

CELRL-OP-FN
Application LRL-2010-466

MEMORANDUM FOR RECORD

SUBJECT: Department of the Army Environmental Assessment and Statement of Finding for Above-Numbered Permit Application

This document constitutes the Environmental Assessment, 404(b)(1) Guidelines Evaluation, Public Interest Review, and Statement of Findings.

1. Proposed project.
 - a. Application as described in the public notice.

APPLICANT: Indiana Department of Transportation
100 North Senate Avenue, Room N642
Indianapolis, Indiana 46204

AGENT: Bernardin Lochmueller and Associates, Inc.
6200 Vogel Road
Evansville, Indiana 47715

LOCATION: On the Patoka River, the East Fork White River and their tributaries in Pike and Daviess Counties, Indiana.

Latitude: 38.3370
Longitude: -87.3980
7.5 Minute Quads: Francisco, Oakland City, Petersburg, Winslow, Sandy Hook, Montgomery, and Washington, Indiana

PURPOSE: To construct stream crossings on Section 2 of the proposed Evansville to Indianapolis extension of Interstate 69.

PROJECT BACKGROUND: The proposed construction of Section 2 of Interstate 69 would include forty crossings of "waters of the U.S." In a letter dated July 27, 2010, the Corps of Engineers verified that eight of these crossings, which impacted a total of 1,350 linear feet of stream and 0.01 acre of wetland, were eligible for Indiana Regional Permit (RGP) No. 1 without further notification. Eighteen more crossings, which impacted a total of 12,170 linear feet of stream and 1.83 acres of wetland, are currently being evaluated for their eligibility under RGP No. 1 with special conditions. The remaining fourteen crossings have proposed impacts that exceed those allowed by RGP No. 1 and are being processed as a standard permit.

DESCRIPTION OF WORK: The applicant proposes to discharge 6,432 cubic yards (cys) of fill material below the Ordinary Highway Water Mark (OHWM) of 25,075 linear feet of East Fork Keg Creek, Allen Lateral, Buck Creek, Hurricane Creek, South Fork Patoka River, Patoka River, Flat Creek, Prides Creek, Mud Creek, Veale

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Creek, Hurricane Branch, unnamed tributaries to East Fork Keg Creek, Buck Creek, Hurricane Creek, South Fork Patoka River, Patoka River, Flat Creek, Prides Creek, Mud Creek, Lick Creek, East Fork White River, Jackson Pond, Veale Creek, and Hurricane Branch. In addition, 638,370 cys of fill material would be discharged into 16.41 acres of open water and emergent, scrub-shrub, and forested wetlands to construct fourteen crossings of Section 2 of the Interstate 69 extension. The road would start at State Route 64 near Oakland City in Gibson County and continue for approximately 29 miles to U.S. Route 50 near Washington, Daviess County, Indiana. The fill material would consist of clean earthen fill, limestone riprap, and concrete.

AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES: Impacts to streams and wetlands were unavoidable considering that the proposed project involves constructing 29 miles of a new 4-lane interstate.

The applicant prepared a Final Environmental Impact Statement which considered impacts from two different alignments. The preferred alternative for the entire 29-mile corridor had fewer impacts to streams and wetlands. Impacts to streams and wetlands were avoided and minimized to the greatest extent possible.

Mitigation would be required to compensate the proposed impacts to the streams and wetlands located on the site. The applicant proposes to create 29,425 linear feet of stream with forested riparian corridor, 11.32 acres of emergent, 4.23 acres of scrub-shrub, and 30.99 acres of forested wetlands as mitigation for the entire Section 2, including the proposed crossings covered in this public notice. The mitigation would be constructed at four separate sites. The Corn mitigation site, a 170.0-acre site in Pike County, and the Purcell mitigation site, a 147.3-acre site in Daviess County, are both located within the Lower East Fork White River 8-digit HUC watershed (05120208). The Cooper/Buck mitigation site, a 20-acre site in Gibson County, is located in the Patoka River 8-digit HUC watershed (05120209). The Cornelius mitigation site, a 355-acre site in Greene County, is located within the Lower White 8-digit HUC watershed (05120202). The proposed impacts for Section 2 would occur in these three watersheds.

b. Additional information not included in Public Notice:

Overall Project Purpose: To construct 14 stream crossings to facilitate construction of Section 2 of the proposed Evansville to Indianapolis extension of Interstate 69. The National Interstate 69 Project is needed to facilitate interstate and international movement of freight through the Interstate 69 corridor. The construction of Section 2 would advance the overall goals of the Interstate 69 project, increase personal accessibility for area residents, improve traffic safety, and support local economic development initiatives.

Water Dependency Determination: The construction of wetland and stream crossings is a water dependent activity. A crossing, by its very nature, is required to be in proximity to or sited within the streams and associated wetlands it is crossing.

MITIGATION MEASURES: For the impacts from the fourteen crossings covered in this Memorandum, the creation or restoration of 25,075 linear feet of stream, 7.84 acres of emergent, 0.06 acre of scrub-shrub, and 28.65 acres of forested wetland would be provided out of the total Section 2 mitigation. In addition to the four proposed mitigation sites described above, 56.6 acres of wetlands (50.2 acres of forested and 6.4 acres of emergent) would be created or restored at the Bartley Mitigation site for use in contingency for any portions of the existing mitigation sites used for Section 2 that are not meeting their designated success criteria. The Bartley Mitigation Site property is located within the Patoka River watershed.

EXISTING CONDITIONS: In general, Section 2 would traverse an area that is mainly agricultural in nature with wooded areas dispersed throughout. The proposed crossings would be constructed on the Patoka River, tributaries to the Patoka and White Rivers, wetlands, and ponds.

Crossing 1 would be located in agricultural fields. The streams are channelized agricultural ditches with no riparian habitat.

Crossing 2 would be located in the Patoka National Wildlife Refuge and would impact the Patoka River, South Fork Patoka River, and forested wetlands. The streams and wetlands are surrounded by agricultural fields.

Crossing 3 would impact unnamed tributaries and wetlands that are located in a riparian corridor that is surrounded by agricultural fields.

Crossing 4 would be located in a mainly wooded area with some agricultural fields and adjacent residences. Most of the streams and the forested wetlands at Crossing 4 were located in riparian corridors. A few of the streams were located in agricultural fields.

Crossing 5 would be located in an upland wooded area. An agricultural field borders two of the streams, the remaining streams are in a wooded parcel.

Crossing 6 would be located in an area that is currently agricultural fields surrounded by woods. The crossing would impact two streams and a forested wetland located in the woods and a pond located in an agricultural field.

Crossing 7 would be located in an agricultural field. The streams are all channelized agricultural ditches with no riparian buffer. A scrub-shrub wetland is also in the impact area.

Crossing 8 would be located in an area that is mainly agricultural. The streams have a wooded riparian corridor.

Crossing 9 would be located in a forested wetland that is surrounded by agricultural fields.

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Crossing 10 would be located in an area that has both agricultural fields and woods. A few streams have riparian corridors, most are located in pastures or agricultural fields.

Crossing 11 would be located in an area with agricultural fields and woods. The streams and ponds are located within wooded corridors with some agricultural fields interspersed.

Crossing 12 would be located in an agricultural field with some wooded corridors. Crossing 12 would impact an agricultural ditch and a stream located in a riparian corridor.

Crossing 13 would be located in an area that is currently agricultural fields with some areas of woods. Crossing 13 would impact a stream that is currently a channelized roadside ditch bordered by an agricultural field and a stream with some wooded riparian habitat surrounded by agricultural fields.

Crossing 14 would be located in an area of agricultural fields with wooded corridors and would impact two streams within a forested wetland and a stream that is channelized ditch surrounded by agricultural fields.

2. Authority

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403).
- Section 404 of the Clean Water Act (33 U.S.C. §1344).
- Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

3. Scope of Analysis.

a. NEPA. *(Write an explanation of rationale in each section, as appropriate)*

(1) Factors.

- (i) Whether or not the regulated activity comprises "merely a link" in a corridor type project.

The proposed construction of Section 2 of the Interstate 69 Evansville to Indianapolis extension would include forty separate and complete crossings of "waters of the U.S." Each crossing would be a link in a corridor project.

- (ii) Whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity.

The proposed crossings are part of a proposed Interstate highway. The alignment of the highway in the immediate vicinity of the crossings does affect the location and configuration of the crossings. The road in the immediate vicinity of the regulated activity was designed to avoid and minimize impacts to "waters of the U.S." to the greatest extent possible.

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- (iii) The extent to which the entire project will be within the Corps jurisdiction. The portion of the project that is within the Corps' jurisdiction will include jurisdictional "waters of the U.S." that would be filled, directly or indirectly, by the construction of each separate and complete crossing and the immediate adjacent riparian corridor. The CWA does not provide the Corps legal authority to regulate interstate highway projects, such as the proposed Interstate 69 Evansville to Indianapolis extension, beyond the limits of the "waters of the U.S." Overall responsibility for the construction and approval of interstate highway projects is the responsibility of the Federal Highways Administration (FHWA).

In a letter dated July 27, 2010, the Corps of Engineers verified that eight of the forty crossings, which impacted a total of 1,350 linear feet of stream and 0.01 acre of wetland, were eligible for Indiana Regional Permit (RGP) No. 1 without further notification. In a letter dated September 29, 2010, the Corps of Engineers verified that eighteen more crossings, which impacted a total of 12,170 linear feet of stream and 1.83 acres of wetland, were eligible under RGP No. 1 with special conditions. The remaining fourteen crossings have proposed impacts that exceed those allowed by RGP No. 1 and are being processed as a standard permit.

- (iv) The extent of cumulative Federal control and responsibility. The project is a federal project. As stated above, overall responsibility for the construction and approval of interstate highway projects is the responsibility of the Federal Highways Administration (FHWA). FHWA has conducted a tiered NEPA review process for the proposed Interstate 69 Evansville to Indianapolis extension. As part of this tiered NEPA review process FHWA: prepared a Tier I Environmental Impact Statement (EIS) that evaluated whether or not to build the proposed Evansville to Indianapolis extension and alternative corridors for the proposed extension; issued a Record of Decision (ROD) for the Tier I EIS that approved a build alternative, the Alternative 3C corridor; prepared a Tier II EIS for Section 2 of the proposed Interstate 69 extension that evaluated different alignments for Section 2 within the Alternative 3C corridor; and issued a ROD for the Tier II EIS approving the Refined Preferred Alternative, the alternative associated with the fourteen proposed crossings, for Section 2 of the Interstate 69 Evansville to Indianapolis extension.

- (2) Determined scope.
 Only within the footprint of the regulated activity within the delineated water.
 Over entire property. *Explain.*

b. NHPA "Permit Area".

- (1) Tests. Activities outside the waters of the United States, the location of which is determined by the location of each separate and complete crossing, are/are not included because all of the following tests are/are not satisfied: (box is checked if

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test is satisfied) Such activity would not occur but for the authorization of the work or structures within the waters of the United States; Such activity is integrally related to the work or structures to be authorized within waters of the United States (or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program); and Such activity is directly associated (first order impact) with the work or structures to be authorized. *Explain.* The location and configuration of some of the activities that would occur outside the "waters of the U.S." would be determined by the location and configuration of one of the stream crossings. As a result, these activities would meet all three tests; and therefore, they are considered in the NHPA "Permit Area."

Activities outside the waters of the United States the location of which is not determined by the location of each separate and complete crossing are/ are not included because all of the following tests are/ are not satisfied: (box is checked if test is satisfied) Such activity would not occur but for the authorization of the work or structures within the waters of the United States; Such activity is integrally related to the work or structures to be authorized within waters of the United States (or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program); and Such activity is directly associated (first order impact) with the work or structures to be authorized. *Explain.* The proposed crossings are part of a linear project. As such, the location and configuration of each separate and complete crossing would only determine the location and configuration of activities outside "waters of the U.S." that are in proximity to a crossing. Beyond a certain distance, the location and configuration of activities outside "waters of the U.S." may be modified without modifying the crossing. These activities would not meet all three tests; therefore, those activities are not considered in the NHPA "Permit Area."

- (2) Determined scope. *Describe.* The portion of the Right of Way (ROW) immediately adjacent to the crossing that encompasses the approaches of the crossing is within the Corps' NHPA "Permit Area." The configuration of this portion of the ROW typically is determined by the location of the crossing.

c. ESA "Action Area".

- (1) Action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.

Determined scope. *Describe.* The federal action for the purposes of this decision is the fourteen proposed crossings. The fourteen proposed crossings and the upland area around them that would be impacted directly or indirectly by the construction of the crossings are the ESA "Action Area." The FHWA has overall responsibility for construction of Section 2 of the proposed Interstate 69 extension. The areas directly and indirectly affected by the overall construction of Section 2 are within FHWA's "Action Area."

d. Public notice comments. NA

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- (1) The public also provided comments at public hearing, public meeting, and/or Explain.
- (2) Commenters and issues raised.

| Name | Issue |
|--|---|
| Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology | Crossing 2 may have demonstrable effects on the Patoka Bridges Historic District. |
| U.S. Environmental Protection Agency | Recommended additional performance standards for proposed stream mitigation. |
| Steven Meyer, Hoosier Environmental Council (HEC) | Objected to tiered NEPA approach; and to the impacts to Indiana bat habitat, the Patoka NWR, the East Fork White River, floodplains, recreation, and aesthetic values. Expressed concern about the sufficiency of FHWA's NEPA documentation, the quality of fill material, and the adequacy of mitigation for forest and wildlife impacts. Stated that impacts to streams and wetlands in project area could be avoided and that the Corps should complete independent analysis of alternative routes and evaluation of the least environmentally damaging practicable alternative. Requested public hearing. |
| Richard Riddle | Objected to filling "old" Patoka River channel. |

The letter received from each of these commenters is located in the administrative record.

- (3) Site was/ was not visited by the Corps to obtain information in addition to delineating jurisdiction. *Include dates and synopsis of information gathered if site was visited.* Site inspections of the proposed crossings were conducted on October 28, November 10, and December 1, 2010. In general, Section 2 would traverse an area that is mainly agricultural in nature with areas of woods dispersed throughout. The streams in Crossing 1 are channelized ditches completely surrounded by agricultural fields with no riparian habitat. The streams and wetlands in Crossing 2 are located in the Patoka National Wildlife Refuge, there are forested wetlands as well as the Patoka River and South Fork Patoka River. The streams and wetland are surrounded by agricultural fields. Crossing 3 would impact unnamed tributaries located in a riparian corridor that included wetland. The riparian corridor was bordered by agricultural fields. Crossing 4 would impact several streams, a few were located in agricultural fields and the rest were located in riparian corridors that were surrounded by agricultural fields. There are also forested wetlands within Crossing 4. Crossing 5 would impact streams located in upland wooded habitat. An agricultural field borders two of the streams, the remaining streams are in a wooded parcel. Crossing 6 would impact two streams, forested wetland, and a pond. The pond is located in an agricultural field, which borders the stream and wetland. The streams in Crossing 7 are all channelized agricultural ditches

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with no riparian buffer. A scrub-shrub wetland is also in the impact area. The streams in Crossing 8 are surrounded by a riparian corridor which is bordered by agricultural fields. Crossing 9 would impact a stream surrounded by forested wetland. Agricultural fields border the wetland. Crossing 10 would impact streams and ponds surrounded by pastures, agricultural fields, and some wooded areas. A few streams have riparian corridors, most are located in pastures or agricultural fields. The streams and ponds at Crossing 11 were located within wooded corridors with some agricultural fields interspersed. Crossing 12 would impact an agricultural ditch and a stream located in a riparian corridor surrounded by agricultural fields. Crossing 13 would impact a stream that is currently a channelized roadside ditch bordered by an agricultural field and a stream with some wooded riparian habitat surrounded by agricultural fields. Crossing 14 would impact two streams within a forested wetland and a channelized agricultural ditch.

(4) Issues identified by the Corps. *Describe.* No issues were identified.

(5) Issues/comments forwarded to the applicant. NA/ Yes.

Comments were forwarded to the applicant to give the applicant an opportunity to respond to comments on November 24, 2010, and January 3, 2011.

(6) Applicant replied/provided views. NA/ Yes.

An electronic mail message was received from the applicant responding to the comments on January 10, 2011.

(7) The following comments are not discussed further in this document as they are outside the Corps purview. NA/ Yes *Explain.*

4. Alternatives Analysis.

a. Basic and Overall Project Purpose (as stated by applicant and independent definition by Corps).

Same as Project Purpose in Paragraph 1.

Revised: *Insert revised project purpose here and explain why it was revised.*

b. Water Dependency Determination:

Same as in Paragraph 1.

Revised: *Insert revised water dependency determination here if it has changed due to changing project purpose or new information.*

c. Applicant's preferred alternative site and site configuration.

Same as Project Description in Paragraph 1.

Revised: *Explain any difference from Paragraph 1*

As stated in the project description in paragraph 1 of this Memorandum, Section 2 of the proposed Interstate 69 Evansville to Indianapolis extension would start at State Route 64

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near Oakland City in Gibson County and continue for approximately 29 miles to U.S. Route 50 near Washington, Daviess County, Indiana. The locations of the 14 crossings are shown in Figure 1, attached hereto. The following table provides information on proposed impacts at the 14 specific crossings that are being evaluated in this Memorandum.

| Water resource | Impact | Resource type | Impact (lf) | Impact (acres) |
|--|-------------------|---------------|-------------|----------------|
| Crossing 1 | | | | |
| Unnamed tributary to East Fork Keg Creek | Stream impact #1 | Ephemeral | 1540 | NA |
| Unnamed tributary to East Fork Keg Creek | Stream impact #3 | Ephemeral | 380 | NA |
| Unnamed tributary to East Fork Keg Creek | Stream impact #4 | Intermittent | 360 | NA |
| East Fork Keg Creek | Stream impact #5 | Perennial | 50 | NA |
| Crossing 2 | | | | |
| Unnamed tributary to South Fork Patoka River | Stream impact #12 | Intermittent | 190 | NA |
| South Fork Patoka River | Stream impact #13 | Perennial | 50 | NA |
| Unnamed tributary to South Fork Patoka River | Stream impact #14 | Ephemeral | 50 | NA |
| Patoka River | Stream impact #15 | Perennial | 50 | NA |
| Wetland impact #2 | | Forested | NA | 0.86 |
| Wetland impact #3 | | Forested | NA | 2.65 |
| Wetland impact #3 | | Open water | NA | 0.44 |
| Crossing 3 | | | | |
| Unnamed tributary to Flat Creek | Stream impact #18 | Intermittent | 210 | NA |
| Unnamed tributary to Flat Creek | Stream impact #19 | Intermittent | 545 | NA |
| Wetland impact #4 | | Emergent | NA | 2.63 |
| Wetland impact #4 | | Forested | NA | 0.29 |
| Crossing 4 | | | | |
| Unnamed tributary to Flat Creek | Stream impact #23 | Ephemeral | 140 | NA |
| Unnamed tributary to Flat Creek | Stream impact #24 | Intermittent | 375 | NA |
| Unnamed tributary to Flat Creek | Stream impact #25 | Intermittent | 390 | NA |
| Unnamed tributary to Flat Creek | Stream impact #26 | Ephemeral | 635 | NA |
| Unnamed tributary to Flat Creek | Stream impact #28 | Intermittent | 400 | NA |
| Unnamed tributary to Flat Creek | Stream impact #29 | Intermittent | 40 | NA |
| Unnamed tributary to | Stream impact #30 | Ephemeral | 190 | NA |

| | | | | |
|-----------------------------------|--------------------|--------------|------|------|
| Flat Creek | | | | |
| Unnamed tributary to Flat Creek | Stream impact #31 | Intermittent | 410 | NA |
| Unnamed tributary to Flat Creek | Stream impact #32 | Ephemeral | 390 | NA |
| Unnamed tributary to Flat Creek | Stream impact #33 | Ephemeral | 515 | NA |
| Unnamed tributary to Flat Creek | Stream impact #34 | Ephemeral | 90 | NA |
| Flat Creek | Stream impact #35 | Perennial | 50 | NA |
| Unnamed tributary to Flat Creek | Stream impact #36 | Intermittent | 170 | NA |
| Unnamed tributary to Flat Creek | Stream impact #37 | Ephemeral | 900 | NA |
| Unnamed tributary to Flat Creek | Stream impact #121 | Ephemeral | 40 | NA |
| Wetland impact #5 | | Forested | NA | 0.64 |
| Crossing 5 | | | | |
| Unnamed tributary to Flat Creek | Stream impact #38 | Intermittent | 405 | NA |
| Unnamed tributary to Flat Creek | Stream impact #39 | Ephemeral | 330 | NA |
| Unnamed tributary to Flat Creek | Stream impact #40 | Intermittent | 460 | NA |
| Unnamed tributary to Flat Creek | Stream impact #42 | Ephemeral | 470 | NA |
| Unnamed tributary to Prides Creek | Stream impact #43 | Ephemeral | 155 | NA |
| Unnamed tributary to Flat Creek | Stream impact #44 | Ephemeral | 185 | NA |
| Crossing 6 | | | | |
| Unnamed tributary to Prides Creek | Stream impact #50 | Intermittent | 50 | NA |
| Unnamed tributary to Prides Creek | Stream impact #51 | Ephemeral | 825 | NA |
| Wetland impact #6 | | Emergent | NA | 0.12 |
| Wetland impact #6 | | Forested | NA | 2.59 |
| Pond impact #6 | | Open water | NA | 0.19 |
| Crossing 7 | | | | |
| Unnamed tributary to Prides Creek | Stream impact #54 | Ephemeral | 915 | NA |
| Unnamed tributary to Prides Creek | Stream impact #55 | Intermittent | 1030 | NA |
| Unnamed tributary to Prides Creek | Stream impact #56 | Ephemeral | 1110 | NA |

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| | | | | |
|--|-------------------|--------------|-----|------|
| Unnamed tributary to Prides Creek | Stream impact #57 | Intermittent | 380 | NA |
| Wetland impact #7 | | Emergent | NA | 0.14 |
| Wetland impact #7 | | Scrub-shrub | NA | 0.03 |
| Crossing 8 | | | | |
| Unnamed tributary to East Fork White River | Stream impact #70 | Ephemeral | 475 | NA |
| Unnamed tributary to East Fork White River | Stream impact #71 | Ephemeral | 135 | NA |
| Unnamed tributary to East Fork White River | Stream impact #72 | Ephemeral | 395 | NA |
| Unnamed tributary to East Fork White River | Stream impact #73 | Ephemeral | 50 | NA |
| Unnamed tributary to East Fork White River | Stream impact #74 | Ephemeral | 80 | NA |
| Crossing 9 | | | | |
| Unnamed tributary to Jackson Pond | Stream impact #76 | Perennial | 50 | NA |
| Wetland impact #10 | | Forested | NA | 1.97 |
| Crossing 10 | | | | |
| Unnamed tributary to Jackson Pond | Stream impact #77 | Ephemeral | 270 | NA |
| Unnamed tributary to Jackson Pond | Stream impact #78 | Ephemeral | 280 | NA |
| Unnamed tributary to Jackson Pond | Stream impact #79 | Intermittent | 285 | NA |
| Unnamed tributary to Jackson Pond | Stream impact #80 | Ephemeral | 130 | NA |
| Unnamed tributary to Jackson Pond | Stream impact #81 | Ephemeral | 15 | NA |
| Unnamed tributary to Jackson Pond | Stream impact #82 | Ephemeral | 450 | NA |
| Pond impact 1 | | Open water | NA | 0.06 |
| Pond impact 2 | | Open water | NA | 0.43 |
| Pond impact 8 | | Open water | NA | 0.08 |
| Pond impact 9 | | Open water | NA | 0.15 |
| Pond impact 10 | | Open water | NA | 0.23 |
| Crossing 11 | | | | |
| Unnamed tributary to Veale Creek | Stream impact #87 | Ephemeral | 170 | NA |
| Unnamed tributary to Veale Creek | Stream impact #88 | Ephemeral | 200 | NA |
| Unnamed tributary to Veale Creek | Stream impact #89 | Ephemeral | 75 | NA |
| Unnamed tributary to Veale Creek | Stream impact #90 | Ephemeral | 405 | NA |

| | | | | |
|---------------------------------------|--------------------|--------------|------|------|
| Unnamed tributary to Veale Creek | Stream impact #91 | Ephemeral | 240 | NA |
| Unnamed tributary to Veale Creek | Stream impact #92 | Ephemeral | 350 | NA |
| Unnamed tributary to Veale Creek | Stream impact #93 | Ephemeral | 230 | NA |
| Unnamed tributary to Veale Creek | Stream impact #94 | Ephemeral | 455 | NA |
| Unnamed tributary to Veale Creek | Stream impact #95 | Ephemeral | 345 | NA |
| Pond impact 3 | | Open water | NA | 0.71 |
| Pond impact 4 | | Open water | NA | 0.24 |
| Pond impact 5 | | Open water | NA | 0.38 |
| Crossing 12 | | | | |
| Unnamed tributary to Veale Creek | Stream impact #97 | Ephemeral | 870 | NA |
| Veale Creek | Stream impact #98 | Perennial | 1030 | NA |
| Crossing 13 | | | | |
| Unnamed tributary to Veale Creek | Stream impact #106 | Ephemeral | 390 | NA |
| Unnamed tributary to Veale Creek | Stream impact #107 | Ephemeral | 1820 | NA |
| Crossing 14 | | | | |
| Hurricane Branch | Stream impact #110 | Perennial | 630 | NA |
| Unnamed tributary to Hurricane Branch | Stream impact #111 | Ephemeral | 260 | NA |
| Unnamed tributary to Hurricane Branch | Stream impact #112 | Ephemeral | 170 | NA |
| Unnamed tributary to Hurricane Branch | Stream impact #113 | Ephemeral | 290 | NA |
| Unnamed tributary to Hurricane Branch | Stream impact #120 | Intermittent | 55 | NA |
| Wetland impact #11 | | Emergent | NA | 0.93 |
| Wetland impact #12 | | Emergent | NA | 0.1 |
| Wetland impact #12 | | Forested | NA | 0.55 |

Criteria. Activities were evaluated based on their ability to meet the purpose and need of the project, impacts on aquatic resources, impacts on other environmental resources, and practicability.

| | |
|--|--|
| Issue | Measurement and/or constraint |
| Wetland impacts | Acres of impact |
| Stream impacts | Linear feet of impact |
| Impacts to other sensitive environmental resources | The extent of unavoidable impacts to these resources |
| Purpose and Need | Whether the purpose and need are satisfied |
| Impacts to Historic Resources | The extent of unavoidable impacts to these resources |
| Upland forests | Acres of impact |
| Floodplains | Acres of impact |
| Farmlands | Acres of impact |

d. Off-site locations and configuration(s) for each. (e.g. alternatives located on property not currently owned by the applicant are not practicable under the Section 404(b)(1) Guidelines as this project is the construction or expansion of a single family home and attendant features, such as a driveway, garage, storage shed, or septic field; or the construction or expansion of a barn or other farm building; or the expansion of a small business facility; and involves discharges of dredged or fill material less than two acres into jurisdictional wetlands.)

Off-site locations and configurations

| | |
|----------------------------|------------------------|
| Description | Comparison to criteria |
| Alternatives in Tier I EIS | See discussion below |

To accommodate the large, complex scope of the Interstate 69 Evansville to Indianapolis extension project, the FHWA used a “tiered” environmental process pursuant to NEPA, 42 U.S.C. §4321 *et seq.*; the NEPA regulations issued by the Council on Environmental Quality, 40 C.F.R. Part 1500; and the FHWA’s NEPA regulations, 23 C.F.R. Part 771. For the Interstate 69 extension, the tiered process involved two levels of NEPA review – Tier I and Tier II. The Tier I review looked at alternative corridors and the “no build” alternative for the proposed Interstate 69 extension between Evansville and Indianapolis, Indiana and identifies a preferred alternative corridor. The Tier II review looks at alternative alignments, including the “no build” alignment, within 6 sections of the approved corridor. The alternative corridors in Tier I are considered the off-site locations for the proposed project.

The following paragraph provides a summary of the alternatives identified and evaluated by FHWA during the Tier I NEPA review for the Interstate 69 Evansville to Indianapolis extension. A detailed discussion of these alternatives is contained in the Tier I Final Environmental Impact Statement (FEIS) and Record of Decision (ROD) prepared by FHWA.

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For the Tier I review, FHWA prepared an FEIS, which included a 404(b)(1) consistency analysis, for the proposed Interstate 69 extension between Evansville and Indianapolis, Indiana that evaluated 12 alternative corridors and the "no build" alternative. FHWA identified 19 route concepts during the scoping process for initial analysis. From these 19 route concepts 5 routes were identified. The 12 alternative corridors evaluated represented different options located within the 5 routes. Of the 12 alternative corridors 8 were ultimately determined not to be practicable alternatives. Four of those alternative corridors were determined not to be practicable because they involved unavoidable impacts to sensitive environmental resources. The other 4, including the corridor that utilized the existing US Route 41 and Interstate 70, were determined not to be practicable because they failed to satisfy project goals (particularly core goals) and, thereby, the purpose and need for the Interstate 69 Evansville to Indianapolis extension project. Of the 4 remaining alternative corridors, FHWA identified Alternative 3C as the environmentally preferred alternative – the least environmentally damaging practicable alternative. Based on the FEIS for Tier I, FHWA issued a ROD that approved one of the alternative corridors – Alternative 3C – and the termini for the 6 sections to be evaluated in Tier II.

In response to the public notice a comment letter was received that raised some issues related to the evaluation of alternatives. One issue raised was FHWA's use of a tiered environmental process for the Interstate 69 Evansville to Indianapolis extension. The decision to use a tiered process was made by FHWA. The legality of a tiered process was addressed in *Hoosier Environmental Council v. U.S. Department of Transportation*, No. 1:06-cv-1442-DFH-TAB, 2007 U.S. Dist. LEXIS 90840, *17-25 (S.D. Ind. Dec 10, 2007) and the court held that the tiered process "does not violate NEPA or other environmental laws."

A second issue raised was the sufficiency of the cost information utilized in the Tier I FEIS and changes in estimated project costs and project features as a result of subsequent studies. The changes in the project costs and features as result of project costs do not affect the evaluation of alternatives within the Tier I FEIS and ROD. The alternatives that were eliminated in Tier I because they were not practicable were determined not to be practicable because they involved unavoidable impacts to sensitive environmental resources or failed to satisfy the purpose and need, not because of their cost. Further, the increase in cost reflected in the Tier II NEPA evaluation of alternatives for Tier I Alternative 3C would also have affected the other Tier I alternatives, including the No Build Alternative which would have involved upgrading existing County Roads, State Routes and US Routes.

e. NA) Site selected for further analysis and why.

For the reasons stated in 4.d., the Alternative 3C corridor was selected from the sites evaluated in the Tier I FEIS for further analysis in Tier II.

For the Tier II evaluation, a computer-aided tool was utilized to identify the possible alternative alignments for Section 2 and develop alignments based on specific criteria that included avoiding large clusters of homes, cemeteries, and large bodies of water and minimizing impacts on key resources and large electric power transmission lines. From the

alternatives developed ultimately two initial alternatives were identified, Alternative 1 and Alternative 2. These alternatives were subsequently refined to further minimize environmental impacts, including impacts to streams and wetlands, and to address design issues, such as alignment of railroad crossings. The refinement resulted in two new alternatives, which were redesignated Alternatives A and B, respectively, to differentiate them from the initial alternative alignments.

Both Alternatives A and B were divided into nine subsections. The subsection breakpoints occurred at major natural barriers, such as the crossings of the Patoka River and the East Fork White River (which also are county boundary lines), and at locations where Alternatives A and B overlap, which would allow the transition from one alternative to the other. The impacts of the two Alternatives in each subsection were then evaluated. The alternative alignment in each subsection with fewer environmental impacts was chosen and incorporated into the Preferred Alternative in the DEIS. Alternative A was the DEIS Preferred Alternative in Subsections 1-6, 8, and 9 and Alternative B was the DEIS Preferred Alternative in Subsection 7. For the FEIS, the DEIS Preferred Alternative was further modified to minimize environmental impacts and facilitate the development of mitigation measures, resulting in the development of the Refined Preferred Alternative.

In addition to the alternative alignments, thirteen conceptual interchange locations and a number of different interchange designs were considered and evaluated based on a variety of factors, including impacts on important environmental resources, projected traffic volume, cost, and need. Of these conceptual locations, four were carried forward for detailed analysis – interchanges located at SR 61/56, North Pike County (CR 600 North), South Daviess County (CR 50 West), and US 50. All four of these interchanges have been included in FHWA's approved Refined Preferred Alternative. However, INDOT has deferred construction of the North Pike County interchange and design and construction of the South Daviess County interchange.

The interchange at SR 61/56 would be associated with Crossing 7. The South Daviess County interchange is in the area of Crossing 12; however, since INDOT has deferred the interchange, the interchange's impacts to "waters of the U.S." are not part of the proposed crossing.

The on-site alternatives discussed below are the crossings associated with alternative alignments presented in the Tier II FEIS – Alternative A, Alternative B, and the Refined Preferred Alternative – and the interchange configuration at SR 61/56, which is the only interchange associated with one of the 14 proposed crossings.

f. On-site configurations.

| Description | Comparison to criteria |
|--|---|
| Crossings 1-14 for Alternative A Alignment | See Table and Discussion below for information on stream, wetland and, where relevant, upland forest impacts. Based on the information available impacts to farmland, floodplains and historic resources should be similar for the 14 crossings for all three alignment alternatives. |
| Crossings 1-14 for Alternative B Alignment | See Table and Discussion below for information on stream, wetland and, where relevant, upland forest impacts. Based on the information available impacts to farmland, floodplains and historic resources should be similar for the 14 crossings for all three alignment alternatives. |
| Crossings 1-14 for Preferred Refined Alternative | See Table and Discussion below for information on stream, wetland and, where relevant, upland forest impacts. Based on the information available impacts to farmland, floodplains and historic resources should be similar for the 14 crossings for all three alignment alternatives. |
| Crossing 7 with SR 61/56 Interchange – Existing SR 61 | This alternative would have fewer impacts to streams and farmland than the SR 61/56 Interchange with the relocated SR 61 since SR 61 would remain in its current location. There would be no impacts to wetlands under this alternative. |
| Crossing 7 with SR 61/56 Interchange – Relocated SR 61 | This alternative would have more impacts to streams and farmlands than existing SR 61 because the relocation of SR 61 would impact additional streams and farmland. There would be no impacts to wetlands under this alternative. |

Alternatives A and B were not developed to the same level of detail as the Refined Preferred Alternative. The information provided in the Tier II FEIS on linear feet of stream and acres of wetlands for Alternatives A and B are based on the right-of-way for the alignment. The information provided in the permit application for the Refined Preferred Alternative was taken to the next level and is based on the actual construction impacts for the roadway within the right-of-way. Therefore, a comparison of the linear feet and acreage impacts identified for Alternatives A and B in the Tier II FEIS and the linear feet and acreage impacts identified for the Refined Preferred Alternative in the permit application would not give an accurate picture of the impacts.

Therefore, a comparison of impacts to wetlands and streams was made based on a comparison of the proposed crossings and the crossings that would be required for the preferred pavement location for Alternatives A and B depicted in the Tier II FEIS. For purposes of this comparison, in those areas where the right of ways for the alternatives overlapped, for example where the alignment for the Refined Preferred Alternative was

based on Alternative A or B and the right of way for the Refined Preferred Alternative remained similar to Alternative A or B, the impacts were determined to be the same, as the alignment of the roadway within the right of way could have similarly been refined to avoid or minimize impacts. Where the alignments differed the potential impacts were compared and a determination was made whether they were similar (same) or whether one would have more or less impacts. The table below summarizes that comparison.

| Crossing | Alternative A | | Alternative B | | Refined Preferred Alternative | |
|-------------|------------------------|---------|------------------------|---------|--------------------------------|-----------------------|
| | Wetland and open water | Streams | Wetland and open water | Streams | Wetland and open water (acres) | Streams (linear feet) |
| Crossing 1 | Same | Same | More | Less | 0 | 2,330 |
| Crossing 2 | Same | Same | Same | Same | 3.95 | 340 |
| Crossing 3 | Same | Same | Same | Same | 2.92 | 755 |
| Crossing 4 | Same | Same | More | Less | 0.64 | 4,735 |
| Crossing 5 | Same | Same | Same | More | 0 | 2,005 |
| Crossing 6 | Same | Same | Less | Less | 2.9 | 875 |
| Crossing 7 | Same | Same | Same | More | 0.17 | 3,435 |
| Crossing 8 | Same | Same | Same | More | 0 | 1,135 |
| Crossing 9 | Same | Same | Less | More | 1.97 | 50 |
| Crossing 10 | Same | Same | Same | More | 0.95 | 1,430 |
| Crossing 11 | Same | More | Same | Same | 1.33 | 2,470 |
| Crossing 12 | Same | Less | Same | Same | 0 | 1,900 |
| Crossing 13 | Same | Same | Same | More | 0 | 2,210 |
| Crossing 14 | Same | Same | More | More | 1.58 | 5,515 |

Alternative A Alignment: In the Section 2 Tier II FEIS, Alternative A was found to have the potential to impact a total of 71,894 linear feet of stream and 25.21 acres of wetlands along the entire Section 2 alignment. Alternative A would have the same general crossing locations as the Refined Preferred Alternative for Crossings 1-10, 13, and 14 and would impact approximately the same amount of wetlands and streams as the Refined Preferred Alternative at each of these crossings. This is because Alternative A is the alternative from which the Refined Preferred Alternative was derived for 8 of the 9 subsections, which included Crossings 1-10, 13 and 14. Even though the Refined Preferred Alternative was further refined after it was developed, the alignment for the two alternatives remains very similar for all of those crossings. Alternative A would have different crossing locations from the Refined Preferred Alternative in the area of Crossings 11 and 12. This is because the Refined Preferred Alternative was derived from Alternative B for the 9th subsection, which included Crossings 11 and 12. Crossing 11 and 12 under the Alternative A would impact more linear feet of stream and fewer linear feet of stream than the Refined Preferred Alternative alignment, respectively. The impacts to wetlands from both alternatives for these crossings would be similar. Even though Crossing 12 of Alternative A has fewer impacts to streams it was determined to be the least damaging practicable alternative for Crossing 12, because the proximity of Crossing 12 to Crossing 11 makes it impracticable to

realign the road from Crossing 11 of the Refined Preferred Alternative to Crossing 12 of Alternative A and cumulatively Crossings 11 and 12 under Alternative A would have more impacts to streams than Crossings 11 and 12 under the Refined Preferred Alternative. Overall, Alternative A would have more impacts to wetlands and streams at the proposed crossings than the Refined Preferred Alternative.

Alternative B Alignment: Alternative B was found to have the potential to impact a total of 75,894 linear feet of stream and 48.37 acres of wetland along the entire Section 2 alignment. Alternative B would have the same general crossing locations as the Refined Preferred Alternative at Crossings 2, 3, 11, and 12 and would impact approximately the same amount of wetlands and streams at those crossings. Alternative B is the alternative from which the Refined Preferred Alternative was derived for Subsection 7, which included Crossings 11 and 12 and the alignment for both alternatives remains very similar in the area of those two crossings. Further, the alignment for Alternative B is very similar to the alignment for the Refined Preferred Alternative in portions of Subsection 2 and 3, including the areas associated with Crossings 2 and 3. Alternative B would have different crossing locations from the Refined Preferred Alternative in the area of Crossings 1, 4-10, 13 and 14. Crossings 5, 7, 8, 10, 13, and 14 under Alternative B would have more impacts on streams and wetlands than the corresponding crossings under the Refined Preferred Alternative. Crossings 1 and 4 under Alternative B would impact fewer linear feet of stream than the corresponding crossings for the Refined Preferred Alternative but would impact more wetland acreage. Crossings 1 and 4 of the Refined Preferred Alternative are considered to have less adverse impacts on the aquatic ecosystem than Crossing 1 and 4 of Alternative B, because they avoid or reduce impacts to wetlands, which are special aquatic sites.

Crossing 6 under Alternative B would have fewer impacts on wetlands and streams than Crossing 6 under the Refined Preferred Alternative. However, comparatively, it would have greater indirect impacts to upland forest. Crossing 6 under Alternative B is located in an area with a large tract of upland forest. Construction of the roadway at Crossing 6 under Alternative B would require realignment of the right of way through the eastern portion of this tract, resulting in loss of upland forest habitat and habitat fragmentation. Taking the upland forest impacts at Crossing 6 into consideration, Alternative B would have greater environmental impacts, even though it would have fewer impacts to aquatic resources. Therefore, the Refined Preferred Alternative was considered the least environmentally damaging practicable alternative at Crossing 6.

Crossing 9 under Alternative B would have more impacts on streams and wetlands than Crossing 9 under the Refined Preferred Alternative. The direct impacts to wetlands from Crossing 9 under Alternative B are less than the direct impacts from Crossing 9 under the Refined Preferred Alternative, as shown in the table above. However, Crossing 9 under Alternative B would result in other (indirect) impacts to wetlands south of the crossing and upland forest, that Crossing 9 under the Refined Preferred Alternative alignment avoids. Cumulatively, the direct and indirect impacts to wetlands from Crossing 9 under the Alternative B alignment would be greater than the impacts from Crossing 9 under the Refined Preferred Alternative alignment. Overall, Alternative B would impact more acres of wetland and linear feet of stream than the Refined Preferred Alternative.

g. Other alternatives not requiring a permit, including No Action.

| Description | Comparison to criteria |
|-------------|--|
| No Action | Neither the fourteen crossings, nor Section 2 of Interstate 69 highway extension project between Evansville and Indianapolis, Indiana would be built. The no action alternative would not cause any adverse impacts to the general ecology of any "waters of the U.S." in the Section 2 corridor, including East Fork Keg Creek, Allen Lateral, Buck Creek, Hurricane Creek, South Fork Patoka River, Patoka River, Flat Creek, Prides Creek, Mud Creek, Veale Creek, Hurricane Branch, unnamed tributaries to East Fork Keg Creek, Buck Creek, Hurricane Creek, South Fork Patoka River, Patoka River, Flat Creek, Prides Creek, Mud Creek, Lick Creek, Jackson Pond, Veale Creek, Hurricane Branch, open water, and emergent, scrub-shrub, and forested wetlands. However, this alternative would not accomplish the applicant's stated purpose. |

h. Alternatives not practicable or reasonable. *Describe/explain*

Of the 12 alternative corridors evaluated in the Tier I FEIS, four involved unavoidable impacts to sensitive environmental resource, another four, including the corridor that utilized the existing US Route 41 and Interstate 70, were determined not to be practicable because they failed to satisfy project goals (particularly core goals) and, thereby, the purpose and need for the Interstate 69 Evansville to Indianapolis extension project.

In the Tier II FEIS a number of alternative alignments were identified using the computer-aided tool. Alternatives that failed to meet the project criteria were eliminated and are considered not to be practicable. Criteria utilized included the avoidance of sensitive environmental resources and certain existing manmade resources of importance and the ability to satisfy highway design standards and project purposes.

i. Least environmentally damaging practicable alternative. *Describe/explain*

The Corps has reviewed the information on alternatives contained in the Tier I and II FEIS and ROD and the permit application, and for the reasons stated in d, e, f and h above have determined that the proposed project, the 14 proposed crossings, is the least damaging practicable alternative.

5. Evaluation of the 404(b)(1) Guidelines. (NA)

a. Factual determinations.

Physical Substrate.

See Existing Conditions, paragraph 1

The substrate composition at each of the crossings was identified using the U.S. Department of Agriculture's Web Soil Survey for Gibson, Pike, or Daviess County. Section 2 traverses ten major soil associations: Stendal-Bonnie-Birds, Hosmer, Zanesville-Hosmer, Alford-Sylvan, Belknap-Bonnie-Wakeland, Fairpoint-Bethesda, Haymond-Nolin-Petrolia, Alford, Zanesville-Wellston, and Ragsdale-Iva-Reesville. Soils in Section 2 primarily consist of alluvium, lacustrine deposits, glacial outwash, and glacial till of Illinoian or Wisconsin age. In Pike County, there are areas with soils consisting of overburden from surface mining.

Substrate composition at Crossing 1 is dominated by Bird silt loam. Approximately 2,330 linear feet of East Fork Keg Creek and two unnamed tributaries would be filled with 789 cys of clean earthen fill material and riprap.

Substrate composition at Crossing 2 is dominated by Stendal silt loam and Steff silt loam. Approximately 340 linear feet of the Patoka River, South Fork Patoka River, and unnamed tributaries, and 3.95 acres of wetland would be filled with 51,257 cys of clean earthen fill material, riprap, and concrete.

Substrate composition at Crossing 3 is dominated by Belknap silt loam. Approximately 755 linear feet of unnamed tributaries to Flat Creek and 2.92 acres of wetland would be filled with 242,552 cys of clean earthen fill material, riprap, and concrete.

Substrate composition at Crossing 4 is dominated by Zanesville silt loam and Hosmer silt loam. Approximately 4,735 linear feet of Flat Creek and unnamed tributaries and 0.64 acre of wetland would be filled with 1,051 cys of clean earthen fill material, riprap, and concrete.

Substrate composition at Crossing 5 is dominated by Zanesville silt loam, Wellston silt loam, and Hosmer silt loam. Approximately 2,005 linear feet of unnamed tributaries to Flat Creek and Prides Creek would be filled with 366 cys of clean earthen fill material, riprap, and concrete.

Substrate composition at Crossing 6 is dominated by Bonnie silt loam. Approximately 875 linear feet of unnamed tributaries to Prides Creek, 2.71 acres of wetland, and 0.19 acre of open water would be filled with 222,132 cys of clean earthen fill material, riprap, and concrete.

Substrate composition at Crossing 7 is dominated by Beaucoup silty clay loam and Wakeland silt loam. Approximately 3,435 linear feet of unnamed tributaries to Prides Creek and 0.17 acre of wetland would be filled with 3,435 cys of clean earthen fill, concrete, and riprap.

Substrate composition at Crossing 8 is dominated by Alvin-Bloomfield complex and Bloomfield loamy fine sandy. Approximately 1,135 linear feet of unnamed tributaries to East Fork White River would be filled with 3,435 cys of clean earthen fill, concrete, and riprap.

Substrate composition at Crossing 9 is dominated by Petrolia silty clay loam. Approximately 50 linear feet of an unnamed tributary to Jackson Pond and 1.97 acres of wetland would be filled with 56,050 cys of clean earthen fill and riprap.

Substrate composition at Crossing 10 is dominated by Hickory silt loam, Wakeland silt loam, and Wellston silt loam. Approximately 1,430 linear feet of unnamed tributaries to Jackson Pond and 0.95 acre of open water would be filled with 3,885 cys of clean earthen fill, concrete, and riprap.

Substrate composition at Crossing 11 is dominated by Wellston silt loam and Hosmer silt loam. Approximately 2,470 linear feet of unnamed tributaries to Veale Creek and 1.33 acre of wetland would be filled with 18,370 cys of clean earthen fill, concrete, and riprap.

Substrate composition at Crossing 12 is dominated by Wakeland silt loam. Approximately 1,030 linear feet of Veale Creek and 870 linear feet of an unnamed tributary would be filled with 1,993 cys of clean earthen fill, concrete, and riprap.

Substrate composition at Crossing 13 is dominated by Wakeland silt loam. Approximately 2,210 linear feet of unnamed tributaries to Veale Creek would be filled with 283 cys of clean earthen fill, concrete, and riprap.

Substrate composition at Crossing 14 is dominated by Wakeland silt loam. Approximately 630 linear feet of Hurricane Branch, 775 linear feet of unnamed tributaries, and 1.58 acres of wetland would be filled with 45,103 cys of clean earthen fill, concrete, and riprap.

Direct impacts to the substrate in the Patoka River, tributaries to the Patoka River and White River, wetlands, and ponds would consist of fill material being placed in these waters in order to construct fourteen separate and complete crossings of Section 2 of the Interstate 69 Evansville to Indianapolis extension. The substrate at each crossing would be completely changed due to the fill.

Indirect and cumulative impacts from the proposed project to the substrate of jurisdictional waters and their immediately adjacent riparian corridor would consist of fill material being placed in a total of 13,520 linear feet of stream and 1.84 acres of wetland from the construction of the twenty-six crossings that were verified as qualifying for Indiana RGP No. 1. The substrate at these crossings would be completely and permanently changed due to the fill material.

The earthen fill material would comply with INDOT's 2010 Standard Specifications, which require borrow material to be "free of substances that will

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above-Numbered Permit Application

| |
|--|
| form deleterious deposits, or produce toxic concentrations or combinations that may be harmful to human, animal, plant or aquatic life, or otherwise impair the designation uses of the stream or area.” |
| Water circulation, fluctuation, and salinity. <input checked="" type="checkbox"/> Addressed in the Water Quality Certification. <input type="checkbox"/> |
| Suspended particulate/turbidity. <input checked="" type="checkbox"/> Turbidity controls in Water Quality Certification. <input type="checkbox"/> |
| Contaminant availability. <input checked="" type="checkbox"/> General Condition requires clean fill. <input type="checkbox"/> |
| Aquatic ecosystem and organism. <input checked="" type="checkbox"/> Wetland/wildlife evaluations, paragraphs 5, 6, 7 & 8. <input type="checkbox"/> |
| Proposed disposal site. <input checked="" type="checkbox"/> Public interest, paragraph 7. <input type="checkbox"/> |
| Cumulative effects on the aquatic ecosystem. <input checked="" type="checkbox"/> See Paragraph 7.e. <input type="checkbox"/> |
| Secondary effects on the aquatic ecosystem. <input checked="" type="checkbox"/> See Paragraph 7.e. <input type="checkbox"/> |

b. Restrictions on discharges (230.10).

- (1) It has/has not been demonstrated in paragraph 5 that there are no practicable nor less damaging alternatives which could satisfy the project's basic purpose. The activity is/is not located in a special aquatic site (wetlands, sanctuaries, and refuges, mudflats, vegetated shallows, coral reefs, riffle & pool complexes). The activity does/does not need to be located in a special aquatic site to fulfill its basic purpose.
- (2) The proposed activity does/does not violate applicable State water quality standards or Section 307 prohibitions or effluent standards (based on information from the certifying agency that the Corps could proceed with a provisional determination). The proposed activity does/does not jeopardize the continued existence of federally listed threatened or endangered species or affects their critical habitat. The proposed activity does/does not violate the requirements of a federally designate marine sanctuary.
- (3) The activity will/will not cause or contribute to significant degradation of waters of the United States, including adverse effects on human health; life stages of aquatic organisms' ecosystem diversity, productivity and stability; and recreation, esthetic, and economic values.

(4) Appropriate and practicable steps have/ have not been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (see Paragraph 8 for description of mitigative actions).

6. Public Interest Review: All public interest factors have been reviewed as summarized here. Both cumulative and secondary impacts on the public interest were considered. Public interest factors that have had additional information relevant to the decision are discussed in number 7. Public Interest factors that are not applicable to the proposed project are not checked.

| | | | | + Beneficial effect |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--|
| | | | | 0 Negligible effect |
| | | | | - Adverse effect |
| | | | | M Neutral as result of mitigative action |
| + | 0 | - | M | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Conservation. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Economics. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Aesthetics. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | General environmental concerns. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Wetlands. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Historic properties. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Fish and wildlife values |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Flood hazards. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Floodplain values. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Land use. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Navigation. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Shore erosion and accretion. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Recreation. |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Water supply and conservation. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Water quality. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Energy needs. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Safety. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Food and fiber production. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Mineral needs. |
| <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Considerations of property ownership. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Needs and welfare of the people. |

7. Effects, policies and other laws.

a. NA

Public Interest Factors. *(add factors that are relevant to specific project that you checked in number 6 above and add a discussion of that factor)*

Conservation: The U.S. Fish and Wildlife Service (USFWS) Patoka River National Wildlife Refuge (NWR) is located in Pike and Gibson counties, near Oakland City. Established in 1994, the refuge consists of 6,159 refuge acres (682 acres in two outlying wildlife areas) with a total of 22,083 authorized acres within the acquisition boundary. The USFWS has established the Patoka River Project (in conjunction with the refuge) that will consist of 6,800 acres of National Wildlife Refuge and 15,283 acres of Wildlife Management Area. This differentiation is necessary to avoid conflicts with the Surface Mining Control and Reclamation Act and the area's surface coal mining industry.

The Patoka River NWR is a high-quality bottomland hardwood forest ecosystem, which supports over 380 species of wildlife, including the federally-protected bald eagle, federally-endangered Indiana bat, and the state-endangered copperbelly water snake. This refuge provides habitat for waterfowl and other wildlife, protects biodiversity, and provides public opportunities for outdoor recreation and environmental education.

A segment of Section 2 of the Interstate 69 Evansville to Indianapolis extension would pass through the Patoka River NWR on a parcel of land that is not part of the NWR. The proposed crossing would not require any direct acquisition of the right of way from the NWR. The segment that crosses through the Refuge is located in a corridor that was designated for a future Interstate 69 highway at the time the Refuge was established. Thus, the impacts of the highway (including proximity impacts) were assumed at the time the Refuge was created as a joint development project. In their letter dated June 15, 2009, the United States Department of Interior stated in reference to the refuge lands that "The current project does not constitute a use of these lands."

Crossing 2 is within this segment. Crossing 2 would bridge the entire width of the Patoka River floodplain, minimizing impacts to the area's plant and animal communities. Existing access to the refuge would not be affected by the proposed project. The bridge would be designed so that stormwater runoff and incident spills are contained and channeled towards the end of the bridges and into detention basins, where it should then be adequately treated to remove sediment and any other pollutants before being allowed to enter the Patoka River NWR. The bridge piers would be spaced approximately every 125 to 150 feet. This construction work would be carefully controlled to minimize impacts to streams, wetlands and wildlife habitat, and all areas within the floodplain would be restored to original contours after construction of the bridges.

Two comments were received in response to the public notice objecting to the crossing in the Patoka NWR. One comment objected to placing fill in the former (original) Patoka River beds, located in the NWR. The proposed Crossing 2 would not include placing any fill material into the former Patoka River. The other comment objected to the bisecting of

the NWR by Interstate 69. However, as previously noted, the Interstate 69 corridor was designated at the time the refuge was established.

There are no designated wild and scenic rivers within the Section 2 corridor. The crossing on the East Fork White River, which qualified for Indiana RGP No. 1, would be in a section of the river that is included on the National Rivers Inventory (NRI) because of its scenic, recreational, geologic, fish, and historic values. The bridge would incorporate design features recommended by the National Park Service (NPS), including minimizing placement of piers, redirection of deck runoff away from the river, and implementation of best management practices to contain erosion, sedimentation, fuels/hydraulic fluids/oil spills.

One comment was received in response to the public notice objected to the placement of fill into the East Fork White River. The applicant has minimized the impacts of this crossing to the extent that it qualified for Indiana RGP No. 1.

Economics: There would be both beneficial and adverse socio-economic impacts from the proposed project. However, overall the impacts are anticipated to be beneficial. Direct socio-economic impacts of the proposed crossings would include the loss of farm income due to the removal of farmland from production, project cost, increased employment during construction, annual maintenance and operation costs, changes in the local property tax base as a result of taking taxable property for public right-of-way, and changes in property values due to improved or diminished access or exposure. The proposed crossings would have the indirect socio-economic impact of increased business and employment associated with changes in land use due to development induced by improved access. Socio-economic benefits associated with the improved highway access would go to the travelling public, commercial trucking companies, and the residents of Southwest Indiana and would be long-term.

Aesthetics: The proposed crossings would result in both temporary and permanent visual impacts. Temporary impacts include the sighting of construction equipment and the clearing of areas to construct the crossings. These would be mitigated by limiting vegetation clearing to the area in the construction limits and quick re-vegetation upon completion of construction. Permanent impacts would include the conversion of forests, wetlands, farmland, and rural landscapes to an Interstate highway.

The crossings in Section 2 are in a rural environment with a viewshed typical of agricultural land use in the region. This land use typically contains level to rolling fields of crops, pastures, water features including creeks and ditches, and forested areas interspersed with rural residences. Crossings 1, 7 and 13 are located in agricultural fields. Crossings 2, 5, and 14 are located in wooded areas and Crossings 3, 4, 6, and 8 through 12 are located in areas with both wooded and agricultural land.

Section 2 would be constructed as an elevated roadway, obstructing the view in the relatively flat and open areas. There are residences located within 2,000 feet of Crossings 2 through 8, and 10 through 14. There would be adverse visual impact due to the proximity of the new road, the effects of traffic, and the loss of trees and shrubs. Lighting is not

anticipated to be used at any of the crossings in Section 2.

At Crossing 2, Interstate 69 would pass through a 420-ft-wide designated corridor of private property that has been reserved specifically for the highway through the Patoka River NWR. The Patoka Bridges Historic District, a property listed on the National Register of Historic Places (NRHP), is also in the area. The proposed highway would be on twin structures elevated approximately 30 to 40 feet above the Patoka River floodplain for approximately nine-tenths of a mile and would be visible within the refuge and from the historic district. The land that would be crossed is currently agricultural or forested. The area currently used for agriculture within the refuge boundaries is planned to be converted to bottomland forested wetlands. The planned forests, once mature, would obscure the view of the bridge from more distant parts of the refuge, including the Patoka Bridges Historic District, particularly during the seasons when the trees are leafed out.

Indirect visual impacts would be expected as the result of induced development projected to occur at the interchange of SR 61 (Crossing 7) to the west of the interchange in an area that is currently used for agriculture. It is projected that there will be some commercial development in this area connected with the Interstate. Commercial structures and the lighting and signage associated with the structures would alter the viewshed.

The crossings verified as qualifying for Indiana RGP No. 1 in the Section 2 corridor are dominated by cultivated land. There are also wooded areas, fencerows and ditches or streams interspersed throughout the area. Most of the residents live on lots surrounded by cultivated fields. The indirect and cumulative visual impacts associated with these crossings would be similar to those at the fourteen crossings covered in this Memorandum.

The applicant would mitigate for the aesthetic impacts by incorporating context sensitive solutions, an approach involving all stakeholders to "develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility." Examples would include planting wildflowers as roadside enhancements and planting shrubs or trees to help screen the roadway.

General Environmental Concerns: Karst ecosystems, landscapes characterized by caves, sinkholes, underground streams, and other features formed by the slow dissolving of bedrock, are a unique feature of Southern Indiana. The Section 2 corridor is generally located west of the potential karst areas of Indiana. The sections of Gibson, Pike, or Daviess counties crossed by the Section 2 corridor do not contain any karst features.

Parts of Gibson and Pike Counties (Montgomery and Washington Townships) have been designated as maintenance areas for annual fine particulate matter National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA). The rest of Gibson and Pike Counties are considered to be in attainment for all other criteria pollutants. Daviess County is considered to be in attainment for all criteria pollutants.

The Evansville Metropolitan Planning Organization (MPO), which is responsible for addressing conformity issues in Gibson and Pike Counties, conducted a conformity analysis

of fine particulate matter in October 2009 and demonstrated that the Long Range Transportation Plan, including the Interstate 69 extension, is in transportation conformity with CAA. FHWA issued the conformity finding on November 30, 2009. The proposed crossings are in compliance with the CAA, therefore, no significant adverse impacts to air quality are anticipated.

The proposed crossings would be located in rural areas and nearby communities would experience an increase in levels of construction-related noise temporarily and highway-related noise in the long-term. FHWA and INDOT conducted an analysis of noise impacts for the Tier 2 Section 2 EIS. None of the proposed fourteen crossings would be located in an area exceeding the Substantial Increase Criterion (where the predicted traffic noise levels exceed existing noise levels by 15 dBA or more).

Noise level modeling demonstrated that four residential receivers at one location in Gibson County, near a crossing of "waters of the U.S." that was verified as qualifying for Indiana RGP No. 1 had modeled noise levels approaching or exceeding the Noise Abatement Criterion of 67 dBA Leq. None of these receivers had modeled noise levels exceeding the Substantial Increase Criterion of 83.7 dBA Leq; therefore, they are not characterized as severely impacted.

Wetlands: The proposed construction of the fourteen crossings would result in fill material being discharged into a total of 2.91 acres of open water, 3.92 acres of emergent wetland, 0.03 acres of scrub-shrub wetland, and 9.55 acres of forested wetlands. The existing wetlands provide a limited surface water storage function, but very limited or no flood protection is provided because the wetlands are restricted to a relatively small, localized portion of the watershed. Some subsurface water storage and groundwater recharge also occurs. The wetland hydrology is primarily driven by precipitation and overland flow. The wetlands would also be expected to provide the following functions: nutrient transformations and processing, biomass accumulation, and decomposition. The wetlands provide habitat for wildlife.

In addition to the fourteen crossings, the construction of Section 2 would result in the placement of fill in a total of 0.78 acre of forested wetland and 1.06 acres of emergent wetland at three crossings that were verified as qualifying for the Indiana RGP No. 1 with special conditions. These wetlands are similar to those that would be impacted at the fourteen crossings; they provide wildlife habitat and very limited flood protection and subsurface water storage.

Compensation for all of the wetland impacts would be provided through wetland creation and restoration at four mitigation sites, which are discussed in detail in 8 below. The Corn mitigation site, a 170.0-acre site in Pike County, and the Purcell mitigation site, a 147.3-acre site in Daviess County, are both located within the Lower East Fork White River watershed. The Cooper/Buck mitigation site, a 20-acre site in Gibson County, is located in the Patoka River watershed. The Cornelius mitigation site, a 355-acre site in Greene County, is located within the Lower White watershed. The proposed impacts for Section 2 would occur in these three watersheds. All four mitigation sites were historically disturbed through land clearing and agricultural practices. A total of 11.32 acres of emergent, 4.23

acres of scrub-shrub, and 30.99 acres of forested wetland would be restored or created as mitigation for the impacts from the entire Section 2 project, including the fourteen crossings. For the impacts from the fourteen crossings covered in this Memorandum, 7.84 acres of emergent, 0.06 acre of scrub-shrub, and 28.65 acres of forested wetland would be provided out of the total Section 2 mitigation. In addition to the four proposed mitigation sites described above, 56.6 acres of wetlands (50.2 acres of forested and 6.4 acres of emergent) would be created or restored at the Bartley Mitigation site for use in contingency for any portions of the existing mitigation sites used for Section 2 that are not meeting their designated success criteria. The Bartley Mitigation Site property is located within the Patoka River watershed.

If approved, during project construction, wetlands that are within the Right of Way but outside of the construction area would be protected from secondary construction impacts. To prevent herbicides from entering these wetland areas, "Do Not Spray" signs would be posted as appropriate in the right-of-way.

Historic Properties: Along the entire Section 2 corridor, there is one property listed on the NRHP and three that have been determined to be eligible for listing on the NRHP. All four of these properties are located near crossings covered in this Memorandum.

Crossing 2 is located near the Patoka Bridges Historic District, which is listed on the NRHP. The district consists of three contributing resources: Pike County Bridges Nos. 81 and 246 and the 1,600-foot-long stretch of CR 300W between the two bridges. The district is significant in the area of transportation as an illustration of the continuing evolution of transportation systems in the Patoka Bottoms area, and in the areas of social history and ethnic heritage for its association with local Underground Railroad. The bridges are also significant in the area of engineering for embodying two stages of through truss bridge design and fabrication. Per the NRHP listing, the period of significance of the district is 1851–1936. The bridges and CR 300W are currently open to traffic; the southernmost one, Bridge No. 246, has recently been repaired by Pike County.

Crossing 11 is located approximately 5,300 linear feet east of the Thomas C. Singleton Round Barn, which is eligible for the NRHP under the Multiple Property Documentation Form Round and Polygonal Barns of Indiana. The barn meets Criteria A and C for embodying the efforts to improve the efficiency and productivity of farm operations through innovative agricultural building design during Indiana's "golden age" of agriculture (1881–1920) and as a highly intact example of the round barn type. The period of significance of the barn is 1908–1955.

Crossing 11 is located approximately 4,000 linear feet west of the Chapman-Allison Farmstead, which is eligible for the NRHP under Criterion A for its association with the early settlement of Veale Township, and for embodying a turn of the twentieth century livestock farm in Daviess County. The farmstead's period of significance is 1845–1955.

Crossing 14 would be located approximately 500 linear feet northwest of the SR 257 Bridge over Veale Creek, which is eligible for the NRHP under Criterion C in the area of engineering. INDOT has recently determined that this bridge is structurally deficient, and

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must be replaced as a separate project. FHWA and SHPO signed a Memorandum of Agreement (MOA) to ensure that the applicant would implement procedures in order to take into account the effect of the Section 2 project on historic properties. Per the MOA, the existing bridge would be dismantled, INDOT would advertise the bridge, and if no entity wishes to claim it, INDOT would store it for 10 years.

FHWA completed Section 106 consultation for the Section 2 Tier 2 FEIS. The finding of effects for Section 2, dated December 15, 2008 is: Historic Properties Affected – Adverse Effect. At the Patoka Bridges Historic District near Crossing 2, construction of large non-period twin interstate highway bridges would have an adverse visual effect on the District. Although there would be an increase in noise levels at the District, the increase is not large enough to constitute an adverse effect. In addition, temporary construction activity may have an adverse effect on the district if bridges within the district are used and disturbed by construction vehicles. The District is not near any proposed interchanges, so the possibility of the setting being altered by induced development is not an anticipated or reasonably foreseeable outcome.

To mitigate for the potential impacts to the Patoka Bridges Historic District, additional vegetative screening would be planted to mitigate visual impacts of the project. During the design phase, further coordination with the Patoka River NWR and the SHPO would be completed regarding the planting of trees that would, in the long term, provide some visual screening of the new structures per the Section 106 MOA stipulations. These efforts would include coordination with managers of the Patoka River NWR to identify possible measures that can be taken to plant more trees between the proposed highway bridge structures and the district in order to provide a greater visual screen and to partially abate highway traffic noise. These requirements are set forth in the MOA.

The Thomas C. Singleton Round Barn and the Chapman-Allison Farmstead, both near Crossing 11, would not be affected by the proposed action, either directly or indirectly. Neither are located in an area in which the undertaking is expected to change the setting of the property due to induced development.

There would be a visual effect on the SR 257 Bridge over Veale Creek resulting from the undertaking; however it would not be an adverse effect. The bridge would not experience any other direct effects as a result of the proposed Interstate-69 construction and there would be no change in the physical features within the property's setting that contribute to its historic features as a result of induced development in the reasonably foreseeable future; the nearest interchange is approximately 1.75 miles away. In their letter of April 24, 2007, the SHPO agreed that the SR 257 Bridge over Veale Creek would not be adversely affected by the proposed undertaking.

A total of fifty-seven archaeological sites were identified within FHWA's Area of Potential Effects (APE) for the entire Section 2 corridor. Six of these sites were re-identified at their previously recorded locations through the Phase Ia archaeological investigations. Fifty-one of these sites were previously unrecorded and included 14 prehistoric isolated finds, 19 prehistoric lithic scatters, 15 historic scatters/farmsteads, one cemetery, seven multicomponent prehistoric/historic scatters, and a section of the Wabash and Erie Canal.

FHWA determined and the SHPO concurred that fifty-five of the fifty-seven sites were not eligible for NRHP listing based on the findings of the Phase Ia investigations. The cemetery, which is located near one of the crossings that qualified for Indiana RGP No.1, was not eligible but was recommended for avoidance. The proposed project would avoid the cemetery.

Two of the fifty-seven sites required further testing to determine eligibility for NRHP listing. A Phase II investigation was completed at one site, which is located near Crossing 13. The results indicated that the site was not eligible for NRHP listing. The Indiana SHPO concurred with the recommendation in a letter dated November 10, 2009. A Phase Ic investigation was completed at the other site, which is located near Crossing 8. The results indicated that the site was not eligible for NRHP listing. The SHPO concurred with the recommendation in a letter dated December 9, 2010.

Phase Ic investigations were also recommended at the Patoka River (Crossing 2), the East Fork White River (crossing verified under Indiana RGP No. 1), and Veale Creek (Crossing 14), since these areas are all within floodplains. A Phase Ic investigation was completed at the Patoka River. The results indicated that the site was not eligible for NRHP listing and the SHPO concurred in a letter dated October 1, 2010. Commitments for completion of the Phase Ic evaluations at East Fork White River and Veale Creek have been developed in the MOA. If results of testing show that Phase III Archaeological Mitigation would be warranted, that work would be completed, in consultation with the SHPO, before construction on the project could begin at that site.

Fish and Wildlife Values: Crossings 1, 7, and 13 are located in agricultural areas with low wildlife habitat value. Crossings 2, 5, and 14 are located in large wooded areas with adjacent agricultural fields. Crossings 3, 4, 6, and 8 through 12 are in smaller wooded areas that are surrounded by agriculture. The wooded areas provide habitat for fish, avifauna, reptiles, rodents and other small mammals, and large mammals such as deer.

Most of the streams at the fourteen crossings, as well as the crossings that were verified as qualifying for Indiana RGP No. 1, have substrates consisting of sand or silt which do not provide suitable habitat for aquatic species. However, some streams at Crossings 2, 4, 6, 12, and 14 include areas that would provide necessary habitat for some fish species including shiners, chubs, catfish, and bass. The proposed project would involve constructing bridges over the streams at crossing 2, 4, 6, and 12 and culverts over these stream at Crossing 14. The bridges and culvert were designed to minimize impacts to these streams and their aquatic habitat.

There are also two crossings, one over Mud Creek and the other over East Fork White River, verified as qualifying for Indiana RGP No. 1 that provide habitat for aquatic species. Both of these crossings would span the stream and no permanent fill would be placed into either stream.

Of the 10,490 linear feet of ephemeral stream that would be relocated for construction of the fourteen proposed crossings and the crossings verified as qualifying for Indiana RGP

No. 1 with special conditions, 7,605 linear feet are currently agricultural ditches with the primary function of transporting stormwater. These ditches would be relocated and would have the same function and quality, therefore, these impacts would be mitigated by constructing the relocated streams. For the remaining 29,640 linear feet of ephemeral, intermittent, and perennial stream that would be impacted by the fourteen crossings and the eighteen crossings verified as qualifying for Indiana RGP No. 1 with special conditions, the applicant proposes to create or restore 29,425 linear feet of stream at the Corn, Purcell, and Cornelius mitigation sites. The mitigation sites are discussed in detail in 8.a(5) below. The proposed mitigation would provide 215 linear feet less than what would be required to meet a 1:1 mitigation ratio for impacted streams. Since most of the streams being impacted that require mitigation are lower functional quality and located in narrow riparian corridors and the proposed mitigation would provide higher functional quality streams in large forested wetland complexes, the proposed mitigation would adequately compensate for the impacts and would result in more functional capacity than currently exists.

Habitat for aquatic organisms adapted to living in the seasonally flooded pools in the wetlands proposed to be filled would be eliminated by the project. This adverse impact would be minimized by the proposed wetland mitigation. The proposal would result in only minimal loss of benthic life from the fill activity within the Patoka River, East Fork White River, their tributaries, and jurisdictional wetlands.

There would be a loss of some upland forest habitat in connection with the construction of Crossings 2-6, 8-12, and 14. The loss associated with these crossings would be mitigated. The mitigation would be part of the overall mitigation for loss of upland forest habitat for the entire Section 2 alignment, which consists of the creation of 210 acres and the preservation of 420 acres of forested habitat. This mitigation is discussed in more detail in 8.a(6). This habitat combined with the habitat provided by the wetland and stream mitigation would provide adequate compensation for lost wildlife habitat resources although local wildlife communities would suffer long-term negative impacts. Wildlife communities in the area of the mitigation sites would benefit.

One comment was received in response to the public notice objecting to the mitigation for impacts to forest, stating that it was insufficient. The mitigation for non-wetland forest, which is generally outside the Corps' scope of analysis, was coordinated with the USFWS as part of mitigation requirements for the Tier 1 BO and Section 2 Tier 2 BO.

Other measures that would be taken during construction to avoid or minimize impacts to aquatic and terrestrial species and their habitat are discussed in 8.a(6).

The applicant coordinated with the USFWS to determine the potential impacts to Federally-listed threatened and endangered species. This coordination and the impacts to such species are discussed in 7.b.

The applicant coordinated with the Indiana Department of Natural Resources to determine potential impacts on state-listed species. The proposed crossings are within the range of the following State-listed species: the state-listed endangered Northern crawfish frog (*Lithobates areolatus*), Indiana bat (*Myotis sodalis*), Evening bat (*Nycticeius humeralis*),

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Northern copperbelly watersnake (*Nerodia erythrogaster neglecta*), and Eastern fanshell (*Cyprogenia stegaria*); and the state-listed species of special concern Eastern pipistrelle (*Perimyotis subflavus*), Eastern red bat (*Lasiurus borealis*), Little brown bat (*Myotis lucifugus*), Northern myotis (*Myotis septentrionalis*), Eastern box turtle (*Terrapene carolina*), and Rough green snake (*Ophedryx aestivus*). Appropriate habitat for each of these species would be impacted by the proposed crossings.

Flood hazards: The proposed crossings would be sized appropriately to allow the unimpeded flow of the Patoka River, East Fork White River, and their tributaries. The flood control functions provided by the existing wetlands at Crossings 2, 3, 4, 6, 7, 9, and 14 would be mitigated through the creation or restoration of wetlands at the Cornelius, Corn, Cooper/Buck, and Purcell Mitigation Sites, which are located in the same 8-digit HUC watersheds as the proposed impacts. The proposed crossings should not adversely affect existing flood control functions.

The twenty-six crossings of "waters of the U.S." authorized under Indiana RGP 1 along Section 2 would be sized so that the 100-year floodway elevations would not be substantially affected. There would be no indirect or cumulative adverse effect on flood control functions from these crossings.

Floodplain values: Longitudinal and transverse floodplain encroachments would be minimized, where reasonable, through design practices such as longer bridges and perpendicular stream crossings. The crossings at both the Patoka River and the East Fork of the White River are transverse crossings. The entire floodplains of both the Patoka River and Flat Creek would be bridged.

Complete bridging of the floodplain is being proposed at the Patoka River using twin 0.8-mile-long structures and clearance to accommodate the passage of wildlife beneath it. Construction of the bridge piers, which would be spaced approximately every 125 to 150 feet, must necessarily take place in the floodplain. This construction work would be carefully controlled to minimize impacts to streams, wetlands, and wildlife habitat, and all areas within the floodplain would be restored to original contours after construction of the bridges. Detention basins would also be constructed to capture bridge run-off to minimize floodplain effects.

The Interstate 69 crossing of Flat Creek does not traverse a FEMA 100-year floodplain. Nonetheless, any potential Flat Creek floodplain as defined from hydraulic modeling during the final design would be spanned.

One comment was received in response to the public notice objecting to the impacts on the floodplain of the East Fork White River. One crossing verified as qualifying for Indiana RGP No. 1 would impact the floodplain. Impacts to the floodplain from the crossing and the right-of-way on either side of the crossing are being evaluated by the Indiana Department of Natural Resources, Division of Water for Construction in a Floodway permits. The applicant is responsible for obtaining and complying with all necessary federal, state, and local permits.

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Land use: The proposed crossings would have an impact on land use. They would convert property that is currently agricultural or wooded for Interstate 69 right-of-way. Gibson, Pike, and Daviess Counties have developed comprehensive plans that include plans to protect natural resources, manage growth and promote economic growth spurred by Interstate 69. The entire corridor of Section 2, including the fourteen crossings, has been incorporated into local land use classifications.

Shore erosion and accretion: No adverse effect to erosion and accretion rates or patterns is expected from any of the crossings in Section 2. Erosion control measures, which are discussed in more detail in 8.a(6), would be implemented on the worksites to protect the waterways from receiving increased sedimentation from the work area.

Recreation: The 3,339-acre Pike State Forest is managed by the IDNR, Division of Forestry. It consists of several units, the largest of which is located near the town of Winslow in Pike County. The state forest provides opportunities for dispersed recreational activities, such as primitive camping, hunting, horseback riding, picnicking, bird watching, and hiking. None of the state forest units are located within the Interstate 69 Section 2 corridor. The nearest unit of the Forest is approximately 790 feet to the east, and is traversed by existing SR 57. None of the proposed crossings would impact the Pike State Forest.

In addition, a small part of the land, but none of the facilities or structures, comprising the Flat Creek Youth Camp lies within the Section 2 corridor north of Glezen. The youth camp is owned by the Board of Trustees of the Flat Creek Association of General Baptists. None of the proposed crossings would impact the Flat Creek Youth Camp.

Prides Creek Park and Prides Creek Golf Course are located on SR 61 on the east side of Petersburg, northwest of Crossing 7. The park and the golf course (with the exception of the four-acre golf course clubhouse and parking site) are owned by the Prides Creek Conservancy District, a Pike County taxing authority. Prides Creek Conservancy District leases the facility to the Pike County Park and Recreation Board, which operates the park and subleases the golf course to Golf Course, Inc. The golf course clubhouse and parking area site of four acres is owned by Golf Course, Inc. Prides Creek Park includes approximately 250 acres of parkland with a 90-acre lake. Park amenities include five playgrounds, four shelters, beach area with beach house, beach volleyball, two basketball courts, tennis, horseshoe pits, archery, two boat ramps, a pier, and facilities for campers (60 sites for tents and RVs). Crossing 7 would improve access to Prides Creek Park and Prides Creek Golf Course.

A comment was received in response to the public notice objecting to the proposed crossings' impacts on recreation in the Patoka and East Fork White River watersheds. There would be some minor impacts to general recreation such as fishing, canoeing, hunting, and wildlife watching associated with the crossings. Fishing, hunting, and wildlife watching would still be available within the watersheds, but would be restricted or eliminated at the crossings and the areas immediately up- and downstream. The Patoka River and East Fork White River are suitable for canoeing. The crossings associated with these rivers would change the setting on the portion of the river crossed, but would not

prevent canoeing, as canoes would be able to pass under the structures built at these crossings.

Water supply and conservation: Public drinking water is supplied by private wells and the municipally-owned water utilities in the Section 2 project area - Pike-Gibson Counties Water, the Oakland City Water Company, the Otwell Water Corporation, and Daviess County Rural Water. The Pike-Gibson system, which is the largest supplier, supplies water to approximately 3,200 customers in the Section 2 corridor and obtains water from the Patoka Lake Reservoir and from wells in Petersburg, which are outside of the project corridor. The Oakland City system obtains water from the Patoka Lake Reservoir and from New Lake. The Otwell Water Corporation obtains water from the Patoka Lake Reservoir and wells that are located outside of the Section 2 corridor. Daviess County Rural Water purchases its water from Washington. Any utility relocation plans required in connection with the crossings would be coordinated with the utility companies during the final design phase of the project.

No public water wells would be impacted by the construction of Section 2. There are four private ground-water wells which would be impacted by the construction of Section 2. All private water wells within the proposed project right-of-way would be located and capped according to the Indiana State Regulations. The wells would no longer be used as a water supply.

Water quality: During construction, fill material would be placed in wetlands at Crossings 2, 3, 4, 6, 7, 9, and 14. Since these waters would be eliminated as a result of the proposed project, water quality impacts would be considered long-term adverse impacts without mitigation. The applicant has proposed mitigation for wetland impacts from these crossings through wetland creation or restoration at the Cornelius, Corn, Cooper/Buck, and Purcell mitigation sites. Water quality impacts to streams would be limited to the construction period and would be considered temporary. Best management practices would be utilized to stabilize the fill and minimize water quality impacts to adjacent streams.

Along the entire length of Section 2, the Corps verified that twenty-six crossings of "waters of the U.S." qualified for Indiana RGP No. 1. Four of these crossings involve the placement of fill into a wetland. Water quality impacts at these sites would be considered long-term adverse impacts and would be mitigated through the creation or restoration of additional wetland at the mitigation sites. The other crossings are all stream crossings. As with the proposed crossings, water quality impacts associated with these crossing would be short-term impacts limited to the construction period; and best management practices would be utilized to minimize impacts.

A comment was received during the public comment period expressing concern with the composition of the proposed fill material and the possibility of contaminated earthen fill being used for the proposed projects. While the source of fill material has not been identified, the earthen fill material would comply with INDOT's 2010 Standard Specifications, which require borrow material to be "free of substances that will form deleterious deposits, or produce toxic concentrations or combinations that may be harmful to human, animal, plant or aquatic life, or otherwise impair the designation uses of the

stream or area.” Therefore, in accordance with 40 CFR 230.60(c), no chemical or biological testing is required to make the factual determination of this fill material.

There are both bedrock (consolidated) and unconsolidated aquifers in the Section 2 area. The four principal bedrock aquifers are composed of the Raccoon Creek, Carbondale, and Patoka and Shelburn formations. The unconsolidated aquifers underlying the Section 2 corridor include surficial sand and gravel deposits. These aquifers vary in thickness, susceptibility to surface contamination, and potential for domestic and/or commercial well use. The proposed fourteen crossings would have no impact on aquifer recharge. Neither the proposed fourteen crossings nor the entire length of Section 2 would create areas of impermeable surfaces large enough to have an adverse effect on aquifer recharge.

Energy needs: The proposed crossings and the construction of Section 2 would lead to an increase in the energy consumed by vehicle travel in the project area. The increase in roadway miles and diversion of through traffic from outside the Interstate 69 corridor would result in an increase of total vehicle-miles of travel in the project area. The increase in energy consumption is necessary to achieve the project’s purposes. These impacts would be permanent.

Safety: The proposed crossings are part of a larger project that would improve traffic safety by reducing the number of automobile crashes. The proposed Interstate 69 extension is projected to reduce the annual number of crashes in the Section 2 area despite a large increase in vehicle miles traveled. The impact of the project on safety, if constructed, would be positive and long-term.

The construction of Section 2 would change traffic volumes on local roads as traffic is diverted to Interstate 69 and as local roads feed the interchanges of Interstate 69. For the design year 2030, the construction of Section 2 would cause a decrease in traffic along SR 356 east of SR 57, Bypass US 50 east of SR 71, Business US 50 west of Bypass US 50, SR 57 south of SR 64, and SR 57 between Business US 50 and SR 64. There would be an increase in traffic along SR 64 east and west of SR 57, SR 61 south of SR 57, SR 257 southeast and northwest of Bypass US 50, Bypass US 50 west of SR 57, and SR 57 north of Business US 50. These changes are necessary to achieve the proposed project’s purposes of strengthening the transportation network in southwest Indiana and completing the National Interstate 69 Project between Evansville and Indianapolis. All impacts to traffic and transportation patterns would be permanent.

Food and fiber production: The proposed crossings would have an adverse impact on food and/or fiber production. The riparian corridors immediately adjacent to some of the streams at the proposed crossings and the 26 crossings authorized under Indiana RGP No. 1 have been cultivated. Construction within the riparian corridor of these streams would result in some loss of acres harvested. Impacts to farmland were unavoidable and were minimized by following property lines to avoid/minimize severances, crossing fields at perpendicular angles to avoid/minimize point rows, providing access to parcels that would otherwise be landlocked, and maintaining the connectivity of county crossroads. These impacts would be permanent. The measures taken to minimize impacts are discussed in more detail in 8.a (6).

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Every one of the fourteen proposed crossings is located in or near an area designated as prime and unique farmland. The entire Section 2 corridor would convert approximately 1,200 acres of prime and unique farmland to an Interstate Highway. Some of the crossings authorized under Indiana RGP No. 1 may impact some of this prime and unique farmland. These impacts are necessary to attain the project goals. The Natural Resources Conservation Service (NRCS) assessed impacts to farmlands for the Tier 2 Section 2 FEIS and determined that the proposed alignment would have no significant impact to farmland.

Mineral needs: Crossings 3, 7-10 and 12-14 would have no impact on mineral needs as no known mineral resources exist within the area of those proposed crossings. The construction of Section 2 would result in the loss of 335.5 acres of permitted coal mining acres, 3 oil wells, and 29 miscellaneous wells (including abandoned or inactive wells). Crossings 1, 2, 5, and 6 are located in permitted coal mining areas. Crossings 1, 4, and 5 are located near oil wells. In addition, crossings that qualified for Indiana RGP No. 1 were located in or near known mineral resources including seven crossings in permitted coal mining areas, two crossings near oil wells, and one crossing near a gas well. Impacts to permitted coal mining areas, oil wells, and gas wells were unavoidable. The applicant would close the wells and compensate property owners/interest owners at fair market value. The measures taken to minimize impacts from the well closures are discussed in 8.a(6).

Consideration of property ownership: Along the entire Section 2 right of way, owners of 18 parcels declined INDOT's offer to purchase their acreage. These 18 parcels represent 211 acres of the 1,684 total acres in the Section 2 right of way. These parcels would be condemned.

The adjoining property owners were mailed a copy of the public notice to provide an opportunity for comment. No comments were received. Adjoining property owners should not be adversely affected by the proposed crossings.

Needs and welfare of the people: The public and private need for the proposed project is to provide improved regional accessibility and interstate and international movement of freight. The proposal would provide employment during construction and after for maintenance of the proposed crossings. Indirectly, the changes in land use due to development induced by improved access are expected to yield an increase in business and employment.

b. Endangered Species Act. NA

The proposed project:

(1) Will not affect these threatened or endangered species:

Any/ Explain.

(2) May affect, but is not likely to adversely affect:

Species: Eastern fanshell mussel (*Cyprogenia stegaria*). Explain. During the applicant's coordination for the Tier 1 NEPA studies, the USFWS indicated that the

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proposed Interstate 69 corridor is within the range of the Eastern fanshell mussel (*Cyprogenia stegaria*). USFWS's Revised Programmatic Biological Opinion (BO) for Tier 1 indicated that the Interstate 69 project is "not likely to adversely affect the eastern fanshell mussel." USFWS's Section 2 Tier 2 BO stated there are no additional adverse effects anticipated beyond those discussed in the Tier 1 BO.

(3) Will/ Will not adversely modify designated critical habitat for the Indiana bat (*Myotis sodalis*). *Explain.* During the applicant's coordination for the Tier 1 NEPA studies, the USFWS indicated that the proposed Interstate 69 corridor is within the range of the Federally-listed endangered Indiana bat (*Myotis sodalis*). The USFWS's Revised Programmatic BO for Tier 1 indicated that the Interstate 69 project "is not likely to adversely modify the bat's designated Critical Habitat." The Section 2 Tier 2 BO stated that there are no additional adverse effects anticipated beyond those discussed in the Tier 1 BO.

(4) Is/ Is not likely to jeopardize the continued existence of the Indiana bat (*Myotis sodalis*) and the bald eagle (*Haliaeetus leucocephalus*). *Explain.* During the applicant's coordination for the Tier 1 NEPA studies, the USFWS indicated that the proposed Interstate 69 corridor is within the range of the Federally-listed endangered Indiana bat (*Myotis sodalis*) and the Federally protected bald eagle (*Haliaeetus leucocephalus*). The USFWS's Revised Programmatic BO for Tier 1 indicated that the Interstate 69 project "is still likely to adversely affect but not jeopardized the bald eagle" and "is not likely to jeopardize the continued existence of the Indiana bat." The Tier 1 USFWS BO contained an "incidental take" statement that included reasonable and prudent measures necessary and appropriate to minimize take of Indiana bats.

The Section 2 Tier 2 BO states that there are no additional adverse effects anticipated beyond those discussed in the Tier 1 BO. The Tier 2 BO contains an "incidental take" statement with additional reasonable and prudent measures that would be implemented along with the Tier 1 measures to minimize incidental take of Indiana bats.

A comment was received in response to the public notice asserting that the potential impact of White Nose Syndrome on the Indiana bat was not considered in the evaluation of impacts. The USFWS evaluated White Nose Syndrome in their Section 2 Tier 2 BO and included this evaluation in their decision process.

(5) The Services concurred/ provided a Biological Opinion(s). *Explain.* The USFWS issued a Revised Programmatic BO for Tier 1 on August 24, 2006 and a Section 2 Tier 2 BO on February 17, 2010. The issuance of the Tier 2 BO concluded formal Section 7 consultation in Section 2.

- c. Essential Fish Habitat. Adverse impacts to Essential Fish Habitat will/ will not result from the proposed project. *Explain.* No Essential Fish Habitat would be impacted by the proposed project.

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- d. Historic Properties. The proposed project will have an effect/ will not have any effect on sites listed, or eligible for listing, in the National Register of Historic Places, or otherwise of national, state, or local significance based on letter from SHPO/ FHWA's finding of effects dated December 15, 2008. *Explain.* FHWA issued a finding of effects for Section 2 on December 15, 2008 which concluded: Historic Properties Affected – Adverse Effect. The effects are discussed in 7.a. above. An MOA was entered into between FHWA and SHPO on January 11, 2010 to address the adverse effects. FHWA is responsible for ensuring compliance with the terms of the MOA.
- e. Cumulative & Secondary Impacts. The geographic area for this assessment is the Patoka, Lower East Fork White, and Lower White watersheds.
- (1) Baseline. (from Indiana Rapid Watershed Assessments <http://www.in.gov/isda/2348.htm>) Approximately 3% of the Patoka; 2% of the Lower East Fork White; and 2% of the Lower White watershed areas are water and wetland. The Patoka watershed has approximately 716 miles of stream of which 398.5 miles are first order, 116.7 miles are second order, 44.6 miles are third order, 52.9 miles are fourth order, 86.6 miles are fifth order, and 0 miles are sixth or higher order streams. The stream order for 16.5 miles is not available. The Lower East Fork White watershed has approximately 1,453 miles of stream of which 796.7 miles are first order, 253.5 miles are second order, 196.1 miles are third order, 43.6 miles are fourth order, 0 miles are fifth order, and 128 miles are sixth or higher order streams. The stream order for 34.8 miles of stream is not available. The Lower White watershed has approximately 1,127 miles of stream of which 633.5 miles are first order, 212.7 miles are second order, 82.9 miles are third order, 8.5 miles are fourth order, 39.2 miles are fifth order, and 129.3 miles are sixth or higher order. The stream order for 19.9 miles of stream is not available.

The watersheds that the fourteen proposed crossings are located in have been substantially modified in the past 200 years. In the project area, most of the impact to "waters of the U.S." has been from the development of agricultural fields. In addition to wetland fill, streams were channelized and relocated to facilitate the cultivation of the land. More recently, most of the impacts to "waters of the U.S." have been from the development of surface mines. The mining process involves excavating and filling streams and wetlands to extract underlying minerals. It is estimated the state of Indiana has lost approximately 87% of the wetlands that were present in the 1780s (Dahl, 1990). The impact from each individual crossing would be in the immediate area of the crossing. Cumulative impacts to the watersheds would be minimal since a very small proportion of each watershed would be impacted by each crossing and appropriate mitigation would be implemented to further ensure minimization of impacts.

A search of the Corps database and project files was conducted for projects within 2 miles of the fourteen proposed crossings. The search was limited to a

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2 mile radius because impacts from the crossings would be negligible beyond this area. The search revealed that Corps permits have authorized the fill of approximately 24.34 acres of wetland and 6,308 linear feet of stream. These impacts were primarily from coal mining. The permits associated with these impacts required wetland and stream mitigation to replace lost functions within the watersheds. Since there is missing information in both the database and project files, there have been more impacts than those that are quantified above.

The projection is that Section 404 CWA authorizations would increase due to the construction of the proposed projects. The FEIS projected that a total of 139 acres of new development would be induced by the construction of Section 2 within Pike, Daviess, and Greene Counties, including both residential and employment-related development. Most of this development is expected near the Petersburg interchange (Crossing 7) and in the Washington area (location of a crossing verified under Indiana RGP No. 1). It is likely that some of this development would require Section 404 CWA authorization for wetland fill or stream crossings. In addition, the Refined Preferred Alternative approved by the FHWA for Section 2 included two interchanges the construction of which INDOT has decided to defer. If additional funds become available these interchanges could be constructed. Any such induced development or future construction of deferred features would be required to avoid, minimize, and mitigate for any impacts to "waters of the U.S." There are no natural resource issues of particular concern from Corps and non-Corps activities.

- (2) Context. The proposed project is typical of / a precedent for / very large compared to / other activities in the watershed.

There are many other road crossings in the area, but Interstate 69 would be the first Interstate built in the area. Each separate and complete crossing for this project would have larger impacts than historic projects, which involved road crossings for local and county roads and State and US Routes. Future conditions in the project area are expected to remain mainly agricultural in nature. Section 2 of the Interstate 69 Evansville to Indianapolis extension does not include any large cities and is located more than an hour from Evansville and Indianapolis, so induced residential development is not expected. Besides Corps authorized projects, other past and present activities include coal mining, maintenance of agricultural fields, and the expansion of wooded area at Patoka River NWR.

Resulting natural resource changes and stresses from coal mining include conversion of woods, streams, and wetlands into mined and spoil areas. While impacts from coal mining are expected to increase from the creation of new mining facilities, the Surface Mining Control and Restoration Act requires stringent reclamation work to return mined lands to their pre-mining land uses. IDNR permit requirements now include returning the land to the approximate original contour, subsoil and topsoil replacement, and, for cropland,

revegetation with several years of cultivation of specified crops. While the land use effects of any particular mining operation may continue in a specific location for a number of years, the requirements of the IDNR Reclamation program are designed to ultimately return the mined lands to their original pre-mining land uses. Also, requirements from the Corps of Engineers regulatory program result in on-site and off-site mitigation for stream and wetland losses.

Natural resource changes and stresses from agricultural activities include the continued erosion of sediments and runoff of herbicides, pesticides, fertilizer, and animal waste into surface waters. Most agricultural operations have farmed or created pastures on all suitable land, leaving unsuitable land as woods. Conversion of these woods is not expected.

Natural resource changes from the expansion of wooded area at Patoka River NWR include the restoration of forested habitat, and improved floodwater capacity and water filtration. The Patoka River National Wetlands Project proposes to develop approximately 6,271 acres of forest, 5,597 acres of which would be agricultural land converted to forest, and the remaining 674 acres would come from other non-agricultural lands. Of the total 5,597 acres of agricultural land to be converted to forest, approximately 4,100 acres of bottomland forested wetlands and 1,497 acres of upland forest would be developed.

The key issues of concern in these watersheds are loss of streams and wetlands, water quality, and habitat fragmentation. There should be no significant secondary or cumulative impacts from the proposed project related to these issues. The applicant's proposed mitigation would offset impacts to streams from the proposed crossings and result in a net increase in wetland acres in the affected watersheds. Water quality issues are addressed in the applicant's Section 401 Water Quality Certification. The crossings are not expected to cause further habitat fragmentation as the project area has already been developed into agricultural field to the maximum extent possible and habitat only exists in fragments. Crossing 2 would pass through the Patoka River NWR. The habitat in this area of the NWR is currently fragmented. The applicant's proposed mitigation would include creating forested wetlands in cultivated fields in the NWR including along the Interstate 69 corridor. This mitigation would decrease fragmentation in the area.

- (3) Mitigation and Monitoring. The project affects the following key issue(s): the proposed crossings include 16.41 acres of wetland and open water that would be cleared and filled and 25,075 linear feet of stream that would be relocated, culverted, and/or lined with riprap. The magnitude of the proposed effect is approximately 0.02% of total wetland area within the watersheds. Avoidance and minimization methods include – refining the highway alignments and crossings during the Tiered NEPA evaluation to avoid wetlands, streams, and forests; and modifying the crossing designs to limit use of fill material, minimizing the impacts to “waters of the U.S.” These avoidance and

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minimization measures would result in fewer overall impacts to the "waters of the U.S." – other alignments/designs would have impacted between 1.2 and 23 more acres of wetland and between 4,370 and 10,664 more linear feet of streams. Compensatory mitigation, namely the proposed "Corn Mitigation and Monitoring Plan," the "Purcell Mitigation and Monitoring Plan," the "Cooper/Buck Mitigation and Monitoring Plan," and the "Cornelius Mitigation and Monitoring Plan" and monitoring described therein would result in the creation or restoration of 29,425 linear feet of stream with forested riparian corridor, 11.32 acres of emergent, 4.23 acres of scrub-shrub, and 30.99 acres of forested wetlands.

The USEPA commented that additional performance standards should be included in the permit's special conditions to ensure success of the proposed stream mitigation. They specifically suggested the following special conditions. (1) Five years of annual stream monitoring should be performed, using the Headwater Habitat Evaluation Index (HHEI) or the Qualitative Habitat Evaluation Index (QHEI), as appropriate for the size of the stream. The annual survey data should be collected at the same time each year, selected during the June-September period, at each mitigation stream reach. The survey should be designed to be readily comparable from year to year. (2) Adaptive management/corrective actions should be assessed, proposed, approved, and performed if 30 percent of the survey channel segments fail to maintain at least their original length in linear feet and to achieve a HHEI/QHEI score of at least 30 during any annual monitoring event. This value represents a moderate quality. These special conditions would be included in the permit, if issued.

- f. Corps Wetland Policy. Based on the public interest review herein, the beneficial effects of the project outweigh the detrimental impacts of the project.
- g. NA) Water Quality Certification under Section 401 of the Clean Water Act has/ has not yet been issued by the / State/ Commonwealth.
- h. NA) Coastal Zone Management (CZM) consistency/permit: Issuance of a State permit certifies that the project is consistent with the CZM plan. There is no evidence or indication from the _____ that the project is inconsistent with their CZM plan.
- i. Other authorizations. As noted above, 26 crossings were authorized under Indiana RGP No. 1.
- j. NA) Significant Issues of Overriding National Importance. *Explain.*

8. Compensation and other mitigation actions.

a. Compensatory Mitigation

- (1) Is compensatory mitigation required? yes no [If "no," do not complete the rest of this section]

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(2) Is the impact in the service area of an approved mitigation bank? yes no

(i) Does the mitigation bank have appropriate number and resource type of credits available? yes no

(3) Is the impact in the service area of an approved in-lieu fee program?

yes no

(i) Does the in-lieu fee program have appropriate number and resource type of credits available? yes no

(4) Check the selected compensatory mitigation option(s):

mitigation bank credits

in-lieu fee program credits

permittee-responsible mitigation under a watershed approach

permittee-responsible mitigation, on-site and in-kind

permittee-responsible mitigation, off-site and out-of-kind

(5) If a selected compensatory mitigation option deviates from the order of the options presented in §332.3(b)(2)-(6), explain why the selected compensatory mitigation option is environmentally preferable. Address the criteria provided in §332.3(a)(1) (i.e., the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project):

The following paragraphs provide an explanation of how the mitigation sites address the criteria provided in §332.3(a)(1).

The Cooper/Buck mitigation site property is within the Patoka River USGS 8-digit watershed (05120209) and the entire site is located within the 100-year floodplain of the Patoka River. The Cooper/Buck mitigation site is located in close proximity to a portion of the impacted wetlands within the Interstate 69 Section 2 project corridor. The majority of the 20.0 acre Cooper/Buck mitigation site property has been disturbed through land clearing and agricultural practices. Land use adjacent to the mitigation site includes agricultural fields to the west and along a portion of the southern boundary of the site. The northern boundary of the site is CR 150 N, an unimproved road which receives little traffic. Existing forested and emergent wetlands adjoin the property to the east, along the remainder of the southern boundary, and also across CR 150 N to the north of the mitigation site. The entire property lies within the Acquisition Area of the Patoka River NWR. The nearest residential property lies more than 4,000 feet from the mitigation site. In addition, there are no airports located within 10,000 feet of the site. Existing wetlands located on and in the vicinity of the Cooper/Buck mitigation site are primarily classified in the National Wetland Inventory (NWI) as palustrine forested wetlands (PFO),

with inclusions of palustrine emergent (PEM) and palustrine scrub/shrub (PSS) wetland areas. The mitigation site is to be designed such that additional palustrine forested and palustrine emergent wetland habitat areas would be created or restored. Hydrology for the Cooper/Buck mitigation site would be provided primarily via Patoka River floodwaters. The channelized Patoka River runs within 800 feet of the property. A backwater slough of the Patoka River, formerly the Patoka River channel, runs directly through the site and provides a direct means for the Patoka River floodwaters to reach the mitigation site. Roadside ditches or swales are located along the north side of the property, south of CR 150 N. As water levels in the Patoka River rise, floodwater first flows into the backwater slough, then inundates the lowest areas of the site either directly or via the roadside channels. Under typical flood conditions associated with multiple annual rain events, floodwaters would inundate the entire mitigation site, with the exception of the berm located adjacent to the west edge of the slough. Communication with the land owners indicates that this area frequently is inundated by floodwaters from the Patoka River. As the floodwater recedes, water is retained in local depressions within the site and within the existing wetland habitat areas. Data showing daily river gage heights were obtained for the previous 20-years from the Winslow and Princeton gages, which are the nearest Patoka River gages upstream and downstream from the mitigation site that record historic gage readings. Utilizing the daily water level elevation at each river gage, an estimated daily water level elevation was computed for the mitigation site. It is estimated that all areas of the mitigation site at or below 412.25 feet above mean sea level were inundated by floodwaters for an average of 11.9% of the growing season (April 1 to September 30) over the past 20 years. This includes nearly all areas proposed for wetland mitigation at this site. Currently, approximately 7.49 acres of the site consist of existing forest and wetland habitat. The existence of the forested wetland habitat areas located along the perimeter of the property and along the slough, at approximately the same elevations as the proposed wetland mitigation site, indicates that the Cooper/Buck mitigation site would have sufficient hydrology to support a wetland community. In addition, water retention berms would be constructed on the site to help ensure that adequate hydrology is achieved within the wetland development areas.

The Corn mitigation site property is within the Lower East Fork White River USGS 8-digit watershed (05120208) and a portion of the site is located within the 100-year floodplain of the East Fork of the White River. The majority of the 170.9 acre Corn mitigation site property has been disturbed through land clearing and agricultural practices. Land use adjacent to the mitigation site includes agricultural fields and woodlots to the west, east and south. The northern boundary of the site is bordered by the East Fork of the White River channel. There is a small amount of residential land adjacent to the site along the southern and eastern boundaries of the site. In addition, there are no airports located within 10,000 feet of the site. Existing wetlands located on and adjacent to the Corn mitigation site are primarily classified in the NWI as PFO. The mitigation site is to be designed such that additional palustrine forested,

palustrine scrub/shrub, and palustrine emergent (PEM) wetland habitat areas would be created or restored. Hydrology for the Corn mitigation site would be provided primarily via East Fork of the White River, which borders the northern boundary of the mitigation site. Communication with the land owners indicates that the northern half of the mitigation site (bottomland area) frequently is inundated by floodwaters from the East Fork of the White River. In addition, the existing wetland habitat areas located within the northern half of the property, at approximately the same elevations as the proposed wetland mitigation areas, indicates that wetland development areas of the mitigation site would have sufficient hydrology to support a wetland community. Under typical flood conditions associated with multiple annual rain events, floodwaters would inundate the lower elevations of this mitigation site. As the floodwater recedes, water is retained in local depressions within the site and within the existing wetland habitat areas. Currently, approximately 14.5 acres of the site consist of existing wetland, bottomland, and riparian forest habitat. The upland areas of this Corn mitigation site do not receive any floodwaters from the river channel. Data showing daily river gage heights were obtained for the previous 20-years from the Shoals and Petersburg gages, which are the nearest White River gages upstream and downstream from the mitigation site that record historic gage readings. Utilizing the daily water level elevation at each river gage, an estimated daily water level elevation was computed for the mitigation site. It is estimated that all areas of the mitigation site at or below 422 feet above mean sea level were inundated by floodwaters for an average of 8.8% of the growing season (April 1 to September 30) over the past 20 years. This includes nearly all areas proposed for wetland mitigation at this site.

The Purcell mitigation site property is within the Lower East Fork White River USGS 8-digit watershed and the majority of the site is located within the 100-year floodplain of the East Fork of the White River. The majority of the 147.3 acre Purcell Mitigation Site property has been disturbed through land clearing and agricultural practices. Land use adjacent to the mitigation site includes agricultural fields to the north, south, and west. The eastern boundary of the site is surrounded by existing bottomland and upland forests. There is a small amount of residential land adjacent to the site in the northeastern corner. In addition, there are no airports located within 10,000 feet of the site. Existing wetlands located on and adjacent to the Purcell mitigation site are primarily classified in the NWI as PFO, with inclusions of PEM and PSS wetland areas. The mitigation site is to be designed such that additional palustrine forested and palustrine emergent wetland habitat areas would be created or restored. Hydrology for the Purcell Mitigation Site would be provided primarily via East Fork of the White River floodwaters. The channel of the East Fork of the White River runs within 20 feet of the southwestern boundary of the Purcell Mitigation Site. Communication with the land owners indicates that this area frequently is inundated by floodwaters from the East Fork of the White River. In addition, the existing wetland habitat areas (aka, Horseshoe Pond) located within this property, comprised of 34.0 acres at approximately the same elevations as the proposed wetland mitigation site, indicates that this mitigation site would have

sufficient hydrology to support a wetland community. Horseshoe Pond is a backwater slough of the East Fork of the White River and was formerly the East Fork of the White River channel. As water levels in the East Fork of the White River rise, floodwater first flows into the backwater slough, then inundates the lowest areas of the site. Under typical flood conditions associated with multiple annual rain events, floodwaters would inundate the entire mitigation site, with the exception of the highest elevations located along the northern boundary of the site. As the floodwater recedes, water is retained in local depressions within the site and within the existing wetland habitat areas. Currently, approximately 34.0 acres of the site consist of existing wetland and bottomland forest habitat. Data showing daily river gage heights were obtained for the previous 20-years from the Shoals and Petersburg gages, which are the nearest White River gages upstream and downstream from the mitigation site that record historic gage readings. Utilizing the daily water level elevation at each river gage, an estimated daily water level elevation was computed for the mitigation site. It is estimated that all areas of the mitigation site at or below 425 feet above mean sea level were inundated by floodwaters for an average of 7.0% of the growing season (April 1 to September 30) over the past 20 years. This includes nearly all areas proposed for wetland mitigation at this site.

The Cornelius Mitigation Site property is within the Lower White USGS 8-digit watershed and the entire site is located within the 100-year floodplain of the West Fork of the White River. The majority of the 355.0 acre Cornelius Mitigation Site property has been disturbed through land clearing and agricultural practices. Land use adjacent to the mitigation site includes agricultural fields to the east and south with some areas of wetlands and riparian forests along the edges of the West Fork of the White River. The remainder of the property boundary, including the entire northern and western edges, is adjacent to the West Fork of the White River. Approximately 17,400 feet of the Cornelius Mitigation Site boundary borders the West Fork of the White River. In addition, there are no airports located within 10,000 feet of the site. Existing wetlands located on and adjacent to the Cornelius Mitigation Site are primarily classified in the NWI as PFO, with inclusions of PEM, and PSS wetland areas. The mitigation site is to be designed such that additional palustrine forested, palustrine emergent, and palustrine scrub/shrub wetland habitat areas would be developed within the existing agricultural fields. Hydrology for the Cornelius Mitigation Site would be provided primarily via West Fork of the White River floodwaters. The channel of the West Fork of the White River comprises nearly three quarters of the boundary of the mitigation site. Communication with the land owners indicates that this area is frequently inundated by floodwaters from the West Fork of the White River. In addition, the existing wetland habitat areas located within and adjacent to this property, at approximately the same elevations as the proposed wetland mitigation site, indicate that this mitigation site would have sufficient hydrology to support a wetland community. As water levels in the West Fork of the White River rise, floodwater first inundates the lowest areas of the site. Under typical flood conditions associated with multiple annual rain events, floodwaters would inundate the entire mitigation site. As

the floodwater recedes, water is retained in local depressions within the site and within the existing wetland habitat areas. Currently, approximately 77.8 acres of the site consist of existing wetland and riparian forest habitat. Data showing daily river gage heights were obtained for the previous 20-years from the Newberry and Petersburg gages, which are the nearest White River gages upstream and downstream from the mitigation site that record historic gage readings. Utilizing the daily water level elevation at each river gage, an estimated daily water level elevation was computed for the mitigation site. It is estimated that all areas of the mitigation site at or below 474 feet above mean sea level were inundated by floodwaters for an average of 7.4% of the growing season (April 1 to September 30) over the past 20 years. This includes nearly all areas proposed for wetland mitigation at this site.

The Bartley Mitigation Site property is located within the Patoka River USGS 8-digit watershed (05120209) and the entire site is located within the 100-year floodplain of the Patoka River with the exception of upland forest areas on the south side of the site. The majority of the 136-acre sproperty has been disturbed through land clearing and agricultural practices. Land use adjacent to the mitigation site includes existing forested and scrub/shrub wetland habitats to the north, east and west and CR 150 to the south along with agricultural fields. The entire property lies within the Acquisition Area of the Patoka River National Wildlife Refuge, which is managed by the USFWS. Hydrology for the Bartley Contingency Mitigation Site would be provided primarily via Patoka River floodwaters. The channelized Patoka River runs adjacent to the northwest and northeast boundaries of this mitigation property. A backwater slough of the Patoka River, formerly the Patoka River channel, runs along the center portion of the northern boundary of the site. Both of these channels provide a direct connection for the Patoka River floodwaters to the proposed contingency mitigation site. As water levels in the Patoka River rise, floodwater first flows into the backwater slough, then inundates the lowest areas of the site. Under typical flood conditions associated with multiple annual rain events, floodwaters would inundate the entire mitigation site, with the exception of the southern areas of the property which are being preserved as existing habitat areas for upland forest mitigation for the USFWS Section 7 Consultation mitigation requirements in Section 2. Currently, approximately 71.6 acres of the site consist of existing forest, wetland, and early successional habitat. The existence of the forested wetland habitat areas located along the perimeter of the property and along the slough, at approximately the same elevations as the proposed wetland mitigation site, indicates that the Bartley Contingency Mitigation Site would have sufficient hydrology to support a wetland community. In addition, water retention berms would be constructed on the site to help ensure that adequate hydrology is achieved within the wetland development areas. Through minor excavation and grading at the Bartley Contingency Mitigation Site, an additional area of 56.6 acres of jurisdictional wetland (50.2 acres of forested and 6.4 acres of emergent) would be added to the existing 71.6 acres of wetland forest, upland forest, and early successional habitat preservation areas. The existing wetlands currently perform functions such as flood storage, retention of

sediment transported by the Patoka River, water purification, food and cover for wildlife, and groundwater recharge. The proposed functions for the Bartley Mitigation Site would essentially remain the same, but would be expanded in size (i.e., storm water detention via the water control structures) and enhanced in quality for wildlife habitat through diversified woody species plantings. At 56.6 acres of wetland development, the wetland areas to be gained are anticipated to be satisfactory for use in contingency for any portions of the existing mitigation sites used for Section 2 that are not meeting their designated success criteria. This plan would also preserve 71.6 acres of existing upland and wetland forest habitat and early successional habitat to compensate for a portion of the upland forest impacts. The backwater slough of the Patoka River, which is located adjacent to the northern boundary of this site and the existing forested areas that surround the proposed mitigation site currently function as forested and scrub/shrub wetlands. The remaining areas within this mitigation site are upland forest and fallow fields that would be preserved and used for Section 2 upland forest mitigation.

Given the research, planning, and design associated with the above sites and their likelihood of success and sustainability, these sites meet the fundamental objective of offsetting the losses from unavoidable impacts to "waters of the U.S."

(6) Other Mitigative Actions:

Forest Impacts: For the proposed Interstate 69 Evansville to Indianapolis extension project as a whole, INDOT and FHWA committed to mitigate impacts to upland forests at a 3 to 1 ratio. Mitigation goals are to replace direct forest impacts at a 1 to 1 ratio and provide an additional 2 to 1 ratio of forest preservation. The 3 to 1 ratio would be achieved for the overall Interstate 69 Evansville to Indianapolis extension; the ratio for an individual Tier 2 section could be higher or lower than 3 to 1. Based on the 3 to 1 ratio and the estimated 210 acres of direct impact to upland forests with Section 2's Refined Preferred Alternative, a total of 630 acres could be needed for mitigation – 210 acres of new plantings to replace acres directly impacted and 420 acres of existing forest to be preserved. In the case of any forests in a floodway, a 2 to 1 replacement or 10 to 1 preservation ratio would apply, as applicable by the IDNR Construction in a Floodway permit. If needed, the necessary permit would be secured before or during the design phase of the project. This mitigation would be accomplished either by purchasing and protecting existing tracts of forests or by planting trees. Preference would be given to areas contiguous to large forested tracts that have recorded federal- and state-listed threatened and endangered species. Coordination with resource agencies would assure that these forest mitigation sites are strategically situated in biologically attractive ecosystems. All forest mitigation lands would be protected in perpetuity via conservation easements or other appropriate measures. Coordination with these landowners has resulted in the acquisition of ten parcels within the Section 2 focus areas which would include forest mitigation, with an additional three parcels which are still in the acquisition phase planned for forest mitigation. Three of the

currently secured sites are under construction as part of the Section 2 wetland and stream mitigation sites to develop the planned forest habitat, while five sites have construction yet to be initiated, and five sites consist of preservation only.

Construction: Environmentally-sensitive locations (e.g., wetlands, historic structures, archaeology sites, sinkholes) in the general area would be clearly shown on construction plans. Sites within the right-of-way would be delineated. These sites would not be permitted for use as staging areas, borrow, or waste sites. Erosion control devices would be used to minimize sediment and debris from leaving the project site in runoff. Timely revegetation after soil disturbance would be implemented and monitored. Erosion control measures would be put in place as a first step in construction and maintained throughout construction. Any riprap used below the high water mark would be of a large diameter in order to allow space for habitat for aquatic species after placement. Slopes would be designed that resist erosion. If slopes exceed 2 to 1, they would include stabilization techniques. Soil bioengineering techniques for bank stabilization would be considered where situations allow. To protect sources of potable water, grassy swales would be constructed to divert stormwater from the road to ditches and streams. Construction methods would be used to reduce temporary turbidity caused by construction. Prior to construction, planning for parking and turning areas for heavy equipment would be located outside the construction limits, but within the right-of-way, to minimize soil erosion and impacts to identified resources. To avoid any direct take of Indiana bats, no trees with a diameter of 3 or more inches would be removed between April 1 and September 30. Tree clearing and snag removal would be kept to a minimum and limited to within the construction limits. In the median, outside the clear zone and considering other safety factors, tree clearing would be kept to a minimum with woods kept in as much a natural state as reasonable. Forested medians would be managed following IDNR State Forest timber management plan. INDOT would consult IDNR to determine appropriate measures during tree clearing to address concerns about the emerald ash borer. Revegetation of disturbed areas would occur in accordance with INDOT standard specifications. Woody vegetation would only be used a reasonable distance beyond the clear zone to ensure a safe facility. Revegetation of disturbed soils in the right-of-way and medians would utilize native grasses and wildflowers as appropriate. During construction of Interstate 69, any spill incidents on site would be handled in accordance with INDOT spill response protocol as outlined in their *Construction Activity Environmental Manual and Field Operations Manual Procedure 20*. The Rule 5 permit that contractors must obtain would require that all have spill containment plans in their contract documents. Construction noise abatement measures may be required in areas where residences or other sensitive noise receivers are subjected to excessive noise from highway operations. Noise impacts could be controlled through the regulation of construction time and hours worked, using noise-controlled construction equipment, limitations of construction vehicles during evening and weekend hours and by locating equipment storage areas away from noise sensitive areas. Within the Patoka River floodplain, all areas would be restored to original

contours after construction of the bridges. Solid waste generated by clearing and grubbing, demolition or other construction practices would be removed from the location and properly disposed. Burning of construction related debris would be conducted in accordance with all local, state, and federal regulations. All burning would be conducted a reasonable distance from all homes and care would be taken to alleviate any potential atmospheric conditions that may be a hazard to the public. All burning would be monitored. Contractors are required to follow safeguards established in INDOT's *Standard Specifications* (Section 203.08 Borrow or Disposal) that include obtaining required permits, and identify and avoid or mitigate impacts at borrow/disposal sites that contain wetlands or archaeological resources. Special Provisions would include prohibiting tree clearing from April 1 to September 30 within the Summer Action Area of the Indiana bats, as identified in the revised Tier 1 BO; and prohibiting the filling of wetlands outside the construction limits. Wetlands within the right-of-way that are not within the construction limits would be delineated and protected from construction impacts. All Interstate 69 engineering supervisors, equipment operators, and other construction personnel and INDOT and/or other maintenance staff would receive mandatory environmental awareness training that discloses where known sensitive Indiana bat sites are located in the project area, addresses any other concerns regarding Indiana bats, and presents a protocol for reporting the presence of any live, injured, or dead bats observed or found within or near the construction limits or right-of-way during construction, operation, and maintenance of Interstate 69.

Hazardous Materials. Where construction would require the removal/relocation of buried fuel (oil, natural gas, and diesel) pipelines, coordination would occur with pipeline owners, per INDOT's *Standard Specifications*. Also, stipulations in the *Standard Specifications* would be followed to ensure safe removal/relocation of the pipelines and associated appurtenances, and appropriate remediation of soils and groundwater impacts, should such be necessary. In addition, the procedure would include advance notification of IDEM regarding the potential for contamination of groundwater and need for remediation. INDOT would be responsible for proper closing of any improperly abandoned well discovered during construction within the project right-of-way, according to INDOT *Standard Operating Procedures* for closing wells that are to be abandoned. In addition, the procedure would include advance notification of IDEM regarding the potential for contamination of groundwater and need for remediation.

Farmland impacts: Where reasonable, the Refined Preferred Alternative follows existing property lines and minimizes dividing or splitting large tracts of farmland to reduce the creation of point rows and uneconomic remnants. Many farm parcels that would have lost access as a result of the project would be provided access via new roads as features of the project. Where providing access is not deemed reasonable from an economic standpoint during final design, the disposition of landlocked parcels and uneconomic remnants would be addressed during final design and right-of-way acquisition process. In several

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locations, overpasses would be provided to maintain the connectivity of local roads. The overpasses would facilitate access to farm operations divided by Interstate 69. Coordination would continue with the NRCS in Section 2 to determine the feasibility of participating in the Farm and Ranch Lands Protection Program.

Water Body Modifications Impacts: The following measures would be utilized to address impacts on water bodies. (1) Water bodies, wetlands and other natural areas outside the construction limits but within the right-of-way would be delineated and posted with "Do Not Disturb" signs. (2) Tree clearing and snag removal would be kept to a minimum and limited to within the construction limits and calendar requirements. (3) The realignment of surface streams or impacts to riffle-pool complexes and natural stream geomorphology has been avoided where reasonable. Stream relocations would be completed using the natural channel design features that are identified through coordination with IDNR and other water resource agencies to develop a channel that is as good as or better than the impacted channel considering a channel's status as a legal drain. In addition, any stream relocations required within an Indiana bat maternity colony area in Section 2 would be completed with a natural stream design. USFWS would be included in the coordination regarding the relocation during the permitting process to assure that any concerns relative to the Indiana bat are addressed as part of the stream relocation. (4) Where reasonable, below-water work would be restricted to placement of piers, pilings and/or footings, shaping of spill slopes around the bridge abutments, and placement of riprap. (5) Where reasonable, channel work and vegetation clearing would be restricted to within the width of the normal approach road right-of-way. (6) The extent of artificial bank stabilization would be minimized. Soil bioengineering techniques for bank stabilization would be considered where situations allow. (7) If riprap is utilized for bank stabilization, it shall be of appropriate size and extend below the low-water elevation to provide for aquatic habitat. (8) Culverts and other devices would be placed so that they would not preclude the movement of fish and other aquatic organisms. Culverts and other devices would be used to preserve existing drainage patterns. Consideration would be given to oversized culverts to allow for the passage of small fauna at locations where it is determined to be appropriate and reasonable, and natural bottoms would be preserved when feasible. Current preliminary designs for bridges at Flat Creek, Prides Creek, Mud Creek and Veale Creek provide openings that are sufficiently large to allow deer and other wildlife to utilize them for crossing under the new highway. In addition, the Patoka River and the East Fork of the White River would be bridged, allowing free movement of wildlife. (9) Erosion control devices such as erosion control matting, grading, seeding and sodding would be used to minimize sediment and debris in tributaries of the project. (10) For the crossing of East Fork of White River, the applicant would incorporate recommendations received in correspondence from the NPS on February 6, 2007, including avoiding the placement of piers in the bed or banks of the river, redirecting deck run-off away from the river to settling ponds or other filtration system, ensuring

commitments are in place to fully incorporate opportunities for design aesthetics, and ensuring all best management practices are in place to contain erosion, sedimentation, fuels/hydraulic fluids/oil spills, or other such materials.

Ecosystems Impacts: Section 2 crosses the Patoka River Bottoms within the Patoka River NWR boundary and also crosses the East Fork of the White River. Both are considered to be significant ecosystems. The following measures would be utilized to address impacts on ecosystems: (1) where woody vegetation, wetlands, wildflowers or environmentally sensitive areas occur, "Do Not Spray or Mow" signs would be posted; (2) in mitigation sites and within the proposed right-of-way for Interstate 69, INDOT would use appropriate herbicides and/or physical mechanisms to control invasive plants, such as purple loosestrife, canary reed grass, kudzu, Japanese knotweed and others; (3) coordination with the USFWS would continue pursuant to the Migratory Bird Treaty Act of 1918; (4) transportation designers would work with appropriate agencies to determine the most feasible and practical conservation measures for the maintenance of wildlife movements and landscape connectivity; (5) planting of unpalatable plant species near roadways to reduce the likelihood of wildlife attraction; and (6) wildlife crossings at four locations: the Patoka River crossing, the Flat Creek crossing, the crossing of the East Fork of the White River, and the crossing of the tributary to Jackson Pond. In each case, the structures proposed to carry Interstate 69 over these features would provide a wildlife crossing corridor well in excess of the minimum dimensions required to allow large mammals to pass (at least 8' by 24'). At the Patoka River, the total structure length would be in excess of 4,400 feet. Following construction of the bridges, all areas within the Patoka River floodplain disturbed by construction would be restored to original contours. Use of armor along the stream banks would vary by the specific location, but an adequate amount of unarmored overbank area would be incorporated (as determined in consultation with IDNR) for the targeted species. Plans for armoring the stream bed and banks and fencing are still under consideration and would be coordinated with IDNR during final design. During the design phase, consideration would be given to planting plans that would provide adequate cover for wildlife to access these crossings from adjacent areas of cover. Fencing to funnel wildlife toward these crossings would also be evaluated during design. Vegetation plantings and fencing would be evaluated in regards to the habitat remaining after final design, the final size of structures, topography, fill material used in the roadway, and cost. Specific information on these factors would not be available until the design phase of the project. Additional opportunities for wildlife to cross would occur at Prides Creek, Mud Creek and Veale Creek. As presently proposed, the structures over these streams are anticipated to provide sufficient opening beneath them for deer and all smaller mammals, reptiles and amphibians. Other bridges and larger culverts would also provide additional crossing opportunities for smaller wildlife. Crossings of four Flat Creek tributaries, a tributary to Veale Creek, North Woods creek, and a tributary to Hurricane Branch would all provide good crossing opportunities for smaller wildlife. Natural bottoms for the box culverts would be used for these crossings where feasible. During the

design phase, detailed consideration would be given to barrier fencing (for large species). All wildlife crossing types would be determined and designed considering size, placement, substrate, vegetative cover, moisture, temperature, light, and human disturbance.

9. General evaluation criteria under the public interest review. We considered the following within this document:
- a. The relative extent of the public and private need for the proposed structure or work. (e.g. Public benefits include employment opportunities and a potential increase in the local tax base. Private benefits include land use and economic return on the property; for transportation projects benefits include safety, capacity and congestion issues.) *Explain.* The proposed crossings would advance the National Interstate 69 Project, which is needed to facilitate interstate and international movement of freight through the Interstate 69 corridor. Benefits from the proposed crossings would include: (1) increased access of area communities to the Interstate system; (2) reduction in travel time to regional business destinations (Evansville, Bloomington, and Indianapolis); (3) reduction in congestion on rural roadways; (4) reduction in number of crashes in the Section 2 area; (5) reduction in the number of trucks on area highways; (6) increase in access of area businesses to the Interstate system; and (7) provision of interchange locations suitable for stimulating economic development.
 - b. There are unresolved conflicts as to resource use however there are no practicable reasonable alternative locations and methods to accomplish the objective of the purposed work. *Explain.* One of the Hoosier Environmental Council's objections to the proposed project is that the alternative that would use existing US 41 and Interstate 70 would be the least environmentally damaging practicable alternative. This alternative would not meet the project goals and has been determined not to be practicable. As discussed in the alternatives section, the proposed project has fewer impacts to aquatic resources than any of the other practicable alternatives.
 - c. The extent and permanence of the beneficial and/or detrimental effects, which the proposed work is likely to have on the public, and private uses to which the area is suited. Detrimental impacts are expected to be minimal although they would be permanent in the construction area. The beneficial effects associated with utilization of the property would be permanent. *Explain.* The proposed crossings would be located in agricultural fields and wooded areas. These areas are currently privately owned and they would be converted to a public Interstate. The proposed crossings include 16.41 acres of wetland and open water that would be cleared and filled and 25,075 linear feet of stream that would be relocated, culverted, and/or lined with riprap to facilitate the construction of the Interstate. In addition to the impacts from the fourteen crossings, the construction of Section 2 would impact 1.84 acres of wetland and 13,520 linear feet of stream.

10. Determinations.

a. Public Hearing Request: NA

I have reviewed and evaluated the requests for a public hearing. There is sufficient information available to evaluate the proposed project; therefore, the request for a public hearing is denied. The determination not to hold a public hearing was made in writing on January 14, 2011.

b. Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed permit action has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under this permit will not exceed de minimis levels of direct or indirect emissions of a criteria pollutant or its precursors and are exempted by 40 CFR Part 93.153. Any later indirect emissions are generally not within the Corps' continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons a conformity determination is not required for this permit action.

c. Relevant Presidential Executive Orders.

(1) EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians. This action has no substantial direct effect on one or more Indian tribes. *Explain, if appropriate.*

(2) EO 11988, Floodplain Management. Not in a floodplain. (Alternatives to location within the floodplain, minimization, and compensation of the effects were considered above.)

(3) EO 12898, Environmental Justice. In accordance with Title III of the Civil Right Act of 1964 and Executive Order 12898, it has been determined that the project would not directly or through contractual or other arrangements, use criteria, methods, or practices that discriminate on the basis of race, color, or national origin nor would it have a disproportionate effect on minority or low-income communities.

(4) EO 13112, Invasive Species.
 There were no invasive species issues involved.
 The evaluation above included invasive species concerns in the analysis of impacts at the project site and associated compensatory mitigation projects.
 Through special conditions, the permittee will be required to control the introduction and spread of exotic species.

(5) EO 13212 and 13302, Energy Supply and Availability. The project was not one that will increase the production, transmission, or conservation of energy, or strengthen pipeline safety. (The review was expedited and/or other actions were taken to the extent permitted by law and regulation to accelerate completion of this energy-related (including pipeline safety) project while maintaining safety, public health, and environmental protections.)

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b. Finding of No Significant Impact (FONSI). Having reviewed the information provided by the applicant and all interested parties and an assessment of the environmental impacts, I find that this permit action will not have a significant impact on the quality of the human environment. Therefore, an Environmental Impact Statement will not be required.

c. Compliance with 404(b)(1) guidelines. NA

Having completed the evaluation in paragraph 5, I have determined that the proposed discharge complies/ does not comply with the 404(b)(1) guidelines.

d. Public Interest Determination: I find that issuance of a Department of the Army permit is not/ is contrary to the public interest, if properly conditioned. Therefore, I have decided to issue the requested Department of the Army permit subject to all Standard Conditions and the following Special Conditions:

1. The permittee shall create or restore 25,075 linear feet of stream and 36.55 acres of wetland to include 7.84 acres of emergent, 0.06 acres of scrub-shrub, and 28.65 acres of forested wetland in accordance with the "Cornelius Mitigation and Monitoring Plan," "Corn Mitigation and Monitoring Plan," "Purcell Mitigation and Monitoring Plan" and "Cooper/Buck Mitigation and Monitoring Plan" dated January 5, 2010.
2. The permittee shall monitor the mitigation sites annually for a period of five years. This monitoring shall include annual stream monitoring, using the Headwater Habitat Evaluation Index (HHEI) or the Qualitative Habitat Evaluation Index (QHEI), as appropriate for the size of the stream, at the mitigation sites. The annual survey data should be collected at the same time each year, selected during the June-September period, at each mitigation stream reach. The survey should be designed to be readily comparable from year to year. The permittee shall submit monitoring reports to the U.S. Army Corps of Engineers, Indianapolis Regulatory Office by December 31 every year of monitoring.
3. If 30 percent of the survey channel segments at the mitigation sites fail to maintain at least their original length in linear feet and to achieve a HHEI/QHEI score of at least 30 during any annual monitoring event, adaptive management/corrective actions shall be proposed, assessed, approved by the U.S. Army Corps of Engineers, and performed.
4. If, at the end of the required monitoring period, total acreage of successful wetland mitigation is less than required at the four above mentioned sites, the permittee shall be allowed to substitute successful acreage at the Bartley Mitigation and Monitoring Site. Construction of the Bartley site shall be in accordance with the "Contingency Wetland Mitigation and Monitoring Plan for the Bartley Mitigation Site," dated September 14, 2010.

5. The permittee's responsibility to complete the required compensatory mitigation as set forth in Special Condition 1 shall not be considered fulfilled until they have demonstrated compensatory mitigation project success and have received written verification of that success from the U.S. Army Corps of Engineers.

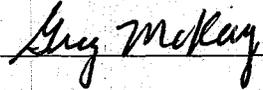
PREPARED BY:



Date: 3/31/11

for
Deborah Duda Snyder
Project Manager
Indianapolis Regulatory Office

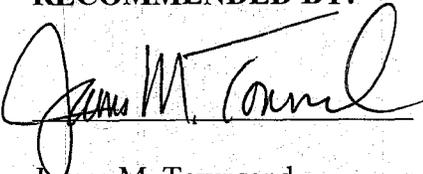
REVIEWED BY:



Date: 3/31/11

Greg McKay
Chief, North Section
Regulatory Branch

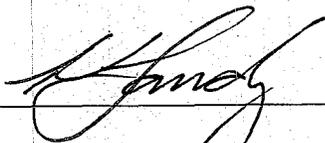
RECOMMENDED BY:



Date: 3/31/11

James M. Townsend
Chief, Regulatory Branch
Operations Division

APPROVED BY:



Date: 4/1/11

Keith A. Landry
COL, Corps of Engineers
District Commander



Figure 1
 I-69 Section 2
 Project Location
 Gibson, Pike & Daviess Counties, Indiana
 LRL-2010-466-djd
 Scale

