

**Avon, Indiana
Section 14**

**Appendix A:
Environmental**



**US Army Corps
of Engineers**
Louisville District

**Finding of No Significant Impact
and
Section 404(b)(1) Finding of Compliance**

White Lick Creek, Avon, Indiana
Continuing Authorities Program
Section 14 Project

1. The U.S. Army Corps of Engineers has proposed a project to address streambank erosion along the left descending bank of White Lick Creek, adjacent to South County Road 625 East in the town of Avon, Indiana. The study is authorized by Section 14 of the 1946 Flood Control Act (P.L. 79-526) as amended. Section 14 allows the Corps to plan and construct emergency streambank and shoreline protection projects to protect highways, highway bridge approaches, public facilities such as water and sewer lines, hospitals, non-profit schools, churches and other public non-profit facilities. The study was initiated in response to a request from the Town of Avon's Department of Public Works to investigate stabilization solutions for the streambank.
2. Alternatives considered for the streambank protection project are: (1) no action, (2) protection of the streambank with launch soil nails, matting and riprap toe, (3) protection of the streambank with riprap, (4) protection of the streambank with sheet pile wall, (5) protection of the streambank with a gabion basket toe and riprap slope, and (6) protection of the streambank with pre-fabricated gravity-retaining wall. Implementation of the soil nails and riprap toe to protect the streambank from erosion is considered the most cost-efficient and effective means to address current bank stabilization issues while minimizing adverse environmental impacts, and is considered the preferred alternative. The No Action alternative would not be in the public's best interest and would eventually impact county infrastructure, thus requiring more costly means to address the issue.
3. In accordance with ER 200-2-2, *Policy and Procedures for Implementing the National Environmental Policy Act* (NEPA), an EA has been prepared and circulated to other agencies and groups for review. Coordination with the Indiana State Historic Preservation Officer (SHPO) and federally recognized tribes was conducted. The preferred alternative (hereinafter, "proposed project") would not significantly impact socioeconomic conditions within the project area. Ecological benefits are expected to be realized with improved streambank stabilization.

4. Construction activities associated with the implementation of the proposed project would cause minor and temporary adverse impacts to water quality, aquatic resources, and noise in the immediate project area. No impacts to wetlands from the proposed project are anticipated. No issues were anticipated regarding hazardous, toxic, or radioactive materials. Overall impacts from construction of this project would be beneficial after construction is complete. The preferred alternative is in compliance with the Clean Air Act and Executive Order 12898 for Environmental Justice. It would not disproportionately place any adverse environmental, economic, social, or health impacts on minority or low-income populations.
5. The proposed project will entail placement of fill material into waters of the U.S. An evaluation and finding of its compliance with the Section 404(b)(1) Guidelines is appended to the EA. Because construction impacts will occur below the ordinary high water mark of White Lick Creek, a Section 401 Water Quality Certification from the Indiana Division of Water (DOW) will be obtained prior to construction. These steps will ensure that all requirements under the Clean Water Act (CWA) will have been met. Construction activities associated with the proposed project would not result in the disturbance of more than one acre of total land.
6. Coordination with U.S. Fish and Wildlife Service (USFWS) and Indiana Department of Natural Resources (DNR), per the Fish and Wildlife Coordination Act (FWCA 48 Stat, 401, as amended; 16 U.S.C. 661 et seq.) and Endangered Species Act (16 U.S.C. §§ 1531-1544) has been completed.
7. Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and its implementing regulations at 36 CFR 800 require consideration of cultural resources prior to a federal undertaking and requires consultation with the SHPO, federally recognized tribes with a connection to the project location, and other consulting parties defined at Section 800.3. The NHPA only affords protection to sites, buildings structures, objects, or landscapes listed in or determined eligible for listing in the National Register of Historic Places (NRHP). Archival research for this project involved consulting the NRHP and Indiana SHPO, and review of the Indiana State Historic Architectural and Archaeological Research Database. A visual pedestrian survey was also performed by Louisville District personnel. As a result of this research, the Corps has determined, in accordance with 36 CFR 800. 3(a)(1), that there is no potential to cause effects on historic properties or other cultural resources. This information has been coordinated with the Indiana SHPO.
8. I have evaluated this project in accordance with the guidelines promulgated by the Administrator of the Environmental Protection Act pursuant to Section 404(b)(1) of the CWA. Based on that evaluation, I have determined that the proposed bank stabilization

project is specified as complying with the guidelines with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem.

9. I have reviewed the proposed project, the public and agency comments, and the EA in light of the general public interest. I have determined that issuing the respective approvals and allowing the proposed project to be implemented would not constitute a major federal action significantly affecting the quality of the human environment within the meaning of the NEPA of 1969, as amended. Accordingly, I have concluded that preparation of an Environmental Impact Statement would not be required.

Date

**Antoinette R. Gant
Colonel, Corps of Engineers
District Commander**



**US Army Corps
of Engineers**
Louisville District

**Clean Water Act Section 404(b)(1) Evaluation
Section 14 Emergency Streambank Protection
on White Lick Creek
Avon, Indiana**

Prepared by:
U.S. Army Corps of Engineers, Louisville District
December 2017

I. Project Description

a. Location

The Town of Avon was incorporated in 1995 and is located approximately five miles west of the city of Indianapolis. U.S. Highway 36, also known as Rockville Road, and Indiana State Highway 267, also known as Avon Road, are its main thoroughfares. Most of the town is characterized by single family dwellings and community parks, the largest being the Washington Township Park which is located adjacent to the project. The most iconic landmark of the town is the "Haunted Bridge of Avon", which is an active CSX double track railroad bridge located adjacent to the project area. (Latitude 39.757670, Longitude -86.413942)



Figure 1. Project site location map

b. General Description

This Clean Water Act Section 404(b)(1) evaluation addresses the proposed discharge of dredged or fill material into the waters of the U.S. The U.S. Army Corps of Engineers (USACE) prepared a draft Environmental Assessment for Section 14 Emergency Streambank Protection Project, which included the proposed placement of 491 linear feet (LF) of protected and stabilized streambank along White Lick Creek in Avon, Indiana.

This alternative would protect 491 feet of bank. The bank would be cleared, removing all the trees with exposed roots and any trees that are dead, dying or otherwise unstable. Once the bank has been cleared, granular fill would be placed to form a stable slope upon which limestone riprap would be placed. Launched soil nails are long steel or fiberglass rods with a steel mesh or mat facing that are installed to reinforce or strengthen the existing ground. Soil nails are inserted using high pressure air by a launcher that can be mounted on a hydraulic excavator. The soil nails reinforce the locally unstable soil mass by transferring the nail's tensile and shear resistance through the failure plane of the sliding soil. The nails maintain the resisting force because they are anchored beyond the slip plane. It is estimated that approximately 366 soil nails will be needed and installed in a systematic pattern to stabilize the existing bank slope.

Because of the proximity of the bank to the road, excavating to form the slope of the streambank is not possible for the majority of the length of the protection and in those areas where it is possible, it would require removing additional trees than by using granular fill to form the slope.

This alternative would require clearing approximately a 0.4 acres, placing 130 cubic yards of granular fill and 517 cubic yards of riprap below the ordinary high water mark (OHWM), which would cover approximately 5,000 square feet of existing benthic substrate in White Lick Creek. A guardrail would be installed between the top of the bank and the edge of the road to meet roadside safety requirements.

c. Authority and Purpose

This project is being conducted under Section 14 of the Flood Control Act of 1946, as amended, which authorizes the USACE to study, design and construct emergency streambank and shoreline works to protect public services including (but not limited to) streets, bridges, schools, water and sewer lines, National Register Historic sites, and churches from damage or loss by natural erosion. It is a Continuing Authorities Program (CAP) which focuses on water resource related projects of relatively smaller scope, cost and complexity.

d. General Description of Dredged or Fill Material

(1) General Characteristics of Material

Fill material would consist of 86-pound maximum graded limestone riprap on the streambank.

(2) Quantity of Material

Bank stabilization would require placing approximately 130 cubic yards of granular fill and 517 cubic yards of riprap below the OHWM.

(3) Source of Material

The riprap would be obtained from approved commercial sources.

e. Description of the Proposed Discharge Sites

(1) Location

The project site is located on the left descending bank of White Lick Creek at river mile 107.2, adjacent to South County Road 625 East in Avon, Indiana.

(2) Size

The proposed project involves placement of 130 cubic yards of granular fill and 517 cubic yards of riprap.

(3) Type(s) of Sites and Habitats

White Lick Creek substrates are primarily clean gravel and sand. Cobble and, to a lesser extent, large boulders are present in some reaches. Moderate silt accumulation near stream margins and organic enrichment, as evidenced by abundant filamentous algae, occurs in most reaches.

(4) Time and Duration of Discharge

The total construction time of the recommended plan would be 180 days.

f. Description of Disposal Method

Placement of the riprap will be accomplished from land by appropriately size crane and/or excavator. Cut earthen material will be repurposed along the streambank for grading measures.

II. Factual Determinations

a. Physical Substrate Determinations

(1) Substrate

The substrates are primarily clean gravel and sand. Cobble and, to a lesser extent, large boulders are present in some reaches. Moderate silt accumulation near stream margins have occurred from eroded banks.

(2) Sediment Type

Sediments at the project sites are mostly fine sediments, sands, and deposited material from the river. Sediments resulting from erosion along the riverbank transported by water flow are composed of sorted gravel, sand, silt, and other fine materials.

(3) Dredged/Fill Material Movement

The installed riprap will be installed and graded appropriately to prevent movement in high flow events on White Lick Creek.

(4) Physical Effects on Benthos

Temporary and localized impacts to benthic organisms and their habitats would occur in the immediate areas of construction; however, benthic organisms are expected to quickly rebound from the short-term impacts of material placement. Approximately 5,000 square feet of benthic habitat will be covered by riprap within White Lick Creek.

(5) Other Effects

No other effects are known.

(6) Actions Taken to Minimize Impacts

Impacts to surface water and physical substrates from excavation of riverbed material would be minimized by using appropriate construction best management practices and limiting excavation quantities and ground disturbance to the absolute minimum required.

The toe size of the installed riprap slope will be minimized to the greatest extent possible to limit impact to benthos.

b. Water Circulation, Fluctuation, and Salinity Determinations

(1) Water

Temporary increases in turbidity would occur at the construction areas and downstream of the areas during construction. These changes in turbidity have not been modeled; however, due to the limited scope of the project, they are not expected to significantly impact water quality.

No significant negative impacts would be expected to water quality or sensitive organisms where material would be placed.

(a) Salinity

There are no impacts expected to salinity.

(b) Water Chemistry

There are no impacts expected to water chemistry.

(c) Clarity

There may be a local and temporary increase in turbidity during construction activities. Because of reduced sediment load, water clarity near the project site is expected to improve from preconstruction conditions shortly after operations are completed.

(d) Color

Water immediately surrounding the construction area may become discolored temporarily due to disturbance of the sediment during placement of the riprap.

(e) Odor

Negligible amounts of hydrogen sulfide may be expected when disturbing possible anoxic sediments at the construction sites. Otherwise, there are no long-term impacts to odor.

(f) Taste

There are no impacts expected to taste.

(g) Dissolved Gas Levels

No impacts to dissolved gas levels would be expected.

(h) Nutrients

The proposed action could cause temporary nutrient increases during periods of resuspension of sediment and organic debris. Once construction is complete, the project will prevent further introduction of nutrients into the water column through stabilization of the streambank.

(i) Eutrophication

Construction activities would not lead to eutrophication of surrounding waters.

(j) Others as Appropriate

None known

(2) Current Patterns and Circulation

(a) Current Patterns and Flow

Construction activities would not have a significant effect on inflows to the system or water surface elevations.

(b) Velocity

Placement of material within the channel would not significantly impact velocities.

(c) Stratification

No changes in water stratification are anticipated.

(d) Hydrologic Regime

Hydrologic regimes would not be altered with placement of material.

(3) Normal Water Level Fluctuations

The average water surface elevation throughout the study area would be unaffected by construction activities.

(4) Salinity Gradients

There would be no change in salinity gradients.

(5) Actions That Would Be Taken to Minimize Impacts

Impacts to surface water and physical substrates from excavation of riverbed material would be minimized by using appropriate construction best management practices and limiting excavation quantities to the absolute minimum required.

c. Suspended Particulate/Turbidity Determination

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site

A temporary and localized increase in suspended particulates and turbidity levels is expected during excavation and placement of material at the project site. Upon completion of construction activities, suspended particulates and turbidity levels are expected to quickly return to preconstruction levels.

(2) Effects on Chemical and Physical Properties of the Water Column

(a) Light Penetration

Turbidity levels would be temporarily increased during placement operations material. Upon completion of construction activities light penetration is expected to improve from preconstruction levels due to reduced sedimentation from erosion at the project sites.

(b) Dissolved Oxygen

No adverse impacts to dissolved oxygen (DO) are expected; a reduction in DO may occur at localized and temporary events during construction activities.

(c) Toxic metals and organics

Suspended particles resulting from placement would not result in detrimental effects to chemical and physical properties of the water column.

(d) Pathogens

None expected or found.

(e) Aesthetics

No impacts to aesthetics would be anticipated.

(f) Others as Appropriate

None known

(3) Effects on Biota

No impacts are expected on photosynthesis, suspension/filter feeders, and sight feeders, except for temporary and localized impacts from placement operations (e.g., burial of benthos or temporary increase of local turbidity levels).

(4) Actions Taken to Minimize Impacts

Impacts to surface water and physical substrates from excavation of riverbed material would be minimized by using appropriate construction best management practices and limiting excavation quantities and ground disturbance to the absolute minimum required.

d. Contaminant Determinations

The riprap would be acquired from a state-approved commercial source. No contaminated materials would be released during construction of this project. Should contamination be found, necessary steps to avoid the materials or cleanup of the area would take place.

e. Aquatic Ecosystem and Organism Determinations

(1) Effects on Plankton

The proposed action could cause some negligible mortality because of increases in total suspended solids and turbidity and decreases in dissolved oxygen levels during construction periods. Impacts would be temporary and short-term in nature, and recolonization of the area by plankton should occur quickly after construction is complete.

(2) Effects on Benthos

Temporary effects on benthic macroinvertebrates could occur during construction, but once the project is complete, recolonization of the project areas by the native benthos is expected.

(3) Effects on Nekton

No significant impacts to the nekton of the area from the proposed construction and placement operations are expected.

(4) Effects on Aquatic Food Web

Reductions in primary productivity from turbidity would be temporary and localized around the immediate area of the construction and would be limited to the duration of the plume at a given site.

(5) Effects on Special Aquatic Sites

Construction activities would not have detrimental effects on special aquatic sites in the study area (i.e., sanctuaries and refuges, wetlands, mudflats).

(6) Threatened and Endangered Species

Coordination is ongoing with the U.S. Fish and Wildlife Service (USFWS) and the Indiana Department of Natural Resources (DNR). The scoping response received from the USFWS on February 6, 2019 listed two threatened or endangered species that may occur in the proposed project area- the Indiana bat (*Myotis sodalis*) and the Northern long-eared bat (*Myotis septentrionalis*). Coordination has been ongoing with the USFWS, and the Corps has made a determination of “may affect, not likely to adversely affect”, for these species.

(7) Other Wildlife

Because existing conditions (eroded river bank) within the proposed project area provide poor quality wildlife habitat, there would be no significant loss of wildlife habitat. However, placed stone, over time, could provide wildlife habitat.

(8) Actions to Minimize Impacts

Construction and riprap placement operations would be limited to low flow conditions, where possible, to minimize the overall impacts of disturbance. Construction best management practices would be implemented to minimize impacts. Additionally, USACE is coordinating with the USFWS regarding potential impacts to threatened and endangered species in the action area, and a Clean Water Act - Section 401 Water Quality Certification will be obtained from the Indiana DNR, Division of Water before construction begins. To minimize impacts to roosting endangered Indiana bats (*Myotis sodalis*), no trees over four inches diameter at breast height will be removed from April 1st to September 30th.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination

N/A

(2) Determination of Compliance with Applicable Water Quality Standards

In the No Action Alternative condition, water and sediment quality are not expected to substantially change in White Lick Creek or its surrounding waters.

For the proposed project alternative, no violation of water quality standards is anticipated. A Clean Water Act - Section 401 Water Quality Certification will be obtained from the Indiana DNR, Division of Water before construction begins.

(3) Potential Effects on Human Use Characteristics

(a) Municipal and Private Water Supply

Construction activities would not impact any municipal or private water supplies.

(b) Recreational and Commercial Fisheries

No significant impacts to recreational and commercial fishing are anticipated from implementation of the proposed project. Completion of the bank stabilization project may have positive effects on the aquatic food chain by providing additional habitat below OHW for aquatic plant and animal species. This in turn, could potentially improve the local fishery.

(c) Water-related Recreation

No impacts to water-related recreation would occur as a result of the proposed construction activities.

(d) Aesthetics

No significant impacts to aesthetics are expected. Some trees will be removed from the project site; however, without the implementation of an erosion protection, these trees will be undercut and fall in a relatively short timeframe. Construction of the project will protect the river bank and allow new vegetation to establish.

(e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves

No special sites would be negatively impacted by the project.

g. Determination of Cumulative Effects on the Aquatic Ecosystem

From a watershed perspective, the stabilized 491 feet of riverbank would not be highly visible in the overall reduction of aquatic resource impairments due to sedimentation; however it would provide some minor progress in reducing riverbank erosion.

The construction activities of the proposed project are expected to have negligible adverse impacts to the environment when considered directly, indirectly, and/or cumulatively. The placement of bank protection is expected to improve water quality from preconstruction conditions by reducing erosion in the area. Riprap protection currently exists in the footprint of the project, but will be improved and extended to protect more riverbank from erosion. Cumulative effects are discussed in further detail in Section 4.12 of the Environmental Assessment.

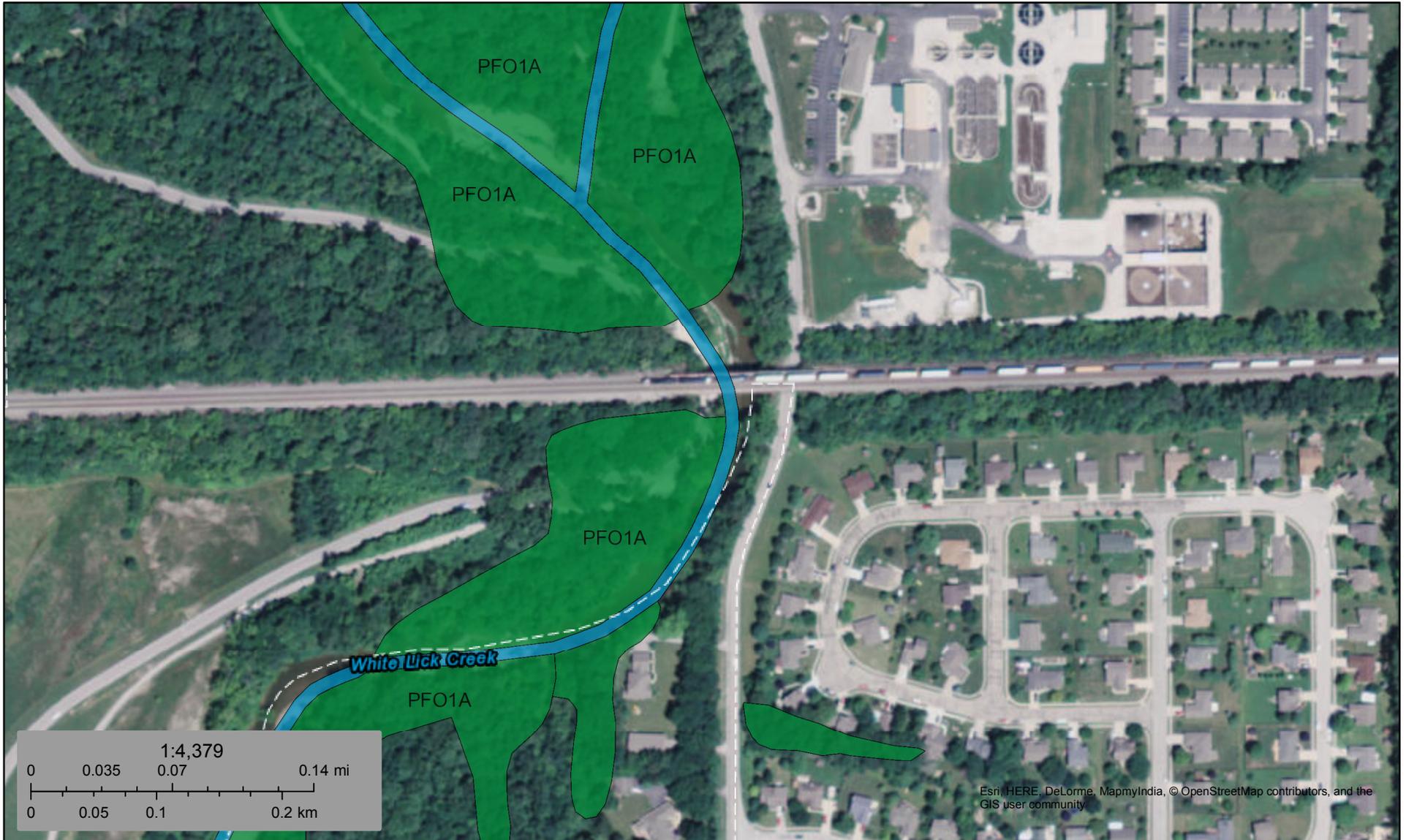
h. Determination of Secondary Effects on the Aquatic Ecosystem

Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill material but do not result from the actual placement of the material. No adverse significant secondary effects on the aquatic ecosystem should occur as a result of the proposed project.

III. Findings of Compliance with Restrictions on Discharge with Section 404(b)(1) Guidelines

- a. **Adaptation of the Section 404(b)(1) Guidelines to this Evaluation**: No significant adaptations of the Guidelines were made relative to the evaluation for this project.
- b. **Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem**: The proposed project is the result of thorough evaluation of seven proposed alternatives (including the No-Action Alternative). Refer to the associated Environmental Assessment and Feasibility Report for a complete comparative analysis of available alternatives. The proposed alternative of streambank protection in the form of launched soil nails with a riprap toe is the practicable alternative that would have the least adverse impact on the aquatic ecosystem.
- c. **Compliance with Applicable State Water Quality Standards**: The discharges associated with the proposed project alternative are not anticipated to cause or contribute to violation of any water quality standards. A Clean Water Act Section 401 Water Quality Certification will be obtained from the State of Indiana before commencing any work in waters of the U.S. Additionally, the proposed project alternative would not violate any toxic effluent standards of Section 307 of the Clean Water Act.

- d. **Compliance with Applicable Toxic Effluent Standard of Prohibition Under Section 307 of the Clean Water Act:** Bank stabilization operations would not violate Section 307 of the Clean Water Act.
- e. **Compliance with the Endangered Species Act:** The Corps has made a determination that the proposed project may affect, but is not likely to adversely affect any federally or State-listed threatened or endangered species or their critical habitat or violate any protective measures for any sanctuary. The US Fish and Wildlife Service is being consulted regarding the potential issues of any federally or State-listed threatened or endangered species or their critical habitat.
- f. **Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act of 1972:** Not applicable.
- g. **Evaluation of Extent of Degradation of the Waters of the United States:** The proposed project would not result in adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, wildlife, and special aquatic sites. There are no significant adverse impacts expected to the aquatic ecosystem diversity, productivity and stability, or recreational, aesthetic, and economic values.
- h. **Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the discharge on the Aquatic Ecosystem:** Appropriate steps to minimize potential adverse impacts on the aquatic system include close coordination with the State and Federal resource agencies during the final design prior to construction to incorporate all valid suggestions. Construction best management practices would be implemented to minimize impacts to the riparian zone and river bed and to control erosion and resuspension of soil and sediments. Additionally, construction activities would be limited to low flow conditions to minimize the overall effects of sediment disturbance and alterations of the river bank, riparian vegetation, and the river substrate would be limited to the greatest extent possible.
- i. **On the Basis of EPA 404 (b) (1) Guidelines, the Proposed Disposal Site for the Discharge of Dredged or Fill Material is:** in compliance with requirements of these guidelines, with the inclusion of the appropriate conditions and construction best management practices to minimize impacts to the aquatic ecosystem.



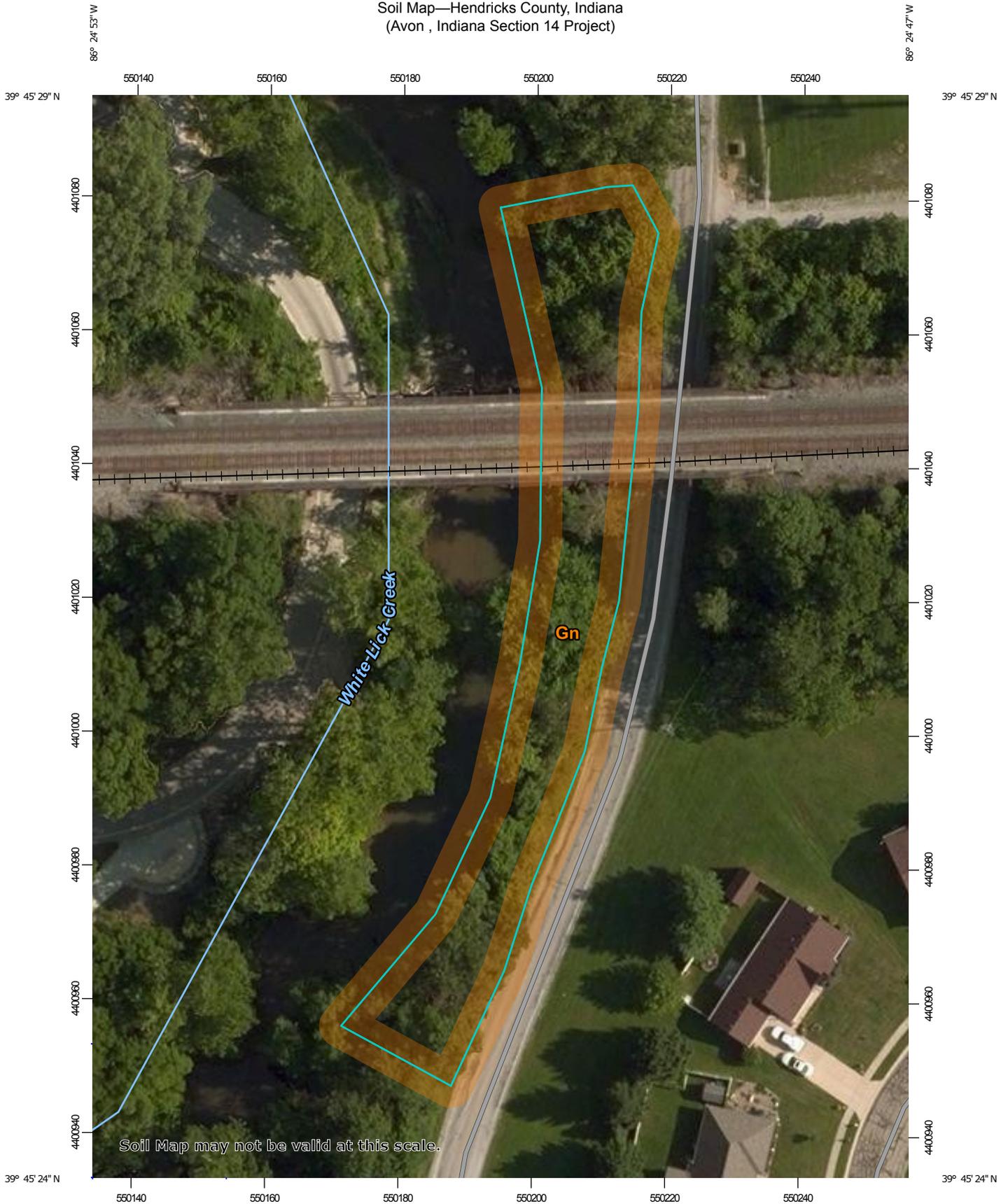
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

February 17, 2017

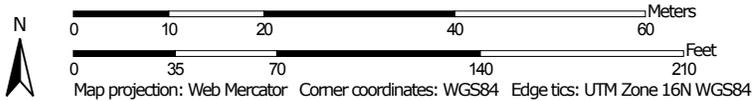
- | | | |
|--|---|--|
|  Estuarine and Marine Deepwater |  Freshwater Forested/Shrub Wetland |  Other |
|  Estuarine and Marine Wetland |  Freshwater Pond |  Riverine |
|  Freshwater Emergent Wetland |  Lake | |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Soil Map—Hendricks County, Indiana
(Avon, Indiana Section 14 Project)



Map Scale: 1:789 if printed on A portrait (8.5" x 11") sheet.



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hendricks County, Indiana

Survey Area Data: Version 20, Sep 14, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 27, 2014—Aug 28, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

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Borrow Pit



Clay Spot



Closed Depression



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Landfill



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Marsh or swamp



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Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

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Map Unit Legend

Hendricks County, Indiana (IN063)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Gn	Genesee silt loam, 0 to 2 percent slopes, frequently flooded, very brief duration	0.5	100.0%
Totals for Area of Interest		0.5	100.0%



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

Phone: (812) 334-4261 Fax: (812) 334-4273

<http://www.fws.gov/midwest/Endangered/section7/s7process/step1.html>

In Reply Refer To:

February 06, 2019

Consultation Code: 03E12000-2017-SLI-0408

Event Code: 03E12000-2019-E-02138

Project Name: Avon, Indianan Section 14 - Emergency Streambank Protection

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies any federally threatened, endangered, proposed and candidate species that may occur within the boundary of your proposed project or may be affected by your proposed project. The list also includes designated critical habitat if present within your proposed project area or affected by your project. This list is provided to you as the initial step of the consultation process required under section 7(c) of the Endangered Species Act, also referred to as Section 7 Consultation.

Section 7 of the Endangered Species Act of 1973 requires that actions authorized, funded, or carried out by Federal agencies not jeopardize federally threatened or endangered species or adversely modify designated critical habitat. To fulfill this mandate, Federal agencies (or their designated non-federal representative) must consult with the Service if they determine their project “may affect” listed species or critical habitat.

Under 50 CFR 402.12(e) (the regulations that implement Section 7 of the Endangered Species Act) the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally. You may verify the list by visiting the ECOS-IPaC website <http://ecos.fws.gov/ipac/> at regular intervals during project planning and implementation and completing the same process you used to receive the attached list. As an alternative, you may contact this Ecological Services Field Office for updates.

Please use the species list provided and visit the U.S. Fish and Wildlife Service's Region 3 Section 7 Technical Assistance website at - <http://www.fws.gov/midwest/endangered/section7/s7process/index.html>. This website contains step-by-step instructions which will help you

determine if your project will have an adverse effect on listed species and will help lead you through the Section 7 process.

For all **wind energy projects** and **projects that include installing towers that use guy wires or are over 200 feet in height**, please contact this field office directly for assistance, even if no federally listed plants, animals or critical habitat are present within your proposed project or may be affected by your proposed project.

Although no longer protected under the Endangered Species Act, be aware that bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*) and Migratory Bird Treaty Act (16 U.S.C. 703 *et seq.*), as are golden eagles. Projects affecting these species may require measures to avoid harming eagles or may require a permit. If your project is near an eagle nest or winter roost area, see our Eagle Permits website at <http://www.fws.gov/midwest/midwestbird/EaglePermits/index.html> to help you determine if you can avoid impacting eagles or if a permit may be necessary.

We appreciate your concern for threatened and endangered species. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Indiana Ecological Services Field Office

620 South Walker Street

Bloomington, IN 47403-2121

(812) 334-4261

Project Summary

Consultation Code: 03E12000-2017-SLI-0408

Event Code: 03E12000-2019-E-02138

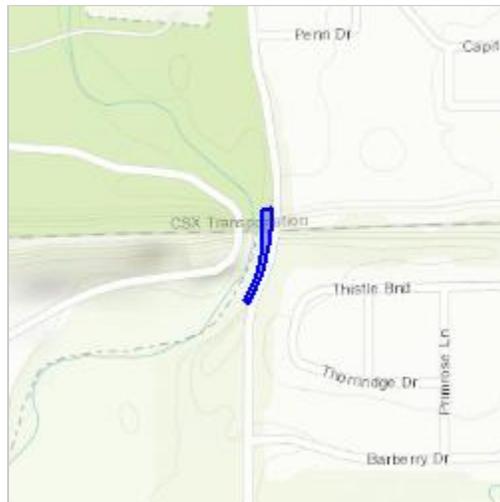
Project Name: Avon, Indianan Section 14 - Emergency Streambank Protection

Project Type: ** OTHER **

Project Description: This project will implement approximately 500 feet of erosion protection along the left descending bank of White Lick Creek.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/39.75752402262638N86.4139079595941W>



Counties: Hendricks, IN

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/1/office/31440.pdf	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> ▪ Incidental take of the NLEB is not prohibited here. Federal agencies may consult using the 4(d) rule streamlined process. Transportation projects may consult using the programmatic process. See www.fws.gov/midwest/endangered/mammals/nleb/index.html Species profile: https://ecos.fws.gov/ecp/species/9045 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/10043/office/31440.pdf	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Indiana County Endangered, Threatened and Rare Species List

County: Hendricks

Species Name	Common Name	FED	STATE	GRANK	SRANK
Mollusk: Bivalvia (Mussels)					
Ptychobranchus fasciolaris	Kidneyshell		SSC	G4G5	S2
Villosa lienosa	Little Spectaclecase		SSC	G5	S3
Insect: Odonata (Damselflies)					
Enallagma divagans	Turquoise Bluet		SR	G5	S3
Reptile					
Sistrurus catenatus catenatus	Eastern Massasauga	C	SE	G3G4T3Q	S2
Bird					
Bartramia longicauda	Upland Sandpiper		SE	G5	S3B
Cistothorus platensis	Sedge Wren		SE	G5	S3B
Dendroica cerulea	Cerulean Warbler		SE	G4	S3B
Mammal					
Myotis sodalis	Indiana Bat or Social Myotis	LE	SE	G2	S1
Nycticeius humeralis	Evening Bat		SE	G5	S1
Taxidea taxus	American Badger		SSC	G5	S2
Vascular Plant					
Juglans cinerea	Butternut		WL	G4	S3
Poa paludigena	Bog Bluegrass		WL	G3	S3
High Quality Natural Community					
Forest - flatwoods central till plain	Central Till Plain Flatwoods		SG	G3	S2
Wetland - seep circumneutral	Circumneutral Seep		SG	GU	S1

Indiana Natural Heritage Data Center
Division of Nature Preserves
Indiana Department of Natural Resources
This data is not the result of comprehensive county surveys.

Fed: LE = Endangered; LT = Threatened; C = candidate; PDL = proposed for delisting
 State: SE = state endangered; ST = state threatened; SR = state rare; SSC = state species of special concern; SX = state extirpated; SG = state significant; WL = watch list
 GRANK: Global Heritage Rank: G1 = critically imperiled globally; G2 = imperiled globally; G3 = rare or uncommon globally; G4 = widespread and abundant globally but with long term concerns; G5 = widespread and abundant globally; G? = unranked; GX = extinct; Q = uncertain rank; T = taxonomic subunit rank
 SRANK: State Heritage Rank: S1 = critically imperiled in state; S2 = imperiled in state; S3 = rare or uncommon in state; G4 = widespread and abundant in state but with long term concern; SG = state significant; SH = historical in state; SX = state extirpated; B = breeding status; S? = unranked; SNR = unranked; SNA = nonbreeding status unranked



Background

- The flood magnification factor represents how flood flow (i.e., the monthly flow exceeded 10% of the time) is predicted to change in the future.
 - In watersheds with indicator values greater than 1, flood flow is predicted to increase.
 - In watersheds with indicator values less than 1, flood flow is predicted to decrease.
- Increases in flood flow can have adverse effects on species not adapted to such changes. For example, increased flood flow levels can lead to river bed scour, which reduces egg-to-fry survival rates of salmon in the Pacific Northwest.¹
- Increased flood flow levels may also result in energy spills at hydropower plants, when there is neither sufficient storage capacity nor turbine capacity. Energy spills may be especially prevalent in winter and early spring, when increased flood flow levels may occur.²
- Higher values suggest higher vulnerability relative to other watersheds.

THIS INDICATOR MEASURES THE CHANGE IN FLOOD RUNOFF, I.E., THE RATIO OF INDICATOR 571L/C (MONTHLY LOCAL OR CUMULATIVE RUNOFF EXCEEDED 10 PERCENT OF THE TIME,) TO 571L/C IN THE BASE PERIOD.

Local vs. Cumulative

- The interpretation of flow-based indicators depends on where the flow originates.
- The vulnerability assessment tool uses two versions of this indicator:
 - Local (568L): Reflects flow generated only within one 4-digit hydrologic code (HUC-4) watershed.
 - Cumulative (568C): Reflects all flow generated within a HUC-4 watershed and any upstream watersheds.

Data Sources

Data Source	Description	Spatial Resolution	Temporal Resolution
Coupled Model Intercomparison Project (CMIP-5) output ³	Local runoff within HUC-4 watersheds	HUC-4 watersheds	2035-2064 and 2070-2099

These Indicators Were Used to Assess the Vulnerability of Some of USACE's Eight Business Lines

Indicator	Business Line	Importance Weight (Varies from 1 to 2 for USACE)	Indicator	Business Line	Importance Weight (Varies from 1 to 2 for USACE)
568L	Flood Risk	1.4	568C	Flood Risk	1.8
	Ecosystem Restoration	1		Navigation	2
	Hydropower	1		Ecosystem Restoration	1.5
	Recreation	1		Hydropower	1.4
	Regulatory	1.1		Recreation	1.4
		Regulatory		1.6	
		Emergency Management		1.9	

Calculation

- Use local runoff values from 47 CMIP-5 climate model traces specific to each future scenario.⁴
- Calculate the flood runoff for the base period (1950-2004), and a future scenario (2035-2064 or 2070-2099).
 - For indicator 568L, use local flood runoff values (indicator 571L) in the base and future periods.
 - For indicator 568C, use cumulative flood runoff values (indicator 571C) in the base and future periods.
- Divide the future value of flood runoff by the base period value to obtain the flood magnification factor.

¹ Mantua, N., I. Tohver, and A. Hamlet. 2010. Climate Change Impacts on Streamflow Extremes and Summertime Stream Temperature and Their Possible Consequences for Freshwater Salmon Habitat in Washington State. *Climatic Change*. 102(1-2): 187-223.

² Madani, K., and J. R. Lund. 2010. Estimated Impacts of Climate Warming on California's High-Elevation Hydropower. *Climatic Change*. 102(3-4): 521-538.

³ CMIP-5 output is available for download online at: http://gdo-dcp.ucllnl.org/downscaled_cmip_projections/dcpinterface.html

⁴ Indicator values were calculated for two scenarios (a wet and a dry future) and two time periods (2035-2064 and 2070-2099).

HIGH INDICATOR VALUE

Watersheds with high indicator values may have an increased risk of flooding or damage to property in the future.

The photo shows the 2011 flood of the Souris River in North Dakota, when 500-year flood levels were reached or exceeded.



Minot, ND - Courtesy of USAF

National Flood Hazard Layer FIRMette



FEMA

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Regulatory Floodway Zone AE, AO, AH, VE, AR

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
OTHER FEATURES		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
OTHER FEATURES		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

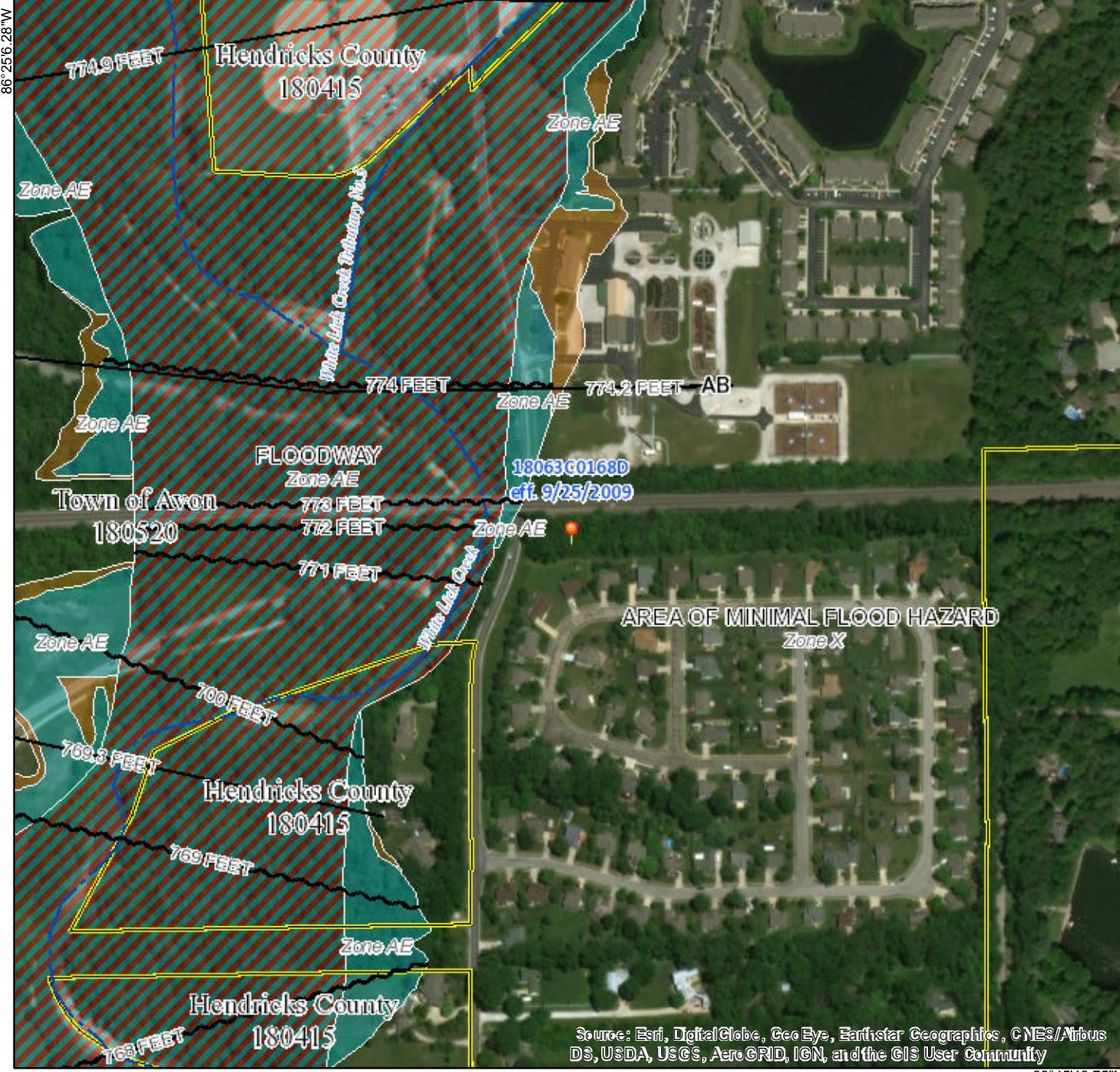


This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **2/21/2018 at 5:09:26 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

39°45'41.41"N



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

86°24'28.82"W

PERCENT CHANGE IN RUNOFF DIVIDED BY PERCENT CHANGE IN PRECIPITATION



Background

- This indicator is one in a group of vulnerability indicators known as “elasticities,” in which the percent change in one variable is divided by the percent change in another variable that causes the change in the first variable.
- This indicator is computed from observations of streamflow and precipitation without relying on the assumptions and caveats needed in a hydrologic model.¹
- For example, an indicator value of 2 would imply that a 1% increase in monthly precipitation would result in a 2% increase in monthly runoff.
- Higher values suggest higher vulnerability relative to other watersheds.

THIS INDICATOR MEASURES THE MEDIAN OF THE DEVIATION OF RUNOFF FROM MONTHLY MEAN TIMES AVERAGE MONTHLY PRECIPITATION, DIVIDED BY THE DEVIATION OF PRECIPITATION FROM MONTHLY MEAN TIMES AVERAGE MONTHLY RUNOFF.

Data Sources

Data Source	Description	Spatial Resolution	Temporal Resolution
Coupled Model Intercomparison Project (CMIP-5) output ²	Local runoff and precipitation within 4-digit hydrologic code (HUC-4) watersheds	HUC-4 watersheds	2035-2064 and 2070-2099

This Indicator Was Used to Assess the Vulnerability of All of USACE’s Eight Business Lines

Business Line	Importance Weight (Varies from 1 to 2 for USACE)
Flood Risk	1
Navigation	1.5
Ecosystem Restoration	1.75
Hydropower	1.5
Recreation	1
Water Supply	1.3
Regulatory	1.25
Emergency Management	1.2

Calculation

- Use local runoff and precipitation values from 47 CMIP-5 climate model traces specific to each future wet or dry scenario.³
- Calculate yearly precipitation, P_t , and average local runoff, Q_t , for each model trace.
- Calculate the mean annual precipitation, \bar{P} , and mean average local runoff, \bar{Q} , by averaging the yearly values.
- For each year, calculate the yearly elasticity as:

$$\left(\frac{Q_t - \bar{Q}}{P_t - \bar{P}} \right) \frac{\bar{P}}{\bar{Q}}$$
- Rank the yearly elasticity values for each model trace from low to high, and select the 15th value. This value is a model trace’s elasticity estimator.
- Rank climate model traces’ elasticity estimator values from low to high, and select the 42nd value.

¹ Sankarasubramanian, A., Vogel, R.M., and J.F. Limbrunner. 2001. Climate Elasticity of Streamflow in the United States. Water Resources Research. 37(6): 1771-1781.
² CMIP-5 output is available for download online at: http://gdo-dcp.ucllnl.org/downscaled_cmip_projections/dcpinterface.html
³ Indicator values were calculated for two scenarios (a wet and a dry future) and two time periods (2035-2064 and 2070-2099).

HIGH INDICATOR VALUE
 Small changes in precipitation are likely to result in large changes in runoff at this Texas site.



HIGH

Brazos River, TX - Courtesy of NWS

PERCENT CHANGE IN RUNOFF DIVIDED BY PERCENT CHANGE IN PRECIPITATION



Background

- This indicator is one in a group of vulnerability indicators known as “elasticities,” in which the percent change in one variable is divided by the percent change in another variable that causes the change in the first variable.
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THIS INDICATOR MEASURES THE MEDIAN OF THE DEVIATION OF RUNOFF FROM MONTHLY MEAN TIMES AVERAGE MONTHLY PRECIPITATION, DIVIDED BY THE DEVIATION OF PRECIPITATION FROM MONTHLY MEAN TIMES AVERAGE MONTHLY RUNOFF.

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HIGH

HIGH INDICATOR VALUE

Small changes in precipitation are likely to result in large changes in runoff at this Texas site.

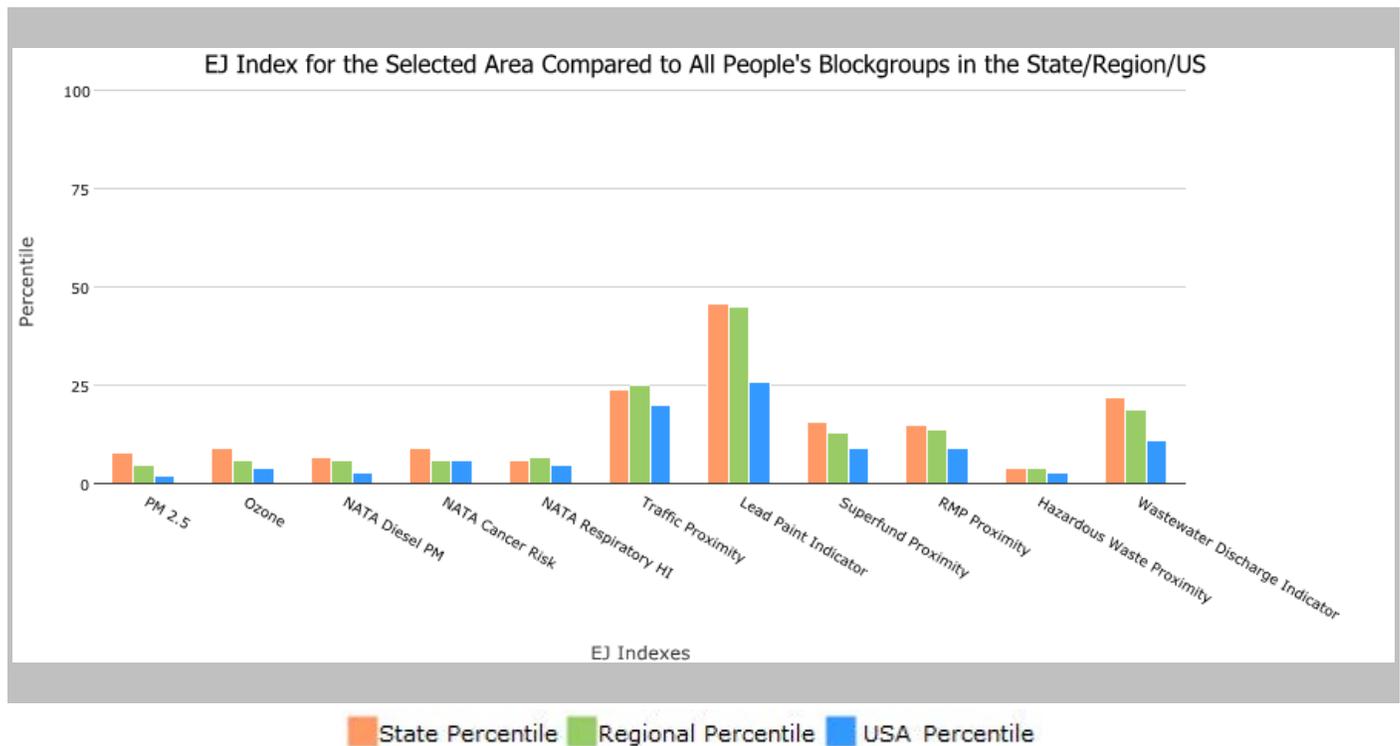
EJSCREEN Report (Version 2017)

the User Specified Area, INDIANA, EPA Region 5

Approximate Population: 67,886

Input Area (sq. miles): 83.92

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	8	5	2
EJ Index for Ozone	9	6	4
EJ Index for NATA* Diesel PM	7	6	3
EJ Index for NATA* Air Toxics Cancer Risk	9	6	6
EJ Index for NATA* Respiratory Hazard Index	6	7	5
EJ Index for Traffic Proximity and Volume	24	25	20
EJ Index for Lead Paint Indicator	46	45	26
EJ Index for Superfund Proximity	16	13	9
EJ Index for RMP Proximity	15	14	9
EJ Index for Hazardous Waste Proximity	4	4	3
EJ Index for Wastewater Discharge Indicator	22	19	11



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

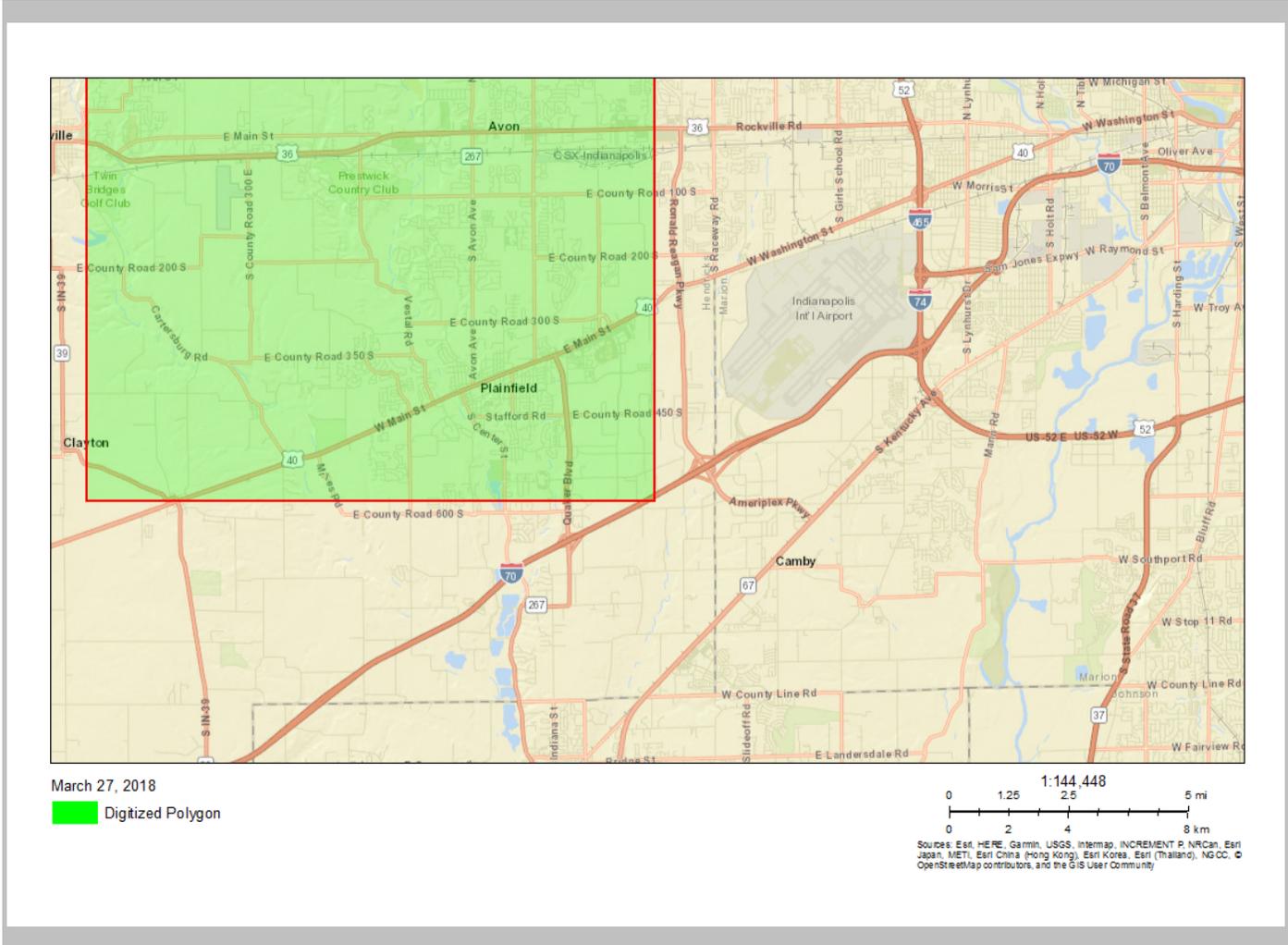
EJSCREEN Report (Version 2017)



the User Specified Area, INDIANA, EPA Region 5

Approximate Population: 67,886

Input Area (sq. miles): 83.92



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EJSCREEN Report (Version 2017)

the User Specified Area, INDIANA, EPA Region 5

Approximate Population: 67,886

Input Area (sq. miles): 83.92

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	11.2	10.9	74	10.1	86	9.14	92
Ozone (ppb)	37.7	38.2	22	37.6	46	38.4	47
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	0.889	0.835	60	0.932	50-60th	0.938	50-60th
NATA* Cancer Risk (lifetime risk per million)	33	34	52	34	<50th	40	<50th
NATA* Respiratory Hazard Index	1.7	1.4	77	1.7	60-70th	1.8	50-60th
Traffic Proximity and Volume (daily traffic count/distance to road)	93	250	54	370	53	590	50
Lead Paint Indicator (% Pre-1960 Housing)	0.11	0.35	25	0.39	23	0.29	38
Superfund Proximity (site count/km distance)	0.072	0.16	50	0.13	58	0.13	55
RMP Proximity (facility count/km distance)	0.39	0.81	50	0.81	51	0.73	55
Hazardous Waste Proximity (facility count/km distance)	0.12	0.078	86	0.091	80	0.093	80
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0027	0.29	57	4.2	64	30	73
Demographic Indicators							
Demographic Index	15%	27%	29	29%	31	36%	19
Minority Population	13%	19%	54	25%	49	38%	29
Low Income Population	17%	35%	21	33%	27	34%	25
Linguistically Isolated Population	1%	2%	65	2%	59	5%	45
Population With Less Than High School Education	6%	12%	31	11%	39	13%	33
Population Under 5 years of age	6%	6%	52	6%	55	6%	53
Population over 64 years of age	13%	14%	47	14%	45	14%	50

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

Location: User-specified polygonal location
 Ring (buffer): 0-mile radius
 Description:

Summary of ACS Estimates		2011 - 2015
Population		67,886
Population Density (per sq. mile)		784
Minority Population		8,947
% Minority		13%
Households		24,224
Housing Units		25,925
Housing Units Built Before 1950		1,193
Per Capita Income		30,139
Land Area (sq. miles) (Source: SF1)		86.63
% Land Area		99%
Water Area (sq. miles) (Source: SF1)		0.61
% Water Area		1%

	2011 - 2015 ACS Estimates	Percent	MOE (±)
Population by Race			
Total	67,886	100%	1,046
Population Reporting One Race	66,621	98%	2,413
White	60,788	90%	1,072
Black	3,843	6%	556
American Indian	96	0%	58
Asian	1,290	2%	391
Pacific Islander	4	0%	45
Some Other Race	601	1%	291
Population Reporting Two or More Races	1,265	2%	230
Total Hispanic Population	2,368	3%	476
Total Non-Hispanic Population	65,518		
White Alone	58,939	87%	933
Black Alone	3,832	6%	556
American Indian Alone	71	0%	55
Non-Hispanic Asian Alone	1,221	2%	391
Pacific Islander Alone	4	0%	45
Other Race Alone	358	1%	258
Two or More Races Alone	1,093	2%	230
Population by Sex			
Male	33,935	50%	609
Female	33,950	50%	636
Population by Age			
Age 0-4	4,159	6%	226
Age 0-17	17,474	26%	523
Age 18+	50,412	74%	686
Age 65+	8,582	13%	246

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available.

Source: U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.

Location: User-specified polygonal location
 Ring (buffer): 0-mile radius
 Description:

	2011 - 2015 ACS Estimates	Percent	MOE (±)
Population 25+ by Educational Attainment			
Total	44,321	100%	631
Less than 9th Grade	924	2%	146
9th - 12th Grade, No Diploma	1,915	4%	158
High School Graduate	12,763	29%	328
Some College, No Degree	13,939	31%	420
Associate Degree	3,984	9%	193
Bachelor's Degree or more	14,780	33%	382
Population Age 5+ Years by Ability to Speak English			
Total	63,727	100%	920
Speak only English	60,345	95%	814
Non-English at Home ¹⁺²⁺³⁺⁴	3,382	5%	442
¹ Speak English "very well"	2,288	4%	296
² Speak English "well"	736	1%	309
³ Speak English "not well"	309	0%	93
⁴ Speak English "not at all"	50	0%	115
³⁺⁴ Speak English "less than well"	359	1%	132
²⁺³⁺⁴ Speak English "less than very well"	1,094	2%	336
Linguistically Isolated Households*			
Total	136	100%	89
Speak Spanish	30	22%	45
Speak Other Indo-European Languages	50	37%	64
Speak Asian-Pacific Island Languages	41	30%	32
Speak Other Languages	15	11%	39
Households by Household Income			
Household Income Base	24,224	100%	292
< \$15,000	1,588	7%	133
\$15,000 - \$25,000	1,450	6%	93
\$25,000 - \$50,000	4,828	20%	230
\$50,000 - \$75,000	5,213	22%	244
\$75,000 +	11,145	46%	386
Occupied Housing Units by Tenure			
Total	24,224	100%	292
Owner Occupied	19,183	79%	289
Renter Occupied	5,041	21%	213
Employed Population Age 16+ Years			
Total	52,842	100%	695
In Labor Force	35,051	66%	712
Civilian Unemployed in Labor Force	1,994	4%	175
Not In Labor Force	17,791	34%	463

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.

*Households in which no one 14 and over speaks English "very well" or speaks English only.

Location: User-specified polygonal location

Ring (buffer): 0-mile radius

Description:

	2011 - 2015 ACS Estimates	Percent	MOE (±)
Population by Language Spoken at Home*			
Total (persons age 5 and above)	63,727	100%	920
English	N/A	N/A	N/A
Spanish	N/A	N/A	N/A
French	N/A	N/A	N/A
French Creole	N/A	N/A	N/A
Italian	N/A	N/A	N/A
Portuguese	N/A	N/A	N/A
German	N/A	N/A	N/A
Yiddish	N/A	N/A	N/A
Other West Germanic	N/A	N/A	N/A
Scandinavian	N/A	N/A	N/A
Greek	N/A	N/A	N/A
Russian	N/A	N/A	N/A
Polish	N/A	N/A	N/A
Serbo-Croatian	N/A	N/A	N/A
Other Slavic	N/A	N/A	N/A
Armenian	N/A	N/A	N/A
Persian	N/A	N/A	N/A
Gujarathi	N/A	N/A	N/A
Hindi	N/A	N/A	N/A
Urdu	N/A	N/A	N/A
Other Indic	N/A	N/A	N/A
Other Indo-European	N/A	N/A	N/A
Chinese	N/A	N/A	N/A
Japanese	N/A	N/A	N/A
Korean	N/A	N/A	N/A
Mon-Khmer, Cambodian	N/A	N/A	N/A
Hmong	N/A	N/A	N/A
Thai	N/A	N/A	N/A
Laotian	N/A	N/A	N/A
Vietnamese	N/A	N/A	N/A
Other Asian	N/A	N/A	N/A
Tagalog	N/A	N/A	N/A
Other Pacific Island	N/A	N/A	N/A
Navajo	N/A	N/A	N/A
Other Native American	N/A	N/A	N/A
Hungarian	N/A	N/A	N/A
Arabic	N/A	N/A	N/A
Hebrew	N/A	N/A	N/A
African	N/A	N/A	N/A
Other and non-specified	N/A	N/A	N/A
Total Non-English	N/A	N/A	N/A

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race. N/A means not available. **Source:** U.S. Census Bureau, American Community Survey (ACS) 2011 - 2015.

*Population by Language Spoken at Home is available at the census tract summary level and up.

EPA Regulated Facilities within Three Miles of Project Site

from EPA Envirofacts website

<https://oaspub.epa.gov/enviro/enviroFACTS.quickstart?ve=11,39.762804,-86.394680&pSearch=Avon,%20Indiana&miny=39.71185000000007&minx=-86.44567999999994&maxy=39.81385000000007&maxx=-86.34367999999994>

FACILITY INFORMATION
<p>ABRA AUTO BODY & GLASS 5170 E MAIN ST PLAINFIELD, IN 46168 Latitude: 39.762249 Longitude: -86.434952</p> <p>Summary Report Facility Report Compliance Report</p>
<p>DUGAN CHEV-PONTIAC INC 183 S CR 525 E AVON, IN 46123-9058 Latitude: 39.757818 Longitude: -86.433211</p> <p>Summary Report Facility Report Compliance Report</p>
<p>GC 008 20 COUNTY ROAD 500 N AVON, IN 46123 Latitude: 39.76218 Longitude: -86.438221</p> <p>Summary Report Facility Report Compliance Report</p>
<p>HARLAN BAKERIES INC 7397 E US 36 AVON, IN 461237171 Latitude: 39.762778 Longitude: -86.388933</p> <p>Summary Report Facility Report Compliance Report</p>
<p>INDY TIRE CENTERS 7309 E US HWY 36 AVON, IN 46123 Latitude: 39.76287 Longitude: -86.39374</p> <p>Summary Report Facility Report Compliance Report</p>
<p>KROGER STORE 985 108 N SR 267 AVON, IN 46123 Latitude: 39.764191 Longitude: -86.399753</p> <p>Summary Report Facility Report Compliance Report</p>
<p>LARKIN BODY SHOP 370 GALEN DR PLAINFIELD, IN 46168 Latitude: 39.762106 Longitude: -86.3981</p> <p>Summary Report Facility Report Compliance Report</p>
<p>LARKIN BODY SHOP & AUTO CARE INC 7026 W GALEN DR AVON, IN 46123-8449 Latitude: 39.76165 Longitude: -86.39934</p> <p>Summary Report Facility Report Compliance Report</p>
<p>NEIGHBORHOOD CLEANERS 7505 BEACHWOOD STE 100 AVON, IN 46123 Latitude: 39.76836 Longitude: -86.389656</p> <p>Summary Report Facility Report Compliance Report</p>
<p>SHERWIN WILLIAMS 1290 7345 E US HWY 36 AVON, IN 46123 Latitude: 39.762885 Longitude: -86.392665</p> <p>Summary Report Facility Report Compliance Report</p>
<p>SUN CLEANERS 5601 E US HWY 36 STE 102 AVON, IN 46123 Latitude: 39.761469 Longitude: -86.425899</p> <p>Summary Report Facility Report Compliance Report</p>
<p>WEST CENTRAL CONSERVANCY DIST 243 S 625 E AVON, IN 46123 Latitude: 39.7585 Longitude: -86.4143</p> <p>Summary Report Facility Report Compliance Report</p>
<p>WEST CENTRAL CONSERVANCY DISTRICT 243 S 625 E AVON, IN 46123 Latitude: 39.759047 Longitude: -86.413757</p> <p>Summary Report Facility Report Compliance Report</p>



Location: User-specified polygonal location
 Ring (buffer): 0-mile radius
 Description:

Summary		Census 2010
Population		64,833
Population Density (per sq. mile)		749
Minority Population		7,101
% Minority		11%
Households		23,386
Housing Units		24,772
Land Area (sq. miles)		86.61
% Land Area		99%
Water Area (sq. miles)		0.62
% Water Area		1%

Population by Race	Number	Percent
Total	64,833	-----
Population Reporting One Race	63,776	98%
White	58,910	91%
Black	2,662	4%
American Indian	133	0%
Asian	1,439	2%
Pacific Islander	19	0%
Some Other Race	613	1%
Population Reporting Two or More Races	1,057	2%
Total Hispanic Population	1,971	3%
Total Non-Hispanic Population	62,862	97%
White Alone	57,732	89%
Black Alone	2,628	4%
American Indian Alone	103	0%
Non-Hispanic Asian Alone	1,421	2%
Pacific Islander Alone	18	0%
Other Race Alone	73	0%
Two or More Races Alone	885	1%

Population by Sex	Number	Percent
Male	32,613	50%
Female	32,220	50%

Population by Age	Number	Percent
Age 0-4	4,403	7%
Age 0-17	17,253	27%
Age 18+	47,580	73%
Age 65+	7,157	11%

Households by Tenure	Number	Percent
Total	23,386	
Owner Occupied	18,235	78%
Renter Occupied	5,151	22%

Data Note: Detail may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, Census 2010 Summary File 1.