

Categorical Exclusion
Appendix F
Water Resources

Waters Report
SR 159 in Sullivan County, Indiana
Branch Spencer Creek Bridge Replacement
Des. No. 1700148
INDOT Structure No. 159-77-05955 B
NBI No. 028060



Prepared By:



Brenten Reust
3502 Woodview Trace #150
Indianapolis, IN 46268
breust@lochgroup.com
Ph: 317-222-3880 / Fax: 317-222-3881

Prepared For:

Indiana Department of Transportation
Vincennes District
3650 South U.S. Highway 41
Vincennes, Indiana 47591

July 26, 2019

**Waters of the U.S. Determination
SR 159 in Sullivan County, Indiana
Branch Spencer Creek Bridge Replacement
Des. No. 1700148**

Date(s) of Field Reconnaissance

June 28, 2019

Location

The project is located on SR 159 at its crossing over Branch Spencer Creek which is approximately 6.76 miles south of SR 54.

- Sections 11 and 12, Township 6 North, Range 8 West
- Bucktown 1:24,000 USGS Quadrangle
- Sullivan County, Jefferson Township, Indiana
- Latitude: 38.971341° Longitude: -87.259961° (center of SR 159 Branch Spencer Creek bridge)

Project Description

The project involves the construction of a new 30 ft. span flat-top three-sided structure on SR 159 over Branch Spencer Creek. Branch Spencer Creek will be realigned to accommodate the proposed structure and ditch/cross slopes. Branch Spencer Creek and Wetland A are within the project survey area. Roadside ditches were not identified within the project survey area. The landscape along and adjacent to the stream is flat bottomland forest consisting of primarily reclaimed mine land and open water resources.

Soils

According to the Soil Survey Geographic (SSURGO) Database for Sullivan County, Indiana, the survey area does not contain soil areas with national hydric soils.

Soil Name	Map Abbreviation	Hydric Range
Strip Mines	St	Not Hydric (0%)

National Wetlands Inventory Information

There are wetlands identified near the survey area. The U.S. Fish and Wildlife National Wetlands Inventory (NWI) Mapper (<https://www.fws.gov/wetlands/Data/Mapper.html>) includes the following wetlands near the SR 159 bridge replacement project area. Wetland type is based on *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).

Wetland Type	Description	Location: Lat/Long
LIUBHx	Lacustrine, limnetic, unconsolidated bottom, permanently flooded, excavated	38.971415 -87.256365
LIUBHx	Lacustrine, limnetic, unconsolidated bottom, permanently flooded, excavated	38.974449 -87.2621
PUBGh	Palustrine, unconsolidated bottom, intermittently exposed, diked/impounded	38.968992 -87.261578
PUBGh	Palustrine, unconsolidated bottom, intermittently exposed, diked/impounded	38.96756 -87.252382
PUBGx	Palustrine, unconsolidated bottom, intermittently exposed, excavated	38.972885 -87.254357



Wetland Type	Description	Location: Lat/Long
PUBGx	Palustrine, unconsolidated bottom, intermittently exposed, excavated	38.971151 -87.252549
PUBGx	Palustrine, unconsolidated bottom, intermittently exposed, excavated	38.969735 -87.251827
PUBGx	Palustrine, unconsolidated bottom, intermittently exposed, excavated	38.969171 -87.252648
PUBGx	Palustrine, unconsolidated bottom, intermittently exposed, excavated	38.968485 -87.252659
PUBGx	Palustrine, unconsolidated bottom, intermittently exposed, excavated	38.96807 -87.252496

12-Digit HUC

The SR 159 bridge replacement project is within the 051202020603 12-Digit HUC (Brewer Ditch-Black Creek).

Attached Documents

- Indiana State Location Map
- USGS Topographic Map
- USDA Soil Map
- Sullivan County Hydric Soil List and Components
- USFWS NWI Map
- FEMA/FIRM Map
- USGS StreamStats Watershed Map
- Water Resources Map
- Project Photos
- QHEI Data Forms
- USACE Wetland Determination Data Forms
- USACE Preliminary Jurisdictional Determination Form

Removed to avoid duplication;
see Attachment B

Field Reconnaissance

The Waters of the U.S. (WOTUS) investigation survey area limits were established based on the scope of work expected for the SR 159 bridge replacement. Wetland determinations were conducted in accordance with the *Corps of Engineers Wetland Delineation Manual* (U.S. Army Corps of Engineers 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0* (U.S. Army Corps of Engineers 2010). The boundary for Wetland A and the reach of Branch Spencer Creek were delineated using a Trimble R1 GIS receiver (sub-meter accuracy) and ESRI ArcCollector.

The indicator status of plants identified for the wetland data points were obtained from the 2016 National Wetland Plant List. Hydric soil information was obtained from the U.S. Department of Agriculture, Natural Resources Conservation Service, Web Soil Survey (<https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>).

Stream Feature(s)

The June 28, 2019 field investigation of the SR 159 over Branch Spencer Creek project area resulted in the identification of one likely jurisdictional stream feature.



Branch Spencer Creek

Branch Spencer Creek is not featured as a blue-line stream within the SR 159 project area on the Bucktown 1:24,000 scale USGS Topographic Map. However, this stream feature is included in the National Hydrology Dataset (NHD). Branch Spencer Creek is not identified on the USFWS NWI Map. According to USGS *StreamStats* (<https://water.usgs.gov/osw/streamstats/>) the drainage area upstream of the SR 159 bridge is approximately 1.93 square miles. Branch Spencer Creek flows from the south (upstream of SR 159) to north (downstream of SR 159) under the SR 159 bridge. Approximately 1,174 feet of this stream is within the project survey area. Branch Spencer Creek confluences with Spencer Creek approximately 0.4 mile downstream which confluences with Brewer Ditch and ultimately Black Creek.

The U.S. Army Corps of Engineers considers Black Creek to be a navigable waterway for a distance of 11.8 miles upstream of its confluence with the West Fork of the White River for the purposes of regulation under Section 10 of the River and Harbors Act. Therefore, Branch Spencer Creek, a relatively permanent waterways (RPW), is considered to be subject to USACE jurisdiction under Section 404 of the Clean Water Act due to the direct connection with Black Creek, however would not be subject to Section 10 regulation.

The reach of Branch Spencer Creek is generally a continuous riffle with limited pool (approximately 5 percent), run (approximately 5 percent), and glide (approximately 5 percent) habitats. The streambed is predominantly gravel (60 percent) and sand (40 percent) in the substrate. The channel has been straightened and channelized upstream and downstream of SR 159. The floodplain upstream and downstream of SR 159 beyond the top of bank consists of a bottomland forest community. Moderate bank erosion is evident on the left and right bank upstream and downstream of the SR 159 bridge. The ordinary high water mark (OHWM) width for Branch Spencer Creek was measured at 11.8 feet and estimated at 0.6 feet deep. This reach of Branch Spencer Creek is considered to exhibit good quality because of its perennial nature, supporting bottomland woods riparian habitat, and gravel substrate. However, the watershed was largely mined and water quality is expected to be compromised through runoff and groundwater. Branch Spencer Creek received a QHEI score of 61.

**Stream Summary Table
SR 159 in Sullivan County, Indiana
DES No. 1700148**

Water Feature Name	Photo	Lat/Long	Maximum OHW Width (ft)	Maximum OHW Depth (ft)	USGS Blue-line? Type?	Riffles? Pools?	Substrate	Quality	Likely Waters of U.S.?
Branch Spencer Creek	1-10	38.97134° N -87.259893° W	11.8	0.6	Yes Perennial	Yes Yes	Gravel/Sand	Good	Yes

Wetlands

One wetland feature was identified within the SR 159 Bridge Replacement project survey area.

Wetland A

This 0.21-acre scrub-shrub wetland is situated along the east side of SR 159 southeast of Branch Spencer Creek. It is located along the roadside adjacent to and draining into Branch Spencer Creek. The *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (U.S. Army Corps of Engineers 2007) “wetlands adjacent to but that do not directly abut a relatively permanent, non-navigable



tributary” are subject to Clean Water Act (CWA) jurisdiction only if a significant nexus is demonstrated. Wetland A has a direct hydrologic connection with Branch Spencer Creek, a relatively permanent waterway (RPW). Therefore, Wetland A is considered to be a jurisdictional wetland feature.

Data point Wetland A represents wetland conditions within a narrow area of the southeast quadrant along the east side of SR 159 to the southeast of Branch Spencer Creek. The dominant species within the tree stratum consisted of sycamore (*Platanus occidentalis* FACW) and red maple (*Acer rubrum* FAC). The dominant species within the sapling/shrub stratum consisted of green ash (*Fraxinus pennsylvanica* FACW) with non-dominant species of red maple (*Acer rubrum* FAC). The dominant species within the herb stratum consisted of sharp-wing monkey-flower (*Mimulus alatus* FACW), deer-tongue rosette grass (*Dichanthelium clandestinum* FACW), common boneset (*Eupatorium perfoliatum* OBL), farewell summer (*Symphotrichum lateriflorum* FACW), trumpet-creeper (*Campsis radicans* FACU), common persimmon (*Diospyros virginiana* FAC), bearded beggarticks (*Bidens aristosa* FACW), spotted touch-me-not (*Impatiens capensis* FACW), Georgia bulrush (*Scirpus georgianus* OBL), and sweet-gum (*Liquidambar styraciflua* FACW). There were no species in the woody vine strata identified within the respective plot area. The percent dominant hydrophytic vegetation is met since 92 percent of the dominant species are FAC or wetter; therefore, hydrophytic vegetation is present. Primary indicators of hydrology included surface water (1 inch), saturation (0 inch), high water table (7 inches), and water stained leaves. Secondary indicators of hydrology included drainage patterns and FAC-neutral test. Therefore, wetland hydrology is present. The USDA NRCS Web Soil Survey indicates that this data point is within the Strip Mines soil unit. The Strip Mines series is not considered to be a hydric soil. The soil profile from a pit excavated to a depth of 20 inches consisted of a 10YR 3/1 loamy/clayey layer to a depth of 5 inches and a 10YR 5/1 loamy/clayey layer with 40 percent 10YR 4/6 redox concentrations from 5 to 20 inches. The soil profile examined at this location meets the depleted matrix (F3) indicator and depleted below dark surface (A11); therefore, hydric soil is present. This data point meets the requirements for hydrophytic vegetation, hydrology, and hydric soils; therefore, this data point is within a wetland.

Data Point Upland A represents non-wetland conditions for Wetland A within a wooded area southeast of Branch Spencer Creek. The dominant species within the tree stratum consisted of silver maple (*Acer saccharinum* FACW) with non-dominant species of eastern cottonwood (*Populus deltoids* FAC), American sycamore (*Platanus occidentalis* FACW), and red maple (*Acer rubrum* FAC). The dominant species within the sapling/shrub stratum consisted of ramble rose (*Rosa multiflora* FACU) with non-dominant species of black cherry (*Prunus serotina* FACU), green ash (*Fraxinus pennsylvanica* FACW), northern spicebush (*Lindera benzoin* FACW), and black walnut (*Juglans nigra* FACW). The non-dominant species within the herb stratum consisted small-spike false nettle (*Boehmeria cylindrical* OBL) and Virginia-creeper (*Parthenocissus quinquefolia* FACU). The dominant species within the wood vine stratum consisted of Japanese honeysuckle (*Lonicera japonica* FACU). The percent dominant hydrophytic vegetation is not met since 33 percent of the dominant species are FAC or wetter; therefore, hydrophytic vegetation is not present. There were no primary or secondary indicators of wetland hydrology met within this data point; therefore, wetland hydrology is not present. The USDA NRCS Web Soil Survey indicates that this data point is within the Strip Mine soil unit. The Strip Mine series is not considered to be a hydric soil. The soil profile from a pit excavated to a depth of 20 inches consisted of a 10YR 3/1 loamy/clayey layer to a depth of 11 inches and a 10YR 4/4 loamy/clayey from 11 to 20 inches. The soils examined do not exhibit any hydric soil indicators. None of the three required wetland criteria were present; therefore, this data point is not within a wetland.



**Data Point Summary Table
SR 159 in Sullivan County, Indiana
DES No. 1700148**

Data Point	Vegetation	Soils	Hydrology	Wetland
Wetland A	Yes	Yes	Yes	Yes
Upland A	No	No	No	No

**Wetland Summary Table
SR 159 in Sullivan County, Indiana
DES No. 9701930**

Wetland Name	Photos	Lat/Long	Type	Area (acres)	Quality	Likely Waters of U.S.?
Wetland A	11-21	38.971139° N -87.259741° W	PSS1	0.21	Poor	Yes

Open Water

There are no open water features within the project survey area.

Conclusions

The Waters of the U.S. investigation conducted for the SR 159 Bridge Replacement project concludes that Branch Spencer Creek is the only stream feature that displays an OHWM within the survey area. The investigation also concludes that Wetland A along the east side of SR 159 and to the southeast of Branch Spencer Creek is the only WOTUS wetland feature within the survey area. There are no open water or roadside ditch features within the project survey area.

Branch Spencer Creek and Wetland A are likely Waters of the U.S. Every effort should be taken to avoid and minimize impacts to the waterway and wetlands. If impacts are necessary, then mitigation may be required. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters is ultimately made by the U.S. Army Corps of Engineers. This report is our best judgment based on the guidelines set forth by the Corps.

Acknowledgement

This waters determination has been prepared based on the best available information, interpreted in the light of the investigator's training, experience and professional judgement in conformance with the 1987 *Corps of Engineers Wetlands Delineation Manual*, the appropriate regional supplement, the USACE *Jurisdictional Determination Form Instructional Guidebook*, and other appropriate agency guidelines.

Brenten Reust



Environmental Biologist
Lochmueller Group, Inc.



Preparers

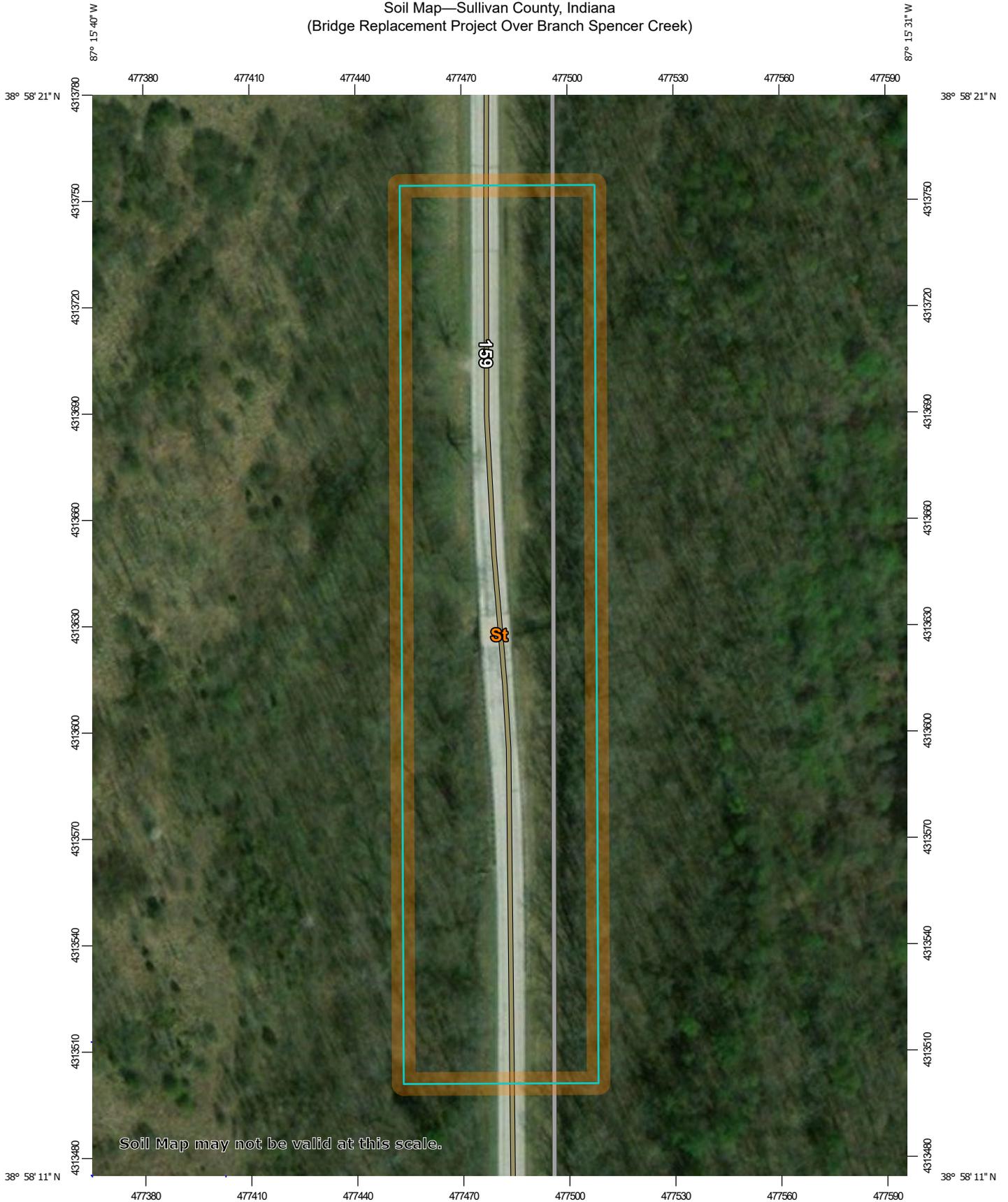
Lochmueller Group, Inc. Staff	Position	Contributing Effort
Chad Costa	Environmental Manager	Contract Manager
Brenten Reust	Environmental Biologist	Field Data Collection Report Preparation



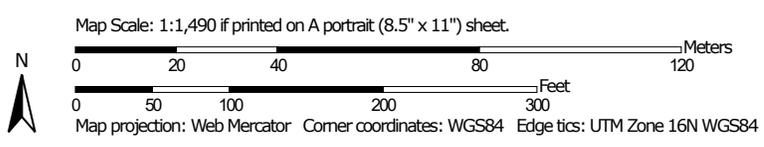
Attachments



Soil Map—Sullivan County, Indiana
(Bridge Replacement Project Over Branch Spencer Creek)



Soil Map may not be valid at this scale.



Soil Map—Sullivan County, Indiana
(Bridge Replacement Project Over Branch Spencer Creek)

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: Sullivan County, Indiana
Survey Area Data: Version 21, Sep 7, 2018

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

Date(s) aerial images were photographed: Apr 25, 2014—Mar 9, 2017

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
St	Strip mines	3.5	100.0%
Totals for Area of Interest		3.5	100.0%

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
St	Strip mines	0	3.5	100.0%
Totals for Area of Interest			3.5	100.0%

Report—Hydric Soil List - All Components

Hydric Soil List - All Components--IN153-Sullivan County, Indiana					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
St. Strip mines	Strip mines	90	—	No	—
	Water	3	—	No	—



Bridge Replacement Project Over Branch Spencer Creek

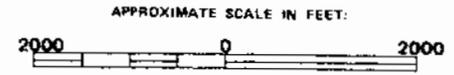
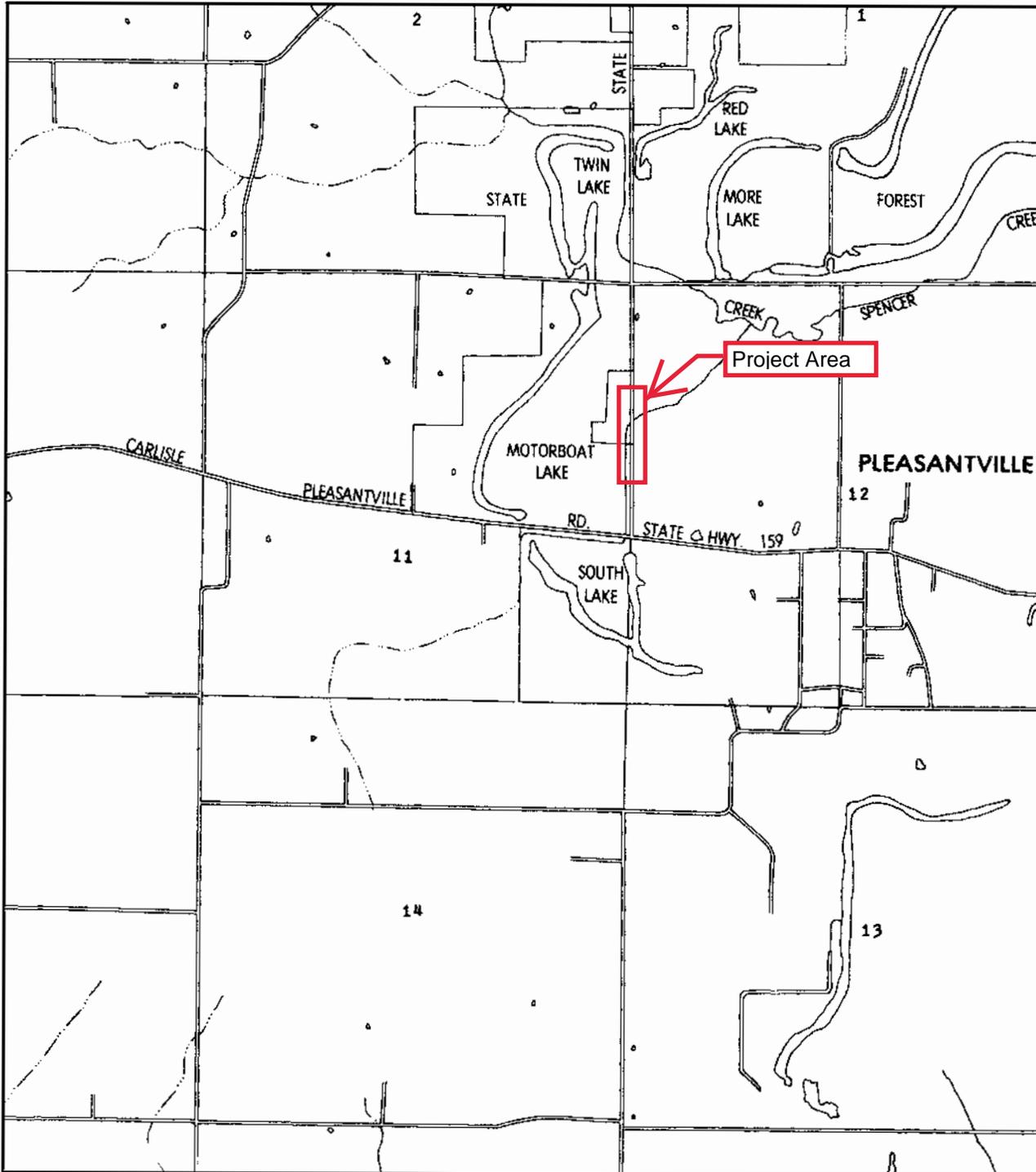


July 9, 2019

Wetlands

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

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.



FLOOD HAZARD BOUNDARY MAP

**SULLIVAN COUNTY
INDIANA
UNINC. AREAS**

PAGE 6 OF 6
(SEE MAP INDEX FOR PAGES NOT PRINTED)

**EFFECTIVE DATE:
MARCH 23, 1979**

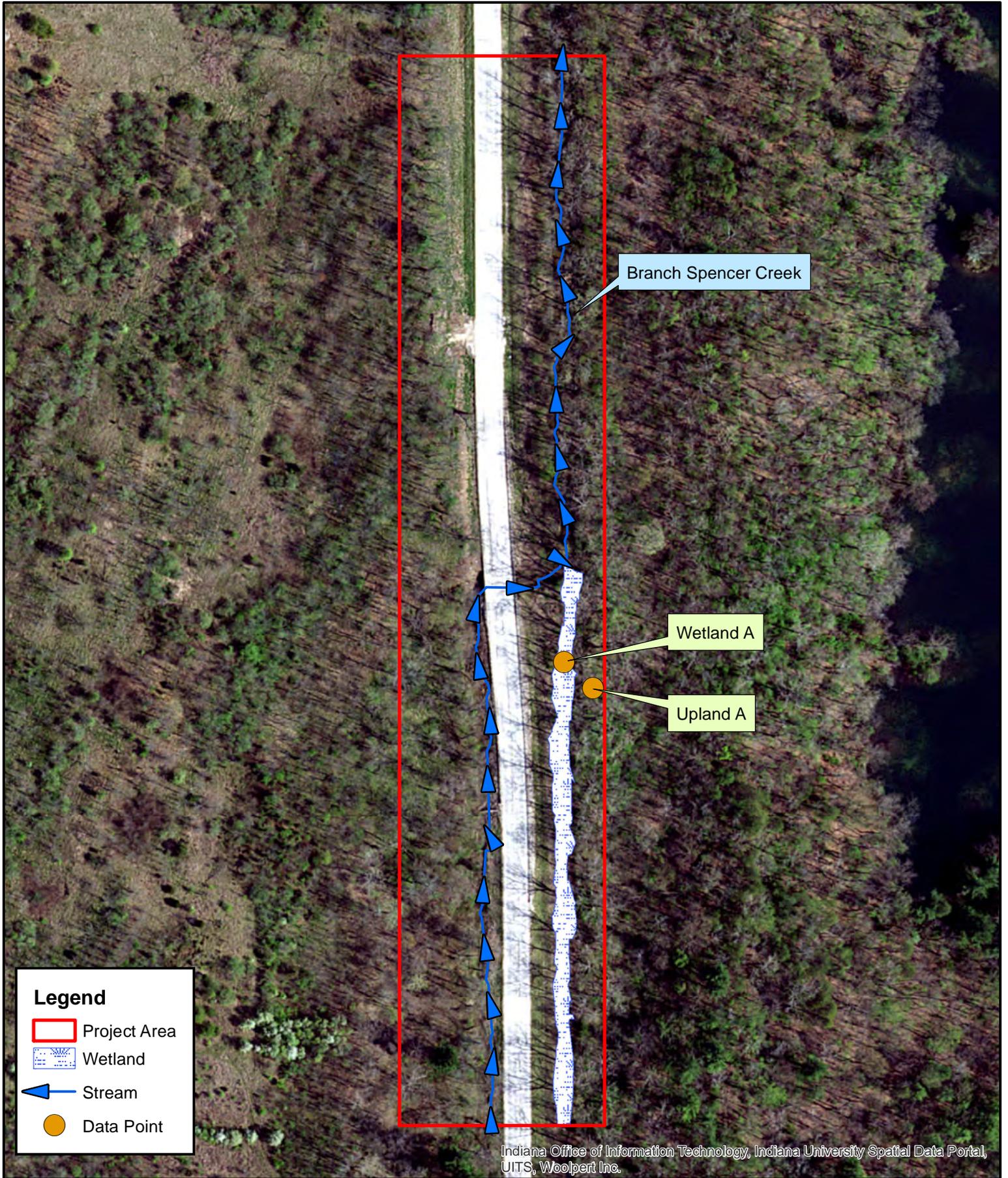
COMMUNITY—PANEL NUMBER

180410 0006 A



**U.S. DEPARTMENT OF HOUSING
AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION**

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



Legend

-  Project Area
-  Wetland
-  Stream
-  Data Point

Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc.



LOCHMUELLER GROUP
 3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

Water Resources Map
 Des. No. 1700148
 Waters of the U.S. Report

0 0.015 0.03
 Miles



County: Sullivan
 Township: Jefferson
 State: Indiana

SR 159 Bridge Replacement Project
 Over Branch Spencer Creek
 Created: 7/23/2019, BReust

S:\2017\17-0051\BDD\Environ\Mapa\Mapa\Mapa\Water_Resources.mxd



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

Sample #	bioSample #	Stream Name	Location
Surveyor	Sample Date	County	Macro Sample Type
<input type="checkbox"/> Habitat Complete			QHEI Score: <input style="width:50px;" type="text"/>

1] SUBSTRATE Check ONLY Two predominant substrate TYPE BOXES; estimate % and check every type present

Check ONE (Or 2 & average)

BEST TYPES	OTHER TYPES	ORIGIN	QUALITY
P R <input type="checkbox"/> <input type="checkbox"/> BLDR/SLABS [10] <input type="checkbox"/> <input type="checkbox"/> BOULDER [9] <input type="checkbox"/> <input type="checkbox"/> COBBLE [8] <input type="checkbox"/> <input type="checkbox"/> GRAVEL [7] <input type="checkbox"/> <input type="checkbox"/> SAND [6] <input type="checkbox"/> <input type="checkbox"/> BEDROCK [5]	P R TOTAL % <input type="checkbox"/> <input type="checkbox"/> _____ <input type="checkbox"/> <input type="checkbox"/> _____ P R <input type="checkbox"/> <input type="checkbox"/> HARDPAN [4] <input type="checkbox"/> <input type="checkbox"/> DETRITUS [3] <input type="checkbox"/> <input type="checkbox"/> MUCK [2] <input type="checkbox"/> <input type="checkbox"/> SILT [2] <input type="checkbox"/> <input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/> LIMESTONE [1] <input type="checkbox"/> TILLS [1] <input type="checkbox"/> WETLANDS [0] <input type="checkbox"/> HARDPAN [0] <input type="checkbox"/> SANDSTONE [0] <input type="checkbox"/> RIP/RAP [0] <input type="checkbox"/> LACUSTRINE [0] <input type="checkbox"/> SHALE [-1] <input type="checkbox"/> COAL FINES [-2]	S I L T <input type="checkbox"/> HEAVY [-2] <input type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> FREE [1] E X T E N S I V E <input type="checkbox"/> EXTENSIVE [-2] <input type="checkbox"/> MODERATE [-1] <input type="checkbox"/> NORMAL [0] <input type="checkbox"/> NONE [1]

NUMBER OF BEST TYPES: 4 or more [2] 3 or less [0]

(Score natural substrates; ignore sludge from point-sources)

Substrate Maximum 20

Comments

2] INSTREAM COVER Indicate presence 0 to 3 and estimate percent: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed root wad in deep/fast water, or deep, well-defined, functional pools.)

% Amount _____ UNDERCUT BANKS [1] _____ OVERHANGING VEGETATION [1] _____ SHALLOWS (IN SLOW WATER) [1] _____ ROOTMATS [1]	% Amount _____ POOLS > 70cm [2] _____ ROOTWADS [1] _____ BOULDERS [1]	% Amount _____ OXBOWS, BACKWATERS [1] _____ AQUATIC MACROPHYTES [1] _____ LOGS OR WOODY DEBRIS [1]	AMOUNT Check ONE (Or 2 & average) <input type="checkbox"/> EXTENSIVE > 75% [11] <input type="checkbox"/> MODERATE 25 - 75% [7] <input type="checkbox"/> SPARSE 5 - < 25% [3] <input type="checkbox"/> NEARLY ABSENT < 5% [1]
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Cover Maximum 20

Comments

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY <input type="checkbox"/> HIGH [4] <input type="checkbox"/> MODERATE [3] <input type="checkbox"/> LOW [2] <input type="checkbox"/> NONE [1]	DEVELOPMENT <input type="checkbox"/> EXCELLENT [7] <input type="checkbox"/> GOOD [5] <input type="checkbox"/> FAIR [3] <input type="checkbox"/> POOR [1]	CHANNELIZATION <input type="checkbox"/> NONE [6] <input type="checkbox"/> RECOVERED [4] <input type="checkbox"/> RECOVERING [3] <input type="checkbox"/> RECENT OR NO RECOVERY [1]	STABILITY <input type="checkbox"/> HIGH [3] <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> LOW [1]
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Channel Maximum 20

Comments

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream L R <input type="checkbox"/> <input type="checkbox"/> EROSION <input type="checkbox"/> <input type="checkbox"/> NONE/LITTLE [3] <input type="checkbox"/> <input type="checkbox"/> MODERATE [2] <input type="checkbox"/> <input type="checkbox"/> HEAVY/SEVERE [1]	L R <input type="checkbox"/> <input type="checkbox"/> RIPARIAN WIDTH <input type="checkbox"/> <input type="checkbox"/> WIDE > 50m [4] <input type="checkbox"/> <input type="checkbox"/> MODERATE 10-50m [3] <input type="checkbox"/> <input type="checkbox"/> NARROW 5-10m [2] <input type="checkbox"/> <input type="checkbox"/> VERY NARROW [1] <input type="checkbox"/> <input type="checkbox"/> NONE [0]	L R <input type="checkbox"/> <input type="checkbox"/> FLOOD PLAIN QUALITY <input type="checkbox"/> <input type="checkbox"/> FOREST, SWAMP [3] <input type="checkbox"/> <input type="checkbox"/> SHRUB OR OLD FIELD [2] <input type="checkbox"/> <input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1] <input type="checkbox"/> <input type="checkbox"/> FENCED PASTURE [1] <input type="checkbox"/> <input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	L R <input type="checkbox"/> <input type="checkbox"/> CONSERVATION TILLAGE [1] <input type="checkbox"/> <input type="checkbox"/> URBAN OR INDUSTRIAL [0] <input type="checkbox"/> <input type="checkbox"/> MINING / CONSTRUCTION [0]
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Indicate predominant land use(s) past 100m riparian.
 Riparian Maximum 10

Comments

5] POOL/GLIDE AND RIFFLE/RUN QUALITY

MAXIMUM DEPTH Check ONE (ONLY!) <input type="checkbox"/> > 1m [6] <input type="checkbox"/> 0.7 - < 1m [4] <input type="checkbox"/> 0.4 - < 0.7m [2] <input type="checkbox"/> 0.2 - < 0.4m [1] <input type="checkbox"/> < 0.2m [0]	CHANNEL WIDTH Check ONE (Or 2 & average) <input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2] <input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1] <input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	CURRENT VELOCITY Check ALL that apply <input type="checkbox"/> TORRENTIAL [-1] <input type="checkbox"/> VERY FAST [1] <input type="checkbox"/> FAST [1] <input type="checkbox"/> MODERATE [1]	RECREATION POTENTIAL Check ALL that apply <input type="checkbox"/> SLOW [1] <input type="checkbox"/> INTERSTITIAL [-1] <input type="checkbox"/> INTERMITTENT [-2] <input type="checkbox"/> EDDIES [1]
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Indicate for reach - pools and riffles.
 Pool/Current Maximum 12

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

RIFFLE DEPTH <input type="checkbox"/> BEST AREAS > 10cm [2] <input type="checkbox"/> BEST AREAS 5 - 10cm [1] <input type="checkbox"/> BEST AREAS < 5cm [metric = 0]	RUN DEPTH <input type="checkbox"/> MAXIMUM > 50cm [2] <input type="checkbox"/> MAXIMUM < 50cm [1]	RIFFLE/RUN SUBSTRATE Check ONE (Or 2 & average) <input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2] <input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1] <input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	RIFFLE/RUN EMBEDDEDNESS <input type="checkbox"/> NONE [2] <input type="checkbox"/> LOW [1] <input type="checkbox"/> MODERATE [0] <input type="checkbox"/> EXTENSIVE [-1]
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Riffle/Run Maximum 8

Comments

6] GRADIENT (ft/mi) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

%POOL: %GLIDE:
 %RUN: %RIFFLE:

Gradient Maximum 10



OWQ Biological Studies QHEI (Qualitative Habitat Evaluation Index)

COMMENT _____

A-CANOPY

- > 85% - Open
- 55% - < 85%
- 30% - < 55%
- 10% - < 30%
- < 10% - Closed

B-AESTHETICS

- Nuisance algae
- Invasive macrophytes
- Excess turbidity
- Discoloration
- Foam/Scum
- Oil sheen
- Trash/Litter
- Nuisance odor
- Sludge deposits
- CSOs/SSOs/Outfalls

C-RECREATION

- Area Depth
 Pool: > 100 ft² > 3 ft

D-MAINTENANCE

- Public Private
- Active Historic
- Succession: Young Old
- Spray Islands Scoured
- Snag: Removed Modified
- Leveed: One sided Both banks
- Relocated Cutoffs
- Bedload: Moving Stable
- Armoured Slumps
- Impounded Desiccated
- Flood control Drainage

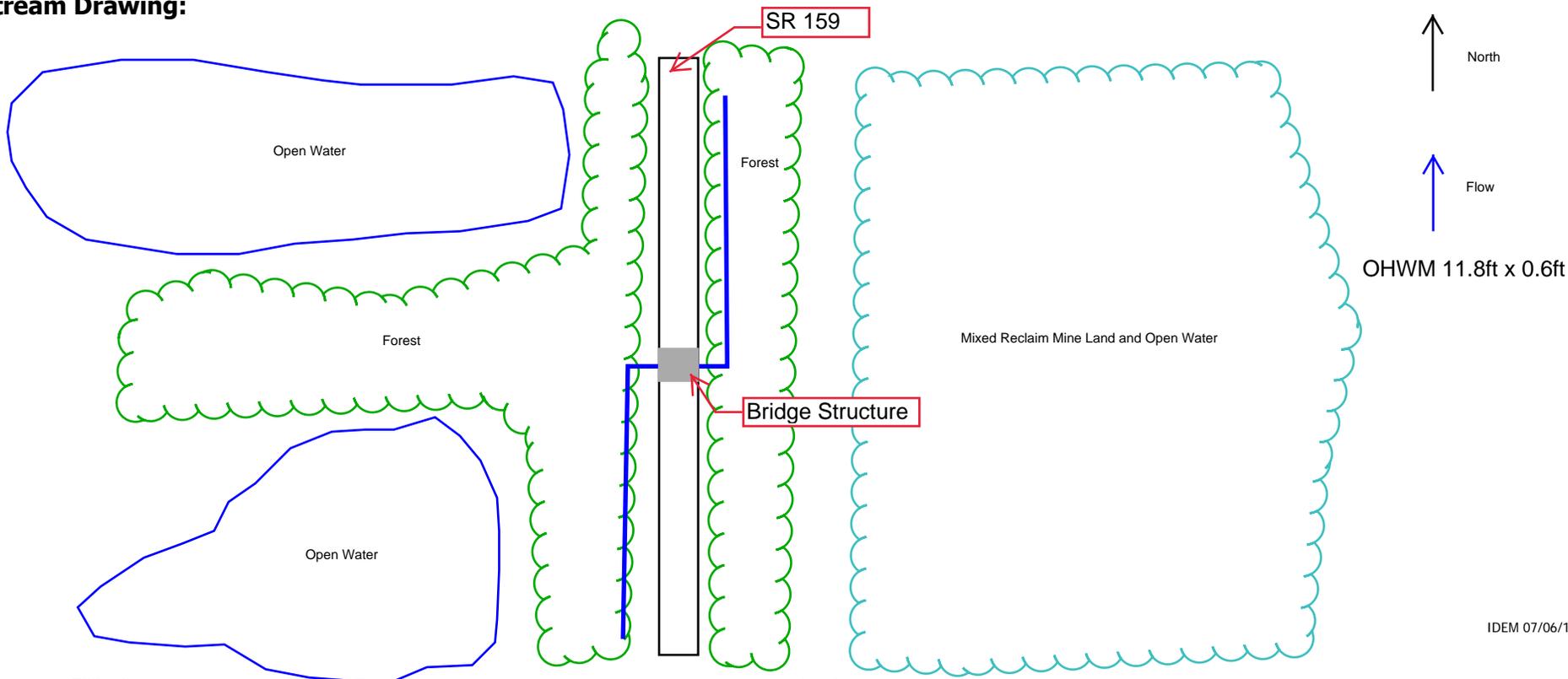
E-ISSUES

- WWTP CSO NPDES
- Industry Urban
- Hardened Dirt & Grime
- Contaminated Landfill
- BMPs: Construction Sediment
- Logging Irrigation Cooling
- Erosion: Bank Surface
- False bank Manure Lagoon
- Wash H₂O Tile H₂O Table
- Mine: Acid Quarry
- Flow: Natural Stagnant
- Wetland Park Golf
- Lawn Home
- Atmospheric deposition

Looking upstream (> 10m, 3 readings; < 10m, 1 reading in middle); Round to the nearest whole percent

% open	Left	Middle	Right	Total Average
	%	%	%	%
	X	X	X	

Stream Drawing:



IDEM 07/06/10

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 159 over Branch Spencer Creek City/County: Carlisle/Sullivan Sampling Date: 06/28/2019
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: Wetland A
 Investigator(s): Breust Section, Township, Range: Sec 12, Twp 6N, Rng 8W
 Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): concave
 Slope (%): 0.5 Lat: 38.971139 Long: -87.259741 Datum: NAD 1983
 Soil Map Unit Name: Strip Mines NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Remarks:	

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>30 ft radius</u>)																				
1. <u>Platanus occidentalis</u>	5	Yes	FACW	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>12</u> (A) Total Number of Dominant Species Across All Strata: <u>13</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>92.3%</u> (A/B)																
2. <u>Acer rubrum</u>	5	Yes	FAC																	
3. _____																				
4. _____																				
5. _____																				
	10	=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft radius</u>)																				
1. <u>Fraxinus pennsylvanica</u>	40	Yes	FACW	Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>6</u></td> <td>x 1 = <u>6</u></td> </tr> <tr> <td>FACW species <u>55</u></td> <td>x 2 = <u>110</u></td> </tr> <tr> <td>FAC species <u>12</u></td> <td>x 3 = <u>36</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>160</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.13</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>6</u>	x 1 = <u>6</u>	FACW species <u>55</u>	x 2 = <u>110</u>	FAC species <u>12</u>	x 3 = <u>36</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>160</u> (B)	Prevalence Index = B/A = <u>2.13</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>6</u>	x 1 = <u>6</u>																			
FACW species <u>55</u>	x 2 = <u>110</u>																			
FAC species <u>12</u>	x 3 = <u>36</u>																			
FACU species <u>2</u>	x 4 = <u>8</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>75</u> (A)	<u>160</u> (B)																			
Prevalence Index = B/A = <u>2.13</u>																				
2. <u>Acer rubrum</u>	5	No	FAC																	
3. _____																				
4. _____																				
5. _____																				
	45	=Total Cover																		
Herb Stratum (Plot size: <u>5 ft radius</u>)																				
1. <u>Mimulus alatus</u>	2	Yes	OBL	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Dichanthelium clandestinum</u>	2	Yes	FACW																	
3. <u>Eupatorium perfoliatum</u>	2	Yes	OBL																	
4. <u>Symphytotrichum lateriflorum</u>	2	Yes	FACW																	
5. <u>Campsis radicans</u>	2	Yes	FACU																	
6. <u>Diospyros virginiana</u>	2	Yes	FAC																	
7. <u>Bidens aristosa</u>	2	Yes	FACW																	
8. <u>Impatiens capensis</u>	2	Yes	FACW																	
9. <u>Scirpus georgianus</u>	2	Yes	OBL																	
10. <u>Liquidambar styraciflua</u>	2	Yes	FACW																	
	20	=Total Cover																		
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)																				
1. <u>No woody vines were located within plot</u>				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																
2. _____																				
		=Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: Wetland A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/1	100					Loamy/Clayey	
5-20	10YR 5/1	60	10YR 4/6	40	c	m	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- Coast Prairie Redox (A16)
- Iron-Manganese Masses (F12)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Sparsely Vegetated Concave Surface (B8)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)
- True Aquatic Plants (B14)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Gauge or Well Data (D9)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No Depth (inches): 1
 Water Table Present? Yes No Depth (inches): 7
 Saturation Present? Yes No Depth (inches): 0
 (includes capillary fringe)

Wetland Hydrology Present? Yes No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: SR 159 over Branch Spencer Creek City/County: Carlisle/Sullivan Sampling Date: 06/28/2018
 Applicant/Owner: Indiana Department of Transportation State: IN Sampling Point: Upland A
 Investigator(s): Breust Section, Township, Range: Sec 12, Twp 6N, Rng 8W
 Landform (hillside, terrace, etc.): hillslope Local relief (concave, convex, none): convex
 Slope (%): 45 Lat: 38.971067 Long: -87.259639 Datum: NAD 1983
 Soil Map Unit Name: Strip Mines NWI classification: upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30 ft radius</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u> 1 </u> (A) Total Number of Dominant Species Across All Strata: <u> 3 </u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u> 33.3% </u> (A/B)																
1. <u>Acer saccharinum</u>	85	Yes	FACW																	
2. <u>Populus deltoides</u>	5	No	FAC																	
3. <u>Platanus occidentalis</u>	2	No	FACW																	
4. <u>Acer rubrum</u>	2	No	FAC																	
5. <u> </u>																				
	94 =Total Cover																			
Sapling/Shrub Stratum (Plot size: <u>15 ft radius</u>)				Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u> 2 </u></td> <td style="text-align: center;">x 1 = <u> 2 </u></td> </tr> <tr> <td>FACW species <u> 91 </u></td> <td style="text-align: center;">x 2 = <u> 182 </u></td> </tr> <tr> <td>FAC species <u> 7 </u></td> <td style="text-align: center;">x 3 = <u> 21 </u></td> </tr> <tr> <td>FACU species <u> 146 </u></td> <td style="text-align: center;">x 4 = <u> 584 </u></td> </tr> <tr> <td>UPL species <u> 0 </u></td> <td style="text-align: center;">x 5 = <u> 0 </u></td> </tr> <tr> <td>Column Totals: <u> 246 </u> (A)</td> <td style="text-align: center;"><u> 789 </u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u> 3.21 </u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u> 2 </u>	x 1 = <u> 2 </u>	FACW species <u> 91 </u>	x 2 = <u> 182 </u>	FAC species <u> 7 </u>	x 3 = <u> 21 </u>	FACU species <u> 146 </u>	x 4 = <u> 584 </u>	UPL species <u> 0 </u>	x 5 = <u> 0 </u>	Column Totals: <u> 246 </u> (A)	<u> 789 </u> (B)	Prevalence Index = B/A = <u> 3.21 </u>	
Total % Cover of:	Multiply by:																			
OBL species <u> 2 </u>	x 1 = <u> 2 </u>																			
FACW species <u> 91 </u>	x 2 = <u> 182 </u>																			
FAC species <u> 7 </u>	x 3 = <u> 21 </u>																			
FACU species <u> 146 </u>	x 4 = <u> 584 </u>																			
UPL species <u> 0 </u>	x 5 = <u> 0 </u>																			
Column Totals: <u> 246 </u> (A)	<u> 789 </u> (B)																			
Prevalence Index = B/A = <u> 3.21 </u>																				
1. <u>Rosa multiflora</u>	50	Yes	FACU																	
2. <u>Prunus serotina</u>	2	No	FACU																	
3. <u>Fraxinus pennsylvanica</u>	2	No	FACW																	
4. <u>Lindera benzoin</u>	2	No	FACW																	
5. <u>Juglans nigra</u>	2	No	FACU																	
	58 =Total Cover																			
Herb Stratum (Plot size: <u>5 ft radius</u>)				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u> </u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Boehmeria cylindrica</u>	2	No	OBL																	
2. <u>Parthenocissus quinquefolia</u>	2	No	FACU																	
3. <u> </u>																				
4. <u> </u>																				
5. <u> </u>																				
6. <u> </u>																				
7. <u> </u>																				
8. <u> </u>																				
9. <u> </u>																				
10. <u> </u>																				
	4 =Total Cover																			
Woody Vine Stratum (Plot size: <u>30 ft radius</u>)				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
1. <u>Lonicera japonica</u>	90	Yes	FACU																	
2. <u> </u>																				
	90 =Total Cover																			
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: Upland A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-11	10YR 3/1	100					Loamy/Clayey	
11-20	10YR 4/4	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:			Indicators for Problematic Hydric Soils³:		
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)			
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Iron-Manganese Masses (F12)			
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21)			
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> Very Shallow Dark Surface (F22)			
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Other (Explain in Remarks)			
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)				
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)				
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)				
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)				
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)				

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
---	---

Remarks:
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:		
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:	
Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____	
(includes capillary fringe)	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: July 26, 2019

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Brenten Reust, Lochmueller Group, 3502 Woodview Trace #150., Indianapolis, IN 46268

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

The project (Des No. 1700148) is located on SR 159 at its crossing over Branch Spencer Creek which is approximately 6.76 miles South of SR 54. The project involves the construction of a new 30 ft. span flat-top three-sided structure over Branch Spencer Creek. Branch Spencer Creek and Wetland A are within the project survey area. Roadside ditches were not identified within the project survey area. The landscape along and adjacent to the stream is flat bottomland forest consisting of primarily reclaimed mine land and open water resources.

(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: **Indiana** County/parish/borough: **Sullivan** City: **Carlisle**

Center coordinates of site (lat/long in degree decimal format):

Lat.: **38.971341** Long.: **-87.259961**

Universal Transverse Mercator: **16S 477800 4424608**

Name of nearest waterbody: **Spencer Creek**

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH “MAY BE” SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource “may be” subject (i.e., Section 404 or Section 10/404)
Branch Spencer Creek	38.971341	-87.259961	1,174 ft	non-wetland	Section 404
Wetland A	38.971139	-87.259741 ⁺	0.21 ac	wetland	Section 404

- 1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
- 2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring “pre-construction notification” (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant’s acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there “*may be*” waters of the U.S. and/or that there “*may be*” navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

- Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: Location maps, topographic map, aerial map, floodplain map, NWI map.
- Data sheets prepared/submitted by or on behalf of the PJD requestor.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report. Rationale: _____.
- Data sheets prepared by the Corps: _____.
- Corps navigable waters' study: _____.
- U.S. Geological Survey Hydrologic Atlas: _____.
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Bucktown 1:24,000.
- Natural Resources Conservation Service Soil Survey. Citation: <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- National wetlands inventory map(s). Cite name: <https://www.fws.gov/wetlands/Data/Mapper.html>.
- State/local wetland inventory map(s): _____.
- FEMA/FIRM maps: FIRM Map Number 1804100006A.
- 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): Indiana Office of Information Technology 2018
or Other (Name & Date): Ground photos June 28, 2019.
- Previous determination(s). File no. and date of response letter: _____.
- Other information (please specify): _____.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Signature and date of
Regulatory staff member
completing PJD

Brenten Reust Digitally signed by Brenten Reust
Date: 2019.07.26 09:34:34 -04'00'

Signature and date of
person requesting PJD
(REQUIRED, unless obtaining
the signature is impracticable)¹

¹ Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.

From: [Cooper, Nicholas](#)
To: [Reust, Brenten](#)
Cc: [Davis, Alan](#)
Subject: RE: Multiple File Upload Tool (MFUT) Confirmation
Date: Wednesday, July 31, 2019 2:11:28 PM
Attachments: [Des. No. 1700148 Waters Report - Final.pdf](#)

Brenten,

I updated the stream summary table in this report regarding the blue-line status of the stream (attached).

Thank you for submitting the waters report for **SR 159 over Branch Spencer Creek, Des. No. 1700148**. Your most recent submission has been reviewed and approved. For the INDOT PM, the approved report can be found on Projectwise through this link: [Des. No. 1700148 Waters Report - Final](#). It is the responsibility of the Project Manager to forward a copy of this report to the Project Designer.

The information in this report should be used by the Project Designer to determine if waters of the U.S. will be impacted by the project. Avoidance and minimization of impacts must occur before mitigation will be considered. If mitigation is required, the Project Manager or Project Designer must coordinate with the Ecology and Waterway Permitting Office to discuss how adequate compensatory mitigation will be provided.

The Project Manager should notify the Ecology and Waterway Permitting Office if there is any change to the project footprint presented in this report. Such changes may require additional fieldwork and submittal of an updated waters report covering areas not previously investigated. This report is only valid for a period of five years from the date of earliest fieldwork. If the report expires prior to waterway permit application submittal, additional fieldwork and a revised waters report will be required.

It will not be sent to the United States Army Corps of Engineers (USACE) or the Indiana Department of Environmental Management (IDEM) until the waterways permit applications are submitted to these agencies.

Nick Cooper

Ecology and Waterway Permitting Specialist
Indiana Department of Transportation
Ph. (317) 233-3698

From: Reust, Brenten [mailto:BReust@lochgroup.com]
Sent: Tuesday, July 30, 2019 4:09 PM
To: Cooper, Nicholas <NCooper5@indot.IN.gov>
Cc: Davis, Alan <AlDavis@indot.IN.gov>
Subject: RE: Multiple File Upload Tool (MFUT) Confirmation

****** This is an EXTERNAL email. Exercise caution. DO NOT open attachments or**

Categorical Exclusion
Appendix G
Public Involvement

April 03, 2018

NOTICE OF SURVEY

- RE: S.R. 159 Branch Spencer Creek Bridge Replacement Project:
- Bridge Located over a branch of Spencer Creek on State Road 159, approximately 6.76 miles of jct. of S.R. 54 in Sullivan County, Indiana.
 - o Loch Group Project No.: 117-0051-RBD

Dear Property Owner:

Research of county records indicates that you own or occupy property(s) near this proposed bridge replacement project. Our employees will be doing a survey of the project area(s) in the near future. It may be necessary for them to come onto your property to complete this work. These procedures are allowed by Indiana Code IC 8-23-7-26. If you are available, our surveyors will show identification before coming onto your property. If you have sold this property, or it is occupied by someone else, please advise us of the name and address of the current owner/occupant so that we may contact them about the survey.

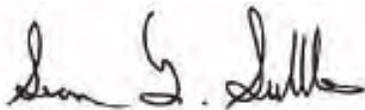
At this stage we do not know what effect, if any, our project may eventually have on your property. If we determine later that your property is involved, we will contact you with additional information.

The survey work will include mapping the location of features such as buildings, trees, fences and drives, as well as obtaining ground elevations. The survey work may include the identification and mapping of wetlands and streams, and various other environmental studies. This work is necessary for the proper planning and design of this bridge replacement Project.

Please be assured of our sincere desire to cause you as little inconvenience as possible during this survey. If any problems do occur, please contact our field crew or call me at **(812-479-6200)**, or write to me at the above address. Thank you in advance for your cooperation.

Sincerely yours,

LOCHMUELLER GROUP, INC.



Sean L. Suttles, P.S.
Chief of Surveying

Categorical Exclusion
Appendix H
Air Quality

Indiana Department of Transportation (INDOT)
 State Preservation and Local Initiated Projects FY 2020 - 2024

SPONSOR	CONTR ACT # / LEAD DES	STIP NAME	ROUTE	WORK TYPE	LOCATION	DISTRICT	MILES	FEDERAL CATEGORY	Estimated Cost left to Complete Project*	PROGRAM	PHASE	FEDERAL	MATCH	2020	2021	2022	2023	2024
Sullivan County																		
Sullivan County	1593018	Init.	VA VARI	Bridge Inspections	Countywide Bridge Inspection and Inventory Program for Cycle Years 2019-2022	Vincennes	0	Multiple		Local Bridge Program	PE	\$299,429.99	\$0.00		\$23,684.00	\$242,172.00	\$33,573.99	
										Local Funds	PE	\$0.00	\$74,857.50		\$5,921.00	\$60,543.00	\$8,393.50	
Indiana Department of Transportation	30550 / 9701930	Init.	SR 48	Bridge Replacement, Other Construction	Bridge over W Fork Turman Creek, 1.84 miles E of SR 63	Vincennes	.01	STPBG		Bridge Construction	CN	\$878,400.00	\$219,600.00	\$1,098,000.00				
Indiana Department of Transportation	39420 / 1593150	Init.	SR 58	HMA Overlay Minor Structural	From 0.8 miles E of US-41 to 0.90 miles E of SR-159	Vincennes	9.962	STPBG		Road Construction	CN	\$2,610,400.00	\$652,600.00	\$3,263,000.00				
Sullivan	39843 / 1600763	Init.	ST 1001	Signing	City of Sullivan Sign Project	Vincennes	40	STPBG		Local Safety Program	CN	\$604,102.50	\$0.00		\$604,102.50			
										Local Safety Program	RW	\$4,500.00	\$0.00	\$4,500.00				
										Local Funds	CN	\$0.00	\$67,122.50		\$67,122.50			
										Local Funds	RW	\$0.00	\$500.00	\$500.00				
Indiana Department of Transportation	40555 / 1700148	Init.	SR 159	Bridge Replacement, Concrete	Over Branch Spencer Creek, 06.76 miles South SR-54	Vincennes	0	STPBG		Bridge ROW	RW	\$56,000.00	\$14,000.00	\$70,000.00				
										Bridge Construction	CN	\$1,597,632.00	\$399,408.00			\$1,997,040.00		
Indiana Department of Transportation	41131 / 1800921	Init.	SR 159	Bridge Thin Deck Overlay	Over Pond Creek, 02.61 mi S SR-54	Vincennes	0	STPBG		Bridge Construction	CN	\$68,000.00	\$17,000.00		\$85,000.00			
Sullivan	41235 / 1800978	Init.	ST 1001	Bike/Pedestrian Facilities	W. Washington St., W. Jackson St. & S. Crowder St. (see project location map).	Vincennes	.4	STPBG		Local Transportation Alternatives	CN	\$696,000.00	\$0.00			\$696,000.00		
										Local Funds	CN	\$0.00	\$174,000.00			\$174,000.00		
Sullivan	41235 / 1800978	M 01	ST 1001	Bike/Pedestrian Facilities	W. Washington St., W. Jackson St. & S. Crowder St. (see project location map).	Vincennes	.4	STBG	\$870,000.00	Local Transportation Alternatives	CN	\$0.00	\$0.00		\$696,000.00	(\$696,000.00)		
										Local Funds	CN	\$0.00	\$0.00		\$174,000.00	(\$174,000.00)		
Comments:Modify 2020-2024 STIP. Move CN Phase from FY22 to FY21. No MPO.																		
Indiana Department of Transportation	41468 / 1800140	Init.	SR 58	Replace Superstructure	Over Turtle Creek, 02.82 mi E SR-63	Vincennes	0	STPBG		Bridge Construction	CN	\$976,000.00	\$244,000.00				\$1,220,000.00	
Indiana Department of Transportation	41474 / 1800226	Init.	US 41	Other Intersection Improvement	At SR-58 West of Carlisle	Vincennes	.33	NHPP		Safety Consulting	PE	\$160,000.00	\$40,000.00	\$200,000.00				
Sullivan	42009 / 1802898	A 03	ST 5200	Bike/Pedestrian Facilities	Washington Street from Main Street to Stewart Street, then north along Stewart Street to	Vincennes	.75	STPBG	\$3,168,250.00	Local Transportation Alternatives	CN	\$2,154,280.00	\$0.00					\$2,154,280.00

*Estimated Costs left to Complete Project column is for costs that may extend beyond the four years of a STIP. This column is not fiscally constrained and is for information purposes.

Categorical Exclusion
Appendix I
Environmental Justice
Analysis



Des. No. 1700148
Bridge Replacement Project
Bridge #159-77-05955B - SR 159 over Branch Spencer Creek in Sullivan County
Environmental Justice Analysis

January 3, 2020

The Federal Highway Administration (FHWA) and the Indiana Department of Transportation (INDOT), Vincennes District propose to proceed with a bridge replacement project in Sullivan County, Indiana.

Project Location

The proposed project involves the replacement of Bridge #159-77-05955B, which carries SR 159 across Branch Spencer Creek in southeastern Sullivan County, approximately 6.75 miles south of SR 54. Specifically, the project is located in Sections 11 and 12, Township 6 North, Range 8 West within Jefferson Township as depicted on the Bucktown U.S. Geological Survey 7.5-minute quadrangle. The proposed project is situated in an area of managed land. The affected managed land is Greene-Sullivan State Forest, a state forest owned and maintained by the Indiana Department of Natural Resources (IDNR) Division of Forestry. Land use adjacent to the project is rural and primarily consists of forest associated with the Greene-Sullivan State Forest.

SR 159 is an approximately 8-mile route extending from the Sullivan/Greene County line, at CR 900 E, east of the community of Pleasantville north to its junction with SR 54 near the town of Dugger where it terminates.

Purpose and Need

The need for the project stems from the deteriorated state of the structure. During field inspections completed by representatives of Lochmueller Group in September 2018 and the routine inspection completed by INDOT in June 2019, heavy cracking was exhibited at the south end joint and spalling was exhibited at the north end joint on the deck. Additionally, the wearing surface shows evidence of delamination. The channel also shows signs of significant erosion and the timber piles beneath the deck have surface decay at the ground line. Respectively, the condition ratings of the superstructure and deck are 7, which is considered “good,” and 6, which is considered “fair.” Both the substructure and channel have condition ratings of 5, which is considered fair. The purpose of the project is to extend the lifespan of this crossing to a minimum of 20 years, and increase the condition ratings of the superstructure, deck, substructure, and channel to a condition rating of at least 8, which is considered to be in “very good condition.” Meeting the purpose of the project will address the identified structural deficiencies.

Project Description (Preferred Alternative)

Existing Bridge #159-77-05955B is a 30-foot long, single span concrete box beam bridge supported by timber abutments. The span of the bridge is 28 feet and the total width is 30.3 feet. The proposed project intends to replace the existing bridge that carries SR 159 over Branch Spencer Creek. The preferred alternative for the new structure is a 3-sided flat top concrete structure with a 30-foot span and a 10-foot rise. Additionally, this project will involve the realignment of Branch Spencer Creek in the southwest quadrant of the crossing and the installation of riprap along the limits of the wing walls of the proposed structure. The roadway approach pavement to approximately 425 feet south and 400 feet north of the

existing bridge will also be removed and replaced to full depth. The total length of the project along SR 159 is approximately 825 feet.

During construction, the maintenance of traffic (MOT) plan involves closing SR 159 between CR 700 S and CR 750 S. No detour route will be established as SR 159 ends at CR 900 E, east of the community of Pleasantville, and does not continue to the east to connect with SR 59. Unofficial detour routes utilizing local roads will be available to the motoring public. Such local detour routes include using CR 875 E or CR 750 E as north-south routes connecting between CR 700 S and CR 750 S. Although there are two access drives within the proposed temporary road closure area, access to the one affected property (Greene-Sullivan State Forest) will be maintained throughout the duration of the project. The closure is expected to last approximately eight months.

Environmental Justice Analysis

Per the current INDOT Categorical Exclusion Manual, an Environmental Justice (EJ) Analysis is required for any project that has two or more relocations or 0.5 acre of additional permanent right-of-way. Because the project is expected to require more than 0.5 acre of new permanent right-of-way (approximately 1.79 acres), an EJ analysis was conducted.

Potential EJ impacts are detected by locating minority populations and low-income populations in and near the project area, calculating their percentage in the area relative to a reference population to determine if, in fact, populations of EJ concern do exist, and determining whether there will be disproportionate adverse impacts to them. The reference population may be a county, city, or town and is called the community of comparison (COC). For this project the COC is Sullivan County, Indiana. The community that overlaps the project limits is called the affected community (AC). For this project there is one AC. The AC is Census Tract 505 in Sullivan County.

An AC has a population of concern for EJ if the population is more than 50% low-income or minority or if the low-income population or minority population is greater than 125% of the population in the COC.

	COC	AC 1
	Sullivan County, Indiana	Census Tract 505
LOW-INCOME POPULATION		
Total Population for Whom Poverty Status is Determined	18,769	2,270
Total Population Below Poverty Level	2,934	399
Percent Low-Income	15.6%	17.6%
125 Percent of COC	19.5%	
AC Percent Low-Income Greater Than 125 Percent of COC?		No
AC Percent Low-Income Greater Than 50 Percent?		No
Population of EJ Concern?		No
MINORITY POPULATION		
Total Population	20,900	4,200
Minority Population	1,647	989
Percent Minority	7.9%	23.5%
125 Percent of COC	9.9%	

AC Percent Minority Greater Than 125 Percent of COC?		Yes
AC Percent Minority Greater Than 50 Percent?		No
Population of EJ Concern?		Yes

A review of American Community Survey five-year estimates data (2013-2017) was completed on April 1, 2019. The data was obtained from the U.S. Census Bureau's American FactFinder webpage (<https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>).

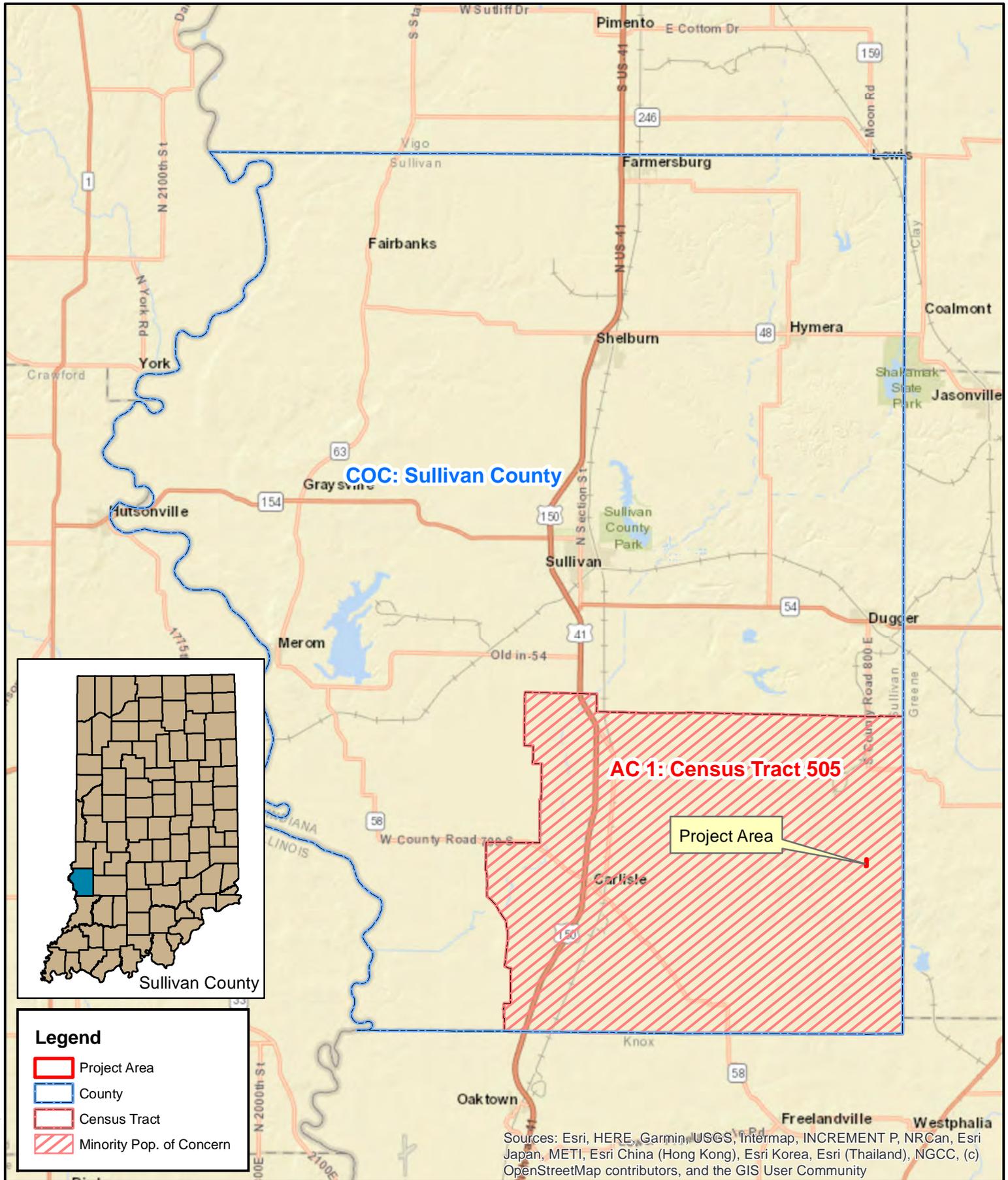
The data for low-income populations determined the AC does not have a low-income population greater than or equal to 50% nor is the low-income population 125% of the COC. Therefore, low-income populations of EJ concern are not present within the project area.

A review of the data revealed that the AC does not have a minority population greater than or equal to 50%; however, it is greater than 125% of the COC minority population. Therefore, minority populations of EJ concern are present within the project area.

The proposed project is expected to require the acquisition of approximately 1.79 acre of permanent right-of-way (ROW) from property owned by the State of Indiana, Department of Natural Resources. Land use within the proposed permanent ROW consists of forested land. No relocations are anticipated. With only one property owner affected by the project, the State of Indiana, IDNR, no permanent or temporary impacts to community cohesion will occur.

The identified EJ population will benefit from the project, by having an improved crossing at this location. Overall, the negative impacts to the identified EJ population of concern will consist of short-term construction impacts resulting from the temporary closure of SR 159 between CR 700 S and CR 750 S. In relationship to the project, the nearest urbanized areas likely servicing the affected community are the community of Pleasantville, which is approximately 0.5 mile to the southeast via SR 159; the town of Dugger, which is located approximately six miles to the north via SR 159; and, the City of Linton (Greene County), which is located approximately 9 miles to the northeast via SR 159, CR 425 S, CR 450 S, and SR 59. During the closure, which is anticipated to last approximately eight months, the affected community will be able to use other adjacent local roads to navigate around the closure. Access to the Greene-Sullivan State Forest will not be affected by the project given the lack of access drives within the proposed temporary closure area. With adequate and convenient routes around the closure, the temporary inconvenience should not affect the identified EJ population's ability to access goods and services. Once construction is complete, through access along SR 159 at this location will be restored.

The impacts resulting from the temporary road closure are not anticipated to cause an economic burden to the identified EJ population of concern. Such an impact could create a burden if the community affected was required to travel an unreasonable distance for an extended length of time. However, the availability of several close local roads to navigate around the closure area should not noticeably affect the community's ability to access goods and services. Therefore, it is expected the project will not have a disproportionately high and adverse environmental or social impacts to low-income or minority populations of EJ concern when compared to non-EJ populations that will experience similar temporary inconveniences.



COC: Sullivan County

AC 1: Census Tract 505

Project Area

Legend

- Project Area
- County
- Census Tract
- Minority Pop. of Concern

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

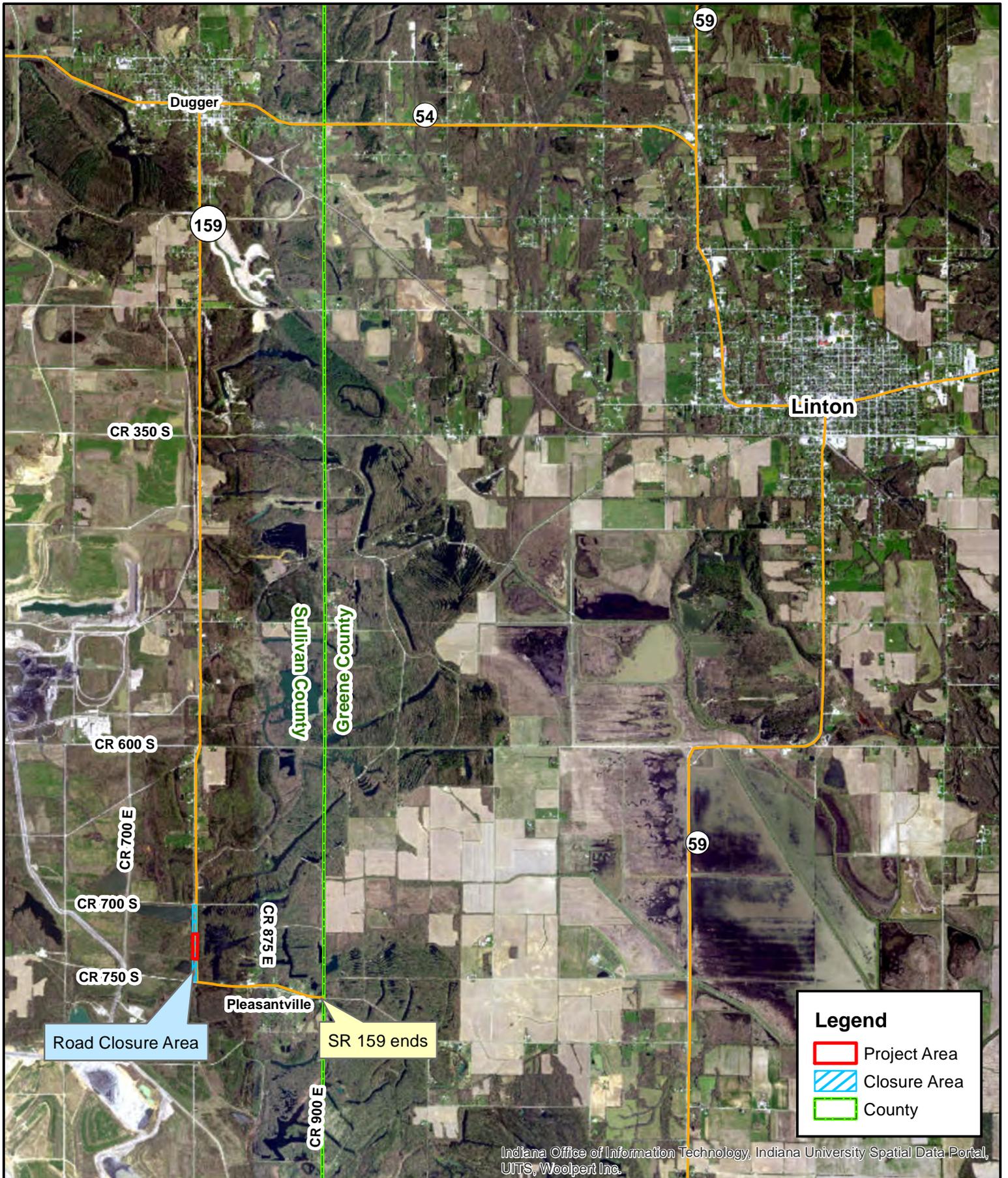
LOCHMUELLER GROUP
 3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

**Environmental Justice
 Analysis Map**
 Des. No. 1700148

0 2 4
 Miles

County: Sullivan
 Township: Jefferson
 State: Indiana

SR 159 Bridge Replacement Project
 Over Branch Spencer Creek
 Created: 12/16/2019, BReust



Legend

- Project Area
- Closure Area
- County

Indiana Office of Information Technology, Indiana University Spatial Data Portal, UITS, Woolpert Inc.

LOCHMUELLER GROUP

3502 Woodview Trace, Suite 150
 Indianapolis, IN 46268
 Phone: (317) 222-3880
 Fax: (317) 222-3881

Aerial Map (2018)
 EJ Analysis
 Des. No. 1700148

0 0.75 1.5
 Miles

County: Sullivan
 Township: Jefferson
 State: Indiana

SR 159 Bridge Project
 SR 159, 6.76 miles south of SR 54
 Created: 12/16/2019, CKunkeI

S:\2019\17-0051\BDD\Enviro\Map\Aerial_Map_EJ.mxd



B17001

POVERTY STATUS IN THE PAST 12 MONTHS BY SEX BY AGE

Universe: Population for whom poverty status is determined
2013-2017 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

	Sullivan County, Indiana		Census Tract 505, Sullivan County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error
Total:	18,769	+/-232	2,270	+/-238
Income in the past 12 months below poverty level:	2,934	+/-550	399	+/-146
Male:	1,080	+/-252	156	+/-63
Under 5 years	114	+/-70	12	+/-16
5 years	71	+/-70	20	+/-20
6 to 11 years	130	+/-102	6	+/-8
12 to 14 years	33	+/-25	0	+/-11
15 years	18	+/-18	10	+/-13
16 and 17 years	12	+/-12	5	+/-7
18 to 24 years	131	+/-77	0	+/-11
25 to 34 years	202	+/-109	61	+/-34
35 to 44 years	82	+/-44	14	+/-12
45 to 54 years	122	+/-45	13	+/-13
55 to 64 years	117	+/-64	13	+/-13
65 to 74 years	25	+/-18	2	+/-3
75 years and over	23	+/-28	0	+/-11
Female:	1,854	+/-350	243	+/-99
Under 5 years	230	+/-104	41	+/-32
5 years	4	+/-7	0	+/-11
6 to 11 years	103	+/-43	32	+/-17
12 to 14 years	46	+/-30	2	+/-4
15 years	29	+/-30	0	+/-11
16 and 17 years	32	+/-32	17	+/-28
18 to 24 years	171	+/-82	20	+/-17
25 to 34 years	374	+/-120	49	+/-28
35 to 44 years	151	+/-66	27	+/-23
45 to 54 years	308	+/-123	34	+/-27
55 to 64 years	209	+/-84	5	+/-6
65 to 74 years	71	+/-35	14	+/-12
75 years and over	126	+/-59	2	+/-4
Income in the past 12 months at or above poverty level:	15,835	+/-599	1,871	+/-197
Male:	8,143	+/-325	992	+/-136
Under 5 years	452	+/-71	57	+/-38

	Sullivan County, Indiana		Census Tract 505, Sullivan County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error
5 years	136	+/-113	0	+/-11
6 to 11 years	488	+/-122	100	+/-65
12 to 14 years	330	+/-101	20	+/-14
15 years	75	+/-28	16	+/-18
16 and 17 years	298	+/-60	83	+/-55
18 to 24 years	727	+/-86	99	+/-53
25 to 34 years	945	+/-118	107	+/-48
35 to 44 years	1,099	+/-103	124	+/-53
45 to 54 years	1,177	+/-102	78	+/-31
55 to 64 years	1,124	+/-112	149	+/-53
65 to 74 years	810	+/-44	111	+/-35
75 years and over	482	+/-47	48	+/-23
Female:	7,692	+/-383	879	+/-108
Under 5 years	309	+/-107	28	+/-20
5 years	72	+/-46	0	+/-11
6 to 11 years	532	+/-103	93	+/-42
12 to 14 years	340	+/-123	49	+/-35
15 years	144	+/-52	4	+/-4
16 and 17 years	128	+/-43	13	+/-9
18 to 24 years	582	+/-87	46	+/-29
25 to 34 years	722	+/-118	73	+/-34
35 to 44 years	1,056	+/-82	147	+/-43
45 to 54 years	1,014	+/-128	67	+/-34
55 to 64 years	1,164	+/-116	190	+/-40
65 to 74 years	950	+/-48	103	+/-39
75 years and over	679	+/-65	66	+/-31

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '*' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '*' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.



B03002

HISPANIC OR LATINO ORIGIN BY RACE

Universe: Total population

2013-2017 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Technical Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities, and towns and estimates of housing units for states and counties.

	Sullivan County, Indiana		Census Tract 505, Sullivan County, Indiana	
	Estimate	Margin of Error	Estimate	Margin of Error
Total:	20,900	*****	4,200	+/-130
Not Hispanic or Latino:	20,540	*****	4,088	+/-145
White alone	19,253	+/-21	3,211	+/-212
Black or African American alone	780	+/-118	733	+/-117
American Indian and Alaska Native alone	36	+/-29	0	+/-11
Asian alone	165	+/-129	0	+/-11
Native Hawaiian and Other Pacific Islander alone	0	+/-21	0	+/-11
Some other race alone	0	+/-21	0	+/-11
Two or more races:	306	+/-83	144	+/-75
Two races including Some other race	0	+/-21	0	+/-11
Two races excluding Some other race, and three or more races	306	+/-83	144	+/-75
Hispanic or Latino:	360	*****	112	+/-55
White alone	244	+/-82	70	+/-46
Black or African American alone	31	+/-23	31	+/-23
American Indian and Alaska Native alone	0	+/-21	0	+/-11
Asian alone	0	+/-21	0	+/-11
Native Hawaiian and Other Pacific Islander alone	0	+/-21	0	+/-11
Some other race alone	48	+/-47	11	+/-14
Two or more races:	37	+/-36	0	+/-11
Two races including Some other race	37	+/-36	0	+/-11
Two races excluding Some other race, and three or more races	0	+/-21	0	+/-11

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

While the 2013-2017 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural populations, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates

Explanation of Symbols:

1. An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '****' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

Kunkel, Chris

From: Fair, Terri <TFair@indot.IN.gov>
Sent: Friday, January 3, 2020 3:30 PM
To: Kunkel, Chris
Cc: Miller, Brandon; Bales, Ronald; Costa, Chad
Subject: SR 159 over Branch Spencer Creek (Des. 1700148) EJ Analysis
Attachments: Draft EJ Analysis_SR 159 over Branch Spencer Creek.pdf

Dear Mr. Kunkel,

INDOT-Environmental Services Division (ESD) has reviewed the project information along with the Environmental Justice (EJ) Analysis for the above referenced project. With the information provided, the project may require minimal right-of-way, require no relocations, and would not disrupt community cohesion or create a physical barrier. With the information provided, INDOT-ESD would not consider the impacts associated with this project as causing a disproportionately high and adverse effect on minority and/or low income populations of EJ concern relative to non EJ populations in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23a. No further EJ Analysis is required.

**Best,
Terri Fair**

NEPA Specialist

100 North Senate Ave., Room N642-ES

Indianapolis, IN 46204

Office: (317) 232-0680

Email: tfair@indot.in.gov



To ensure that all NEPA documents are submitted appropriately in ERMS to the NEPA Document Review Unit, please be sure to include the following:

1. The document type (CE/EA/EIS/PCE for ITS/Noise Analysis/ECF/AI/NTF/Bat Language) within the subject line and the body of the text.
2. State in the body of the email who the document is intended for based on the CE Manual
 - a. PCE and State projects that are a CE-2 or lower to the appropriate district environmental supervisor/team lead
 - b. LPA and State projects that are a CE-3 and above or EA/EIS to the INDOT ESD Document Team Lead at Central Office.
 - c. Specify the name and email address of the recipient who should get the final document (e.g. Brandon Miller, NEPA Document Team Lead at Central Office; email: bramiller1@indot.in.gov)

Categorical Exclusion
Appendix J
Other Information

Land and Water Conservation Fund (LWCF) County Property List for Indiana (Last Updated December 2019)

ProjectNumber	SubProjectCode	County	Property
1800171	1800171M	Sullivan	Shakamak State Park
1800280	1800280	Sullivan	Sullivan City Park
1800295	1800295	Sullivan	Shakamak State Park
1800305	1800305F	Sullivan	Shakamak State Park
1800312	1800312O	Sullivan	Shakamak State Park
1800363	1800363CC	Sullivan	Shakamak State Park
1800378	1800378F	Sullivan	Shakamak State Park
1800413	1800413S	Sullivan	Shakamak State Park
1800444	1800444	Sullivan	Merom Bluff Park
1800474	1800474	Sullivan	Shakamak State Park

Please note, some of the property names are cut off on the ends due to character limits

Also, park names may have changed and is not reflected on the list.

*Various - this may include multiple sites in multiple counties and should always be included in your searches by county.

Bridge Inspection Report

159-77-05955 B
SR 159
over
BRANCH SPENCER CREEK



Inspection Date: 06/12/2019

Inspected By: Tony Hoover

Inspection Type(s): Routine

Bridge Inspection Report



PHOTO 1 Condition
Description Alignment looking North.



PHOTO 2 Elevation
Description East Elevation.

Bridge Inspection Report



PHOTO 3 Condition

Description South bridge to pavement transition joint condition; notice Northbound lane map cracking and delamination; needs sounded and patched.



PHOTO 4 Condition

Description Deck topside overall condition.

Bridge Inspection Report



PHOTO 5 Condition

Description Southbound lane exhibits full length longitudinal cracks 0.020" nominal width and map cracking by North transition joint with spalling.



PHOTO 6 Condition

Description North bridge to pavement transition joint; notice approximately 3 SFT of spalling; needs patched.

Bridge Inspection Report



PHOTO 7 Condition
Description Abutment 1 overall condition.



PHOTO 8 Condition
Description Closeup of timber piles on Abutment 1 condition; notice ground level decay on random ones.

Bridge Inspection Report



PHOTO 9 Condition
Description Superstructure (PCBB) underside and Abutment 1 conditions.



PHOTO 10 Condition
Description Very minor spall on edge of Beam 4 and leakage between beams.

Bridge Inspection Report



PHOTO 11 Condition
Description Rust stain at West edge of Beam 2 due to containment steel exposure.



PHOTO 12 Condition
Description Beam 1 exhibits longitudinal cracks coming off drains holes.

Bridge Inspection Report



PHOTO 13 Condition
Description East coping condition; notice spalling with some reinforcement exposed.



PHOTO 14 Condition
Description Abutment 2 overall condition.

Bridge Inspection Report



PHOTO 15 Condition

Description Superstructure (PCBB) underside and Abutment 2 conditions; notice minor leakage between beams.



PHOTO 16 Condition

Description Riprap along Abutment 2 holding well to help channel conditions.

Bridge Inspection Report



PHOTO 17 Condition

Description Timber piles at ground level of Abutment 2 conditions.



PHOTO 18 Condition

Description Typical end of abutment cap decay due to element exposure.

Bridge Inspection Report



PHOTO 19 Condition

Description West upstream channel conditions.



PHOTO 20 Condition

Description East downstream channel conditions.

Inspector: Tony Hoover
Inspection Date: 06/12/2019

Asset Name: 159-77-05955 B
Facility Carried: SR 159

Bridge Inspection Report

Date Reported: 06/17/2019
Priority: Yellow - 2
Work Code: Deck Patch

Deficiency Description:
North end of structure in south bound lane exhibits spalling around a patch near north transition joint.
Work Description:

Date Repairs Completed:
Maintenance Comments:

Stage: Open



PHOTO 1 Description Deck topside overall condition.

Stage: Open



PHOTO 2 Description North bridge to pavement transition joint; notice approximately 3 SFT of spalling; needs patched.