Statewide Interstate Tolling Strategic Plan

APPENDIX B: ENGINEERING & ENVIRONMENTAL ANALYSIS

Indiana Department of Transportation

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1. INTRODUCTION

This document summarizes the engineering and environmental analysis that supported INDOT's strategic planning effort. The information and analysis contained within this report are intended to support the development of a statewide interstate tolling strategic plan. The report is not intended to preclude or replace the preliminary engineering and environmental studies completed as part of INDOT's project development process.

1.1 Overview of Engineering & Environmental Analysis

The objectives of this analysis were to:

- Develop planning-level estimates of probable construction costs for the roadway and bridge work associated with a potential statewide interstate tolling program; and
- Identify key environmental factors that may significantly impact the scope, schedule, or cost of a potential widening project and that would require further consideration as part of the project-level environmental review process for tolling projects.

1.2 Corridor Definitions

For the purpose of this analysis, three interstates –I-65, I-70, and I-94 – were broken into corridors, as shown in Table 1-1 and Figure 1-1. Each corridor was then divided into segments, which each segments running from an interchange to the next interchange (or state line).

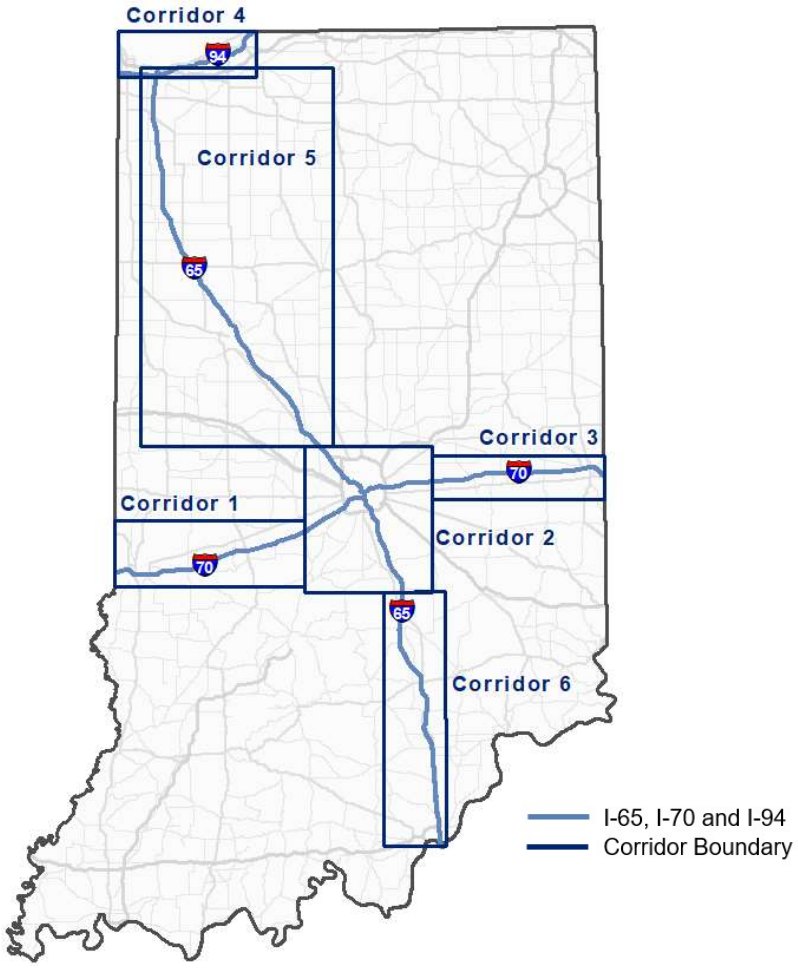
All sections of I-94 are greater than four lanes. Therefore only I-65 and I-70 were included in the roadway analysis. The following naming conventions should be noted:

- I-94 is commonly referred to as the Borman Expressway from the Illinois state line east 11.5 miles to I-65;
- I-94 travels on I-80 for 16.0 miles from the Illinois state line; and
- I-70 travels on I-65 for 2.2 miles in downtown Indianapolis.

Table 1-1. Corridor Locations

Number	Name	Description	Mile Markers
Corridor 1	I-70 West	Begins at the Illinois State line and ends at SR 39	1-59
Corridor 2	Indy Metro	I-70: Begins at SR 39 and ends at SR 9	59-104
		I-65: Begins at SR 252 and ends at SR 267 and Boone CR 400 East	80-133
Corridor 3	I-70 East	Begins at SR 9 and ends at the Ohio State line	104-156
Corridor 4	I-94	Encompasses all of I-94 from the Illinois State line to the Michigan State line	1-45
Corridor 5	I-65 North	Begins at SR 267 and Boone CR 400 East and ends at 15th Avenue, just south of I-90, the Indiana Toll Road	133-261
Corridor 6	I-65 South	Begins at the Kentucky State line and ends at SR252	1-80

Figure 1-1. Corridor Boundaries



1.3 Data Sources

At the outset of the analysis, geospatial data was obtained from INDOT. This data included information on roads, bridges, interchanges, and roadway assets. Additional pavement and bridge data were provide by INDOT from its pavement and bridge management systems.

The majority of the geospatial data compiled for the environmental screening was obtained from the Indiana Map.[1] Indiana Map is the largest publicly available collection of geographic information system (GIS) map data in Indiana. The data within this site is made possible by partners from the Indiana Geographic Information Office; federal, state, and local organizations and agencies; and universities.

Imagery used in this report was obtained from the latest available Orthophotography and LiDAR statewide initiatives.

Data from INDOT's Scheduling Program Management System (SPMS) records were also used. The SPMS includes data on roadway improvements and added travel lane projects.

Data for the demographic analysis was obtained from the U.S. Census Bureau's American Community Survey.

More details on the data used for the engineering and environmental analysis are provided in the Map Metadata located in the Supplemental Information.

[1] Indiana MAP, Indiana Geological Survey and Indiana Geographic Information Council, http://igs.indiana.edu, 2018.

2. ROADWAY ANALYSIS

The roadway analysis addressed the feasibility and costs of widening I-65 and I-70 to six lanes from state line to state line where only four travel lanes currently exist. Figure 2-1 shows the locations where the existing four-lane and six-lane segments.

Figure 2-1. Existing Number of Lanes

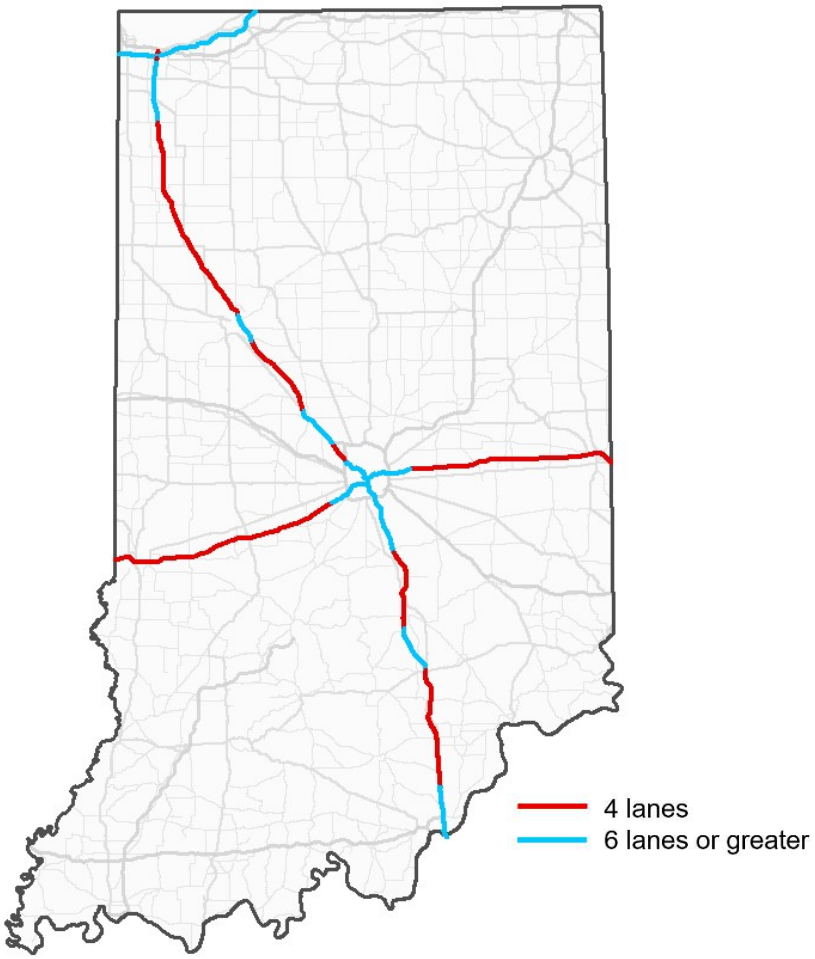


Table 2-1 summarizes the interstate centerline mileage by lane count.

Table 2-1. Centerline Mileage

Interstate	Four Lanes Only Mileage	Six Lanes or Greater Mileage
Corridor 1 (I-70 West)		
I-70	59	-
Corridor 2 (Indy Metro)		
I-65	15	38
I-70	15	29
Corridor 3 (I-70 East)		
I-70	53	-
Corridor 4 (I-94)		
I-94	-	46
Corridor 5 (I-65 North)		
I-65	94	45
Corridor 6 (I-65 South)		
I-65	49	30
Total Length Analyzed for Potential Widening		
I-65	158	-
I-70	127	-

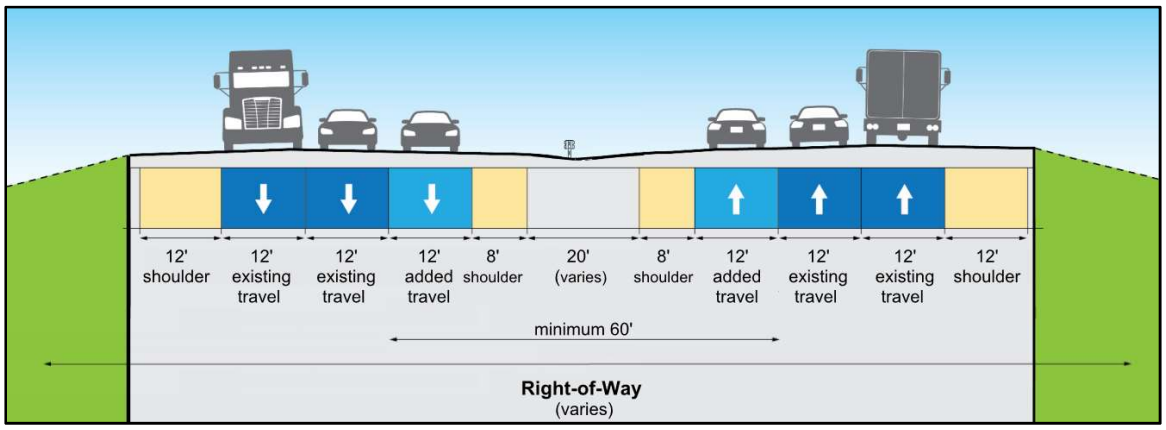
All sections of I-94 are greater than four lanes. Therefore only I-65 and I-70 were included in the roadway analysis.

2.1 Key Assumptions

The assumed design criteria is based on the requirements of the Indiana Design Manual[2] (IDM) freeway standards. All of the added travel lanes on I-65 and I-70 could be accommodated within the existing median except for the portion of I-65 that intersects with State Route (SR) 46 in Columbus. The existing and proposed typical cross-sections are provided in the Initial Design Concepts located in the Supplemental Information, and a rendering of the assumed widening concept is provided in Figure 2-2.

[2] Indiana Department of Transportation, *Indiana Design Manual 2013- Current,* published January 1, 2013, https://www.in.gov/indot/design_manual/design_manual_2013.htm.

Figure 2-2. Typical Cross-Section fo r Widening to Inside



Standard 60-foot Median

Following are the assumptions used to estimate the cost of adding one travel lane in each direction in existing four-lane segments that have a standard 60-foot median:

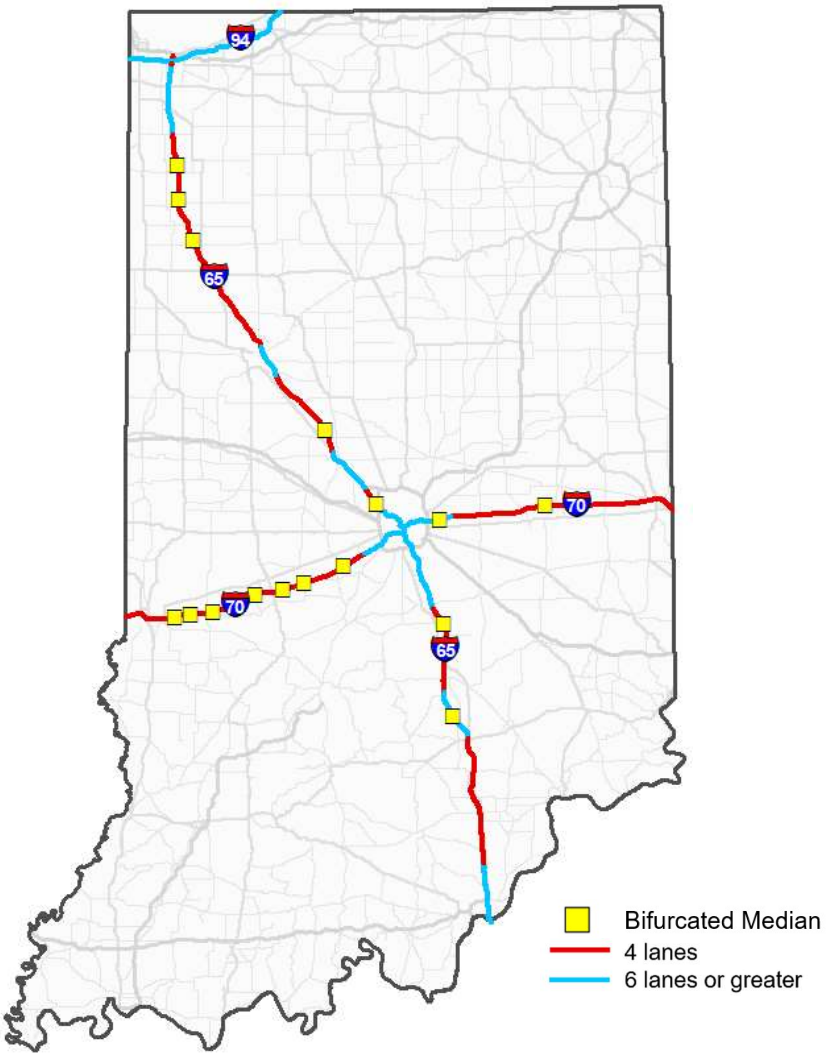
- 12-foot, full depth median added travel lanes in each direction;
- 8-foot, full depth median shoulders with double-sided guardrail (would require a design exception per the Indiana Design Manual);
- Median drainage inlets and associated drainage pipes;
- Replacement of outside shoulder with 12-foot wide full depth shoulder;
- Replacement of all existing outside guardrail;
- Extension of all existing cross drainage structures;
- Replacement of all existing panel and sheet signs;
- 50% full depth replacement of existing lanes within each segment;
- On portions of existing lanes not receiving full depth replacement, four inch asphalt overlay and 15% full depth patching; and
- Earthwork required for median grading and outside drainage improvements (i.e., detention ponds and ditches).

Medians Greater than 60 feet

Areas with an existing median width greater than 60 feet are referred to as bifurcated areas. Bifurcated areas require additional analysis because they can be associated with environmentally sensitive areas such as wooded areas or wetlands and/or separated due to elevation differences between opposing traffic lanes. Figure 2-3

identifies the sixteen bifurcated areas along I-65 and I-70. Two of these areas are located on portions of the interstate not identified for potential widening

Figure 2-3. Locations with Bifurcated Medians



The variation in elevation within the bifurcated median was taken into consideration when developing cost exceptions to the standard widening unit to account for the amount of earthwork that would be required to add a travel lane. In addition, the assumptions listed above for 60 foot median areas were modified as follows for the bifurcated areas:

- 12-foot wide median shoulder;
- Additional earthwork required for median improvements;
- No median double-sided guardrail except as needed at bridge approaches; and

- Replacement of existing median guardrail as required.

2.2 Active Projects

INDOT has several active projects along the study corridors. The costs active projects and projects that are planned to be under construction before 2020 were not included in the analysis.

2.3 Analysis Approach

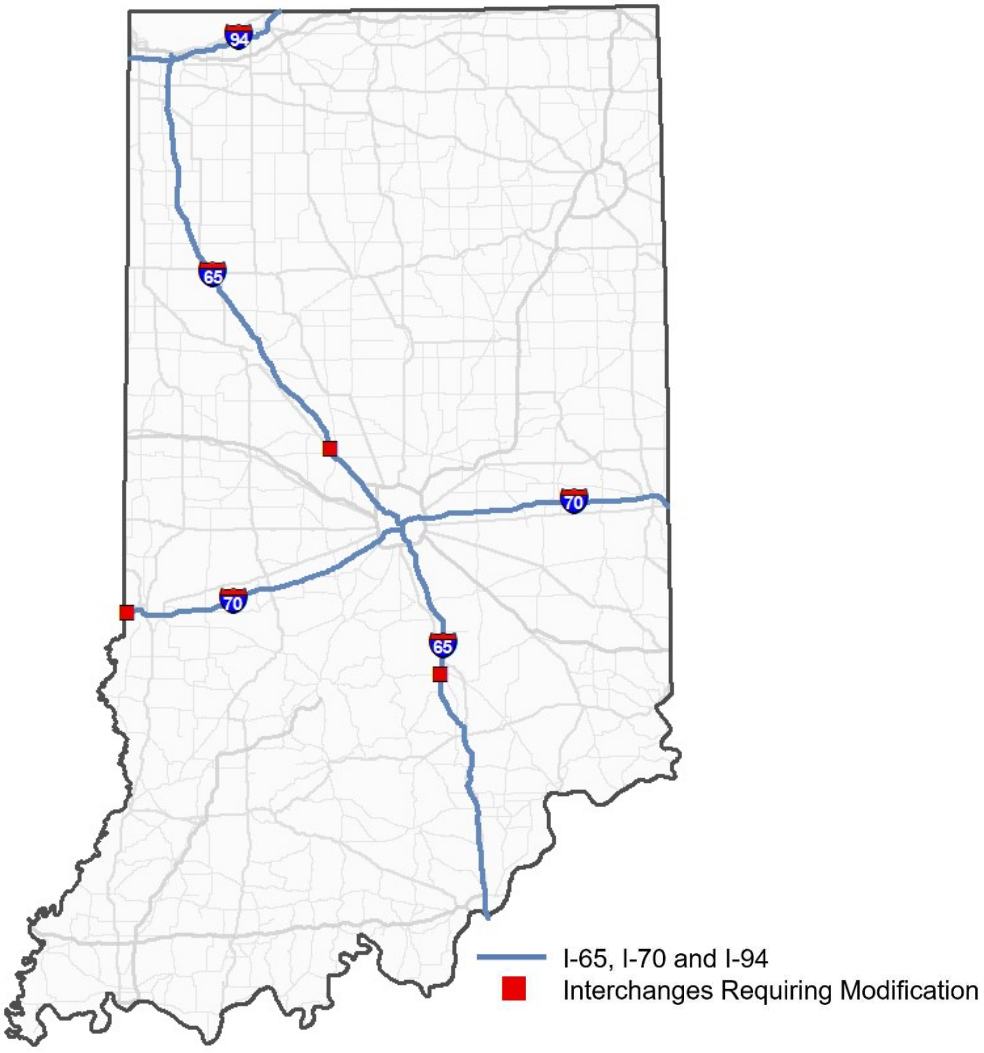
All corridors were evaluated to estimate the costs of widening to the inside median. Special consideration was given to three interchanges that would need modification. In addition, bifurcated areas along the interstates were evaluated in greater detail.

2.4 Interchanges Requiring Modification

Most of the interchanges identified in this report included improvements to existing ramps and ramp intersections with the exception of the I-65 and US 50 interchange in Seymour. The proposed improvements of this full cloverleaf interchange consists of reconstructing of the partial cloverleaf interchange. The cost for this reconfiguration is included in this analysis.

There are three locations where the widening would require interchange modifications. These locations are shown in Figure 2-4 and are described below. Conceptual cost estimates were developed for these locations. More detailed design work is needed in these areas to develop firm costs.

Figure 2-4. Interchanges Requiring Modification



- **Corridor 1 - I-70 & National Avenue Interchange:** The existing partial interchange located just east of the Illinois state line at Exit 1, provides a left-hand exit ramp for eastbound I-70 traffic onto eastbound National Road with an overpass bridge of the westbound I-70 lanes. The westbound I-70 lanes cannot accommodate additional travel lane because of the width of this overpass bridge.
- **Corridor 5 - I-65 & Lafayette Avenue Interchange:** The existing partial interchange just north of Lebanon at Exit 141, provides a northbound entrance ramp to I-65 and US 52, a southbound entrance ramp from US 52 to I-65, and a left hand exit from I-65 southbound to southbound Lafayette Avenue. The northbound weaving movements between the Lafayette Avenue entrance ramp and the exit ramp to US 52 are separated from mainline I-65 with collector-distributor (C-D) lanes behind a concrete barrier. In the southbound direction, the weaving movement from US 52 to Lafayette Avenue is accomplished by crossing the mainline I-65 lanes.
- **Corridor 6 - I-65 & SR 46 Interchange:** The existing interchange is the site of the Columbus Gateway Arch Bridge located in Columbus at Exit 68 carries I-65 over SR 46. The design of the arch bridge provides unobstructed sight lines for a single point interchange below the bridge. This signature bridge was built to create an attractive entrance to the City of Columbus. The deck system consists of a biaxially post-tensioned, cast-in-place deck and cannot be expanded without major modification to the existing arch.

3. BRIDGE ANALYSIS

The objectives of the bridge analysis were to:

- For each bridge on the study corridors, identify the ideal timing for work that would make the bridge eligible for tolling under the Section 129 General Tolling Program. This program enables states to convert existing toll-free bridges to toll bridges if they are reconstructed.
- Identify recommended bridge work for inclusion in a potential roadway widening project. When estimating the costs of potential widening projects, it was assumed that scope would include widening existing bridges, conducting all necessary work on bridges that carry the interstate, conducting necessary work on overhead bridges, and raising rural overhead bridges so that they have at least 16.5 feet of clearance.

3.1 Key Assumptions

The analysis related to the Section 129 General Tolling Program focused on mainline interstate bridges. Bridges within interchanges, adjacent collector-distributor (C-D) road bridges, and ramp bridges were not considered candidates for potential tolling because they do not benefit all users within a given segment of the interstate. Although interchange bridges were not the focus of the bridge evaluation, interim results from INDOT's ongoing statewide interchange study were reviewed to determine if any interchanges have been identified for potential enhancements.

In addition to widening, the analysis addressed the following types of bridge work:

- Deck replacement;
- Superstructure replacement;
- Bridge replacement; and
- Strengthening to meet current design loads.

3.2 Analysis Approach

The first step in the process was to compile the following information:

- **National Bridge Inventory (NBI) condition data.** This data was used to classify the deck, superstructure, and substructure condition ratings of each bridge. INDOT inspects its bridges every two years and assigns these ratings on a ten point scale.

- **Inventory Rating from the NBI data set**. The inventory rating represents the load level that can safely use the existing structure for an indefinite period of time. Bridges with an inventory rating below 36 tons are considered in need of strengthening and therefore were eliminated from consideration for bridge deck replacement. Bridge deck replacement alone is not a strengthening technique. Therefore, these bridges would either require superstructure replacement or full bridge replacement as the preferred rehabilitation method.
- **Fracture Critical status.** Bridges that were designed without structural redundancy are categorized as Fracture Critical. The only bridge in the study area that is classified as Fracture Critical is the I-65 bridge over SR 46 (Bridge 35520).
- **Superstructure type**. Bridges with existing steel beams and a concrete deck were flagged as candidates for a bridge deck replacement.
- **Bridge inspection reports.** These reports summarize notes and recommendations from INDOT's inspections.
- **INDOT's five-year program.** This program provides a year-by-year list of scheduled bridge work.
- **Recommendations generated by INDOT's bridge management system.** INDOT ran its bridge management system with an unconstrained budget to identify the optimal timing of bridge work.
- **INDOT guidance on when condition ratings trigger bridge work.**
    - Bridges with a rating of six or below for the substructure were identified for bridge replacement.
    - Bridges with a superstructure rating of six or below and a substructure rating of 7 or greater were identified for superstructure replacement.
    - Bridges with substructure and superstructure ratings greater than six were identified for bridge deck replacement.
- **INDOT guidance on the service life of a bridge.** Table 3-1 shows a typical schedule for bridge work.

Table 3-1. Typical Bridge Service Life

Work	Timing (Years After Construction)
Thin Deck Bridge Overlay	5
Rigid Bridge Deck Overlay	15
Deck Replacement	35
Superstructure Replacement	55
Bridge Replacement	75

The information described above was combined and used to determine the ideal timing and scope of each bridge's next treatment. Table 3-2 summarizes the analysis which includes the bridge work sufficient to make it eligible for tolling under the Section 129 General Tolling Program, broken down by time period.

Table 3-2. Bridge Work by Type and Year

Year	2023-2026	2027-2030	2031-2034	2035-Later	TOTAL
Bridge Replacement	14	16	16	262	**308**
Deck Replacement	35	48	15	80	**178**
Superstructure Replacement	20	22	14	30	**86**
TOTAL	**69**	**86**	**45**	**372**	**572**

4. ENVIRONMENTAL SCREENING

The objective of the environmental screening process was to identify any environmental factors that may substantially affect the scope, schedule, or cost of a potential widening project. The screening process considered natural environment resources, such as floodplains and wetlands, and human environment considerations, such as environmental justice, hazardous materials sites and historic resources.

The environmental screening process included compilation and review of existing and secondary source GIS data. As previously indicated, the majority of GIS data used in the analysis was obtained from Indiana MAP and the primary focus was on areas of I-65 and I-70 outside of I-465 that are currently no more than four lanes. The metadata for the existing and secondary source GIS data used in the environmental screening can be found in the Supplemental Information.

The information summarized in this report is not intended to replace or supersede the detailed environmental review and analysis that is completed to comply with the National Environmental Policy Act (NEPA) and/or related state environmental laws. Rather, it is intended to broadly identify and inventory environmental issues that would require further consideration as part of the project-level environmental review process for tolling projects.

4.1 Natural Environment

Natural resources within one-half mile of each interstate study corridor were mapped. The locations of the following natural features in relation to the interstate study corridors are shown in the mapping contained in the Supplemental Information :

- Notable streams;
- Floodplains; and
- Wetlands.

In addition to establishing a general understanding of the location and extent of natural resources, the GIS mapping helps identify possible waterway and water resources permitting requirements that could be required. Depending on the project and the type of resource affected, permits could be required from regulatory agencies such as the U.S. Army Corps of Engineers, the Indiana Department of Environmental Management, the Indiana Department of Natural Resources, and the U.S. Coast Guard.

In addition to the GIS mapping, the natural resources considered in the environmental screening included consideration of federally threatened and endangered species, as well as air quality. These resources are discussed below in further detail.

Federally Threatened and Endangered Species

An informal list of federal threatened and endangered (T&E) species that are known or expected to be near the three interstate study corridors was generated using the Information for Planning and Consultation (IPaC) tool developed by the U.S. Fish and Wildlife Service. The IPaC tool identifies the federal species that would be protected under Section 7 of the Endangered Species Act.

Table 4-1 summarizes the information generated from the IPaC tool.

Table 4-1. Informal T&E Species List from USFWS IPaC Tool

Species	Study Corridor				
	I-65 North	I-65 South	I-70 West	I-70 East	I-94
Mammals					
Gray Bat *(Myotis grisescens)*	-	E	-	-	-
Indiana Bat *(Myotis sodalis)*	E	E	E	E	E
Northern Long-eared Bat *(Myotis septentrionalis)*	T	T	T	T	T
Birds					
Least Tern (*Sterna antillarum*)	-	E	-	-	
Piping Plover (*Chadrius melodus*)	-	-	-	-	E
Red Knot (*Calidris canutus rufa*)	-	-	-	-	T
Whooping Crane (*Grus Americana*)	-	-	-	-	EXPN
Reptiles					
Eastern Massasauga (=rattlesnake) (*Sisturus catenatus*)	-	-	-	-	T
Clams					
Fanshell (*Cyprogenia stegaria*)	E	E	-	-	-
Rabbitsfoot (*Quadrula cylindrica cylindrica*)	T	T	T	-	-
Sheepnose Mussel (*Plethobasus cyphyus*)	E	E	-	-	-
Clubshell (*Pleurobema clava*)	-	E	-	-	-
Northern Riffleshell (*Epioblasma torulosa rangiana*)	-	E	-	-	-
Orangefoot Pimpleback (pearlymussel) (*Plethobasus cooperianus*)	-	E	-	-	-

Species	Study Corridor				
	I-65 North	I-65 South	I-70 West	I-70 East	I-94
Purple Cat's Paw (Purple Cat's Paw Pearlymussel) (*Epioblasma obliquata obliquata*)	-	E	-	-	-
Rayed Bean (*Villosa fabalis*)	-	E	-	-	-
Ring Pink (mussel) (*Obovara retusa*)	-	E	-	-	-
Rough Pigtoe (*Pleurobema plenum*)	-	E	-	-	-
Snuffbox Mussel (*Epioblasma triquetra*)	-	E	-	E	-
Spectaclecase (mussel) (*Cumberlandia monodonta*)	-	E	-	-	-
Insects					
Karner Blue Butterfly (*Lycaeides melissa samuelis*)	E	-	-	-	E
Hine's Emerald Dragonfly (*Somatochlora hineana*)	-	-	-	-	E
Mitchell's Satyr Butterfly (*Neonympha mitchellii mitchellii*)	-	-	-	-	E
Rattlesnake-master Borer Moth (*Papaipema eryngii*)	-	-	-	-	C
Flowering Plants					
Mead's Milkweed (*Asclepias meadii*)	T	-	-	-	T
Running Buffalo Clover (*Trifolium stoloniferum*)	-	E	-	-	-
Eastern Prairie Fringed Orchid (*Platanthera leucophaea*)	-	-	T	-	T
Leafy Prairie-clover (*Dalea foliosa*)	-	-	-	-	E
Pitcher's Thistle (*Cirsium pitcher*)	-	-	-	-	T
Prairie Bush-clover (*Lespedeza leptostachya*)	-	-	-	-	T
Small Whorled Pogonia (*Isotria medeloides*)	-	-	-	-	T

Source: https://ecos.fws.gov/ipac/, accessed October 16, 2018.
Notes:
No critical habitats identified for any of the study corridors.
T = Federally Threatened Species
E = Federally Endangered Species
C = Candidate species: Plants and animals that have been studied and the Service has concluded that they should be proposed for addition to the Federal endangered and threatened species list.
EXPN = Experimental Population, Non-essential: Special designation under Endangered Species Act which can be applied to a population of a threatened or endangered species prior to reestablishing it in a unoccupied portion of its former range.
The areas defined to query the IPaC tool included the entire interstate study corridor outside of I-465.

Indiana Law IC 14-22-34 also protects species within the state that have a limited abundance or distribution or those species in danger of extinction. A listing of state-listed threatened and endangered species within Indiana can be found on the Indiana Department of Natural Resource's website.[3]

Based on the results of the engineering analysis documented in this report, the vast majority of potential roadway capacity and operational improvements associated with I-65 and I-70 outside of I-465 could be completed within the existing right-of-way. Although this would minimize the potential environmental impacts, there are natural resources of concern within the existing right-of-way. However, these types of resources are best identified through detailed field studies that occur during project-level environmental studies. As a result, they are not depicted in detail in the environmental screening completed for this analysis. In general, environmental resources of concern within the right-of-way are not anticipated to substantially affect project scope, schedule, or cost. Therefore, detailed and itemized mitigation cost estimates were not developed as part of this effort. Instead, these costs are considered to be part of the identified contingencies.

Air Quality

The Clean Air Act (CAA) and the 1990 CAA Amendments require the United States Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) for pollutants that are considered to be harmful to the public health and environment. USEPA set forth standards for six criteria or principal pollutants: particulate matter (PM), sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), and lead. When levels of pollutants do not exceed the standards, an area is considered in attainment of the NAAQS. An area that does not meet the NAAQS for one or more pollutants is designated by the USEPA as a nonattainment area. Nonattainment areas that later are designated to attainment are considered maintenance areas. Table 4-2 below summarizes the air quality status by county for each of the three study corridors.

Table 4-2. Air Quality Status for Criteria Pollutants

County	Criteria Pollutants[1]			
	Carbon Monoxide (1971 std.)	Nitrogen Dioxide (1971 std.)	Ozone (2015; 8-hr std.) (2008; 8-hr std.) (1997; 8-hr std.)[4]	Particulate Matter (2012; $PM_{2.5}$ std.) (2006; $PM_{2.5}$ std.) (1987; PM_{10} std.)
I-65 North				
Lake County	Maintenance[2]	Attainment	Nonattainment[5] Nonattainment	Attainment Attainment

[3] https://www.in.gov/dnr/naturepreserve/4725.htm, accessed October 18, 2018.

County	Criteria Pollutants[1]			
	Carbon Monoxide (1971 std.)	Nitrogen Dioxide (1971 std.)	Ozone (2015; 8-hr std.) (2008; 8-hr std.) (1997; 8-hr std.)[4]	Particulate Matter (2012; $PM_{2.5}$ std.) (2006; $PM_{2.5}$ std.) (1987; PM_{10} std.)
			Maintenance[4]	Maintenance[6]
Newton County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
Jasper County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
Benton County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
White County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
Tippecanoe County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
Clinton County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
Boone County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment
Hendricks County	Attainment	Attainment	Attainment Attainment Maintenance	Attainment Attainment Attainment
Marion County	Maintenance[3]	Attainment	Maintenance Attainment Maintenance[4]	Attainment Attainment Attainment
I-65 South				
Marion County	Maintenance[3]	Attainment	Maintenance Attainment Maintenance[4]	Attainment Attainment Attainment
Johnson County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment
Shelby County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment
Bartholomew County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
Jackson County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment
Scott County	Attainment	Attainment	Attainment Attainment	Attainment Attainment

County	Criteria Pollutants[1]			
	Carbon Monoxide (1971 std.)	Nitrogen Dioxide (1971 std.)	Ozone (2015; 8-hr std.) (2008; 8-hr std.) (1997; 8-hr std.)[4]	Particulate Matter (2012; $PM_{2.5}$ std.) (2006; $PM_{2.5}$ std.) (1987; PM_{10} std.)
			Attainment	Attainment
Clark County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment
I-70 West				
Vigo County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
Clay County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
Putnam County	Attainment	Attainment	Attainment Attainment Attainment	Attainment Attainment Attainment
Morgan County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment
Hendricks County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment
Marion County	Maintenance[3]	Attainment	Maintenance Attainment Maintenance[4]	Attainment Attainment Maintenance Attainment
I-70 East				
Marion County	Maintenance[3]	Attainment	Maintenance Attainment Maintenance[4]	Attainment Attainment Maintenance Attainment
Hancock County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment
Henry County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment
Wayne County	Attainment	Attainment	Attainment Attainment Maintenance[4]	Attainment Attainment Attainment

Source: https://www.epa.gov/green-book, accessed October 15, 2018.
Notes:
[1] Criteria pollutants also include sulfur dioxide and lead; however, neither is associated with on-road mobile sources. Therefore, they were excluded from the table.
[2] The carbon monoxide maintenance area in Lake County includes a portion of the City of East Chicago (area bounded by Columbus Drive on the north, the Indiana Harbor Canal on the west, 148th St. if extended, on the south, and Euclid Ave. on the east).

[3] The carbon monoxide maintenance area in Marion County includes a portion of the City of Indianapolis (area bounded by 11th St. on the north, Capitol on the west, Georgia St. on the south, and Delaware on the east).
[4] The U.S. EPA revoked the 1997 ozone NAAQS in April 2015; however, a recent decision from the U.S. Court of Appeals by the D.C. Circuit requires a conformity determination for the 1997 ozone NAAQS for actions on Plans, TIPS and projects in certain areas beginning on February 16, 2019.
[5] The ozone maintenance area in Lake County includes Calumet Township, Hobart Township, North Township, Ross Township, and St. John Township.
[6] The particulate matter (PM_{10}) maintenance area in Lake County includes a portion of the county.

Under the CAA, each state is required to establish a plan to achieve and/or maintain the NAAQS in nonattainment and maintenance areas. This plan is known as the State Implementation Plan (SIP) and sets the emission budget that meets the NAAQS. New transportation projects must conform with the emissions budget in the SIP. The process of determining whether a specific project conforms with the SIP is called transportation conformity.

The introduction of tolling within each of the interstate study corridors could change existing travel patterns. These changes could affect local and regional air quality. The potential impacts to air quality will be studied in further detail as part of the project-level environmental review process, and will consider transportation conformity at both the regional and project-level. This will involve coordination with the appropriate metropolitan planning organization (MPO) to confirm the project is included in the adopted long range transportation plan. It may also include hot-spot analyses for certain criteria pollutants to support a project-level conformity determination. Mobile source air toxics, which is not one of the criteria pollutants, will also require further study as part of the project-level environmental review process.

4.2 Human Environment

Man-made resources within one-half mile of each interstate study corridor were mapped. These particular resources were mapped due to their relevance to key issues that will require consideration as part of the federal environmental review process, including Section 4(f) of the U.S. Department of Transportation Act of 1966, Section 6(f) of the Land and Water Conservation Fund Act, Section 106 of the National Historic Preservation Act, as well as regulations associated with the proper management of hazardous waste. The locations of the following human environment features in relation to the interstate study corridors are shown in the mapping contained in the Supplemental Information:

- Recreational facilities;
- Managed lands;
- Hazardous materials sites;

- Trails; and
- Historic properties and districts.

Traffic Noise

Based on the FHWA procedures for abatement of highway traffic noise and construction noise[4], the potential widening of I-65 and I-70 would be considered a Type I project. As a result, the project-level environmental review process would include a noise analysis to assess traffic noise impacts, and analyze the feasibility of abatement measures for any unavoidable noise impacts. There is no readily available and reliable screening process for this type of issue. Therefore, detailed and itemized noise abatement cost estimates were not developed as part of this effort.

In addition to the GIS mapping, the environmental screening included a demographic analysis to identify sensitive populations. Although sensitive populations could include multiple demographic categories that face challenges engaging with the transportation process and reaping equitable benefits, the demographic analysis focused on low-income and minority populations due to the potential for introduction of tolling within each of the three interstate study corridors.

Environmental Justice

INDOT routinely works with the Federal Highway Administration (FHWA) to deliver transportation projects that use federal funding or require certain approvals related to the interstate system. All federal agencies, including the FHWA, must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*.

EO 12898 requires that each federal agency develop an agency-wide strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and/or low-income populations. EO 12898 defines minority persons as individuals who identify with one or more of the following categories: African American, Hispanic or Latino, Asian American, American Indian or Native Alaskan. EO 12898 defines low-income persons as individuals whose household income is at or below the U.S. Department of Health and Human Services (DHHS) poverty guidelines.

There are three fundamental principles of environmental justice (EJ) that guide FHWA actions:

[4] 23 CFR 772 – Procedures for Abatement of Highway Traffic Noise and Construction Noise

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
2. To ensure the full and fair participation by all potentially affected communities in the decision-making process.
3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

FHWA uses these principles with the goal of achieving an equitable distribution of benefits and burdens, as well as the full and fair participation by all potentially affected communities in the transportation decision-making process.

The implementation of tolling within the interstate study corridors would introduce a transaction cost – the payment of a toll – to existing roadway users. This could lead to direct effects, including:

- Change in travel patterns (diversion to alternative routes or modes);
- Change in mobility;
- Change in accessibility;
- Change in travel reliability;
- Change in trip-making behavior and trip purposes;
- Change in household disposable income and change in household financial burden; and
- Change in disposable time.

The extent of these effects should be evaluated in the context of the above-outlined EJ principles to assess whether these effects are disproportionately high and adverse, whether there has been full and fair participation by communities in the transportation decision-making process, and whether the effects result in the denial of, reduction in, or significant delay in the receipt of benefits. The detailed analysis of these considerations will occur during the project-level environmental reviews.

As part of the strategic planning process for tolling, INDOT focused on developing a better understanding of potential EJ considerations and how an interstate tolling program could be equitably developed. The information developed as part of this analysis is intended to serve as a starting point for a potential EJ analysis. The basic intent is to identify where potential EJ populations of concern may exist, as well as where translation services could be needed to more meaningfully engage these populations. While the data used in this report is sufficient for identifying populations

at the census tract level, minority and/or low-income persons or populations may reside within a cohesive community within a census tract or overlap the boundaries of one or more census tracts that may or may not be identified as elevated. Further detailed studies, including a public involvement program, would be needed during project-level environmental studies to assess the presence of minority and/or low-income populations, as well as the benefits and burdens associated with an interstate tolling program.

Demographic Analysis

To better understand the potential EJ considerations associated with tolling the three interstate study corridors, demographic data from the U.S. Census Bureau's 2012-2016 American community survey (ACS) was compiled and reviewed. The ACS data was gathered and reviewed at the census tract level to assess the presence of minority and/or low-income populations. Additionally, the ACS data was reviewed to assess presence of limited English proficiency populations (LEP). LEP is relevant to EJ because some minorities may not speak English as a first language. LEP is also relevant because one of the three fundamental principles of EJ is the full and fair participation by all potentially affected communities in the decision-making process. The LEP data helps to understand the level of English proficiency and whether translation services could be required in certain areas.

According to INDOT EJ guidance,[5] populations of potential concern are present if the minority or low-income population of an affected community is more than 50 percent or if the percentage is 25 percent (or more) higher than the reference population or community of comparison (COC). When this situation occurs, the affected community is referred to as having an elevated concentration of minority or low-income populations. The INDOT EJ guidance indicates that an affected community needs to be contained within the COC, which is typically a county, city, or town, but may be based on other locally or regionally important community contexts. For large projects with multiple affected communities, there may be multiple communities of comparison.

The COC assumed for this analysis was the county within which each census tract resided. For example, Census Tracts 3528 and 3910 are located with Marion County. Therefore, the COC or reference community for these census tracts was designated as Marion County. Table 4-3 illustrates how these (and all statewide) census tracts were analyzed to determine if elevated concentrations of low-income populations existed within them.

[5] INDOT Environmental Justice in NEPA Documentation Process (American FactFinder, Step-by-Step Guide), April 3, 2012. http://www.in.gov/indot/files/ES_EnvironmentalJusticeGuidance_2012.pdf

Table 4-3. Example Low-Income Population Analysis at Census Tract Level

Geography	Total Population	Total Low-Income Population (% of Total Population)	125% of COC	Elevated EJ Population?
Marion County (COC)	913,255	187,586 (20.5%)	25.6%	-
Census Tract 3528	1,017	241 (23.6%)	-	No
Census Tract 3910	4,701	1,460 (31.1%)	-	Yes

Source: U.S. Census Bureau, 2012-2016 American Community Survey Tables B17001

As shown in Table 4-3, the low-income population of Census Tract 3528 (23.6%) is less than 25 percent of the low-income population of Marion County (20.5% x 1.25 = 25.6%). However, the low-income population within Census Tract 3910 (31.1%) is more than 25 percent above the low-income population of Marion County. As a result, Tract 3910 has an elevated concentration of low-income populations, but Tract 3528 does not.

Table 4-4. Example Minority Population Analysis at Census Tract Level

Geography	Total Population	Total Minority Population (% of Total Population)	125% of COC	Elevated EJ Population?
Marion County (COC)	932,142	397,806 (42.7%)	53.4%	-
Census Tract 3528	1,017	858 (84.4%)	-	Yes
Census Tract 3910	5,403	1,545 (28.6%)	-	No

Source: U.S. Census Bureau, 2012-2016 American Community Survey Table B03002

As shown in Table 4-4, the minority population of Census Tract 3528 (84.4%) is more than 25 percent higher than the minority population of Marion County (42.7% x 1.25 = 53.4%). It is also greater than 50 percent. As a result, it has an elevated concentration of minority populations. The minority population of Census Tract 3910 (28.6%) is less than 50% and less than the concentration of minority populations found in Marion County. Therefore, it does not have an elevated concentration of minority populations.

A similar approach was used to identify census tracts with elevated concentrations of LEP populations. In addition to using the criteria contained within INDOT's EJ guidance, the policy guidance issued by the U.S. Department of Transportation (USDOT) was also applied. The USDOT guidance outlines the steps that funding recipients are to take to ensure meaningful access to their programs and activities by

LEP persons.[6] In the guidance, the USDOT outlines two specific "safe harbor" provisions. A "safe harbor" means that if a recipient provides written translations under these circumstances, such action will be considered strong evidence of compliance with the recipient's written-translation obligations under Title VI. The two "safe harbor" provisions identified in the USDOT guidance are as follows:

1. The USDOT recipient provides written translations of vital documents for each eligible LEP language group that constitutes 5 percent or 1,000, whichever is less, of the population of persons eligible to be served or likely to be affected or encountered. Translation of other documents, if needed, can be provided orally; or

2. If there are fewer than 50 persons in a language group that reaches the 5 percent trigger in (a), the recipient does not translate vital written materials but provides written notice in the primary language of the LEP language group of the right to receive competent oral interpretation of those written materials, free of cost. These safe harbor provisions apply to the translation of written documents only. They do not affect the requirement to provide meaningful access to LEP individuals through competent oral interpreters where oral language services are needed and are reasonable.

Based on the "safe harbor" criteria, census tracts meeting the following two conditions were identified as having elevated concentrations of LEP populations:

1. Greater than 5 percent LEP population (from USDOT LEP guidance); and

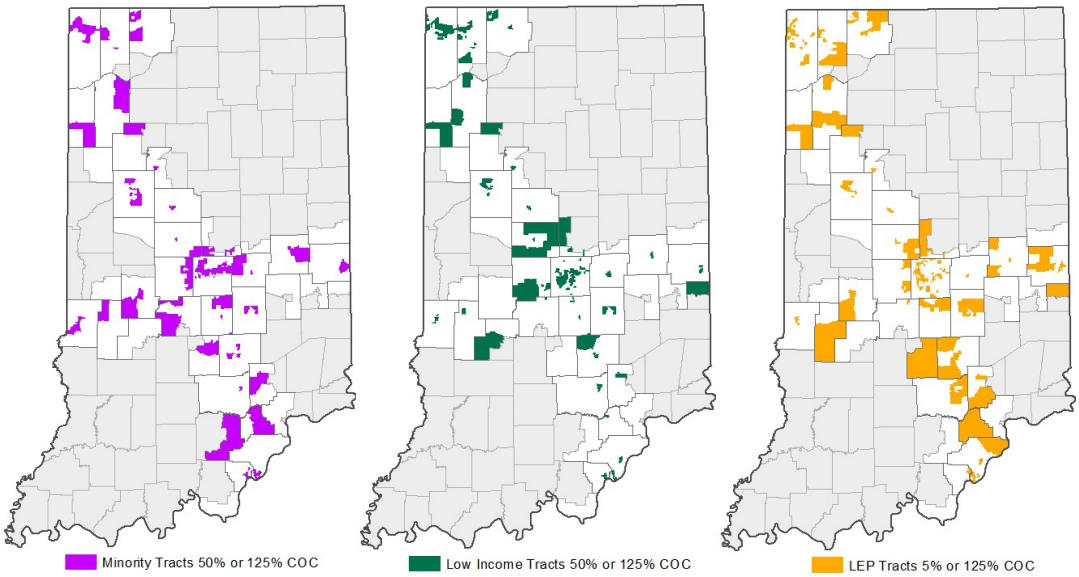
2. LEP population 25 percent (or more) higher than the county within which it is located (from INDOT EJ guidance).

Findings

The analyses described above were completed at the statewide level for all census tracts located within Indiana. Figure 4-1 shows the census tracts located within or touching a 10-mile buffer of the three interstate study corridors that have elevated concentrations of minority, low-income and LEP populations.

[6] https://www.transportation.gov/civil-rights/civil-rights-awareness-enforcement/dots-lep-guidance, accessed October 16, 2018.

Figure 4-1. Statewide Demographic Analysis: Low Income, Minority and LEP



Statewide and more detailed maps for each interstate study corridor are included with the Socioeconomic Maps located in the Supplemental Information . These maps identify census tracts where elevated concentrations of low-income, minority, or LEP populations reside. The statewide map identifies the census tracts throughout the entire state that meet the analysis thresholds. The corridor maps focus on the census tracts that are located within or touch a 10-mile buffer of the three study corridors. Future studies may decide to use different COCs to consider specific project and community contexts, as well as the appropriate detection limits for identifying minority or low-income populations. As previously noted, the project-level environmental reviews would also use public involvement as a tool help assess the presence of minority or low-income populations.

Table 4-5 summarizes the demographic analysis for low-income populations by corridor. The analysis includes the total population in the elevated census tracts, as well as the low-income population concentration for each corridor. Although the relative concentrations vary, each corridor contains census tracts with elevated concentrations of low-income populations. The I-94 corridor has the highest overall concentration of low-income populations. Conversely, the I-65 South corridor contains the lowest overall concentration of low-income populations.

Table 4-5. Low-Income Analysis Summary by Corridor

Geography	Low-Income Population in Elevated CTs	Total Population in all CTs	% Low-Income Population	Number of CTs with Elevated Low-Income Population	Total CTs	% of CTs with Elevated Low-Income Population
I-70 West	10,933	184,402	5.9%	11	46	23.9%
Indianapolis Metro	108,773	1,513,703	7.2%	92	312	29.5%
I-70 East	9,517	146,698	6.5%	10	37	27.0%
I-94	50,425	362,115	13.9%	50	105	47.6%
I-65 North	60,844	765,494	7.9%	57	174	32.8%
I-65 South	17,684	369,502	4.8%	21	83	25.3%

Notes: Demographic data summarized in table is limited to census tracts (CTs) touching or within a 10-mile buffer of the interstate study corridor.

Table 4-6 summarizes the demographic analysis for minority populations by corridor. The analysis includes the total population in the elevated census tracts, as well as the low-income population concentration for each corridor. Although the relative concentrations vary, each corridor contains census tracts with elevated concentrations of low-income populations. The I-94 corridor has the highest overall concentration of minority populations. It also has the highest number of census tracts with elevated minority populations. I-70 East, on the other hand, has the lowest overall concentration of minority populations.

Table 4-6. Minority Analysis Summary by Corridor

Geography	Minority Population in Elevated CTs	Total Population in all CTs	% Minority Population	Number of CTs with Elevated Minority Population	Total CTs	% of CTs with Elevated Minority Population
I-70 West	12,927	200,301	6.5%	16	46	34.7%
Indianapolis Metro	256,116	1,541,538	16.6%	103	312	33.0%
I-70 East	8,509	153,458	5.5%	13	37	35.1%
I-94	126,173	373,782	33.8%	57	105	54.3%
I-65 North	121,170	797,407	15.2%	65	174	37.4%
I-65 South	23,208	375,907	6.2%	28	83	33.7%

Notes: Demographic data summarized in table is limited to census tracts (CTs) touching or within a 10-mile buffer of the interstate study corridor.

Table 4-7 summarizes the demographic analysis for LEP populations by corridor. The analysis includes the number of LEP households in the elevated census tracts,

as well as the LEP household concentration for each corridor. LEP households were identified in each of the six corridors. Although none reach the USDOT guidance threshold of 5 percent for translation services, there could be specific areas where translation or the offer of translation services could be appropriate during public outreach activities. This determination will be made during the project-level environmental studies. The Indianapolis Metro area has the highest number of census tracts with elevated concentrations of LEP households. It along, with I-94 corridor, have the highest concentration of LEP households.

Table 4-7. LEP Analysis Summary by Corridor

Geography	LEP Households in Elevated CTs	Total Households in all CTs	% LEP Households	Number of CTs with Elevated LEP Households	Total CTs	% of CTs with Elevated LEP Households
I-70 West	344	74,732	0.5%	10	46	21.7%
Indianapolis Metro	11,245	588,401	1.9%	84	312	26.9%
I-70 East	201	58,453	0.3%	9	37	24.3%
I-94	2,644	141,792	1.9%	32	105	30.5%
I-65 North	3,260	298,989	1.1%	42	174	24.1%
I-65 South	1,377	142,385	1.0%	29	83	34.9%

Notes: Demographic data summarized in table is limited to census tracts (CTs) touching or within a 10-mile buffer of the interstate study corridor.

5. COST ESTIMATING METHODOLOGY

This section describes the methodology used to estimate the cost of potential roadway and bridge projects. The procedures are consistent with practices outlined by the American Society of Professional Estimators.

All estimates in this report are presented in constant 2018 dollars. They have not been adjusted to account for future inflation.

5.1 Roadway Cost Estimates

This section documents the assumptions used to develop the cost estimates for widening the four-lane sections of I-65 and I-70 to six-lane sections outside of I-465 as described in Section 3.0.

General Conditions

General conditions represent the costs of managing a project. Key parameters were analyzed to determine the appropriate value for general conditions. Project complexity, delivery method, and value of the project were all considered when developing the estimate. The following assumptions were made for this effort.

- The scope of work was considered moderately complex due to the work primarily consisting of typical construction activities, rural location, and minimal technical structural scope.
- It was assumed that the projects would use a design-bid-build delivery method. This method requires fewer indirect staff to manage the contract and scope compared to other delivery methods.
- Although the cost to complete the full corridor is substantial, it was assumed that each individual segment or project released for bid would be only a fraction of the full scope.

Removal of Existing Infrastructure

This item accounts for the cost of milling and removing existing pavement, drainage structures, and walls. Costs were estimated by creating conceptual quantities based on the assumptions of a typical cross section, which is provided in the Initial Design Concepts located in the Supplemental Information . The conceptual quantities were then extended by applying average production rates and unit prices for the specific construction operations.

Maintenance of Construction Equipment

This item includes the costs to maintaining equipment utilized on the project. This value was determined based on a pro-rated value with consideration given to the type of construction and its related equipment density.

Erosion Control and Maintenance of Traffic

Traffic control and maintenance of traffic (MOT) costs historically range from 3% to 5% of total project cost. Environmental best management practices, dust control, and erosion and sediment control historically contribute 1.5% to 3% of total project cost. For this analysis, the high end percentage was assumed since it is unknown how these projects would be phased. These items may be able to performed more efficiently as project size increases.

Roadway Grading

The purchase and installation of the aggregate base for the base course and sub-grade were developed for the grading costs. Quantities reflect the typical cross-section. Costs were estimated based on typical production rates, crew compositions, equipment spreads, and unit prices for the required construction activities.

Drainage

GIS data was used to determine the existing density of crossings. This value was transferred into the estimate. Costs were then estimated by applying typical production rates, crew compositions, equipment spreads, and unit prices for the required construction activities.

Paving

Costs for purchasing and installing pavement for the base course and sub-grade were developed for the paving costs. Quantities reflect the typical cross section. Costs were estimated based upon assigning typical production rates, crew compositions, equipment spreads, and unit prices for the required construction activities.

Labor Rates

Labor wages and add-ons (benefits, taxes and insurance, etc.) were considered to reflect local trade rates for both craft and staff.

Overtime

Labor costs were based on a 50-hour work week, 10 of which were assumed to be overtime. Added costs for shift premiums for night and weekend work and holiday pay were not considered.

Contingency

Given that there are unknown scope items, limited preliminary design information, and both the contractor delivery method and the contractual language is unknown at this time, a value of 10% contingency was used for this effort.

Profit

Profit margins for civil engineering projects typically range from 5%-25%, and most commonly fall in the 8%-15% range. Profit was assumed at a rate of 12% of the total project revenue consistent with projects of this magnitude and complexity. This is a conservative approach that account for the unknowns of the phasing and delivery method.

Project Development Costs

Costs for design and environmental fees were estimated based on the complexities of the scope of work for the individual projects. Total design cost was applied at a rate of 7.2% of the total project cost.

Estimate Parameters

The following were included in the road widening estimates:

- Hot mix asphalt (HMA) section to be 15-inch pavement, including six-inch compacted aggregate base (CAB), subgrade treatment;
- Portland cement concrete pavement (PCCP) section to be 14-inch pavement, including subbase for PCCP, subgrade treatment;
- 50% of existing travel lanes to be removed and replaced as part of widening;
- 50% of existing travel lanes to receive four-inch mill and overlay, with 15% of this area receiving full depth patching;
- Remove and replace existing outside shoulder with 12-foot full depth shoulder;
- Rehab existing interchange ramps;
- Extend existing drainage crossings to accommodate the added lane;
- Replace existing roadway signs; and
- Replace existing outside guardrail.

Estimate Exclusions

The following items were not included in the estimates:

- Hazardous or contaminated material abatement and/or removal;

- Third Party utility impacts, relocation and/or any delays that could be caused by them;
- Potential right-of-way procurement costs or easement costs have not been included in this estimate
- Special environmental considerations and mitigation costs;
- Overhead utility relocation costs;
- Construction Management fees have been excluded;
- Warranty, operation, and maintenance cost; and
- Unforeseen conditions.

These items are not included in the contingency because they are not typically included in a contractor's estimate or in a typical scope. Estimating a cost for these items is inherently complex because they represent unknowns.

Road Unit Costs

The assumptions described above were used to estimate the following average unit costs for widening the four-lane sections of I-65 and I-70 outside of I-465:

- 60 foot standard median per mile cost $7.3 million
- Bifurcated section per mile cost $7.7 million

These unit costs do not include the costs of bridge work, which are describe below.

5.2 Bridge Cost Estimates

Unit Prices

Costs were taken from previous INDOT bid projects and translated to a cost per square foot of bridge deck area. Unit costs were developed from projects with the following criteria:

- Bridge Contracts from 2014-2017 lettings;
- Bridges on Interstates and Principal Arterials; and
- Deck areas from 1,410-196,450 sq. ft.

Contingency

Contingency for unknowns was estimated as 5% for bridge work done in conjunction with roadway widening and 15% of project costs for stand-alone bridge work.

Parameters for Bridge Work In Conjunction With Roadway Widening

- Estimate includes structures pay items only;
- Construction engineering, mobilization and demobilization, earthwork, aggregate pavement and bases, pavements, incidental construction, and traffic control costs captured in roadway estimate;
- Additional maintenance of traffic estimated as 10% for superstructure replacement and bridge replacement;
- Width of each bridge increased 18 feet to account for added travel lane and additional shoulder width associated with roadway widening;
- Estimates include the cost of bridge maintenance that falls within two years before to 3 years after the widening project for all bridges within the segment. This includes mainline, intersection, C-D bridges, ramp bridges, and overpassing bridges; and
- Estimates include the costs or raise overpassing bridges to 16.5 feet of vertical clearance.

Parameters for Bridge Work Not Associated with Widening

- Earthwork, aggregate pavement and bases, pavements, incidental construction, structures and traffic control costs included;
- Construction Engineering factored at 2%;
- Mobilization and Demobilization factored at 5%;
- Maintenance of traffic factored at 5% for bridge deck overlays and bridge deck replacements. Superstructure replacement factored at 10% and bridge replacement factored at 15%;
- Current bridge width maintained;
- Bridge maintenance costs based on life cycle are not included; and
- Costs to raise overpassing bridges are not included.

Bridge Estimate Exclusions

The following items were not included in the estimates:

- Design engineering;
- Construction management;

- Warranty, operation, and maintenance cost; and
- Unforeseen conditions.

Bridge Unit Costs

The assumptions described above were used to develop the following unit costs:

- For bridges associated with roadway improvements:
  - Thin deck overlay $9/sq. ft.
  - Rigid deck overlay $24/sq. ft.
  - Deck replacement $53/sq. ft.
  - Superstructure replacement $90/sq. ft.
  - Bridge replacement $135/sq. ft.
  - Painting $26/sq. ft.
- For stand-alone bridge projects:
  - Thin deck overlay $14/sq. ft.
  - Rigid deck overlay $42/sq. ft.
  - Deck replacement $96/sq. ft.
  - Superstructure replacement $215/sq. ft.
  - Bridge replacement $265/sq. ft.

6. RIGHT-OF-WAY IMPACT ANALYSIS

A planning-level review of the potential roadway and bridge improvements was conducted for the I-65 and I-70 corridors. The added travel lanes on most of the existing four-lane portions of I-65 and I-70 within I-465 could be constructed within the existing right-of-way and would not require additional property acquisition. The following areas, previously described in Section 2.4 Interchanges Requiring Modification, may be the exception to this finding. Depending on the final design, new right-of-way may be required for the following interchanges:

- Corridor 1: I-70 & National Avenue interchange (Illinois State line at exit 1);
- Corridor 5: I-65 & Lafayette Avenue interchange (near Lebanon at exit 141); and
- Corridor 6: I-65 & SR 46 interchange (in Columbus at exit 68).

7. RESULTS

This section summarizes the results of the engineering and environmental analysis.

Engineering Analysis

Figure 7-1 provides cost estimates by corridor for potential interstate widening along I-65 and I-70. The total cost is $4.65 billion. This cost includes roadway and bridge work, but not the costs associated with tolling or any addition right-of-way that may be needed.

Figure 7-2 provides cost estimates by corridor for potential bridge work assuming it is not completed as part of a widening project. Table 7-1 provides the earlier year for each segment in which bridge work could make a bridge eligible for tolling under the Section 129 General Tolling Program.

Figure 7-1. Interstate Widening Costs by Corridor (Includes Roadway and Bridge Costs)

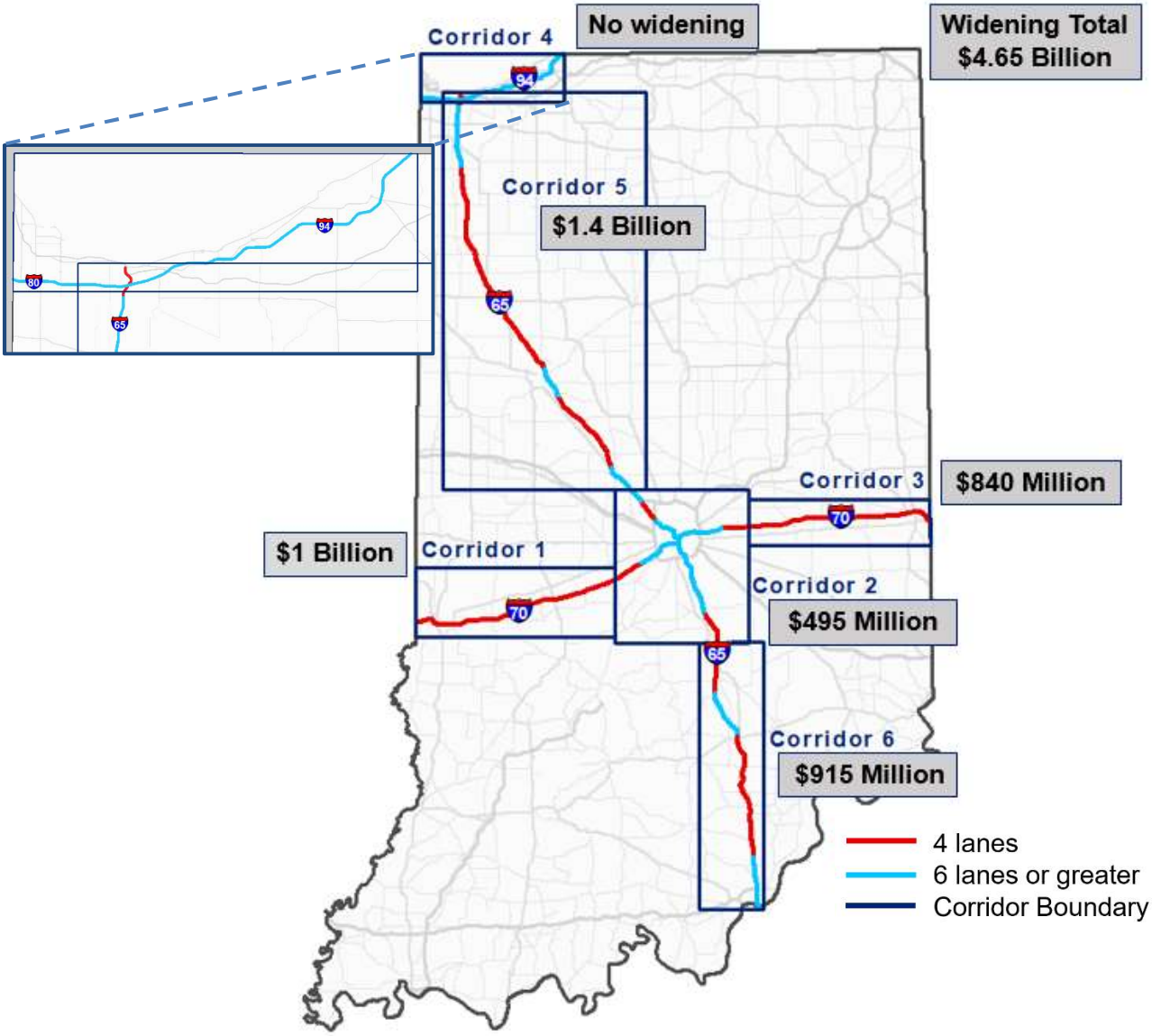


Figure 7-2. Bridge-Only Costs Assuming Work is Not Included in a Widening Project

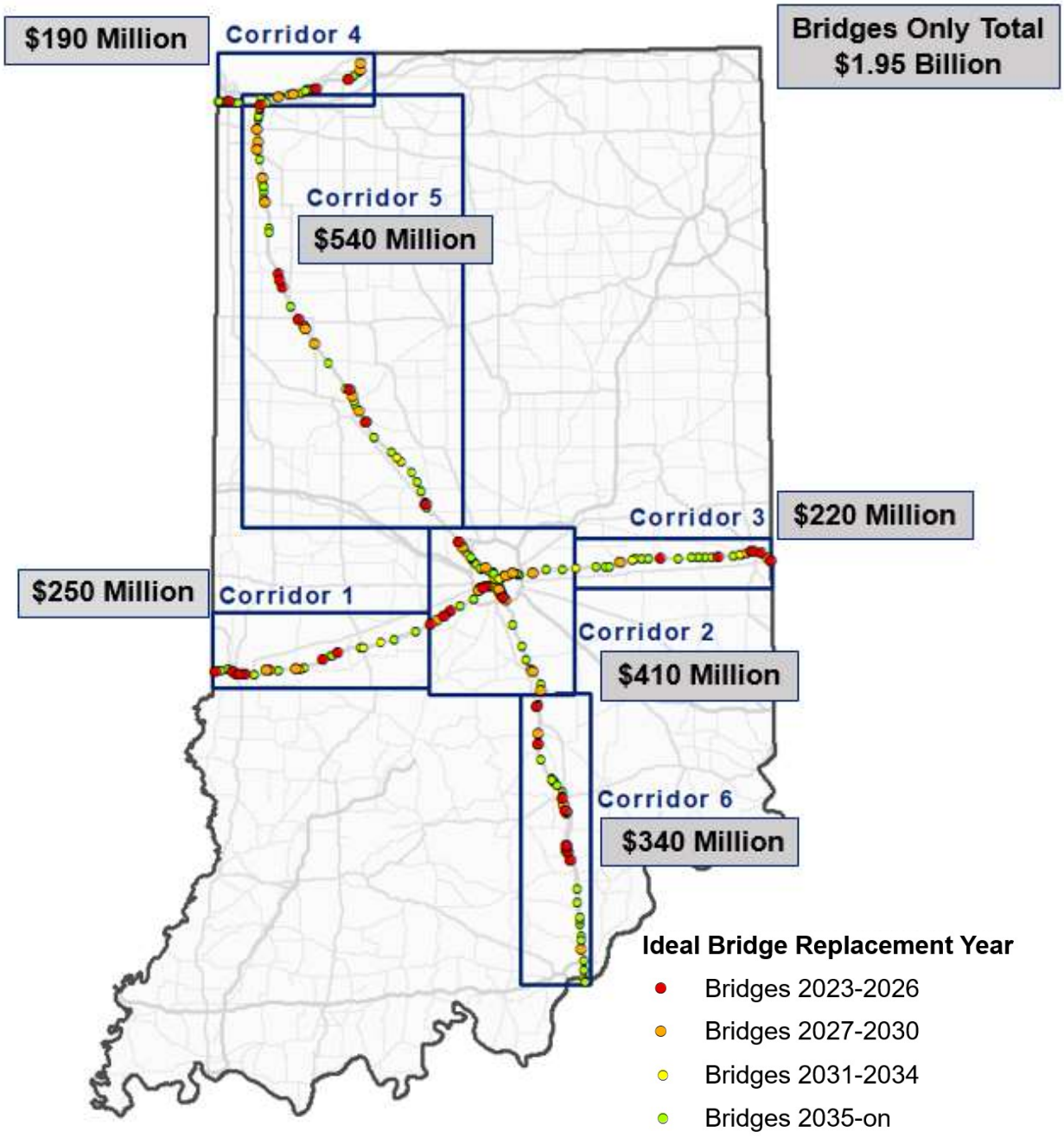


Table 7-1. Potential Timing of Bridge Work by Segment

Interstate	From	To	Miles	Ideal Year for First Bridge Work that Could Trigger Tolling
Corridor 1 – I-70 West				
I-70	Illinois State Line	US 40	1.39	2024
I-70	US 40	Darwin Rd	2.1	2045
I-70	Darwin Rd	US 41/US 150	3.43	2026
I-70	US 41/US 150	SR 46	4.32	2025
I-70	SR 46	SR 59	11.42	2028
I-70	SR 59	SR 243	14.53	2026
I-70	SR 243	US 231	4.04	2032
I-70	US 231	CR 1100 W (Little Point Rd)	9.58	2032
I-70	CR 1100 W (Little Point Rd)	SR 39	8.65	2045
Corridor 2 – Indianapolis Metropolitan Area				
I-70	SR 39	SR 267	6.99	2025
I-70	SR 267	Ameriplex/Ronald Reagan Pkwy	2.51	2045
I-70	Ameriplex/Ronald Reagan Pkwy	Indianapolis International Airport	0.82	No Bridge
I-70	Indianapolis International Airport	I-465 W jct.	3.21	2045
I-70	I-465 W jct.	Sam Jones Expwy	1.8	2045
I-70	Sam Jones Expwy	Holt Rd	1.85	2023
I-70	Holt Rd	Harding St	2.04	2023
I-70	Harding St	West St	1.07	2032
I-70	West St	McCarty St	0.05	2023
I-70	McCarty St	I-65 W jct.	0.52	2045
I-70	I-65 W jct.	Washington St	0.94	*2033*
I-70	Washington St	I-65 E jct.	0.81	*2038*
I-70	I-65 E jct.	Rural St/Keystone Ave	1.8	2033
I-70	Rural St/Keystone Ave	Emerson Ave	1.88	2027
I-70	Emerson Ave	Shadeland Ave	2.17	2026
I-70	Shadeland Ave	I-465 E jct.	0.68	2026
I-70	I-465 E jct.	Post Rd	1.35	2030

Interstate	From	To	Miles	Ideal Year for First Bridge Work that Could Trigger Tolling
I-70	Post Rd	Mount Comfort Rd	5.34	2027
I-70	Mount Comfort Rd	SR 9	7.73	2045
I-65	SR 252/Shelbyville Rd	SR 44/King St	9.41	2029
I-65	Sr 44/King St	Whiteland Rd	4.89	2045
I-65	Whiteland Rd	Worthsville Rd	2.83	No Bridge
I-65	Worthsville Rd	Greenwood Rd/Main St	1.91	2045
I-65	Greenwood Rd/Main St	County Line Rd	1.53	2045
I-65	County Line Rd	Southport Rd	2.35	No Bridge
I-65	Southport Rd	I-465/I-74 S jct.	2.86	2023
I-65	I-465/I-74 S jct.	Keystone Ave	1.14	2025
I-65	Keystone Ave	Raymond St	1.91	2030
I-65	Raymond St	I-70 S jct.	1.33	2030
I-65	I-70 S jct.	Washington St	0.94	2033
I-65	Washington St	I-70 N jct.	1.6	2038
I-65	I-70 N jct.	Illinois St/11th St	0.76	2044
I-65	Illinois St/11th St	West St	0.4	2038
I-65	West St	21St	0.82	2038
I-65	21St	29th/30th St	1.05	2039
I-65	29th/30th St	MLK Jr Ave/Michigan Rd	0.47	2045
I-65	MLK Jr Ave/Michigan Rd	I-65 Sb Ramp To 38th St	1.68	2037
I-65	I-65 Sb Ramp To 38th St	38th St/Kessler Blvd	1.29	2023
I-65	38th St/Kessler Blvd	Lafayette Rd	1.92	2045
I-65	Lafayette Rd	I-465 N jct.	2.03	2045
I-65	I-465 N jct.	71St St	1.49	2038
I-65	71St St	I-865/US 52	4.32	2023
I-65	I-865/US 52	Whitestown Pkwy	1.21	No Bridge
I-65	Whitestown Pkwy	SR 267	3.24	No Bridge
Corridor 3 – I-70 East				
I-70	SR 9	SR 109	11.65	2032
I-70	SR 109	SR 3	7.73	2029

Interstate	From	To	Miles	Ideal Year for First Bridge Work that Could Trigger Tolling
I-70	SR 3	Wilbur Wright Road	7.96	2023
I-70	Wilbur Wright Road	SR 1	6.31	2023
I-70	SR 1	Centerville Rd	7.94	2023
I-70	Centerville Rd	US 35/Williamsburg Pike	3.79	2032
I-70	US 35/Williamsburg Pike	US 27	2.02	2023
I-70	US 27	SR 227/Middleboro Pike	1.54	No Bridge
I-70	SR 227/Middleboro Pike	US 40	3.36	2023
I-70	US 40	Ohio State line	0.26	No Bridge
Corridor 4 – I-94 (I-94 travels over I-80 from the Illinois state line to 16 miles east)				
I-94	Illinois State Line	Calumet Ave	0.84	2045
I-94	Calumet Ave	Indianapolis Blvd	1.49	2045
I-94	Indianapolis Blvd	Kennedy Ave	0.98	2026
I-94	Kennedy Ave	Cline Ave	1.55	2045
I-94	Cline Ave	Burr St	1.5	2032
I-94	Burr St	Grant St	2.44	No Bridge
I-94	Grant St	Broadway Ave	1.02	No Bridge
I-94	Broadway Ave	I-65	1.9	2045
I-94	I-65	Central Ave	0.88	2045
I-94	Central Ave	Ripley St	2.39	2045
I-94	Ripley St	I-80	0.5	No Bridge
I-94	I-80	Crisman Rd	3.31	2027
I-94	Crisman Rd	US 20	3.51	2029
I-94	US 20	IN 49	3.55	2045
I-94	IN 49	US 421	8.56	2023
I-94	US 421	US 20	5.35	2025
I-94	US 20	Michigan State Line	5.9	2030
Corridor 5 – I-65 North				
I-65	SR 267	CR 100/Hall Baker Rd	4.33	2045
I-65	CR100/Hall Baker Rd	SR 39	1.17	No Bridge

Interstate	From	To	Miles	Ideal Year for First Bridge Work that Could Trigger Tolling
I-65	SR 39	SR 32	1.33	No Bridge
I-65	SR 32	US 52	1.55	2026
I-65	US 52	SR 47	4.18	2023
I-65	SR 47	SR 28	11.98	2023
I-65	SR 28	SR 38/Walnut St	10.62	2023
I-65	SR 38/Walnut St	SR 26/South St	3.67	2029
I-65	SR 26/South St	SR 25/Schuyler Ave	3.03	2034
I-65	SR 25/Schuyler Ave	SR 43/River Rd	3.12	2026
I-65	Sr 43/River Rd	SR 18	9.7	2023
I-65	SR 18	US 231	5.37	2029
I-65	US 231	US 24	8.07	2023
I-65	US 24	US 231	3.53	2045
I-65	US 231	SR 114	9.83	2023
I-65	SR 114	SR 14/Division Rd	5.71	No Bridge
I-65	SR 14/Division Rd	SR 10	9.12	2037
I-65	SR 10	SR 2	10.34	2025
I-65	SR 2	US 231	7.37	2030
I-65	US 231	109th Ave	1.87	2045
I-65	109th Ave	US 30	3.52	2029
I-65	US 30	61ST Ave	2.49	2045
I-65	61ST Ave	37th Ave/Ridge Rd	3.1	2033
I-65	37th Ave/ Ridge Rd	US-6	0.8	2023
I-65	US-6	I-94/ I-80/US-6	0.6	2045
I-65	I-94/ I-80/US-6	15th Ave	1.61	2045
I-65	15th Ave	I-90	0.16	No Bridge
I-65	I-90	US 20	0.43	No Bridge
Corridor 6 – I-65 South				
I-65	Kentucky State Line	Court Ave	0.36	2045
I-65	Court Ave	US 31	0.18	2045
I-65	US 31	10th St	0.32	2045
I-65	10th St	Stansifer Ave	0.46	2045
I-65	Stansifer Ave	Old Indiana 62	0.37	No Bridge

Interstate	From	To	Miles	Ideal Year for First Bridge Work that Could Trigger Tolling
I-65	Old Indiana 62	Eastern Blvd	0.38	2045
I-65	Eastern Blvd	US 31/Lewis And Clark Pkwy	1.73	2042
I-65	US 31/Lewis And Clark Pkwy	I-265	1.85	No Bridge
I-65	I-265	SR 60	1.7	2045
I-65	SR 60	SR 311	1.69	2030
I-65	SR 311	Memphis Rd/Blue Lick Rd	6.67	2045
I-65	Memphis Rd/Blue Lick Rd	SR 160	3.49	2035
I-65	SR 160	SR 56	10.1	2044
I-65	SR 56	SR 256	4.2	2023
I-65	SR 256	US 31	2.99	2023
I-65	US 31	SR 250	4.54	2045
I-65	SR 250	US 50	8.46	2023
I-65	US 50	SR 11	5.75	2039
I-65	SR 11	SR 58	8.44	2039
I-65	SR 58	SR 46	4.58	2023
I-65	SR 46	US 31	7.47	2025
I-65	US 31	SR 252/Shelbyville Rd	4.34	2028

Environmental Analysis

The results of the engineering analysis documented in this report indicate the vast majority of potential roadway capacity and operational improvements associated with I-65 and I-70 outside of I-465 could be completed within the existing right-of-way. Although this would minimize the potential environmental impacts, there are natural resources of concern within the existing right-of-way. These types of resources are best identified through detailed field studies that occur during project-level environmental studies. Therefore, they are not depicted in detail in the environmental screening completed for this analysis.

The implementation of tolling within the interstate study corridors would introduce a transaction cost – the payment of a toll – to existing roadway users. This could lead to direct effects, including:

- Change in travel patterns (diversion to alternative routes or modes);
- Change in mobility;
- Change in accessibility;
- Change in travel reliability;
- Change in trip-making behavior and trip purposes;
- Change in household disposable income and change in household financial burden; and
- Change in disposable time.

The detailed analysis of these considerations would occur during project-level environmental reviews.

Based on the environmental screening, it appears that each of the three interstate study corridors will have to address several key issues during the project-level environmental reviews. These issues would include, but may not be limited to, the following:

- Wetlands, streams, and floodplains;
- Federal- and state-listed threatened and endangered species;
- Air quality;
- Recreational facilities and managed lands;
- Historic properties and districts;
- Hazardous materials;
- Traffic noise; and
- Community impacts, including EJ and meaningful engagement of LEP populations.

Statewide Interstate Tolling Strategic Plan

APPENDIX B: ENGINEERING & ENVIRONMENTAL ANALYSIS MAP BOOK

Indiana Department of Transportation

November 2018

MAP BOOK SUMMARY

This document provides the following map book:

Section A: Environmental Resource and Socioeconomic Map Metadata.

Section B: Environmental Resource Maps; displays resources within a ½ mile area on both sides of the interstate tolling study corridors. Maps are separated by I-65 and I-70 along portions of the highway that may be widened if tolling occurs.

Section C: Socioeconomic Maps; displays the Low Income, Minority and Low English Proficiency by state and then by each of the six corridors.

Section D: Initial Design Concepts; Roadway Typical Sections and Roadway Gantry Sections.

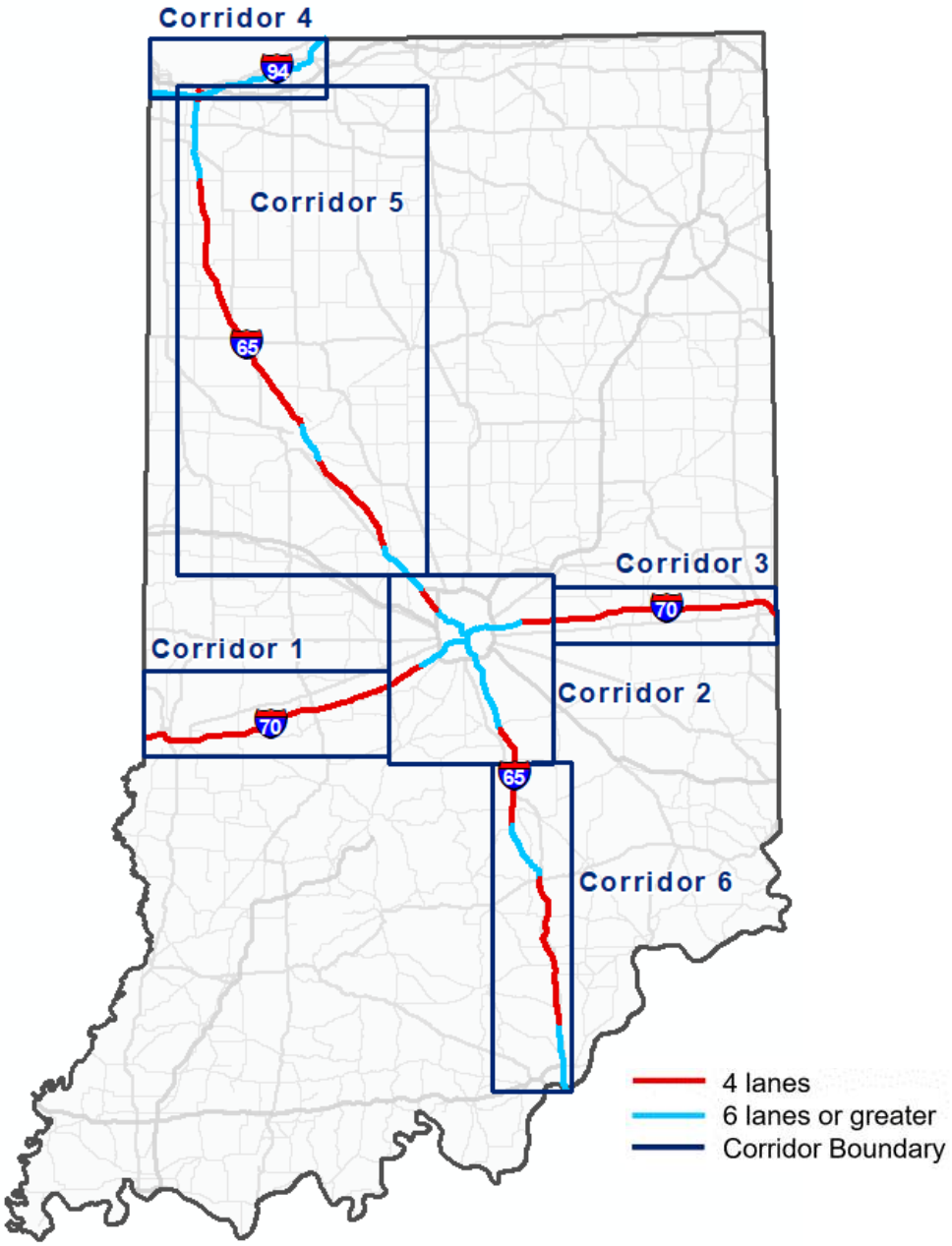
Corridor Summary

For the purpose of Engineering and Environmental Analysis, each corridor was divided into segments, consisting of roadway sections from interchange to interchange (or state line). The analysis assumes widening of I-65 and I-70 in areas that are only two lanes in each direction, as noted in Figure 1-1 and Table 1-1.

Table 1-1. Corridor Locations

Number	Name	Description	Mile Marker
Corridor 1	I-70 West	Begins at the Illinois State line and ends at SR 39	1-59
Corridor 2	Indy Metro	I-70: Begins at SR 39 and ends at SR 9	59-104
		I-65: Begins at SR 252 and ends at SR 267 and Boone CR 400 East	80-133
Corridor 3	I-70 East	Begins at SR 9 and ends at the Ohio State line	104-156
Corridor 4	I-94	Encompasses all of I-94 from the Illinois State line to the Michigan State line	1-45
Corridor 5	I-65 North	Begins at SR 267 and Boone CR 400 East and ends at 15th Avenue, just south of I-90, the Indiana Toll Road	133-261
Corridor 6	I-65 South	Begins at the Kentucky State line and ends at SR 252	1-80

Figure 1-1. Corridor Boundaries along I-65, I-70 and I-94



SECTION A: MAP METADATA

1.1 Environmental Resource Metadata

The data below was used to develop maps for the environmental resources analysis. Point data was clipped to the ½ mile buffer. Wetlands polygons were reduced to the ½ mile boundary, all other polygon and line data were not refined to the corridor buffer.

MAP LAYER: County Boundary

SUBJECT: County boundaries created from United States Geological Survey maps, according to the Public Land Survey System

DESCRIPTION: The Indiana Geological Society developed the 1998 boundaries for showing county boundaries for the counties located within the corridor vicinity. The county boundaries were digitized from Public Land Survey System boundaries, as they appear on United States Geological Survey 7.5-minute quadrangle maps.

MAP LAYER: Exceptional or Outstanding Streams

SUBJECT: Exceptional Streams Derived from 2016 Local Resolution Hydrography Dataset and the identified IDNR exceptional rivers. Developed by HNTB.

DESCRIPTION: The National Hydrography Dataset was originally developed at 1:100,000-scale and exists at that scale for the whole country. The low-resolution National Hydrography Dataset, was developed at 1:24,000 to 1:12,000 scale, and 1:1,200 in some cases. Identifies rivers and streams which have environmental or aesthetic interest. Except where incorporated into a statute or rule, the listing is intended to provide guidance rather than to have regulatory application. Provided by the Natural Resource Commission.

SUBJECT: Outstanding Streams Derived from 2016 Local Resolution Hydrography Dataset and the identified IDNR outstanding rivers. Developed by HNTB.

DESCRIPTION: The National Hydrography Dataset data was originally developed at 1:100,000-scale and exists at that scale for the whole country. The low-resolution National Hydrography Dataset, was developed at 1:24,000 to 1:12,000 scale, and 1:1,200 in some cases. Identifies rivers and streams which have environmental or aesthetic interest. Except where incorporated into a statute or rule, the listing is intended to provide guidance rather than to have regulatory application. Provided by the Natural Resource Commission.

MAP LAYER: Floodplain

SUBJECT: Floodplains located across the state of Indiana

DESCRIPTION: Identifies the 100 year or 1% annual chance floodplains and flood hazard areas, derived from the Federal Emergency Management Agency Flood Rate Insurance Maps (FIRM). The FIRM are the basis for floodplain management, mitigation, and insurance activities for the National Flood Insurance Program. The Digital Flood Insurance Rate Map (DFIRM) Database is derived from Flood Insurance Studies (FIS), previously published FIRM, flood hazard analyses performed in support of the FIS's and FIRM's, and new mapping data, where available. This database is an interim version of the DFIRM Database and does not fully meet all DFIRM specifications. Updated data were supplied by Indiana Department of Natural Resources personnel on March 20, 2017.

MAP LAYER: Landfill

SUBJECT: Waste Landfill Boundaries

DESCRIPTION: Shows boundaries for open dump sites, approved landfills, and permitted landfills in Indiana. Provided by personnel of Indiana Department of Environmental Management (IDEM), Office of Land Quality. Data are current as of April 8, 2015. This dataset is not complete, but comprises the waste boundaries of landfills as a work in progress.

MAP LAYER: Managed Lands

SUBJECT: Natural and recreational areas

DESCRIPTION: Shows natural and recreation areas which are owned or managed by the Indiana Department of Natural Resources. In addition, some lands are included that are owned by federal agencies, local agencies, non-profit organizations, and conservation easements. For additional information regarding these lands, persons should contact the IDNR Indiana Natural Heritage Data Center (317-232-4052). Attributes include property names, owners, managing entities, acreages, access, and other information. Provided by personnel of the Indiana Natural Heritage Data Center, Indiana Department of Natural Resources, on February 12, 2018.

MAP LAYER: National Register Historic Districts

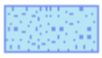
SUBJECT: Historic Districts in Indiana that have been included in the National Register of Historic Districts.

DESCRIPTION: These data were provided by the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology on April 19, 2017. It is not complete, may be inaccurate, and may be modified as new information is prepared. The absence of information in a particular location does not necessarily indicate that no such resources exist in said location.

MAP LAYER: National Register Historic Site

SUBJECT: Sites in Indiana that have been included in the National Register of Historic Places

DESCRIPTION: These data were provided by the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology on April 19, 2017. It includes buildings, districts, sites, cemeteries, bridges, structures and objects. It is not complete, may be inaccurate, and may be modified as new information is prepared. The absence of information in a particular location does not necessarily indicate that no such resources exist in said location.



MAP LAYER: NWI Wetland

SUBJECT: Wetlands

DESCRIPTION: Shows the extent, approximate location, and type of wetlands and deepwater habitats in Indiana, as provided by the National Wetlands Inventory (NWI) of the U.S. Fish and Wildlife Service. These data delineate the areal extent of wetlands and surface waters as defined by Cowardin et al. (1979) and published in 2014. Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and near shore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory.

MAP LAYER: Other Hazardous Material Concerns

SUBJECT: Waste Sites- Disposal, Storage, Handling

DESCRIPTION: Shows waste site locations for the disposal, storage, and handling of solid and hazardous waste in Indiana. It contains the location of access points to managed sites, along with a unique identifier for each location. Types of waste sites include constructions/demolition waste, composting of CFO waste, clean fill, municipal, non-municipal, open dumps, restricted waste, surface impoundments, sanitary landfills, incinerators, material recovery, medical waste, recycling, and waste transfer stations. Data were provided by personnel of Indiana Department of Environmental Management, Office of Land Quality. Data is current as of 2015.

SUBJECT: Open Dump Waste Site

DESCRIPTION: This dataset consists of Open Dumps - Sites that are not regulated and are illegal dump sites of solid waste, as defined by IAC 10-2-28 329 and IAC 10-2-128 of the Indiana Administrative Code. Provided by personnel of the Indiana Department of Environmental Management, Office of Land Quality. Data is current as of 2010.

MAP LAYER: Populated Areas

SUBJECT: Populated Places in Indiana

DESCRIPTION: Shows all populated places identified by the U.S. Bureau of the Census in 2000. This file does not necessarily reflect the legal limits of any city, town, or incorporation. Only

communities greater than 2,000 people are labeled in the reference map. Data is from U.S. Department of Commerce, U.S. Census Bureau, Census 2000 Tiger Line Files and SF1 tables.

MAP LAYER: Potential National Register Historic Structure

SUBJECT: Shows point locations historic bridges in Indiana.

DESCRIPTION: Provided by the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology on April 19, 2017. It includes bridge structures and objects that are were at least 40 years old at the time of survey. It is not complete, may be inaccurate, and may be modified as new information is prepared. The absence of information in a particular location does not necessarily indicate that no such resources exist in said location. Absence of information in a particular location may be due simply to a lack of survey investigations of said location.

SUBJECT: Sites in Indiana that have been included in the Historic Sites and Structures Survey

DESCRIPTION: Shows site locations that have been included in the Indiana Historic Sites and Structures Survey and rated as 'Notable', 'Contributing' or 'Outstanding.' These data were provided by the Indiana Department of Natural Resources, Division of Historic Preservation and Archaeology on April 19, 2017. It includes buildings, districts, sites, structures and objects that are were at least 40 years old at the time of survey. It is not complete, may be inaccurate, and may be modified as new information is prepared. The absence of information in a particular location does not necessarily indicate that no such resources exist in said location. Absence of information in a particular location may be due simply to a lack of survey investigations of said location.

MAP LAYER: Recreation Facility

SUBJECT: Recreational facilities located around the state

DESCRIPTION: Shows outdoor recreation facilities, including facilities managed by federal, state, and local governments, as well as non-government organizations, private and commercial entities, and schools. It does not include sites that are private and not open to the public. Provided by personnel of the Indiana Department of Natural Resources, Division of Outdoor Recreation on February 26, 2009.

MAP LAYER: Rest Areas

SUBJECT: Rest areas located around the state

DESCRIPTION: Shows INDOT currently operated rest areas within the tolling corridors from 2018. Each rest area contains parking lots and driveways, various building types, restroom facilities, water fountains, picnic areas, vending services, numerous other site amenities, and a variety of tourism/traveler related services.

MAP LAYER: State Cleanup Sites

SUBJECT: State Cleanup Sites as determined by Indiana Department of Environmental Management, Office of Land Quality

DESCRIPTION: Shows State Cleanup sites that are on the Commissioner's Bulletin or referred remedial response locations or other Indiana Department of Environmental Management (IDEM) programs that require mitigation of risk to human health and the environment through investigation, remediation or institutional controls. Data is current as of 2015.

MAP LAYER: Superfund Sites

SUBJECT: Superfund Program Facilities

DESCRIPTION: The layer generally shows the locations of access points to managed sites located with GPS-located Superfund Program facilities. Attributes include facility identifications, federal identification numbers, and addresses. Provided by personnel of the Indiana Department of Environmental Management, Office of Land Quality. Data is current as of 2015.

MAP LAYER: Trail

SUBJECT: Existing, Proposed and Under Development Trails

DESCRIPTION: Shows trails and associated attributes of public, off-road recreation, and transportation trails. It includes trails managed by federal, state, and local governments, as well as non-government organizations. Provided by personnel of the Indiana Department of Natural Resources, Division of Outdoor Recreation from December 21, 2017.

1.2 Socioeconomic Resources Metadata

The table data below was used to develop maps for the socioeconomic analysis. For more details on the steps to develop the criteria in the maps, visit the Engineering and Environmental Analysis.

MAP LAYER: Hispanic Or Latino Origin by Race

SUBJECT: Minority Populations by Census Tract from the 2012-2016 American Community Survey 5-year Estimates

DESCRIPTION: Data from B03002 tables from this 2017 dataset were geographically associated with census tracts to create visual representation of the demographic data from the US Census Bureau. Table B03002, though titled “Hispanic Or Latino Origin by Race”, does include sufficient data to calculate total minority population. Below is an example of the Table 03002 for a census tract within the City of Indianapolis:

	Census Tract 3910, Marion County, Indiana	
	Estimate	Margin of Error
Total:	5,403	+/-486
Not Hispanic or Latino:	5,149	+/-461
White alone	3,858	+/-446
Black or African American alone	555	+/-188
American Indian and Alaska Native alone	0	+/-16
Asian alone	561	+/-264
Native Hawaiian and Other Pacific Islander alone	0	+/-16
Some other race alone	0	+/-16
Two or more races:	175	+/-116
Two races including Some other race	0	+/-16
Two races excluding Some other race, and three or more races	175	+/-116
Hispanic or Latino:	254	+/-124
White alone	148	+/-80
Black or African American alone	0	+/-16
American Indian and Alaska Native alone	0	+/-16
Asian alone	0	+/-16
Native Hawaiian and Other Pacific Islander alone	0	+/-16
Some other race alone	45	+/-73
Two or more races:	61	+/-80
Two races including Some other race	42	+/-51
Two races excluding Some other race, and three or more races	19	+/-31

This methodology to complete the total minority population is consistent with INDOTs EJ guidance and is calculated as follows.

(Total population – Not Hispanic or Latino: White alone) / Total population = Percentage minority:

(5,403 – 3,858) /5,403 = 28.5%

MAP LAYER: Poverty Status in the Past 12 Months By Sex By Age

SUBJECT: Low Income Tracts from the 2012-2016 American Community Survey 5-year Estimates

DESCRIPTION: Data from B17001 tables from this 2017 dataset were geographically associated with census tracts to create a visual representation of the demographic data from the US Census Bureau . Data estimates of urban and rural population, 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 American Community Survey do not necessarily reflect the results of ongoing urbanization.

MAP LAYER: Limited English Speaking Proficiency

SUBJECT: Limited English Speaking Proficiency from the 2011-2015 American Community Survey 5-year Estimates

DESCRIPTION: Data from S1602 tables from this 2016 dataset were geographically associated with census tracts to create a visual representation of the demographic data from the US Census Bureau. Data estimates of urban and rural population, 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 American Community Survey do not necessarily reflect the results of ongoing urbanization.

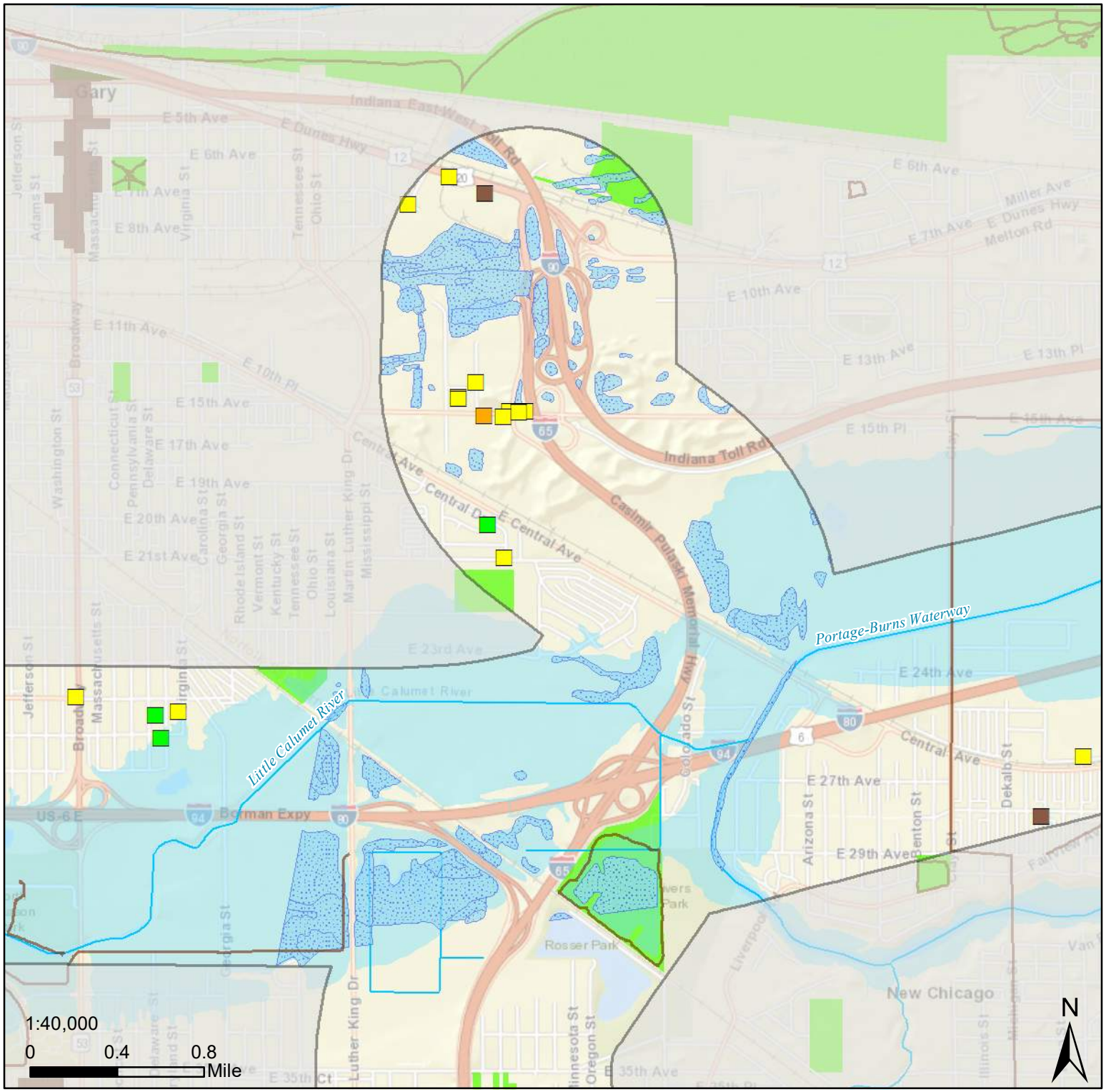
MAP LAYER: Census Tracts

SUBJECT: Boundaries developed by the US Department of Commerce, US Census Bureau, Geography Division

DESCRIPTION: Census tracts from 2017 generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. When first delineated, census tracts were designed to be homogeneous with respect to population characteristics, economic status, and living conditions. The spatial size of census tracts varies widely depending on the density of settlement. Physical changes in street patterns caused by highway construction, new development, and so forth, may require boundary revisions. In addition, census tracts occasionally are split due to population growth, or combined as a result of substantial population decline. Census tract boundaries generally follow visible and identifiable features. They may follow legal boundaries such as minor civil division or incorporated place boundaries in some states and situations to allow for census tract-to-governmental unit relationships where the governmental boundaries tend to remain unchanged between censuses. State and county boundaries always are census tract boundaries in the standard census geographic hierarchy. In a few rare instances, a census tract may consist of noncontiguous areas. These noncontiguous areas may occur where the census tracts are coextensive with all or parts of legal entities that are themselves noncontiguous.

SECTION B: ENVIRONMENTAL RESOURCE MAPS

Displays resources within a ½ mile area on both sides of the interstate tolling study corridors. Maps are separated by I-65 and I-70 along portions of the highway that may be widened if tolling occurs.



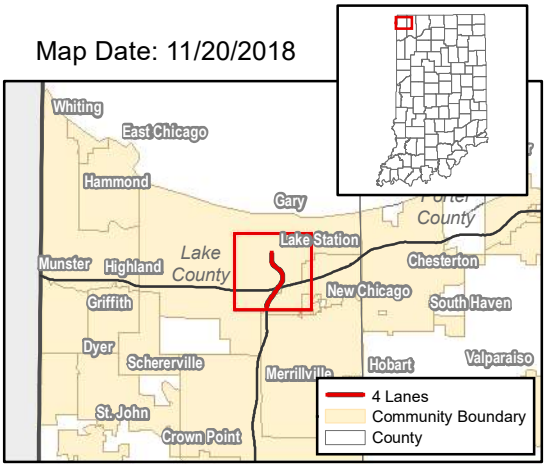
Environmental Resources

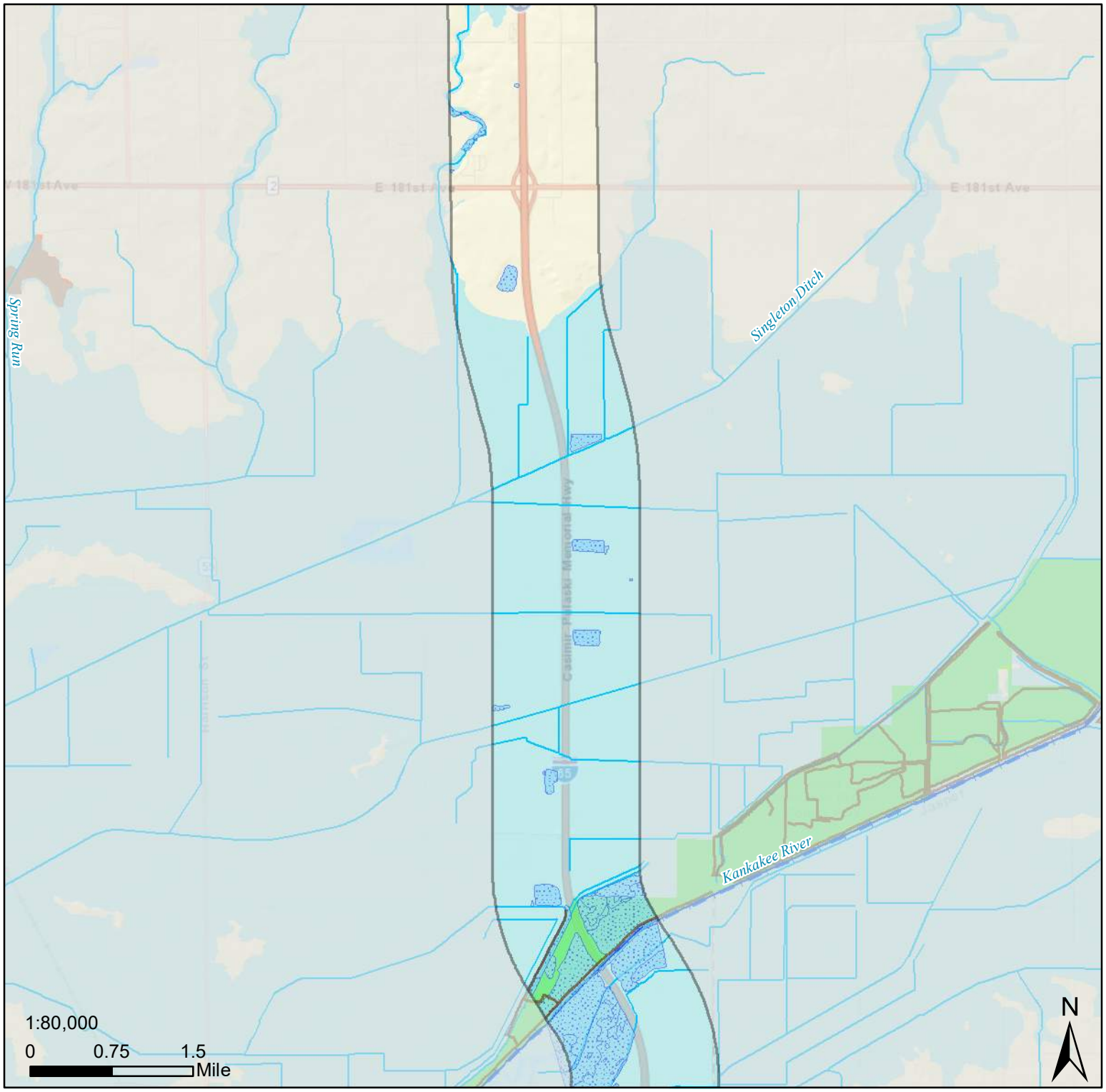
Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
- Major Stream
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile





Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
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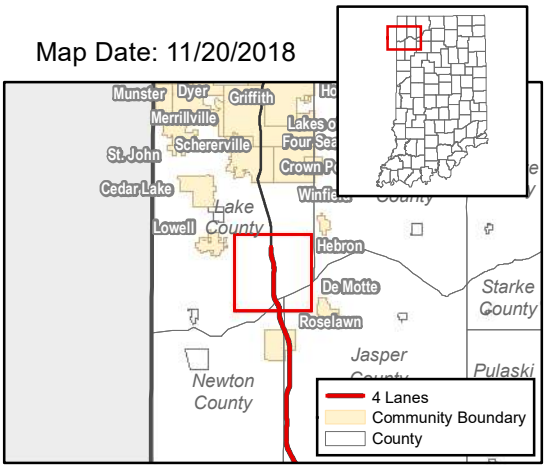

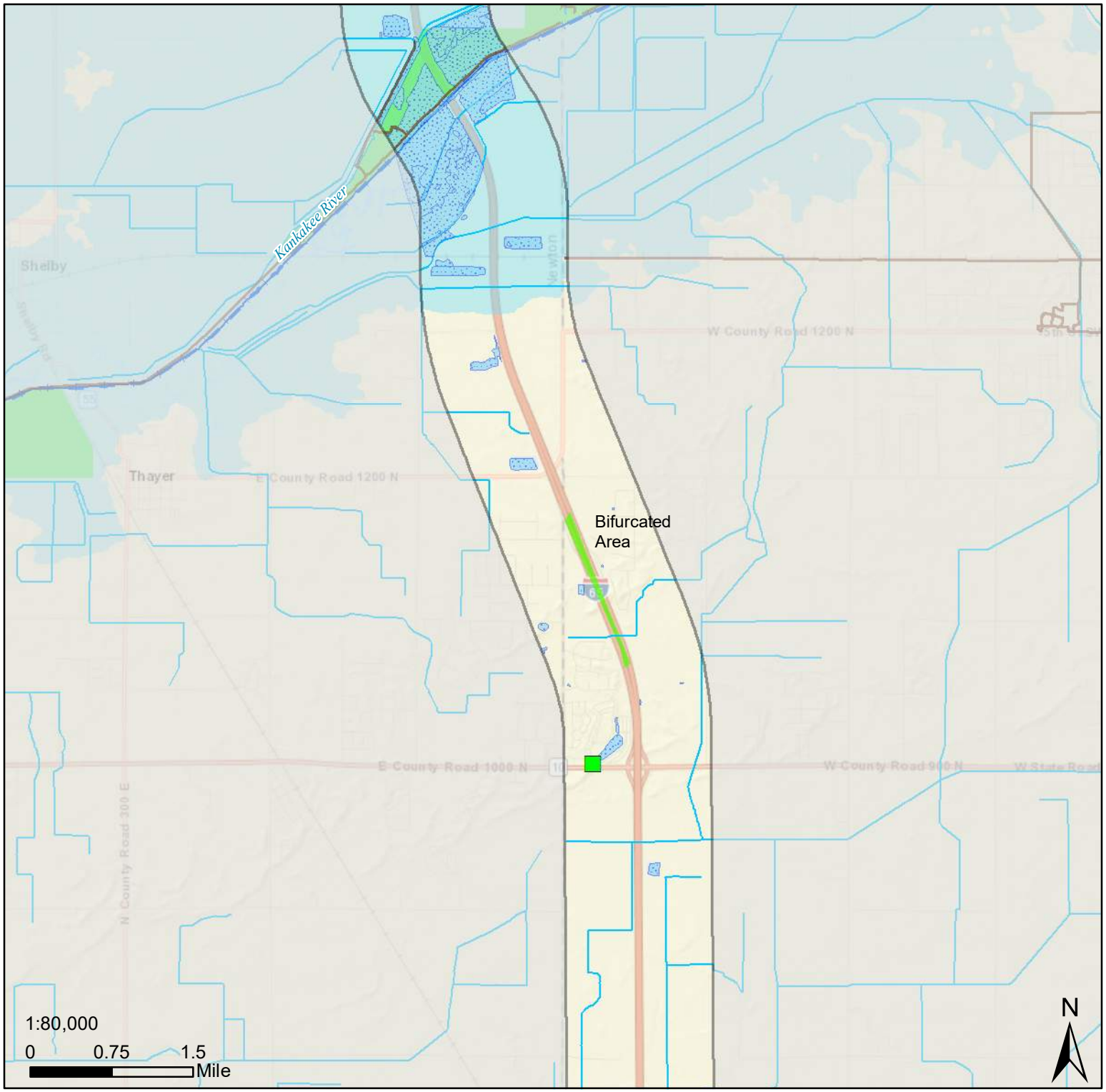

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
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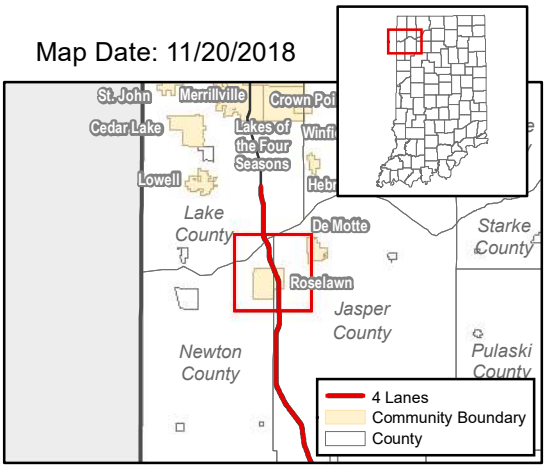

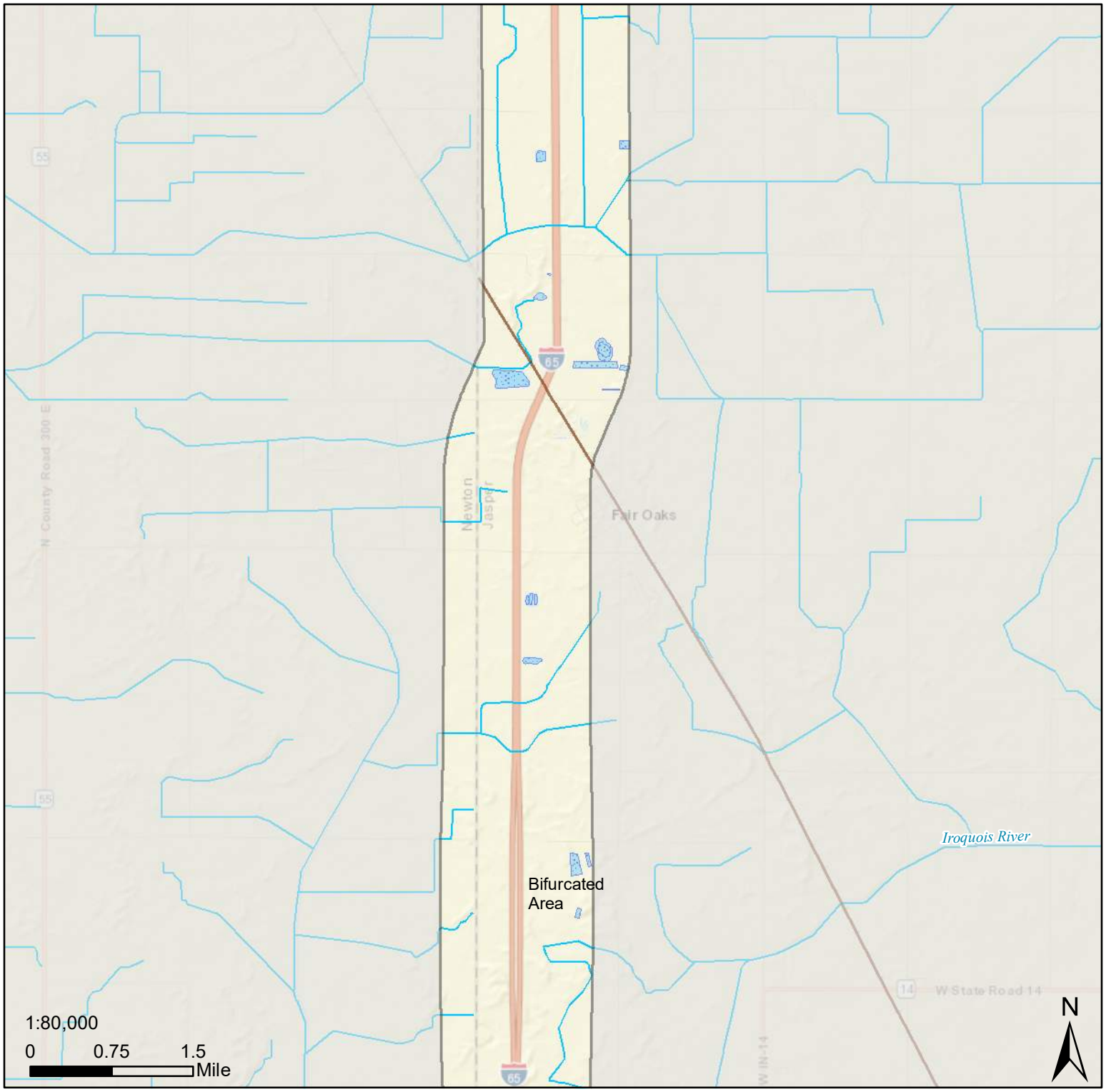

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
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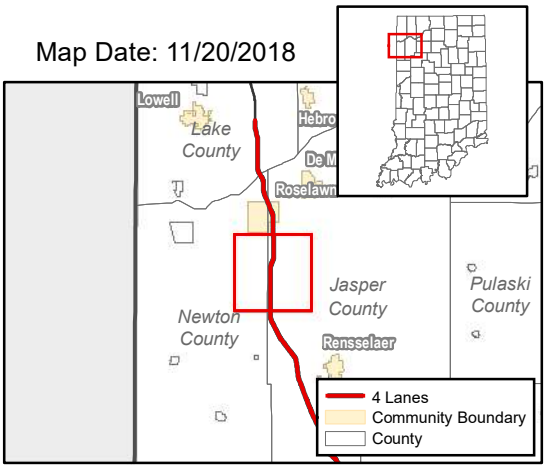
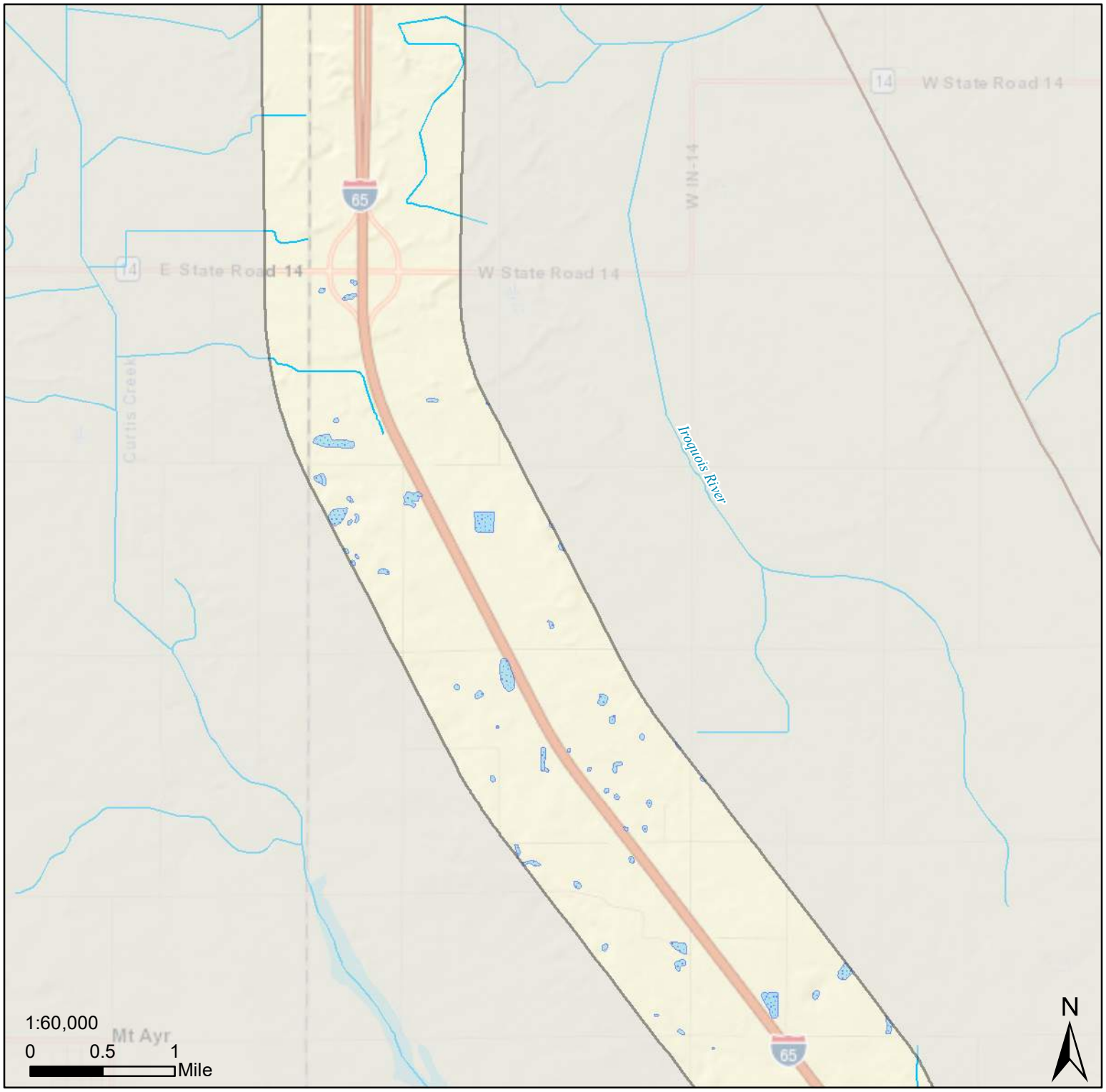




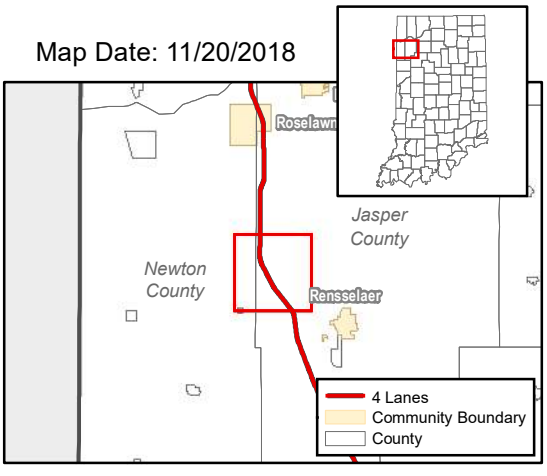
Environmental Resources

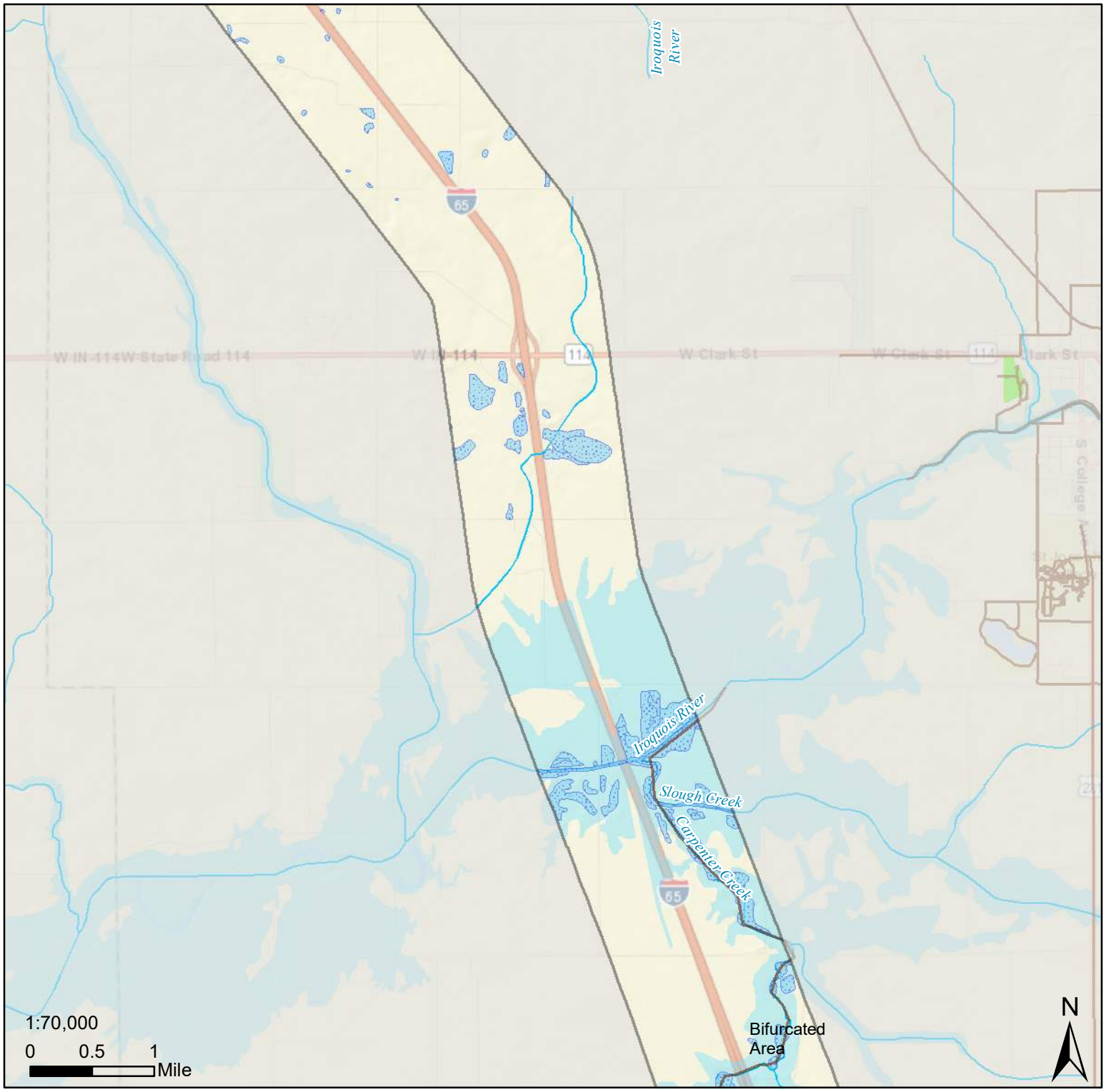
Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
- Major Stream
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile





Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
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- National Register Historic Site
- National Register Historic District
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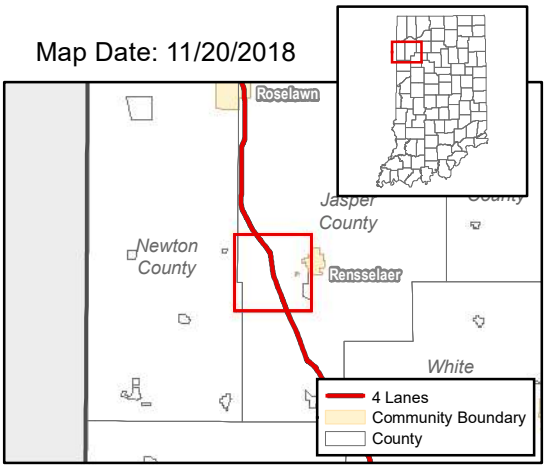

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
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- National Register Historic Site
- National Register Historic District
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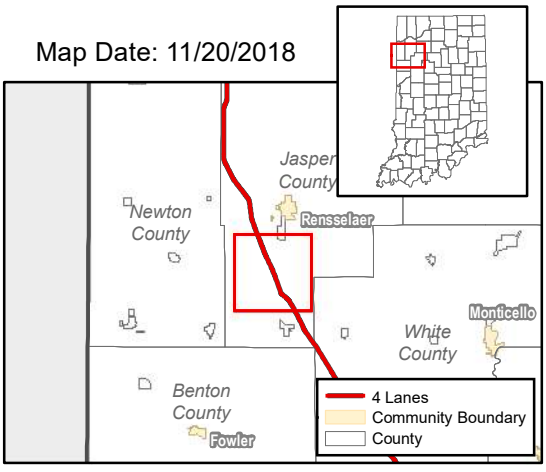

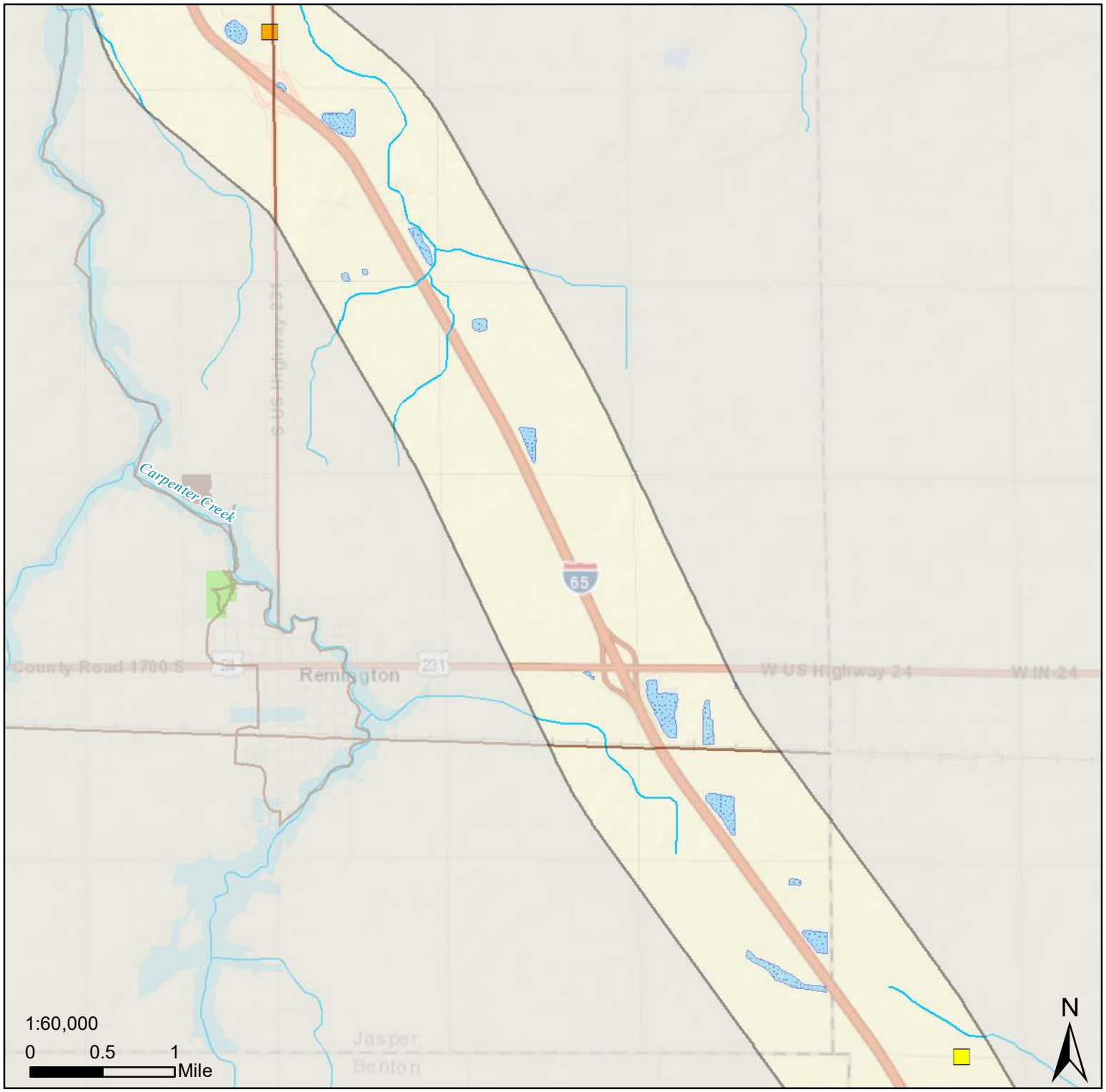

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
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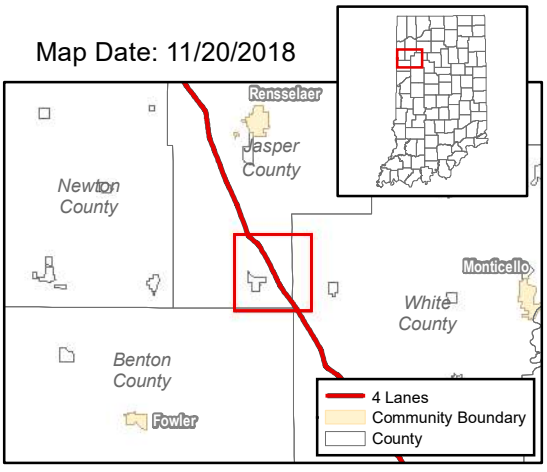

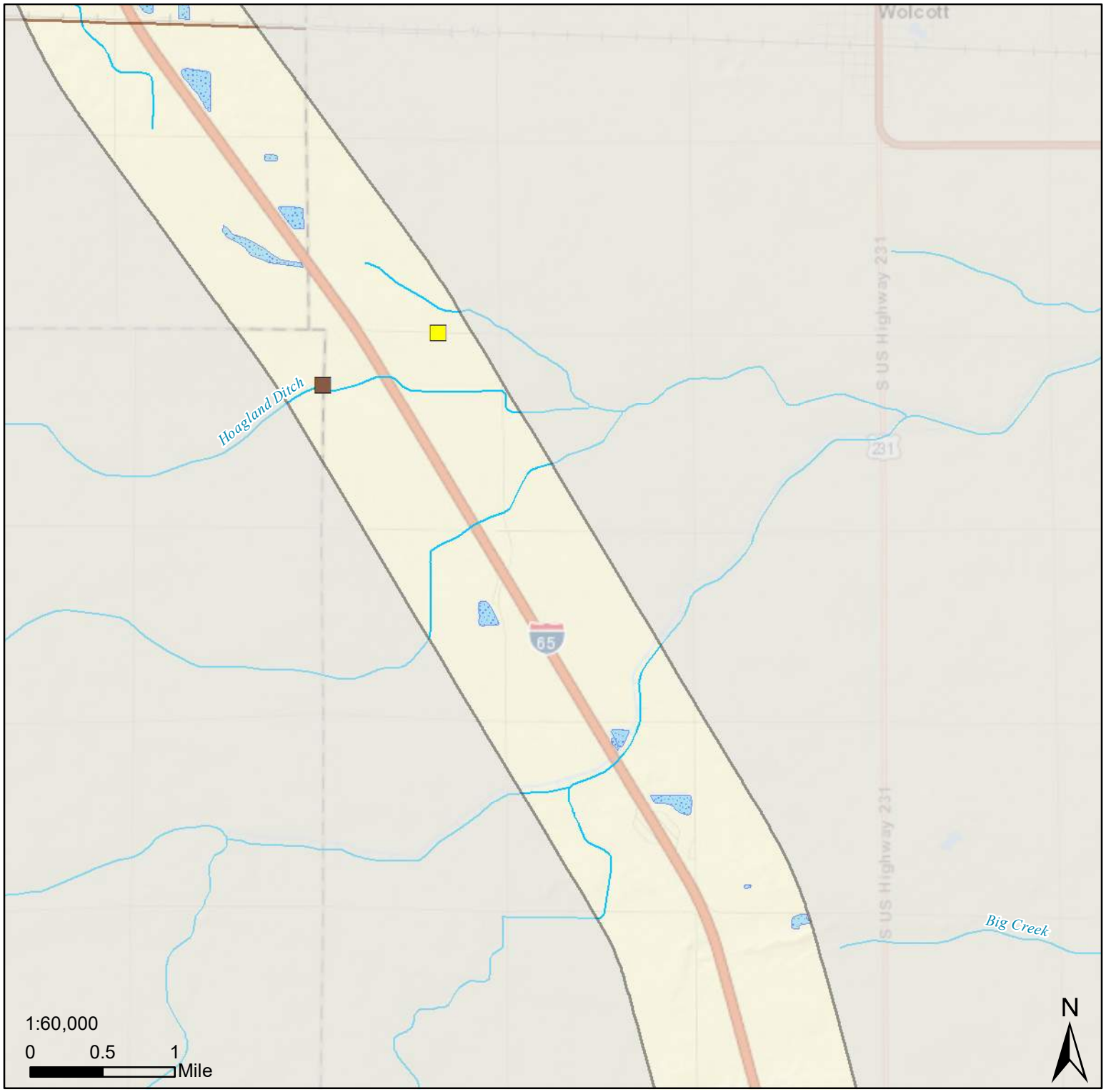

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
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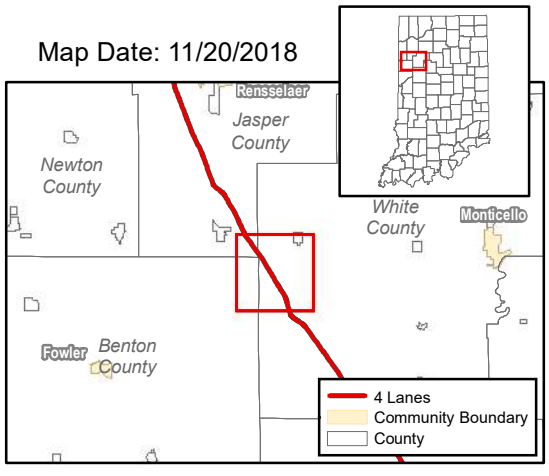

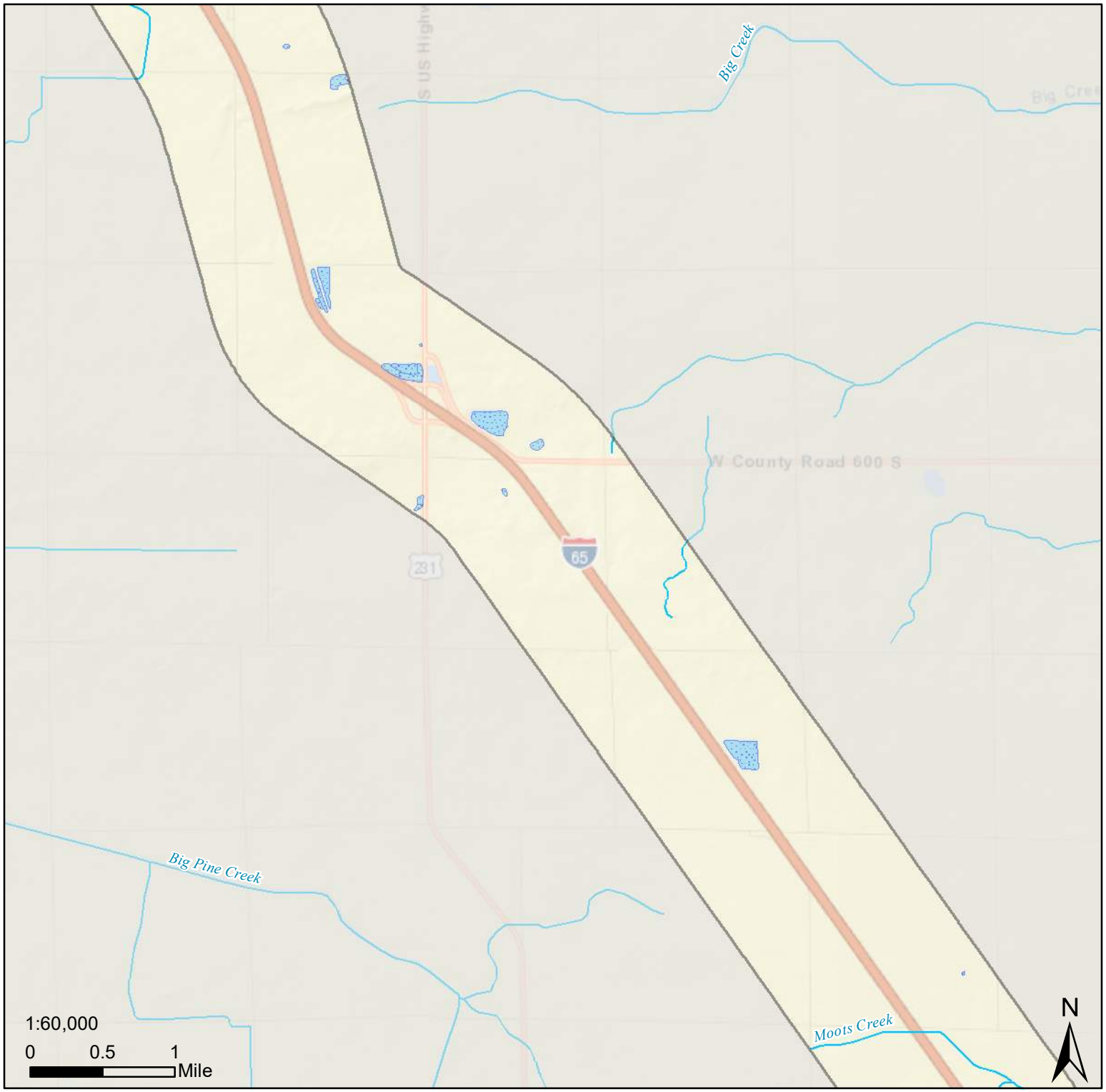

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
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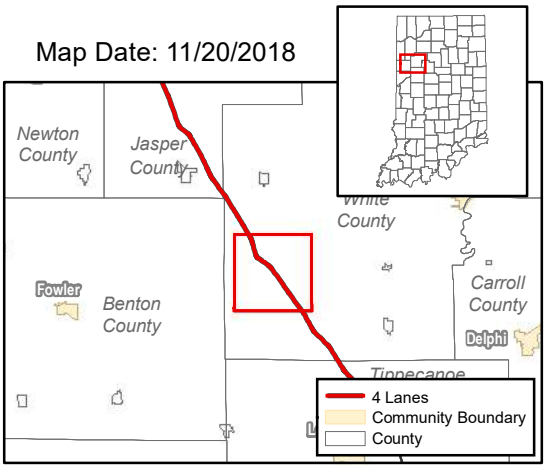

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
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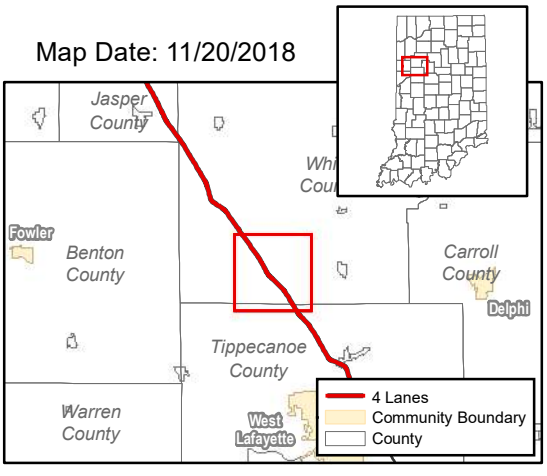

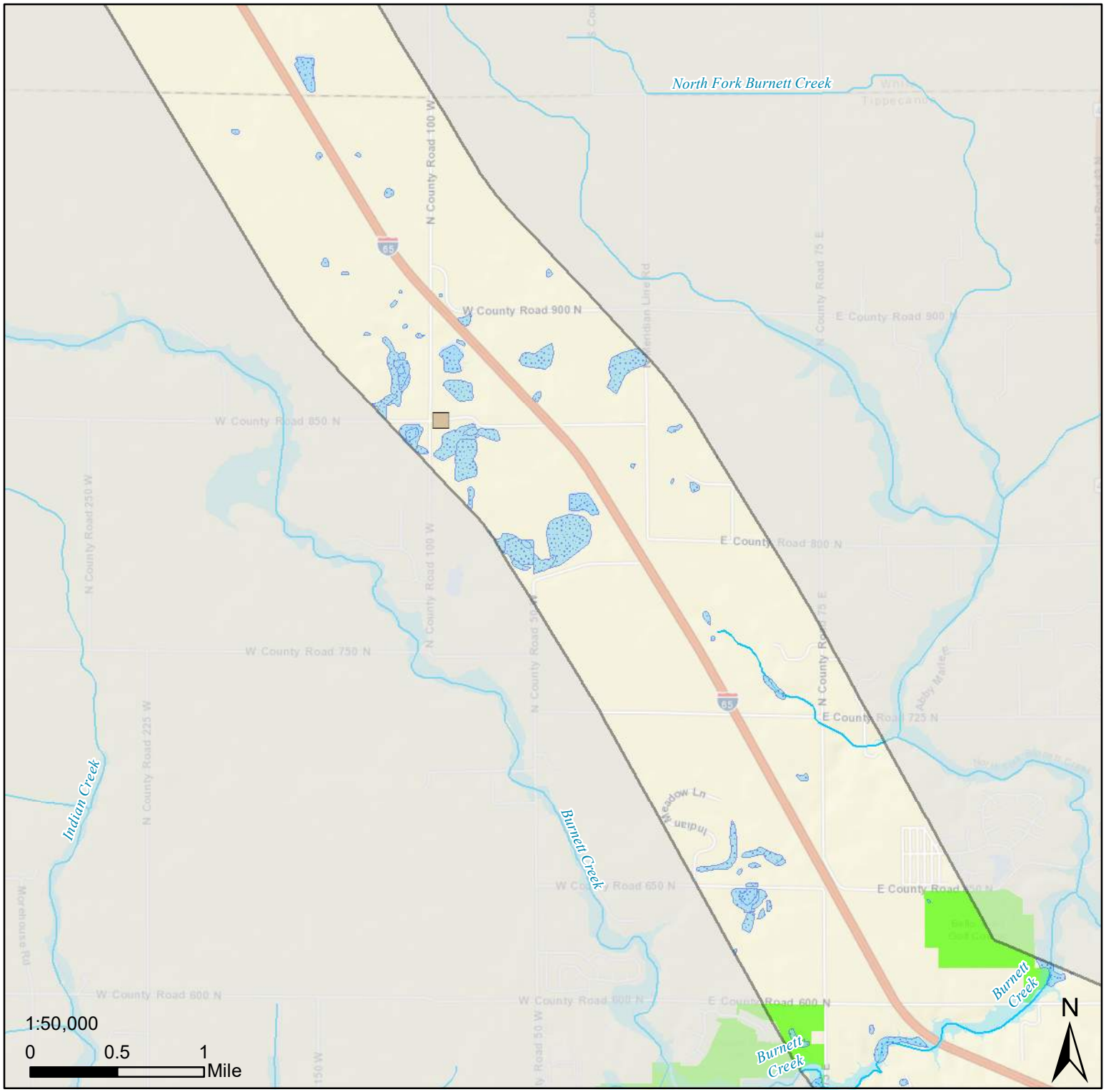

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

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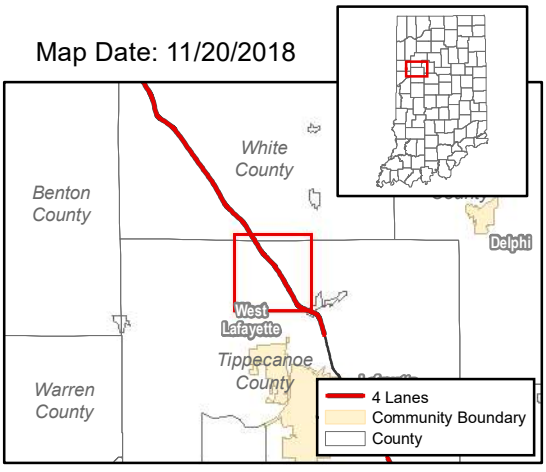

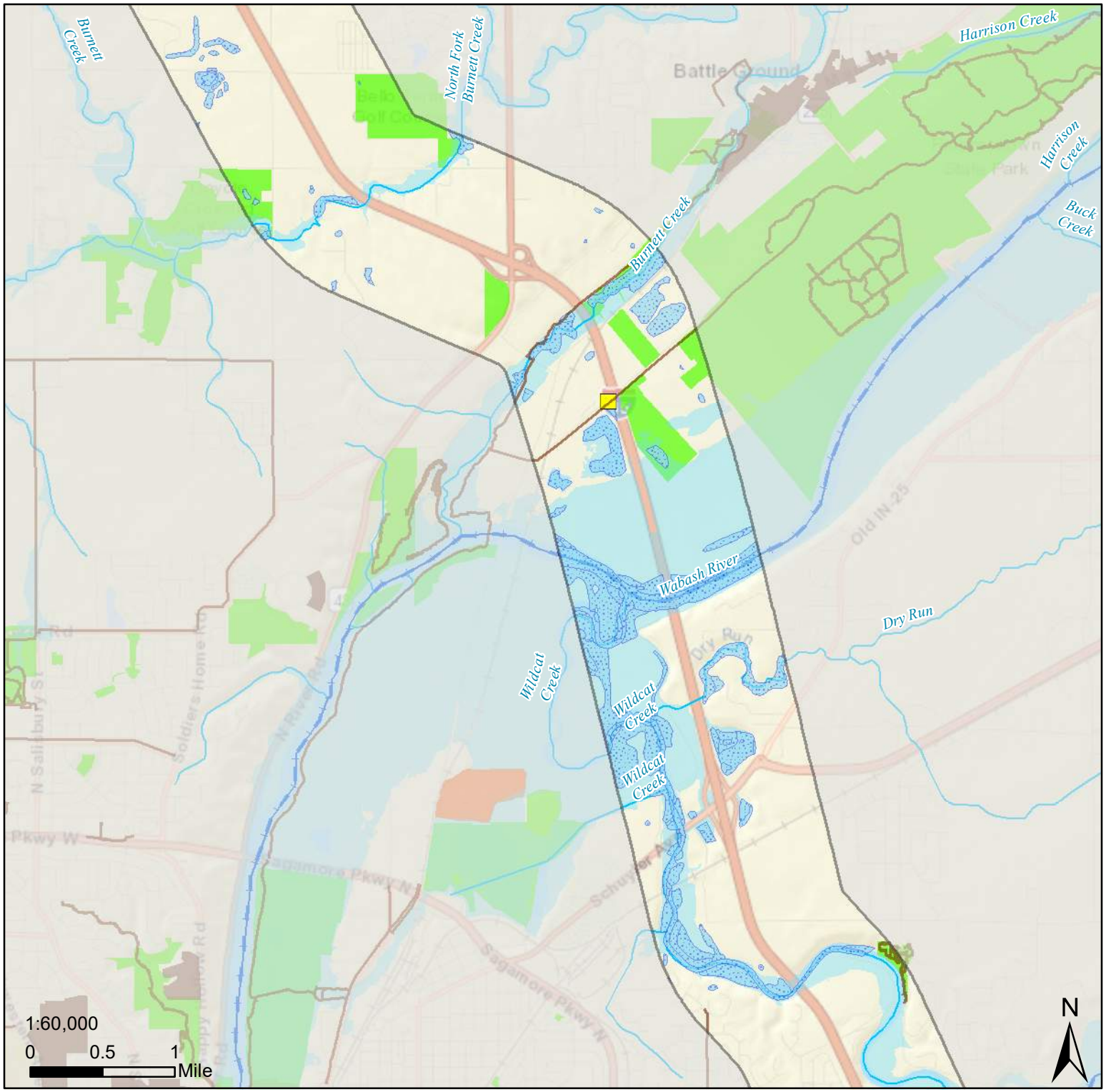

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

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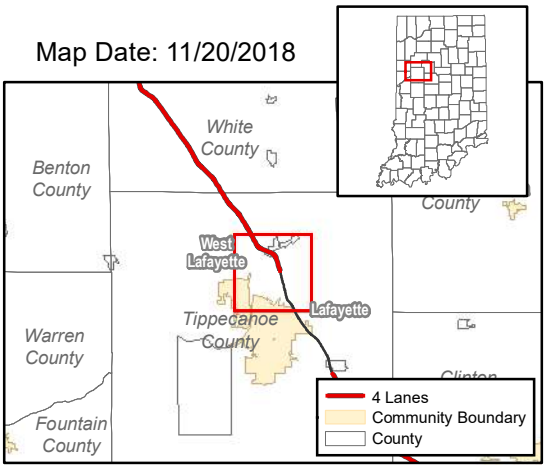

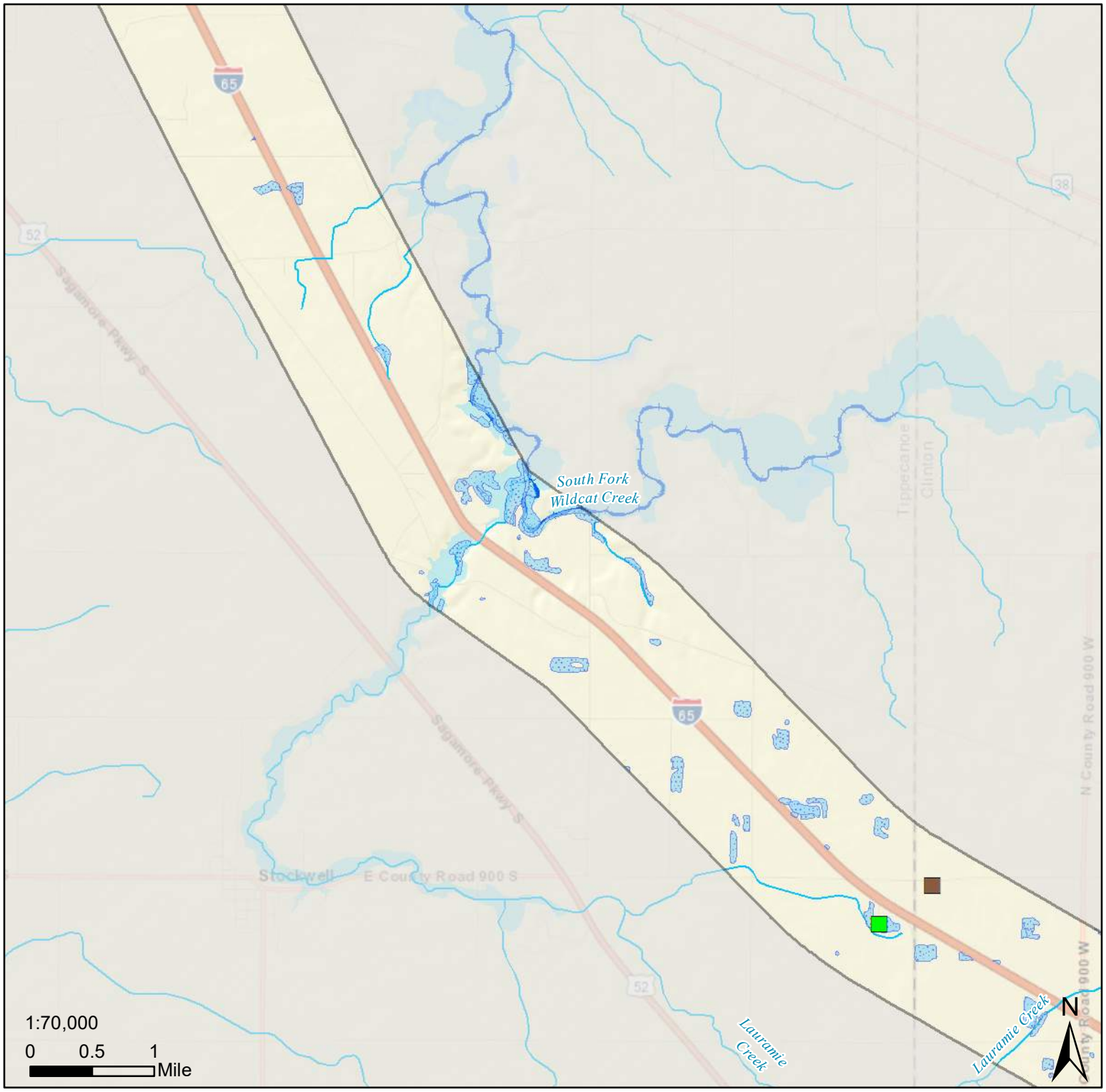

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

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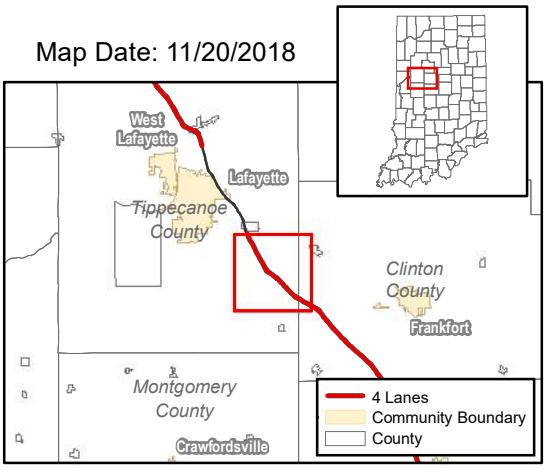

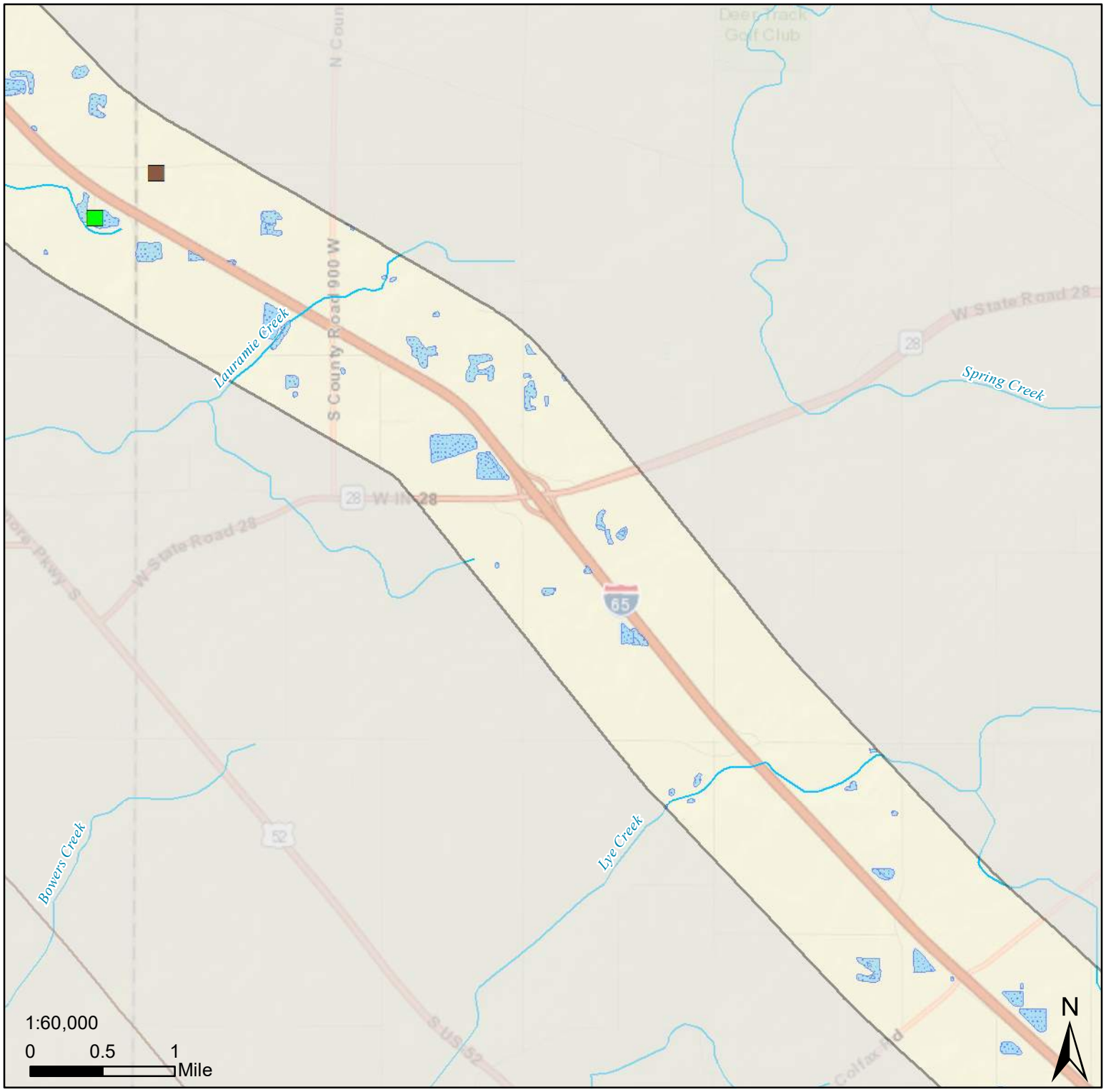

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

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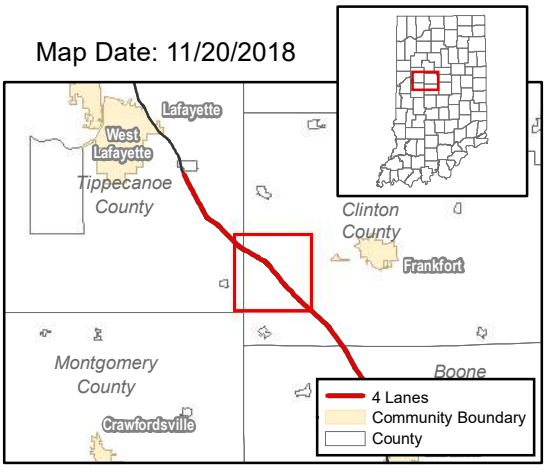

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

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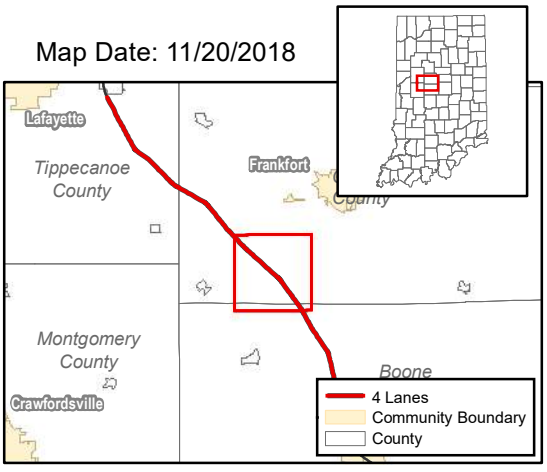

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

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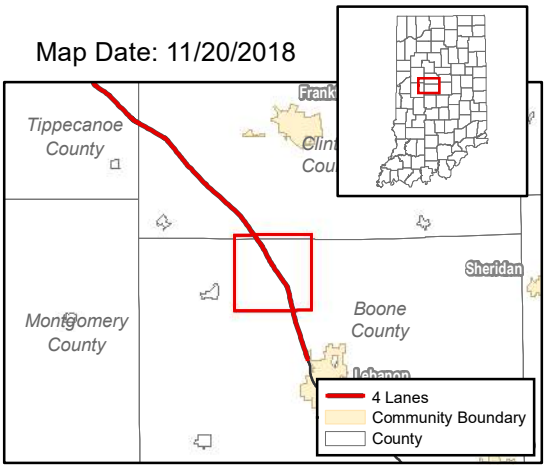

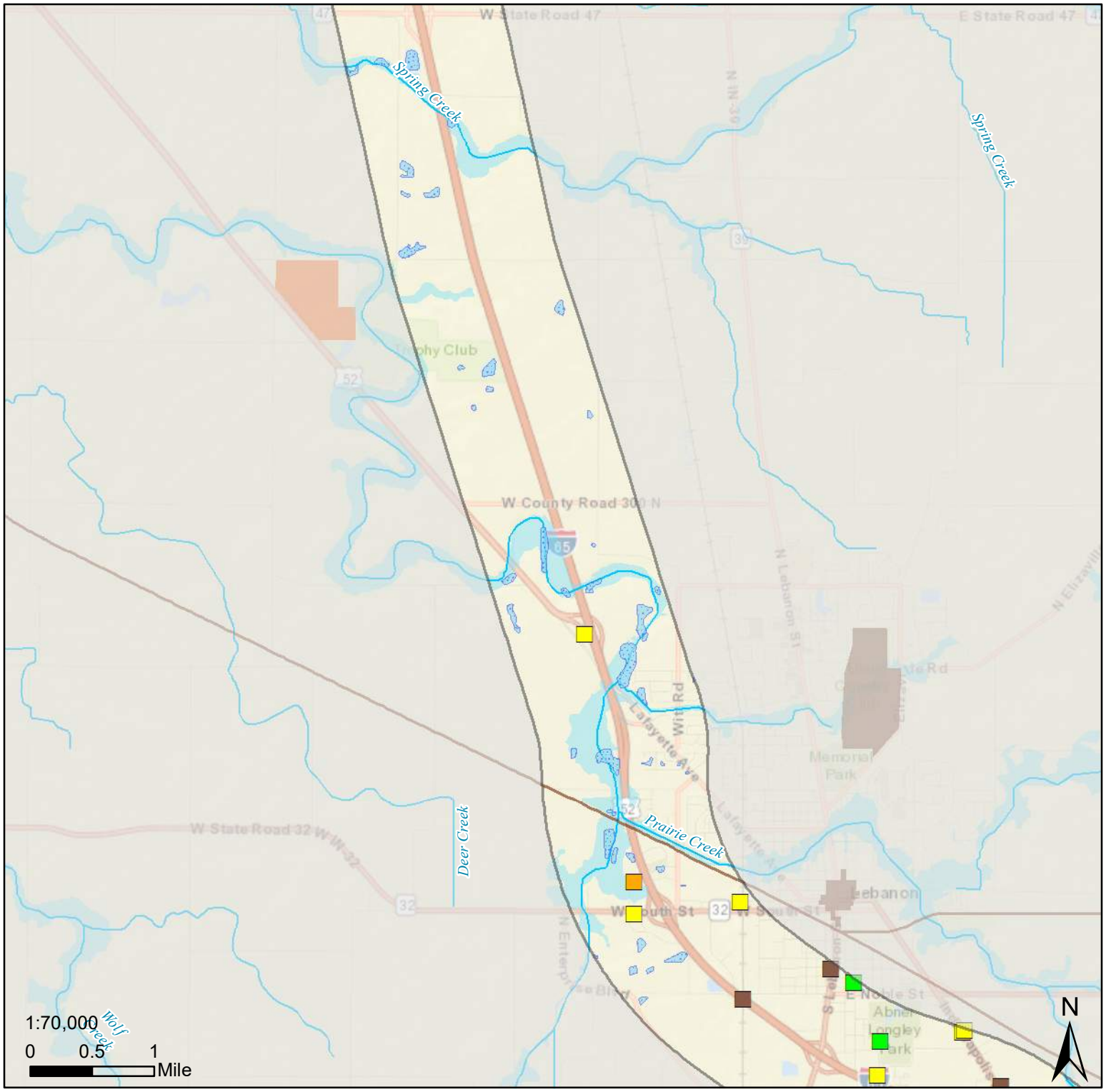

Environmental Resources

Corridor 5 - I-65 North

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
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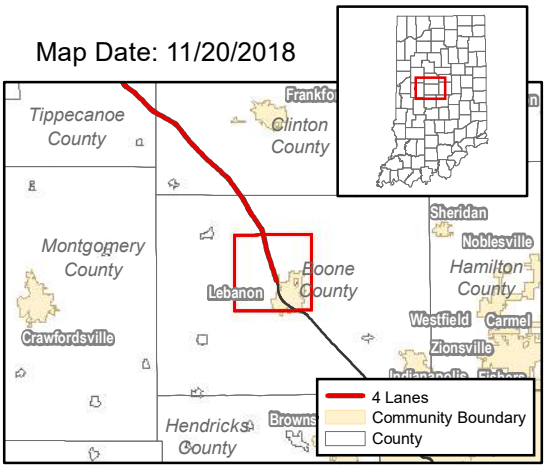

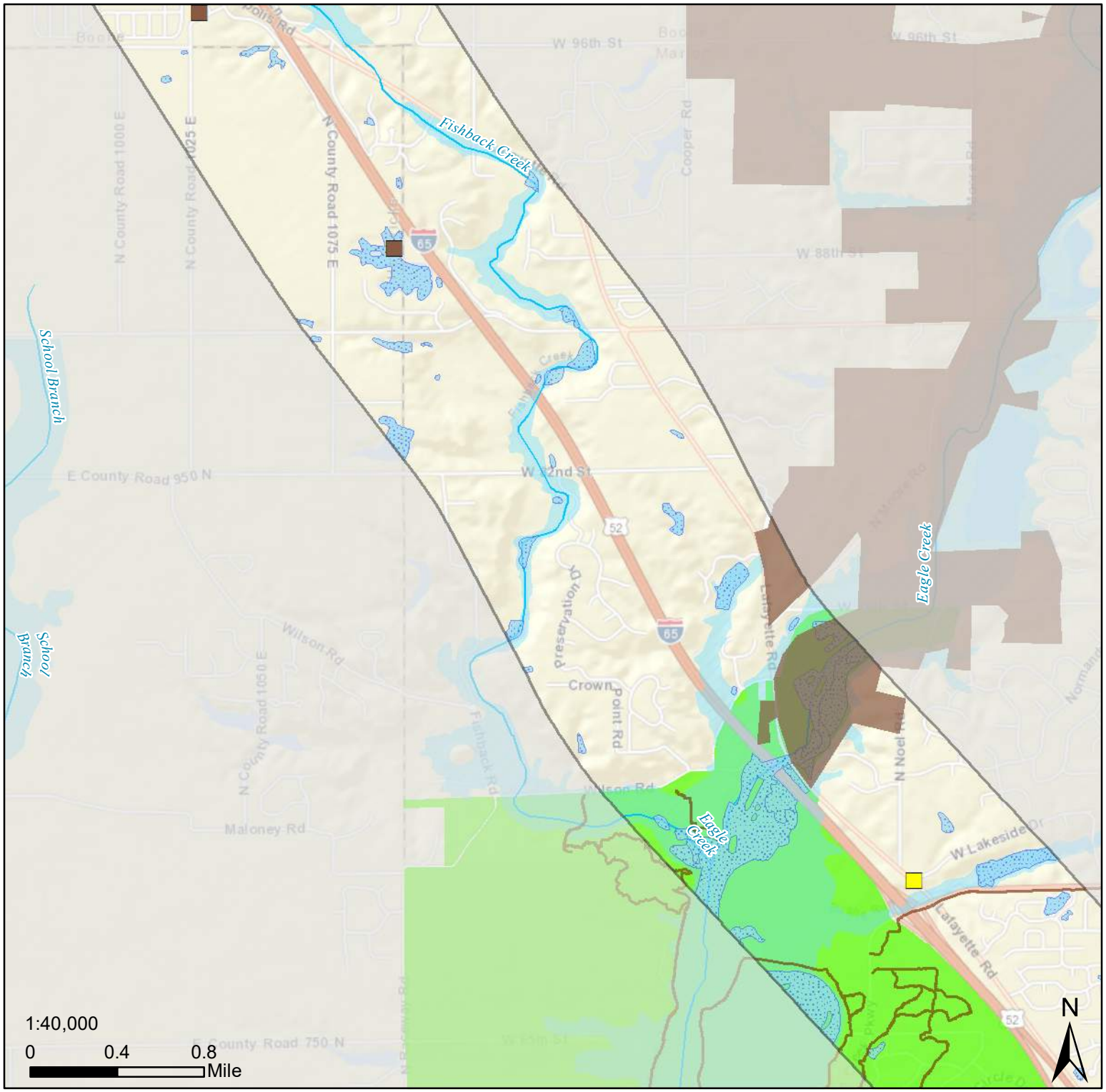

Environmental Resources

Corridor 2 - Indy Metro

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
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- National Register Historic Site
- National Register Historic District
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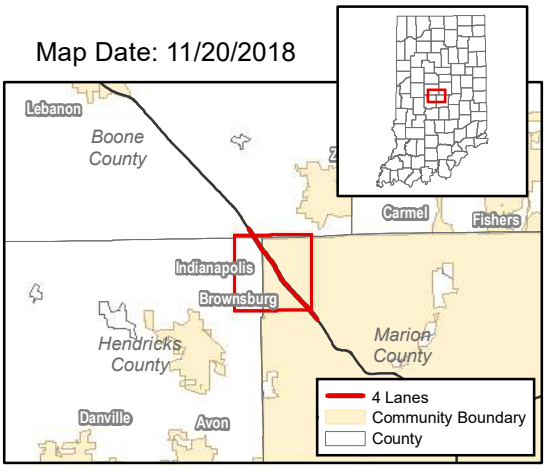

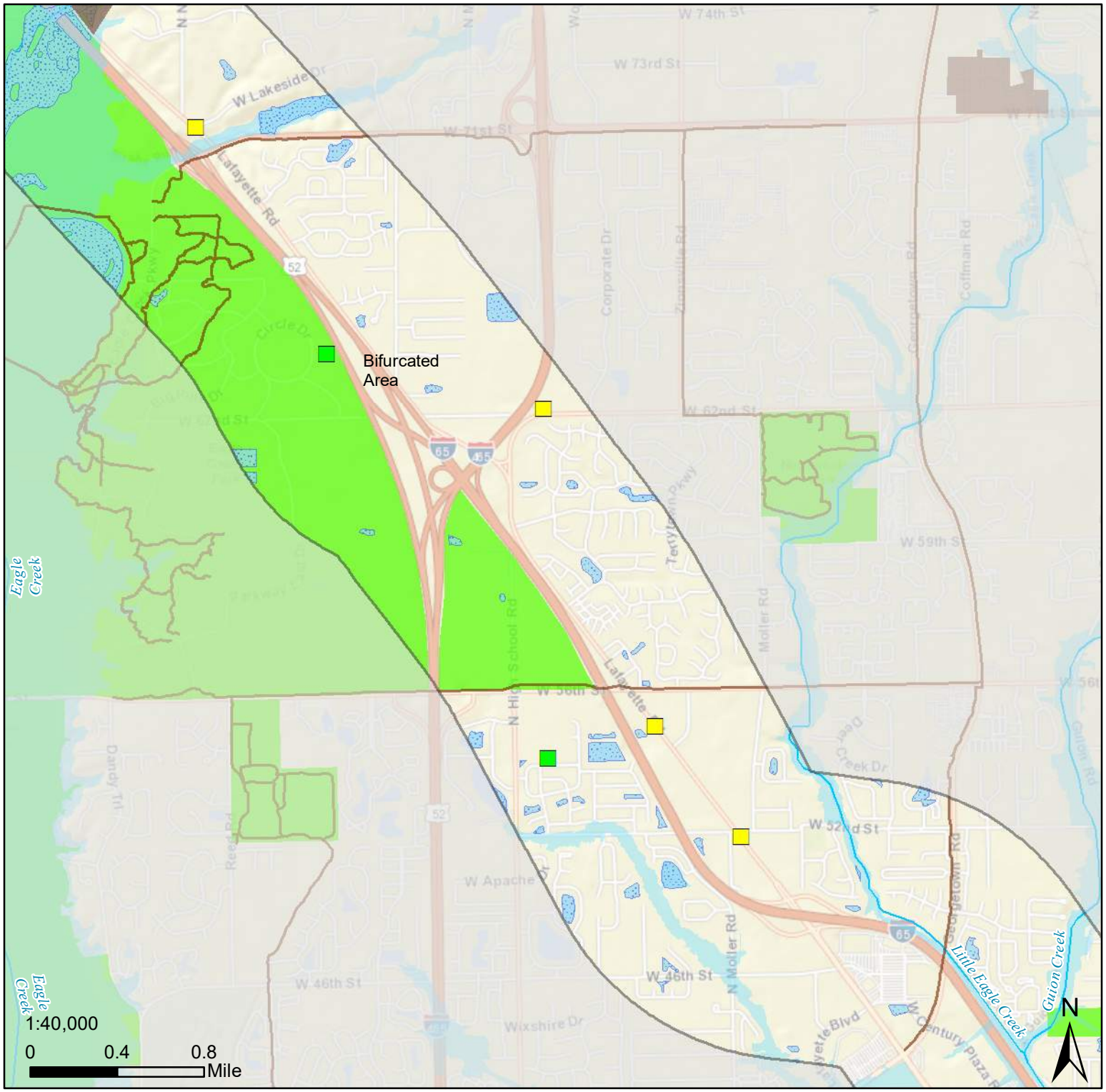

Environmental Resources

Corridor 2 - Indy Metro

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
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- National Register Historic District
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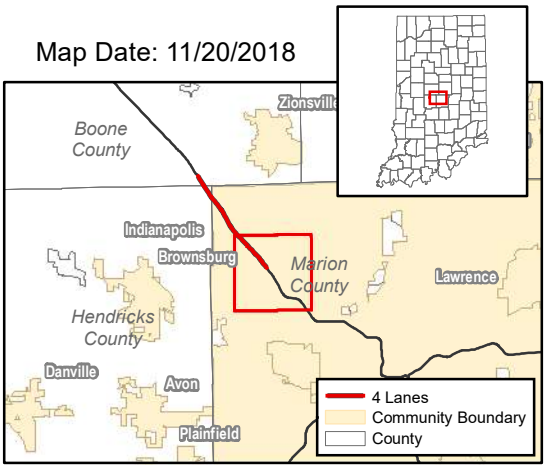

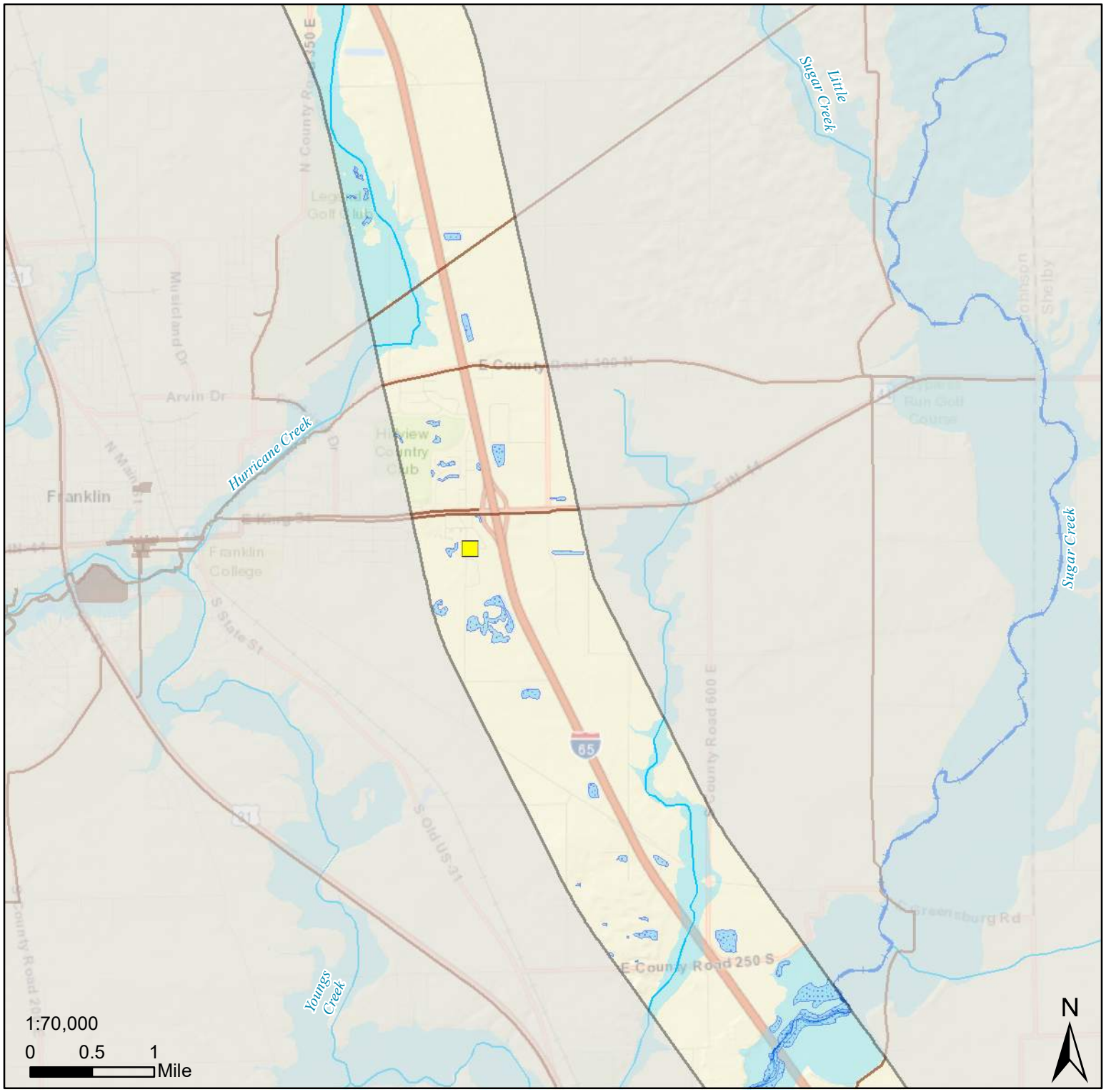

Environmental Resources

Corridor 2 - Indy Metro

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
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- National Register Historic District
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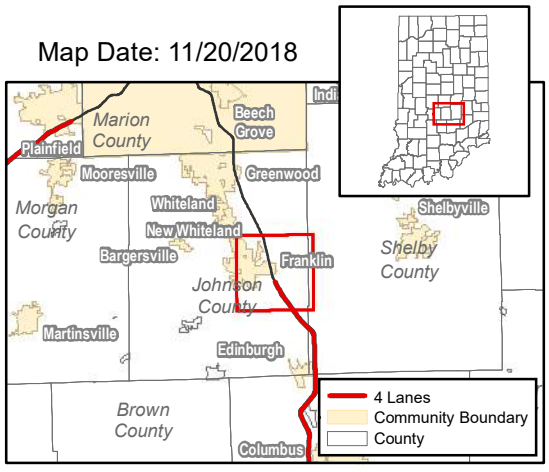

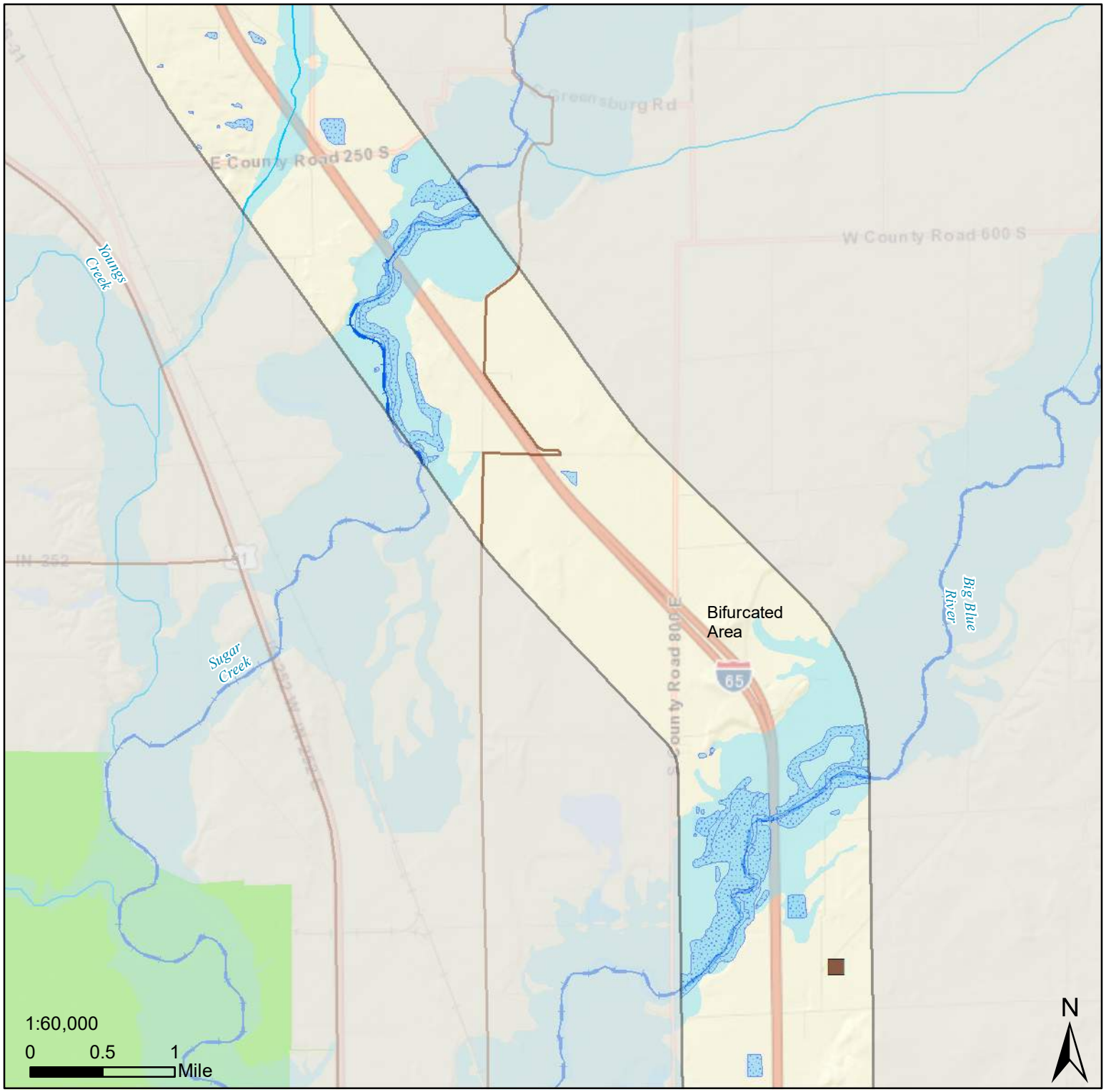

Environmental Resources

Corridor 2 - Indy Metro

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
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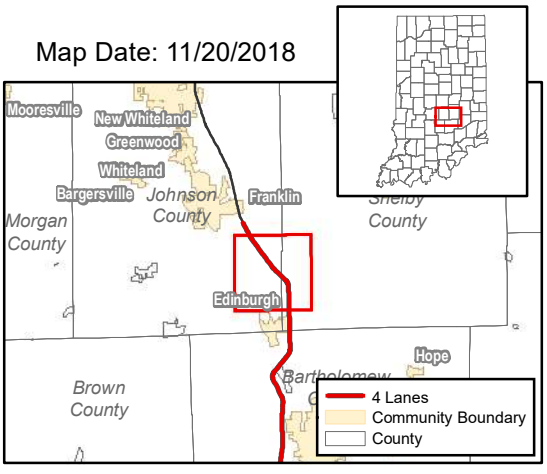

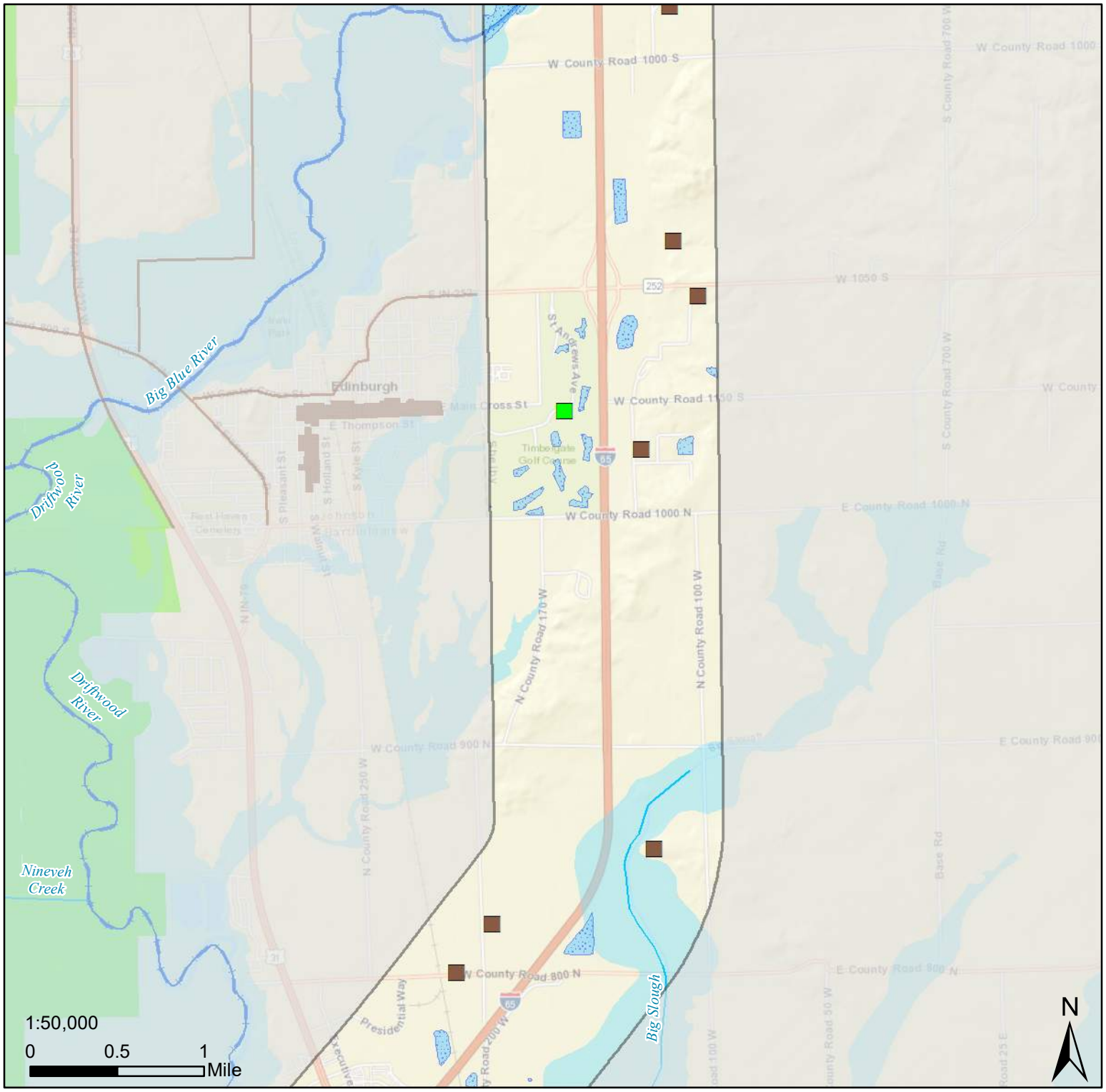

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
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- National Register Historic Site
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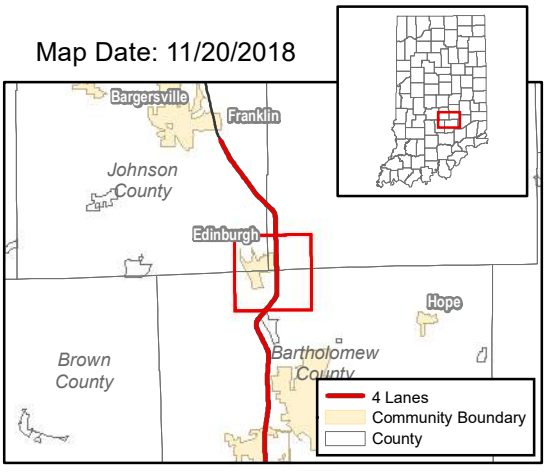

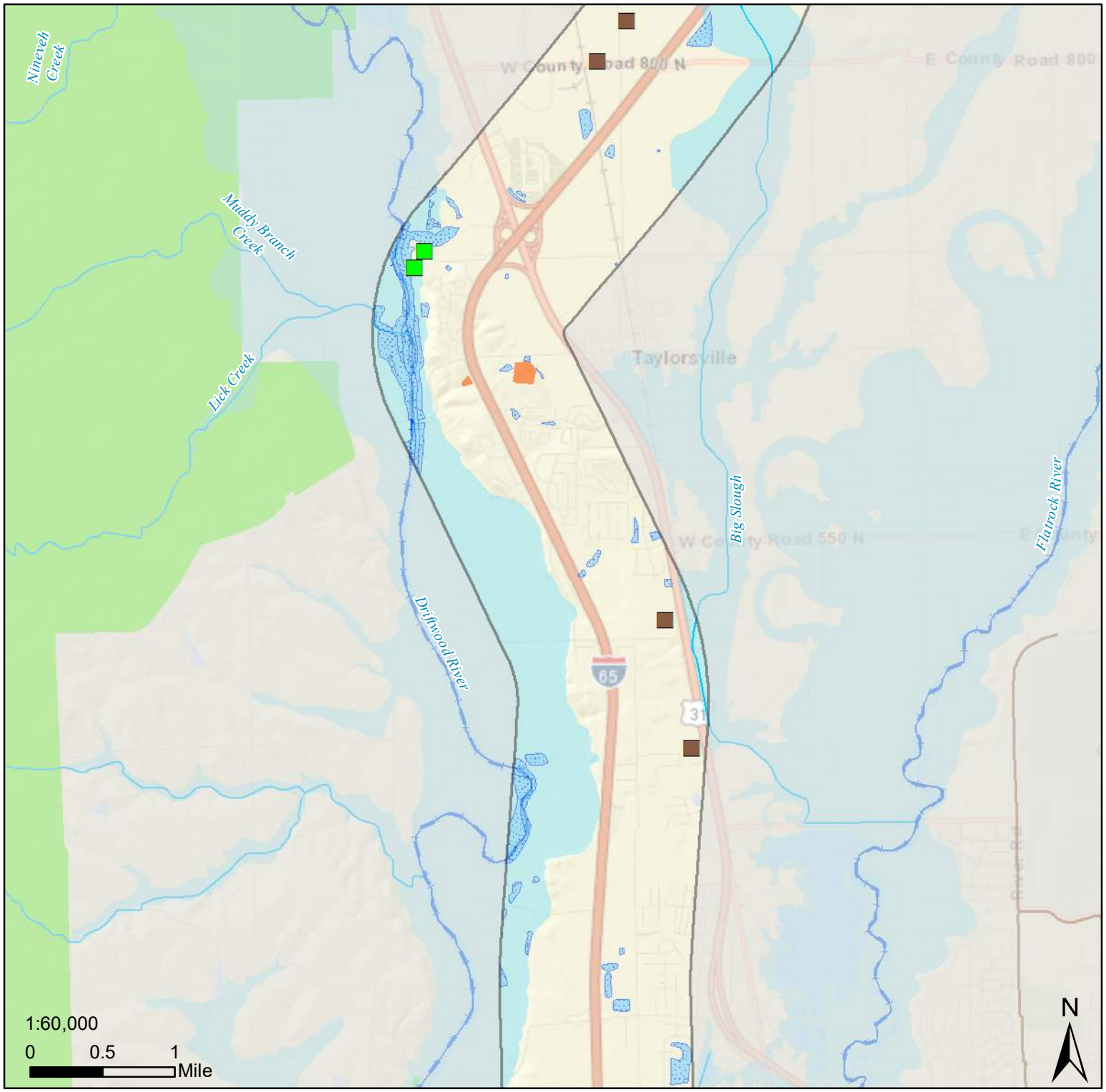

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
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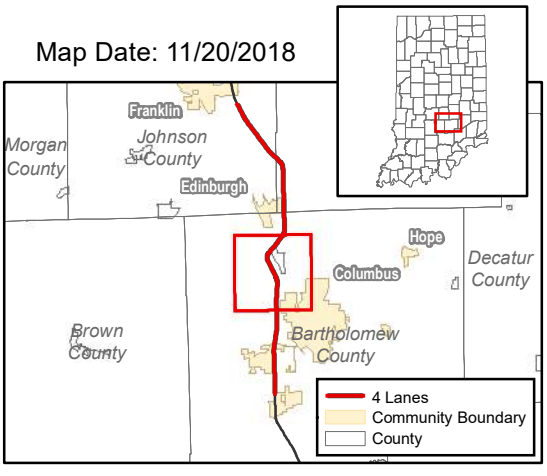

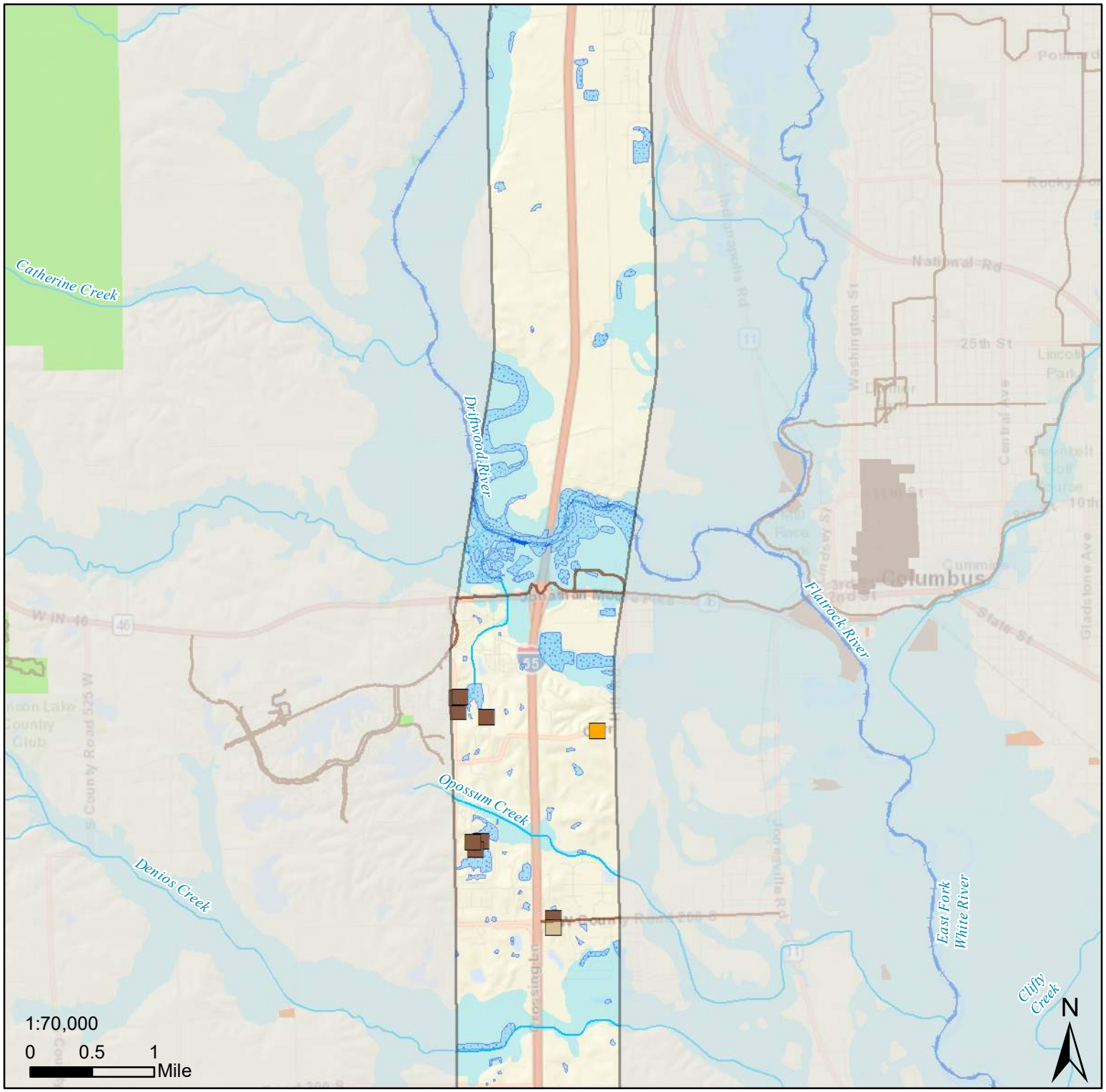

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
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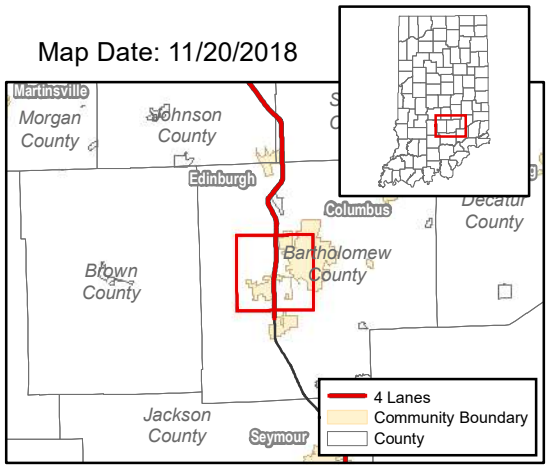

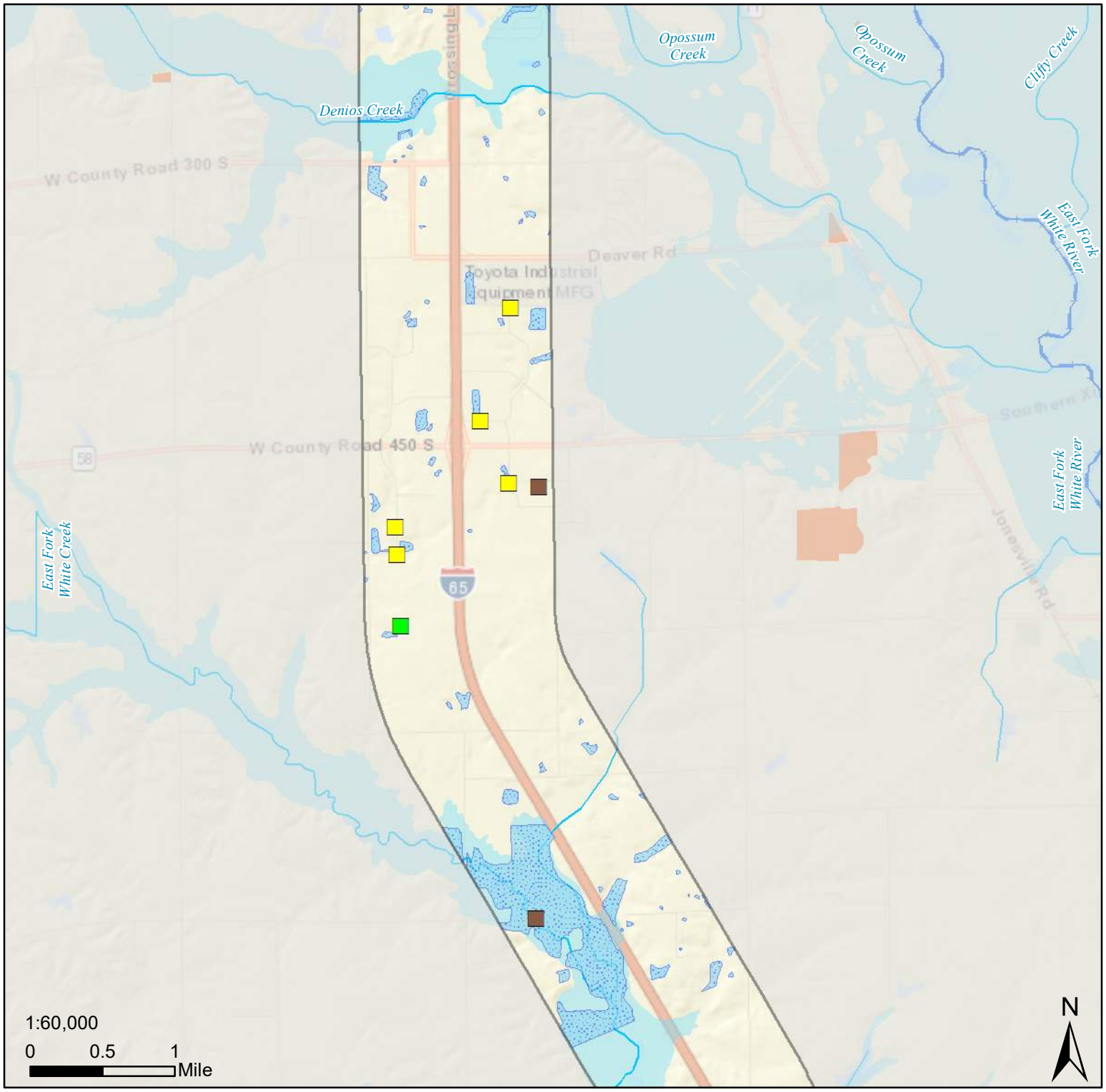

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
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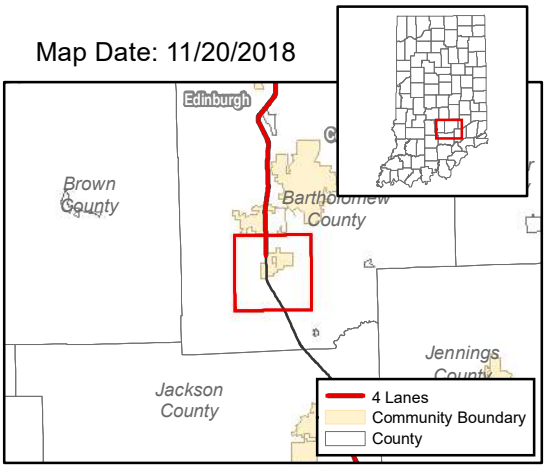
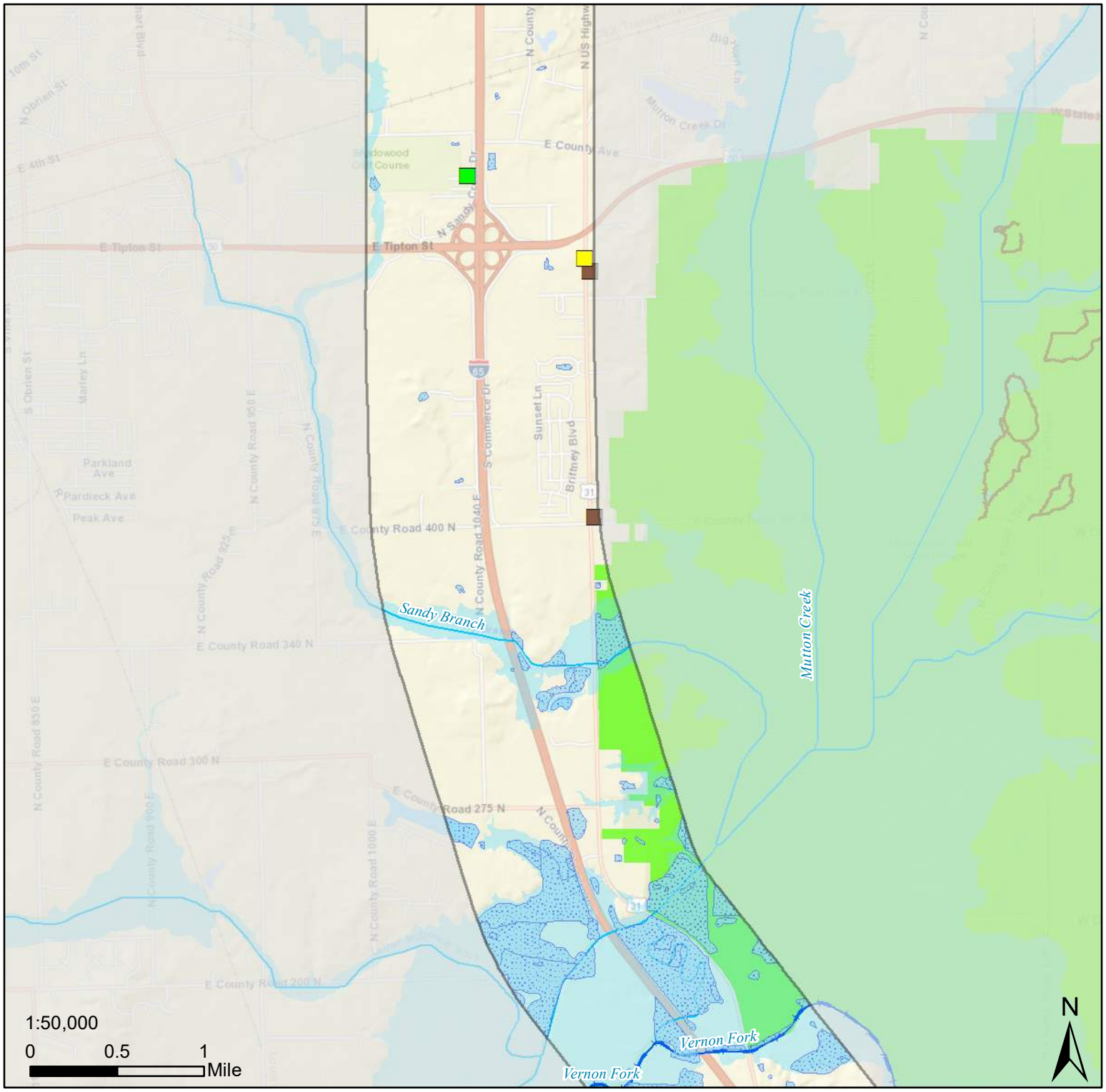
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile





Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
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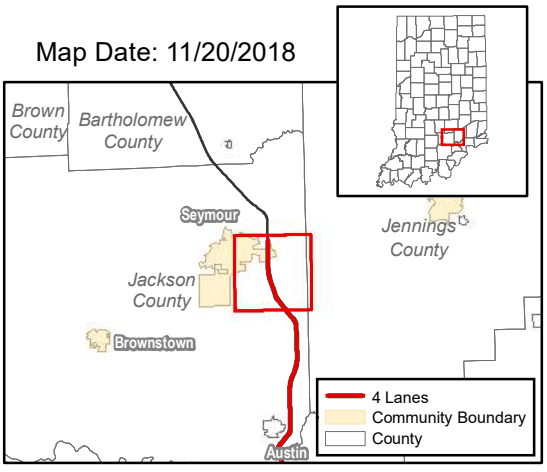

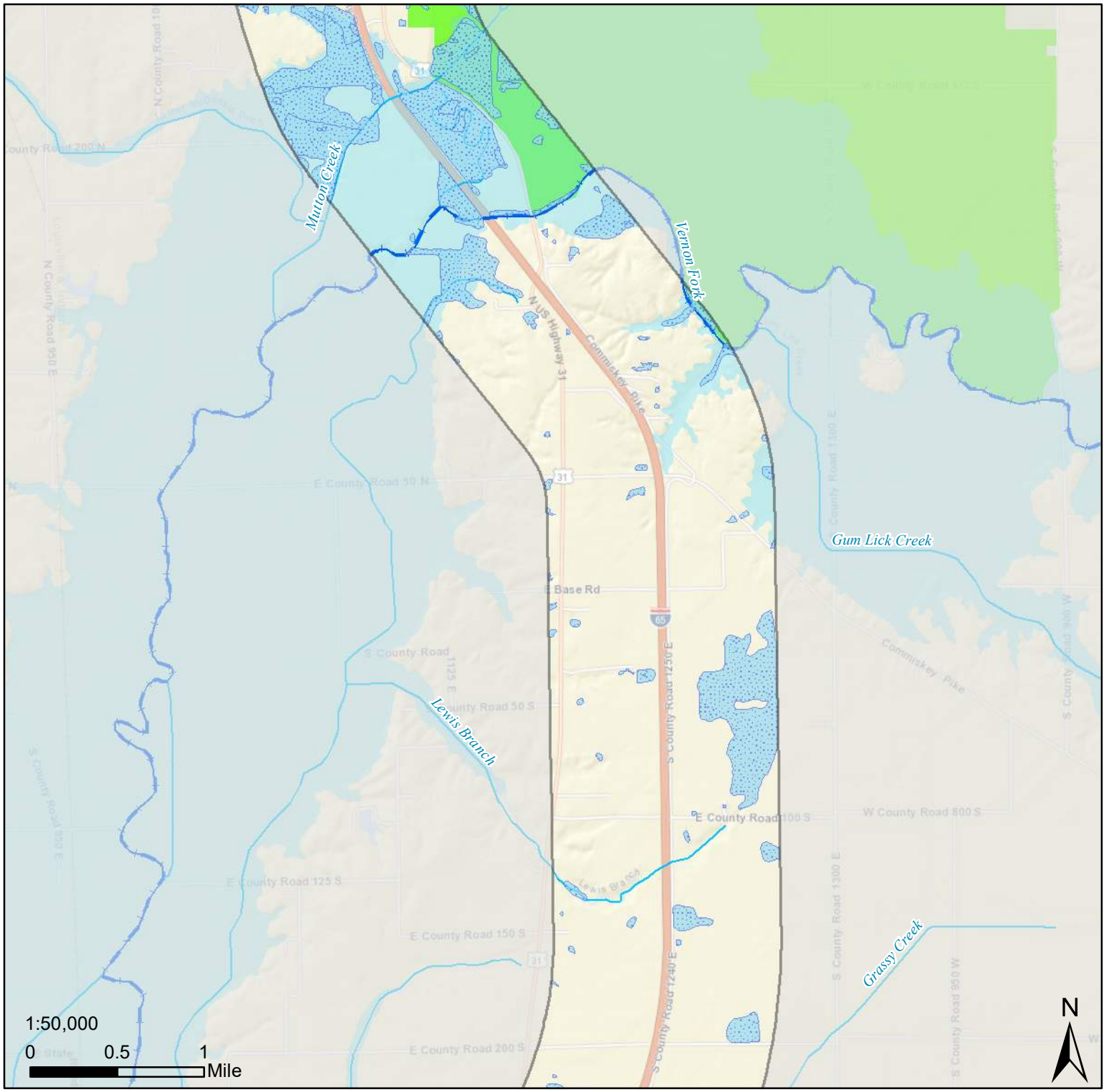

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
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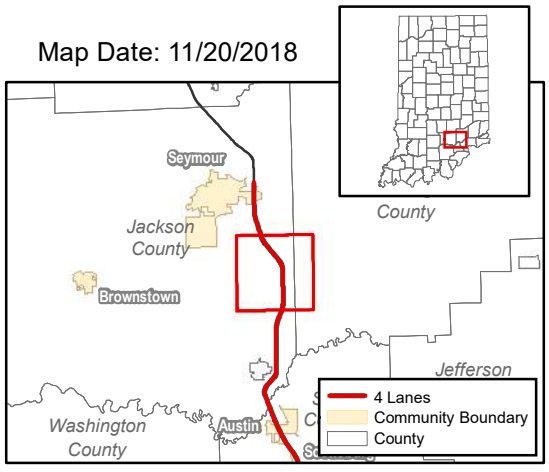

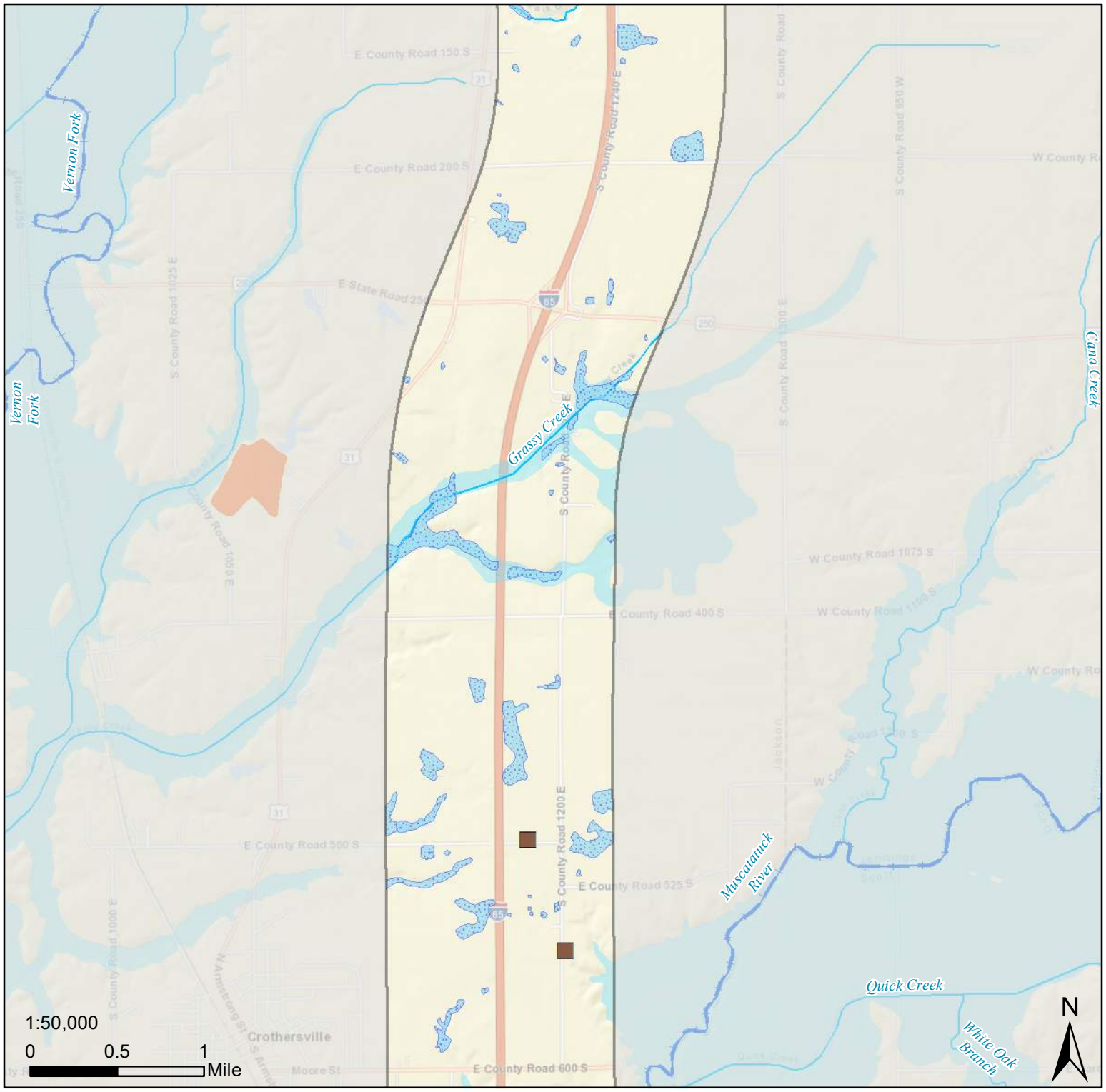

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
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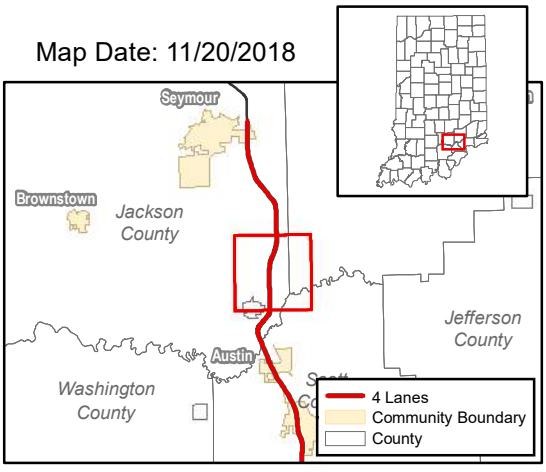

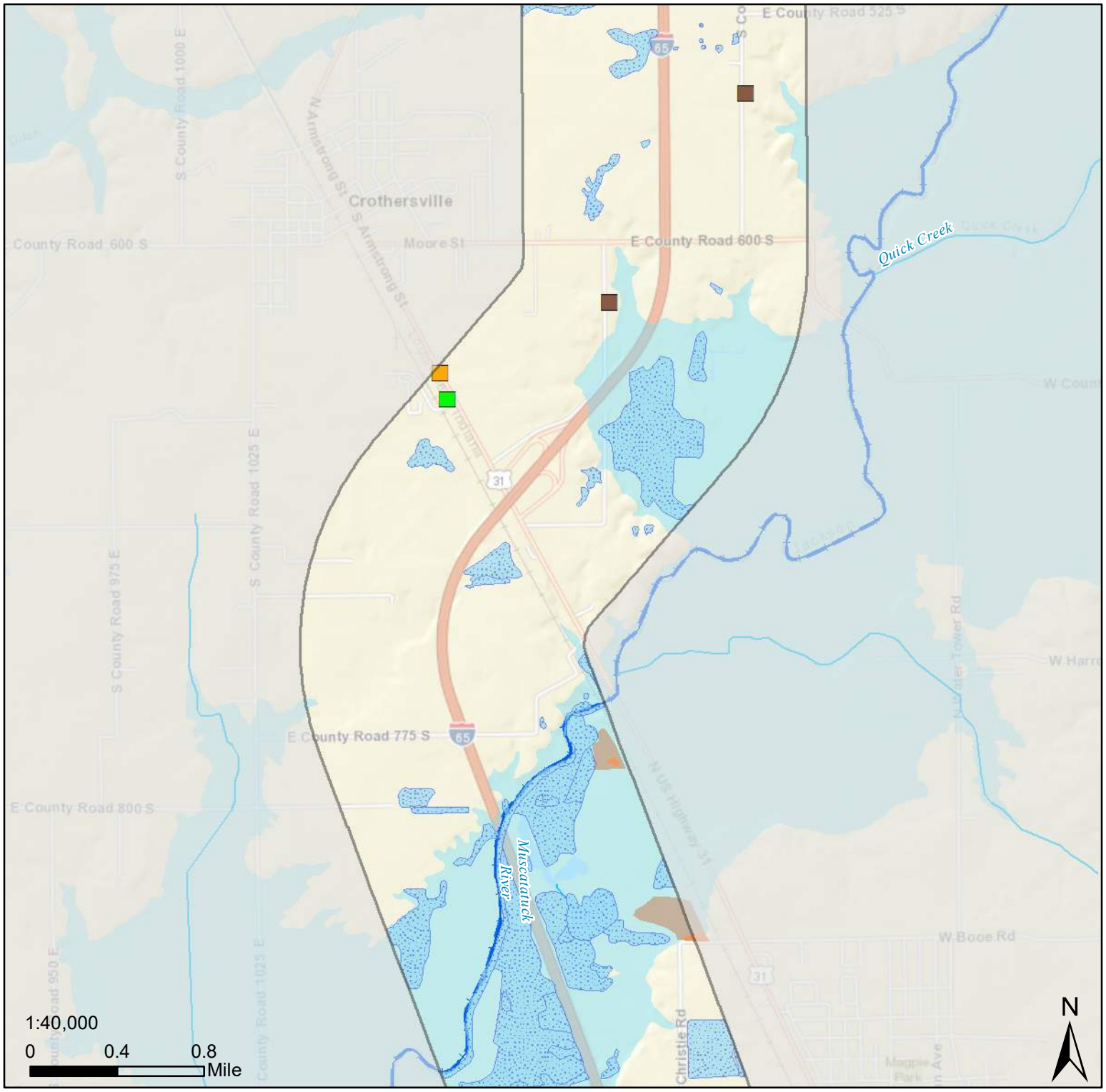

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
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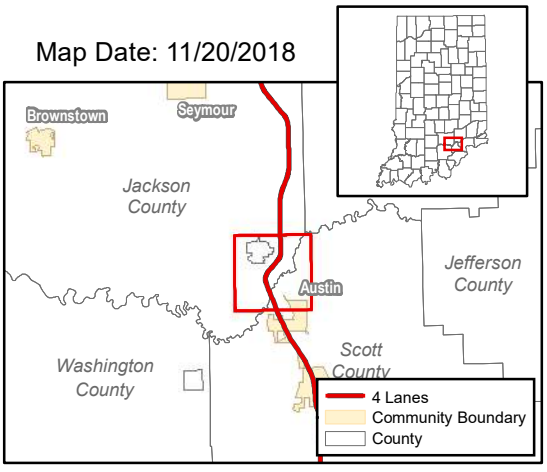

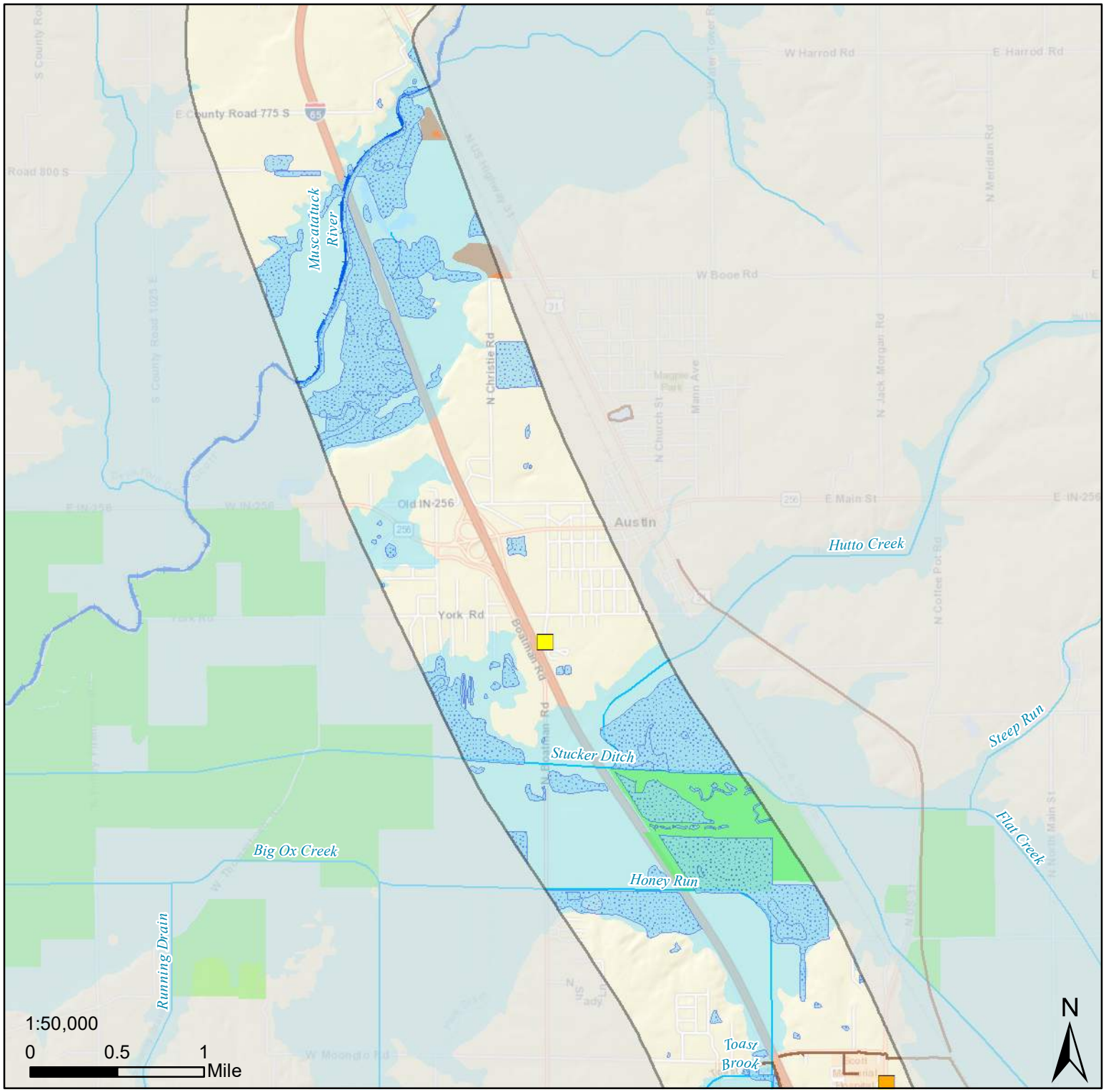

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
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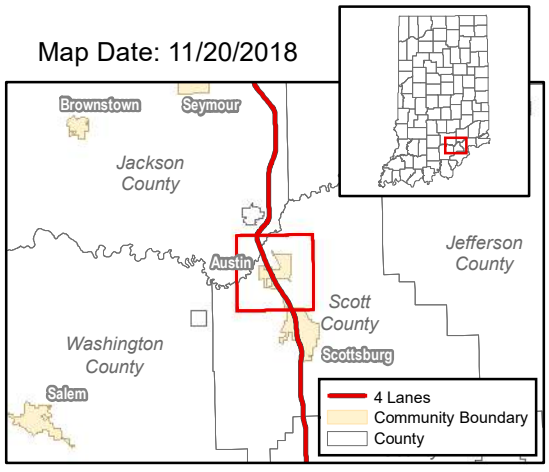

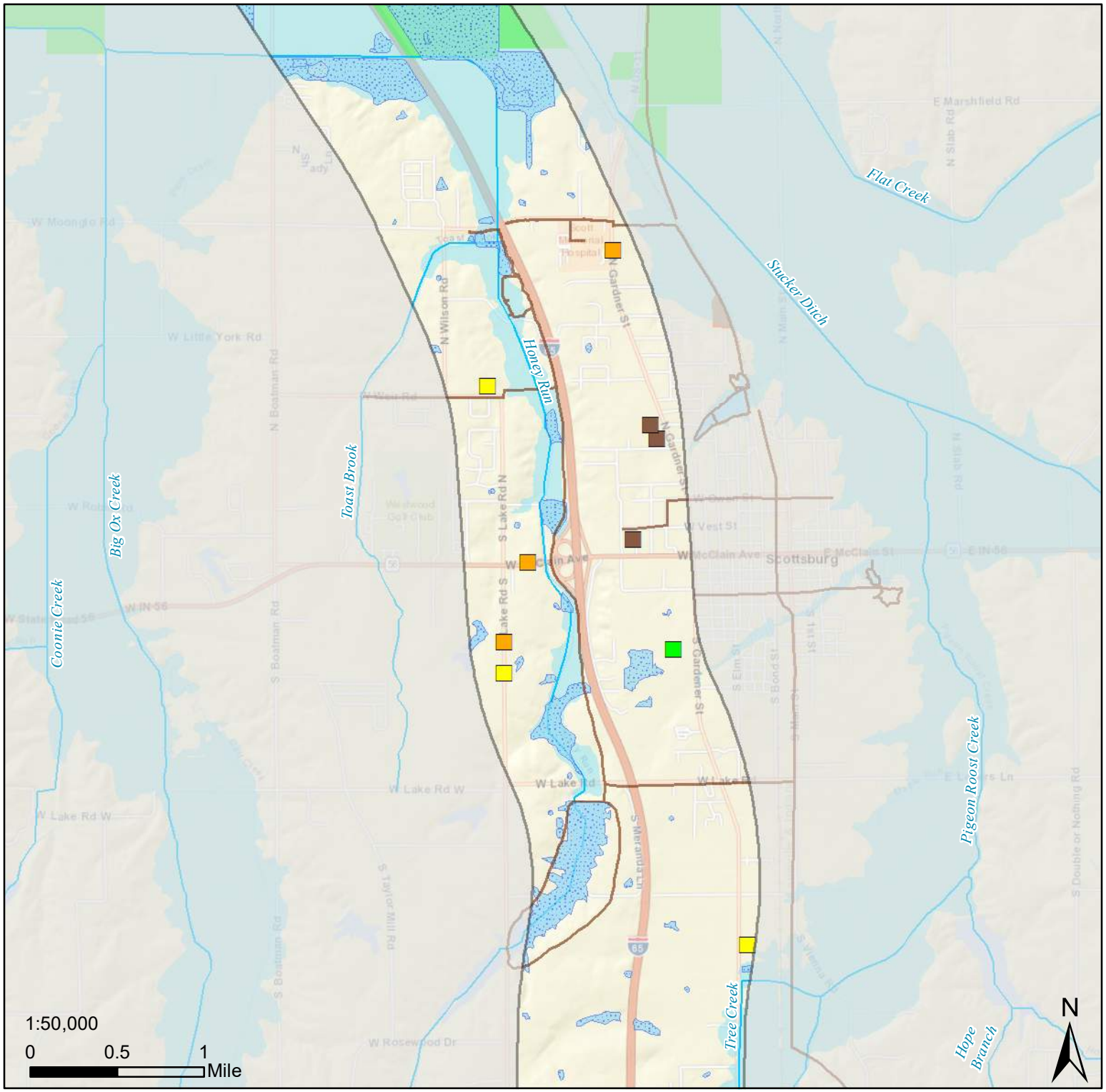

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
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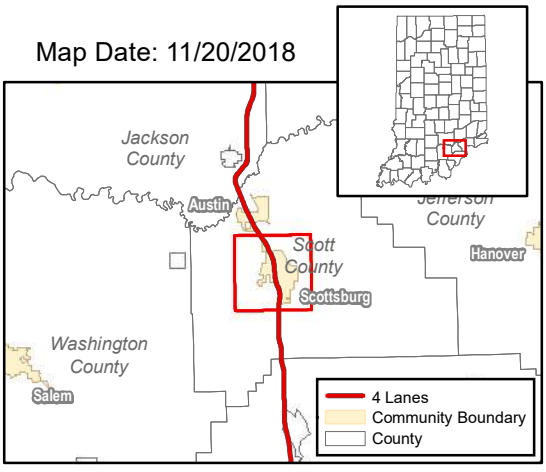

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

- Recreational Facility
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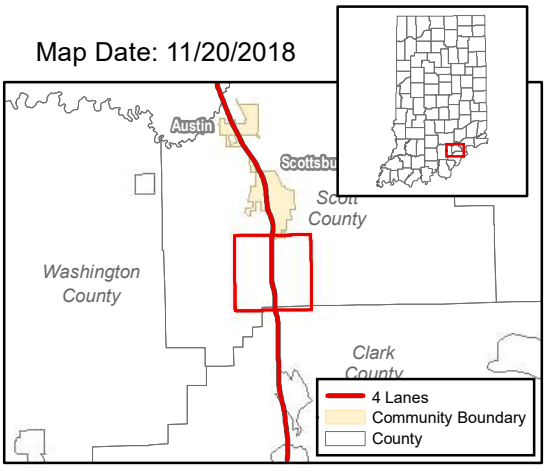

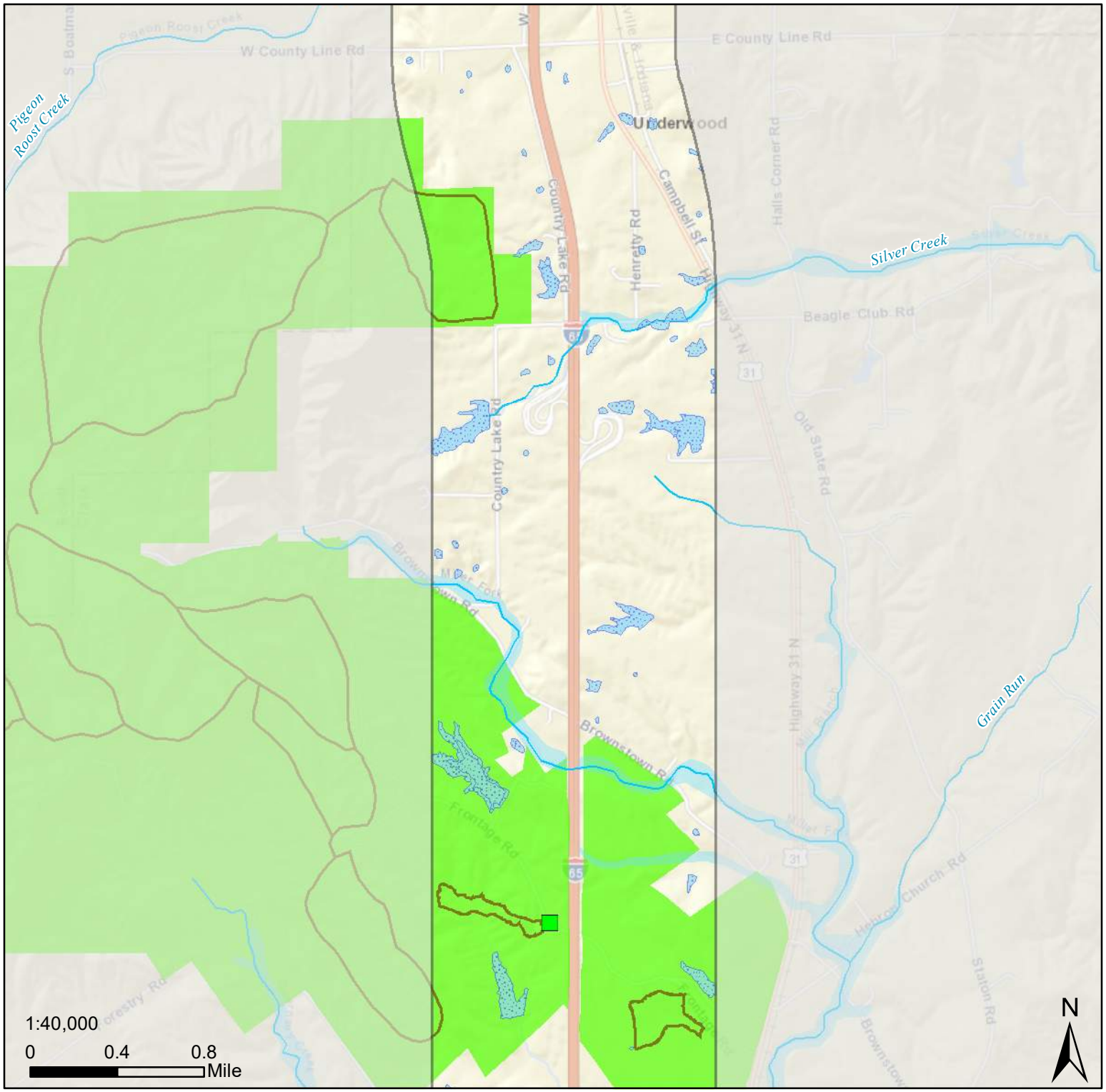

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

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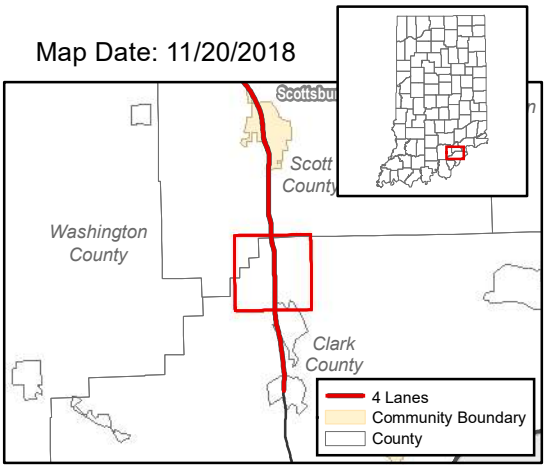

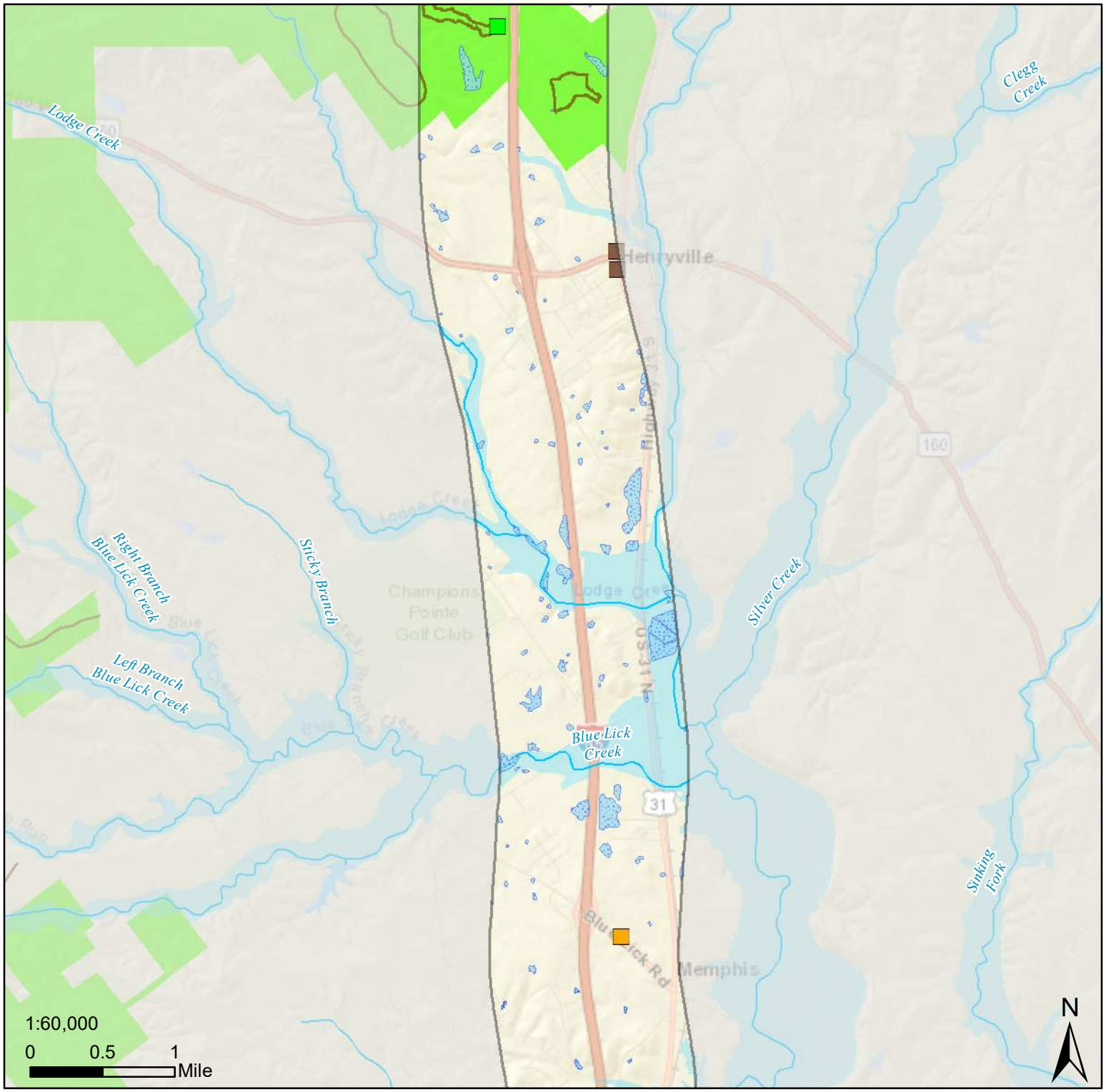

Environmental Resources

Corridor 6 - I-65 South

Map Date: 11/20/2018

Legend

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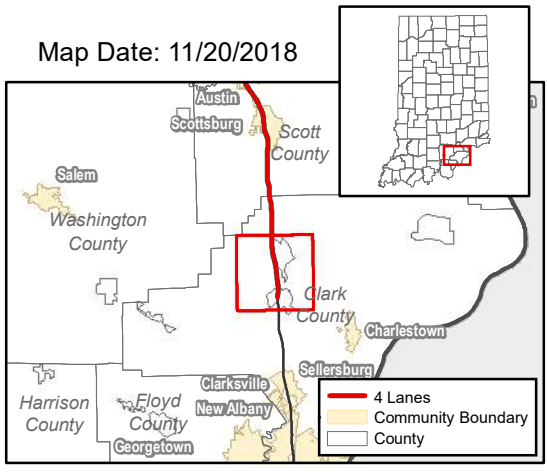

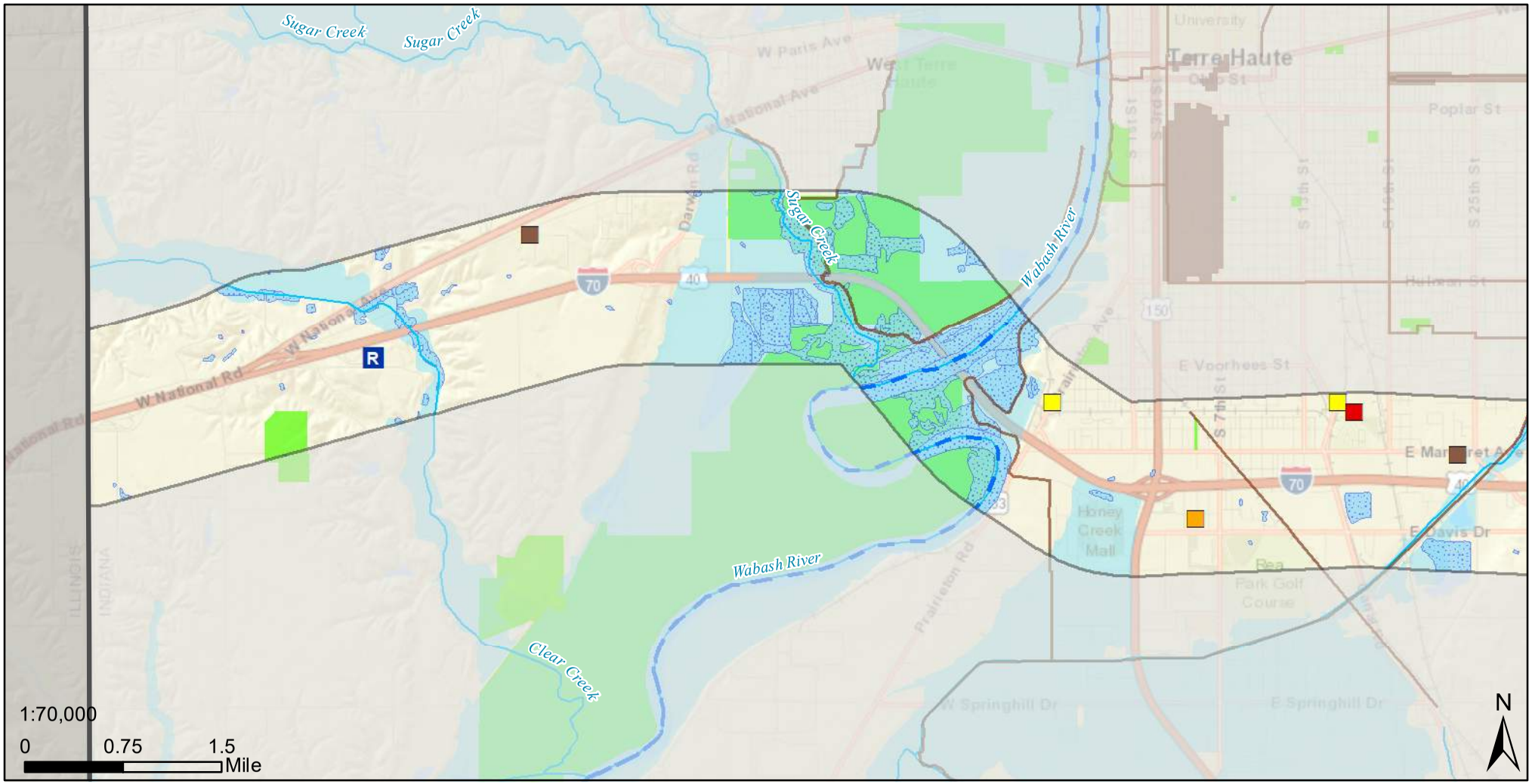

Environmental Resources

Corridor 1 - I-70 West

Map Date: 11/20/2018

Legend

- Recreational Facility
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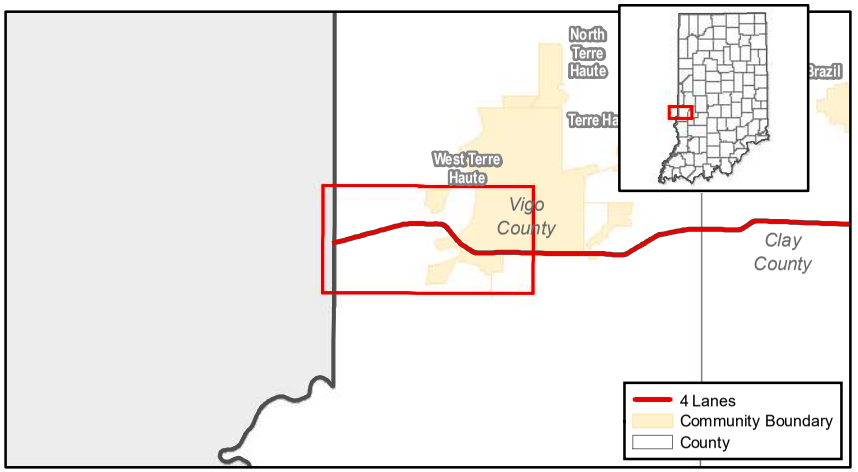

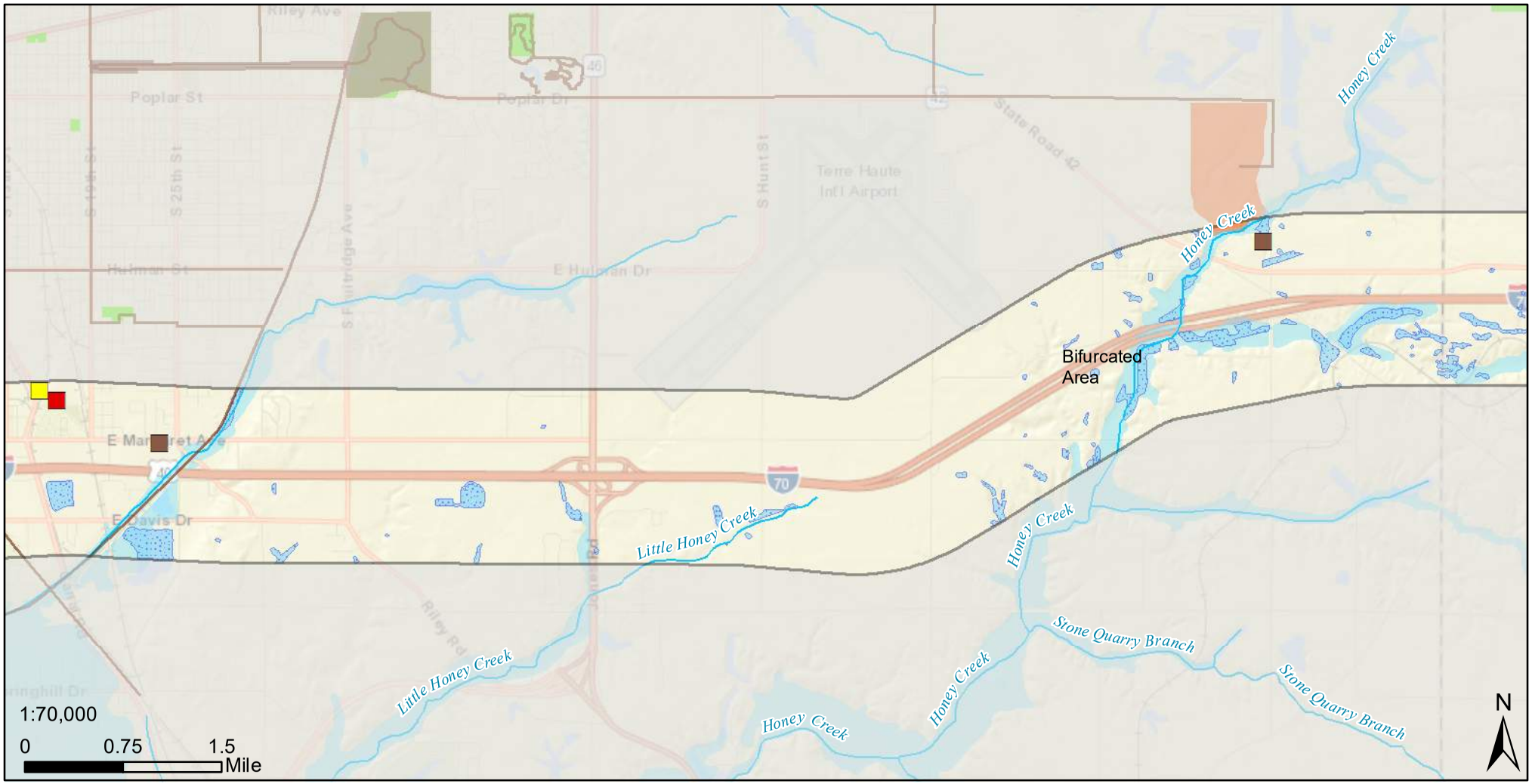

Environmental Resources

Corridor 1 - I-70 West

Map Date: 11/20/2018

Legend

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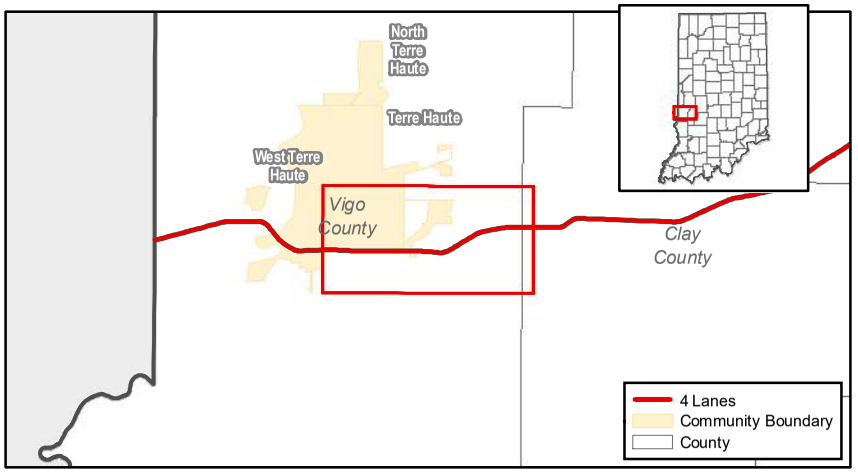

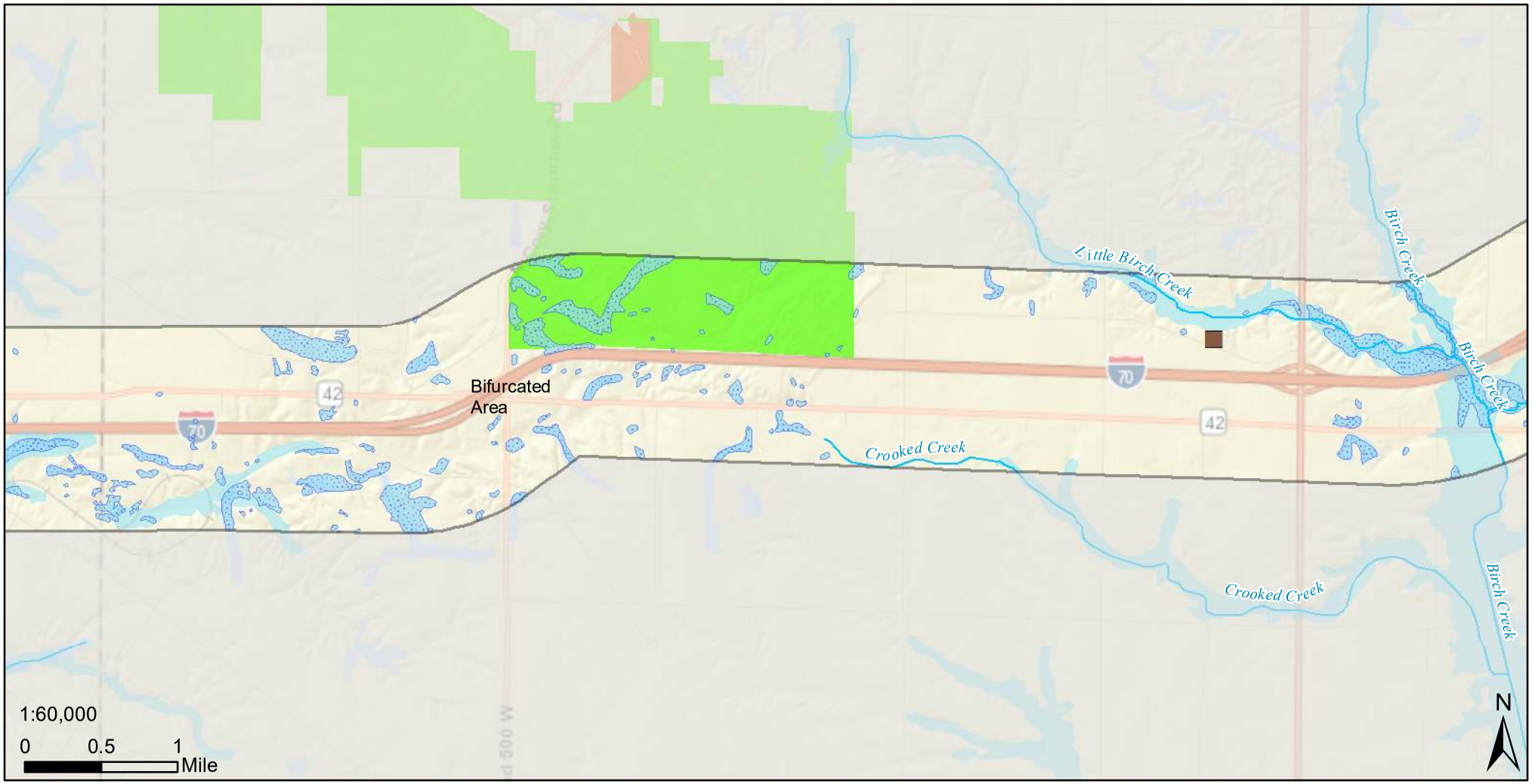

Environmental Resources

Corridor 1 - I-70 West

Map Date: 11/20/2018

Legend

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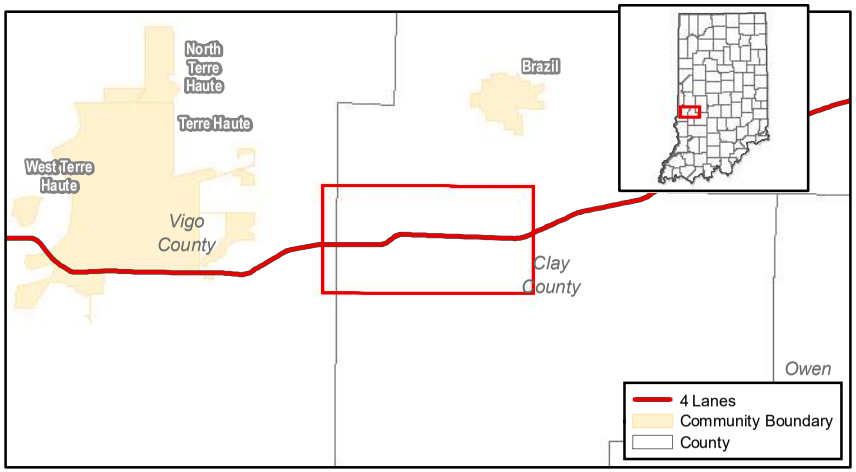

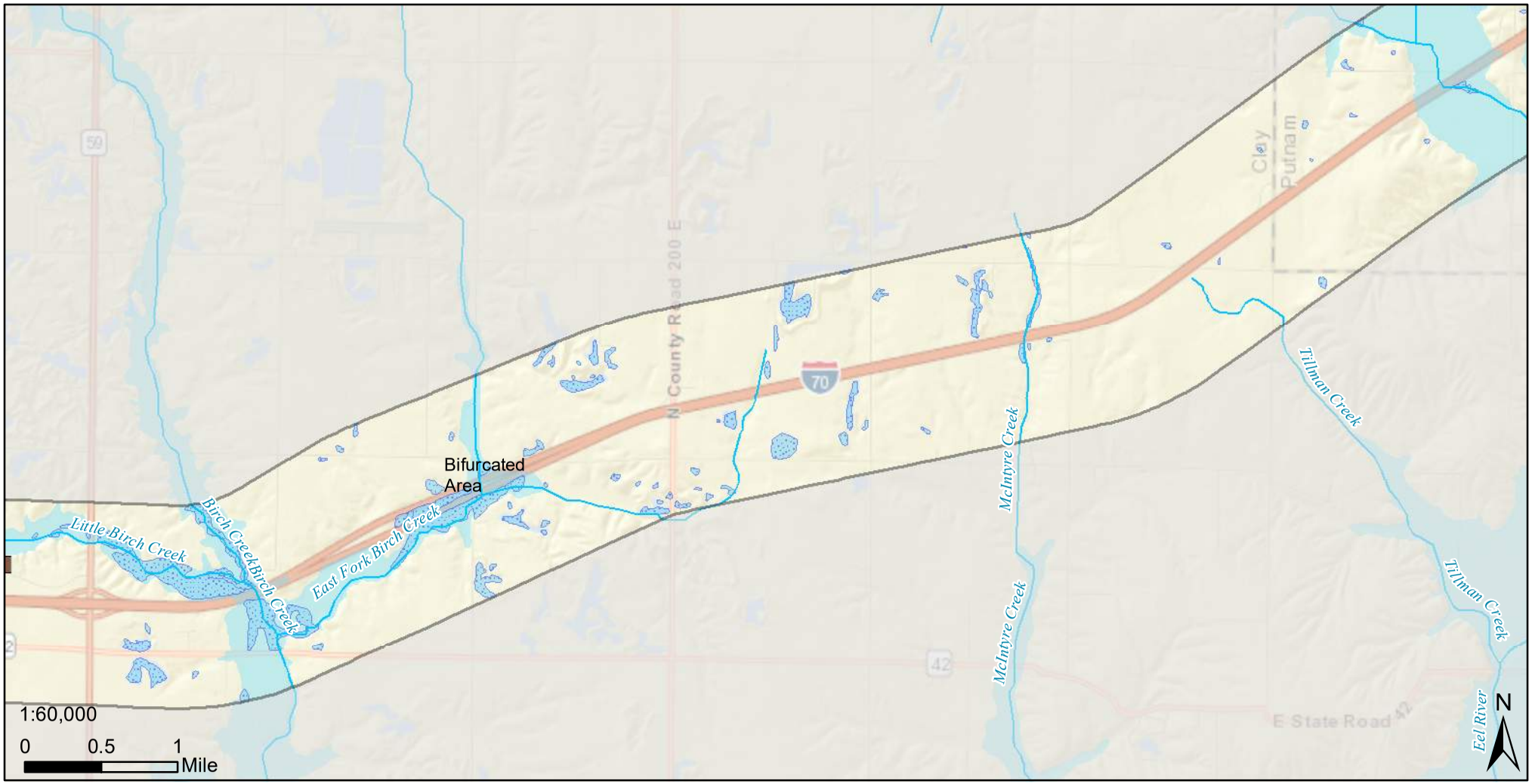

Environmental Resources

Corridor 1 - I-70 West

Map Date: 11/20/2018

Legend

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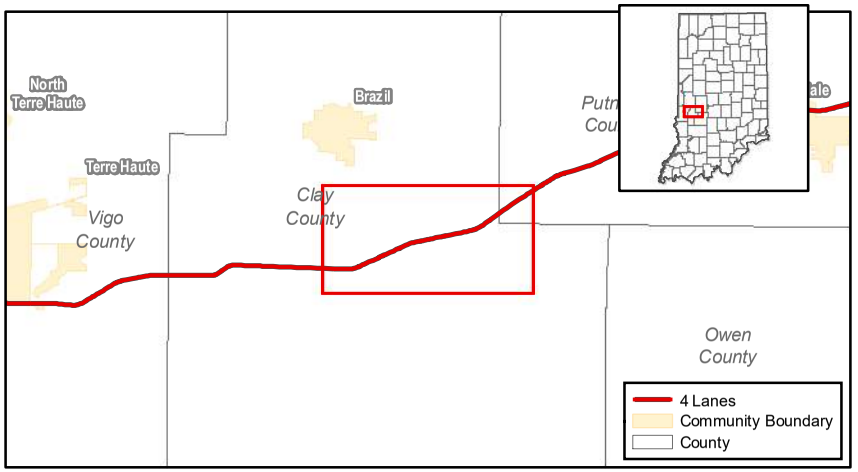

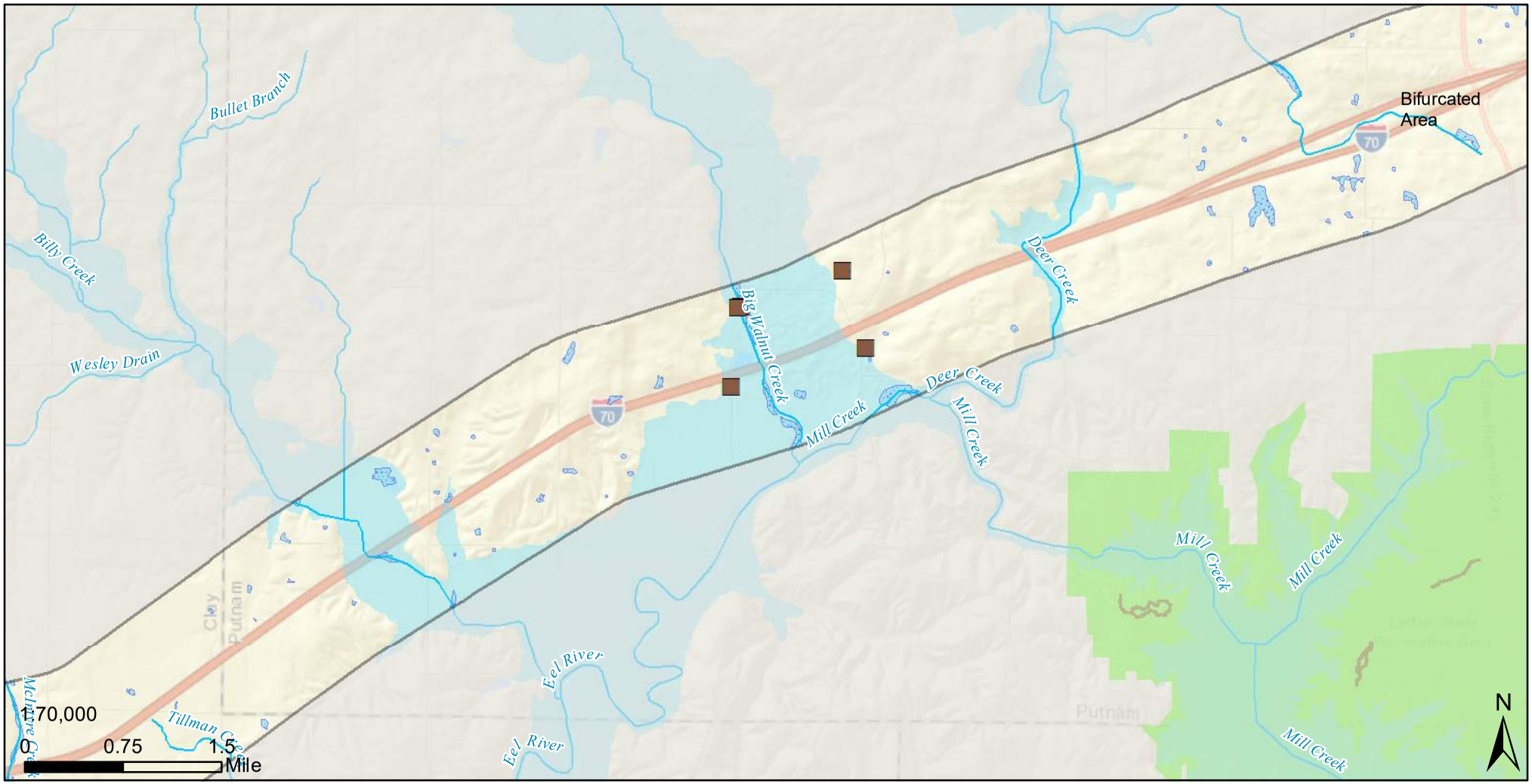

Environmental Resources

Corridor 1 - I-70 West

Map Date: 11/20/2018

Legend

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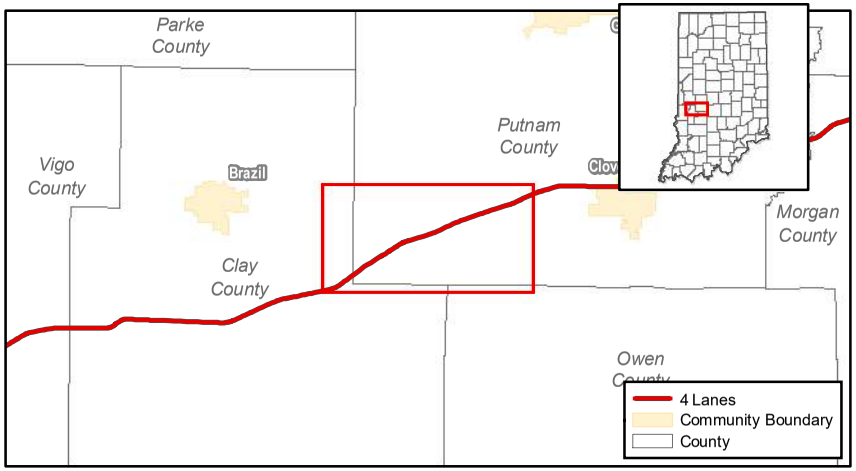

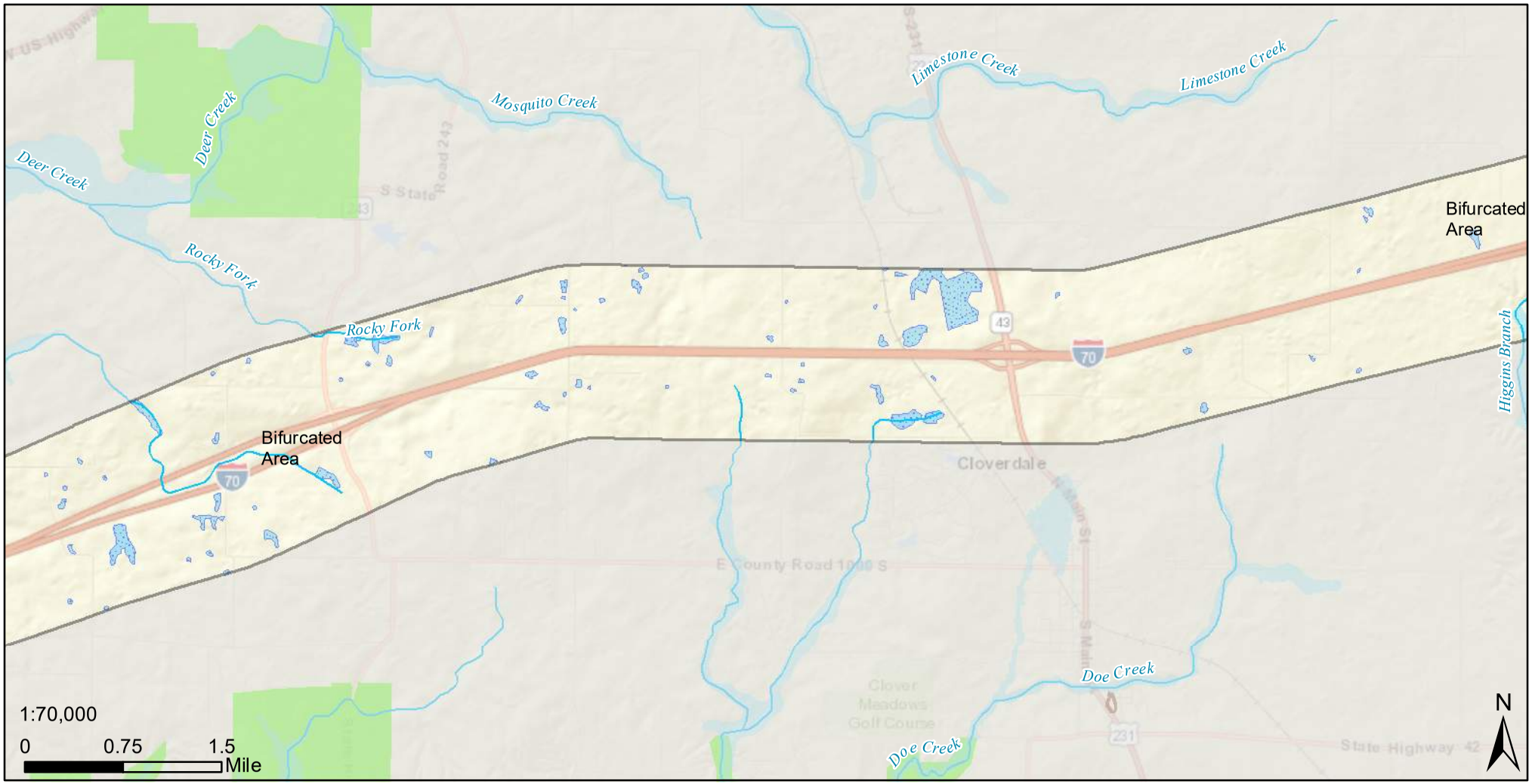

Environmental Resources

Corridor 1 - I-70 West

Map Date: 11/20/2018

Legend

- Recreational Facility
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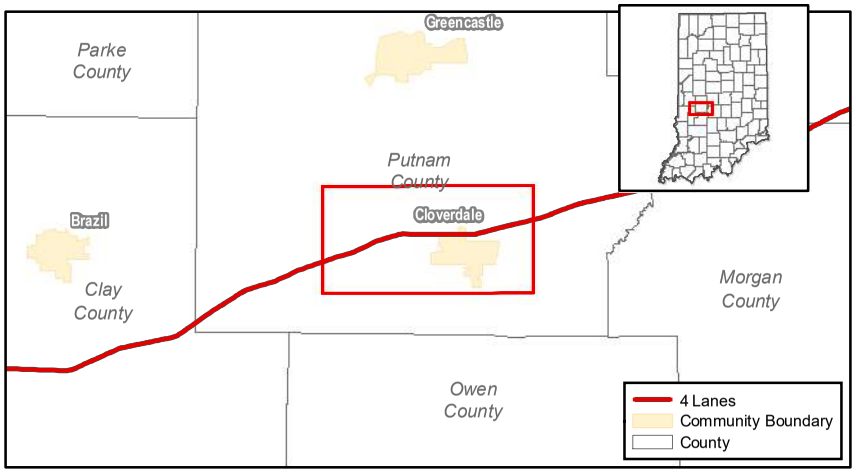

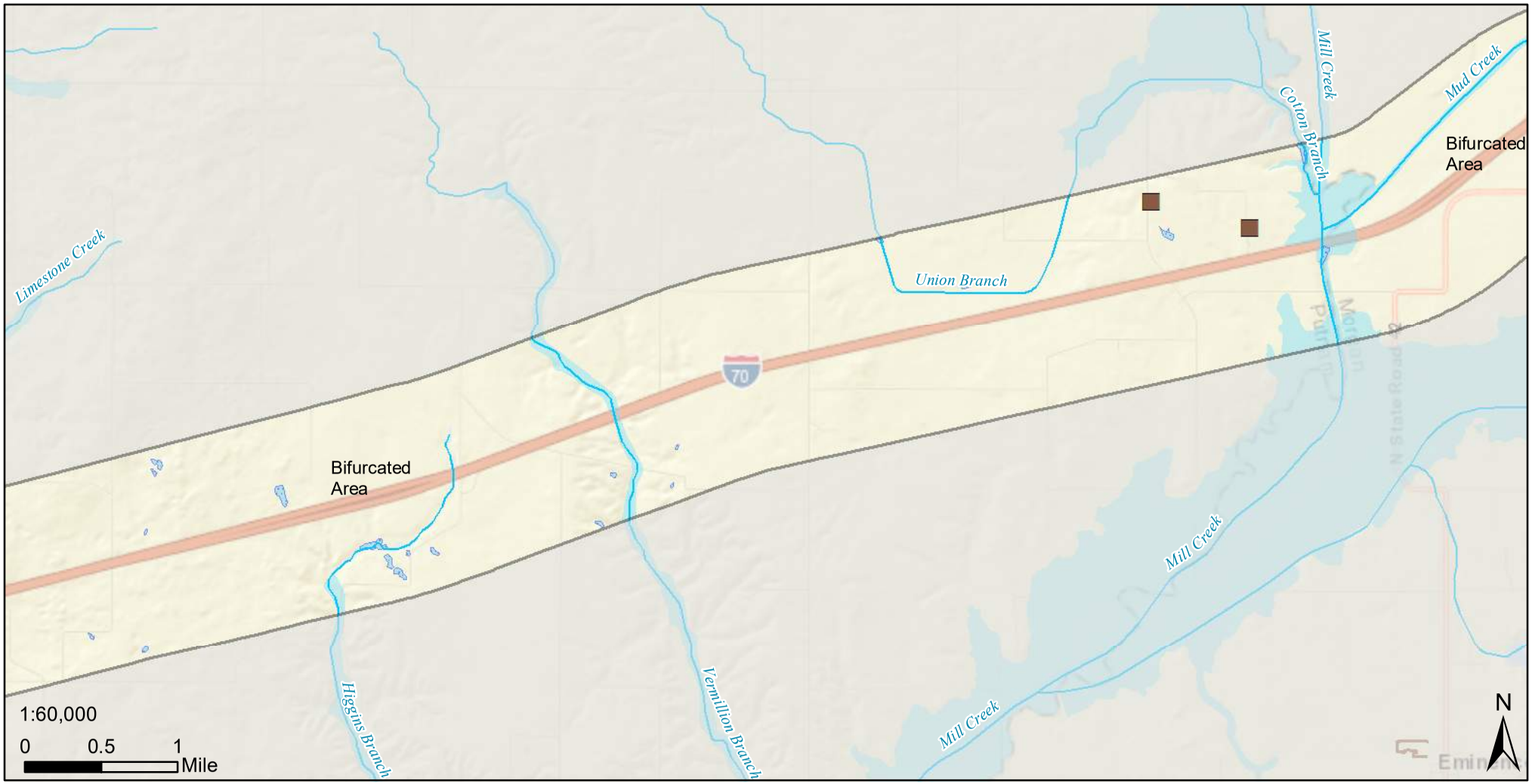

Environmental Resources

Corridor 1 - I-70 West

Map Date: 11/20/2018

Legend

- Recreational Facility
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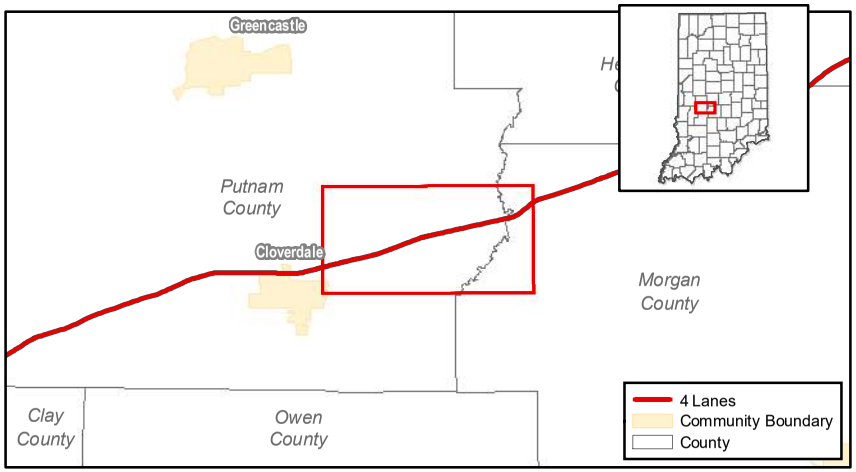

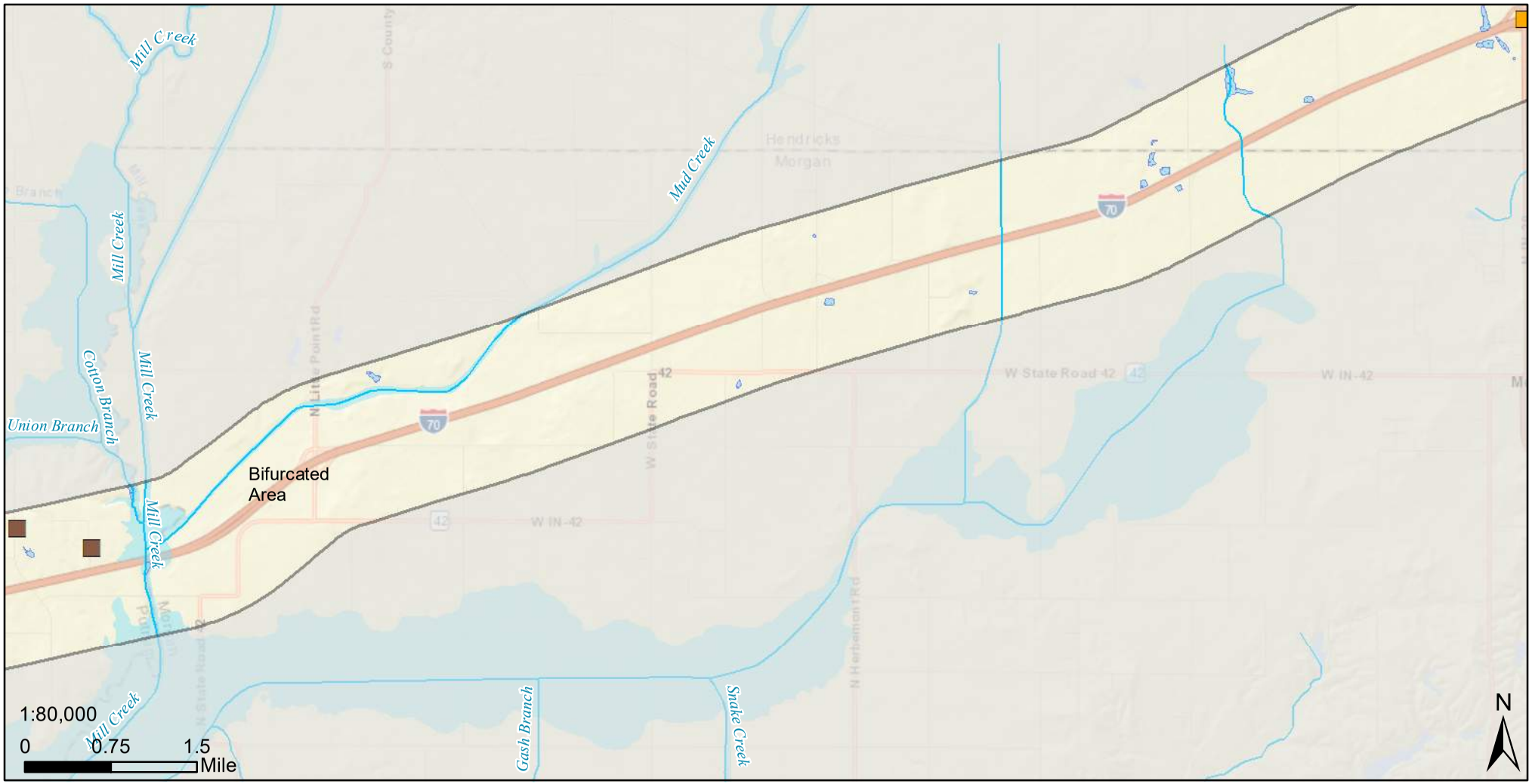

Environmental Resources

Corridor 1 - I-70 West

Map Date: 11/20/2018

Legend

- Recreational Facility
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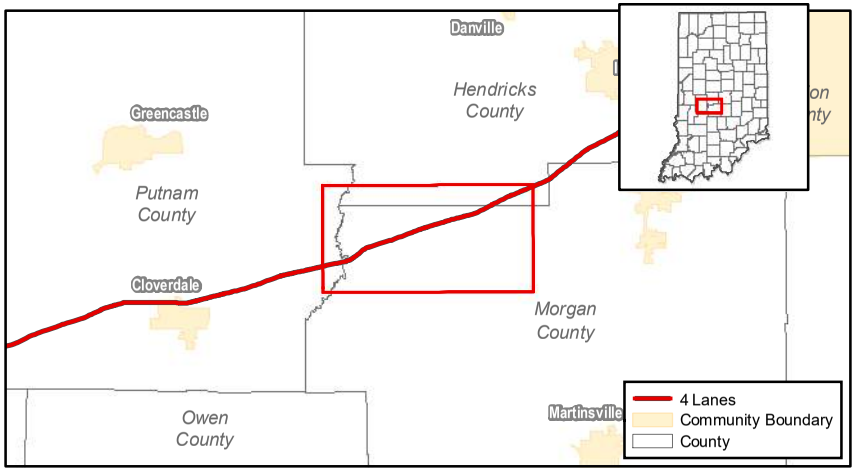

Environmental Resources

Corridor 1 - I-70 West

Map Date: 11/20/2018

Legend

- Recreational Facility
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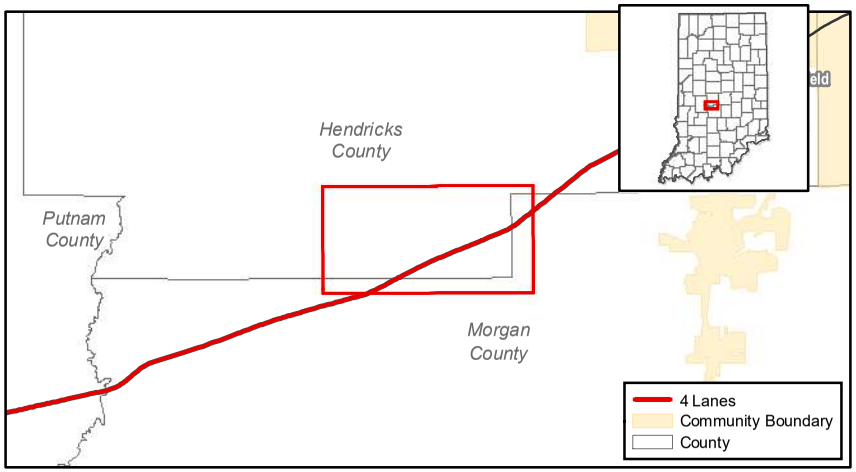

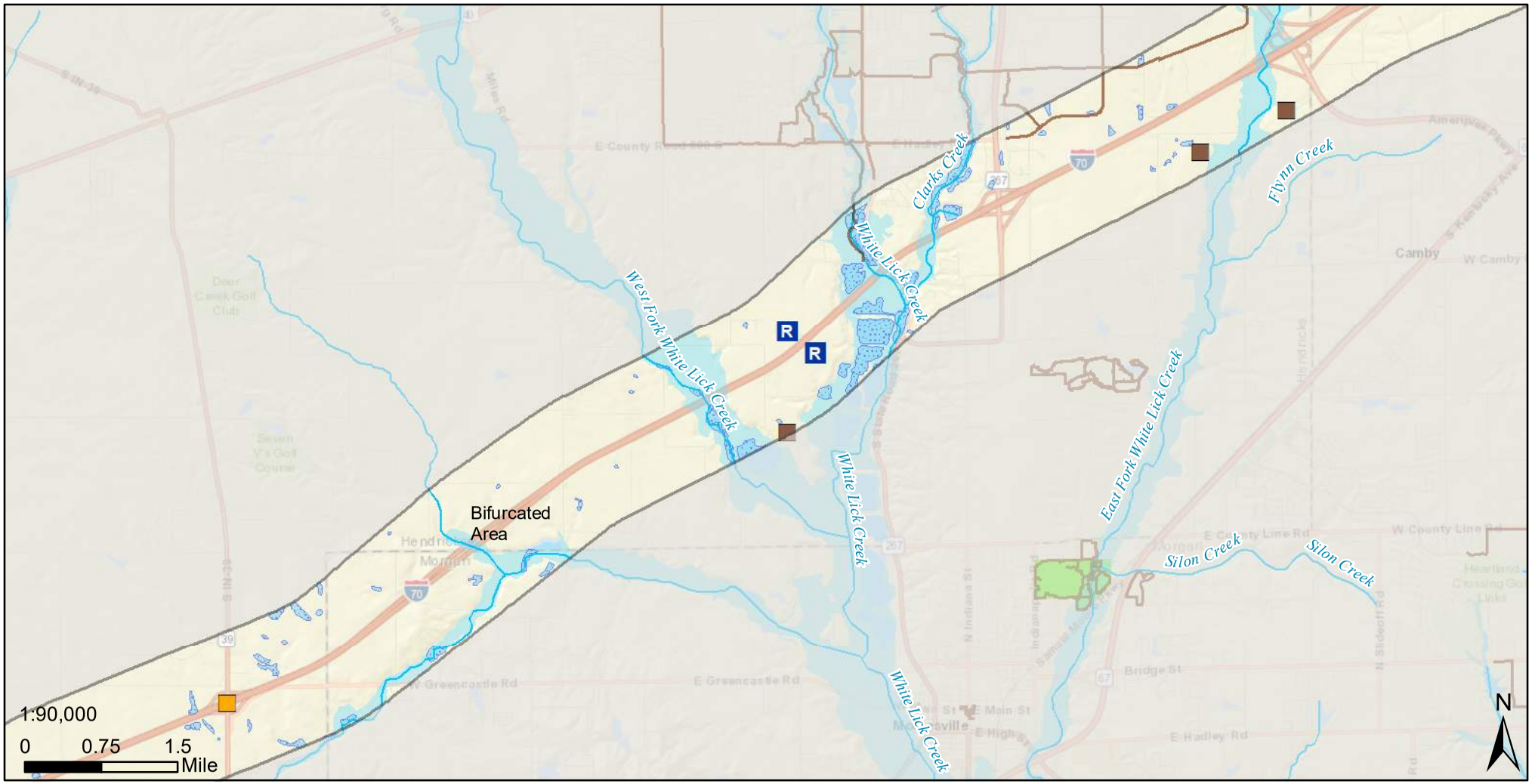

Environmental Resources

Corridor 2 - Metro

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
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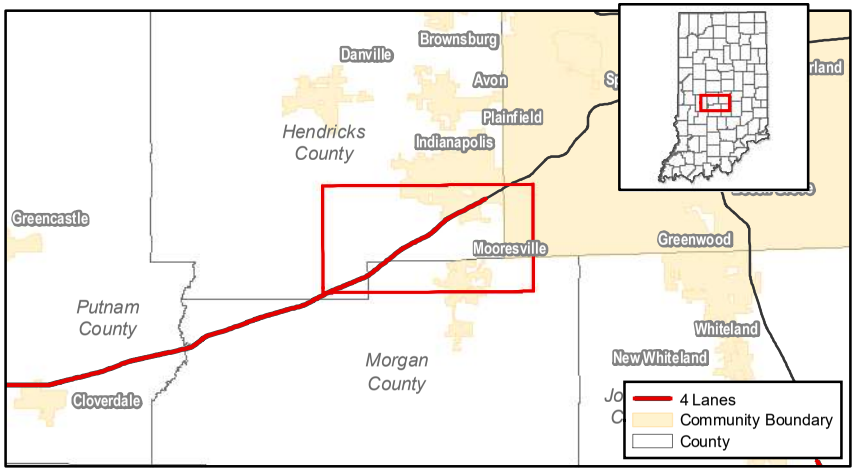

Environmental Resources

Corridor 2 - Metro

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
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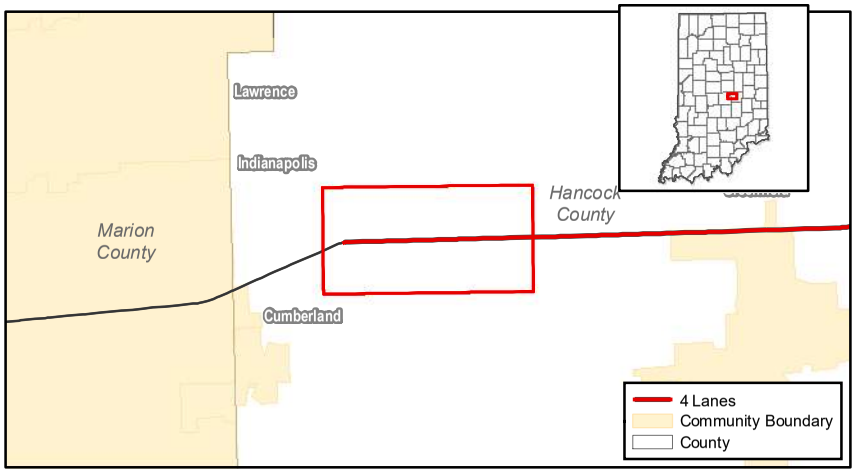

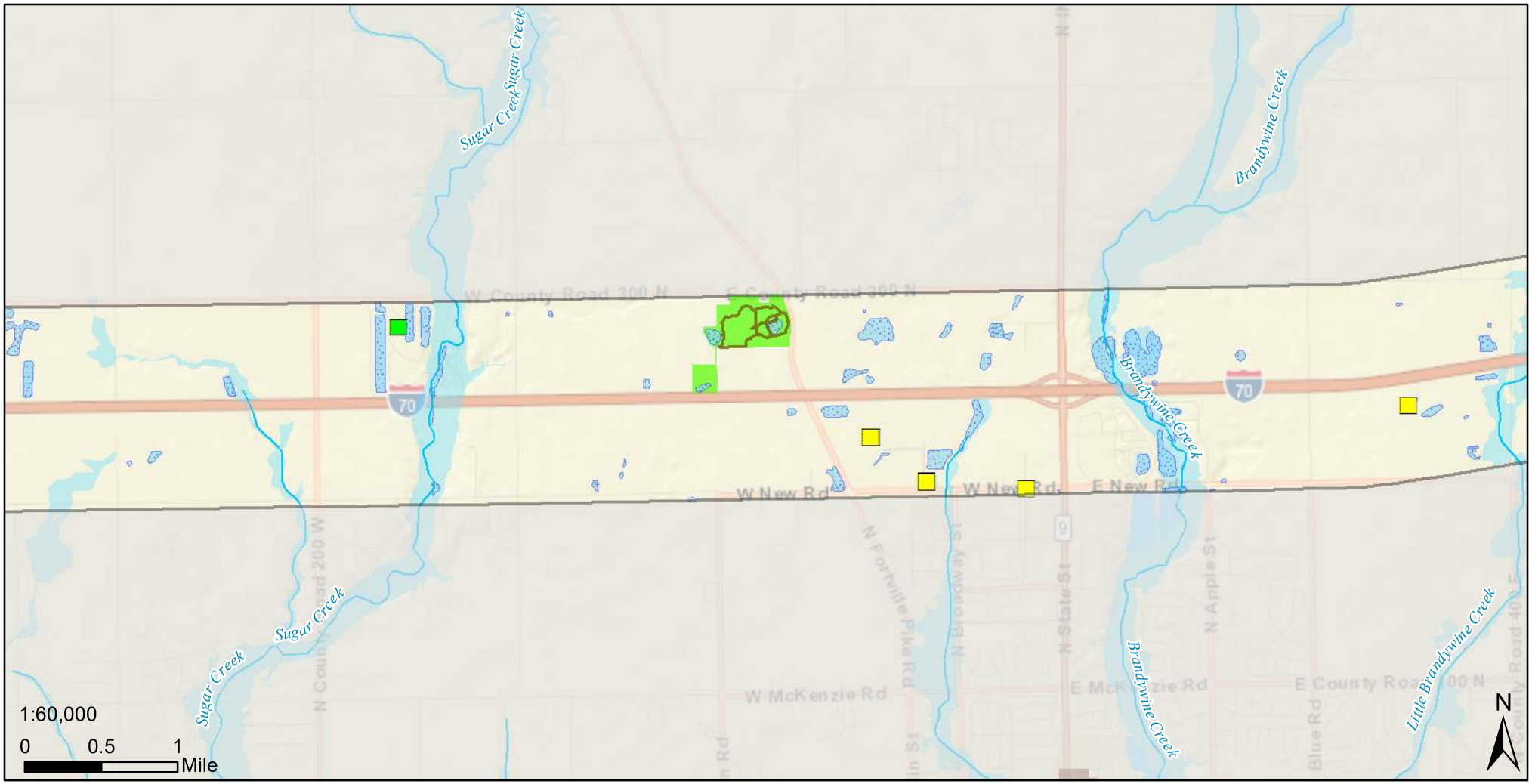

Environmental Resources

Corridor 2 - Metro

Map Date: 11/20/2018

Legend

- Recreational Facility
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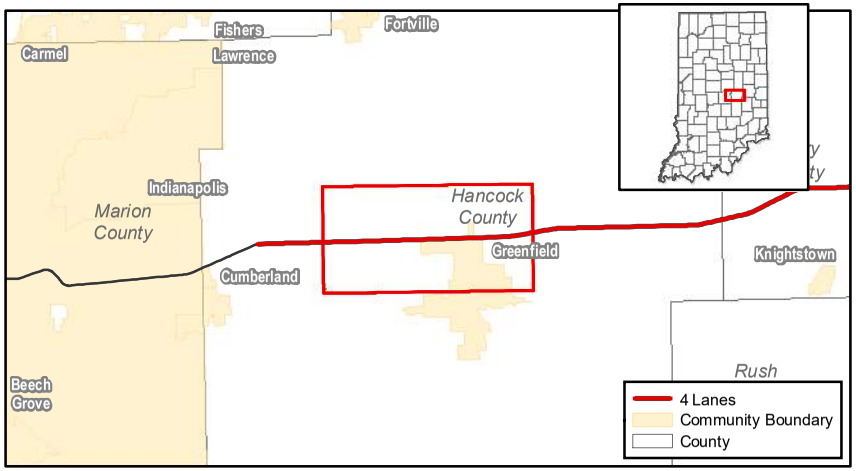
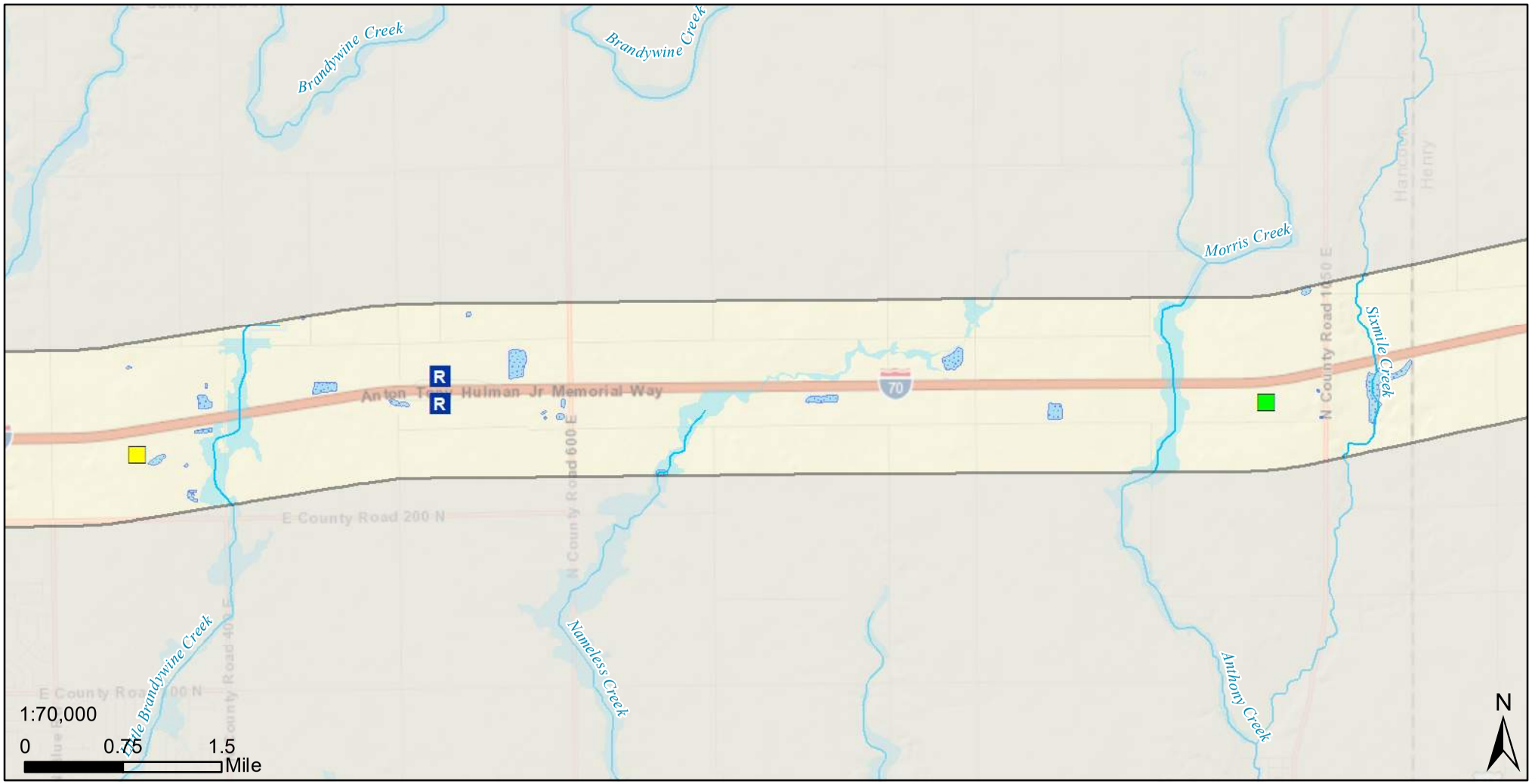
- Outside 1/2 Mile





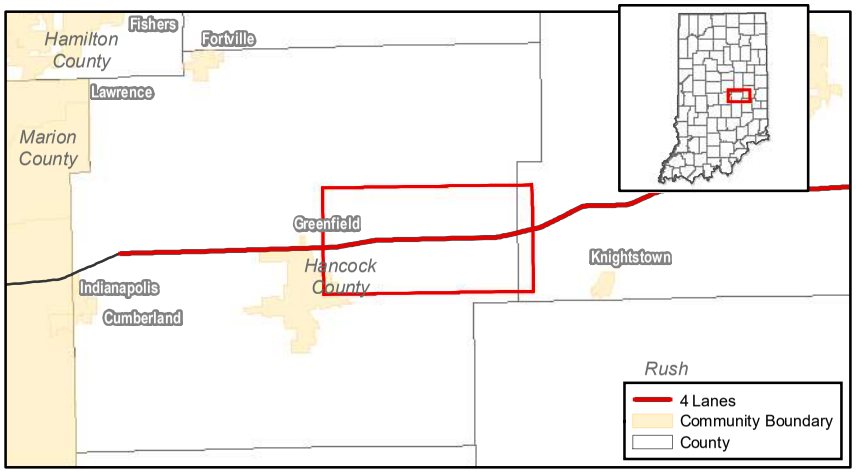
Environmental Resources

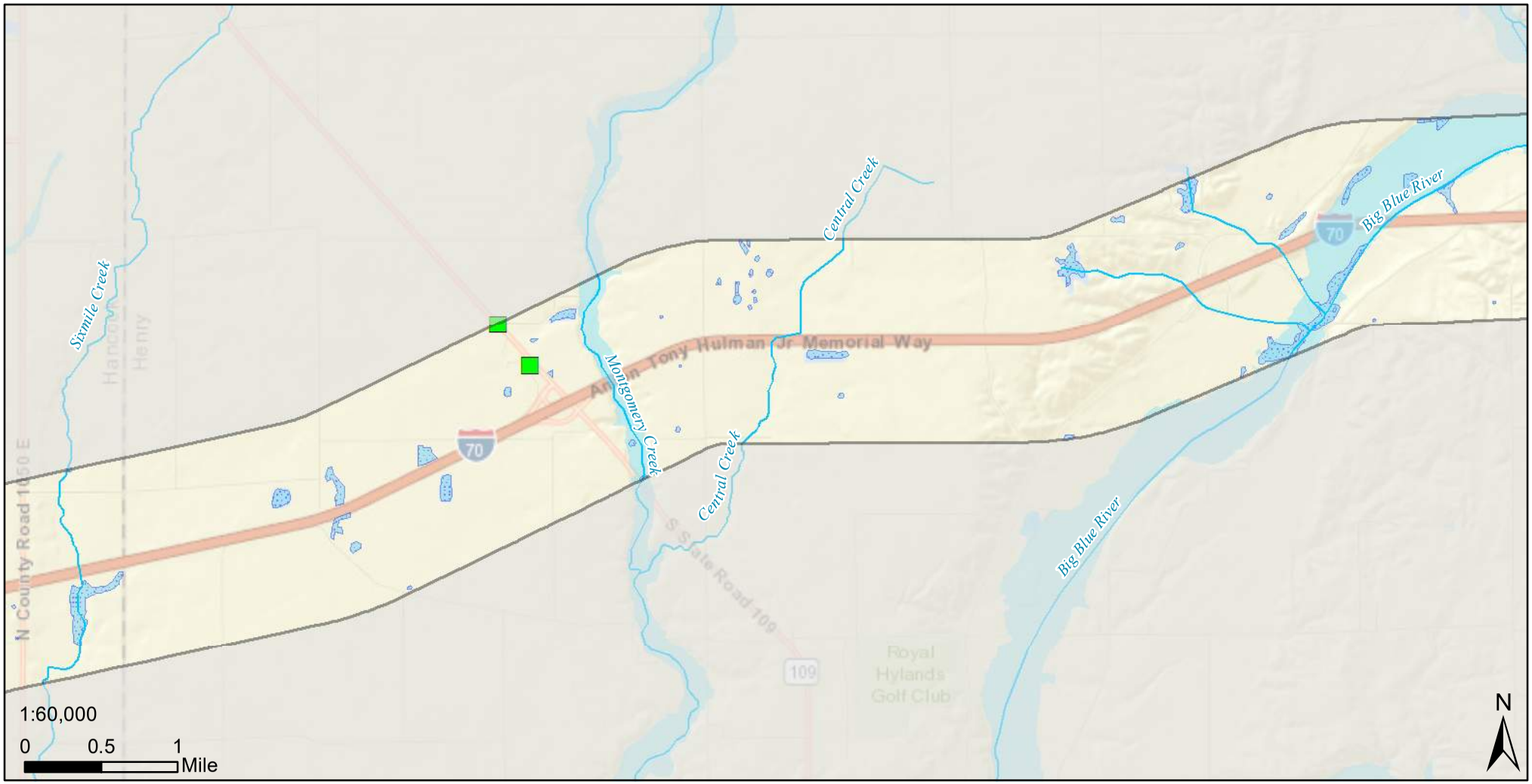
Corridor 3 - I-70 East

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
- Major Stream
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile





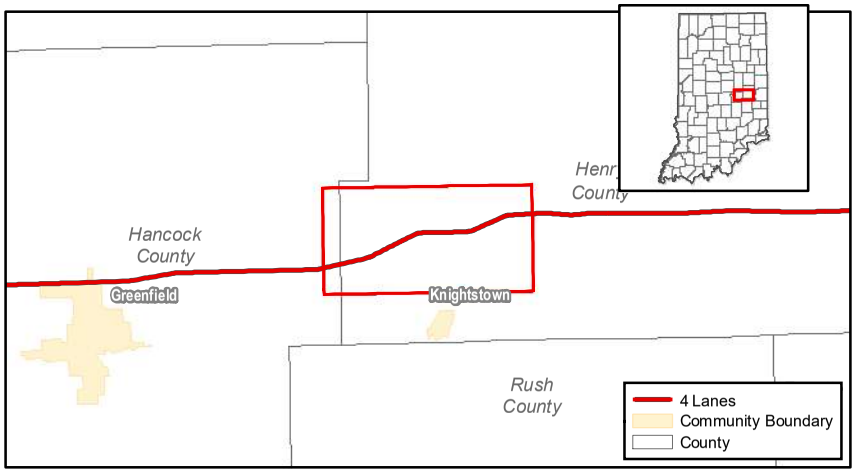
Environmental Resources

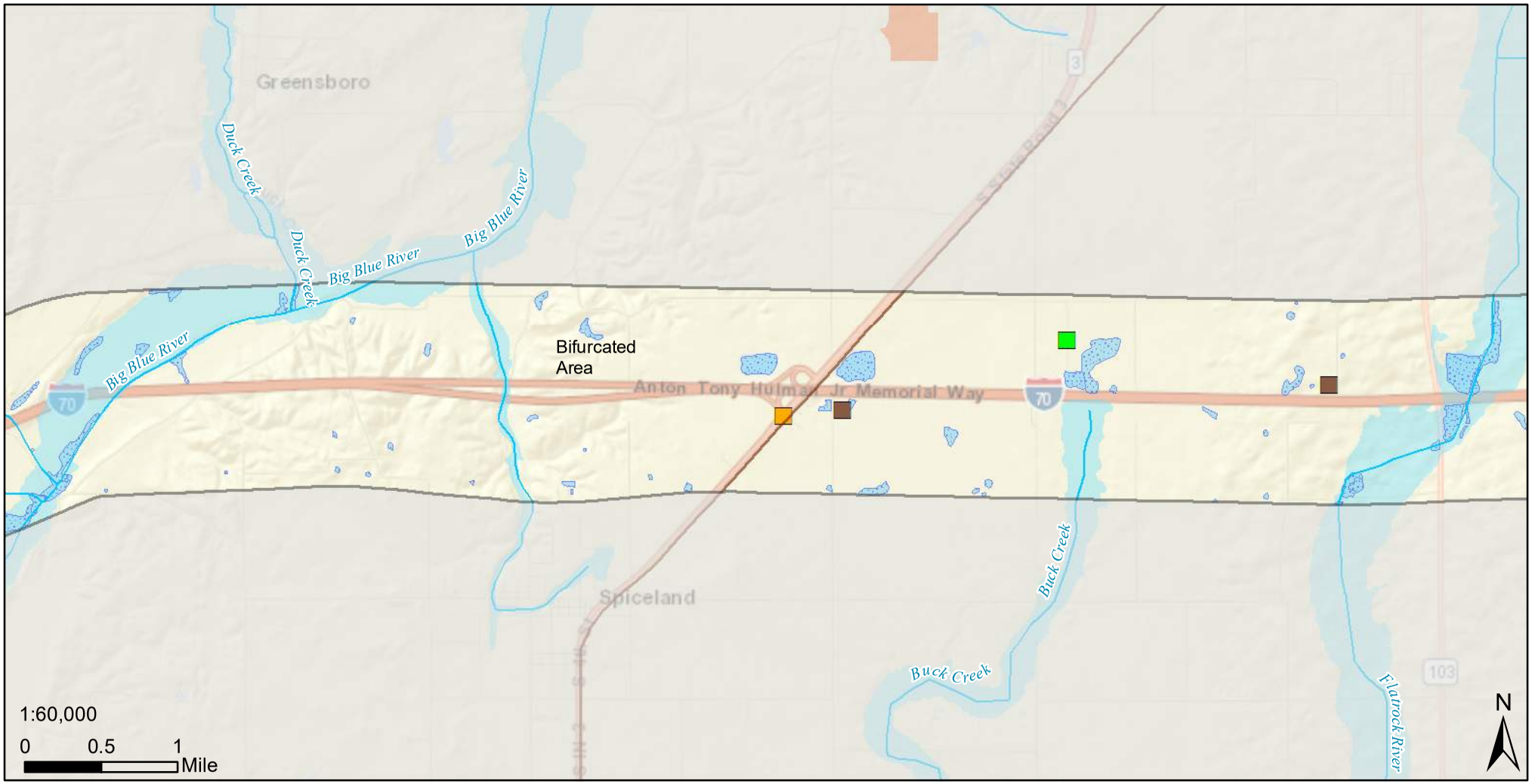
Corridor 3 - I-70 East

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
- Major Stream
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile





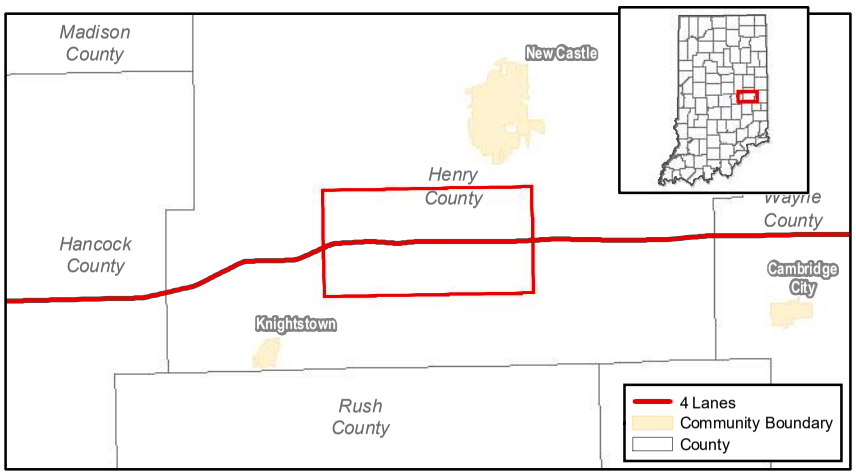
Environmental Resources

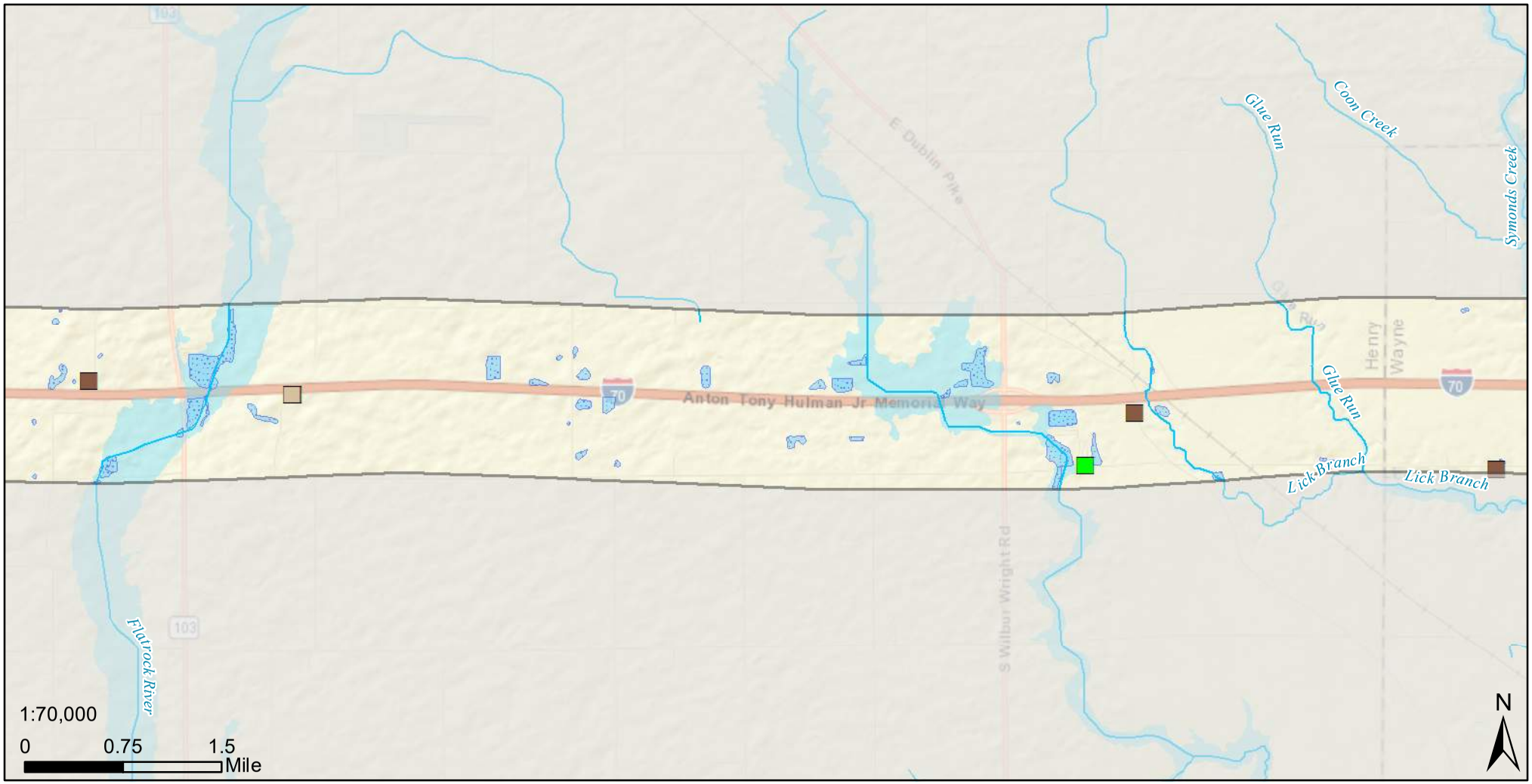
Corridor 3 - I-70 East

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
- Major Stream
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile





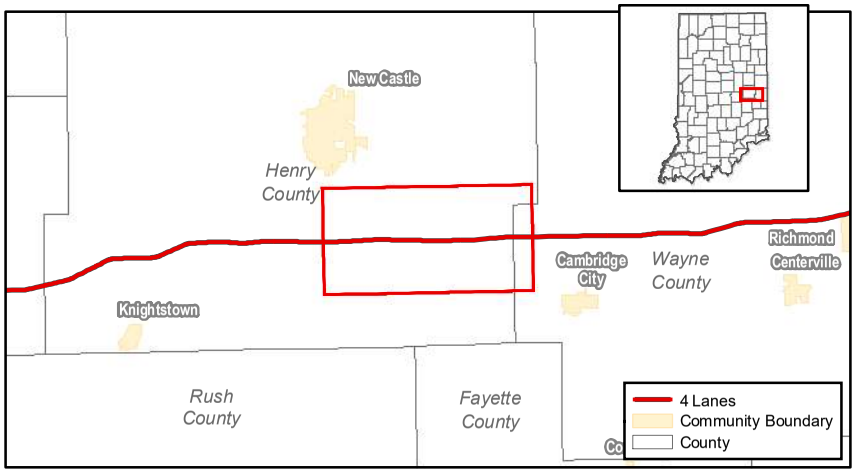
Environmental Resources

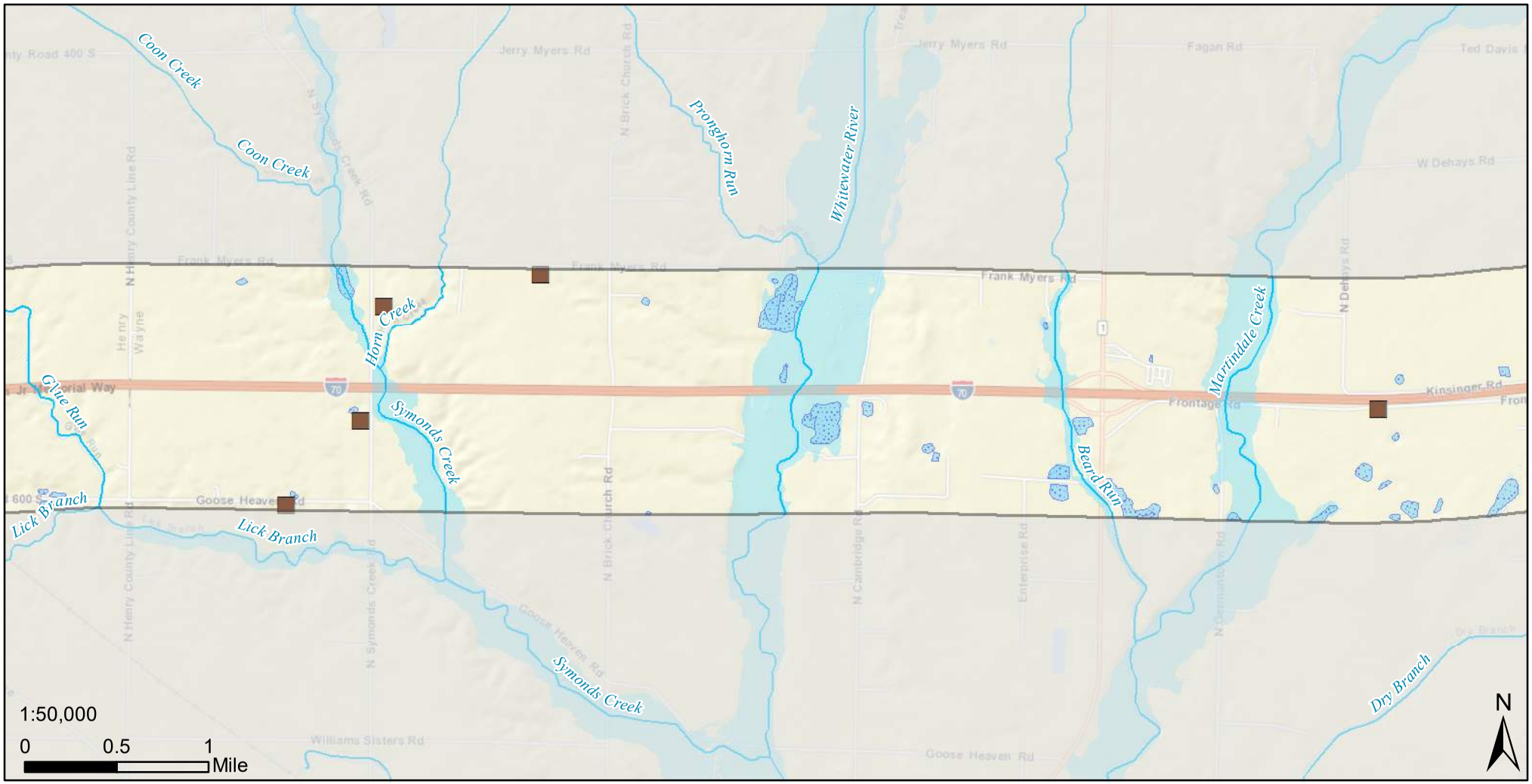
Corridor 3 - I-70 East

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
- Major Stream
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile





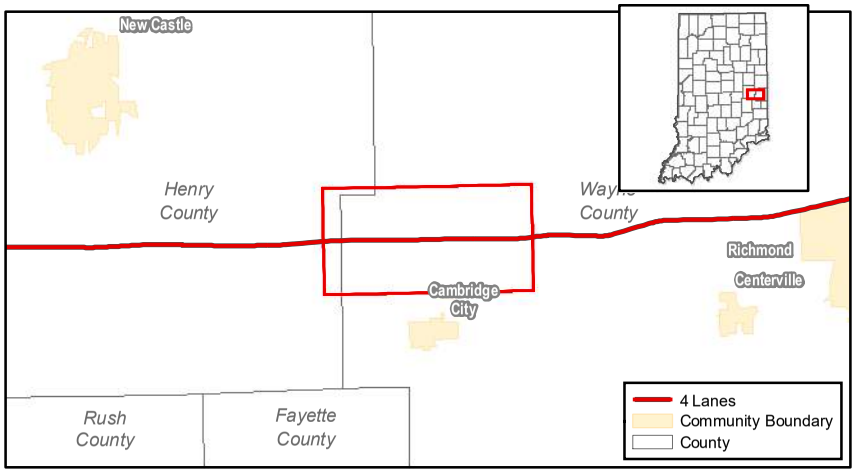
Environmental Resources

Corridor 3 - I-70 East

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
- Major Stream
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile



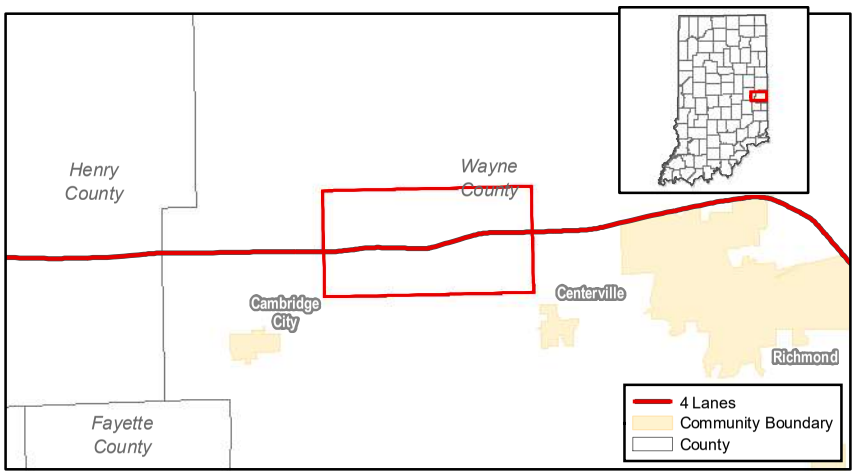
Environmental Resources

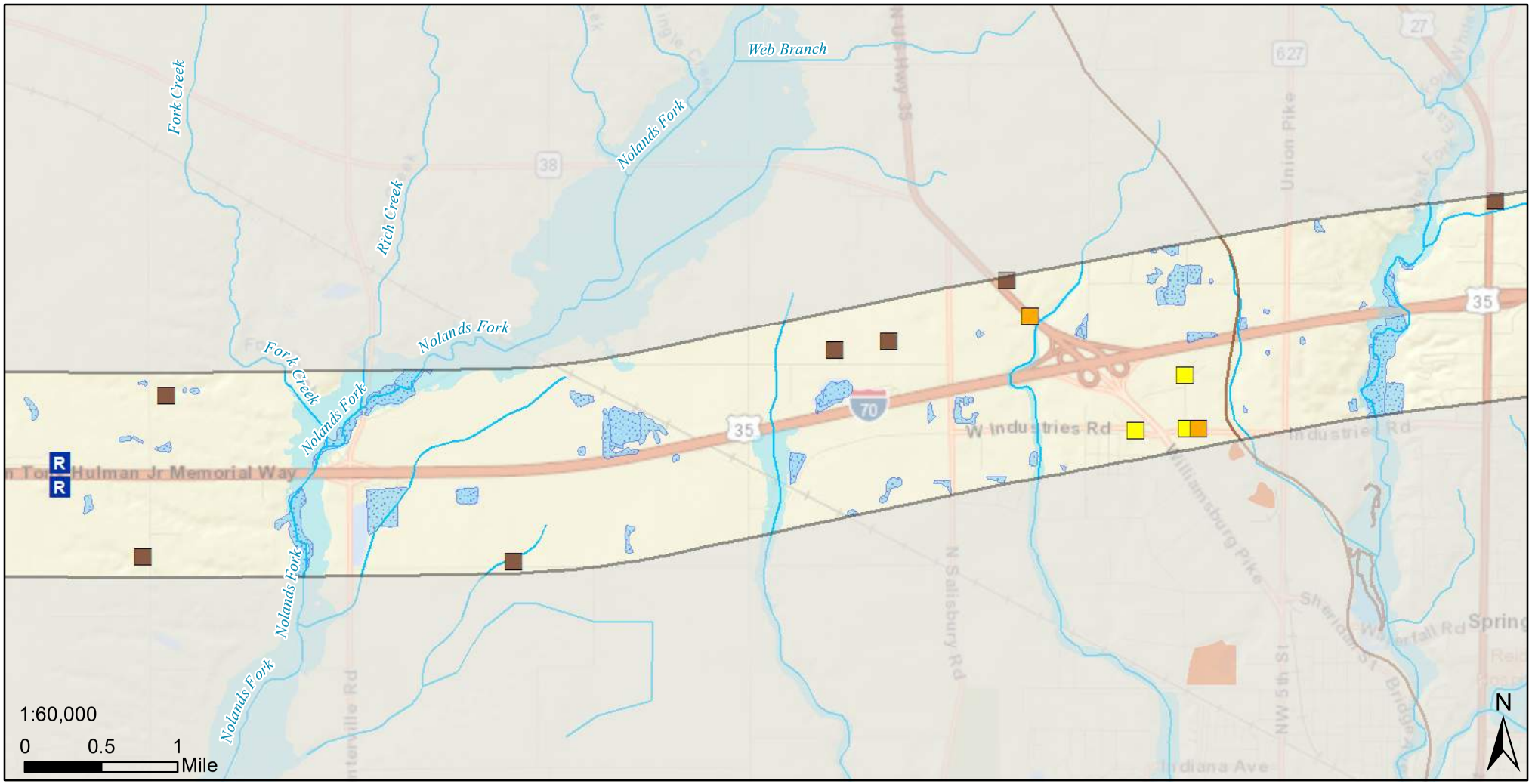
Corridor 3 - I-70 East

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
- Major Stream
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile





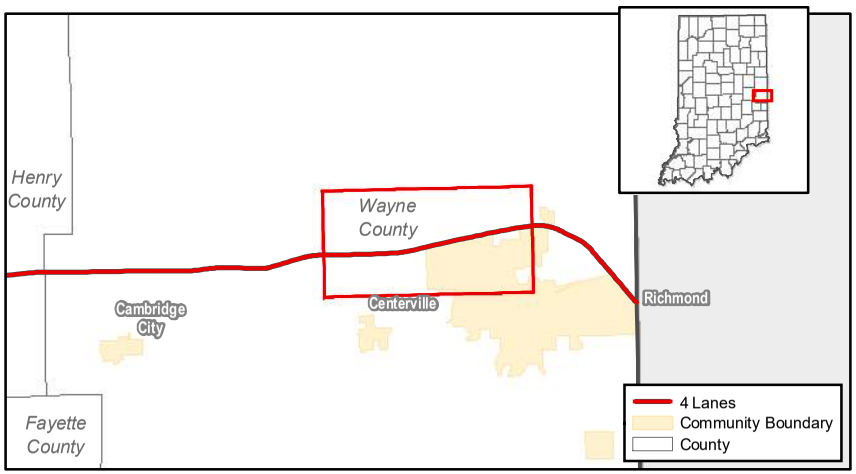
Environmental Resources

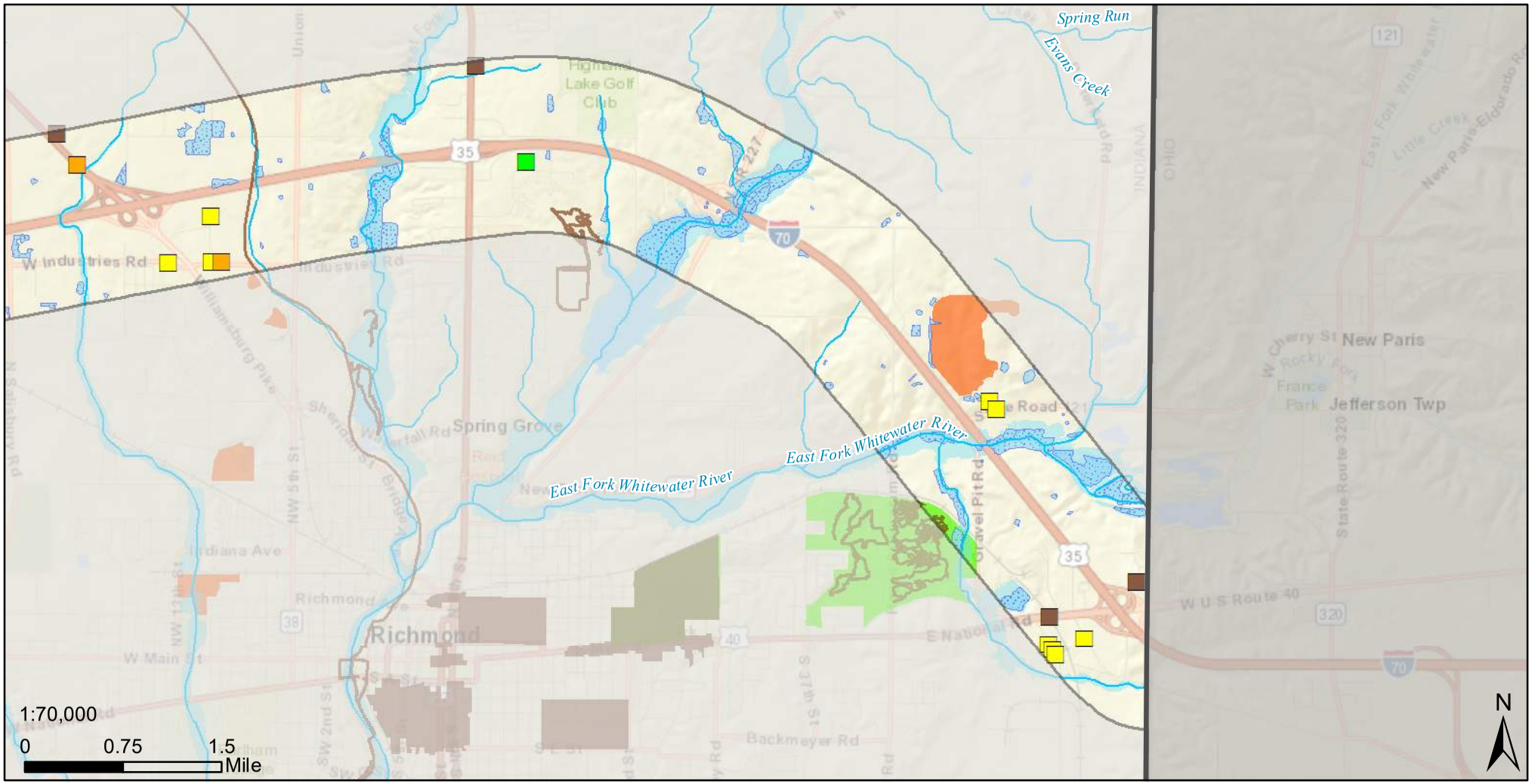
Corridor 3 - I-70 East

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
- Rest Areas
- Major Stream
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile





Environmental Resources

Corridor 3 - I-70 East

Map Date: 11/20/2018

Legend

- Recreational Facility
- Managed Lands
- Superfund Site
- State Cleanup Site
- Other Hazardous Materials Concerns
- Landfill
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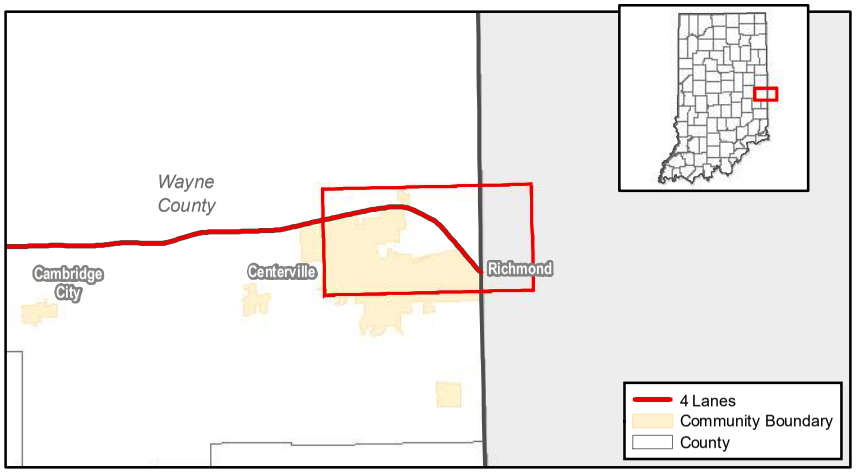
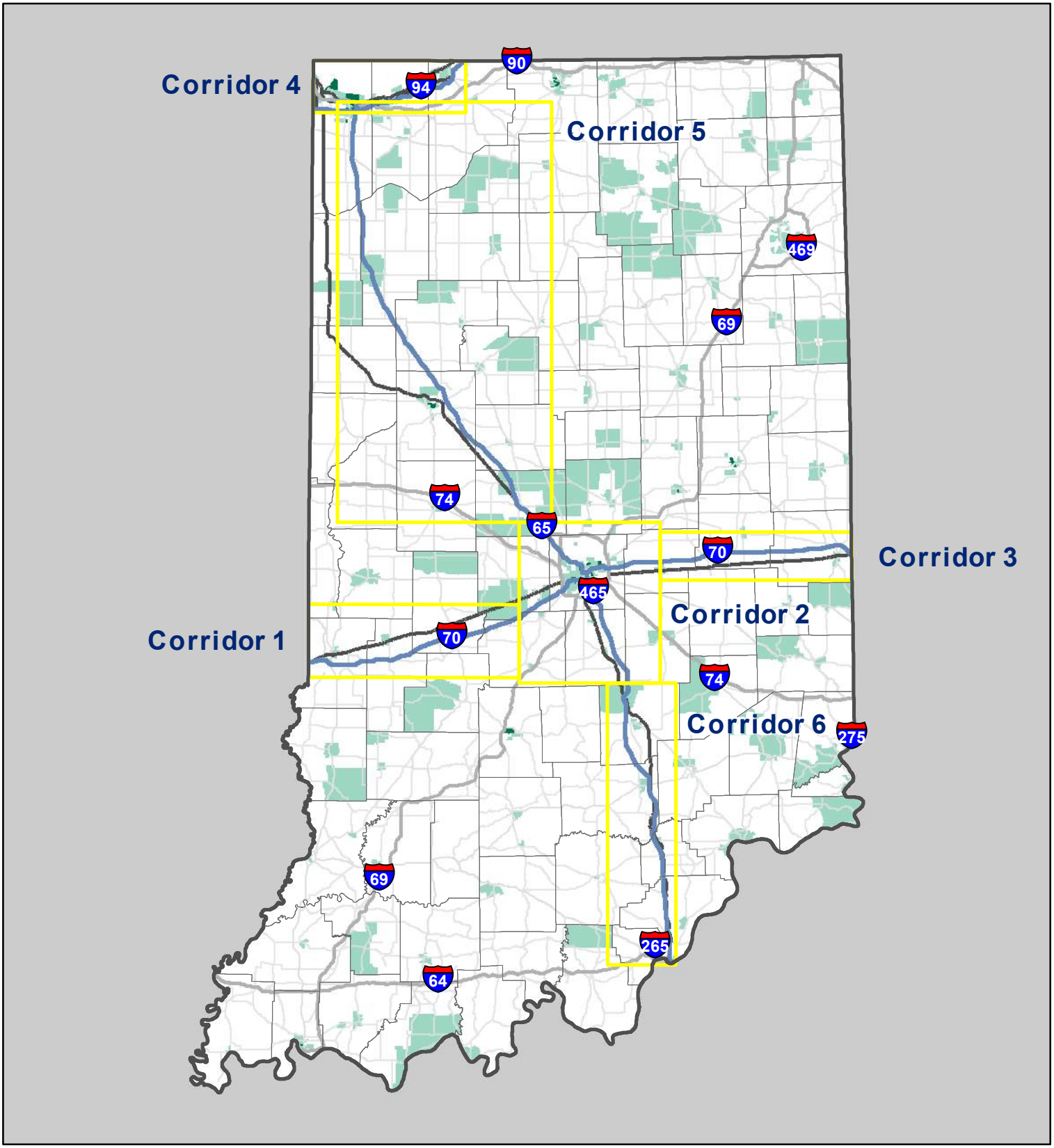
- Exceptional or Outstanding Stream
- NWI Wetlands
- Floodplain
- Trail
- Potential National Register Site
- National Register Historic Site
- National Register Historic District
- State Border
- Outside 1/2 Mile



SECTION C: SOCIOECONOMIC MAPS

Displays the Low Income, Minority and Low English Proficiency by state and then by each of the six corridors.

Statewide Census Tracts
Meeting Low Income Criteria



Legend

- County Border
- State Border
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Low Income
- Census Tract >= 125% of COC

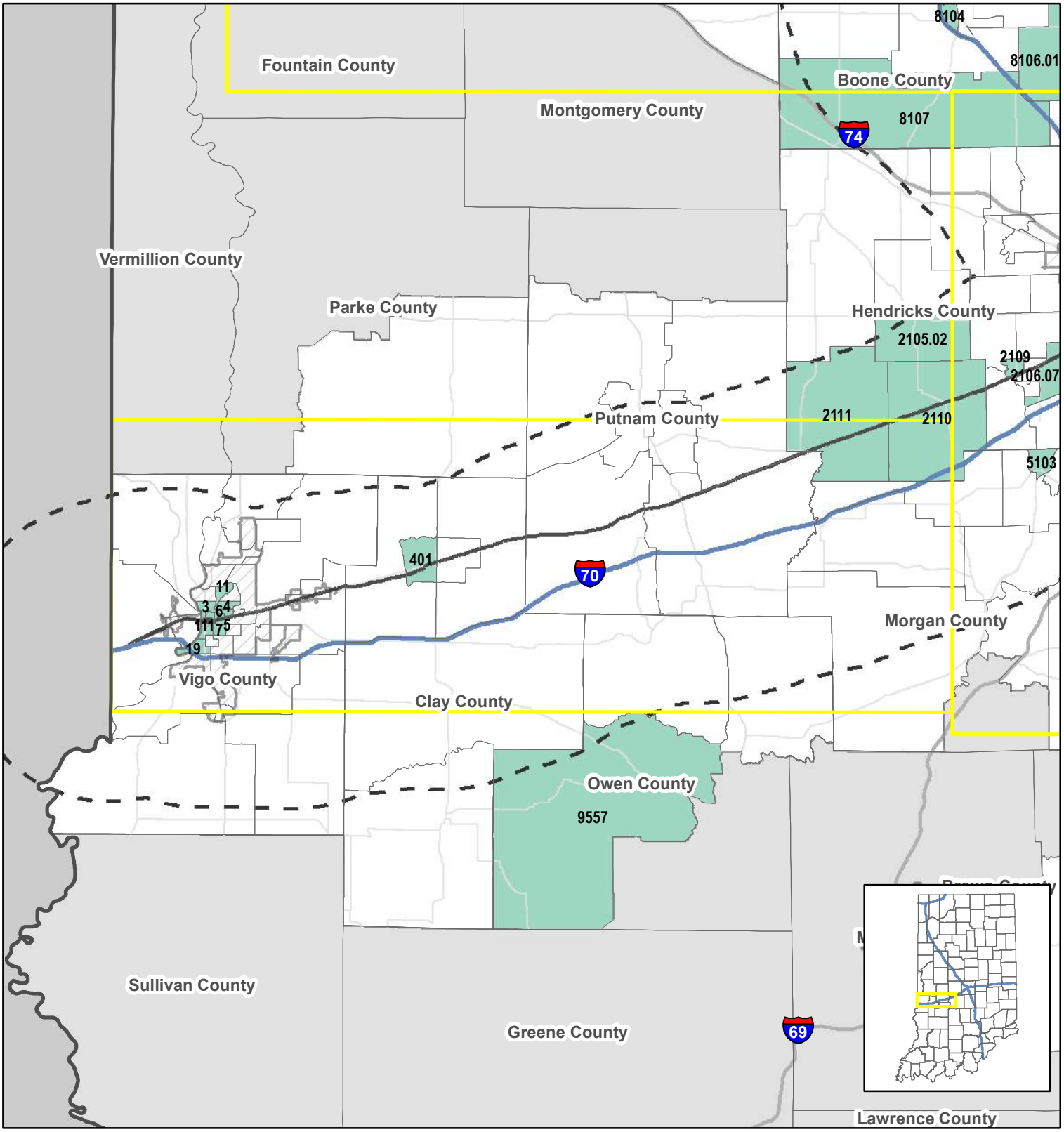
N

Source: 2012-2016 ACS 5-Year Estimates

0 30 60 Miles

Corridor 1

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Low Income
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

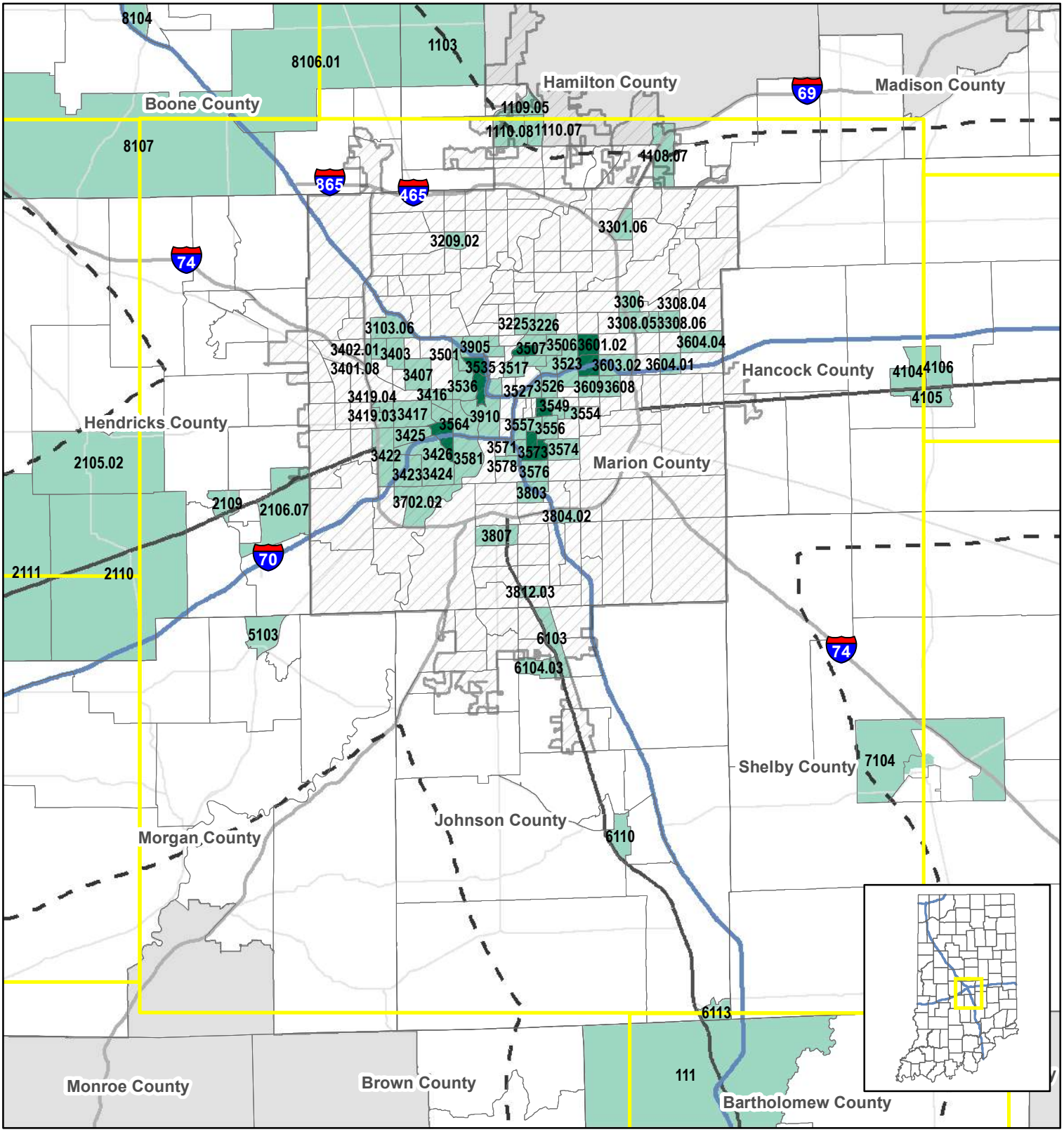
0 8 16 Miles

1:570,000

N

Corridor 2

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Low Income
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

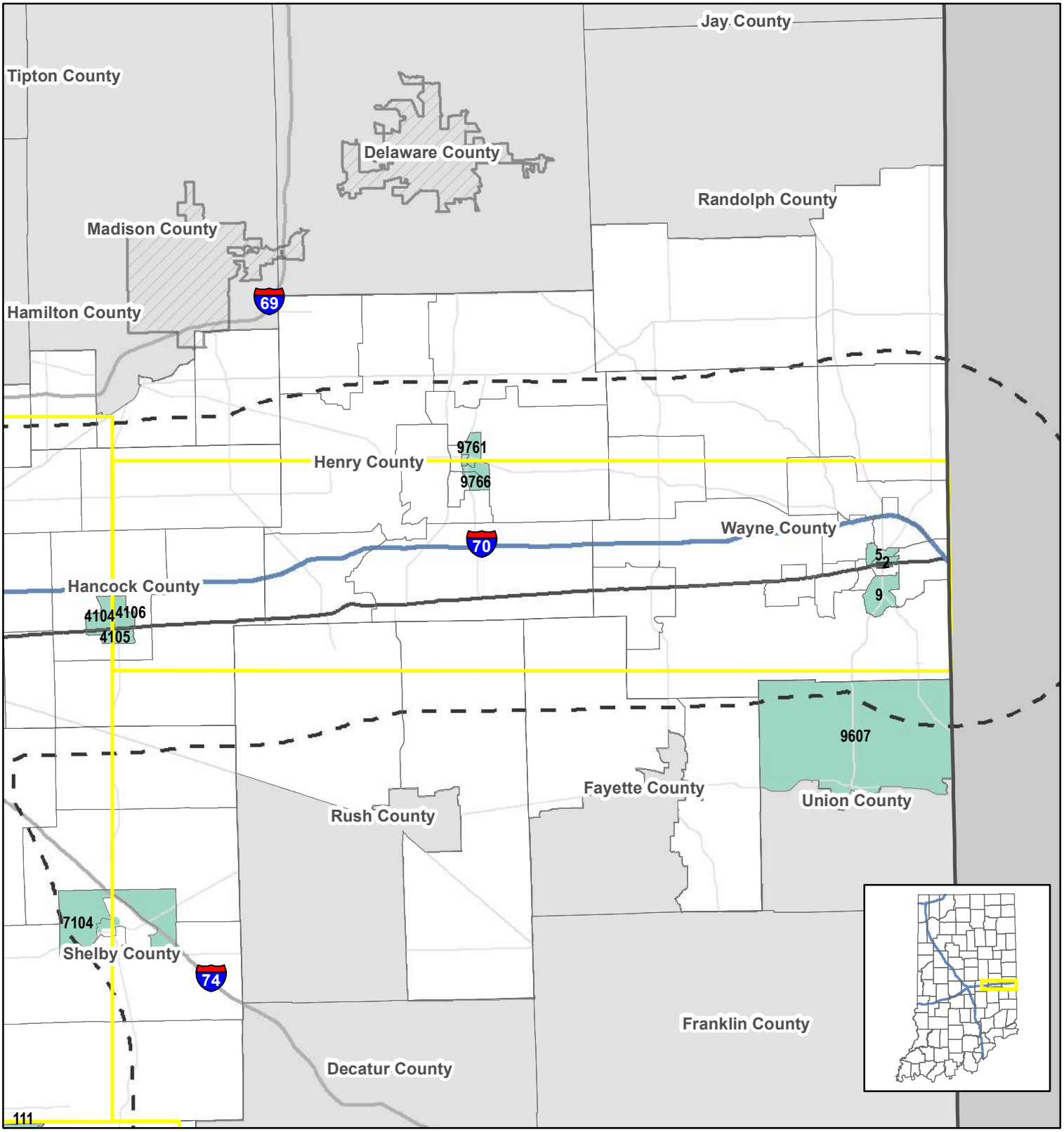
0 6 12 Miles

1:410,000

N

Corridor 3

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Low Income
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

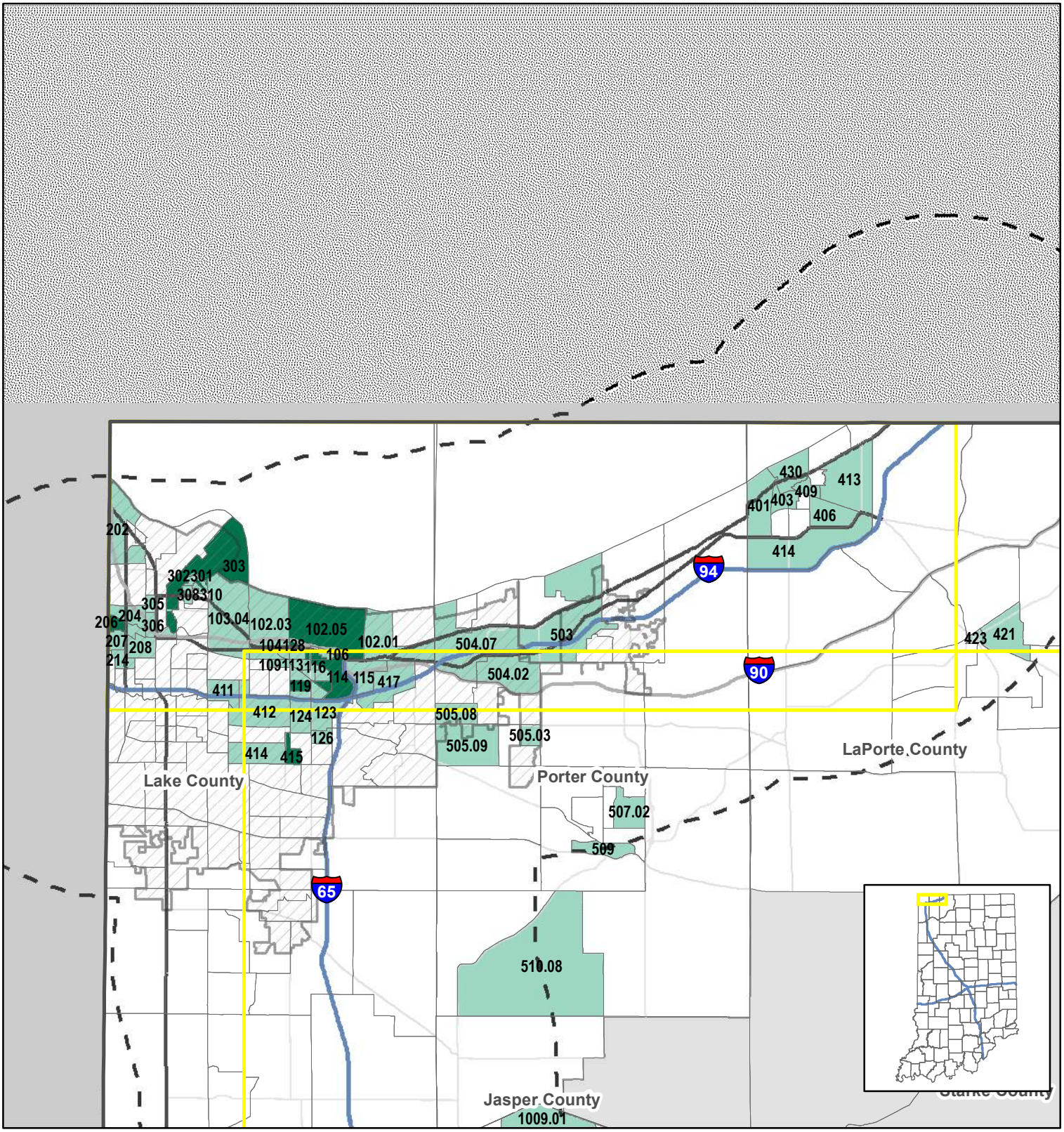
0 7.5 15 Miles

1:520,000

N

Corridor 4

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Low Income
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

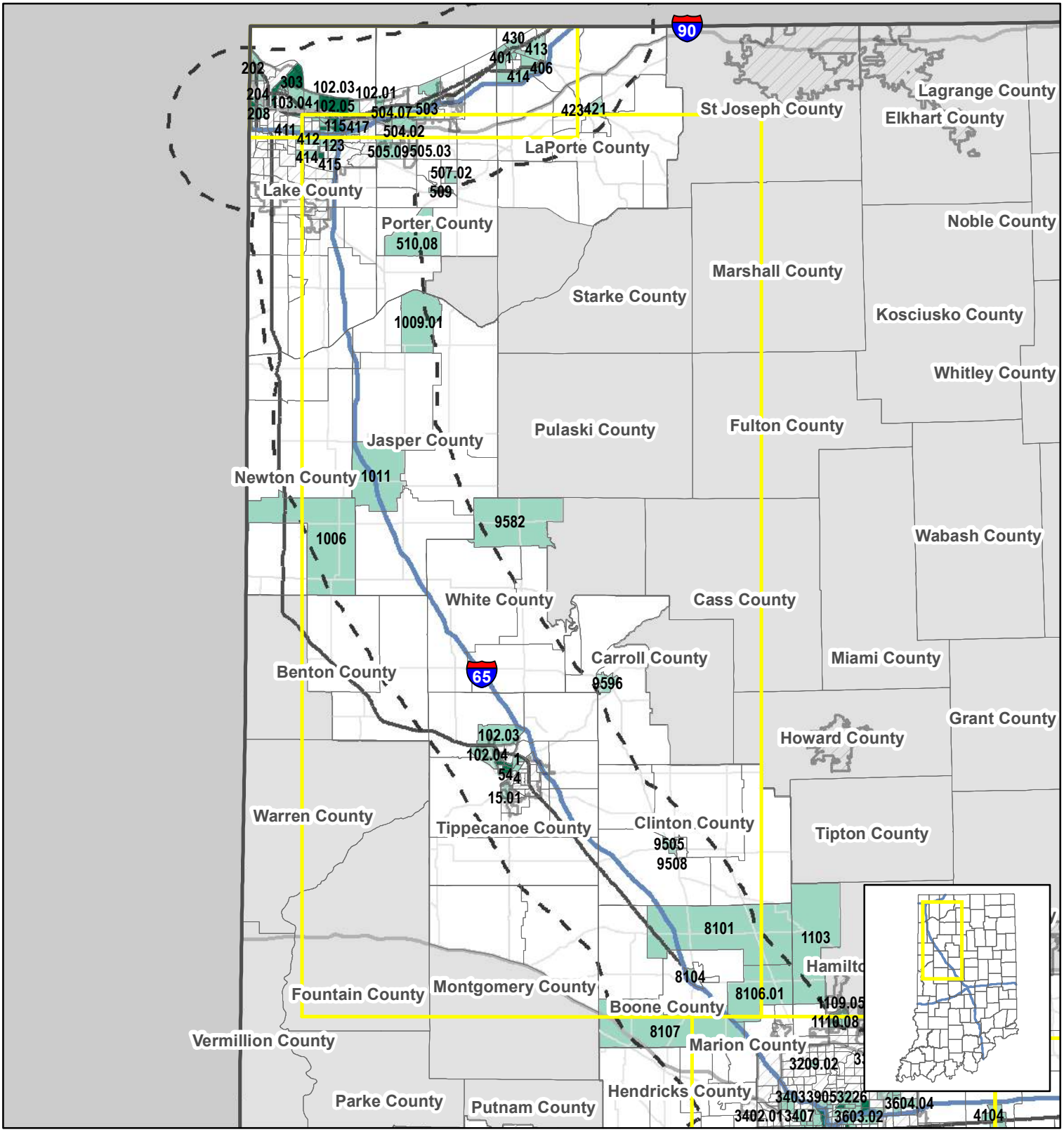
0 6 12 Miles

1:410,000

N

Corridor 5

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Low Income
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

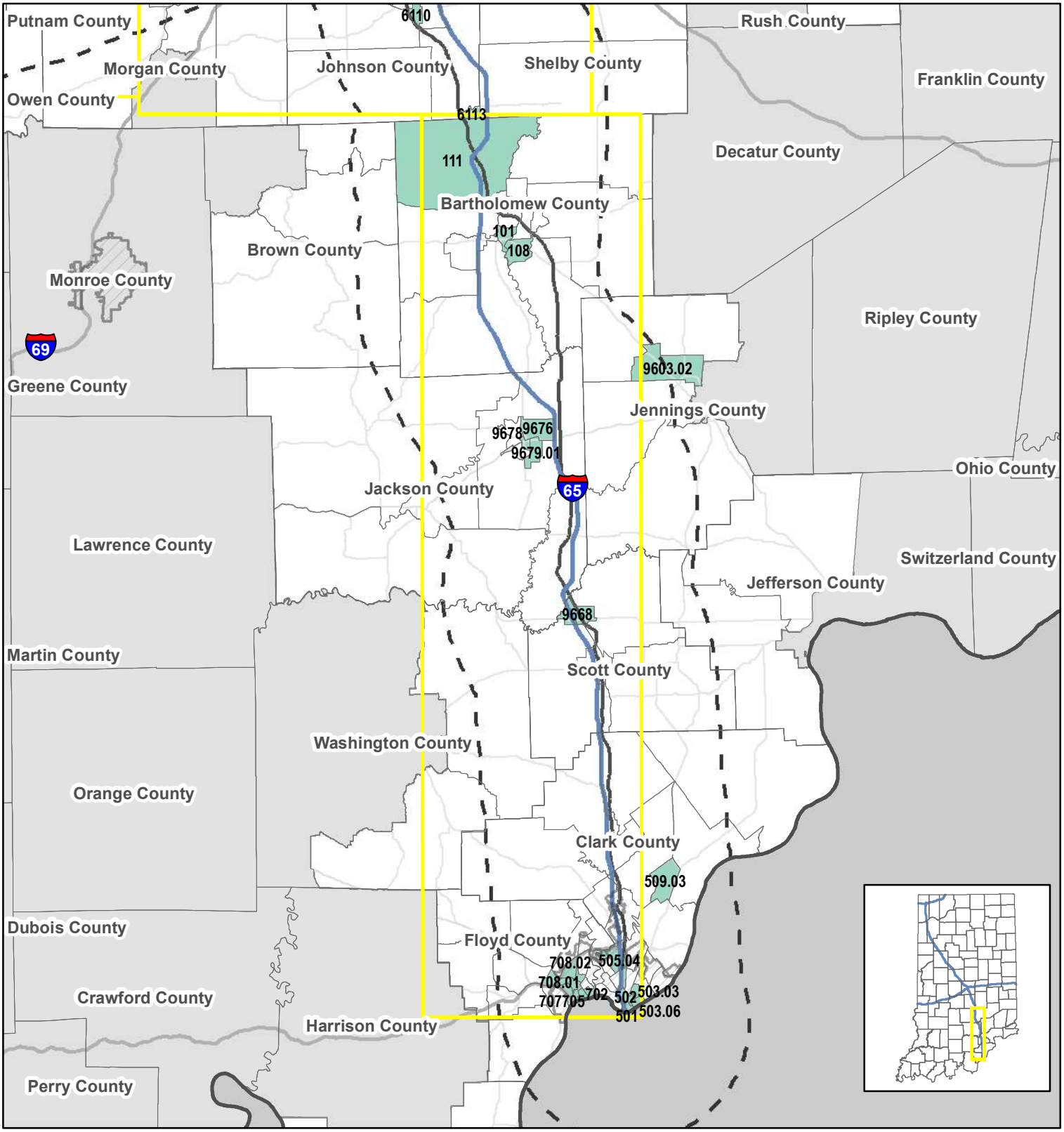
0 10 20 Miles

1:1,060,000

N

Corridor 6

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Low Income
- Census Tract >= 125% of COC (Tract Number Displayed)

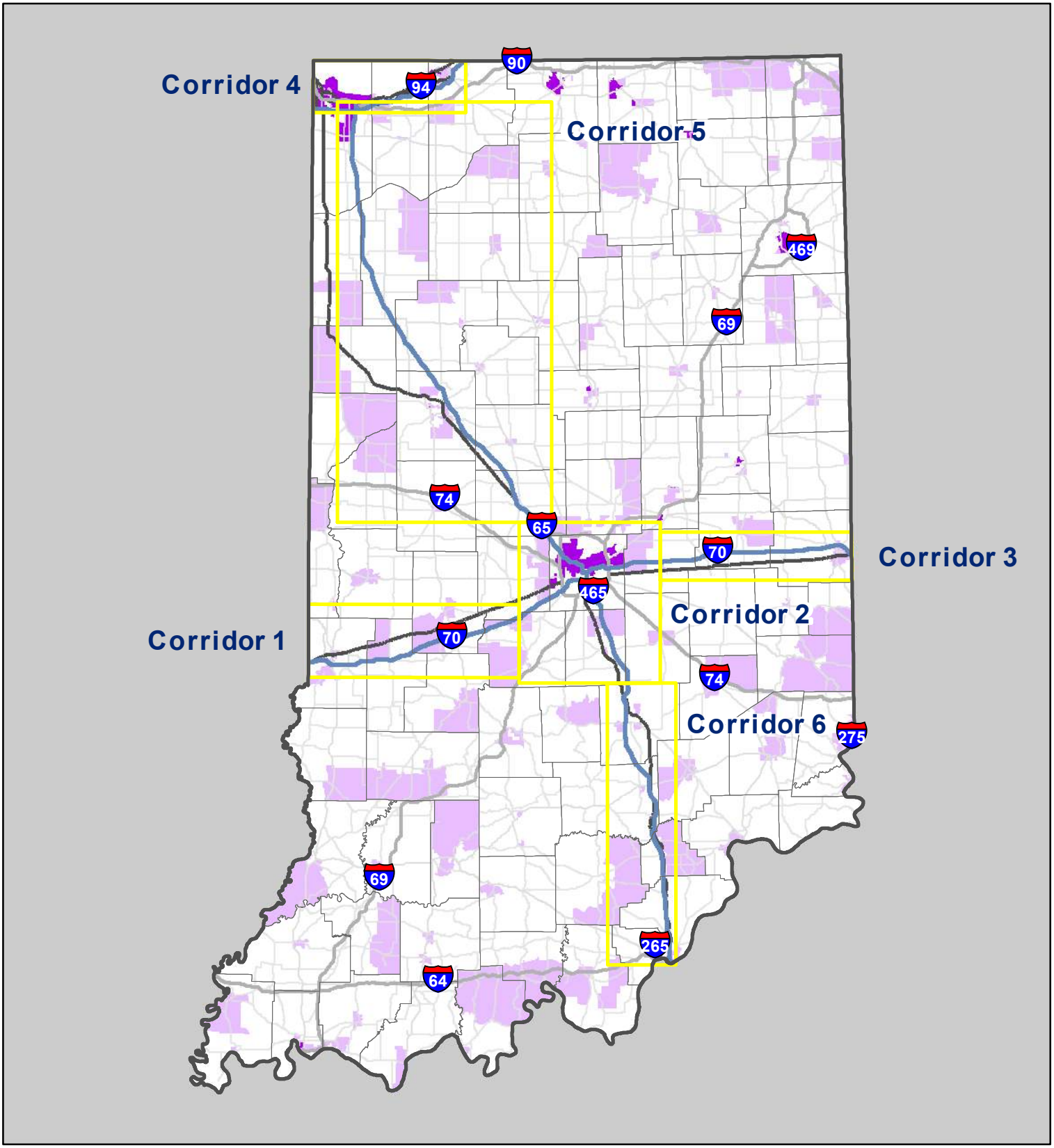
Source: 2012-2016 ACS 5-Year Estimates

0 10 20 Miles

1:710,000

N

Statewide Census Tracts Meeting Minority Criteria



Legend

- County Border
- State Border
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Minority
- Census Tract >= 125% of COC

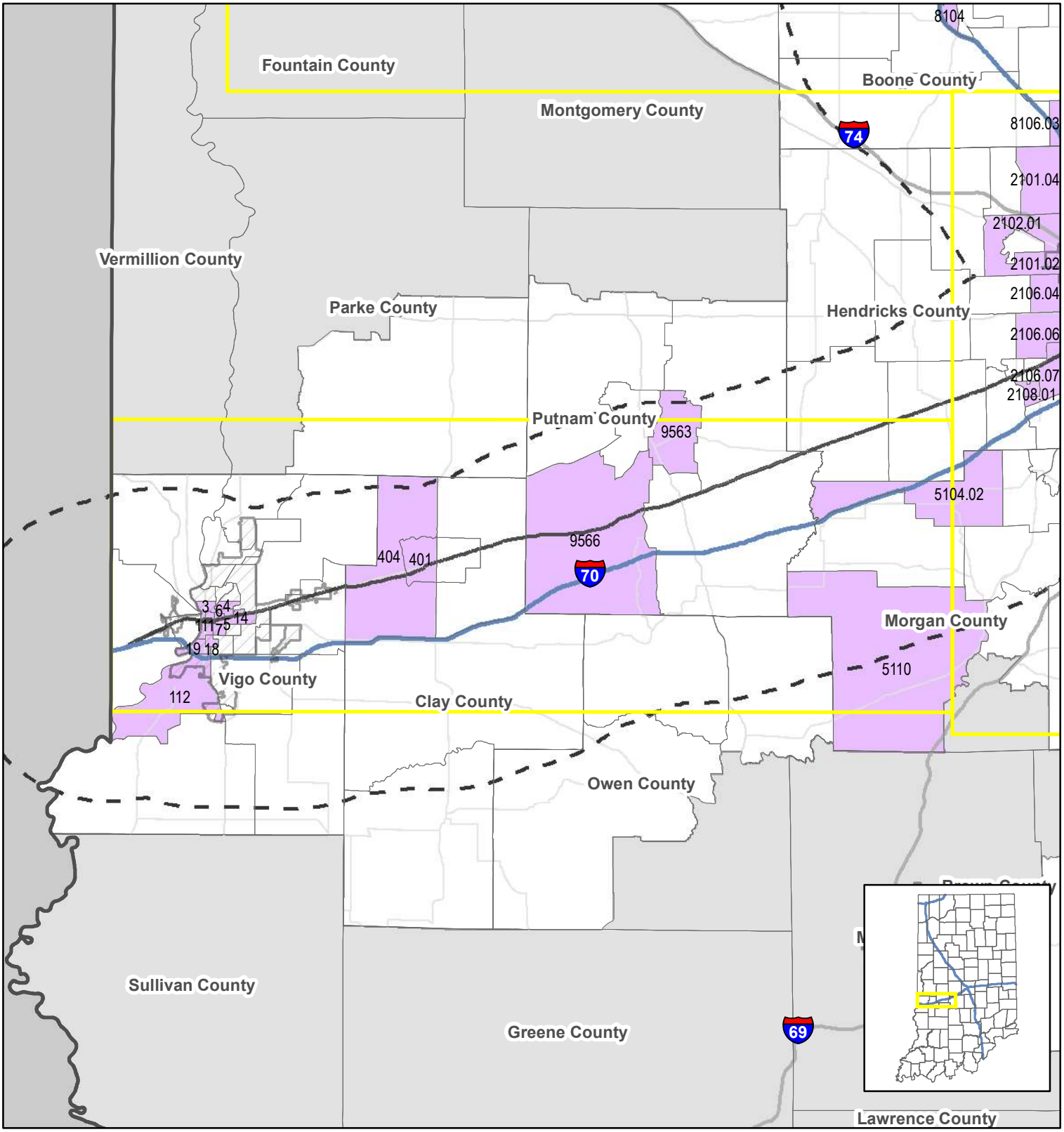
N

Source: 2012-2016 ACS 5-Year Estimates

0 30 60 Miles

Corridor 1

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Minority
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

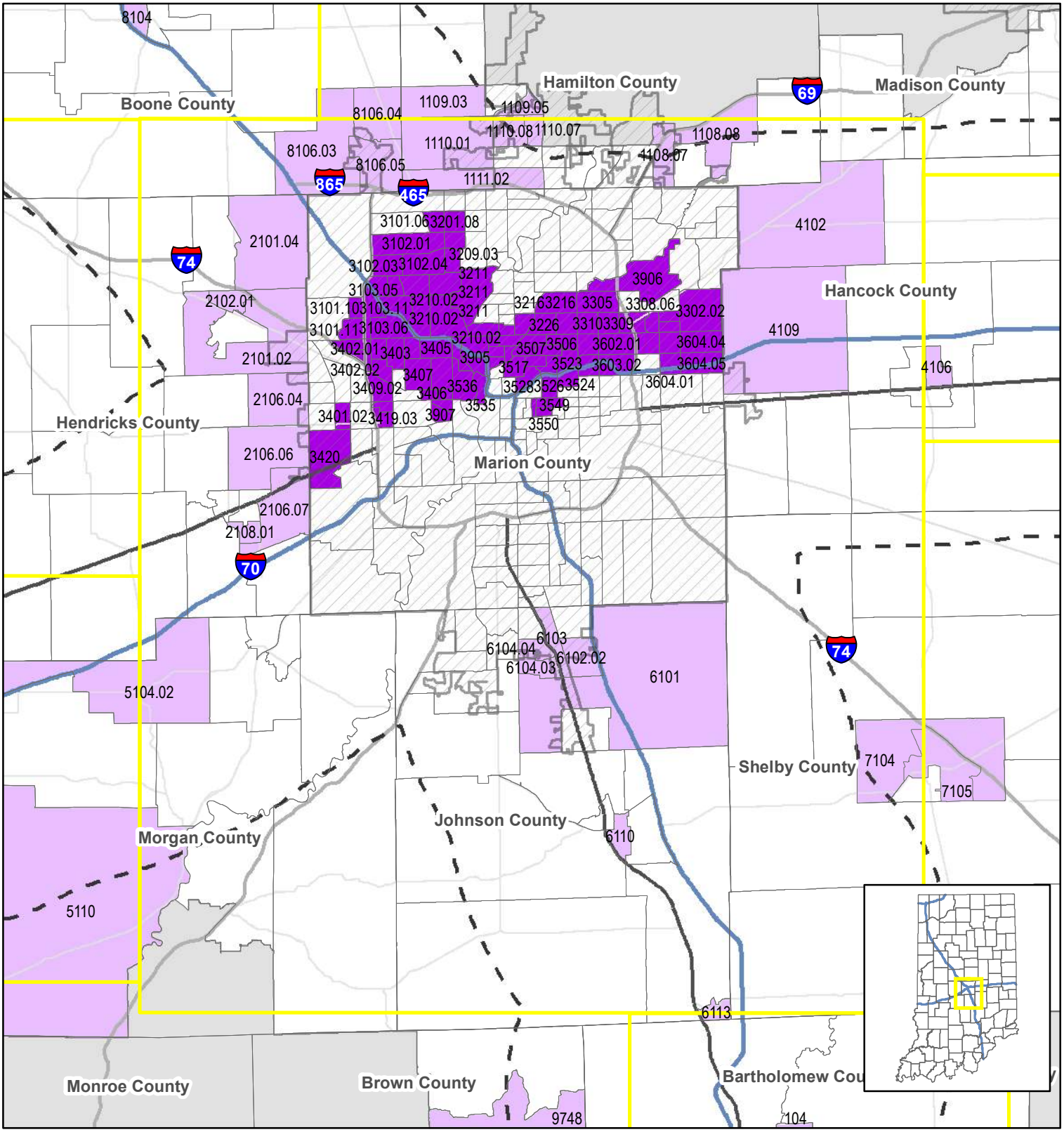
0 8 16 Miles

1:570,000

N

Corridor 2

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Minority
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

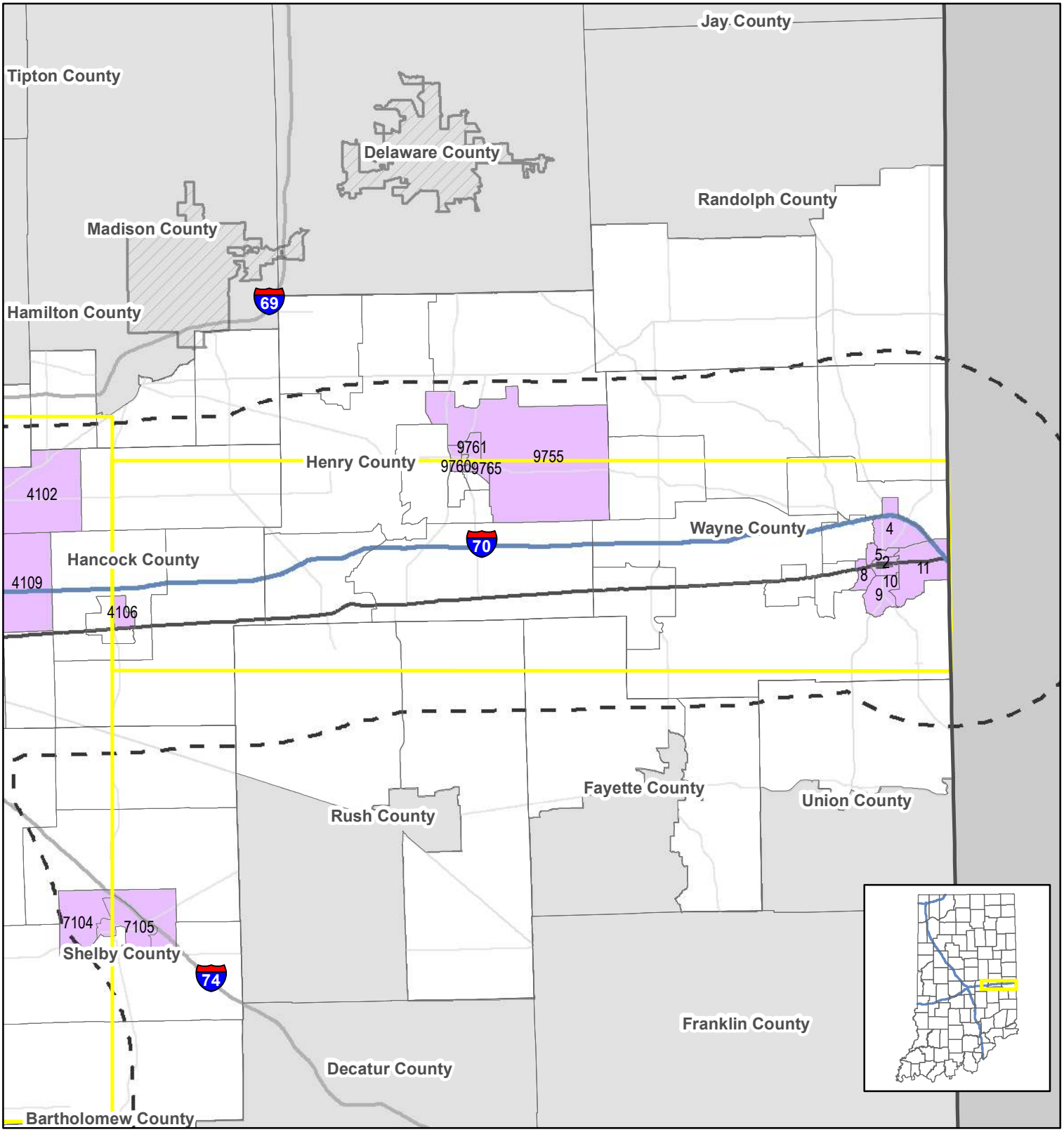
0 6 12 Miles

1:410,000

N

Corridor 3

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Minority
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

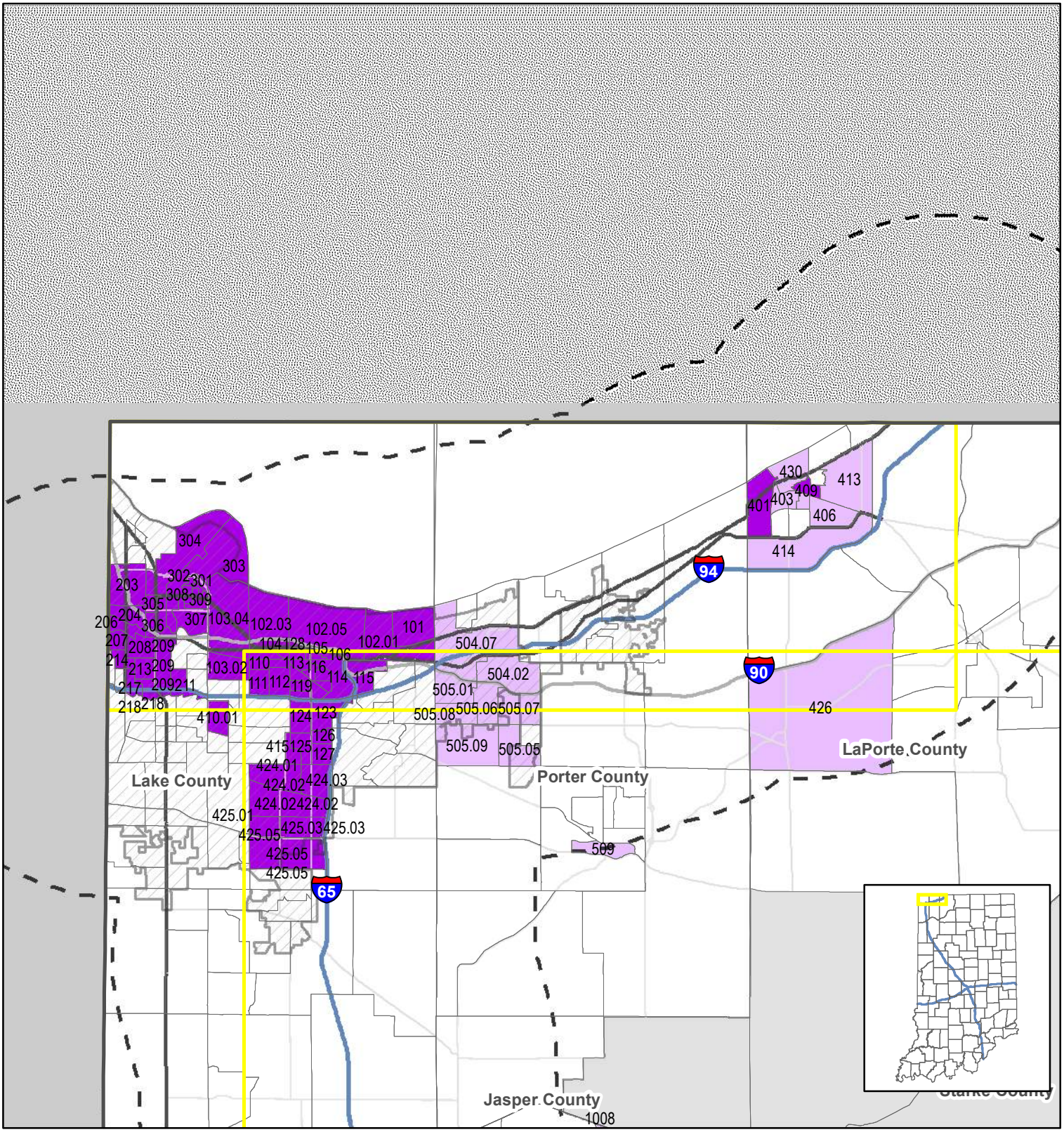
0 7.5 15 Miles

1:520,000

N

Corridor 4

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Minority
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

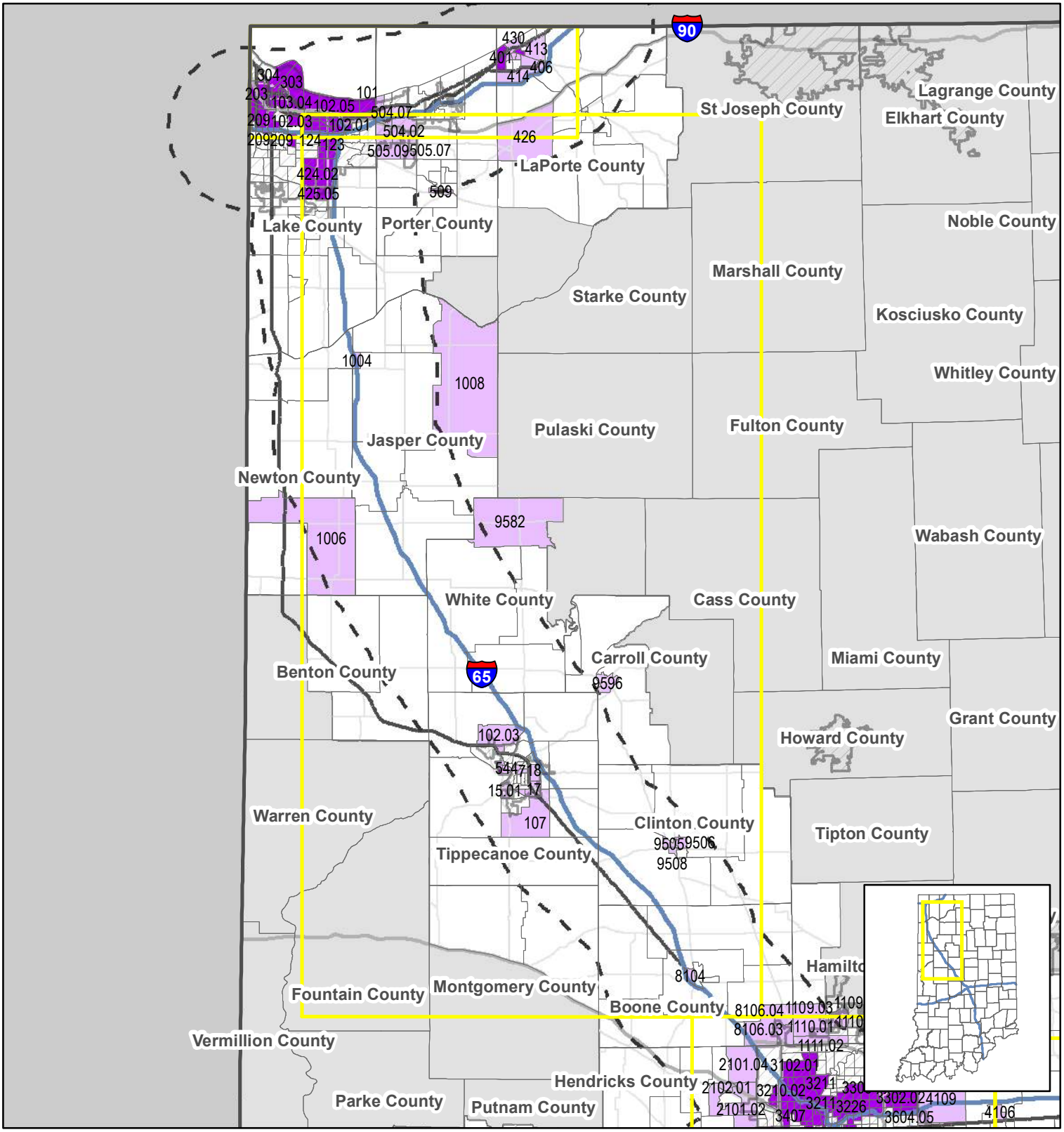
0 6 12 Miles

1:410,000

N

Corridor 5

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Minority
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2012-2016 ACS 5-Year Estimates

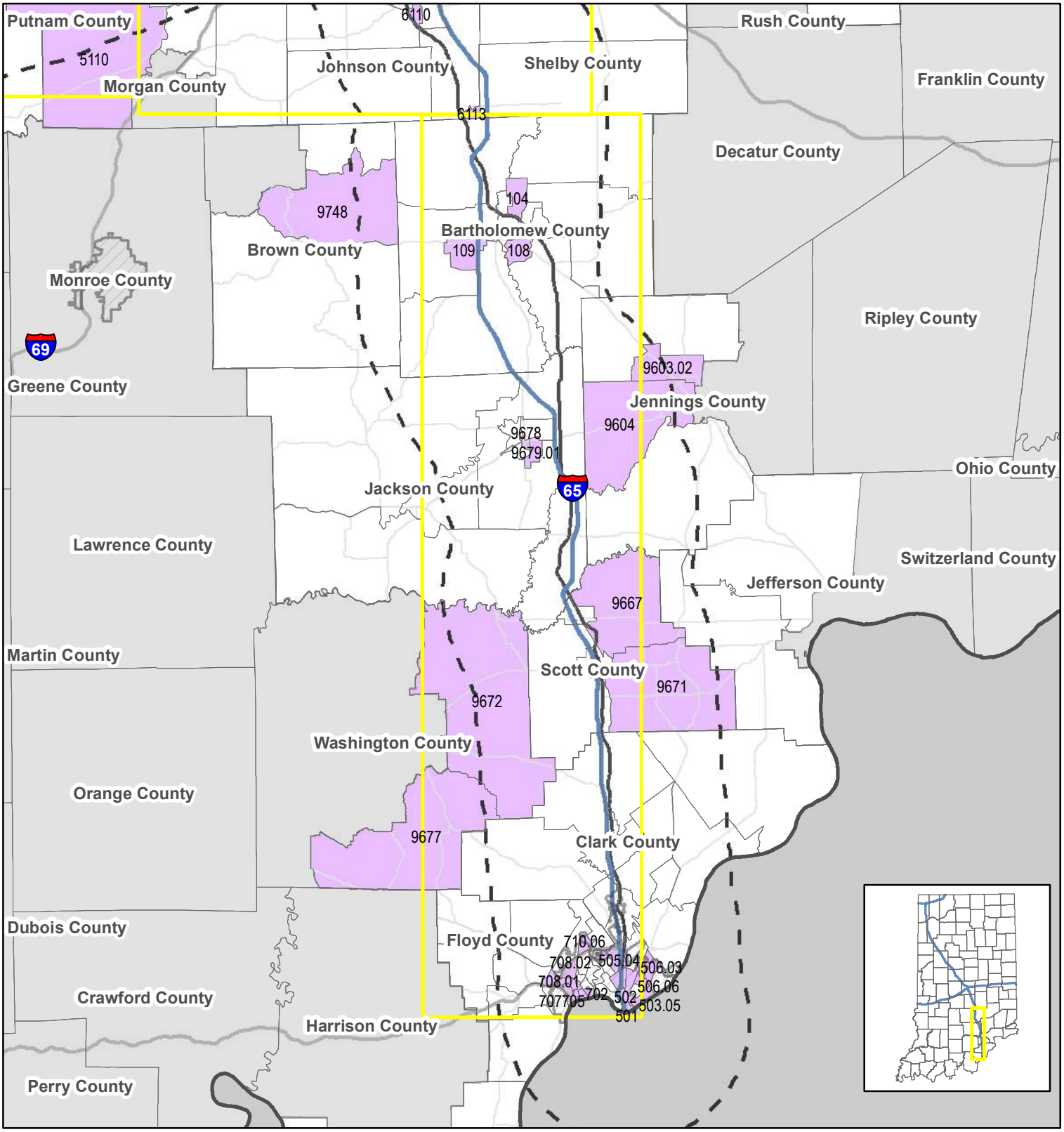
0 10 20 Miles

1:1,060,000

N

Corridor 6

Census Tracts Meeting Minority Criteria



Legend

- Urban Area Boundary
- County Border
- State Border
- Socioeconomic Study Area
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >50% Minority
- Census Tract >= 125% of COC (Tract Number Displayed)

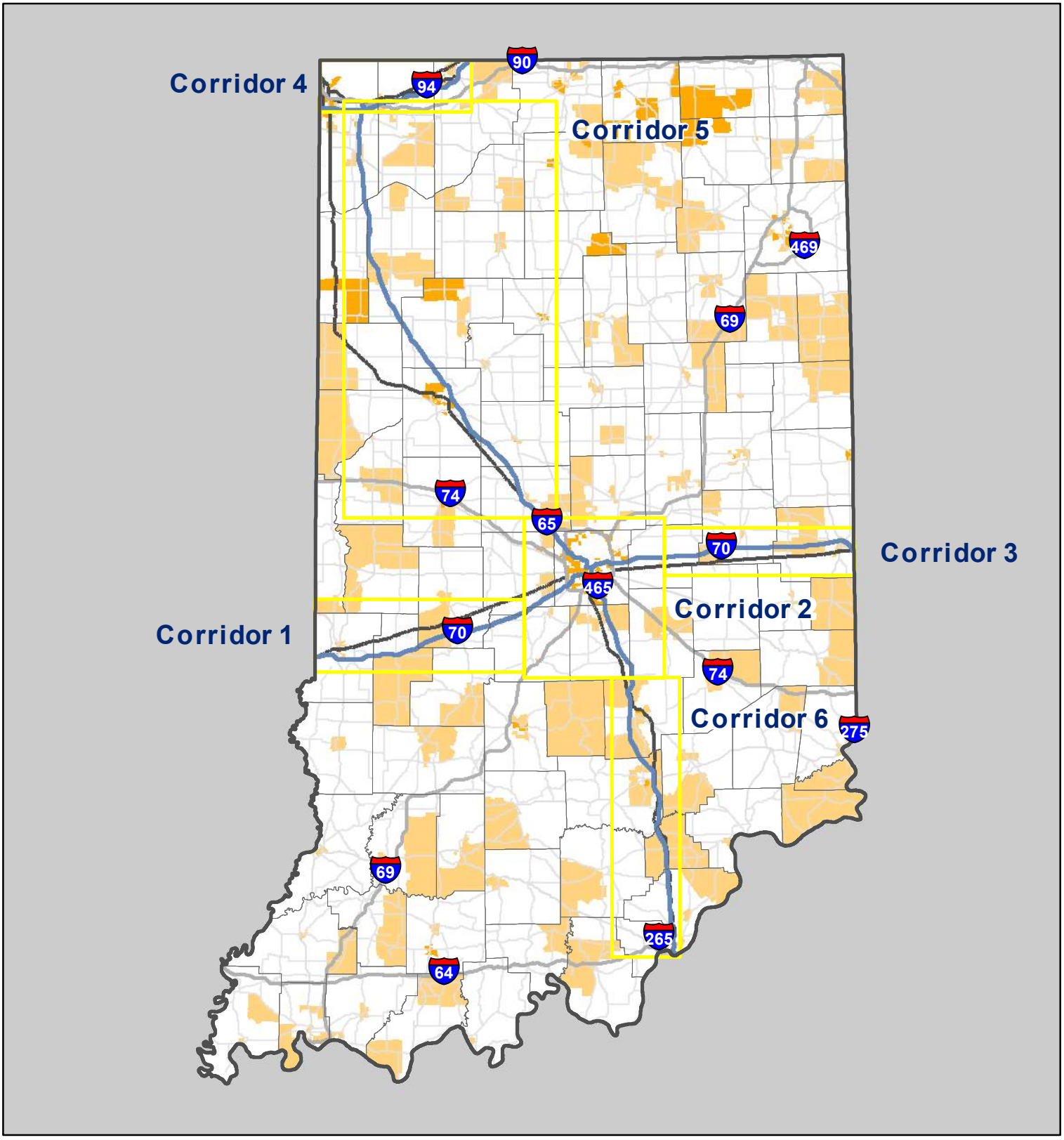
Source: 2012-2016 ACS 5-Year Estimates

0 10 20 Miles

1:710,000

N

Statewide Census Tracts Meeting Limited English Proficiency Criteria



Legend

- County Border
- State Border
- Corridor Boundary
- Potential Toll Road
- Potential Alternative Route
- Census Tract >5% Limited English Proficiency
- Census Tract >= 125% of COC

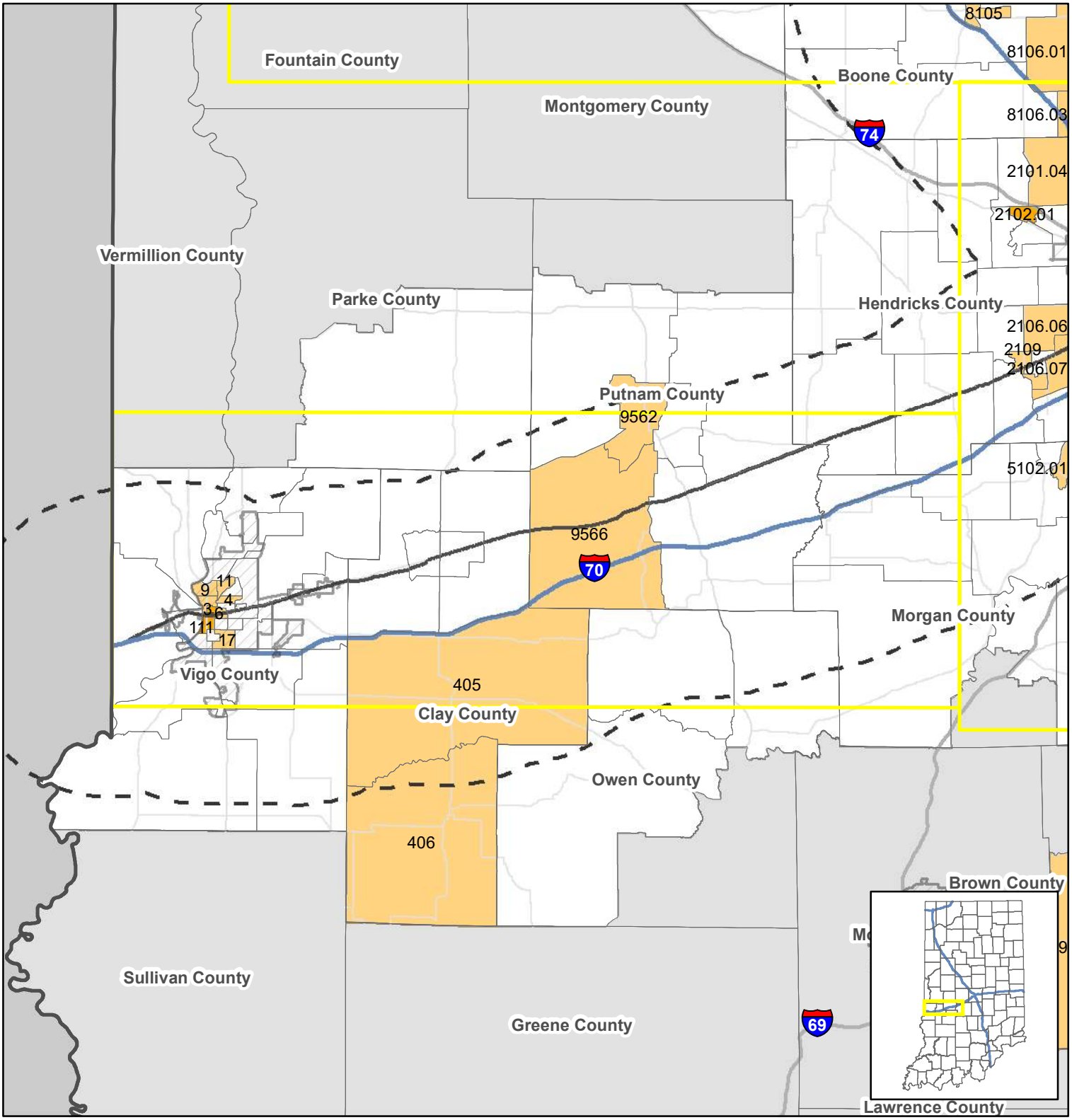
N

Source: 2011-2015 ACS 5-Year Estimates

0 30 60 Miles

Corridor 1

Census Tracts Meeting Limited English Proficiency Criteria



Legend

- County Border
- State Border
- Corridor Boundary
- Socioeconomic Study Area
- Potential Toll Road
- Potential Alternative Route
- Census Tract >5% Limited English Proficiency
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2011-2015 ACS 5-Year Estimates

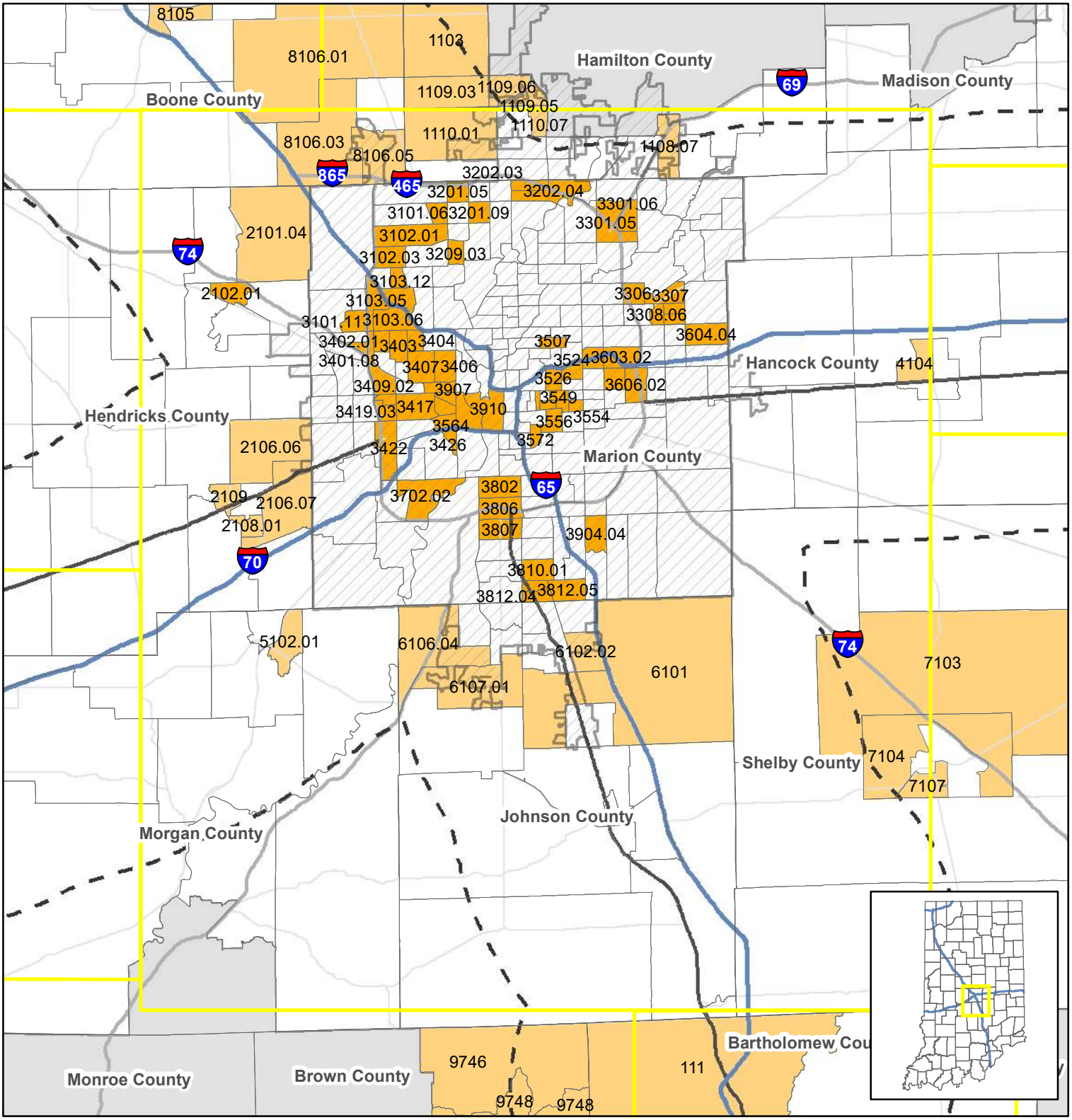
N

0 8 16 Miles

1:570,000

Corridor 2

Census Tracts Meeting Limited English Proficiency Criteria



Legend

- County Border
- State Border
- Corridor Boundary
- Socioeconomic Study Area
- Potential Toll Road
- Potential Alternative Route
- Census Tract >5% Limited English Proficiency
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2011-2015 ACS 5-Year Estimates

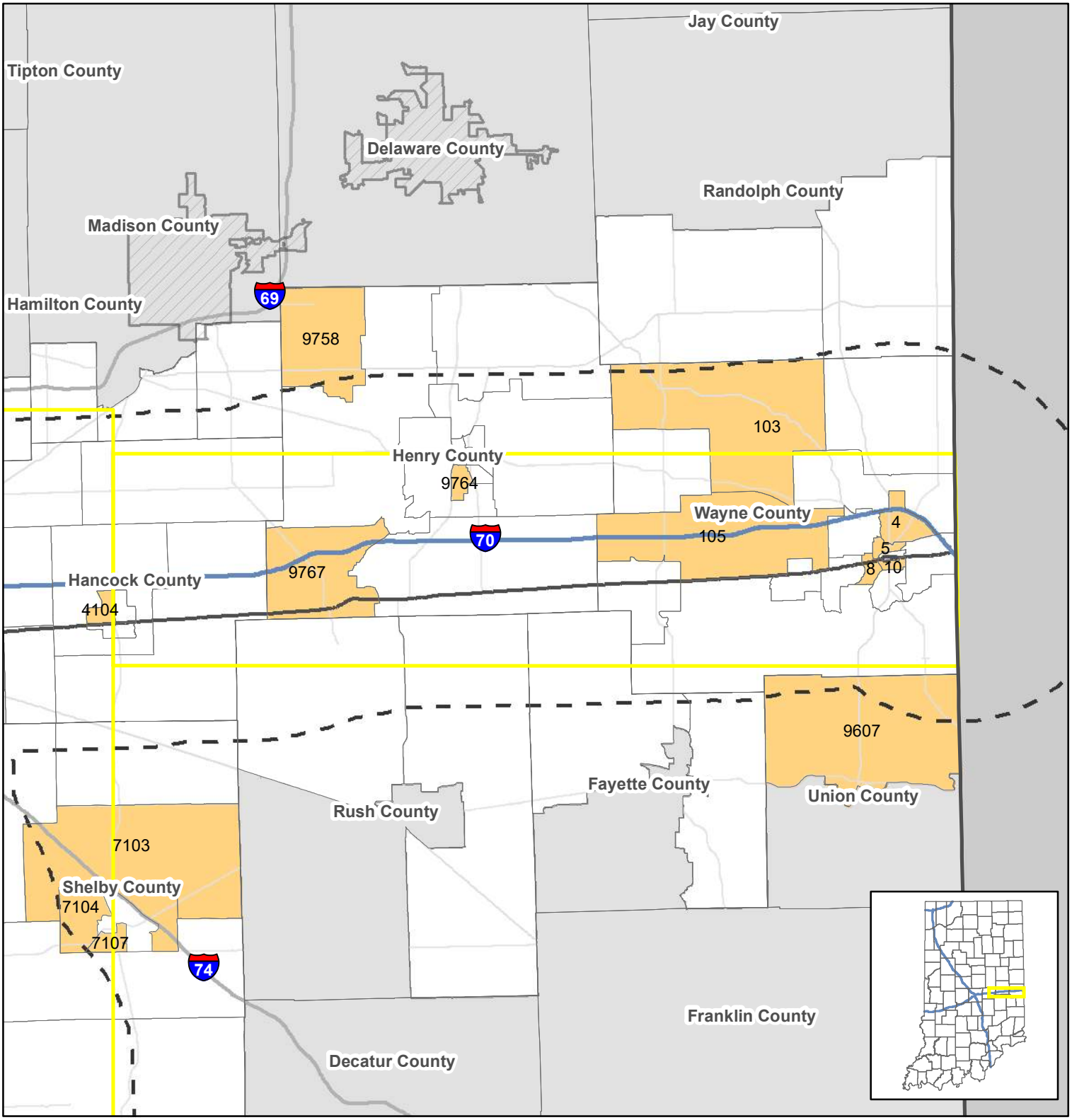
N

0 6 12 Miles

1:410,000

Corridor 3

Census Tracts Meeting Limited English Proficiency Criteria



Legend

- County Border
- State Border
- Corridor Boundary
- Socioeconomic Study Area
- Potential Toll Road
- Potential Alternative Route
- Census Tract >5% Limited English Proficiency
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2011-2015 ACS 5-Year Estimates

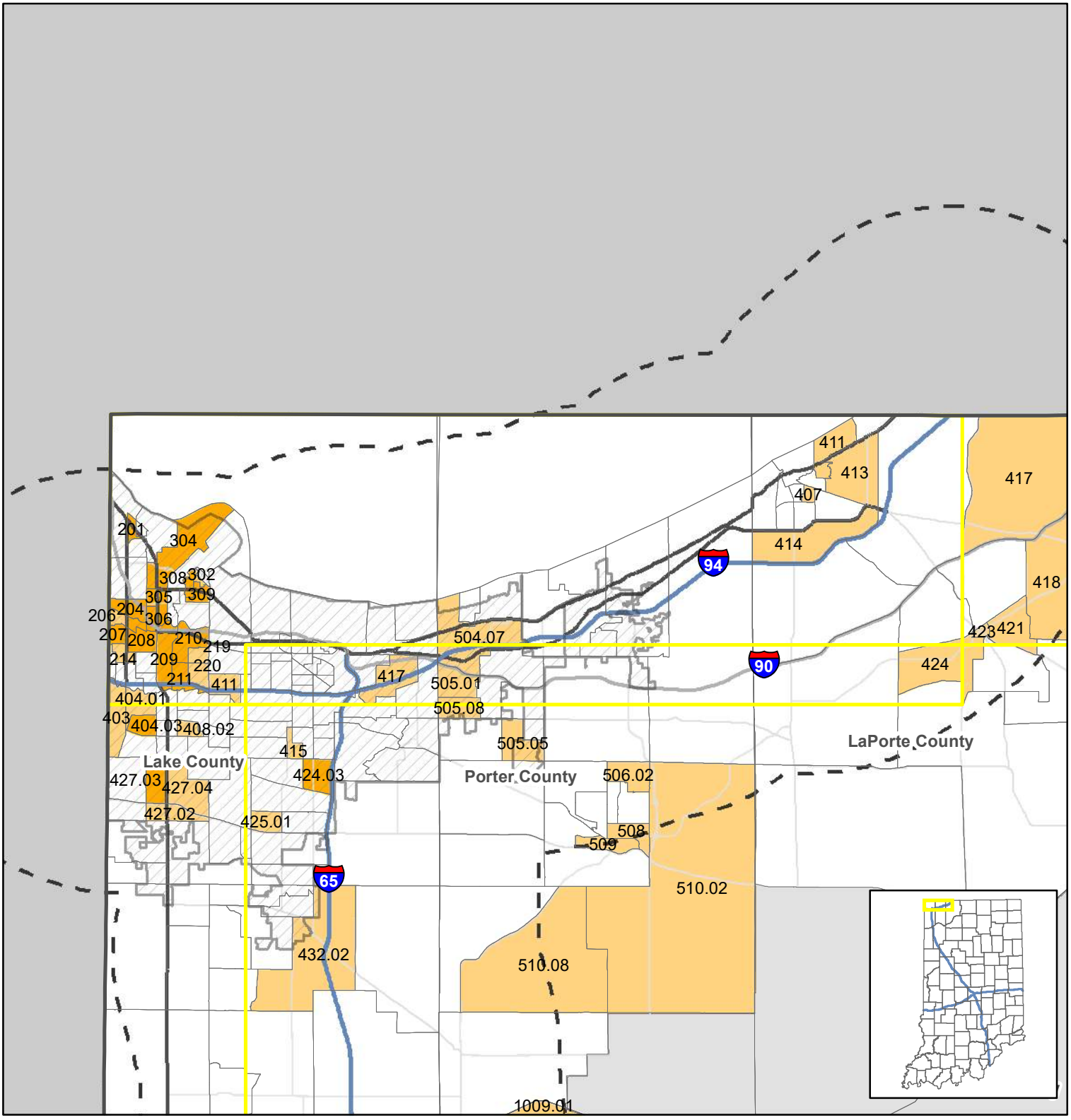
N

0 7.5 15 Miles

1:520,000

Corridor 4

Census Tracts Meeting Limited English Proficiency Criteria



Legend

- County Border
- State Border
- Corridor Boundary
- Socioeconomic Study Area
- Potential Toll Road
- Potential Alternative Route
- Census Tract >5% Limited English Proficiency
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2011-2015 ACS 5-Year Estimates

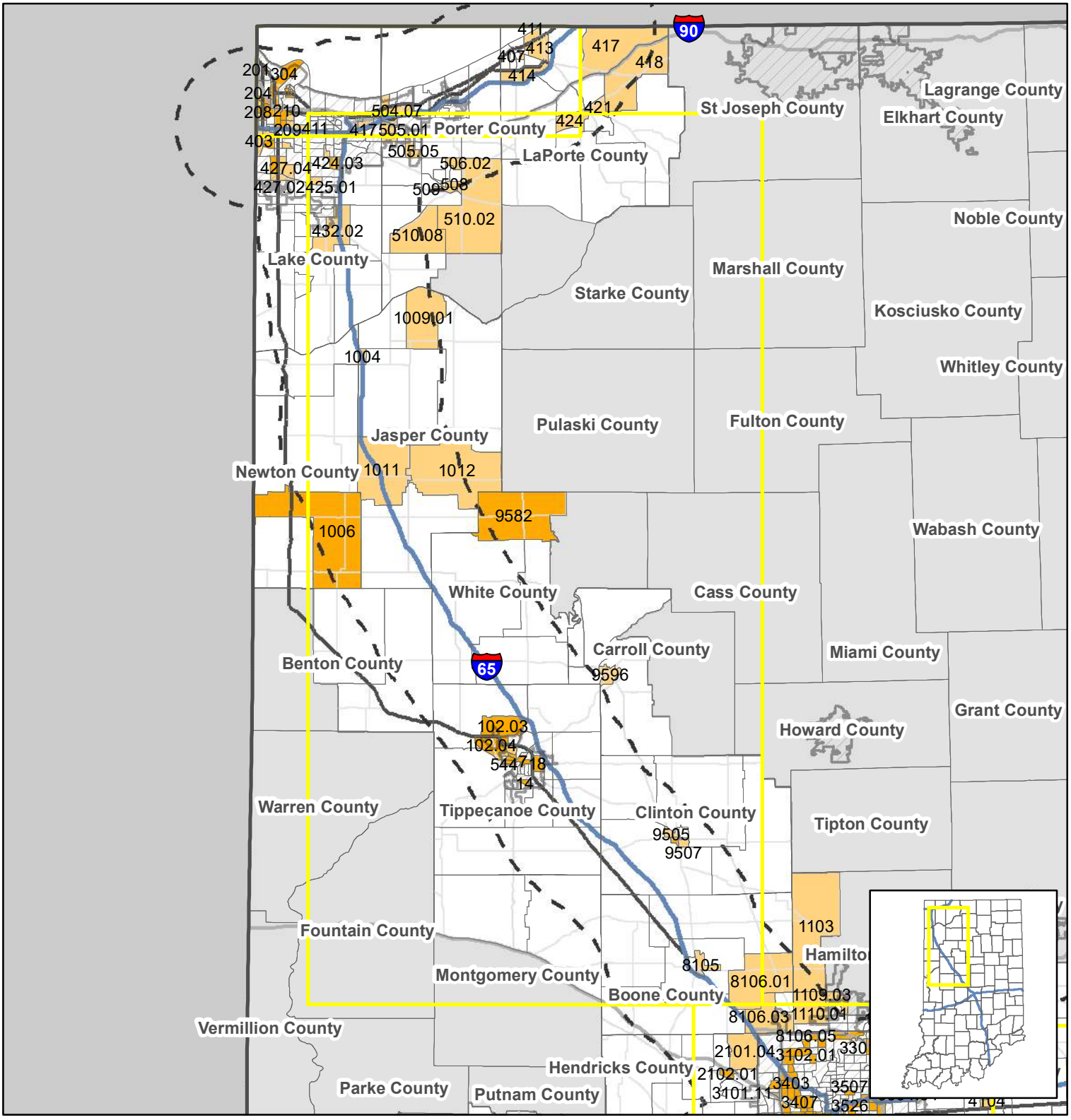
N

0 6 12 Miles

1:410,000

Corridor 5

Census Tracts Meeting Limited English Proficiency Criteria



Legend

- County Border
- State Border
- Corridor Boundary
- Socioeconomic Study Area
- Potential Toll Road
- Potential Alternative Route
- Census Tract >5% Limited English Proficiency
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2011-2015 ACS 5-Year Estimates

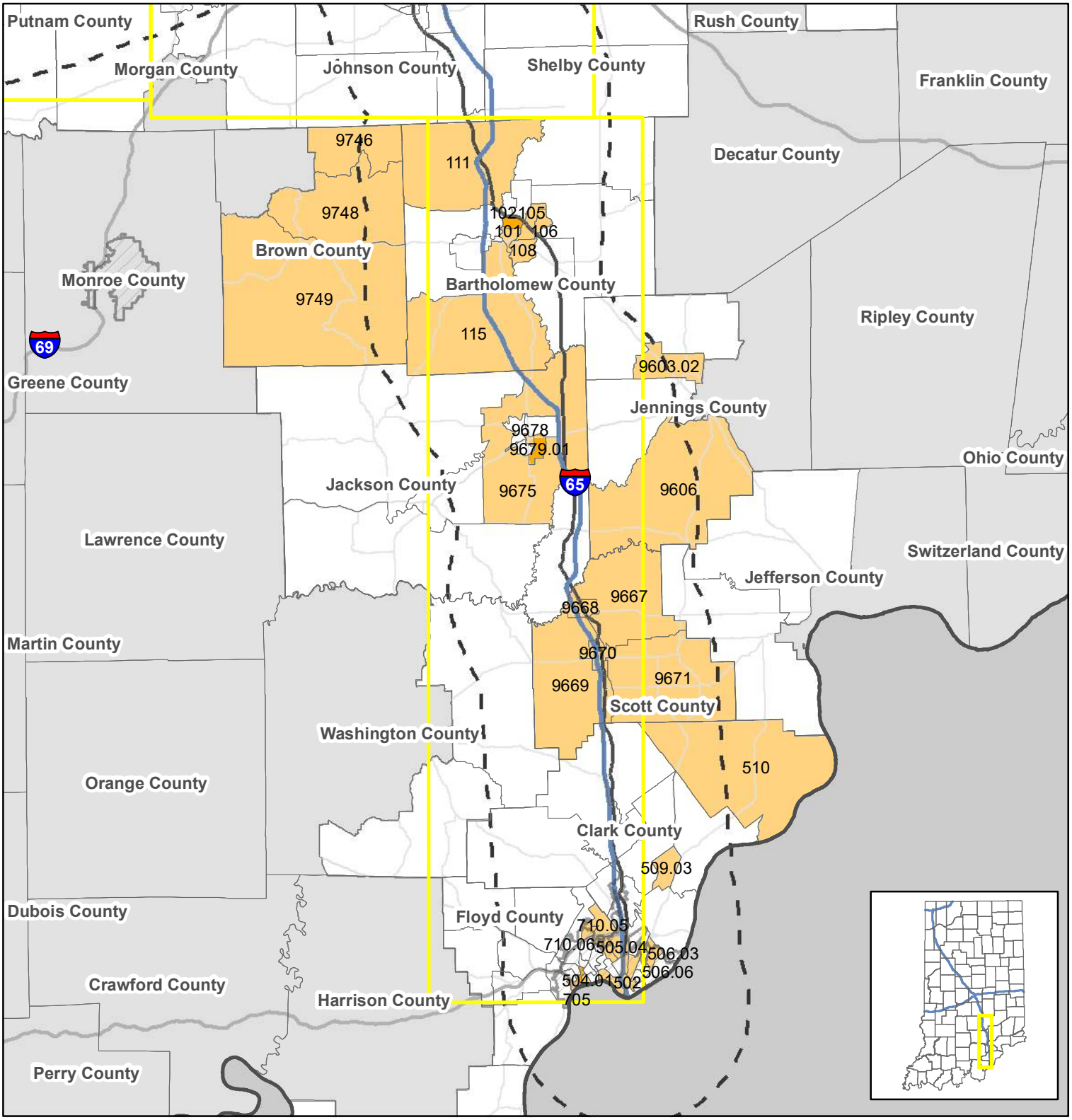
N

0 10 20 Miles

1:1,080,000

Corridor 6

Census Tracts Meeting Limited English Proficiency Criteria



Legend

- County Border
- State Border
- Corridor Boundary
- Socioeconomic Study Area
- Potential Toll Road
- Potential Alternative Route
- Census Tract >5% Limited English Proficiency
- Census Tract >= 125% of COC (Tract Number Displayed)

Source: 2011-2015 ACS 5-Year Estimates

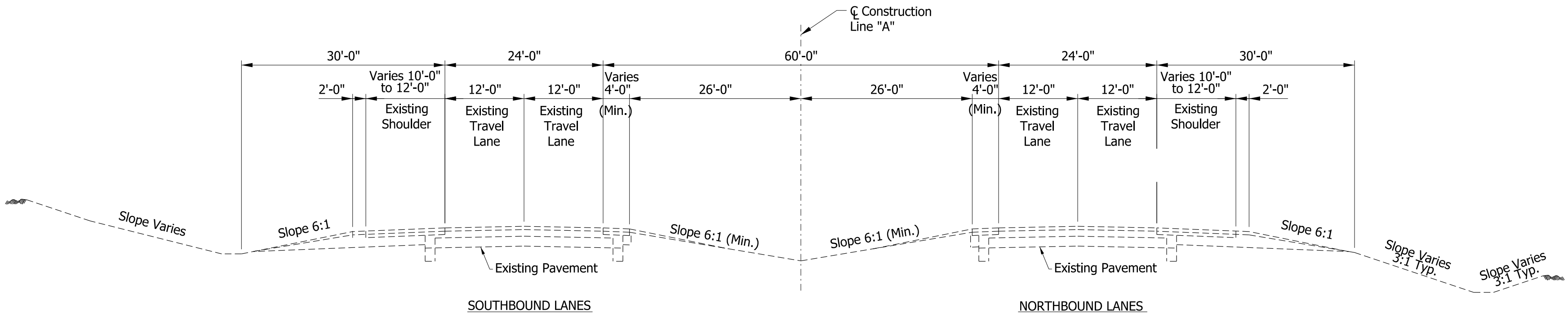
N

0 10 20 Miles

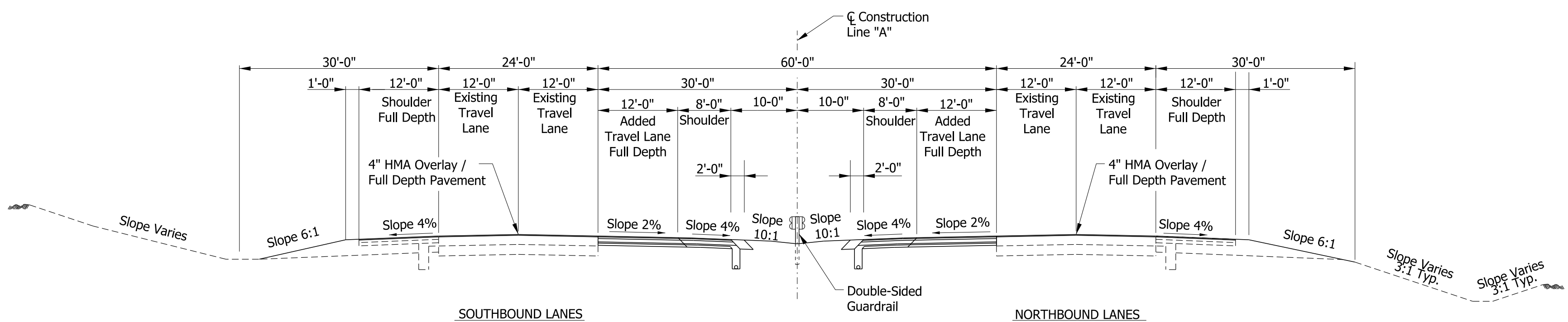
1:730,000

SECTION D: INITIAL DESIGN CONCEPTS

Initial design concepts for the typical roadway widening were developed as a part of the Engineering Analysis.



EXISTING 60' MEDIAN TYPICAL TANGENT SECTION
I-65 AND I-70



PROPOSED 60' MEDIAN TYPICAL TANGENT SECTION
I-65 AND I-70

LEGEND

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED:	DRAWN:	
CHECKED:	CHECKED:	

INDIANA
DEPARTMENT OF TRANSPORTATION

I-65 & I-70 ROADWAY TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1/8"=1'-0"	N/A
VERTICAL SCALE	DESIGNATION
N/A	1172430
SURVEY BOOK	SHEET TS-01
	of 93
CONTRACT	PROJECT
R-37450	1172430

MShaffer
10/9/2018 12:02:41 pm
model: Sheet1
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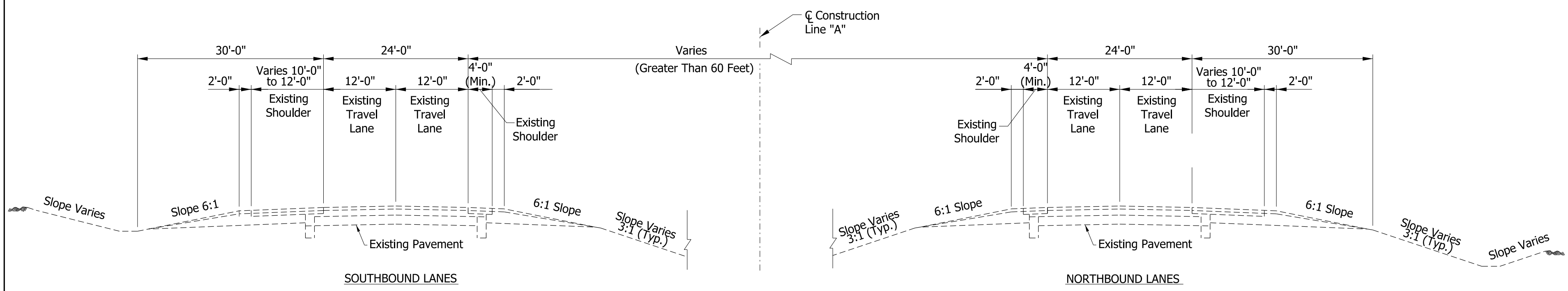
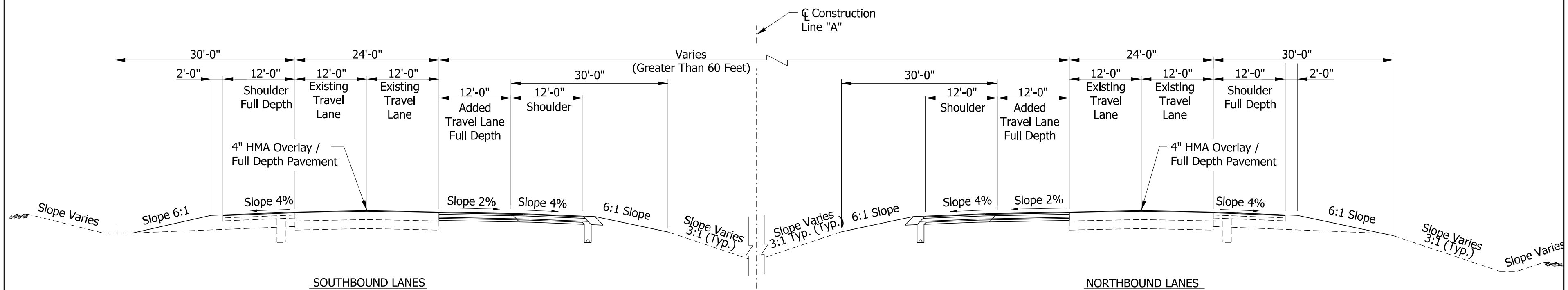


EXISTING WIDE (>60') MEDIAN TYPICAL TANGENT SECTION
I-65 AND I-70



PROPOSED WIDE (>60') MEDIAN TYPICAL TANGENT SECTION
I-65 AND I-70

RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE	
DESIGNED:	DRAWN:		
CHECKED:	CHECKED:		

INDIANA
DEPARTMENT OF TRANSPORTATION

I-65 & I-70 ROADWAY TYPICAL SECTIONS

HORIZONTAL SCALE	BRIDGE FILE
1/8"=1'-0"	N/A
VERTICAL SCALE	DESIGNATION
N/A	1172430
SURVEY BOOK	SHEET TS-02 of 93
CONTRACT	PROJECT
R-37450	1172430

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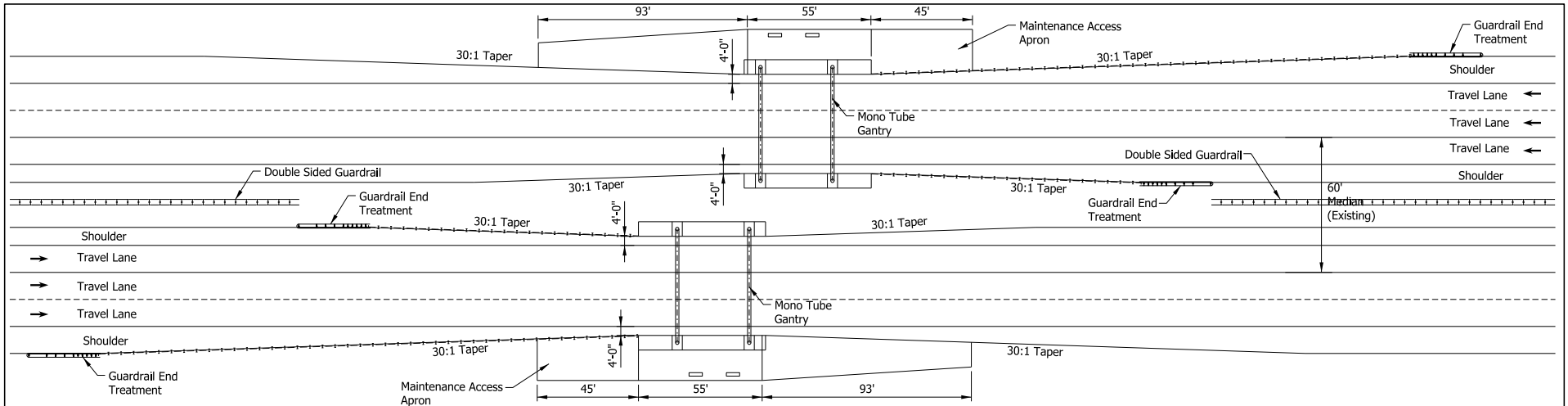
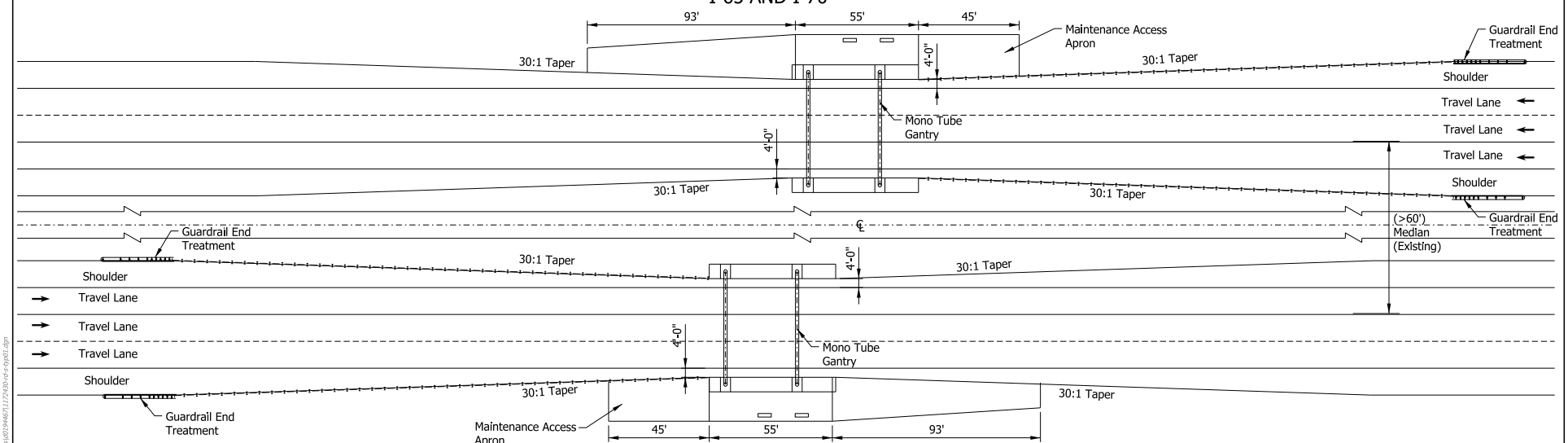


PROPOSED 60' MEDIAN PLAN
I-65 AND I-70



PROPOSED WIDE (>60') MEDIAN PLAN
I-65 AND I-70

RECOMMENDED FOR APPROVAL
DESIGN ENGINEER DATE

DESIGNED: DRAWN:
CHECKED: CHECKED:

INDIANA
DEPARTMENT OF TRANSPORTATION

I-65 & I-70 ROADWAY PLAN

HORIZONTAL SCALE	BRIDGE FILE
NTS	N/A
VERTICAL SCALE	DESIGNATION
N/A	1172430
SURVEY BOOK	SHEET TS-03
	1 of 93
CONTRACT	PROJECT
R-37450	1172430

NOTES

- The analysis contained within this document addresses potential tolling along I-65, I-70, I-94. However, no final decisions have been made about if and where to toll. Additionally, tolling may be considered along other interstates (e.g., I-64, I-74, etc.).
- To support the strategic planning process, INDOT analyzed the engineering & environmental contained within this report. The report is not intended to preclude or replace the preliminary engineering and environmental studies completed as part of INDOT's project development process.
- INDOT evaluated the potential to pair tolling with the widening of I-65 and I-70 outside of I-465 to six lanes border-to-border. The analysis assumes that widening these corridors would include bridge reconstruction work that meets the legal basis for tolling under the federal Section 129 General Tolling Program.