



Chapter 13—Glossary, Acronyms, and Index

13.1 Glossary of Terms

Since the DEIS, the following substantive changes have been made to this section:

- Definitions have been added for the following karst-related terms: Cave, Dip, Gaining Stream, Sinking Stream, Sinkhole, Spring, and Swallet.

Access Control Limits – Within the context of this project, an “access control limit” is a specific length along roads with an interchange within which no at-grade access is permitted. Access control limits are specified to avoid conflicts with traffic entering and leaving interchanges. This traffic may be traveling at relatively high rates of speed.

Accessibility – The ability of people to reach desired destinations (such as employment, shopping, recreational facilities, medical facilities, cultural centers, airports, etc.). Accessible regions allow residents to reach many such destinations in a shorter period of time. Inaccessible regions allow residents to reach fewer destinations and require longer periods of time.

Alternatives – Possible routes for I-69. In the Tier 1 study, alternative corridors were evaluated, and Alternative 3C was selected as the preferred alternative. In Tier 2, alternative roadway alignments are being studied within each of the six sections of the Alternative 3C corridor. Section 4’s four alternatives were identified for detailed analysis. They extended from US 231 near Scotland, Indiana to SR 37 near Bloomington, Indiana.

Ambient Noise – The background sound of an environment in relation to which all foreground sounds are heard, such as conversation in a room, dogs barking, birds singing, lawnmower engines, etc. Ambience is composed of many small sounds, near and far, which generally are heard as a composite, not individually.

Aquifer – One or more geologic formations containing sufficient saturated porous and permeable material to transmit water at a rate sufficient to feed a spring or for economic extraction by a well. A sole source aquifer is the sole or principal source of drinking water for an area.

Archaeological Research – Indiana guidelines define the phases of archaeological research as follows:

- **Phase Ia** includes background research and limited field reconnaissance to assess potential for cultural resources within a project area. The reconnaissance consists of a surface survey and visual inspection of the soil when ground surface visibility and survey conditions are adequate; or, when ground surface and survey conditions are not adequate, the use of shovel probes, cores, and/or auguring techniques to discover site evidence at or near the surface of the site.



Section 4—Final Environmental Impact Statement

- **Phase Ib** is an intensive survey with the use of controlled surface collections, piece plotting, or subsurface sampling.
- **Phase Ic** is subsurface reconnaissance to locate archaeological sites buried in alluvial (sediment deposited by flowing water), colluvial (loose deposit of rock debris), or eolian (wind-borne) landforms.
- **Phase II** testing is conducted for sites identified through Phase I investigations that are potentially eligible for the National Register of Historic Places (NRHP). Sites are tested to determine the vertical extent of the site, the presence of subsurface cultural features (i.e. hearths, trash/storage pits, living surfaces), the nature and context of deposits, and extent of disturbance, if any. Field research is conducted through the controlled excavation of test units (usually measuring between 1x1m to 2x2m). Testing may also involve the stripping of top soil in areas to identify cultural features. Sites determined eligible for NRHP listing are recommended for avoidance and/or mitigation.
- **Phase III** archaeological projects are designed to mitigate or recover data from significant archaeological sites that cannot be avoided. These projects involve large-scale excavations and recovery efforts to mitigate adverse effects on a site. Mitigation plans are developed to determine the methodology and research design for the project.

Archaeological Site – An instance of past human behavior or activity, where humans conducted some activity and left evidence of it behind, including artifacts and features.

Area of Potential Effects (Archaeological) – The study area for belowground cultural resource impacts. It is defined through consultation with the Indiana Department of Natural Resources, Department of Historic Preservation, and consists of the right-of-way for the preferred alternative.

Area of Potential Effects (Historic) – The study area for aboveground cultural resource impacts. It is defined through consultation with the Indiana Department of Natural Resources, Department of Historic Preservation, and consists of an area extending one mile on either side of the approved Tier 1 corridor, except where visibility is limited by vegetation or terrain. Where interchanges and/or access roads extend outside of the corridor, the APE is expanded.

Bedrock – Solid rock underlying loose deposits such as soil.

Biological Assessment (BA) – Information prepared by, or under the direction of, a Federal agency to determine whether a proposed action is likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of species that are proposed for listing; or (3) adversely modify proposed critical habitat. Biological assessments must be prepared for major construction activities. The outcome of the biological assessment determines whether *formal consultation* or a *conference* with appropriate regulatory agency (i.e., USFWS or the National Marine Fisheries Service) is necessary.

Biological Opinion (BO) – A document that includes: (1) the opinion of USFWS or the National Marine Fisheries Service as to whether or not a federal action is likely to jeopardize the



continued existence of listed species, or result in the destruction or adverse modification of designated critical habitat; (2) a summary of the information on which the opinion is based; (3) a detailed discussion of the effects of the action on listed species or designated critical habitat; and (4) the terms and conditions (mitigation requirements) associated with the incidental take statement.

Brownfield – With certain legal exclusions and additions, the term “brownfield site” means real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

Best Management Practice (BMP) – The methods or practices determined by a particular industry to be the most effective, practical means of accomplishing the tasks of that industry. For example, BMPs for treating water pollution may include requirements for treatment, operating procedures, and practices to control runoff leaks, sludge, waste, or drainage.

Cave - A natural underground opening in rock, large enough for human entry and exploration of an appreciable distance.

CERCLA Site – A site contaminated with a hazardous substance and being remediated as part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

Clear Zone – The unobstructed, relatively flat area provided beyond the edge of the traveled way, intended to allow errant vehicles to stop or maneuver without striking any fixed objects. The clear zone includes any shoulders and auxiliary lanes.

Collector-Distributor (CD) Lanes – A one-way road next to a freeway that is used for some or all of the ramps that would otherwise merge into or split from the main lanes of the freeway. It is similar to a frontage road, but is built to freeway standards. It is used to eliminate or move weaving from the main lanes of the freeway.

Commerce Corridor – That part of a recognized system of highways that (1) directly facilitates, intrastate, interstate, or international commerce and travel; (2) enhances economic vitality and international competitiveness; or (3) provides service to all parts of Indiana and the United States.

Committed Project – This is a project that is expected to occur regardless of the proposed I-69 project. Improvements to US 231 in Jasper County and the construction of SR 641 (the Terre Haute bypass) are examples of committed projects.

Community Advisory Committee (CAC) – A committee developed to facilitate communication between project team members and representatives of potentially impacted and key constituent groups in the project area. Through a series of meetings, committee members learned details of the project and provided feedback on such subjects as community access, local needs, and development of alternatives.



Section 4—Final Environmental Impact Statement

Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) – A database that includes all sites currently on the National Priorities List, or being considered for it.

Congestion – A condition in which the number of vehicles using a road approaches the capacity of that road. It is characterized by reduced travel speeds and (at high levels of congestion) stop-and-go conditions.

Construction Limits – A boundary that defines the extent of the area within which construction activities can occur. The construction limits are contained within a project’s right-of-way limits but do not always occupy the entire right-of-way area. The construction limits and right-of-way limits are shown on the contract plans provided to a contractor for purposes of constructing a project.

Context Sensitive Solutions (CSS) – A collaborative approach to developing and redesigning transportation facilities that fit into their physical and human environment while preserving the aesthetic, historic, community, and natural environmental values.

Contributing Sites/Structures – Property that is not important enough to stand on its own as individually “outstanding” or “notable”. Such resources are important to the density or continuity of an area’s historic fabric. “Contributing” properties may appear in the National Register of Historic Places if they are part of a historic district but do not usually qualify individually.

Core Forest – Generally accepted to be the portion of the forest that is 100 meters from the edge. The outer portion is considered the *edge habitat*.

Core Goal – In Tier 1, certain project goals were identified as *core* goals. A Tier 1 project goal was identified as a *core goal* based upon consideration of the policy/legislative framework as well as the transportation and economic development needs assessment. A substantial improvement for each core goal was expected for the selected Tier 1 alternative. In Tier 2 studies, there is no designation of core goals.

Corridor – The area (generally 2,000 feet in width) approved in the Tier 1 Record of Decision (ROD). Tier 2 studies identify a final alignment within the approved corridor. The corridor in Section 4 serves as the study area for natural resource impacts.

Cowardin et al. Classifications – Refers to the authors of the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979), which explains the USFWS wetlands classification method that includes five systems and many subsystems and classes.

Cumulative Impacts – Are defined by the Council on Environmental Quality (CEQ) Regulations as “The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.” (CEQ Regulations). Cumulative impacts include the direct and indirect impacts of a project together with the reasonably foreseeable future actions of others.



Digital Terrain Model (DTM) – A digital terrain model (DTM) is a digital representation of ground surface topography or terrain. The DTM is most commonly represented as a triangular irregular network (TIN). This is the network (mesh) of triangles that are created by connecting all valid points and objects selected, according to the Delauney Triangulation Method. The model is generated from the physical features of the original ground survey points and their respective elevation and plan view feature lines. Flow lines for ditches, building outlines, walls, and edges of roadways or water are a few examples of these features.

Dip - The direction of the slope of geologic formations.

Direct Impacts – Are defined by the CEQ Regulations as “effects that are caused by the action and occur at the same time and place.” For this project, an example of a direct impact would be the taking of a wetland for right-of-way for an interchange.

Directional Ramp – A ramp that does not deviate greatly from the intended direction of travel and generally allows the vehicle to exit and enter from the right lane. In the case of a left-turn directional change, the vehicle generally turns to the left to complete the interchange movement as opposed to a right turn that would be required by a loop ramp. Directional ramps for left-turn moves provide more capacity than loop ramps but are more costly due to the bridge structures required to span the other roadways that are crossed by the ramp.

Ecosystem – The complex of living organisms, their physical environment, and all their inter-relationships in a particular unit of space.

Economic Model – A computerized representation of the economy of a region. It models the interaction of components such as labor, capital, markets, and government policy. The model used in this study (the Regional Economic Model Inc. – REMI Model) analyzes the interaction of 53 industry categories with available markets, labor, and capital resources. It is used to forecast the economic effects of a significant change in policies that affect the economy, such as the construction of a new interstate highway between Evansville and Indianapolis.

Environmental Impact Statement (EIS) – A detailed document prepared as part of the NEPA process. A draft EIS (DEIS) is published to seek agency and public input. A final EIS (FEIS) adds (1) the comments and responses to the DEIS and (2) selects a preferred alternative.

Ephemeral Streams – Streams that flow only after rainfall and generally do not support aquatic life.

External Station – A special kind of zone on the boundary of a traffic modeled area. Unlike Traffic Analysis Zones (TAZs), these special external zones do not have demographic or land use data associated with them. Trips that enter or leave the modeled area are shown as originating or ending at that zone. For example, if the boundary of the modeled area were at I-70 west of US 231, all trips entering or leaving the modeled area via I-70 would be shown with their origin or destination at that external station. Such trips may begin or end far beyond the external station.

**Section 4—Final Environmental Impact Statement**

Farmed Wetlands – Wetlands that were drained, dredged, filled, leveled, or otherwise manipulated before December 23, 1985, for the purpose of, or to have the effect of, making the production of an agricultural commodity possible, and continue to meet specific wetland hydrology criteria.

Farmland Severance – Dividing farmland into two or more unconnected parcels by the purchase of the right-of-way necessary for the roadway. Severing may separate a portion of the farm from the residence or from the place where equipment is stored and cause inconvenience and additional travel time to work a portion of the farm.

Flood Easement - Flood easements may be acquired in some areas where the I-69 and new local access road bridge designs result in increased backwater exceeding 0.14 feet during the regulatory flood (the allowable limit identified in the Flood Control Act – IC 14-28). All bridge designs will comply with FHWA approved design standards, which allow a maximum backwater increase of 1.0 foot during the regulatory flood.

Floodplain – Mostly level land along rivers and streams that may be submerged by floodwater. A 100-year floodplain is an area that can be expected to flood once in every 100 years.

Forecast Year – A year that is 20-25 years into the future for which traffic forecasts are made. The design of any transportation facility must accommodate travel that would occur in the forecast year. For this study, the Forecast Year is 2030.

Functional Classification – “Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of the service they are intended to provide. Basic to this process is the recognition that individual roads and streets do not serve travel independently in any major way. Rather, most travel involves movement through a network of roads.” Quoted from *Highway Functional Classification: Concepts, Criteria and Procedures*, FHWA, Revised March, 1989, p. II-1.

Gaining Stream – A stream which increases in water volume as it progresses downstream, as it gains water from the local aquifer.

Geographic Information System (GIS) – A computer representation of data that is geographically distributed. These data can be generated and displayed to show their physical location. Each data set with a certain type of information (e.g., the location of wetlands) constitutes a “layer” in the GIS. GIS layers can be superimposed to show the relationship between the locations of different items.

Geographic Scope – The study area for cumulative impacts. For Section 4, the geographic scope consists of Greene and Monroe counties.

Grade Separation – Overpass or underpass.

Groundwater – That portion of the water beneath the surface of the earth that can be collected with wells, tunnels, or drainage galleries, or that flows naturally to the earth's surface via seeps or springs.



High Quality Natural Community – Any one of a number of unique habitats tracked by the IDNR Division of Nature Preserves and ranked by their relative scarcity in the state.

Historic Properties – Buildings, structures, sites, objects or districts that are eligible for or listed in the National Register of Historic Places.

Horizontal Alignment – Location of the road as it can be moved from side to side, usually done by using curves.

I-69 Community Planning Program – A mitigation initiative developed by FHWA and INDOT that will set in place a regional strategy for providing resources (i.e., technical and financial assistance through grants) to local communities to manage the growth and economic development associated with I-69. In the Section 4 area, Greene and Monroe counties and the cities of Bloomfield, Linton, Ellettsville, and Bloomington were eligible for grants.

Impaired Stream – A stream listed in the IDEM 2008 303(d) List of Impaired Waterbodies. These streams do not meet Indiana’s water quality standards. Streams may be impaired due to chemical or biological contaminants.

Indirect Impact Study Area – The Traffic Analysis Zones (TAZs) within Greene and Monroe counties associated with Section 4 in which additional growth in population and/or employment is projected to occur due to I-69.

Indirect Impacts – Defined by the CEQ Regulations as “effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate...” For this project, an example of an indirect impact would be farmland bought by a developer to build a service station at an interchange.

Indirect Land Use Change Area – The study area for Section 4’s cumulative impacts analysis. The area is composed of 55 Traffic Analysis Zones (TAZs) in Greene and Monroe counties.

Induced Growth – Increases in population, residential / commercial development, jobs, etc., that occurs or is expected to occur as a result of a major project such as construction of a new highway.

Interchange – A grade-separated crossing with entrance and exit ramps to allow access to and from the route crossed.

Intermittent Streams – Streams that flow seasonally and support some aquatic life.

Intersection – The place where two or more roads meet or cross. Unlike an interchange, crossing is at-grade without any separation by use of a bridge. Traffic control is by use of signage and/or signalization.

**Section 4—Final Environmental Impact Statement**

Jurisdictional Wetland – A wetland regulated by the U. S. Army Corps of Engineers as a “water of the United States” under the Clean Water Act. Impacts to jurisdictional wetlands must be mitigated (e.g., recreated, restored, or enhanced).

Karst – Landscapes characterized by caves, sinkholes, underground streams, and other features formed by slow dissolution, rather than mechanical erosion, of bedrock. Karst areas can be especially sensitive to groundwater pollution.

Landlocked Parcel – Property to which road or driveway access has been terminated as a result of the project and for which construction of new access is not proposed.

Last Resort Housing – A program used when comparable replacement housing is not available or when it is unavailable within the displacee's financial means, and the replacement payment exceeds the state legal limitation. The purpose of the program is to allow broad latitude in methods of implementation by the state so that decent, safe, and sanitary replacement housing can be provided. This program is used, as the name implies, only as a "last resort," when there is no adequate opportunity for relocation within the area.

Layer – Individual digital GIS data file. Many layers (e.g., aerial photo, roads, churches) are used in a project to create one map.

Level of Service (LOS) Ratings – A scale that measures the levels of congestion and/or delay on a road. It goes from A (free flowing traffic) to F (the highest level of congestion/delay).

Managed Lands – Lands that are actively managed by federal, state, and local agencies and private land trusts. Lands include natural areas, city parks, nature and wildlife preserves, refuges, forests, fish, and wildlife areas, river access sites, and historic sites.

Memorandum of Agreement (MOA) or Memorandum of Understanding (MOU) – An agreement executed between two or more entities.

Metropolitan Planning Organization (MPO) – The forum for cooperative transportation decision-making for a metropolitan area. Title 23 USC Section 134 requires that (1) an MPO be designated for each Urbanized Area (UZA) containing 50,000 or more persons based on the latest U.S. Census, and (2) the metropolitan area has a continuing, cooperative, and comprehensive transportation planning process.

Mitigation – In the context of the NEPA process, CEQ regulations define mitigation as: avoiding the impact altogether by not taking a certain action or parts of an action; minimizing impacts by limiting the degree or magnitude of the action and its implementation; rectifying the impact by repairing, rehabilitating, or restoring the affected environment; reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; or compensating for the impact by replacing or providing substitute resources or environments. The mitigation of impacts must be considered whether or not the impacts are significant.

Mobility Corridors – These corridors are the top-end of the highway system and are meant to provide mobility across that state. They provide safe, free-flowing, high-speed connections



between metropolitan areas of the state and surrounding states. They serve as the freight arteries of the state and are vital for economic development.

National Environmental Policy Act (NEPA) – Legislation passed by Congress in 1969 that requires preparation of an environmental impact statement (EIS) for federal actions that may significantly impact the environment.

National Highway System (NHS) – A national system of highways, consisting of all interstate highways and other principal arterial highways. Federal policy is to focus federal highway investments on these roads. The NHS includes 5% of the national roadway network but serves approximately 40% of the nation’s highway travel.

National Wetland Inventory (NWI) – A portion of the U.S. Fish and Wildlife Service that produces information on the characteristics of the nation’s wetlands and deepwater habitats.

Natural Region – A major, generalized unit of the landscape where a distinctive assemblage of natural features is present. The natural region classification system includes several natural features, such as: climate, soils, glacial history, topography, exposed bedrock, pre-settlement vegetation, species composition, physiography, and plant and animal distribution.

No Build Scenario – The scenario in which a proposed project is not built. All benefits and impacts are forecasted with reference to the No Build scenario (also called the No Action Alternative). The No Build scenario was eliminated as an alternative during the Tier 1 Study. It is used for comparison purposes in the discussion of traffic, noise, economic, and cumulative land use impacts in the Tier 2 studies.

Notable Sites/Structures – Property that did not quite merit an “Outstanding” rating, but still is above average in its importance. Further research or investigation may reveal that the property could be eligible for National Register listing. The property may be eligible for the Indiana Register of Historic Sites and Structures. Most surveys were done by the Indiana Historic Landmark Foundation as part of the Indiana Historic Sites and Structures Inventory.

Ordinary High Water Mark (OHWM) – The point on the bank or shore up to which the presence and action of water is so continuous or frequent as to leave a distinct mark by erosion, destruction of terrestrial vegetation, or other easily recognized characteristic.

Outstanding Sites/Structures – Property that has enough historic or architectural significance that it is already listed or should be considered for individual listing in the National Register of Historic Places. Most surveys were done by the Indiana Historic Landmark Foundation as part of the Indiana Historic Sites and Structures Inventory.

Palustrine Wetland System – As it pertains to the project area, includes all nontidal wetlands dominated by trees, shrubs, and persistent emergents. The system groups the vegetated wetlands traditionally called by such names as: marsh, swamp, bog, fen, and prairie, and includes ponds.

Palustrine Emergent Wetland (PEM) – Wetland that supports erect, largely herbaceous perennial species and permanent water for most of the growing season, during those years of

**Section 4—Final Environmental Impact Statement**

normal precipitation levels. These wetlands maintain the same appearance each year unless extreme climatic conditions cause flooding or other extreme local changes. Emergent wetlands traditionally include marsh, meadow, and fen communities.

Palustrine Forested Wetland (PFO) – Wetland that supports largely woody species greater than 20 feet in height and includes various hydrological regimes. This class generally possesses various layers of vegetation, including canopy trees, subcanopy trees, shrubs, and ground layer herbaceous vegetation. Forested wetlands traditionally include bottomland hardwood and swamp communities.

Palustrine Unconsolidated Bottom Wetland (PUB) – Wetland and deepwater habitat that support less than 30% cover of vegetation, contain at least 25% cover of substrate smaller than stones, and have various permanent or semi-permanent water regimes. These communities rarely comprise a stable substrate for aquatic vegetative growth.

Perennial Stream – Streams that are generally free-flowing year-round and support a wide variety of aquatic life.

Performance Measure – A rating (typically numerical) that assesses the degree to which an alternative satisfies a project goal.

Phase II Environmental Site Assessment – A site investigation to determine the nature and extent of hidden hazards such as leaking underground storage tanks, contaminated soils, etc.

Physiographic Division – An area characterized by similar topography and land use.

Populated Area – General boundary where there is some density of residential development, similar to city limits.

Postprocessor – A computer program that analyzes a traffic assignment to compute measures of transportation performance.

Poverty – The status of any person living in a household with a total household income less than the poverty threshold. The poverty thresholds are based on the household size and are updated annually by the Census Bureau.

Primary Headwater Habitat Stream – As described in the *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams* (Ohio EPA, 2002), a “surface water of the state, having a defined bed and bank, with either continuous or periodical flowing water, with watershed area less than or equal to 1.0 square mile (259 hectares), and a maximum depth of water pools equal to or less than 40 cm.” Primary headwater habitat streams are defined based on substrate type, quality, maximum pool depth, and bank full width, i.e., the total width of the stream at the boundary line of terrestrial vegetation.

Prime Farmland – Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops.



Public Hearing – INDOT holds public hearings for all transportation projects that involve the development of an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA). A public hearing, which is held following the approval of the draft environmental document, is an opportunity for the public to make formal statements of position immediately before project decision-making and preparation of the final environmental document. The disposition of both oral and written comments is included in the final approved NEPA document that constitutes FHWA location approval. *Public meetings*, as needed during the development of the NEPA document, provide additional opportunities for early and continuing public involvement. The disposition of comments made during a public meeting is not required to be included in the environmental document.

Purpose and Need – The section of an environmental project that discusses the needs and defines the goals (purposes) of the project.

Purpose and Need Study Area – Five county area including Greene, Monroe, Lawrence, Martin and Owen counties. Used for needs assessment, project performance measures, and energy impact analysis.

Quantm – A computer-aided engineering alignment tool used to help generate alternatives within the selected I-69 corridor.

RCRA Site – A site that is regulated by the Resource Conservation and Recovery Act to generate, transport, store, or dispose of hazardous waste.

Record of Decision (ROD) – A NEPA requirement for an EIS, which explains the reasons for the project decision and summarizes any mitigation measures that will be incorporated in the project.

Regulated Drains – Open ditches or tile drains or a combination of both under the jurisdiction of a county Drainage Board. The Indiana Drainage Code (IC 36-9-27), which created a Drainage Board in each county, provides for a 75-foot drainage easement and gives the board the right to remove obstructions within the drain. They are also known as “legal drains.”

Relocation – The purchase of private property (land and/or structures) for a public purpose, such as a transportation facility. The purchase price includes the costs of relocating residents or businesses. Also referred to as a displacement.

Reverse Curve – A succession of curves in which a curved horizontal alignment changes to a curve in the opposite direction of travel. For example, a curve to the right immediately followed by a curve to the left (with no straight section in between) is a reverse curve. A reverse curve may be confusing to drivers and generally is regarded as an undesirable design feature.

Right-of-Way Limits – Define the area of land owned or obtained as an easement for purposes of constructing a road, railroad, power line, etc.

Riparian – Of, or pertaining to, rivers or streams and their banks.



Section 4—Final Environmental Impact Statement

Riparian Forest – Forested areas bordering streams or rivers. Riparian forests help to protect and enhance stream plants and animals, can contribute to the control of pollution entering the waterway, and can serve as a corridor for the movement of plants and animals.

Route Concept – A line connecting points on a map, used in the scoping and screening phases of the Tier 1 analysis.

Scoping – The initial step of an environmental study. It includes the determination of a range of possible alternatives and analysis of Purpose and Need for the project.

Screening – The second step of an environmental study. It applies Purpose and Need criteria to all alternatives to arrive at a set of alternatives for detailed study.

Section 4(f) – A section of the Department of Transportation Act of 1966 which prohibits FHWA from approving any program or project which requires the use of any publicly-owned park, recreation area, or wildlife or waterfowl refuge, or any land from a historic site of national, state, or local significance unless: (1) there is no feasible and prudent alternative to the use, and (2) all possible planning to minimize harm resulting from such use is included.

Section 4(f) Resource – Any site which meets specific criteria for protection under Section 4(f) of the Department of Transportation Act of 1966. These sites include specific publicly-owned parks, recreation areas, and wildlife or waterfowl refuges as well as sites listed in or eligible for inclusion in the National Register of Historic Places.

Section 7 Consultation – Section 7 of the Endangered Species Act of 1973 requires federal agencies to consult with the USFWS on all federal actions that may affect a federally-listed species to ensure that their actions do not jeopardize listed species or destroy or adversely modify critical habitat.

Section 106 Consultation – Consultation between a federal agency and interested parties, including the State Historic Preservation Officer, regarding potential impacts of a federal action on historic sites and mitigation measures to reduce impacts. This consultation and review process is required by Section 106 of the National Historic Preservation Act of 1966.

Section 404 – Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into “waters of the United States,” including wetlands. Activities in “waters of the United States” that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry.

Section of Independent Utility (SIU) – A section of a larger project that would perform a useful purpose if none of the other sections were to be built. These sections must conform to certain regulatory criteria to ensure that each section performs independently. These criteria, specified in 23 CFR § 771.111 (f), require that the project: connect logical termini and be of sufficient length to address environmental matters on a broad scope; have independent utility or independent significance; and not restrict consideration of alternatives for other reasonably foreseeable transportation improvements. For the National I-69 project, there are 26 SIUs.



Seismic – Subject to, or caused by, an earthquake or earth vibration.

Serious Crash – A crash resulting in at least one fatality or serious injury.

Shrink-Swell Potential – The relative change in soil volume that occurs with changes in moisture content, the extent of which is influenced by the amount and kind of clay present in the soil. Shrinking and swelling of soils can cause damage to building foundations, roads, and other structures.

Sinking Stream – The bed of this type of stream is positioned above the water table. Due to this vertical gradient, stream flow seeps through the stream bottom and enters the groundwater. This term can be used interchangeably with “influent stream” or “losing stream.”

Sinkhole - A naturally occurring bowl shaped recharge feature that collects water from nearby areas. Water can infiltrate to the subsurface through openings at the bottom and/or through the soil if openings are not present. Collapse of sinkholes is common and can result in steeper, irregular depressions.

Spring - An area where karst groundwater discharges to the surface.

State Historic Preservation Officer (SHPO) – Administers the National Historic Preservation Program at the state level, reviews National Register of Historic Places nominations, maintains data on historic properties that have been identified but not yet nominated, and consults with federal agencies during the Section 106 process. In Indiana, the SHPO is the Director of the Department of Natural Resources.

State Implementation Plan (SIP) – Under the 1990 Clean Air Act Amendments (CAAA), each state is required to establish a plan for achieving and/or maintaining National Ambient Air Quality Standards (NAAQS) for pollutants that are considered harmful to the public health and environment, such as particulate matter (PM), sulfur dioxide (SO₂), carbon monoxide (CO), ozone, oxides of nitrogen (NO_x) and lead. This plan is known as the State Implementation Plan (SIP). The SIP establishes emission budgets (not to be exceeded) for “nonattainment” areas (i.e., an area that does not meet the NAAQS for one or more pollutants) and “maintenance” areas (i.e., an area that was formerly in nonattainment and now meets the NAAQS).

Statewide Mobility Corridor – The highest level of INDOT’s statewide transportation network, corresponding closely to the Commerce Corridors.

Study Area – The special limits within which potential impacts as a result alternatives are considered. For the Tier 1 study, the Study Area included 26 counties in Southwest Indiana. For Tier 2 Section 4, the Study Area includes the project corridor and surrounding places and Census Tract (CT) Block Groups (BG) the corridor travels through.

Study Area (Socio-Economic) – The special limits within which potential socio-economic impacts which result from the implementation of alternatives are considered. For the Tier 1 study, the Study Area included 26 counties in Southwest Indiana. For Tier 2, the Section 4 Study



Section 4—Final Environmental Impact Statement

Area is the distinct set of all census tract block groups that the approved I-69 corridor in Section 4 (which generally is 2,000-foot wide) passes through. The Study Area includes the following U.S. Census block groups:

Greene County: Census Tract 9547—**BG 1, BG 4 and BG 5**

Census Tract 9553—**BG 1 and BG 2**

Monroe County: Census Tract 11.03—**BG 2 and BG 3**

Census Tract 12—**BG 5, BG 6 and BG 7**

Study Band – Two-mile wide band around the conceptual working alignment.

Subsidence – Sinking of the earth’s surface in response to geological or man-induced causes.

Superfund Sites – Uncontrolled or abandoned places where hazardous waste is located, possibly affecting local ecosystems or people.

Swallet – The area where a stream sinks into the subsurface or the opening in the bottom of a sinkhole. This term can be used interchangeably with “swallowhole.”

Threatened and Endangered Species (TES) – Species that are recognized by federal and state agencies as being in danger of extinction or being sufficiently compromised that they are at risk of becoming endangered, either nationally or in a state.

Tiering – A two-step process applied to NEPA evaluations where the first step (tier) focuses on broad issues such as general location, mode, choice, and area-wide air quality and land use implications of the major alternatives. The second step (tier) addresses site-specific details on project impacts, costs, and mitigation measures.

Tier 1 EIS – An EIS that may be completed for large studies that require certain major questions to be answered before a more detailed study (Tier 2 EIS) can be done.

Tier 2 NEPA Studies – More detailed NEPA studies completed after the Tier 1 EIS has been done.

Tier 2 Sections – Shorter sections of the alternative that are selected in the Tier 1 ROD. Each Tier 2 Section is evaluated in a separate NEPA study.

Topography – The configuration of the surface of a place or region, including its relief.

Total Length – Length of an alternative extending the entire length of a section’s corridor. In Section 4, the length is approximately 27 miles from the southern terminus east of US 231 to the northern terminus south of SR 37.

Traffic Analysis Zone – One of many small areas within a larger geographical study area that has been subdivided for purposes of obtaining socioeconomic and traffic data in a manageable fashion.



TransCAD® – The modeling platform produced by Caliper Corp. that is used by INDOT for the Indiana Statewide Travel Demand Model (ISTDM).

Travel Demand Model – A computerized representation of the population, employment, socio-economic characteristics, and transportation network of a region. Travel on the transportation network is forecasted as a function of population, employment, and socio-economic characteristics. If proposed projects (such as an alternative of I-69) can be added to the transportation network, the model can forecast the effects of that proposed project.

Trip Table – A matrix listing the number of vehicular trips made between any two Traffic Analysis Zones (TAZs).

Typical Section – A section cut through a roadway that shows the typical configuration and design features. This will usually include lane and shoulder widths, profile grade and construction centerline location, roadway cross slopes, side slopes, ditches, and clear zones. Right-of-way width estimations were developed from typical sections.

Uneconomic Remnant – That portion of a property remaining after acquisition, the retention of which provides little utility or economic benefit to the owner. In relation to farmland, an uneconomic remnant is a remainder that, if taken by itself, would be too small to be economically productive to farm.

Vertical Alignment – Location of the road as it can be moved up or down through hills and valleys.

Volume-to-Capacity (V/C) Ratio – The ratio of volume of traffic on a roadway to the capacity of that roadway. As the volume approaches the capacity, the roadway becomes congested.

Watershed – The surface area that drains to a specified point on a watercourse, usually a confluence of streams or rivers.

Wellhead Protection Area – The surface and subsurface area which contributes water to a public water supply well and through which contaminants are likely to move through, and reach, the well over a specified period of time. A wellhead protection area may be delineated by a fixed radius, hydrogeologic/geomorphic mapping, analytical, semi-analytical, or numerical flow/solute transport methods.

Wetland – A type of land use protected by various state and federal laws. Wetlands are characterized by plants adapted to a wet environment, soils which are characterized by anaerobic conditions, and which are inundated or saturated to the surface for at least 5% of the growing season in most years.

Working Alignment – A conceptual footprint of the right-of-way within a corridor used solely to estimate and compare the environmental impacts of the various alternatives. This is not a final alignment, which would be determined in the design phase.



Section 4—Final Environmental Impact Statement

13.2 Acronyms

13.2.1 Terms

AADT	Average Annual Daily Traffic
ADT	Average Daily Traffic
AMSL	Above Mean Sea Level
APE	Area of Potential Effect
AR	Access Road
AST	Aboveground Storage Tank
BA	Biological Assessment
BG	Block Group
BMP	Best Management Practice
BO	Biological Opinion
CAAA	Clean Air Act Amendment
CAA	Clean Air Act
CAC	Community Advisory Committee
CD Lanes	Collector-Distributor Lanes
CEDS	Comprehensive Economic Development Strategy
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Hazardous Waste Sites)
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System (Hazardous Waste Sites)
CFR	Code of Federal Regulations
CIA	Community Impact Assessment
CFWP	Classified Forest and Wildlands Program
CPP	Community Planning Program
CRP	Conservation Reserve Program
CSS	Context Sensitive Solutions
CWA	Clean Water Act
DHV	Design Hourly Volume
DTM	Digital Terrain Model
EEAC	Environmental & Engineering Assessment Consultant
EIS	Environmental Impact Statement



EQIP	Environmental Quality Incentives Program
EMS	Emergency Medical Service
ERNS	Emergency Response Notification System
ESA	Endangered Species Act
FAQ	Frequently Asked Questions
FEC	Federal Endangered (species)Consultant
FEP	Floodplain Easement Program
FPPA	Farmland Protection Policy Act
GIS	Geographic Information System
GPS (also USGPS)	Global Positioning System (United States GPS)
HazMat	Hazardous Material
HHEI	Headwater Habitat Evaluation
IDM	Indiana Design Manual
IHSS Inventory	Indiana Historic Sites and Structures Inventory
INSTIP	Indiana Statewide Transportation Improvement Program
INWRAP	Indiana Wetland Rapid Assessment Procedure
ISTDM	Indiana Statewide Travel Demand Model
ISTEA	Intermodal Surface Transportation Efficiency Act
LEDPA	Least Environmentally Damaging Practicable Alternative
LOS	Level of Service
LRP	Long-Range Plan
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPO	Metropolitan Planning Organization
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Policy Act
NFRAP	No Further Remedial Action Planned



Section 4—Final Environmental Impact Statement

NHPA	National Historic Preservation Act
NOI	Notice of Intent
NRHP	National Register of Historic Places
NRI	National Rivers Inventory
NSWC	Naval Surface Warfare Center
NWI	National Wetlands Inventory
OHWM	Ordinary High Water Mark
PAMP	Preferred Alternative Mitigation Package
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PIM	Public Information Meeting
PM 2.5	Particulate matter 2.5 microns or smaller in size (a potential air pollutant)
PMC	Project Management Consultant
PUB	Palustrine Unconsolidated Bottom Wetland
PSS	Palustrine Scrub-Shrub Wetland
QHEI	Qualitative Habitat Evaluation Index
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conservation and Recovery Information System
RCRIS TSD	RCRIS Treatment, Storage, and Disposal Facilities
RCRIS COR	RCRIS Corrective Action Sites
RCRIS GEN	RCRIS Large and Small Quantity Generators
REG UST	State Registered UST Listing
ROD	Record of Decision
REMEL	Reference Energy Mean Emission Levels
SAA	Summer Action Area
SAFETEA-LU	Safe, Accountable, Flexible, Efficient, Transportation Equity Act: A Legacy for Users
SIP	State Implementation Plan (for air quality)
SIU	Section of Independent Utility
SR	State Rare (species), also State Route (highway)
SSC	State Special Concern (species)
SWCD	Soil and Water Conservation District
SWL	State Solid Waste Landfill List
TAZ	Traffic Analysis Zone



TCM	Transportation Control Measures
TEA-21	Transportation Equity Act for the 21 st Century
TERG	Taylor University Environmental Research Group
TES	Threatened and Endangered Species
TIN	Triangular Irregular Network
TIP	Transportation Improvement Program
TNM	Traffic Noise Model
UST	Underground Storage Tank
V/C	Volume to Capacity Ratio
VFD	Volunteer Fire Department
VHT	Vehicle Hours of Travel
VMT	Vehicle Miles of Travel
VPD	Vehicles Per Day
VPH	Vehicles Per Hour
WAA	Winter Action Area
WHIP	Wildlife Habitat Incentive Program
WRP	Wetland Reserve Program

13.2.2 Agencies & Organizations

AASHTO	American Association of Highway and Transportation Officials
ACHP	Advisory Council on Historic Preservation
BFO	Bloomington Field Office, USFWS
CEQ	Council on Environmental Quality
EDR	Environmental Data Resources
EMPO	Evansville Metropolitan Planning Organization (formerly EUTS)
EUTS	Evansville Urban Transportation Study
ESRI	Environmental Systems Research Institute, Inc.
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FSA	Farm Service Agency
FTA	Federal Transit Administration
IDEM	Indiana Department of Environmental Management
IDNR	Indiana Department of Natural Resources



Section 4—Final Environmental Impact Statement

IDNR-DFW	IDNR Division of Fish and Wildlife
IDNR-DHPA	IDNR Division of Historic Preservation & Archaeology
IDNR-DNP	IDNR Division of Nature Preserves
IDNR-DOW	IDNR Division of Water
IGS	Indiana Geological Survey
ILRC	Indiana Land Resources Council
INDOT	Indiana Department of Transportation
IPSAWG	Invasive Plant Species Assessment Working Group
MPO	Metropolitan Planning Organization
NPS	National Park Service
NRCS	Natural Resource Conservation Service
OER/IDEM	Office of Emergency Response/IDEM
SHPO	State Historic Preservation Officer
SIDC	Southern Indiana Development Commission
SWIDC	Southwest Indiana Development Council
SWIRDC	Southwestern Indiana Regional Development Commission (now QCDC)
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WCPB	Water Pollution Control Board (Indiana)



13.3 Index

<u>Subject</u>	<u>DEIS Section</u>
1996 Evansville to Bloomington DEIS.....	1.1
Aboveground Storage Tank (AST).....	4.5.1, 5.16, 7.3
Accessibility	2.1, 2.3, 2.4, 2.5, 3.3, 4.2, 5.2, 5.3, 5.5, 5.6, 5.24, 5.27, 6.3, 7.3, 11.2
Access Roads	3.2, 3.4, 3.5, 5.1, 5.2, 5.3, 5.4, 5.6., 6.3, 7.3, 11.2
Advisory Council on Historic Preservation	1.2, 5.13
Aerial Mapping.....	5.1, 5.19, 5.20
Agriculture	4.2.1, 4.2.3, 4.2.4, 4.3.1, 4.4.1, 4.4.2, 5.1, 5.4, 5.5, 5.24
Air Quality Impacts.....	1.2, 3.2, 5.1, 5.9, 5.12
Air Quality Conformity.....	1.2, 5.9
Airports	4.2.2, 5.3
Alternatives Impact Analysis (Section 4).....	3.3, 3.4, 5.1 – 5.27, 6.1 – 6.3
Alternatives Development (Section 4).....	3.1 – 3.5, 6.4
Ambient Noise Levels.....	4.7, 5.10, 5.13
Aquifers	4.3.2, 5.19, 5.24, 6.4
Archaeological Resources.....	3.2, 4.4.1, 4.4.3, 5.13, 5.14, 7.2, 7.3, 8.3
Area of Potential Effect (APE).....	4.4.3, 5.13, 5.14, 7.2, 7.3
Bald Eagle	1.2, 4.3.3, 5.17, 5.18, 7.2, 7.3
Bedford/Lawrence Co. 2020 Plan.....	2.2
Best Management Practices (BMP).....	5.12, 5.19, 5.21, 5.23, 5.26, 7.3
Bicycle Trails	4.2.2, 5.3
Biological Assessment (BA).....	1.2, 5.17, 7.2, 7.3
Biological Opinion (BO).....	1.2, 5.12, 5.17, 5.18, 5.19, 7.2, 7.3
Biological Surveys.....	5.17, 5.18, 7.2
Blasting (Construction).....	5.10, 5.12, 5.15, 7.3
Bloomington SR37 Corridor Study	2.2
Bloomington/Monroe County MPO	2.2
Borrow Sites (Construction).....	5.12, 7.3
Business Impacts.....	5.1, 5.2, 5.3, 5.5, 5.8, 7.3
Cemeteries	3.2, 3.4, 4.2.2, 4.4.2, 5.3, 5.13, 6.2, 7.3, 11.4
CERCLA Site.....	4.5.1, 5.16, 7.3
Churches	4.2, 4.2.1, 4.2.2, 5.2, 5.3, 5.10, 5.13, 7.3
City of Loogootee Comprehensive Plan.....	2.2
Clean Air Act	1.2, 4.6, 5.9
Clean Water Act.....	4.3, 5.19
Commerce Corridors.....	2.2
Community Advisory Committee (CAC).....	2.3, 3.2, 5.3, 5.6, 7.2, 7.3, 11.1, 11.2, 11.3
Community Cohesion	4.2.1, 5.2, 5.3
Community History	4.2.1
Community Impact Assessment	1.2, 4.1, 4.2, 5.2, 5.3, 5.8
Comparative Population Characteristics—Age, Race, Ethnicity	4.2.1, 5.8
Construction Impacts	1.2, 5.10, 5.12, 6.2, 6.3, 6.4, 7.3



Section 4—Final Environmental Impact Statement

Construction Within a Floodway Permit5.19, 5.20, 5.23, 7.2, 7.3

Consulting Party.....5.3, 5.13, 5.14, 7.3, 11.3

Context Sensitive Solutions5.3, 5.7, 5.17, 5.18, 7.3, 11.4

Core Forest Impacts3.4, 5.20, 6.3, 6.4

Corn Production4.2.3, 5.4

Corridor 181.1, 2.2

Corridor Segment Alternatives (Section 4, Description).....3.2

Costs (Capital)1.2, 3.4, 5.1, 6.2, 6.4

Costs (Maintenance)3.4

Costs (Mitigation)7.4

Crane Naval Surface Warfare Center1.3, 2.1, 2.3, 2.5, 3.3, 4.2, 4.3, 5.3, 5.8, 5.17, 5.19, 5.22

Crashes2.3, 2.5, 3.2, 3.3, 5.5

Crop Cash Receipts.....5.4

Crop Production Loss5.4, 5.5, 6.4

Crop Yields4.2.3, 4.4.1, 5.4

Cultural Resources4.4, 5.1, 5.13, 8.3

Cumulative Impacts1.2, 5.1, 5.3, 5.5, 5.17, 5.24, 11.3, 11.4

Demographic Profile4.2.1, 5.2, 5.3

Economic Development.....1.2, 2.1, 2.2, 2.3, 2.5, 3.2, 3.3, 3.4, 4.2.1, 4.2.2, 5.3, 5.4, 5.5, 5.24

Economic Impact1.1, 1.2, 5.1, 5.2, 5.3, 5.5, 5.24, 6.4

Economy4.2.1, 4.2.3, 4.4.1, 4.4.2, 5.24, 7.2

Ecosystems.....1.2, 4.3.1, 4.3.2, 4.3.3, 5.17, 5.18, 5.19, 5.20, 5.21, 5.24, 7.2, 7.3

Educational Attainment4.2.1

Emergency Responders.....3.2, 3.4, 4.2.2, 5.3, 7.3, 11.2

Employment3.3, 4.2.1, 4.2.4, 5.1, 5.5, 5.24

Endangered Species Act1.2, 4.3.3, 5.17, 7.2

Energy Impacts5.25, 6.4

Environmental Justice.....5.2, 5.8

Erosion Control.....4.3.3, 5.12, 5.17, 5.19, 5.22, 5.23, 5.24, 7.3

Expert Land Use Panel.....5.5, 5.20, 5.24, 11.4

Farmland1.2, 3.4, 4.2.3, 5.1, 5.2, 5.4, 5.5, 5.24, 6.2, 6.4, 7.3, 11.2, 11.4

Farmland Conversion Rating System5.4

Farmland Protection Policy Act.....5.4

Farmland Protection Program5.4, 7.3

Federal Listed Species4.3.3, 5.1, 5.12, 5.17, 5.21

Flood Control Act4.3.2, 5.19, 5.23, 5.24

Floodplains1.2, 3.4, 4.3.1, 4.3.2, 4.3.3, 5.1, 5.17, 6.2, 6.4, 7.2, 7.3, 11.4

Forested Wetland4.3.2, 4.3.3, 5.12, 5.17, 5.18, 5.20, 7.2, 7.3, 7.4

Forests4.3.3, 5.17, 5.20, 5.22, 5.24, 6.2, 6.4, 7.2, 7.3, 11.4

Gas Resources.....4.2.2, 4.3.1, 5.15, 6.4

Geographic Information System (GIS)1.2, 3.2, 4.3.3, 5.1, 5.2, 5.3, 5.14, 5.15, 5.16, 5.20, 5.22, 5.23
5.24, 7.2, 7.3, 11.4

Goals, Project.....1.2, 2.0, 2.1, 2.5, 3.3, 11.4

Government Agency Coordination.....1.2, 2.4, 3.2, 5.1, 5.17, 11.4

Greene County Comprehensive Plan.....2.2



Groundwater 4.3.2, 5.12, 5.16, 5.19, 5.21, 5.24, 7.3

Growth Trends4.2.2, 5.24

Habitat4.2.2, 4.3.2, 4.3.3, 5.1, 5.3, 5.12, 5.17, 5.18, 5.20, 5.22, 7.3, 11.4

Hay Production4.2.3, 5.4

Hazardous Materials4.5, 5.16, 5.19, 6.2, 6.4, 7.3

Headwater Habitat Evaluation Index (HHEI).....4.3.2, 5.19, 5.24

Historic Resources4.4, 5.13, 6.3, 7.2, 7.4, 11.4

Hospitals/Health Care4.2.2, 4.2.4, 5.3

Hotline (Toll Free)3.2, 11.3

Household Characteristics4.2.1, 5.2

I-69 Community Planning Program.....4.2.2, 5.3, 5.4, 5.5, 5.24, 7.2, 7.3, 7.4

I-69 Corridor Plan for Greene County.....2.2

IDNR Game Bird Habitat Development Program5.22

Impaired Waterbodies4.3.2, 5.19, 5.24

Income and Poverty Level4.2.1, 5.2, 5.8

Indiana Bat1.2, 3.2, 4.3.3, 5.12, 5.17, 5.20, 5.21, 5.24 7.2, 7.3

Indiana Historic Sites and Structures (IHSS) Inventory5.13, 7.2

Indiana Statewide Transportation Plans.....2.2

Indiana Statewide Travel Demand Model (ISTDM)3.1, 5.1

Indiana Wetland Rapid Assessment Protocol (INWRAP).....5.1, 5.19, 5.20, 5.24, 7.3

Indirect Impacts5.3, 5.5, 5.17, 5.19, 5.20, 5.24, 6.3, 6.4

Institutional Displacement5.2

Interchanges ...1.2, 3.1, 3.2, 3.3, 3.4, 3.5, 4.2.2, 5.2, 5.3, 5.6, 5.7, 5.10, 5.22, 5.24, 6.3, 11.2, 11.3, 11.4

Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA)1.1, 2.2

Invasive Plan Species Assessment Working Group5.20, 7.3

Irreversible and Irrecoverable Resources5.4, 5.27, 6.4

Karst1.2, 3.2, 4.3.1, 5.1, 5.12, 5.21, 5.24, 6.2, 6.3, 6.4, 7.3, 7.4, 11.4

Labor Force Characteristics4.2.4

Land Use, Current.....1.2, 3.2, 4.2.2, 4.2.3, 4.3.1, 5.3, 7.3

Land Use, Plans and Zoning.....4.2.2, 5.3, 7.2, 7.3

Land Use Impacts1.2, 5.3, 5.5, 5.20, 5.24, 6.2, 6.4, 7.3

Least Environmentally Damaging Practicable Alternative.....1.2

Leq(h) Descriptor.....4.7, 5.10, 5.13

Libraries4.2.4, 5.3

Low-Income Populations4.2, 5.2, 5.8,

Managed Lands4.3.3, 5.22, 6.3

Martin County Comprehensive Plan.....2.2

Memorandum of Agreement (MOA, Section 106-related).....1.2, 5.13, 5.14, 7.3

Memorandum of Understanding (MOU, Wetlands).....5.17, 5.20, 5.21, 7.3

Methodology for Analysis of Impacts: Tier 1 – Tier 2 Comparison5.1

Migratory Bird Treaty Act.....4.3.3, 5.173

Mineral Resources4.3.1, 5.15, 6.3

Minority Populations5.1, 5.2, 5.8, 6.3, 7.3

Mitigation Measures / Commitments5.10, 5.13, 5.16, 5.22, 5.24, 6.2, 7.2, 7.3, 7.4



Section 4—Final Environmental Impact Statement

Mitigation Costs.....	6.2, 7.4
Mobile Emissions.....	4.6, 5.9
Mussels	1.2, 4.3.3, 5.17, 7.2
National Highway System (NHS).....	1.1, 2.2, 2.3
National I-69 Corridor.....	1.1, 2.2, 2.3, 5.26
National Ambient Air Quality Standards (NAAQS)	4.6, 5.9
National Historic Preservation Act.....	1.2, 5.13, 5.14
National Pollutant Discharge Elimination System (NPDES).....	5.19, 5.23, 5.24
National Register of Historic Places (NRHP).....	4.4, 5.7, 5.13, 5.14, 6.4
National Wetland Inventory (NWI).....	4.3.2, 5.19
Natural Regions	4.3.1, 4.3.3
Needs Assessment.....	2.0, 2.1, 2.3
Newsletter, Project.....	3.2, 11.1, 11.3
No-Build Condition	3.4, 5.5, 5.6, 5.9, 5.10, 5.25, 6.3
Noise Abatement Criteria	4.7, 5.10, 5.13
Noise Barriers	1.2, 5.1, 5.10, 7.3, 7.4
Noise Impacts	1.2, 5.1, 5.10, 5.12, 5.13, 5.18, 7.3
Notable or Outstanding Historic Resources.....	5.13
Notice of Intent	1.0, 1.1, 5.17, 11.4
Oil Resources	5.15
Open Water (Lakes, Ponds).....	4.3.2, 5.3, 5.18, 5.19, 5.23, 5.24, 6.4
Parks	4.2.4, 5.3, 5.10, 8.2, 11.3
Pedestrian Transect Survey.....	4.3.3, 5.17.3
Per Capita Income Trends.....	4.2.1, 5.8
Performance Measures.....	1.2, 2.0, 2.5, 3.1, 3.3, 3.4
Permits	1.2, 4.3.2, 5.12, 5.19, 5.23, 5.24, 6.4, 7.3
Physiographic Divisions	4.2.3, 4.3.1, 5.1
Population Trends.....	4.2.1
Project Background.....	1.1 – 1.3
Project Office (Section 4).....	2.3, 3.2, 5.2, 5.3, 5.8, 5.13, 11.1, 11.2, 11.3
Public Involvement.....	2.3, 2.4, 2.5, 3.2, 4.2.2, 5.2, 5.3, 5.8, 11.1 –11.4
Public Water Supply	4.3.2, 5.19, 5.24
Purpose and Need	1.2, 2, 3.2, 3.3, 3.4, 5.13, 11.1, 11.3, 11.4
Qualitative Habitat Evaluation Index (QHEI)	4.3.2, 5.19, 5.24
Quantm.....	3.1, 3.2
Railroads	2.2, 4.2.2, 4.4.1, 5.3
Recreation Areas.....	4.2.2, 4.3.3, 5.3, 11.3
Residential Relocations	3.4, 5.2, 5.3, 5.8, 6.4, 7.3
Residential Cluster.....	5.2, 7.3
Right-of-Way	3.2, 3.4, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.12, 5.14, 5.15, 5.16, 5.17, 5.18, 5.19, 5.20, 5.22, 5.24, 6.2, 6.3, 6.4, 7.3, 11.2, 11.4
Riparian Impacts.....	5.19, 6.4
Roadway Damage (Construction).....	5.12
Roadway Impacts (Section 4 Study Area).....	5.2, 5.3
Rule 5 Permit	5.19, 5.23, 5.24, 6.4



Safety 2.1, 2.3, 2.5, 3.1, 3.2, 3.3, 3.4, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.10, 5.12, 5.18, 6.2, 6.3, 6.4, 7.2, 7.3

Schools..... 3.2, 4.2.2, 4.2.4, 5.2, 5.3, 5.10, 5.12, 7.2, 7.3, 11.2, 11.3

Scoping of Alternatives 2.1, 3.1, 3.2, 3.4, 5.2

Section 4 Study Area (Description) 1.2, 3.3, 4.2.1, 4.3.1, 4.3.2, 4.3.3, 4.4.1, 4.4.2, 4.4.3, 5.2, 5.8, 5.17, 5.19, 5.20

Section 106 (Archaeological) 4.4, 5.14, 7.2, 7.3, 7.4, 8.3

Section 106 (Historic)..... 1.2, 3.4, 4.4, 5.13, 7.3, 7.4, 8.3

Section 106 Consultation 3.4, 5.3, 7.3, 8.3, 11.3

Section 303(d), Clean Water Act 4.3.2, 5.19, 5.24

Section 4(f) 6.4, 8.1, 8.2, 8.3

Section 401, Clean Water Act..... 1.2, 5.19, 5.23, 5.24

Section 404, Clean Water Act..... 1.2, 5.19, 5.24, 7.3

Section 6(f) Resources 6.4, 8.4, 11.4

Section 7 Formal Consultation..... 1.2, 4.3.3, 5.17, 7.2, 7.3

Sections of Independent Utility (SIU) 1.1, 1.2, 2.2, 5.17

Seismic Risks 4.3.1

Soil Associations/Types..... 4.3, 5.4, 5.18

Soybean Production 4.2.3, 5.4

State Historic Preservation Officer (SHPO) 4.4.3, 5.1, 5.13, 5.14, 7.2, 7.3

State Implementation Plan for Air Quality 4.6, 5.9

State Listed Species 5.17, 7.2, 7.3

Statewide Mobility Corridors 2.2

Stream Impacts..... 3.4, 5.19, 5.23, 6.2, 6.3, 6.4, 7.3, 11.4

Study Band 5.1

Summer Action Area 5.12, 5.17, 7.2, 7.3

Superfund 4.5.1

Tax Base 4.2.1, 4.2.4, 5.5, 6.4

Threatened and Endangered Species 1.2, 3.2, 4.3.3, 5.1, 5.12, 5.17, 5.18, 5.19, 6.4, 7.2, 7.3

Tier 1 Environmental Impact Statement..... 1.2, 3.2, 3.3, 4.3.3, 4.4.2, 5.1, 5.5, 5.8, 5.13, 5.17, 5.19, 5.24, 6.2, 7.1, 7.2

Tier 1 Goals 1.2, 2.0, 2.1, 2.5, 3.2, 3.3, 3.4

Tier 1 Major Mitigation Initiatives 5.12, 5.13, 5.14, 5.17, 5.18, 5.19, 5.20, 7

Tier 1 Preferred Alternative 3C 1.3, 2.5, 5.9, 5.19, 7.1

Tier 1 Record of Decision (ROD)..... 1.2, 2.1, 2.2, 2.3, 2.5, 3.1, 3.2, 3.4

Tier 1 Re-Evaluation..... 1.2, 3.2, 11.3, 11.4

Tier 2 (General)..... 1.2, 2.1 – 2.5, 5.1

Tier 1 and Tier 2 Methodologies (Overview)..... 1.2, 5.1, 5.17, 5.24

Tier 1 and Tier 2 Cost and Impacts Comparison, Section 4 3.2, 5.8, 6.2, 6.3, 7

Tier 2 Section 4 Corridor Description 1.2, 1.3, 2.0, 3.1, 3.2, 4.4.2

Tiering 1.2

Toll Funding Option 1.2, 3.2

Tourism 4.2, 4.2.4, 5.1

Town of Bloomfield Comprehensive Plan 2.2

Traffic Analysis Zones (TAZs)..... 3.1, 5.5, 5.6, 5.24



Section 4—Final Environmental Impact Statement

Traffic Congestion2.1, 2.2, 2.5, 3.3, 5.6
 Traffic Demand Model (ISTDM) 2.3, 3.1, 5.5, 5.6, 5.24, 5.25
 Traffic Forecasts 3.1, 3.3, 3.4, 5.1, 5.5, 5.6
 Traffic Impacts3.2, 3.3, 3.4, 5.1, 5.3, 5.5, 5.6, 5.8, 5.12, 6.3
 Traffic Noise Model (TNM)1.2, 4.7, 5.10
 Traffic Safety 2.1, 2.2, 2.3, 2.5, 3.3, 5.3
 Transportation Equity Act for the 21st Century (TEA-21).....1.1, 2.2
 Travel Patterns 3.2, 4.2, 4.2.2, 5.2, 5.3, 5.5, 5.6, 5.12
 Typical Cross Section 3.2., 6.3
 USDA Wildlife Habitat Incentive Program5.22
 USDA-NRCS Conservation Reserve Program 4.3.2, 4.3.3, 5.4, 5.22, 6.4, 7.3
 USFWS Partners for Fish and Wildlife Program 4.3.3, 5.22
 Underground Storage Tanks4.5.1, 5.16, 6.3, 7.3
 User Cost Analysis 5.5
 Utilities 2.2, 4.2.2, 4.2.4, 5.3, 10.2
 Visual Impacts 1.2, 5.1, 5.7, 6.4, 7.3, 8.1
 View from the Road 1.2, 5.1, 5.7, 6.4, 7.3
 View of the Road 1.2, 5.1, 5.7, 6.4
 Wabash Lowland Division 5.17, 5.18
 Water Body Modification 5.1, 5.19, 5.23, 6.2, 7.3
 Water Resources 3.2, 4.3, 4.3.2, 5.18, 5.19, 5.23, 5.24, 6.4, 11.4
 Water Quality 1.2, 3.2, 4.3.2, 4.3.3, 5.1, 5.12, 5.17, 5.19, 5.22, 5.23, 5.24, 6.4, 7.3, 11.4
 Water Quality Certification 5.19, 5.23
 Website, Project 11.4
 Wellhead Protection Area 4.3.2, 5.19, 6.4
 5.24
 Wetlands 1.2, 1.3, 3.1, 3.2, 3.4, 4.2.2, 4.3.2, 4.3.1, 4.3.3, 5.1, 5.7, 5.12, 5.13, 5.17, 5.18,
 5.19, 5.20, 5.22, 5.23, 5.24, 6.2, 6.3, 6.4, 7.2, 7.3, 7.4, 11.3, 11.4
 Wheat Production 4.2.3, 5.4
 Wild and Scenic Rivers 5.11, 6.4
 Wildlife 4.3.3, 5.18, 6.4, 7.2, 7.3
 Wildlife Corridors 4.3.3, 5.18, 7.2, 7.3