

Indiana Department of Transportation

County Bartholomew Route State Road 46 Des. No. 1700139

**FHWA-Indiana Environmental Document
CATEGORICAL EXCLUSION / ENVIRONMENTAL ASSESSMENT FORM
GENERAL PROJECT INFORMATION**

Road No./County:	State Road (SR) 46, Bartholomew County
Designation Number:	1700139
Project Description/Termini:	Construct a grade separation structure carrying SR 46 over SR 11 and the Louisville and Indiana Railroad. The intersection is anticipated to extend 2,450 feet west and 1,285 feet east of the existing SR 11 alignment, and 475 feet north and 2,100 feet south of the existing SR 46 alignment.

After completing this form, I conclude that this project qualifies for the following type of Categorical Exclusion (FHWA must review/approve if Level 4 CE):

<input type="checkbox"/>	Categorical Exclusion, Level 2 – The proposed action meets the criteria for Categorical Exclusion Manual Level 2 - table 1, CE Level Thresholds. Required Signatories: ESM (Environmental Scoping Manager)
<input type="checkbox"/>	Categorical Exclusion, Level 3 – The proposed action meets the criteria for Categorical Exclusion Manual Level 3 - table 1, CE Level Thresholds. Required Signatories: ESM, ES (Environmental Services Division)
<input checked="" type="checkbox"/>	Categorical Exclusion, Level 4 – The proposed action meets the criteria for Categorical Exclusion Manual Level 4 - table 1, CE Level Thresholds. Required Signatories: ESM, ES, FHWA
<input type="checkbox"/>	Environmental Assessment (EA) – EAs require a separate FONSI. Additional research and documentation is necessary to determine the effects on the environment. Required Signatories: ES, FHWA

Note: For documents prepared by or for Environmental Services Division, it is not necessary for the ESM of the district in which the project is located to release for public involvement or sign for approval.

Approval

_____	_____	_____	_____
ESM Signature	Date	ES Signature	Date
_____		_____	
FHWA Signature		Date	

Release for Public Involvement

<u>N/A</u>	_____	<u>REB</u>	<u>4-23-19</u>
ESM Initials	Date	ES Initials	Date

Certification of Public Involvement _____
 Office of Public Involvement Date

Note: Do not approve until after Section 106 public involvement and all other environmental requirements have been satisfied.

INDOT ES/District Env.
 Reviewer Signature: _____ Date: _____

Name and Organization of CE/EA Preparer: Aaron M. Toombs / United Consulting

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Part I - PUBLIC INVOLVEMENT

Every Federal action requires some level of public involvement, providing for early and continuous opportunities throughout the project development process. **The level of public involvement should be commensurate with the proposed action.**

Does the project have a historic bridge processed under the Historic Bridges PA*? Yes No
If No, then:
Opportunity for a Public Hearing Required?

**A public hearing is required for all historic bridges processed under the Historic Bridges Programmatic Agreement between INDOT, FHWA, SHPO, and the ACHP.*

Discuss what public involvement activities (legal notices, letters to affected property owners and residents (i.e. notice of entry), meetings, special purpose meetings, newspaper articles, etc.) have occurred for this project.

Remarks:

Notice of entry letters were mailed to potentially affected property owners near the project area on July 24, 2017 notifying them about the project and that individuals responsible for site visits may be seen in the area (Appendix G, G-1).

To meet the public involvement requirements of Section 106 FHWA's finding of Adverse Effect was advertised in the *The Republic* on February 15, 2019. The public comment period closed 30 days later on March 17, 2019. The text of the public notice and the affidavit of publication appear in Appendix D, D-145 to D-148. No comments were received as a result of the public notice.

The project will meet the minimum requirements described in the current *Indiana Department of Transportation (INDOT) Public Involvement Manual* which requires the project sponsor to offer the public an opportunity to submit comment and/or request a public hearing. Therefore, a legal notice will appear in a local publication contingent upon the release of this document for public involvement. This document will be revised after the public involvement requirements are fulfilled.

Public Controversy on Environmental Grounds

Will the project involve substantial controversy concerning community and/or natural resource impacts? Yes No

At this time, there is no substantial public controversy concerning the impacts to the community or to natural resources.

Part II - General Project Identification, Description, and Design Information

Sponsor of the Project: INDOT INDOT District: SeymourLocal Name of the Facility: SR 46Funding Source (mark all that apply): Federal State Local Other*

*If other is selected, please identify the funding source: _____

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PURPOSE AND NEED:

Describe the transportation problem that the project will address. The solution to the traffic problem should NOT be discussed in this section. (Refer to the CE Manual, Section IV.B.2. Purpose and Need)

The Louisville and Indiana Railroad Company (L&I) has entered into a lease agreement with CSX Transportation, Inc. (CSXT) to allow CSXT trains to operate on the L&I corridor between Indianapolis and Louisville. According to the 2013 *Draft Environmental Assessment for the CSX Transportation Inc. Joint Use Louisville & Indiana Railroad Company, Inc.* (Docket No. FD 35523), this agreement is expected to increase daily train traffic between Indianapolis and Seymour from 2 per day to 17 per day along with average train lengths increasing from 5,100 feet to 7,500 feet. The L&I railroad has an at-grade crossing with SR 46 approximately 1.5 miles east of I-65 and 0.40 mile west of downtown Columbus. The SR 46 corridor has a 2017 average daily traffic volume of 29,580 vehicles and provides the most direct connection between I-65 and downtown Columbus.

The need for the proposed project is based on the expected increase in daily train traffic through this at-grade crossing, which would cause an increase in travel delays, traffic congestion, emergency response times, and school and public transit delays at the intersection of SR 46/SR11. A Railroad Impact Study completed by American Structurepoint Inc. in 2016 reported that the vehicle delay for the SR 46 at-grade crossing is anticipated to grow from 67 vehicle-hours per day in 2016 to 716 vehicle-hours per day in 2017 and to 994 vehicle-hours per day by 2036.

Traffic congestion has also been recently documented in the project area. The Alternatives Analysis Report (CMT, December 2017) identified current and future unacceptable levels of service (LOS) at the adjacent intersection of SR 46 and SR 11 (Appendix K, K-2 to K-99). For construction of streets classified as Urban Arterial, Indiana Design Manual standards indicate an intersection LOS of C or better is the minimum for suburban environments. LOS as they apply to signalized intersections may be characterized as follows: A – free flow; B – stable flow, minor delay; C – restricted flow, some delay; D- severely restricted flow, tolerable delay; E – unstable flow, at or near capacity, intolerable delay; and F – gridlock. In 2017, the SR 46 and SR 11 intersection operated at a LOS of C in the AM peak and E in the PM peak. If no improvements are made by the design year 2041, the intersection will operate at a substandard LOS for both peak periods (D in the AM peak and E in the PM peak). It should be noted that the intersection LOS were calculated assuming no delays due to train activity at the adjacent crossing; train activity would be expected to make certain movements at the intersection more congested.

The purpose of the proposed project is to reduce current and anticipated future delays to traffic on SR 46 due to train activity at the L&I crossing and to reduce congestion and improve vehicular mobility at the SR46/SR11 intersection to acceptable levels (LOS of C or better).

PROJECT DESCRIPTION (PREFERRED ALTERNATIVE):

County: Bartholomew Municipality: City of Columbus

Limits of Proposed Work: From the existing intersection, the project will extend 2,100 feet south and 475 feet north along SR 11. This project will extend 2,450 feet west and 1,285 feet east along SR 46 from the existing intersection.

Total Work Length: 1.04 Mile(s) Total Work Area: 48.08 Acre(s)

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Is an Interchange Modification Study / Interchange Justification Study (IMS/IJS) required?
 If yes, when did the FHWA grant a conditional approval for this project?

Yes ¹	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
Date: _____	

¹If an IMS or IJS is required; a copy of the approved CE/EA document must be submitted to the FHWA with a request for final approval of the IMS/IJS.

In the remarks box below, describe existing conditions, provide in detail the scope of work for the project, including the preferred alternative. Include a discussion of logical termini. Discuss any major issues for the project and how the project will improve safety or roadway deficiencies if these are issues.

Location:

The project is located at the intersection of SR 46 and SR 11, in Section 26, Township 9 North, Range 5 East, Columbus Township, Columbus, Bartholomew County, Indiana. SR 11 terminates at the intersection with SR 46. The project includes the adjacent L&I railroad crossing at SR 46. Downtown Columbus is located directly across the Flatrock River northeast of the project. North and east of this intersection, SR 46 is divided into separate eastbound and westbound routes, crossing the Flatrock River on separate bridges (NBI No. 19335 eastbound and NBI No. 10340 westbound) and continuing into Columbus as 2nd Street and 3rd Street, respectively. The limits of the project will extend from 2,450 feet west and 1,285 feet east of the existing SR 11 alignment, and 475 feet north and 2,100 feet south of the existing SR 46 alignment.

Existing Conditions:

The existing SR 46 and SR 11 intersection is four-legged with signalized control. The northbound approach includes a 12 foot dedicated turn lane leading to a merge onto westbound SR 46 and a 12 foot channelized right-turn lane that continues onto eastbound SR 46. The eastbound approach consists of two, 12 foot through lanes continuing to eastbound SR 46 and a 12 foot dedicated right turn lane merging onto southbound SR 11. The southbound approach consists of one 12 foot southbound through travel lane and a 12 foot dedicated left turn lane merging onto eastbound SR 46, as well as two 12 foot channelized right-turn lanes that become westbound SR 46. The east leg of the intersection is eastbound SR 46; there are no westbound lanes on this leg. The L&I railroad track crosses the west leg of the intersection approximately 215 feet west of the intersection. The existing SR 46 is functionally classified as a Principal Arterial and SR 11 is functionally classified as a Minor Arterial.

Preferred Alternative:

The design selected as the preferred alternative is an adaptation of the Parclo – Folded Diamond; a partial cloverleaf interchange or "parclo" is a modification of a cloverleaf interchange. This alternative grade-separates SR 46 over the railroad and provides free-flow operations for SR 46 traffic. SR 11 southbound traffic would pass underneath SR 46. The new bridge over SR 11 and the L&I railroad will be a 2-span structure using concrete bulb-tee beams and providing a 23 foot vertical clearance over the railroad. Cloverleaf ramps would be provided for northbound SR 11 to westbound SR 46 and eastbound SR 46 to southbound SR 11. The intersection of SR 11 and the eastbound SR 46 off-ramp will be a signalized intersection located approximately 900 feet south of the current intersection. Known as a "green-T" layout, the intersection will install a curbed median along SR 11 so the southbound traffic can remain in free-flow, bypassing the signal.

Refinements were made to improve the standard version of the Parclo-Folded Diamond option. The eastbound horizontal curves will be designed to provide speed control entering downtown by having a progressively lower design speed [50 miles per hour (mph) at the west end of the project, 40 mph

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just west of the bridge, and 30 mph between the bridge and river crossing]. The northbound-to-eastbound ramp will be realigned to comply with a 30 mph design speed, improving the weaving area. Finally, the loop ramps will use a 25 mph design speed, condensing the overall footprint of the interchange. The proposed roadways at horizontal curves will be super-elevated to a maximum of 4%.

Since the SR 46/SR 11 signalized intersection is being removed, the delays associated with the intersection will be removed. Mainline SR 46 and SR 11 traffic will be in free-flow conditions through the interchange area. There will still be delays for eastbound vehicles exiting SR 46 and wanting to turn left (south) to SR 11, but those delays and LOS are within acceptable levels. Due to this project being located within a transition zone of higher suburban speeds and a downtown area with lower speeds, the design has been laid out accordingly. As vehicles travel eastbound along SR 46 through the project area, the three horizontal curves are designed at 50 mph, then 40 mph, and then 30 mph (and in reverse for westbound traffic). The interchange ramps are designed to 30 mph to minimize the perception of this being a freeway-style interchange. No bicycle and/or pedestrian facilities are proposed for the project.

New permanent and temporary right-of-way will be required to complete the project. It is expected that 50.089 acres of permanent right-of-way and 0.691 acre of temporary right-of-way will be required to complete the project.

Tree clearing will occur as a part of this project. Mitigation for tree removal activities outside of the floodway will be addressed on-site as a part of this project. Mitigation for tree removal activities within the floodway will be addressed as a separate project, with a separate CE document, under Des. No.: 1801373. Mitigation to be handled on-site is expected to include tree planting within the infield area between the existing SR 46 and proposed SR 46, west of SR 11. Approximately 7.39 acres of tree planting will occur within this area (Appendix B, B-59). The remaining mitigation, to be completed off-site, will include approximately 3.90 acres of tree planting within DNR Area 1 (Appendix B, B-59) and will account for the loss of trees within the floodway of the Flatrock River.

The preferred maintenance of traffic plan will be implemented in five stages. Lane closures, restrictions, and a detour route have been proposed. Please refer to the MOT section in this document for further details.

The proposed project will receive Federal and State funds. The construction cost of this project is approximately \$25,000,000.

The need for this project stems from the severe traffic congestion and travel delays resulting from the existing intersection configuration of SR 46 and SR 11 near the L&I railroad. The purpose of this project is to reduce the anticipated delays to traffic on SR 46 due to train activity at the L&I crossing and to reduce the congestion and improve vehicular mobility at the SR 46/SR 11 intersection to acceptable levels (LOS of C or better). The preferred alternative will address the traffic congestion and travel delays through eliminating the signal-controlled intersection and bypassing the railroad corridor. It is preferred over other alignments also meeting the project purpose and need based on a cost comparison which details the project costs and right of way impacts versus the benefits derived from the free flow movements for a majority of traffic which will greatly reduce congestion at the intersection (Appendix K, K-27 and K-29).

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OTHER ALTERNATIVES CONSIDERED:

Describe all discarded alternatives, including the Do-Nothing Alternative and an explanation of why each discarded alternative was not selected.

Seven other possible alternatives including a no-build option were considered for the project (CMT Alternatives Analysis Report, November 2017) (Appendix K, K-2 to K-99). These alternatives have been evaluated based on traffic operations, environmental impacts, vehicular mobility, supporting economic enhancement, and project cost.

No-Build Alternative: The no-build option retains all existing roads with no geometric improvements. Advantages of this alternative include no requirement for right-of-way or earthwork. Disadvantages of this alternative include long traffic queues backing up into downtown Columbus during peak hours, and retaining the at-grade crossing with the L&I railroad which exacerbates traffic congestion and slows emergency service response times as well as school bus and city transit routes. This option was discarded from further consideration as it would not address existing and future congestion and travel delays, thus not satisfying the purpose and need of the project. Table 10 in the Alternatives Analysis Report prepared by CMT November 2017 (Appendix K, K-28) provides a comparison of the alternative options. Further details for this alternative can be found in Appendix K, K-11 to K-12.

Traditional Intersection: This alternative would grade-separate SR 46 over the railroad and would reconstruct the existing geometric layout and signalized control of the intersection with SR 11 on an elevated fill area. This alternative would include the addition of dual southbound through lanes and dual northbound left turn lanes to improve intersection capacity. Advantages of this alternative include elimination of roadway conflict with the railroad, small right-of-way footprint, and an increased eastbound weaving zone. Disadvantages include continued use of a three-phase signal at the intersection, significant fill required to elevate the intersection, and reduced ability to calm speeds heading into downtown Columbus. This option was discarded from further consideration as the three-phase signal would not fully address the congestion and travel delays. As a result, this option would not satisfy the purpose and need. Table 10 in the Alternatives Analysis Report prepared by CMT November 2017 (Appendix K, K-28) provides a comparison of the alternative options. Further details for this alternative can be found in Appendix K, K-13.

Parclo – Reroute Through Downtown: This alternative grade-separates SR 46 over the railroad and provides free-flowing operations for SR 46. Southbound SR 11 would pass beneath SR 46. The northbound SR 11 to westbound SR 46 and eastbound SR 46 to southbound SR 11 movements would be required to travel on downtown Columbus streets: both movements would proceed east on SR 46, north on Brown Street, and west on SR 46 via 3rd Street. Advantages include free-flowing operations for SR 46 and SR 11 except as noted, elimination of multiple conflict points for high-volume movements, and much less pavement being required for construction. Disadvantages of this alternative include extra drive time for vehicles traveling through downtown Columbus. This option was discarded from further consideration as this extra drive time caused by certain movements being forced through the downtown grid relocates traffic congestion to downtown Columbus, and thus would not meet the purpose and need. Table 10 in the Alternatives Analysis Report prepared by CMT November 2017 (Appendix K, K-28) provides a comparison of the alternative options. Further details for this alternative can be found in Appendix K, K-15.

Roundabout: This alternative would grade-separate SR 46 over the L&I railroad and the lane conveying westbound SR 46 traffic to southbound SR 11. Westbound SR 46 traffic and northbound

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SR 11 to eastbound SR 46 traffic would bypass the roundabout. All other movements would utilize a dual-lane roundabout. Advantages of this alternative include provision of speed-calming operations and improved weaving movements for those heading into downtown Columbus. Disadvantages of this alternative include the need for a bridge spanning both the railroad and SR 11 which is not required for the preferred alternative. This bridge would increase the overall project cost by approximately \$100,000. This option would meet the purpose and need of the project; however, it was discarded from further consideration because it increases the cost of construction while providing no additional benefits when compared with the preferred alternative. Table 10 in the Alternatives Analysis Report prepared by CMT November 2017 (Appendix K, K-28) provides a comparison of the alternative options. Further details for this alternative can be found in Appendix K, K-16.

Modified Single-Point Urban Interchange: This alternative grade-separates SR 46 over the railroad and the lane conveying westbound SR 46 traffic to southbound SR 11. The intersection would be signalized in a two-phase configuration. Eastbound SR 46 to southbound SR 11 and northbound SR 11 to eastbound SR 46 would have channelized free-flowing movements. Advantages include a construction cost approximately \$3,000,000 less than the preferred alternative, a right-of-way impact of approximately 12 acres less than the preferred alternative, and improved signal operations. Disadvantages would include unconventional traffic movements to those not familiar with the intersection and the need for a bridge spanning both the railroad and SR 11 which is not required for the preferred alternative. This option was discarded from further consideration as the unconventional traffic movements and continued use of signal operations would not improve the issue of traffic congestion at the intersection, and thus would not satisfy the purpose and need. Table 10 in the Alternatives Analysis Report prepared by CMT November 2017 (Appendix K, K-28) provides a comparison of the alternative options. Further details for this alternative can be found in Appendix K, K-17.

Modified Diverging-Diamond Interchange: This alternative would grade-separate SR 46 over the railroad. The majority of the intersection would be a diverging-diamond interchange, utilizing two cross-overs to allow free flow left turns. Both cross-overs would be signalized. Eastbound SR 46 to southbound SR 11 would have a channelized free-flowing movement. Advantages of this alternative include opportunities for speed control of eastbound traffic and provision of the fewest conflict points between traffic movements. Disadvantages of this alternative would include a complicated layout which may be unfamiliar to the traveling public, addition of two signals on westbound SR 46, and lack of efficiency of diverging-diamond interchanges in high-volume traffic compared to other configurations. This option was discarded from further consideration, as it would not adequately improve the existing traffic congestion, and thus would not satisfy the purpose and need. Table 10 in the Alternatives Analysis Report prepared by CMT November 2017 (Appendix K, K-28) provides a comparison of the alternative options. Further details for this alternative can be found in Appendix K, K-18.

Jughandle Intersection: This alternative grade-separates SR 46 over the railroad. SR 46 and SR 11 would intersect at a signalized at-grade intersection. Left turns would be prohibited at the intersection. Traffic traveling northbound wishing to go westbound or southbound wishing to go eastbound would utilize loop roadways in the southwest and northeast corners of the intersection after passing through the intersection itself. Westbound SR 46 through traffic and northbound SR 11 to eastbound SR 46 traffic would bypass the intersection through channelized turn lanes. Advantages of this alternative include utilization of a two-phase signal, improving signal operations. Disadvantages of this alternative would include a lack of familiarity of the traveling public intersection

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Setting: Urban Suburban Rural
 Topography: Level Rolling Hilly

If the proposed action has multiple roadways, this section should be filled out for each roadway.

DESIGN CRITERIA FOR BRIDGES:

Structure/NBI Number(s): 46-03-02818 Sufficiency Rating: N/A
 (Rating, Source of Information)

	Existing		Proposed
Bridge Type:	N/A		Continuous, pre-stressed, concrete bulb-tee beam bridges
Number of Spans:	N/A		2
Weight Restrictions:	N/A	ton	None
Height Restrictions:	N/A	ft.	None
Curb to Curb Width:	N/A	ft.	57'-10" WB 49'-8" EB
Outside to Outside Width:	N/A	ft.	60'-8"WB 52'-6" EB
Shoulder Width:	N/A	ft.	9'-8" - 17'-10"
Length of Channel Work:			N/A

Describe bridges and structures; provide specific location information for small structures.

Remarks: This project will result in the construction of two new bridge structures carrying SR 46 over SR 11 and the L&I railroad. The proposed structures will be 2-span, continuous, pre-stressed, concrete bulb-tee beam bridges. Each span will be 131 feet and 5 inches in length. The clear roadway width will be 49 feet and 8 inches wide for the eastbound structure, and 57 feet and 10 inches wide for the westbound structure. The structures will be built to a 0 degree skew. Cross sections of the bridges will consist of two, 12 foot wide travel lanes (two traveling in each direction) as well as an additional 12 foot wide entrance ramp acceleration lane tying into the westbound structure with a 10 foot wide shoulder. The eastbound structure will also feature a 10 foot wide shoulder, widening to 16 feet to allow for tie in with the exit ramp leading to SR 11.

Will the structure be rehabilitated or replaced as part of the project? Yes No N/A

If the proposed action has multiple bridges or small structures, this section should be filled out for each structure.

MAINTENANCE OF TRAFFIC (MOT) DURING CONSTRUCTION:

	Yes	No
Is a temporary bridge proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Is a temporary roadway proposed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will the project involve the use of a detour or require a ramp closure? (describe in remarks)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made for access by local traffic and so posted.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made for through-traffic dependent businesses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Provisions will be made to accommodate any local special events or festivals.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Will the proposed MOT substantially change the environmental consequences of the action?
Is there substantial controversy associated with the proposed method for MOT?

The MOT for the project will require lane closures, restrictions, and the use of a detour route.

Stage I: The flow of traffic will be unobstructed during Stage I.

Stage IIA: Stage IIA will involve the construction of temporary pavement within the median of SR 46, directing eastbound traffic on SR 46 along the temporary pavement and allowing for development of the new alignment south of SR 46. Two through lanes in each direction will remain open.

Stage IIB: Stage IIB will involve the construction of a temporary concrete barrier, narrowing SR 46 from 3 lanes to 2 lanes prior to the bridge crossing Flatrock River.

Stage IIC: Stage IIC proposes the use of a detour route for SR 11 (via US 31, I-65, and SR 46).

Stage IID: Stage IID will widen the east side of SR 11; SR 11 traffic will be open using the pavement installed during Stage IIC.

Stage IIIA: Stage IIIA will involve construction of the north-to-west loop ramp; traffic obstructions are not expected. At the conclusion of this stage, the existing SR 46/SR 11 traffic signal can be removed.

Stage IIIB: Stage IIIB will reduce the number of travel lanes along the SR 46 westbound bridge over the Flatrock River from 3 to 1 in order to facilitate construction of the new westbound lanes. A temporary traffic barrier will be used to separate traffic from the construction zone.

Stage IIIC: Stage IIIC will involve the use of temporary pavement marking and the construction of a temporary traffic barrier to separate traffic from the construction zone that reduces the through lanes to 1 before the eastbound bridge over the Flatrock River.

Stage IV: Stage IV will utilize the previously installed crossover, shifting traffic north to allow for reconfiguration of SR 46 to the south in preparation for the construction of the grade separating structure. Two through lanes will remain open in each direction.

Stage V: Stage V will consist of removing existing pavement that that will no longer serve SR 46 or SR 11 and completing the construction of the curbed median along realigned SR46.

Restrictions may be needed that reduces the travel lanes from 2 to 1 to complete this work (duration less than 1 week).

A MOT plan for non-motorized traffic will not be necessary for this project.

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The closures/lane restrictions will pose a temporary inconvenience to traveling motorists (including school buses and emergency services); however, no significant delays are anticipated and all inconveniences will cease upon project completion. The project sponsor will be responsible for contacting school districts and emergency services at least 2 weeks prior to construction. Delays may occur during construction but will cease with project completion.

ESTIMATED PROJECT COST AND SCHEDULE:

Engineering: \$ 4,500,000 (2020) Right-of-Way: \$ 1,500,000 (2018-2019) Construction: \$ 25,000,000 (2020)

Anticipated Start Date of Construction: December 2019

Date project incorporated into STIP July 3, 2017

Is the project in an MPO Area? Yes No

If yes,

Name of MPO Columbus Area Metropolitan Planning Organization (CAMPO)

Location of Project in TIP Page 4

Date of incorporation by reference into the STIP July 3, 2017

RIGHT OF WAY:

Land Use Impacts	Amount (acres)	
	Permanent	Temporary
Residential	0.00	0.00
Commercial	0.928	0.461
Agricultural	40.513	0.115
Forest	6.390	0.115
Wetlands	0.0	0.0
Other: Mowed Grasses/Trees	2.258	0.00
Other:	0.0	0.0
TOTAL	50.089	0.691

Describe both Permanent and Temporary right-of-way and describe their current use. Typical and Maximum right-of-way widths (existing and proposed) should also be discussed. Any advance acquisition or reacquisition, either known or suspected, and their impacts on the environmental analysis should be discussed.

Remarks: The existing right-of-way surrounding the proposed project area consists of agricultural fields to the east and west, forested riparian habitat adjacent the Flatrock River to the northeast, and several small commercial properties south of the existing intersection. The Columbus People's Trail is located approximately 20 feet (0.003 mile) northwest of the proposed project area.

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The existing right-of-way width from the centerline of SR 46 is a minimum of 100 feet and a maximum of 300 feet. The proposed typical right-of-way width along SR 46 will be 240 feet.

The existing right-of-way width from the centerline of SR 11 is a minimum of 50 feet and a maximum of 85 feet. The proposed typical right-of-way width along SR 11 will be 130 feet.

The project requires approximately 50.089 acres of permanent right-of-way. The project also requires approximately 0.691 acres of temporary right-of-way. Right-of-way values differ from those indicated during the early coordination process by approximately 15 acres. The overall footprint for the project did not change; however, an adjustment in the method used to calculate right-of-way requirements resulted in additional right-of-way that was not previously included. Since the project footprint did not change, and no changes were made to cause additional environmental impacts resulting from the project, re-coordination with jurisdictional agencies was not warranted.

An early acquisition CE (Map21 CE) was prepared for the project and approved by INDOT on February 15, 2018. The project will involve 48.08 acres of advanced right-of-way acquisition from 8 parcels. No Section 4(f) parcels are being acquired through advanced early right-of-way acquisition. The presence of nearby Section 4(f) properties was documented during the Section 106 process and through completion of the Red Flag Investigation.

If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately.

Part III – Identification and Evaluation of Impacts of the Proposed Action

SECTION A – ECOLOGICAL RESOURCES

	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Streams, Rivers, Watercourses & Jurisdictional Ditches	X		X
Federal Wild and Scenic Rivers			
State Natural, Scenic or Recreational Rivers			
Nationwide Rivers Inventory (NRI) listed			
Outstanding Rivers List for Indiana	X		X
Navigable Waterways	X		X

Remarks:

Based on a desktop review, site visit on August 23, 2017 by Metric Environmental, the aerial map of the project area (Appendix B, B-2), and the water resources map in the RFI report (Appendix E, E-10) there are two streams located within the 0.5 mile search radius. The closest stream (Flatrock River) is 0.07 mile east of the project area. The site visit conducted on August 23, 2017 by Metric Environmental confirmed the results of the desktop review. This new interchange construction project will not involve any work within or near the Flatrock River. Therefore, no impacts are expected.

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Flatrock River is included in the Outstanding Rivers List for Indiana; however, this interchange construction project will not involve any work within or near the Flatrock River. No impacts are expected.

Flatrock River is listed as a Navigable Waterway; however, this interchange construction project will not involve any work within or near the Flatrock River. No impacts are expected.

Waters Report:
 A *Waters of the U.S. Determination Report* was completed for the project and submitted to INDOT Ecology and Waterway Permitting Office on October 30, 2017. The report was approved on November 14, 2017. Please refer to Appendix F for the *Waters of the U.S. Determination Report*. It was determined that no jurisdictional streams, rivers, watercourses or jurisdictional ditches will be impacted by the proposed project. The USACE makes all final determinations regarding jurisdiction.

Early Coordination:
 Early coordination letters were sent to the Indiana Department of Natural Resources – Division of Fish and Wildlife (IDNR DFW), the U.S. Fish and Wildlife Service (USFWS), and the U.S. Army Corps of Engineers (USACE) on November 30, 2017. The IDNR DFW responded on December 29, 2017 with several recommendations to avoid and minimize impacts to fish, wildlife, and botanical resources (Appendix C, C-3 to C-4). The USFWS responded on December 4, 2017 with their standard list of recommendations to avoid or minimize impacts to fish, wildlife, and wildlife habitat, which are associated with the *USFWS Interim Policy for Transportation Projects in Indiana (2013)*, (Appendix C, C-30 to C-32). However, it's anticipated that the project will exceed the USFWS Interim Policy's threshold "of less than 0.5 acre of forested RW impacts" and that the Interim Policy will not apply. The USACE did not respond to the early coordination letter. All applicable IDNR DFW and USFWS recommendations are included in the Environmental Commitments section of this CE document.

	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Other Surface Waters			
Reservoirs			
Lakes	X		X
Farm Ponds			
Detention Basins	X		X
Storm Water Management Facilities			
Other: _____			

Remarks: Based on a desktop review, site visit on August 23, 2017 by Metric Environmental, the aerial map of the project area (Appendix B, B-2), and the water resources map in the RFI report (Appendix E, E-10) there are six other surface waters (lakes) located within the 0.5 mile search radius. The closest lake is 0.11 mile north of the project area. This new interchange construction project will not involve any work within or near the lake. Therefore, no impacts are expected.

Waters Report:
 A *Waters of the U.S. Determination Report* was completed for the project and submitted to

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INDOT Ecology and Waterway Permitting Office on October 30, 2017. The report was approved on November 14, 2017. Please refer to Appendix F for the *Waters of the U.S. Determination Report*. It was determined that no other surface waters were located within the 0.5 mile search radius. The USACE makes all final determinations regarding jurisdiction.

Early Coordination:

Early coordination letters were sent to the IDNR DFW, the USFWS, and the USACE on November 30, 2017. The IDNR DFW responded on December 29, 2017 with several recommendations to avoid and minimize impacts to fish, wildlife, and botanical resources (Appendix C, C-3 to C-4). The USFWS responded on December 4, 2017 with their standard list of recommendations to avoid or minimize impacts to fish, wildlife, and wildlife habitat (Appendix C, C-30 to C-32). The USACE did not respond to the early coordination letter. All applicable IDNR DFW and USFWS recommendations are included in the Environmental Commitments section of this CE document.

	<u>Presence</u>	<u>Impacts</u>
		Yes No
Wetlands	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>

Total wetland area: 2.579 acre(s) Total wetland area impacted: 0.0 acre(s)

(If a determination has not been made for non-isolated/isolated wetlands, fill in the total wetland area impacted above.)

Wetland No.	Classification	Total Size (Acres)	Impacted Acres	Comments
Wetland A	PFO1A	2.574	0.0	This wetland shares a significant nexus with the Flatrock River, a Water of the U.S., through proximity with the associated floodplain.
Wetland B	PEM1A	0.005	0.0	This wetland shares a significant nexus with the Flatrock River, a Water of the U.S., through proximity with the associated floodplain.

	<u>Documentation</u>	<u>ES Approval Dates</u>
Wetlands (Mark all that apply)		
Wetland Determination	<input checked="" type="checkbox"/>	November 14, 2017
Wetland Delineation	<input type="checkbox"/>	
USACE Isolated Waters Determination	<input type="checkbox"/>	
Mitigation Plan	<input type="checkbox"/>	

Improvements that will not result in any wetland impacts are not practicable because such avoidance would result in (Mark all that apply and explain):

- Substantial adverse impacts to adjacent homes, business or other improved properties;
- Substantially increased project costs;
- Unique engineering, traffic, maintenance, or safety problems;
- Substantial adverse social, economic, or environmental impacts, or
- The project not meeting the identified needs.

Measures to avoid, minimize, and mitigate wetland impacts need to be discussed in the remarks box.

Remarks: Based on a review of the National Wetlands Inventory (NWI) online mapper (<https://www.fws.gov/wetlands/data/Mapper.html>), the USGS topographic map (Appendix

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B, B-3) and the RFI report (Appendix E), there are fifteen (15) mapped wetlands located within the 0.5 mile search radius. The closest wetland (Wetland B) is located adjacent to the project area. A site visit was conducted on August 23, 2017 by Metric Environmental (Appendix B, page 3 for the topographic map, and page 2 for the aerial), with two wetland areas being identified. Wetland A was identified approximately 150 feet (0.02 mile) northeast of the project area within the riparian area south of westbound SR 46 and north of eastbound SR 46. Wetland B is located adjacent to the project area, approximately 50 feet (0.009 mile) north of SR 46, south of the Columbus People's Trail, and west of the SR 46/SR11 intersection within a roadside ditch. The location of these wetland areas are outside of the footprint for this project. As a result, this new interchange construction project will not involve any work within a wetland. Therefore, no impacts are expected.

Waters Report:
 A *Waters of the U.S. Determination Report* was completed for the project and submitted to INDOT Ecology and Waterway Permitting Office on October 30, 2017. The report was approved on November 14, 2017. Please refer to Appendix F for the *Waters of the U.S. Determination Report*. It was determined that two wetlands were present within the project area. The USACE makes all final determinations regarding jurisdiction.

Early Coordination:
 Early coordination letters were sent to the IDNR DFW, the USFWS, and the USACE on November 30, 2017. The IDNR DFW responded on December 29, 2017 with several recommendations to avoid and minimize impacts to fish, wildlife, and botanical resources (Appendix C, C-3 to C-4). The USFWS responded on December 4, 2017 with their standard list of recommendations to avoid or minimize impacts to fish, wildlife, and wildlife habitat (Appendix C, C-30 to C-32). The USACE did not respond to the early coordination letter. All applicable IDNR DFW and USFWS recommendations are included in the Environmental Commitments section of this CE document.

	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Terrestrial Habitat	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Unique or High Quality Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Use the remarks box to identify each type of habitat and the acres impacted (i.e. forested, grassland, farmland, lawn, etc).

Remarks: Based on a desktop review, site visit on August 23, 2017 by Metric Environmental, and the aerial map of the project area (Appendix B, B-2), there are agricultural fields, commercial properties, and a forested riparian corridor located within the project area. A maintained, wooded area within the right-of-way, south of the SR 46 roadway and west of SR 11, containing numerous planted trees is also present within the project area.

The closest agricultural field is located within the proposed project area. The agricultural fields are used to grow corn and provide habitat for small terrestrial mammals and reptiles such as rodents and snakes. The project will shift the alignment of SR 46 to the south, resulting in 40.513 acres of impact to agricultural fields. Impacts to agricultural fields were unavoidable, however, impacts have been minimized to the greatest extent possible. The closest commercial properties are located in the southern limits of the proposed project area and support native tree species such as sugar maple, white oak, and hickory.

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The development of this project will result in approximately 1.39 acre of impact to commercial properties.

The closest forested riparian corridor is located within the northeast quadrant of the proposed project area. This forested riparian corridor provides food and habitat for wildlife such as birds and squirrels while supporting vegetation such as silver maple, boxelder, and northern hackberry. Tree removal will be necessary in this location. The proposed project will result in the loss of approximately 0.17 acre of forested riparian habitat, including 0.07 acre of tree removal, for the purpose of grading and providing temporary construction access. No alternative which satisfied the purpose and need of the project was found to completely avoid impacts to existing trees. Impacts to trees were determined to be unavoidable, however, impacts have been minimized to the greatest extent possible. Additionally, guardrail will be used with 3:1 fore slopes to narrow the footprint of impact.

The maintained, wooded area within the right-of-way of SR 46 acts as a windbreak for the adjacent field to the south, while providing some habitat for small birds and squirrels. Tree removal will be necessary in this location. The proposed project will result in the loss of approximately 2.33 acres of trees from this maintained, wooded area. All tree removal will take place during the winter months, from November 1, 2019 through March 1, 2020.

As previously mentioned, mitigation for tree removal activities outside of the floodway will be addressed on-site as a part of this project. Mitigation for tree removal activities within the floodway will be addressed as a separate project, with a separate CE document, under Des. No.:1801373. Mitigation to be handled on-site is expected to include tree planting within the infield area between the existing SR 46 and proposed SR 46, west of SR 11. Approximately 7.39 acres of tree planting will occur within this area (Appendix B, B-59). The remaining mitigation, to be completed off-site, will include approximately 3.90 acres of tree planting within DNR Area 1 (Appendix B, B-59) and will account for the loss of trees within the floodway of the Flatrock River. The proposed DNR Areas 2 and 3 will not be utilized.

It was determined that 0.07 acre of tree removal from the forested riparian habitat will result in adverse effects, while 2.33 acres of tree removal from the maintained wooded area is not anticipated to result in any adverse effects to the Indiana Bat. The Federal Highway Administration used the mitigation ratio of 1.75 from Table 3 of the Biological Opinion to calculate the compensatory mitigation required to offset these adverse impacts for a total of 0.12 acre of trees that are suitable for the Indiana Bat. This discussion is covered in more detail within the Threatened or Endangered Species section of this CE document.

Early Coordination:

Early coordination letters were sent to IDNR DFW and USFWS on November 30, 2017. The IDNR DFW responded on December 29, 2017 with several recommendations to avoid and minimize impacts to fish, wildlife, and botanical resources (Appendix C, C-3 to C-4). The USFWS responded on December 4, 2017 with their standard list of recommendations to avoid or minimize impacts to fish, wildlife, and wildlife habitat (Appendix C, C-30 to C-32). All applicable IDNR DFW and USFWS recommendations are included in the Environmental Commitments section of this CE document.

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If there are high incidences of animal movements observed in the project area, or if bridges and other areas appear to be the sole corridor for animal movement, consideration of utilizing wildlife crossings should be taken.

Karst

Is the proposed project located within or adjacent to the potential Karst Area of Indiana?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Are karst features located within or adjacent to the footprint of the proposed project?

If yes, will the project impact any of these karst features?

<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------

Use the remarks box to identify any karst features within the project area. (Karst investigation must comply with the Karst MOU, dated October 13, 1993)

Remarks:

Based on a desktop review, site visit on August 23, 2017, the aerial map of the project area (Appendix B, B-2), and the RFI report (Appendix E), the proposed project is located outside of the designated karst region of Indiana as outlined in the October 13, 1993 Memorandum of Understanding (MOU). No karst features were observed within the project area. In the early coordination response, the Indiana Geological Survey (IGS) did not indicate that karst features may exist in the project area (Appendix C, C-41 to C-43). The IGS response letter states that geological hazards such as high liquefaction potential and floodway are present. Mineral resources including moderate potential to encounter bedrock, and high potential to encounter sand and gravel were identified. Petroleum exploration wells were also identified. The features will not be affected as liquefaction typically occurs in saturated sandy soils, while the proposed project area is dominated by silty loams. Impacts to the floodway of Flatrock River have been determined unsubstantial and coordination with the Floodplain Manager for Bartholomew County (Appendix C, C-45) has resulted in several recommendations to the project, which have been included in the Environmental Commitments section of this document. Bedrock and gravel will not be readily encountered as excavation will extend to a depth sufficient to remove the existing roadway, and fill material is expected to be placed and compacted for the purpose of constructing the grade separating structures. The petroleum exploration wells have already been located during utility coordination and were not found to be within the project limits.

Early Coordination:

An early coordination letter was sent to the Indiana Geological Survey (IGS) on November 30, 2017. An additional letter of coordination was sent to the IDNR Division of Oil and Gas on January 8, 2019. IGS responded on September 11, 2018 with an automated Environmental Assessment Report indicating the presence of geological hazards, mineral resources, and active or abandoned mineral resource extraction sites. The IDNR Division of Oil and Gas did not respond to the early coordination letter.

Threatened or Endangered Species

Within the known range of any federal species

Any critical habitat identified within project area

Federal species found in project area (based upon informal consultation)

State species found in project area (based upon consultation with IDNR)

Presence

Impacts

<input checked="" type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

Is Section 7 formal consultation required for this action?

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks:

Based on a desktop review and the Red Flag Investigation (RFI) (Appendix E), completed by United Consulting on January 17, 2018, the IDNR Bartholomew County Endangered, Threatened and Rare (ETR) Species List has been checked and is included in Appendix

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E, E-14 to E-15. The highlighted species on the list reflect the federal and state identified ETR species located within the county. According to the IDNR DFW early coordination response letter dated December 29, 2017, the Natural Heritage Program's data have been checked, and to date, no plant or animal species listed as state or federally threatened, endangered, or rare have been reported to occur in the project vicinity (Appendix C, C-3 to C-4).

Indiana Bat and Northern Long-Eared Bat:

The proposed project does not qualify for the *Range-wide Programmatic Informal Consultation for the Indiana Bat and Northern Long-Eared Bat (NLEB)*, dated May 2016, between FHWA, Federal Railroad Administration, Federal Transit Administration, and USFWS because some tree clearing activities will occur between 100-300 feet from the edge of existing pavement, but not greater than 300 feet. *Programmatic Formal Consultation* for the Indiana Bat and NLEB must be completed.

Project information was submitted through the USFWS's Information for Planning and Consultation (IPaC) portal, and an official species list was generated (Appendix C, C-13 to C-17). Bartholomew County is within range of the federally endangered Indiana Bat (*Myotis sodalis*) and the federally threatened NLEB (*Myotis septentrionalis*). In addition, an effect determination key (Project Submittal Form) was completed on November 28, 2017, and based on the responses provided, the project was found to "May Affect, Likely to Adversely Affect" (MA-LAA) the Indiana Bat and the NLEB (Appendix C, C-22 to C-27). Proposed impacts cannot be avoided as no alternatives found to meet the purpose and need of the project could be constructed within the footprint of the existing intersection. Impacts to the wooded areas have been minimized to the greatest extent possible.

INDOT shall satisfy the compensatory mitigation requirements of the formal consultation with USFWS through one of the conservation options outlined on page 41 of the May 20, 2016 *Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and NLEB*. The amount to be paid to the Range-wide In-lieu Fee Program, to be administered by The Conservation Fund (TCF), shall be \$1,300. This amount was determined by the Habitat Block Method. The area of suitable habitat to be cleared, multiplied by the mitigation ratio for inactive tree season clearing for Bartholomew County, and the compensatory price per acre; $(0.07) \times (1.75) \times \$10,600 = \$1,298.50$.

The SR 46 eastbound (NBI No. 19335) and westbound (NBI No.10340) structures spanning Flatrock River were inspected for the presence of bats on August 23, 2017 (Appendix C, C-28 and C-29). No bats or evidence of bats was seen or heard at the structures. These inspections are good for a period of 2 years from the date of inspection. It will be documented as a firm commitment that the structures will be reinspected within this 2 year period and if any signs of bats are seen or heard at the structures INDOT will be notified immediately.

INDOT verified the effect finding on November 28, 2017 and requested USFWS's review of the finding. On January 24, 2018, USFWS concurred with the "May Affect, Likely to Adversely Affect" finding (Appendix C, C-18 to C-21). USFWS stated that the proposed project's effects are consistent with those analyzed in the biological opinion (BO). Additionally, a "Reinitiation Notice" is required if: more than 0.07 acre of additional suitable habitat is to be cleared; the amount or extent of incidental take of Indiana bat is exceeded;

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new information about listed species or critical habitat is encountered; new species is listed or critical habitat designated that the project may affect; the project is modified in a manner that causes an effect to the listed species; or new information that reveals that the project may affect listed species or critical habitat in a manner not considered in the BO or the project information. These requirements, and the Avoidance and Minimization Measures (AMMs) from the Project Submittal Form regarding tree removal activities will be implemented and include:

- Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA environmental commitments, including all applicable AMMs.
- Ensure tree removal is limited to that specified in project plans and ensure that contractors understand clearing limits and how they are marked in the field (e.g., install bright colored flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits.
- Avoid conducting tree removal within documented Indiana bat roosting/foraging habitat or travel corridors from May 1-July 31.
- Minimize tree removal within suitable Indiana bat habitat (no documented habitat) from May 1-July 31 in the following manner: limit clearing such that all trees can be visually assessed; conduct visual emergence surveys if trees are greater than or equal to 9 inches diameter at breast height (dbh), if no bats are observed, proceed with clearing the following day (NLAA), if bats are observed, modify the project to conduct tree removal after August 1 (LAA); if trees are less than 9 inches dbh, no emergence survey required (LAA).
- Avoid removing documented NLEB maternity roosts and trees within 150 feet of those roosts from June 1-July 31.
- Direct temporary lighting away from suitable habitat during active season.
- When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, the goal is to be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable.

All AMMs are included as firm commitments of this project.

Contractors must take care when handling dead or injured bats (regardless of species), and any other federally listed species that are found at the Project site in order to preserve biological material and protect the handler from exposure to diseases, such as rabies. Project personnel are responsible for ensuring that any evidence about determining the cause of death or injury is not unnecessarily disturbed. Reporting the discovery of dead or injured listed species is required in all cases to enable the Service to determine whether the level of incidental take exempted by the BO is exceeded, and to ensure that the terms and conditions are appropriate and effective. Parties finding a dead, injured, or sick specimen of any bat (regardless of species), or other endangered or threatened species, must promptly notify the USFWS Bloomington Field Office, call (812) 334-4261.

Rusty Patched Bumble Bee

On January 17, 2018 United Consulting reviewed the USFWS Range Map for the Rusty

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Patched Bumble Bee (<https://www.fws.gov/midwest/endangered/insects/rpbb/rpbbmap.html>) and identified the entire project area is not located in or within 0.5 mile of a High Potential Zone for Rusty Patched Bumble Bee habitat. INDOT reviewed *The Rusty Patched Bumble Bee (Bombus affinis) Voluntary Implementation Guide Version 1.1* January 19, 2018 and confirmed this project is not located in or within 0.5 mile of a High Potential Zone for the Rusty Patched Bumble Bee. The project area consists of agricultural fields, forested riparian habitat, and several commercial properties. Based on the habitat qualifications identified in the USFWS Voluntary Implementation Guide, none of the project area exhibits properties that would make the area suitable habitat for the Rusty Patched Bumble Bee. The project is not anticipated to impact the Rusty Patched Bumble Bee.

This precludes the need for further consultation on this project as required under Section 7 of the Endangered Species Act, as amended. If new information on endangered species at the site becomes available, or if project plans are changed, USFWS will be contacted for consultation.

SECTION B – OTHER RESOURCES

Drinking Water Resources

- Wellhead Protection Area
- Public Water System(s)
- Residential Well(s)
- Source Water Protection Area(s)
- Sole Source Aquifer (SSA)

	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Wellhead Protection Area	X		X
Public Water System(s)			
Residential Well(s)			
Source Water Protection Area(s)			
Sole Source Aquifer (SSA)			

If a SSA is present, answer the following:

- Is the Project in the St. Joseph Aquifer System?
- Is the FHWA/EPA SSA MOU Applicable?
- Initial Groundwater Assessment Required?
- Detailed Groundwater Assessment Required?

	Yes	No
Is the Project in the St. Joseph Aquifer System?		
Is the FHWA/EPA SSA MOU Applicable?		
Initial Groundwater Assessment Required?		
Detailed Groundwater Assessment Required?		

Remarks:

Sole Source Aquifer
 The Environmental Protection Agency's Sole Source Aquifer website (<https://www.epa.gov/dwssaa>) was accessed on October 8, 2018 by United Consulting. The project is located in Bartholomew County, which is not located within the area of the St. Joseph Sole Source Aquifer, the only legally designated sole source aquifer in the state of Indiana. Therefore, the FHWA/EPA Sole Source Aquifer Memorandum of Understanding (MOU) is not applicable to this project, and a detailed groundwater assessment is not required. No impacts are expected.

Wellhead Protection Area:
 The Indiana Department of Environmental Management's Wellhead Proximity Determinator website (<http://www.in.gov/idem/clearwater/pages/wellhead/>) was accessed on January 11, 2018 by United Consulting. This project is located within a Wellhead Protection Area (WHPA). In an early coordination response letter dated December 4, 2017, IDEM stated the project is located within a wellhead protection area (Appendix C, C-5). The features will be affected because the proposed project intersection lies within, and cannot be relocated outside of, the WHPA. On January 11, 2018 a representative of

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the City of Columbus' Wellhead Protection Program responded to a request for coordination with comments and excerpts from the Columbus Wellhead Protection Management Plan. The comments indicate that well fields exist in the vicinity of this new interchange construction project, and the City does not permit the use of dry wells and infiltration ponds within the WHPA. Additionally, the City was concerned that the reconfiguration of the intersection could lead to increased transport of hazardous materials through the WHPA which could increase the risk for release of hazardous materials near the water supply. The City has initiated coordination with INDOT officials to divert hazardous cargo from SR 11 in the vicinity of the proposed project to Interstate 65. No dry wells or infiltration ponds will be constructed as a result of the project. The project is not expected to change hazardous cargo transportation patterns and will not influence efforts to relocate hazardous cargo transportation from SR 11 to Interstate 65. The WHPA contact's email and attached Columbus Wellhead Protection Management Plan excerpts are included in Appendix C, C-7 to C-10. All Applicable Columbus City Utilities recommendations can be found in the Environmental Commitments section of this CE document.

Residential Wells
 The Indiana Department of Natural Resources Water Well Record Database website (<https://www.in.gov/dnr/water/3595.htm>) was accessed on September 4, 2018 by United Consulting. No wells are located near this project. Therefore, no impacts are expected.

Urban Area Boundary Location:
 Based on a desktop review of the INDOT MS4 website (<https://entapps.indot.in.gov/ms4/>) by United Consulting on October 8, 2018, this project is located in an Urban Area Boundary (UAB) location. This project also appears in a UAB according to the RFI report (Appendix E). An early coordination letter was sent on November 30, 2017 to the local Municipal Separate Storm Sewer System (MS4) coordinator. The MS4 coordinator did not respond to the early coordination letter. The UAB will not be affected because Best Management Practices (BMPs) will be followed and reasonable and prudent measures to implement the storm water quality management plan will be taken.

Public Water System
 Based on a desktop review, site investigation on August 23, 2017 by Metric Environmental, and the aerial map of the project area (Appendix B, B-2), this project is not located where there will be public water system impacts. Therefore, no impacts are expected.

	<u>Presence</u>	<u>Impacts</u>	
		Yes	No
Flood Plains			
Longitudinal Encroachment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transverse Encroachment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Project located within a regulated floodplain	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Homes located in floodplain within 1000' up/downstream from project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Discuss impacts according to classification system described in the "Procedural Manual for Preparing Environmental Studies".

Remarks: The Indiana Department of Natural Resources Indiana Floodway Information Portal website (<https://dnrmmaps.dnr.in.gov/appsphp/fdms/>) was accessed on October 8, 2018 by United Consulting. This project is located in a regulatory floodplain as determined from available FEMA floodplain maps (Appendix B, B-4). Impacts to the floodway of Flatrock

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River have been determined unsubstantial and an early coordination letter was sent on October 8, 2018, to the local Floodplain Manager. The Floodplain Manager provided several comments with reference to the presence of the floodplain in a response letter dated October 31, 2018 (Appendix C, C-45). The Floodplain Manager indicated the most recent Flood Insurance Rate Map (FIRM), revised April 17, 2018, should be used for this project. In reference to Columbus Zoning Ordinance Section 4.7(l)(1)(g), the Planning Department will need to review this documentation prior to the commencement of construction activities to ensure compliance with the floodplain regulations. The City of Columbus has developed a Flood Risk Management Plan to help guide floodplain development in the City jurisdiction. One goal of the plan is to provide flood free access along critical transportation routes when opportunities arise. Currently, SR 11 and SR 46 both flood periodically throughout the year. This project presents an opportunity to pursue the creation of flood-free routes in this area. Members of the design team took the opportunity to discuss the elevations, and for areas within the project limits along SR 46, the profile grade will be increased. Along SR 11, no significant grade change will be made. All applicable City of Columbus recommendations are included in the Environmental Commitments section of this CE document. This project qualifies as a Category 5 per the INDOT CE Manual because the proposed project is on a new alignment.

Tree removal activities occurring within the floodway of Flatrock River will require mitigation to offset the impacts. Mitigation will be completed off-site as a separate project (Des. No.: 1801373) and will include approximately 3.90 acres of tree planting to account for the loss of trees within the floodway of the Flatrock River.

There will be no substantial impacts on natural and beneficial floodplain values; there will be no substantial change in flood risks; and there will be no substantial increase in potential for interruption or termination of emergency service or emergency evaluation routes; therefore it has been determined that this encroachment is not substantial. A hydraulic design study that addresses various structure size alternates will be completed during the preliminary design phase. A summary of this study will be included with the Field Check Plans.

Farmland

Agricultural Lands
Prime Farmland (per NRCS)

Presence

X

Impacts

Yes	No
X	

Total Points (from Section VII of CPA-106/AD-1006* _____
*If 160 or greater, see CE Manual for guidance.

See CE Manual for guidance to determine which NRCS form is appropriate for your project.

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Remarks: Based on a desktop review, site investigation on August 23, 2017 by Metric Environmental, the aerial map of the project area (Appendix B, B-2), and consultation with the Natural Resources Conservation Service (Appendix C, C-44) there is no land that meets the definition of prime farmland under the Farmland Protection Policy Act (FPPA) within or adjacent to the project area. The requirements of the FPPA do not apply to this project, therefore, no significant impacts to agricultural land are expected.

SECTION C – CULTURAL RESOURCES

	Category	Type	INDOT Approval Dates	N/A
Minor Projects PA Clearance				X

Eligible and/or Listed Resource Present

Results of Research

Archaeology	X
NRHP Buildings/Site(s)	X
NRHP District(s)	X
NRHP Bridge(s)	X

Project Effect

No Historic Properties Affected No Adverse Effect Adverse Effect

Documentation Prepared

Documentation (mark all that apply)

		ES/FHWA Approval Date(s)	SHPO Approval Date(s)
Historic Properties Short Report	<input type="checkbox"/>		
Historic Property Report (HPR)	X	2/1/18, 5/4/18	6/21/18 SHPO
Archaeological Records Check/ Review	<input type="checkbox"/>		
Archaeological Phase Ia Survey Report	X	5/24/18	7/16/18, 3/18/19 SHPO
Archaeological Phase Ic Survey Report	X	1/31/19	3/4/19
Archaeological Phase II Investigation Report	<input type="checkbox"/>		
Archaeological Phase III Data Recovery	<input type="checkbox"/>		
APE, Eligibility and Effect Determination	<input type="checkbox"/>		
800.11 Documentation	X	2/12/19	3/18/19

MOA Signature Dates (List all signatories)

Memorandum of Agreement (MOA)	<input checked="" type="checkbox"/>	MOA has been circulated for signatures. Signatures dates for each consulting party are forthcoming. FHWA - TBD SHPO - TBD INDOT – April 5, 2019 City of Columbus - TBD
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Describe all efforts to document cultural resources, including a detailed summary of the Section 106 process, using the categories outlined in the remarks box. The completion of the Section 106 process requires that a Legal Notice be published in local newspapers. Please indicate the publication date, name of paper(s) and the comment period deadline. Likewise include any further Section 106 work which must be completed at a later date, such as mitigation or deep trenching.

Remarks: **Area of Potential (APE):**
The Area of Potential Effects (APE) includes the project area and a one-quarter mile radius around it, extending approximately 500 feet to the north to account for potential traffic increases along Second Street (eastbound SR 46), Third Street (westbound SR 46),

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and Washington Street. The APE was further expanded to include adjacent properties along SR 11 to Garden Road and along Fifth Street and Lafayette Avenue. The APE for archaeological resources was defined as the project footprint.

Coordination with Consulting Parties:

The organizations listed below were invited to become consulting parties and to comment on potential historic properties within the APE and project impacts in an early coordination letter (ECL) dated January 23, 2018. The ECL was distributed via email except to the State Historic Preservation Officer (SHPO), which received a hard copy. The Federal Highway Administration (FHWA), INDOT, and SHPO are always consulting parties (CPs) for federally funded transportation projects. The following is a list of organizations and individuals that the early coordination letter was sent to, their responses, and the date of their response. If no response was received after 30 days, it was assumed the parties involved did not wish to act as consulting parties.

Organization:	Response Date:	Accepted/ Declined:
Bartholomew County History Center	N/A	N/A
Bartholomew County Historian	N/A	N/A
Bartholomew County Genealogical Society	N/A	N/A
Board of Commissioners of Bartholomew County	N/A	N/A
Columbus Area Metropolitan Planning Organization	N/A	N/A
Indiana Landmarks (Central Regional Office)	2/2/2018	Accepted
Dr. James Cooper	N/A	N/A
Historic SPANS Task Force	N/A	N/A
National Park Service	1/26/2018	Declined
Delaware Nation of Oklahoma	2/6/2018	Accepted
Eastern Shawnee Tribe of Oklahoma	N/A	N/A
Miami Tribe of Oklahoma	1/31/2018	Accepted
Peoria Tribe of Indians of Oklahoma	N/A	N/A
Pokagon Band of Potawatomi Indians	N/A	N/A
Landmark Columbus	N/A	N/A
Mayor of Columbus	N/A	N/A
City of Columbus Engineer	N/A	N/A
Bartholomew County Engineer	N/A	N/A
Bartholomew County Highway Department	N/A	N/A
Columbus Area Chamber of Commerce	N/A	N/A
Columbus Area Visitors Center	N/A	N/A
Columbus Redevelopment Department	N/A	N/A
State Historic Preservation Office	2/23/2018	Accepted
Debra Haza	8/24/2018	Accepted

In addition to being invited to be consulting parties, the above-listed parties were provided with access to the ECL and the Historic Properties Report (HPR), available on IN SCOPE. The January 23, 2018 ECL requested dual review of the project by the SHPO, pursuant to 312 Indiana Administrative Code ("IAC") 20-4-11.5.

The SHPO replied to the ECL and HPR on February 23, 2018 (Appendix D, D-51 to D-

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53). SHPO stated:

"We agree with the HPR's identification of listed National Register of Historic Places ("NRHP") and National Historic Landmark properties within the APE as it currently is proposed. For the purposes of Section 106 review of this project, we also agree with the HPR's conclusions about the NRHP eligibility or ineligibility and the historic property boundaries of above-ground properties within the APE, for the reasons stated in the HPR."

A detailed description of consulting party coordination is located in Appendix D. A summary of the CP's discussions is provided below:

On February 23, 2018, SHPO, in response to the early coordination letter (Appendix D, D-51 to D-53), recommended that additional consulting parties be invited to join consultation (Landmark Columbus, Mayor of the City of Columbus, Engineer of the City of Columbus, and the Bartholomew County Engineer). SHPO also recommended that the APE be expanded to account for additional potentially historic properties. In consideration of SHPO's comments, Weintraut & Associates, Inc. (W&A) expanded the APE to the south along SR 11 and to the north along Fifth Street and Lafayette Road. W&A conducted an additional site survey on March 8, 2018 and prepared an Additional Information Memorandum – No.1 in April 2018. On May 3, 2018, INDOT responded to SHPO's comments raised in the February 23, 2018 letter, and conveyed the Additional Information Memorandum – No. 1 to the SHPO (Appendix D, D-60 to D-64). W&A notified CPs that the letter was available for review on IN SCOPE on May 21, 2018. On June 21, 2018, SHPO responded (Appendix D, D-71 to D-72) to the Additional Information Memorandum and INDOT's letter of May 3, 2018. SHPO agreed with the expanded APE and recommendations of eligibility, as discussed in the Additional Information Memorandum.

Archaeology:

An archaeologist for W&A completed an archaeological records check on August 3, 2017, of the project area using the State Historical Architectural and Archaeological Research Database (SHAARD). The results of the search showed that portions of the project area had been previously surveyed by professional archaeologists and that eight recorded archaeological sites are located within the project area; 12B0918, 12B0919, 12B0920, 12B0921, 12B0936, 12B1022, 12B1023, and 12B1024. Three of the sites, 12B0936, 12B1023, and 12B1024, had been recommended for further investigation. Sites 12B0918, 12B0919, 12B0920, 12B0921, and 12B1022 had been recommended for no further investigation.

The Phase Ia archaeological field reconnaissance of the project area began on October 30, 2017, and was completed on March 19, 2018. During the Phase Ia archaeological field reconnaissance, two of the eight previously recorded sites were relocated and reinvestigated, and sixteen previously undocumented sites were recorded. Additionally, an area of deep alluvial soil was identified.

Archaeologists for W&A completed a Phase Ia Archaeological Records Check and Field

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Reconnaissance Report in May 2018 (Goldbach and Arnold, May 2018). Specifically, W&A made the following recommendations: sites 12B0918, 12B0919, 12B0920, and 12B0921 are assumed to be destroyed and are not recommended for further work; sites 12B0936 and 12B1023 will not be impacted and no further work is required; no further work for site 12B1022; but site 12B1024 must be avoided by project activities or subjected to Phase II testing. All of the newly recorded sites were recommended not eligible for the National Register of Historic Places (NRHP) or Indiana Register of Historic Sites and Structures (IRHSS) and no further work was recommended. INDOT Cultural Resources Office (CRO) approved the Phase Ia Records Check and Reconnaissance Report on May 24, 2018. W&A sent a paper copy of the report to SHPO on June 11, 2018. INDOT-CRO notified Tribal consulting parties of the report's availability on that same day.

On July 16, 2018, the SHPO concurred with the findings of the Phase Ia Records Check and Reconnaissance Report (Appendix D, D-73 to D-75).

On September 26-28, 2018, archaeologists conducted a Phase Ic subsurface reconnaissance of the area of alluvial soils identified in the Phase Ia Report (Goldbach, 2018). No cultural features, buried cultural horizons, or significant buried archaeological deposits were encountered during the Phase Ic subsurface reconnaissance. The portion of site 12B1511 within the project area does not appear to be eligible for listing in the IRHSS or the NRHP, and no further work is recommended.

Archaeologists for W&A conducted an Addendum Phase Ia archaeological reconnaissance in an expanded area of the project on October 16, 2018. The reconnaissance located no archaeological resources in the project area; therefore, archaeological clearance was recommended for this expanded area.

On February 5, 2019, W&A sent the Phase Ic Subsurface Reconnaissance Report to the SHPO and notified the CPs of its availability on IN SCOPE. The Phase Ic and Addendum Phase Ia archaeological reports were submitted concurrently with the 800.11 documentation.

On March 4, 2019, the SHPO concurred with the findings of the Phase Ic Subsurface Reconnaissance Report (Appendix D, D-149 to D-150).

On March 18, 2019, the SHPO concurred with the findings of the Addendum Phase Ia Archaeological Report, and 800.11 documentation (Appendix D, D-151 to D-153).

Historic Properties:

Pursuant to 36 CFR 800.4(b), W&A identified and evaluated historic properties. Historians for W&A conducted a field survey of aboveground resources on September 20, 2017. Additionally, W&A historians reviewed the NRHP, Indiana Register of Historic Sites and Structures (State Register), the Indiana Historic Sites and Structures Inventory (IHSSI), the SHAARD, the *Indiana Statewide Historic Bridge Inventory*, and the *Bartholomew County: Interim Report* for previously identified properties. Historians also reviewed prior Section 106 studies completed by W&A in the general area.

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W&A which is included as a Qualified Professional (QP) satisfying the *Secretary of Interior's Professional Qualification Standards*, produced a HPR in January 2018. Historians surveyed twenty-four resources within the APE. Of those, eight merited a rating of Contributing or higher, per the IHSSI. Four of those eight resources are listed in the NRHP and/or have been designated as a National Historic Landmark (NHL): Columbus Historic District (NR-0373), Bartholomew County Courthouse (NR-0131), Haw Creek Leather Company (NR-1404), and The Republic (NR-2354/NHL). One resource had been previously determined eligible for listing in the NRHP per the *Indiana Historic Bridge Inventory*: Third Street/SR 46 Bridge (Bridge No. 04-03-03782BWBL; NBI No.: 10340). In addition, historians recommended two resources eligible for listing in the NRHP: City Power House Building (IHSSI No.: 005-130-45059) and Pennsylvania Railroad Bridge (IHSSI No.: 005-130-25031).

The February 23, 2018 early coordination response letter from SHPO (Appendix D, D-51 to D-53) requested that the APE be expanded to account for additional potential historic properties. W&A developed the Additional Information Memorandum – No. 1 to account for the increased APE. As a result of the Additional Information Memorandum – No. 1, historians identified three resources within the expanded APE listed in the NRHP and/or NHL that are within the boundaries of the Columbus Historic District (NR-0373): Columbus City Hall (NR-0134), McEwn-Samuels-Marr Home (NR-0135), and First Christian Church (NR-1532, NHL). In addition, historians recommended the Columbus Post Office (IHSSI No.: 005-130-45055) as eligible for listing in the NRHP.

Pursuant to 36 CFR 800.41(2), eleven properties are listed or eligible for listing, in the NRHP within the APE for this undertaking:

Eligible Property:	National Register (NR) Listing:
Columbus Historic District	NR-0373
Bartholomew County Courthouse	NR-0131
Haw Creek Leather Company	NR-1404
The Republic	NR-2354, NHL
Third Street/SR 46 Bridge	NBI No.: 10340
City Power House Building	IHSSI No.: 005-130-45059
Pennsylvania Railroad Bridge	IHSSI No.: 005-130-25031
Columbus City Hall	NR-0134
McEwen-Samuels-Marr Home	NR-0135
First Christian Church	NR-1532, NHL
Columbus Post Office	IHSSI No.: 005-130-45055

Documentation Finding:

The preferred alternative is a grade separation that will use a bridge to carry SR 46 over the railroad. The structure will be 34 feet from the railroad track to the top of the bridge deck and 45 feet from SR 11 to the top of the bridge deck. Single-arm cobra head street lights will be installed on the deck. To avoid visual intrusion, lights will be twenty-five feet tall, which is the shortest standard height. The City of Columbus wants to perpetuate the current themes of the SR 46 corridor, with native species of trees lining the highway. The new bridge will not have any significant architectural enhancements to it. As a driver approaches downtown Columbus from this overpass, their eye will catch the Stewart

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Bridge and the County Courthouse. Aboveground historic properties will have a view to the undertaking but none will be adversely affected by the project. No work will occur within the boundaries of historic properties.

FHWA has determined a finding of "Adverse Effect" is appropriate for this undertaking due to the ongoing archaeological investigations, and based on the fact that the effect of the undertaking on archaeological resources is not yet known. On February 12, 2019, the FHWA issued an Adverse Effect finding for potential impacts to Site 12B1024 (Appendix D, D-5). The SHPO concurred with this determination in a March 18, 2019 review letter (Appendix D, D-151 to D-153). No other responses were received in regards to the Adverse Effect finding.

36 CFR 800.5(a)(1) states: "An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance, or be cumulative."

The criteria of adverse effect, as defined and described in 36 CFR 800.5(a)(1) and in 36 CFR 800.5(a)(2)(i) through (v), do not apply to the Columbus Historic District, the Bartholomew County Courthouse, the Haw Creek Leather Company, the Republic, the Third Street/SR 46 Bridge, the City Power House Building, the Pennsylvania Railroad Bridge, the Columbus City Hall, the McEwen-Samuels-Marr Home, the First Christian Church, or the Columbus Post Office.

The eligibility of site 12B1024 will be addressed at a later date. Standards for the archaeological identification, evaluation, and reporting will be included in a Memorandum of Agreement (MOA). FHWA intends to address the effects of the undertaking on any NRHP-eligible archaeology site through stipulations in a MOA.

MOA:

In an effort to mitigate the finding of Adverse Effect, a MOA was established between the FHWA, SHPO, INDOT, and the Bartholomew County Commissioners. The MOA was developed in discussion with consulting parties through meetings and correspondence. All of the stipulations contained in the MOA are firm project commitments. A copy of the draft MOA is located in Appendix D, D-130 to D-144. The MOA contains the following stipulations:

- I. Professional Qualification and Standards:
 - a. FHWA, in coordination with INDOT, shall ensure that work carried out pursuant to this MOA shall be done by, or under the direct supervision of, professionals who meet the Secretary of the Interior's Professional Qualification Standards, as amended and annotated, at http://www.nps.gov/history/local-law/arch_stnds_9.htm ("qualified professional"). The FHWA and INDOT shall ensure that consultants retained for services pursuant to the MOA meet these

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standards.

II. Mitigation Measures:

1. Archaeological Site 12B1024:

- a. The Phase Ia archaeological reconnaissance identified site 12B1024, which was recommended as potentially eligible for inclusion on the NRHP. If avoidance is not possible, then before commencing construction activities within a segment of this undertaking that could affect this site, FHWA shall ensure that a qualified professional archaeologist prepare and submit a work plan authorization request for Phase II archaeological investigations to the Indiana Division of Historic Preservation and Archaeology ("DHPA") for review and approval pursuant to IC 12-21-1-25 prior to the commencement of Phase II investigations.
- b. After the approval of the Phase II work plan authorization request, FHWA shall ensure Phase II testing to determine the eligibility of site 12B1024 for listing in the NRHP.
- c. A report of Phase II archaeological investigations shall be provided to the DHPA prior to any proposal of Phase III investigations.
- d. If site 12B1024 is determined eligible for inclusion in the NRHP, FHWA shall ensure that a work plan authorization is submitted by a qualified professional for Phase III archaeological investigations for review and approval by the DHPA pursuant to IC-14-21-1-25 prior to commencement of Phase III investigations.
- e. After approval of the Phase III work plan authorization request, FHWA or its representatives shall conduct Phase III data recovery of site 12B1024 to mitigate for impacts to the site from this undertaking.

2. Archaeological Sites 12B0936 and 12B1023:

- a. FHWA shall avoid any ground disturbing project activities in the area of archaeological site 12B1023 that lies outside the project area depicted in "Attachment B" of the MOA (Appendix D, D-143).
- b. FHWA shall avoid any ground disturbing project activities that would reach a depth greater than fifteen (15) inches within the portions of the archaeological sites 12B0936 and 12B1023 that lie within the Archaeology APE, as depicted in "Attachment B" of the MOA (Appendix D, D-143).
- c. If avoidance of archaeological sites 12B0936 and 12B01023 is not feasible, FHWA shall ensure that a qualified professional submit a plan for subsurface archaeological investigations to determine the eligibility of the sites for listing in the NRHP to the DHPA for review and comment before commencing with ground disturbing activities.

3. FHWA shall clearly mark and avoid any ground disturbing project activities within portions of archaeological site 12B1517 that lie outside the Archaeology APE depicted in "Attachment B" of the MOA (Appendix D, D-143) or, if avoidance is not feasible, FHWA will submit a plan for subsurface archaeological investigations to determine eligibility for listing in the NRHP to the DHPA for review and comment before commencing with ground disturbing activities within those archaeological sites.

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4. No less than 10 percent of any site within the project limits shall be tested during a Phase II investigation; Phase III data recovery, if required, shall excavate an additional 25 percent of the site area within the project limits as mitigation.

5. A report of investigations detailing all archaeological investigations shall be provided to Indiana DHPA/SHPO for review and comment within one (1) year after fieldwork or any Phase of investigation has ended.

Public Involvement:
 To meet the public involvement requirements of Section 106 FHWA's finding of Adverse Effect was advertised in the *The Republic* on February 15, 2019. The public comment period closed 30 days later on March 17, 2019. The text of the public notice and the affidavit of publication appear in Appendix D, D-145 to D-148. No comments were received as a result of the public notice.

This Environmental Document will not be approved until the MOA has been executed. This document will be updated after the completion of public involvement to state fulfillment of FHWA's responsibilities under Section 106.

SECTION D – SECTION 4(f) RESOURCES/ SECTION 6(f) RESOURCES

Section 4(f) Involvement (mark all that apply)

Parks & Other Recreational Land	<u>Presence</u>		<u>Use</u>	
Publicly owned park	<input type="checkbox"/>		Yes	No
Publicly owned recreation area	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other (school, state/national forest, bikeway, etc.)	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	<u>Evaluations Prepared</u>			
Programmatic Section 4(f)* "De minimis" Impact*	<input type="checkbox"/>		<u>FHWA Approval date</u>	
Individual Section 4(f)	<input type="checkbox"/>		<input type="text"/>	
	<u>Presence</u>		<u>Use</u>	
Wildlife & Waterfowl Refuges			Yes	No
National Wildlife Refuge	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
National Natural Landmark	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
State Wildlife Area	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
State Nature Preserve	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>
	<u>Evaluations Prepared</u>			
Programmatic Section 4(f)* "De minimis" Impact*	<input type="checkbox"/>		<u>FHWA Approval date</u>	
Individual Section 4(f)	<input type="checkbox"/>		<input type="text"/>	
	<u>Presence</u>		<u>Use</u>	
Historic Properties			Yes	No
Sites eligible and/or listed on the NRHP	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

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**Evaluations
Prepared**

Programmatic Section 4(f)*
"De minimis" Impact*
Individual Section 4(f)

**FHWA
Approval date**

--

*FHWA approval of the environmental document also serves as approval of any Section 4f Programmatic and/or De minimis evaluation(s) discussed below.

Discuss Programmatic Section 4(f) and "de minimis" Section 4(f) impacts in the remarks box below. Individual Section 4(f) documentation must be separate Draft and Final documents. For further discussions on Programmatic, "de minimis" and Individual Section 4(f) evaluations please refer to the "Procedural Manual for the Preparation of Environmental Studies". Discuss proposed alternatives that satisfy the requirements of Section 4(f).

Remarks:

Section 4(f) of the U.S. Department of Transportation Act of 1966 prohibits the use of certain public and historic lands for federally funded transportation facilities unless there is no feasible and prudent alternative. The law applies to significant publicly owned parks, recreation areas, wildlife/waterfowl refuges, and NRHP eligible or listed historic properties. Lands subject to this law are considered Section 4(f) resources.

Based on a desktop review, site investigation on August 23, 2017 by Metric Environmental, the aerial map of the project area (Appendix B, B-2), and the RFI report (Appendix E), there are two 4(f) resources located within 0.5 mile of the project. The Third Street/SR 46 Bridge spanning Flatrock River (NBI 10340) is located adjacent to the proposed project area and meets the criteria to be considered eligible for the NRHP. This undertaking will not convert property from the Third Street/SR 46 Bridge, a section 4(f) property, to a transportation sue. FHWA has determined the appropriate Section 106 finding is "No Adverse Effect"; therefore, no Section 4(f) evaluation is required for the Third Street/SR 46 Bridge, and no impacts are expected. The Columbus People's Trail is located adjacent to the proposed project area and is a publicly funded recreational feature, constituting a Section 4(f) resource. This new intersection construction project will not involve work to the trail. The Columbus People's Trail will not be impacted by this proposed project as right-of-way will not be taken from the trail, no construction activities will take place on the trail, and no temporary disruptions to its recreational use will occur. Therefore, no impacts are expected.

The Columbus Park Foundation owns land adjacent the south side of eastbound SR 46. This land is currently vacant and not used for recreational purposes and there are no plans to add such facilities.

Additionally, four identified archaeological sites (potential Section 4(f) resources) are located within the project area. None of these sites will require preserve-in-place commitments. FHWA Section 4(f) regulations except archaeological sites from Section 4(f) protection if the archaeological resource "is important chiefly because of what can be learned by data recovery and has minimal value for preservation in place" per 23 CFR 774.12(b)(1). This exception from Section 4(f) is only effective if the "official(s) with jurisdiction over the Section 4(f) resource have been consulted and have not objected" per

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23 CFR 774.12(b)(2). Most archaeological resources qualify for this exception.

Commitments to mitigate adverse impacts to archaeological resources that are determined eligible for the NRHP as a result of the SR 11 and SR 46 New Interchange Construction project have been developed through a MOA between FHWA, SHPO, ACHP, INDOT, and the City of Columbus.

On February 14, 2019, a draft MOA was sent for review and comment to the SHPO and all CPs. Comments were received from SHPO on March 18, 2019. After revisions to the MOA, the final version was circulated to the SHPO and CPs on April 4, 2019. The final MOA is currently undergoing the signature process and the final signed MOA will be included in this CE document once all signatures are obtained. All documentation referenced herein is provided in Appendix D.

An early coordination letter was sent to the Columbus Parks and Recreation Department on November 30, 2017. The Columbus Parks and Recreation Department did not respond to the early coordination letter.

Section 6(f) Involvement

Presence

Use

Section 6(f) Property

Yes

No

Discuss proposed alternatives that satisfy the requirements of Section 6(f). Discuss any Section 6(f) involvement.

Remarks:

The U.S. Land and Water Conservation Fund Act of 1965 established the Land and Water Conservation Fund (LWCF), which was created to preserve, develop, and assure accessibility to outdoor recreation resources. Section 6(f) of this Act prohibits conversion of lands purchased with LWCF monies to a non-recreation use.

A review of the 6(f) properties on the Land and Water Conservation Fund (LWCF) website at <https://www.lwcfcoalition.com/tools> revealed a total of 5 properties in Bartholomew County (Appendix K, K-1). None of these properties are located within or adjacent to the project area. Therefore, there will be no impacts to Section 6(f) resources as a result of this project.

SECTION E – Air Quality

Air Quality

Conformity Status of the Project

Is the project in an air quality non-attainment or maintenance area?

Yes

No

If YES, then:

Is the project in the most current MPO TIP?

Is the project exempt from conformity?

If the project is NOT exempt from conformity, then:

Is the project in the Transportation Plan (TP)?

Is a hot spot analysis required (CO/PM)?

Level of MSAT Analysis required?

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Level 1a Level 1b Level 2 Level 3 Level 4 Level 5

STIP/TIP:

This project is included in Fiscal Year (FY) 2018-2021 Statewide Transportation Improvement Program (STIP) (Appendix H, H-1) and the Columbus Area Metropolitan Planning Organization Transportation Improvement Program (CAMPO TIP) (Appendix H, H-4).

Attainment Status

Bartholomew County is currently in attainment for all criteria pollutants. Therefore, the conformity procedures of 40 CFR Part 93 do not apply.

MSAT

The purpose of this project is to increase operational efficiency and traffic mobility while reducing anticipated traffic delays and congestion caused by the L&I railroad crossing and the current SR 46 / SR 11 at-grade intersection configuration by constructing a grade separating structure to carry SR 46 over the rail corridor and SR 11, while reconfiguring the intersection to the south to provide for free-flow operations. This project has been determined to generate minimal air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special mobile source air toxic (MSAT) concerns. As such, this project will not result in changes in traffic volumes, vehicles mix, basic project location, or any other factor that would cause a meaningful increase in MSAT impacts of the project from that of the no-build alternative.

Moreover, Environmental Protection Agency (EPA) regulations for vehicles engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with EPA's MOVE2014 model forecasts a combined reduction of over 90 percent in the total annual emissions rate for the priority MSAT from 2010 to 2050 while vehicle-miles of travel are projected to increase by over 45 percent. This will both reduce the background level of MSAT as well as the possibility of even minor MSAT emissions from this project.

SECTION F - NOISE

Noise Is a noise analysis required in accordance with FHWA regulations and INDOT's traffic noise policy? Yes No

	No	Yes/ Date
ES Review of Noise Analysis	<input type="checkbox"/>	<input checked="" type="checkbox"/> August 14, 2018

Remarks: The preferred alternative qualifies as a Type I project involving a substantial vertical alteration "that removes shielding, and therefore exposes the line-of-sight between the receptors and the traffic noise source". As a result, a Traffic Noise Impact Analysis was required per 23 CFR 772 and the current INDOT *Traffic Noise Analysis Procedure*. Metric Environmental, LLC completed a Noise Analysis for the project (Appendix I, I-1 to I-60). INDOT issued technical sufficiency for the Noise Analysis on August 14, 2018 (Appendix I, I-61 to I-62).

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Traffic noise was modeled at thirteen (13) receptors identified within the project area. One (1) residential receptor, eight (8) receptors associated with the Columbus People Trail, and four (4) non-noise sensitive commercial/industrial receptors were identified within the project area. Traffic noise levels were evaluated for the existing (2017) and projected (2041) traffic volumes for the No-Build and Preferred Alternatives. Train noise contributes to the overall noise environment in the study area. FTA methods were used to estimate train noise at each receptor location and the traffic noise level was adjusted accordingly. The existing and future FHWA Traffic Noise Model noise levels for the 13 identified receptors, as well as their noise Abatement Categories (NAC), FTA train noise adjustments, adjusted noise levels and impact determinations are provided in the following table. Three impacted receptors were identified, all located along the Columbus People Trail.

Existing and Predicted Noise Level Distributions

Receptor Number	NAC Category	Predicted Noise Level (dBA)						Difference (+/-) (dBA)	Impacted (Yes/ No)
		TNM Existing	FTA Adjustment*	Adjusted Existing	TNM Proposed	FTA Adjustment*	Adjusted Proposed		
1	B/ Residential (66 dBA)	51.7	+0.2	51.9	56.0	+0.1	56.1	+4.2	No
2	C/ Trail (66 dBA)	60.8	+0.0	60.8	64.9	+0.0	64.9	+4.1	No
3	C/ Trail (66 dBA)	57.6	+0.2	57.8	62.4	+0.1	62.5	+4.7	No
4	C/ Trail (66 dBA)	66.5	+0.1	66.6	63.6	+0.1	63.7	-2.8	No
5	C/ Trail (66 dBA)	61.4	+0.7	62.1	56.0	+2.2	58.2	-4.0	No
6	C/ Trail (66 dBA)	71.0	+0.3	71.3	54.6	+5.8	60.4	-10.8	No
7	C/ Trail (66 dBA)	69.2	+6.1	75.3	59.2	+15.1	74.3	-1.1	Yes
8	C/ Trail (66 dBA)	68.4	+0.9	69.3	70.3	+0.6	70.9	+1.6	Yes
9	C/ Trail (66 dBA)	67.9	+0.8	68.7	69.2	+0.6	69.8	+1.1	Yes
10	F/ Commercial (Non-Noise Sensitive)	59.2	+15.1	74.3	64.8	+9.8	74.6	+0.3	N/A
11	F/ Commercial (Non-Noise Sensitive)	60.3	+9.4	69.7	65.6	+5.1	70.7	+1.1	N/A
12	F/ Industrial (Non-Noise Sensitive)	61.2	+6.9	68.1	66.8	+3.2	70.0	+1.9	N/A
13	F/ Industrial (Non-Noise Sensitive)	60.6	+5.8	66.4	66.2	+2.5	68.7	+2.3	N/A

Based on the studies thus far accomplished, the INDOT has not identified any locations where noise abatement is likely. Noise abatement at these locations is based upon preliminary design costs and design criteria. Noise abatement has been found to be feasible but not reasonable based on an abatement cost that exceeds \$30,000 per benefited receptor. The minimum barrier that would satisfy the noise reduction

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feasibility requirement and noise reduction design goal is 7,640 square feet in area and over \$100,000 per benefited receptor. The abatement measures were therefore not found to be reasonable. A reevaluation of the noise analysis will occur during final design. If during final design it has been determined that conditions have changed such that noise abatement is feasible and reasonable, the abatement measures might be provided. The final decision on the installation of any abatement measure(s) will be made upon the completion of the project's final design and the public involvement processes.

SECTION G – COMMUNITY IMPACTS

Regional, Community & Neighborhood Factors

- Will the proposed action comply with the local/regional development patterns for the area?
- Will the proposed action result in substantial impacts to community cohesion?
- Will the proposed action result in substantial impacts to local tax base or property values?
- Will construction activities impact community events (festivals, fairs, etc.)?
- Does the community have an approved transition plan?
If No, are steps being made to advance the community's transition plan?
- Does the project comply with the transition plan? (explain in the remarks box)

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Remarks: The preferred alternative is consistent with local land use plans developed by the City of Columbus. No negative impacts to community cohesion are anticipated. This project will not have any significant short or long-term economic impacts. The project will comply with the approved ADA transition plan for the City of Columbus, which does not require pedestrian facilities in the absence of a pedestrian route. This new interchange construction project will not create any new pedestrian routes, however, accessibility of the Columbus People Trail will be maintained throughout the duration of the project.

Indirect and Cumulative Impacts

Will the proposed action result in substantial indirect or cumulative impacts?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks: Indirect impacts are effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate. Cumulative impacts affect the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions.

There are no substantial indirect or cumulative effects resulting from the project. The proposed project addresses existing congestion and vehicular mobility concerns at the intersection of SR 46 and SR 11 that are projected to grow worse if not addressed. The project is not designed for and therefore will not induce growth beyond that reasonably expected based on current growth rates. It will not provide access to currently inaccessible areas that could experience changes in land use patterns. Incremental impacts to natural resources such as threatened and endangered species are addressed by the environmental commitments proposed for the project.

Yes No

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Public Facilities & Services

Will the proposed action result in substantial impacts on health and educational facilities, public and private utilities, emergency services, religious institutions, airports, public transportation or pedestrian and bicycle facilities? *Discuss how the maintenance of traffic will affect public facilities and services.*

Remarks: Based on a desktop review, site investigation on August 23, 2017 by Metric Environmental, the aerial map of the project area (Appendix B, B-2), and the RFI report (Appendix E), there are six public facilities located within 0.5 mile of the project area. The L&I railroad, the Columbus People's Trail, existing overhead electrical lines, two natural gas pipelines, and a petroleum well are located within or adjacent to the project area. The L&I railroad will experience a temporary disruption during the construction of the grade separating structure to ensure no debris or materials fall into the railway and obstruct train traffic.

The Columbus People's Trail will not be impacted by this proposed project as right-of-way will not be taken from the trail, no construction activities will take place on the trail, and no temporary disruptions to its recreational use will occur. The existing overhead electrical lines will be impacted by the proposed project. It is expected that these power lines will be relocated before project completion.

One of the natural gas pipelines is located within the project area and will likely be impacted by the project. It has been documented as a firm commitment that coordination with INDOT Utilities and Railroads will occur prior to project letting. Access to all adjacent properties will be maintained during construction.

The petroleum well will not be impacted by this proposed project as it is located outside of the project area, beyond the limits of construction.

Early Coordination:
 Early coordination letters were sent to the Columbus Parks and Recreation Department, the City of Columbus Engineer, and the Bartholomew County Engineer on November 30, 2017. An additional letter of coordination was sent to the IDNR Division of Oil and Gas on January 8, 2019. The Columbus Parks and Recreation Department did not respond to the early coordination letter. The City of Columbus Engineer did not respond to the early coordination letter. The Bartholomew County Engineer responded on December 5, 2017 agreeing that the project will have no adverse effect on Bartholomew County facilities and providing no recommendations (Appendix C, C-11). The IDNR Division of Oil and Gas did not respond to the early coordination letter. It is the responsibility of the project sponsor to notify school corporations and emergency services at least two weeks prior to any construction that would block or limit access.

Environmental Justice (EJ) (Presidential EO 12898)	Yes	No
During the development of the project were EJ issues identified?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Does the project require an EJ analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
If YES, then:		
Are any EJ populations located within the project area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Will the project result in adversely high or disproportionate impacts to EJ populations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Remarks: Under FHWA Order 6640.23A, FHWA and the INDOT, as a recipient of funding from FHWA, are responsible to ensure that their programs, policies, and activities do not have a disproportionately high and adverse effect on minority or low-income populations. Per

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the current INDOT Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent right-of-way. The project will require 50.089 acres of permanent right-of-way and 0.691 acre of temporary right-of-way with no relocations. Therefore, an EJ Analysis is required.

Potential EJ impacts are detected by locating minority and low-income populations relative to a reference population to determine if populations of EJ concern exists and whether there could be disproportionately high and adverse impacts to them. The reference population may be a county, city or town and is called the community of comparison (COC). In this project, the COC is the City of Columbus. The community that overlaps the project limits is called the affected community (AC). In this project, the AC includes Census Tracts 109 and 115. An AC has a population of concern for EJ if the population is more than 50% minority or low-income or if the low-income or minority population is 125% of the COC. Data from the 2012-2016 American Community Survey 5-Year Estimates was obtained from the US Census Bureau Website (<https://factfinder.census.gov/>) on September 20, 2018 by United Consulting. The data collected for minority and low-income populations within the AC are summarized in the table below:

Table: Minority and Low-Income Data (2016 US Census Bureau)			
	City of Columbus (COC)	Census Tract 115, Bartholomew County, Indiana (AC-1)	Census Tract 109, Bartholomew County, Indiana (AC-2)
Percent Minority	(20.4%)	(19.7%)	(24%)
125% of COC	(25.5 %)	AC < 125% COC	AC < 125% COC
EJ Population of Concern		(No)	(No)
Percent Low-Income	(11.9%)	(13.7%)	(3%)
125% of COC	(14.9%)	AC < 125% COC	AC < 125% COC
EJ Population of Concern		(No)	(No)

AC-1, Census Tract 115, has a percent minority of 19.7% which is below 50% and is below the 125% COC threshold of 25.5%. AC-2, Census Tract 109 has a percent minority of 24% which is below 50% and is below the 125% COC threshold of 25.5%.

AC-1, Census Tract 115 has a percent low-income of 13.7% which is below 50% and is below the 125% COC threshold of 14.9%. AC-2, Census Tract 109 has a percent low-income of 3% which is below 50% and is below the 125% COC threshold of 14.9%.

Conclusion:

The census data sheets, maps, and calculations can be found in Appendix J. There are no elevated populations of EJ-concern within the project area. Therefore, no further environmental justice analysis is warranted.

Relocation of People, Businesses or Farms

Will the proposed action result in the relocation of people, businesses or farms? Is a Business Information Survey (BIS) required?
 Is a Conceptual Stage Relocation Study (CSRS) required?
 Has utility relocation coordination been initiated for this project?

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Number of relocations: Residences: 0 Businesses: 0 Farms: 0 Other: 0

If a BIS or CSRS is required, discuss the results in the remarks box.

Remarks: The INDOT plans to construct a grade separation structure carrying SR 46 over SR 11 and the L&I railroad. The purpose of the proposed project is to reduce existing and anticipated future delays to traffic on SR 46 due to train activity at the L&I crossing and to reduce congestion and improve vehicular mobility at the SR46/SR11 intersection to acceptable levels (LOS of C or better). No relocations of people, businesses, or farms will take place as a result of this project.

SECTION H – HAZARDOUS MATERIALS & REGULATED SUBSTANCES

Documentation

Hazardous Materials & Regulated Substances (Mark all that apply)

Red Flag Investigation	<input checked="" type="checkbox"/>
Phase I Environmental Site Assessment (Phase I ESA)	<input type="checkbox"/>
Phase II Environmental Site Assessment (Phase II ESA)	<input type="checkbox"/>
Design/Specifications for Remediation required?	<input type="checkbox"/>

	No	Yes/ Date
ES Review of Investigations		X / January 19, 2018 and April 10, 2018.

Include a summary of findings for each investigation.

Remarks:

Based on a desktop review a RFI was completed on January 17, 2018 by United Consulting (Appendix E). INDOT's Site Assessment and Management (SAM) Unit reviewed the document and provided concurrence on January 19, 2018. One leaking underground storage tank (LUST) associated with the Kocelene Service Center #47, at 505 West Jonathan Moore Pike, Columbus, IN, 47201 (FID No. 4839), is located within the limits of the project area. Excavation is not expected to occur in this area; however, if contaminated soil and/or groundwater are encountered, proper handling and disposal of the contaminated soil and/or groundwater will be necessary.

One Superfund site is located adjacent to the project area. This Superfund site has specific limitations and an Environmental Restrictive Covenant (ERC) placed on the northern and southern extents of the property. These restrictions have been put in place to reduce exposure to the site through physical restrictions (fencing) and deed restrictions (including excavation limitations). Coordination with IDEM has resulted in a review of the existing ERC which is currently being evaluated by the INDOT, IDEM, US Environmental Protection Agency, and City of Columbus. Additionally, a Soils Mitigation Plan (SMP) was prepared to determine the extent of geotechnical investigation needed for the site. Once the SMP is approved by IDEM, the geotechnical investigation will take place and results of the investigation will provide direction in regards to construction operations and safeguards for working within the Superfund site. The project plans and specifications will be updated accordingly to account for the additional construction operations and safeguards and will be provided to IDEM for review prior to the Stage 3 plan submission. This action has been documented as a firm commitment within this CE document. An addendum to the approved RFI report was prepared by United Consulting. INDOT's SAM Unit reviewed the document and provided concurrence with the addendum on April 10, 2018. The RFI addendum was intended to supplement the original RFI report after a site visit by the project manager revealed monitoring wells on the Former Wischmeier

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Property. One additional state cleanup site is located within the 0.5 mile search radius. The state cleanup site, Former Wischmeier Nursery (State Cleanup Site # 0000655), located at the Chaille Veterinary Services, LLC, 240 Jonesville Road, Columbus, IN 47201, is located adjacent to the project area on the southwest. Ongoing groundwater monitoring will continue on the property for another quarter to determine if contamination remains on site. Excavation is not expected to occur in this area; however, if contaminated soil and/or groundwater are encountered, proper handling and disposal of the contaminated soil and/or groundwater will be necessary.

Recommendations from the RFI report and addendum have been documented as firm commitments within this CE document.

SECTION I – PERMITS CHECKLIST

Permits (mark all that apply)	<u>Likely Required</u>
Army Corps of Engineers (404/Section10 Permit)	
Individual Permit (IP)	<input type="checkbox"/>
Nationwide Permit (NWP)	<input type="checkbox"/>
Regional General Permit (RGP)	<input type="checkbox"/>
Pre-Construction Notification (PCN)	<input type="checkbox"/>
Other	<input type="checkbox"/>
Wetland Mitigation required	<input type="checkbox"/>
Stream Mitigation required	<input type="checkbox"/>
IDEM	
Section 401 WQC	<input type="checkbox"/>
Isolated Wetlands determination	<input type="checkbox"/>
Rule 5	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>
Wetland Mitigation required	<input type="checkbox"/>
Stream Mitigation required	<input type="checkbox"/>
IDNR	
Construction in a Floodway	<input checked="" type="checkbox"/>
Navigable Waterway Permit	<input type="checkbox"/>
Lake Preservation Permit	<input type="checkbox"/>
Other	<input type="checkbox"/>
Mitigation Required	<input type="checkbox"/>
US Coast Guard Section 9 Bridge Permit	
Others (Please discuss in the remarks box below)	
	<input type="checkbox"/>

Remarks: IDEM Rule 5 Permit: The project will disturb greater than one acre. Rule 5 administered through the Indiana Department of Environmental Management will apply to this project. Completion of this permit will be coordinated with IDEM.

IDNR Construction in a Floodway: The proposed project is located within the limits of the regulated floodway of Flatrock River. The proposed project will require a Construction in a Floodway Permit from the IDNR - Division of Water.

Applicable recommendations provided by IDNR DFW are included in the Environmental

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Commitments section of this CE document. If a Construction in a Floodway permit is found to be necessary, the conditions of the permit would be requirements of the project, and would supersede these recommendations.

It will be the responsibility of the project sponsor or designer on behalf of the project sponsor to coordinate with INDOT Ecology & Waterway Permitting Office to request a permits determination and to submit all applicable permits prior to construction.

SECTION J- ENVIRONMENTAL COMMITMENTS

The following information should be provided below: List all commitments, name of agency/organization requesting the commitment(s), and indicating which are firm and which are for further consideration. The commitments should be numbered.

- Remarks: **FIRM:**
1. If the scope of work or permanent or temporary right-of-way amounts change, the INDOT Environmental Services Division (ESD) and the INDOT District Environmental Section will be contacted immediately. (INDOT)
 2. It is the responsibility of the designer to coordinate with the INDOT Ecology & Waterway Permitting Office to request a permits determination and to submit all applicable permits prior to construction. (INDOT)
 3. The project sponsor will be responsible for contacting school districts and emergency services at least 2 weeks prior to construction. (INDOT)
 4. Access will be provided to adjacent businesses and residences during construction. (INDOT)
 5. If a spill occurs, or contaminated soils or water are encountered during construction, appropriate Personal Protective Equipment (PPE) should be used. Contaminated materials will need to be properly handled by the trained personnel and disposed in accordance with current regulations. IDEM should be notified through the spill line at (888) 233-7745 within 24 hours of discovery of contamination from a Leaking Underground Storage Tank and 2 hours from a spill. (IDEM)
 6. If any archaeological artifacts or human remains are uncovered during construction, federal law and regulations (16 USC 470, et seq.; 36 CFR 800.11, et al.) and State Law (IC 14-21-1) require that work must stop immediately and that the discovery must be reported to the Division of Historic Preservation and Archaeology in the Indiana Department of Natural Resources within 2 business days. If the remains are determined to be Native American, FHWA will notify the appropriate federally recognized Indian Tribes. Work at the site shall not resume until a plan for the treatment of human remains is developed and approved in consultation with SHPO and any appropriate consulting parties. The plan will comply with IC 14-21-1, 312 AIAC 22, and the current Guidebook for Indiana Historic Sites and Structures Inventory – Archaeological Sites, and all other appropriate federal and state guidelines, statues, rules, and regulations. (IDNR DHPA)
 7. The proposed project will adhere to all applicable parts of the City of Columbus'

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- Wellhead Protection Management Plan. (Columbus City Utilities)
8. Per the Columbus City Utilities Wellhead Protection Area Plan, dry wells will not be drilled and infiltration ponds will not be constructed within the wellhead protection area. (Columbus City Utilities)
 9. General AMM 1: Ensure all operators, employees, and contractors working in areas of known or presumed bat habitat are aware of all FHWA environmental commitments, including all applicable AMMs. (USFWS)
 10. Tree Removal AMM 3: Ensure tree removal is limited to that specified in project plans. Install bright orange flagging/fencing prior to any tree clearing to ensure contractors stay within clearing limits. Ensure that contractors understand the clearing limits and how they are marked in the field. (USFWS)
 11. Tree Removal AMM 5: Avoid conducting tree removal within documented Indiana bat roosting/foraging habitat or travel corridors from May 1-July 31. (USFWS, IDNR DFW)
 12. Tree Removal AMM 6: Minimize tree removal within suitable Indiana bat habitat (no documented habitat) from May 1-July 31 in the following manner: limit clearing such that all trees can be visually assessed; conduct visual emergence surveys if trees are greater than or equal to 9 inches diameter at breast height (dbh); if trees are less than 9 inches dbh, no emergence survey required. (USFWS)
 13. Tree Removal AMM 7: Avoid removing documented NLEB maternity roosts and trees within 150 feet of those roosts from June 1-July 31. (USFWS)
 14. Contractors must take care when handling dead or injured bats (regardless of species), and any other federally listed species that are found at the Project site in order to preserve biological material and protect the handler from exposure to diseases, such as rabies. Project personnel are responsible for ensuring that any evidence about determining the cause of death or injury is not unnecessarily disturbed. Reporting the discovery of dead or injured listed species is required in all cases to enable the Service to determine whether the level of incidental take exempted by the BO is exceeded, and to ensure that the terms and conditions are appropriate and effective. Parties finding a dead, injured, or sick specimen of any bat (regardless of species), or other endangered or threatened species, must promptly notify the USFWS Bloomington Field Office, call (812) 334-4261. (USFWS)
 15. Do not cut any trees suitable for Indiana bat or Northern Long-eared bat roosting (greater than 3 inches dbh, living or dead, with loose hanging bark, or with cracks, crevices, or cavities) from April 1 through September 30. (IDNR DFW)
 16. All structures adjacent the project area will be re-inspected by an environmental professional, who has completed INDOT's 'Bat Investigations for Field Personnel' training, within the 2 year period and if any signs of bats are seen or heard at the structures INDOT will be notified immediately. (INDOT)
 17. A "Reinitiation Notice" is required if: more than 0.07 acre of trees are to be cleared; the

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amount or extent of incidental take of Indiana bat is exceeded; new information about listed species is encountered; new species is listed or critical habitat designated that the project may affect; the project is modified in a manner that causes an effect to the listed species; or new information that reveals that the project may affect listed species or critical habitat in a manner not considered in the BO or the project information. (USFWS)

18. The INDOT Project Manager will assure that \$1,300 of Preliminary Engineering funds will be allocated to the Range-wide In-lieu Fee Program, administered by The Conservation Fund, to resolve formal consultation under the Range-wide Programmatic Agreement. Payment shall be made at Ready for Contracts (RFC). (USFWS)

19. Lighting AMM 1: Direct temporary lighting away from suitable habitat during active season. (USFWS)

20. Lighting AMM 2: When installing new or replacing existing permanent lights, use downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting); or for those transportation agencies using the BUG system developed by the Illuminating Engineering Society, the goal is to be as close to 0 for all three ratings with a priority of "uplight" of 0 and "backlight" as low as practicable. (USFWS)

21. One leaking underground storage tank (LUST) associated with the Kocelene Service Center #47, at 505 West Jonathan Moore Pike, Columbus, IN, 47201 (FID No. 4839), is located within the limits of the project area. Excavation is not expected to occur in this area; however, if contaminated soil and/or groundwater are encountered, proper handling and disposal of the contaminated soil and/or groundwater will be necessary. (INDOT SAM)

22. The project plans and specifications will be updated according to results from the geotechnical investigation of the Superfund site (Old Columbus Landfill) to account for additional construction operations and safeguards and will be provided to IDEM for review prior to the Stage 3 plan submission. Additional commitments related to this Superfund site will be added as coordination with IDEM is completed. (INDOT SAM)

23. One additional state cleanup site is located within the 0.5 mile search radius. The state cleanup site, Former Wischmeier Nursery (State Cleanup Site # 0000655), located at the Chaille Veterinary Services, LLC, 240 Jonesville Road, Columbus, IN 47201, is located adjacent to the project area to the southwest. Ongoing groundwater monitoring will continue on the property for another quarter to determine if contamination remains on site. Excavation is not expected to occur in this area; however, if contaminated soil and/or groundwater are encountered, proper handling and disposal of the contaminated soil and/or groundwater will be necessary. (INDOT SAM)

24. Accessibility to the Columbus People Trail will be maintained throughout the duration of the project. (City of Columbus)

25. The City of Columbus Planning Department will need to review this documentation prior to the commencement of construction activities to ensure compliance with the floodplain regulations. (City of Columbus)

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26. Educate Columbus, Bartholomew County Commissioners, and INDOT officials about sensitive wellhead protection areas where chemical application could be minimized. (Columbus City Utilities)

27. Request that the City investigate restricting the transport of hazardous cargo on 25th Street within 1 year TOT of the Lincoln Park Well Field, except for shipments whose destinations are located within the WHPA. (Columbus City Utilities)

28. Request that the City have discussions with INDOT officials about the possibility of diverting hazardous cargo from SR 11 within 1 year TOT at the Fairgrounds Well Field to Interstate 65. (Columbus City Utilities)

29. Coordination with INDOT Utilities and Railroads will occur prior to project letting. (INDOT)

30. MOA: FHWA, in coordination with INDOT, shall ensure that work carried out pursuant to the MOA between FHWA, SHPO, INDOT, and the Bartholomew County Commissioners, shall be done by, or under the direct supervision of, professionals who meet the Secretary of the Interior's Professional Qualification Standards, as amended and annotated, at http://www.nps.gov/history/local-law/arch_stnds_9.htm ("qualified professional"). The FHWA and INDOT shall ensure that consultants retained for services pursuant to the MOA meet these standards. (IDNR, DHPA-SHPO)

31. MOA: Archaeological Site 12B1024: The Phase Ia archaeological reconnaissance identified site 12B1024, which was recommended as potentially eligible for inclusion on the NRHP. If avoidance is not possible, then before commencing construction activities within a segment of this undertaking that could affect this site, FHWA shall ensure that a qualified professional archaeologist prepare and submit a work plan authorization request for Phase II archaeological investigations to the Indiana Division of Historic Preservation and Archaeology ("DHPA") for review and approval pursuant to IC 12-21-1-25 prior to the commencement of Phase II investigations. (IDNR, DHPA-SHPO)

32. MOA: Archaeological Site 12B1024: After the approval of the Phase II work plan authorization request, FHWA shall ensure Phase II testing to determine the eligibility of site 12B1024 for listing in the NRHP. (IDNR, DHPA-SHPO)

33. MOA: Archaeological Site 12B1024: A report of Phase II archaeological investigations shall be provided to the DHPA prior to any proposal of Phase III investigations. (IDNR, DHPA-SHPO)

34. MOA: Archaeological Site 12B1024: If site 12B1024 is determined eligible for inclusion in the NRHP, FHWA shall ensure that a work plan authorization is submitted by a qualified professional for Phase III archaeological investigations for review and approval by the DHPA pursuant to IC-14-21-1-25 prior to commencement of Phase III investigations. (IDNR, DHPA-SHPO)

35. MOA: Archaeological Site 12B1024: After approval of the Phase III work plan authorization request, FHWA or its representatives shall conduct Phase III data recovery of site 12B1024 to mitigate for impacts to the site from this undertaking. (IDNR, DHPA-

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36. MOA: Archaeological Sites 12B0936 and 12B1023: FHWA shall avoid any ground disturbing project activities in the area of archaeological site 12B1023 that lies outside the project area depicted in "Attachment B" of the MOA (Appendix D, D-143). (IDNR, DHPA-SHPO)

37. MOA: Archaeological Sites 12B0936 and 12B1023: FHWA shall avoid any ground disturbing project activities that would reach a depth greater than fifteen (15) inches within the portions of the archaeological sites 12B0936 and 12B1023 that lie within the Archaeology APE, as depicted in "Attachment B" of the MOA (Appendix D, D-143). (IDNR, DHPA-SHPO)

38. MOA: Archaeological Sites 12B0936 and 12B1023: If avoidance of archaeological sites 12B0936 and 12B01023 is not feasible, FHWA shall ensure that a qualified professional submit a plan for subsurface archaeological investigations to determine the eligibility of the sites for listing in the NRHP to the DHPA for review and comment before commencing with ground disturbing activities. (IDNR, DHPA-SHPO)

39. MOA: FHWA shall clearly mark and avoid any ground disturbing project activities within portions of archaeological site 12B1517 that lie outside the Archaeology APE depicted in "Attachment B" of the MOA (Appendix D, D-143) or, if avoidance is not feasible, FHWA will submit a plan for subsurface archaeological investigations to determine eligibility for listing in the NRHP to the DHPA for review and comment before commencing with ground disturbing activities within those archaeological sites. (IDNR, DHPA-SHPO)

40. MOA: No less than 10 percent of any site within the project limits shall be tested during a Phase II investigation; Phase III data recovery, if required, shall excavate an additional 25 percent of the site area within the project limits as mitigation. (IDNR, DHPA-SHPO)

41. MOA: A report of investigations detailing all archaeological investigations shall be provided to Indiana DHPA/SHPO for review and comment within one (1) year after fieldwork or any Phase of investigation has ended. (IDNR, DHPA-SHPO)

FOR FUTHER CONSIDERATION:

42. Any work in a wetland area within existing right-of-way or in a borrow/waste area is prohibited unless specifically allowed in the US Army Corps of Engineers or IDEM permit. (INDOT)

43. Do not clear trees or understory vegetation outside the construction zone boundaries. (USFWS)

44. Restrict below low-water work in streams to placement of culverts, piers, pilings, and/or footings, shaping of the spill slopes around the bridge abutments and placement of riprap. Culverts should span the active stream channel, should be either 3-sided or open-arch culvert, and be installed where practicable on an essentially flat slope. When an

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open-bottomed culvert or arch is used in a stream, which has a good natural bottom substrate, such as gravel, cobbles, and boulders, the existing substrate should be left undisturbed beneath the culvert to provide natural habitat for the aquatic community. (USFWS)

45. Restrict channel work and vegetation clearing to the minimum necessary for installation of the stream crossing structure. (USFWS)

46. Minimize the extent of hard armor (riprap) in bank stabilization by using bioengineering techniques whenever possible. If riprap is utilized for bank stabilization, extend it below low-water elevation to provide aquatic habitat. (USFWS)

47. Implement temporary erosion and sediment control methods within areas of disturbed soil. All disturbed soil areas upon project completion will be vegetated following INDOT's standard specifications. (USFWS)

48. Avoid all work within the inundated part of the stream channel (in perennial streams and larger intermittent streams) during the fish spawning season (April 1 through June 30), except for work within sealed structures such as caissons or cofferdams that were installed prior to the spawning season. No equipment shall be operated below Ordinary High Water Mark during this time unless the machinery is within the caissons or on the cofferdams. (USFWS)

49. Evaluate wildlife crossings under bridge/culverts projects in appropriate situations. Suitable crossings include flat areas below bridge abutments with suitable ground cover, high water shelves in culverts, amphibian tunnels, and diversion fencing. (USFWS)

50. Revegetate all bare and disturbed areas in the floodway with a mixture of native grasses, sedges, and wildflowers as soon as possible upon completion. Do not use any varieties of Tall Fescue or other non-native plants (e.g. crown-vetch). (IDNR DFW)

51. Minimize and contain within the project limits inchannel disturbance and the clearing of trees and brush. (IDNR DFW)

52. Do not work in the waterway from April 1 through June 30 without the prior written approval of the Division of Fish and Wildlife. (IDNR DFW)

53. Post "Do Not Mow or Spray" signs along the right-of-way. (IDNR DFW)

54. Appropriately designed measures for controlling erosion and sediment must be implemented to prevent sediment from entering the stream or leaving the construction site; maintain these measures until construction is complete and all disturbed areas are stabilized. (IDNR DFW)

55. Seed and protect all disturbed slopes that are 3:1 or steeper with heavy-duty, biodegradable-fiber, or net-free erosion control blankets (follow manufacturer's recommendations for selection and installation); seed and apply mulch on all other disturbed areas. (IDNR DFW)

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56. IDEM recommends that appropriate structures and techniques be utilized, both during the construction phase and after completion of the project, to minimize the impacts associated with storm water runoff. (IDEM)
57. The use of cutback asphalt or asphalt emulsion containing more than seven percent (7%) oil distillate is prohibited during the months of April through October. (IDEM)
58. Stabilize all disturbed areas upon completion of land disturbing activities. (IDEM)
59. A stable construction site access shall be provided at all points of construction traffic ingress and egress to the project site. (IDEM)
60. Reasonable precautions must be taken to minimize fugitive dust emissions from construction and demolition activities. Dirt tracked onto paved roads from unpaved areas should be minimized. (IDEM)
61. Public or private roadways shall be kept cleared of accumulated sediment that is a result of run-off tracking. (IDEM)
62. Wastes and unused building materials shall be managed and disposed of in accordance with all applicable statues and regulations. (IDEM)
63. All facilities slated for renovation or demolition must be inspected by an Indiana-licensed asbestos inspector prior to renovation or demolition activities. If regulated asbestos-containing material (RACM) that may become airborne is found, demolition, renovation, or asbestos removal activities must be performed in accordance with notification and emission control requirements. (IDEM)

SECTION K- EARLY COORDINATION

Please list the date coordination was sent and all agencies that were contacted as a part of the development of this Environmental Study. Also, include the date of their response or indicate that no response was received. INDOT and FHWA are automatically considered early coordination participants and should only be listed if a response is received.

Remarks:

Early Coordination			
Recipients	Date Sent	Response	Date Received
Natural Resources Conservation Service	November 30, 2017	Yes	September 20, 2018
Indiana Department of Environmental Management	November 30, 2017	Yes	September 6, 2018
U.S. Fish and Wildlife Service	November 30, 2017	Yes	December 4, 2017
U.S. Army Corps of Engineers	November 30, 2017	No	N/A
Indiana Department of Natural Resources – Division of Water	November 30, 2017	Yes	December 29, 2017
Indiana Department of Environmental Management – Groundwater Section	November 30, 2017	Yes	December 4, 2017
INDOT Seymour District	November 30,	No	N/A

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	2017		
INDOT Public Involvement	November 30, 2017	Yes	December 19, 2017
INDOT Project Manager, Joe Bell (Greg Prince is now the INDOT PM)	November 30, 2017	No	N/A
CMT Project Manager	November 16, 2017	Yes	November 16, 2017
Indiana Geological Survey	November 30, 2017	Yes	September 11, 2018
Federal Highway Administration	November 30, 2017	No	N/A
Mayor, City of Columbus	November 30, 2017	No	N/A
Engineer, City of Columbus	November 30, 2017	No	N/A
Engineer, Bartholomew County	November 30, 2017	Yes	December 5, 2017
Columbus Area Metropolitan Planning Organization (CAMPO)	November 30, 2017	No	N/A
National Park Service	November 30, 2017	No	N/A
Housing and Urban Development – Chicago Regional Office	November 30, 2017	No	N/A
Columbus City Council	November 30, 2017	No	N/A
Columbus Parks and Recreation Department	November 30, 2017	No	N/A
Floodplain Manager, Bartholomew County	October 8, 2018	Yes	October 31, 2018
Indiana Department of Natural Resources – Division of Oil and Gas	January 8, 2019	No	N/A

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Appendix A
INDOT Supporting Documentation

Categorical Exclusion Level Thresholds

	PCE	Level 1	Level 2	Level 3	Level 4 ¹
Section 106	Falls within guidelines of Minor Projects PA	"No Historic Properties Affected"	"No Adverse Effect"	-	"Adverse Effect" Or Historic Bridge involvement ²
Stream Impacts	No construction in waterways or water bodies	< 300 linear feet of stream impacts	≥ 300 linear feet of stream impacts	-	Individual 404 Permit
Wetland Impacts	No adverse impacts to wetlands	< 0.1 acre	-	< 1 acre	≥ 1 acre
Right-of-way ³	Property acquisition for preservation only or none	< 0.5 acre	≥ 0.5 acre	-	-
Relocations	None	-	-	< 5	≥ 5
Threatened/Endangered Species (Species Specific Programmatic for Indiana bat & northern long eared bat)	"No Effect", "Not likely to Adversely Affect" (Without AMMs ⁴ or with AMMs required for all projects ⁵)	"Not likely to Adversely Affect" (With any other AMMs)	-	"Likely to Adversely Affect"	Project does not fall under Species Specific Programmatic
Threatened/Endangered Species (Any other species)	Falls within guidelines of USFWS 2013 Interim Policy	"No Effect", "Not likely to Adversely Affect"	-	-	"Likely to Adversely Affect"
Environmental Justice	No disproportionately high and adverse impacts	-	-	-	Potential ⁶
Sole Source Aquifer	Detailed Assessment Not Required	-	-	-	Detailed Assessment
Floodplain	No Substantial Impacts	-	-	-	Substantial Impacts
Coastal Zone Consistency	Consistent	-	-	-	Not Consistent
National Wild and Scenic River	Not Present	-	-	-	Present
New Alignment	None	-	-	-	Any
Section 4(f) Impacts	None	-	-	-	Any
Section 6(f) Impacts	None	-	-	-	Any
Added Through Lane	None	-	-	-	Any
Permanent Traffic Alteration	None	-	-	-	Any
Coast Guard Permit	None	-	-	-	Any
Noise Analysis Required	No	-	-	-	Yes
Air Quality Analysis Required	No	-	-	-	Yes ⁷
Approval Level	Concurrence by INDOT District Environmental or Environmental Services	Yes	Yes	Yes Yes	Yes Yes Yes
<ul style="list-style-type: none"> • District Env. Supervisor • Env. Services Division • FHWA 					

¹Coordinate with INDOT Environmental Services. INDOT will then coordinate with the appropriate FHWA Environmental Specialist.

²Any involvement with a bridge processed under the Historic Bridge Programmatic Agreement.

³Permanent and/or temporary right-of-way.

⁴AMMs = Avoidance and Mitigation Measures.

⁵AMMs determined by the IPAC decision key to be needed that are listed in the USFWS *User's Guide for the Range-wide Programmatic Consultation for Indiana bat and Northern long-eared bat* as "required for all projects".

⁶Potential for causing a disproportionately high and adverse impact.

⁷Hot Spot Analysis and/or MSAT Quantitative Emission Analysis.

*Substantial public or agency controversy may require a higher-level NEPA document.