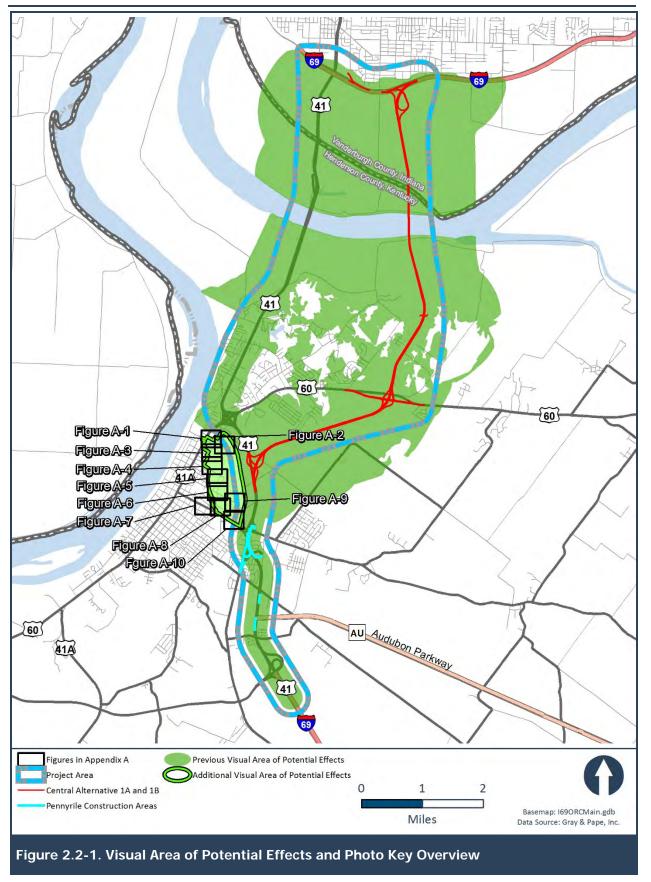


36. Looking west at the east abutment.

Appendix C

Previously determined APE for the Project (Relevant Page from the FEIS)





Appendix D

KY SHPO Correspondence



ANDY BESHEAR
GOVERNOR

JACQUELINE COLEMAN

LT. GOVERNOR

TOURISM, ARTS AND HERITAGE CABINET KENTUCKY HERITAGE COUNCIL

THE STATE HISTORIC PRESERVATION OFFICE

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CRAIG A. POTTS
EXECUTIVE DIRECTOR &
STATE HISTORIC
PRESERVATION OFFICER

October 3, 2022

Mr. Daniel R. Peake Division of Environmental Analysis Kentucky Transportation Cabinet 200 Mero Street Frankfort, KY 40622

Re: Design Changes to Section 1 of Project I-69 Ohio River Crossing Undetermined Historic-Age Properties Item No. 2-1088 Henderson County, Kentucky

Dear Mr. Peake,

Thank you for your digital submission of maps, memorandum from the consultant to KYTC capturing the summarization of project modifications and KYTC's letter that outlined KYTC's effects determination.

Our office understands that the submission proposes modifications to the design of Section 1 of the I-69 Ohio River Crossing (ORX) project and the potential changes in impacts to historic resources that may result.

We understand KYTC's effect determinations as outlined below:

#1: US 60 Interchange Modifications to include

- Converting three intersections to roundabouts. The changes would not encroach upon the NRHP boundaries of the adjacent historic properties (Jackson/McLain Farm and Ellis Neville/Lee Baskett House). KYTC has determined a finding of No Adverse Effect.
- Realign the new US 60 roadway such that it would remain closer to the existing US 60. KYTC has determined a finding of No Adverse Effect.
- Reverse the vertical orientation of US 60 and I-69 such that I-69 would cross over US 60, instead of under. The overall elevation of the interchange would not change substantively. KYTC has determined a finding of No Adverse Effect.

#2: Bridge Rehabilitation Work

- KY 425/Henderson Bypass over I-69- A deck overlay was added to the plans. KYTC has determined a finding of No Effect to Historic Properties.
- Adams Lane over US 41- A deck overlay was added to the plans. KYTC has determined a finding of No Effect to Historic Properties.
- Airline Road over US 41- Replacement of the superstructure was added to the plans. KYTC has determined a finding of No Effect to Historic Properties.



#3: Merge Area Modification at the KY 9005 interchange

- Northbound US 41 exit ramp to KY 9005.
- KY 9005 ramp to southbound US 41.
- KY 9005 ramp to northbound US 41.

All work would be within the existing ROW. There are no NRHP- eligible resources in the area. KYTC has determined a finding of No Effect to Historic Properties.

#4: Roadway/Ramp Removal Areas

Construction limits were revised to better reflect the activities required to remove existing ramps at the KY 2084 and KY 351 interchanges and to remove the Kimsey Lane bridge over existing US 41. All work would be within the existing ROW. The William Soaper Farm (KHC Survey# HE-5, NR 00000001595), is adjacent to KY 351, but the impacts will be minimized if existing ramps removed, A No Adverse Effect determination is recommended for these design changes.

#5: KY 351 Interchange

Minor modifications to the design of the northbound exit ramp were made to improve operations and would require the acquisition of one additional residential property that is not historic. Modifications also reduced the construction limits in the northeast quadrant of the interchange adjacent to the William Soaper Farm (KHC Survey# HE-5, NR 00000001595), a NRHP-eligible property. A No Adverse Effect is recommended for this change.

#6: US 41 Interchange

Some minor additions and reductions were added to the construction limits. There do not appear to be any historic age resources present. No Effect to Historic Properties has been recommended.

#7: Uneconomic Remnants

There are no structures on any of the uneconomic remnants to be acquired and no work is proposed to occur on the properties. KYTC has determined No Effect to Historic Properties.

We understand that KYTC has determined an overall effect finding of No Adverse Effect for the design changes. Based on our review, our office understands that there are multiple historic-age resources that have not been assessed for eligibility. Our comments for the proposed construction items are outlined below.

#1: US 60 Interchange Modifications

- We understand that Item #1 would have **No Adverse Effect** to historic properties.

#2: Bridge Rehabilitation Work

- For KY 425/Henderson Bypass over I-69 and Adams Lane over US 41 we understand that these bridges have not been assessed for eligibility. As such, our office is not asking for additional information as the proposed construction items would not likely impact integrity. As such, we would recommend that the work items would result in **No Adverse Effect.**
- For Airline Road over US 41 we understand that the superstructure is proposed to be replaced. As this bridge has not been assessed for eligibility our office is **withholding comment** on effects until more information can be provided to our office regarding eligibility.

#3: Merge Area Modification at the KY 9005 interchange

Based on our review, it appears that there are no historic-age structures present and **Concur** with KYTC's determination of **No Effect to Historic Properties** for the three locations outlined above.

#4: Roadway/Ramp Removal Areas

The location appears to be heavily developed with dense suburbanization. Although there is potential for subdivisions as historic resources, based on our review, the removal of roadway does not appear to have potential to impact historic resources. However, as the *Kimsey Lane bridge over existing US 41* is proposed for removal and has not yet been assessed for eligibility. We must **withhold comment** on effects at this time.

#5: KY 351 Interchange

- We understand that this item requires the acquisition of one additional residential property. It is our understanding that this property is of historic age and has not been assessed for eligibility. Therefore, we must **withhold our comments** on effects until our office has been provided with documentation and an eligibility determination from KYTC.



ANDY BESHEAR **G**OVERNOR

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CRAIG A. POTTS **EXECUTIVE DIRECTOR &** STATE HISTORIC PRESERVATION OFFICER

JACQUELINE COLEMAN LT. GOVERNOR

#6: US 41 Interchange

Based on our review, it appears that there are above-ground resources in the area. However, they do not appear to be of historic age. Therefore, we Concur with KYTC's determination of No Effect to Historic Properties.

#7: Uneconomic Remnants

Based on our review, it appears that there are no above-ground resources in the area. Therefore, we Concur with KYTC's determination of No Effect to Historic Properties.

Before our office can concur with an overall effects finding for these proposed modifications to the plan, the SHPO requests an official eligibility determination from KYTC for Airline Road over US 41 bridge, Kimsey Lane bridge over existing US 41 and the Residential property associated with KY 351 interchange. We look forward to receiving KYTC's official eligibility determination along with a letter-report for our review of the undetermined resources and the below-ground review component of this undertaking.

Should you have any questions, please feel free to contact Matt Yagle of my staff at matthew.yagle@ky.gov.

Sincerely,

Executive Director and State Historic Preservation Officer

CP: my, KHC #66226

CC: Jonna Mabelitini (KYTC-DEA)





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STATE HISTORIC PRESERVATION OFFICER

November 28, 2022

Mr. Daniel R. Peake Division of Environmental Analysis Kentucky Transportation Cabinet 200 Mero Street Frankfort, KY 40622

Re: Design Changes to Project-Additional Information (Three Resources)

I-69 Ohio River Crossing Henderson County, Kentucky KYTC Item Number: 2-1088

Dear Mr. Peake,

Our office understands that there were revisions made to the design of Section 1 of the I-69 Ohio River Crossing (ORX) project with potential changes in impacts to historic resources that may result.

We also understand that eligibility assessments were carried out for the following properties:

- 1. Residential property located at 2106-2104 Zion Road.
- 2. Bridge carrying Kimsey Lane over US 41
- 3. Bridge carrying Airline Road over US41

Based on our review, our office understands that the above resources do not appear to retain sufficient integrity or significance, and as a result, appears to be **Not Eligible** for listing on the NRHP. We understand that the Soper Farm, an eligible property is within close proximity to the project but the impacts will be minimal. As such, we **Concur** with your official eligibility determinations and with your determination of **No Adverse Effect.**

Should you have any questions, please feel free to contact Matt Yagle of my staff at matthew.yagle@ky.gov.

Sincerely,

Craig A. Potts,

Executive Director and State Historic Preservation Officer

CP: my, KHC #220198; 66226 CC: Jonna Mabelitini (KYTC-DEA)

