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1. PURPOSE AND NEED FOR ACTION

1.1 Description and Location of Proposed Project

The project consists of transportation improvements of US 45 from IL 142 in Eldorado, Saline County to IL 141, which is located on the county line between Gallatin and White Counties, Illinois (Exhibit 1, page 2.) Within the project corridor, US 45 will primarily be widened from two lanes to four lanes. The length of the project corridor is approximately 9.0 miles.

1.2 Purpose Of the Project

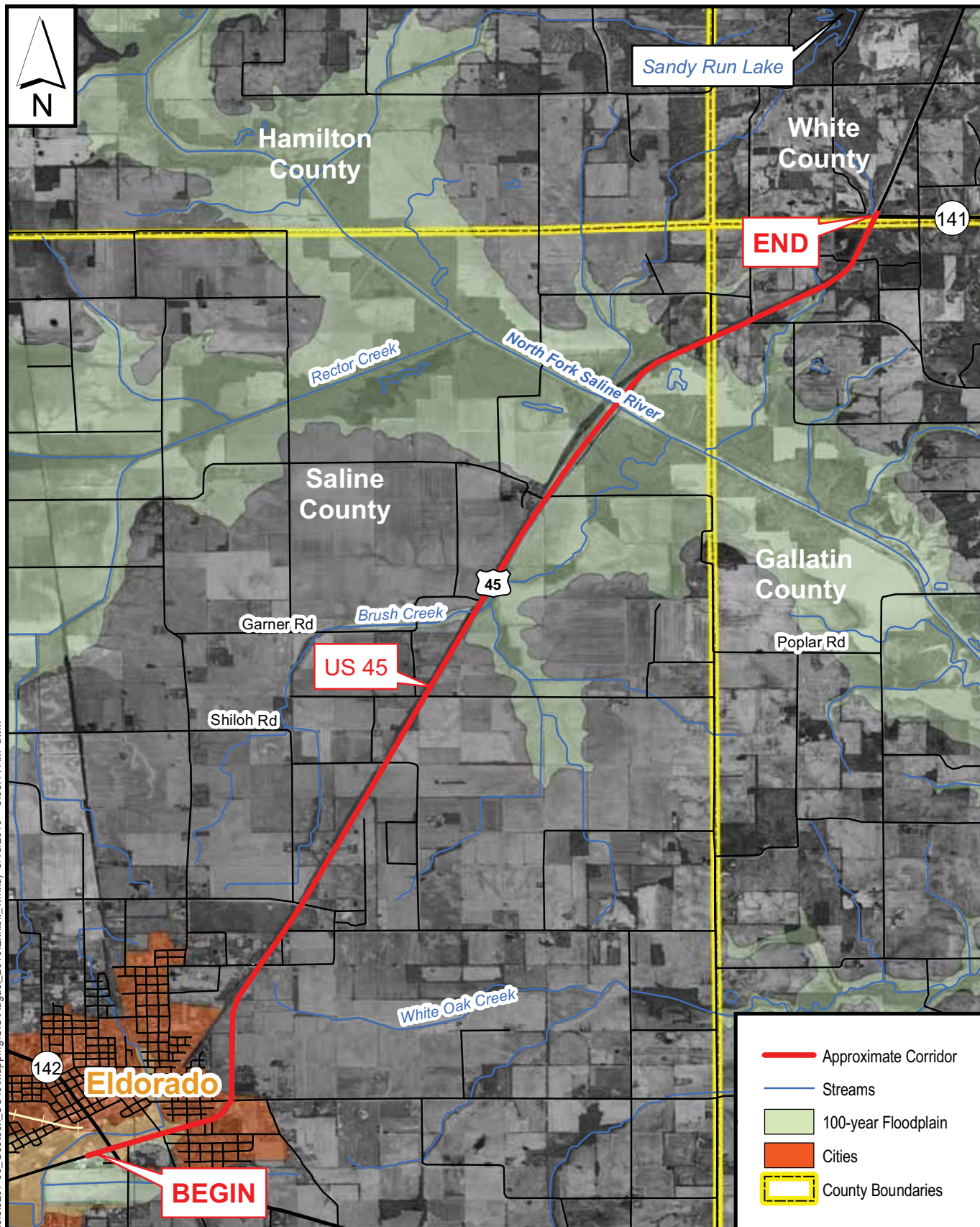
The purpose of the project is to improve regional connectivity and promote economic development in an economically depressed portion of Illinois.

1.3 Need for the Project

The project is needed because Southern Illinois has lagged behind the rest of the state in employment, new job creation, and economic opportunities for its citizens. In 2003, the *Opportunity Returns* program was initiated by the state to be a comprehensive economic development strategy. The state was divided into 10 regions to ensure that economic initiatives under the plan are tailored to specific Illinois regions. Saline, Gallatin, and White counties are in the Southern Illinois region.¹ Six goals were established to address the economic and workforce development needs of Southern Illinois: modernizing and expanding local business, *improving local infrastructure*, strengthening education and job training, supporting the coal industry and the use of renewable fuel, promoting regional tourism, and assisting entrepreneurs and small business (emphasis added).

Upgrading roads within the Southern Illinois region may encourage business growth and job creation. Additionally, the proposed highway project will provide connectivity with multi-modal transportation systems in the region. Such connectivity will improve the flow of goods efficiently and economically. US 45 is the primary non-interstate north-south highway serving the southeast region of Southern Illinois. The existing (2007) average daily traffic (ADT) varies for the 9.0-mile corridor from 10,300 ADT near the southern terminus to 2,800 ADT at the northern terminus with IL 141. Table 1, page 3, shows ADT for 2007 and the design year (2033) for sections of US 45 in the project corridor, together with truck percentage (single and multi-units). Truck traffic represents a smaller percentage of traffic in Eldorado because most of the traffic within the city boundaries is comprised of passenger vehicles. As the number of trips into the county decreases, the percentage of trucks relative to passenger vehicles increases, although the actual number of trucks remains relatively constant. Constructing a four-lane road would increase the efficiency of traffic along the corridor and would allow for a safer combination of trucks and cars sharing the road.

¹ In addition to Saline, Gallatin, and White counties, the Southern Illinois region includes Alexander, Edwards, Franklin, Hamilton, Hardin, Jackson, Jefferson, Johnson, Massac, Perry, Pope, Pulaski, Union, Wabash, Wayne, and Williamson counties.



All data sets were downloaded from the Illinois Natural Resources Geospatial Data Clearinghouse hosted by the Illinois State Geological Survey (ISGS)

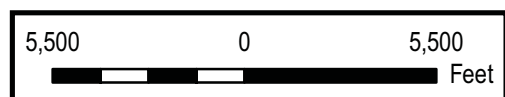


Exhibit 1 US 45 Reconstruction Saline, Gallatin and White Counties, Illinois

TABLE 1 – 2007 AND DESIGN YEAR TRAFFIC DATA

ROAD SECTION	2007		2033	
	ADT	% TRUCKS	ADT	% TRUCKS
US 45, MP 6.60-7.42 (at Eldorado)	10,300	5.3%	13,340	5.4%
US 45, MP 5.54-6.60)	4,450	17.4%	5,760	17.4%
US 45, MP 1.62-5.54	4,300	14.5%	5,570	14.5%
US 45, MP 0.00-1.63 (Saline/Gallatin County Line)	4,300	15.7%	5,570	15.7%
US 45, MP 1.14-1.35	4,300	15.7%	5,570	15.7%
US 45, MP 0.00-1.14 (White/Gallatin County Line)	4,200	13.7%	5,400	13.7%
US 45, MP 28.23-32.51 (north of White/Gallatin County Line)	2,800	14.3%	3,630	14.3%
IL 141, MP 0.00-2.76	1,450	12.4%	1,880	12.5%

The proposed project is included in the Illinois Department of Transportation (IDOT) *FY 2009-2014 Highway Improvement Program* for District 9, as shown in Table 2.

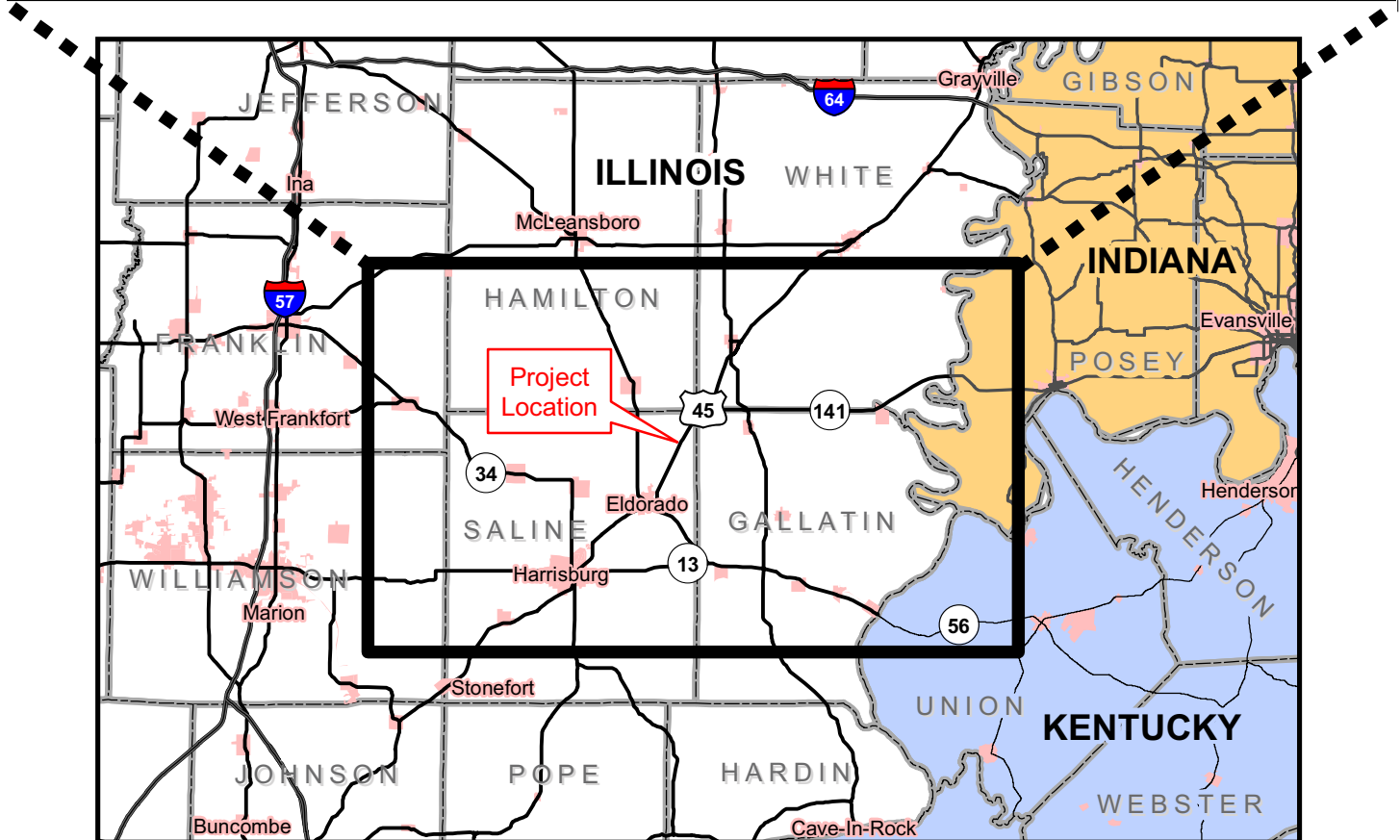
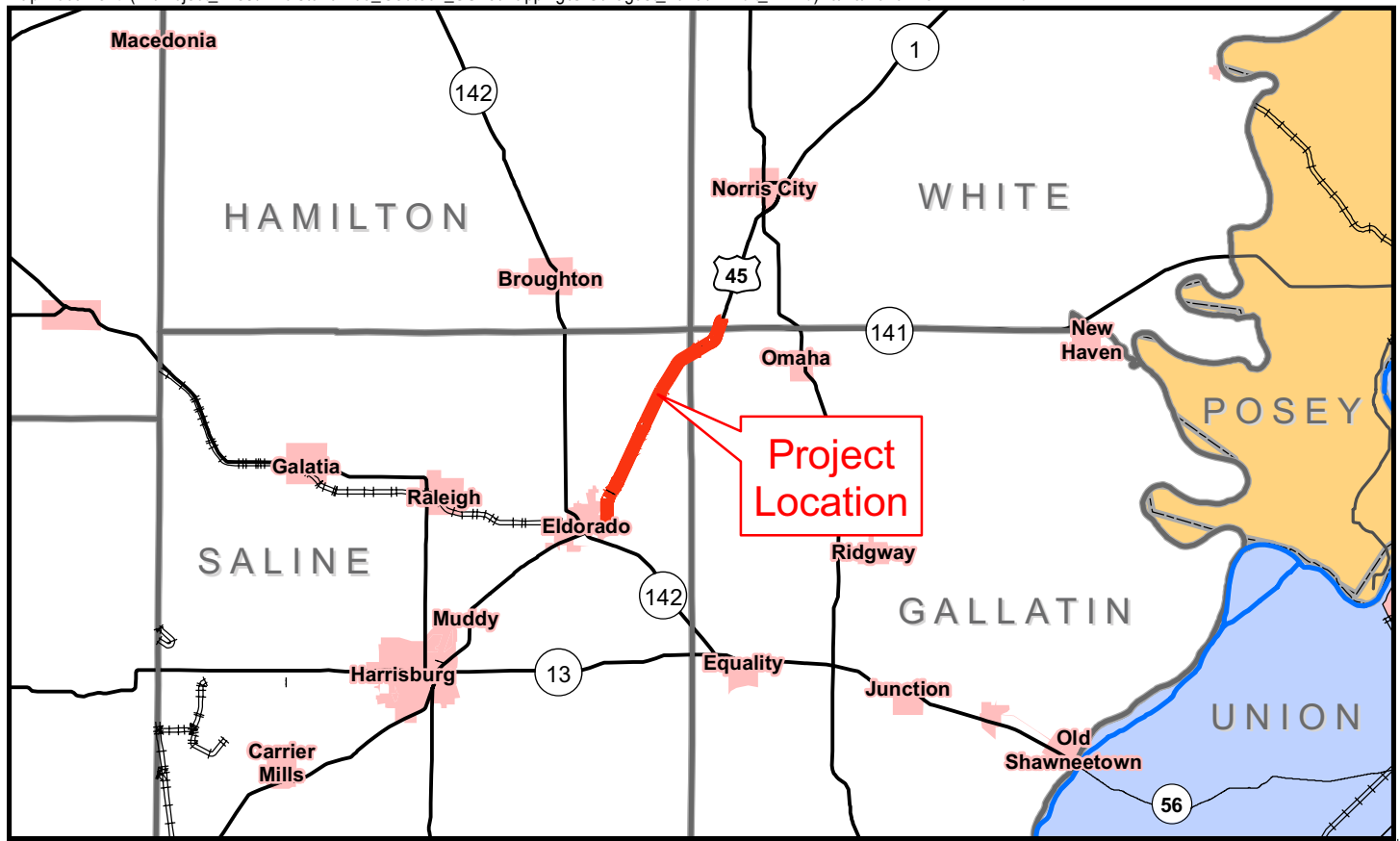
TABLE 2 – PROJECT INFORMATION, FY 2009-2014 HIGHWAY IMPROVEMENT PROGRAM

ROUTE	SECTION	IMPROVEMENTS	EST. COST	COUNTY	MYP YEARS
US 45	IL 141 to IL 142 in Eldorado	P.E. (Phase I)	\$1,000,000	Gallatin, Saline	2009
US-45	IL 141 to IL 142 in Eldorado	P.E. (Phase II)	\$1,700,000	Gallatin, Saline	2010-2014

1.3.1 Regional Connectivity

US 45 has recently been upgraded to a four-lane expressway between Harrisburg and Eldorado and IL 13 is a four-lane expressway between Murphysboro and Harrisburg. The southern terminus of the proposed project connects with the existing five-lane section in Eldorado.

At the northern end of the project corridor, IL 141 is a connection from Eldorado to Evansville, Indiana (Exhibit 2, page 4). Evansville, located 55 miles east of Eldorado, is a major medical, industrial, and recreational destination for traffic from Eldorado. With a metropolitan population of 300,000 (2000 US Census) and two full-service hospitals, it is the nearest major metropolitan area to the project area. Paducah, Kentucky (located 70 miles away) is the next largest, with a population of 26,500 (2000 US Census). The project corridor is in a rural area, which has different transportation needs from urban areas. In order to prosper, rural areas need safe, efficient access to mainline transportation systems. Congestion and mobility are normally not issues for rural areas. These areas need reasonable access to the nation's interstate system if they are to compete in the global market. US 45 connects with Interstate 64 (I-64) north of IL 141. Although I-64 and Evansville are both destinations for traffic north of the IL 141 intersection,



All data sets were downloaded from the
Illinois Natural Resources Geospatial Data Clearinghouse
hosted by the Illinois State Geological Survey (ISGS)

NOT TO SCALE

Exhibit 2
Project Location
US 45 Reconstruction
Saline, Gallatin, & White Counties, Illinois

traffic levels were determined to drop off at IL 141 to a level that do not support continuation of the four-lane section north of IL 141 to I-64 or along IL 141 to Evansville. Thus IL 141 represents the logical northern terminus for the project.

The proposed project also represents an important link to the multi-modal transportation systems of Southern Illinois. The region has active rail and barge networks that carry millions of tons of freight throughout the nation's mid-section. The Illinois Central Railroad (now part of the Canadian National Railways system) has a trunk line connecting Eldorado with East St. Louis. This line also connects with main north-south lines connecting Chicago with Memphis and the Gulf Port region.

Additionally, Illinois is bordered by the Mississippi River to the west and the Ohio and Wabash Rivers to the east. The state contains 16 port districts which, in 2005, moved over 117 million tons of freight. One of those port districts is located east of Eldorado, just south of the confluence of the Ohio and Wabash Rivers. Improvements to US 45 would facilitate transport of heavy freight from the rail terminal at Fairfield to the shipping port on the river. Improvements to US 45 would also provide for alternative access to the port in the event of catastrophic failure of the interstate highway network due to national emergency or seismic activity.

1.3.2 Economic Development

The proposed project is needed to promote economic stability and potentially stimulate employment, new job creation, and economic opportunities for the Southern Illinois region. Saline and Gallatin Counties are among the 252 counties and parishes along the Mississippi River corridor that comprise the most distressed area of the country and population has been declining in the Southern Illinois region even as the population of Illinois has increased (Delta Regional Authority 2009). As the population has declined, the median age has increased, so that Saline and Gallatin Counties have median ages higher than for the State of Illinois as a whole. Thus, the area has a smaller qualified labor force to fill vacant positions. This discrepancy has hindered new investment in the region, which has stifled job creation and economic opportunities.

Combined with an older, smaller population base, a higher percentage of residents in the project area live below the poverty level, with unemployment higher for the project area than for Illinois. Detailed demographic statistics of the project area are discussed more fully in Section 2, *Affected Environment*.

The construction of the proposed project will improve transportation access to the regional transportation system and to multi-modal hubs which may help to stimulate new business and job creation in the area. This is discussed more fully in Section 2, *Affected Environment*. Combined with programs designed to re-train the workforce for 21st century job demands, an improved US 45 corridor will provide an important link for the Southern Illinois region to businesses that reach a broader national or international market.

2. AFFECTED ENVIRONMENT

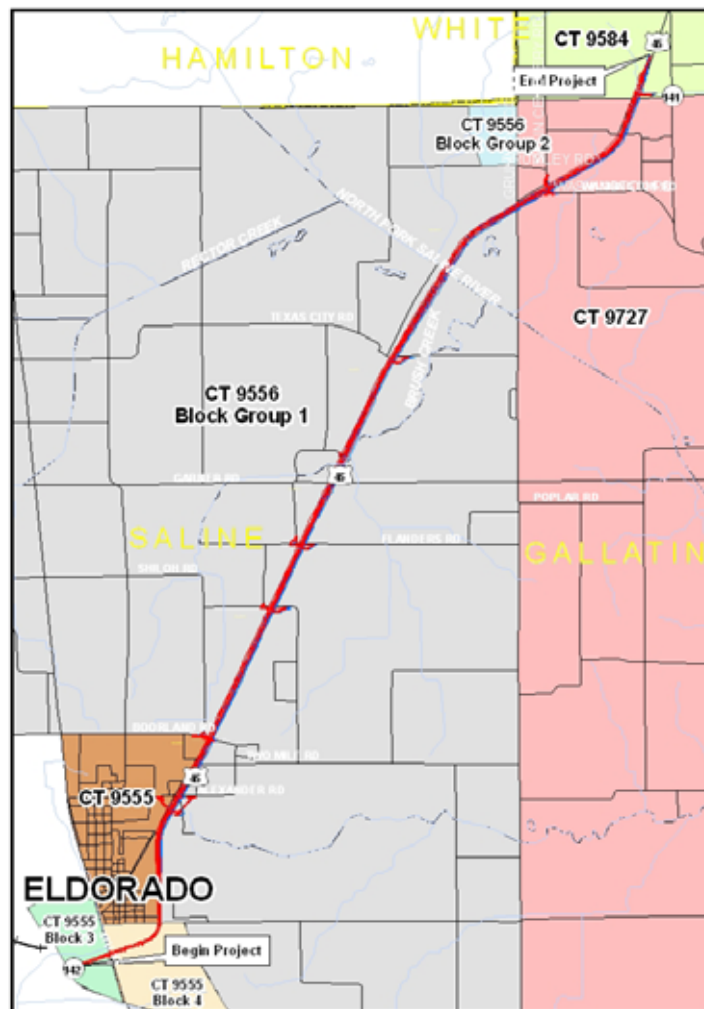
The project area was inventoried for environmental resources. Cultural, natural, physical, and socioeconomic resources and special waste sites found to be present in the study area are identified in this section and on the environmental inventory mapping (Exhibits 3 through 6, pages 7 through 10).

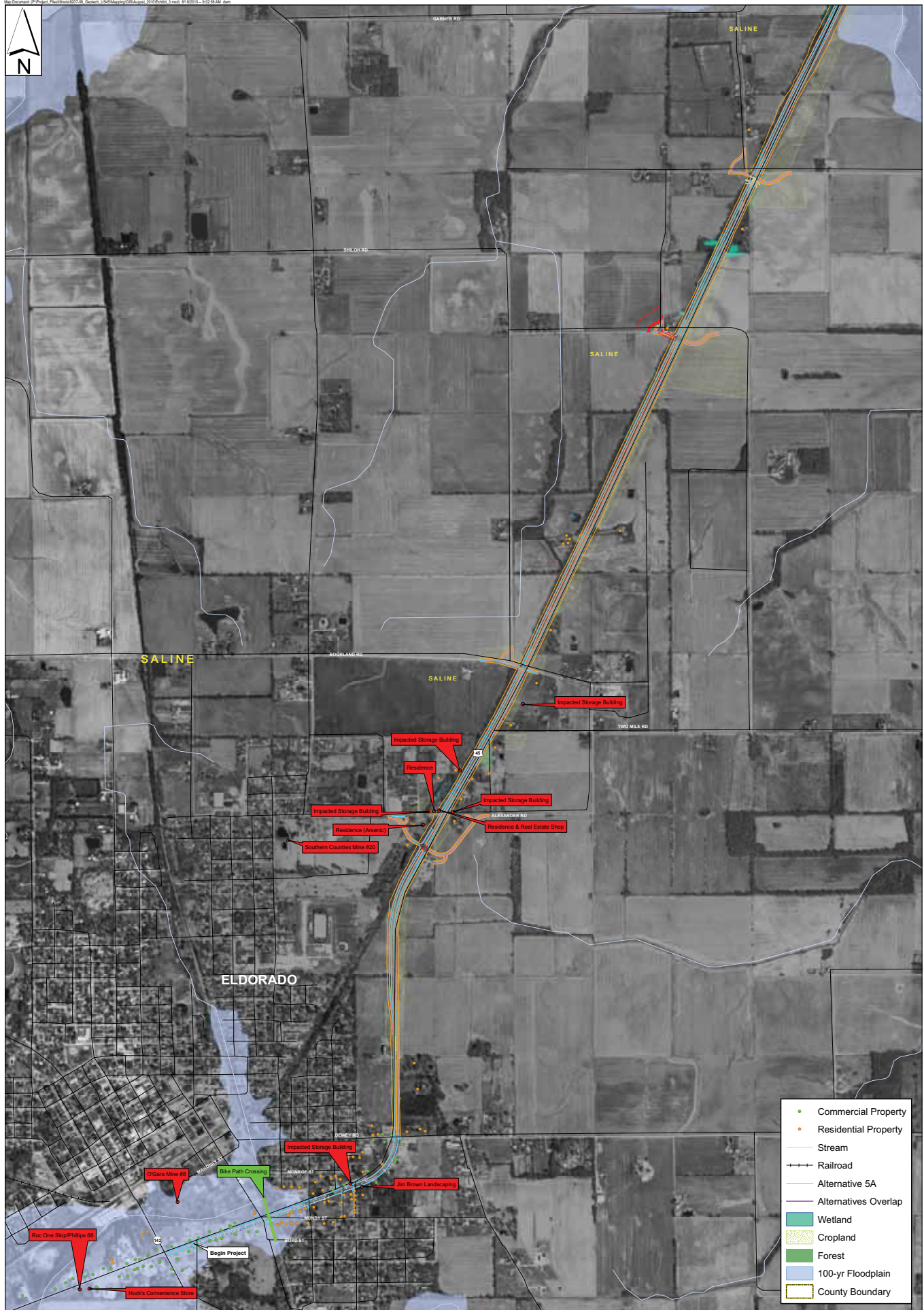
2.1 Social/Economic

2.1.1 Demographics

Data from the 2000 US Census for Saline, Gallatin, and White Counties, Illinois was obtained, as well as census tracts (CT) and block groups (BG) within the project area, where available, to provide demographic data for the project area. In addition to 2000 US Census data, additional Census Bureau population estimates were used, as was data from the Illinois Department of Commerce and Economic Opportunities. As shown on Figure 1, the project area is composed of Census Tract (CT) 9555 (all block groups in this census tract are located within the project area); and CT 9556 BG 1 and 2 in Saline County, and CT 9727 BG 2 in Gallatin County and CT 9584 BG 3 in White County.

FIGURE 1 – CENSUS TRACT LOCATION





- Commercial Property
- Residential Property
- Stream
- Railroad
- Alternative 5A
- Alternatives Overlap
- Wetland
- Cropland
- Forest
- 100-yr Floodplain
- County Boundary

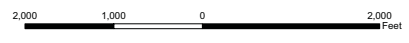
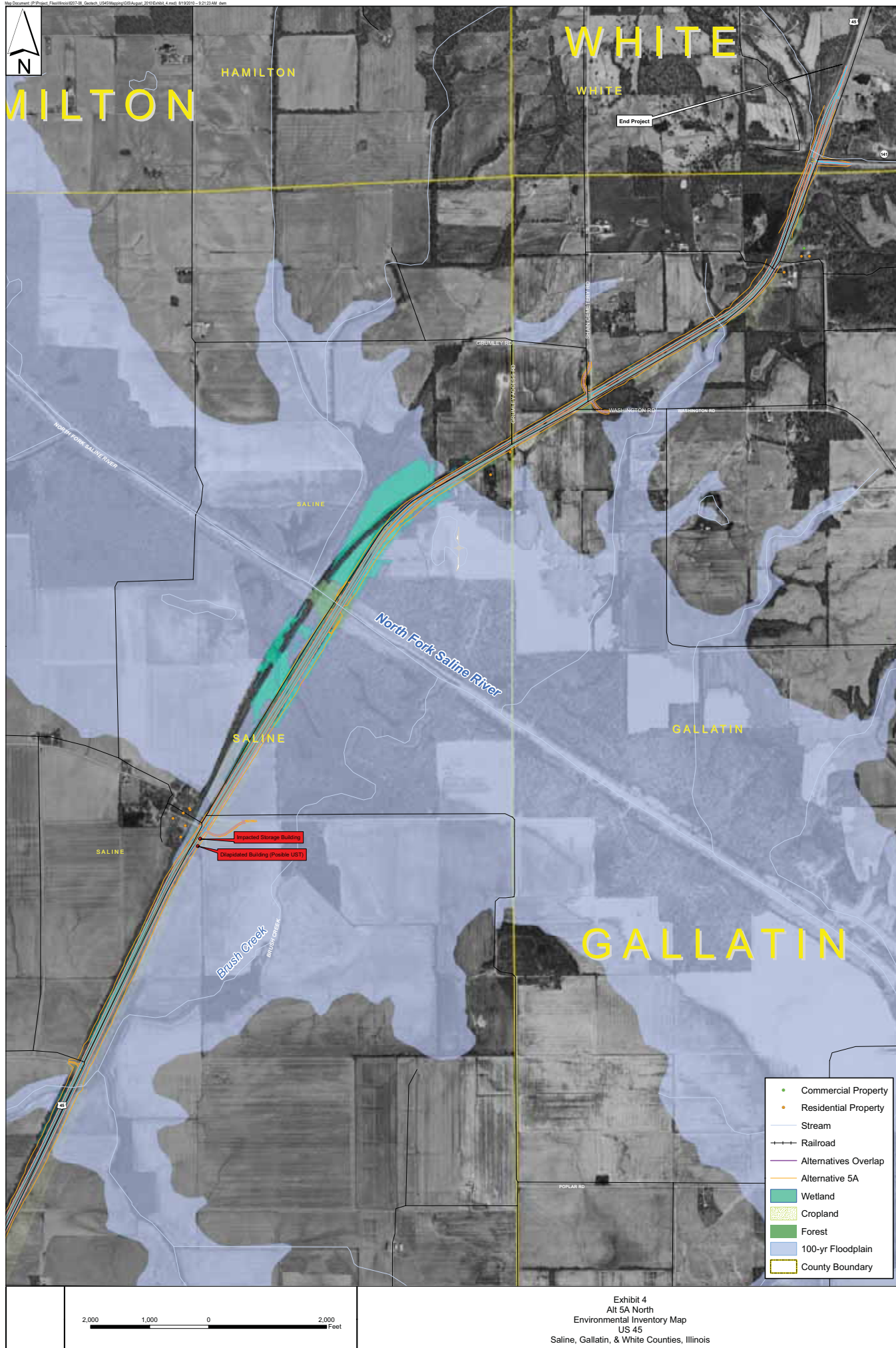
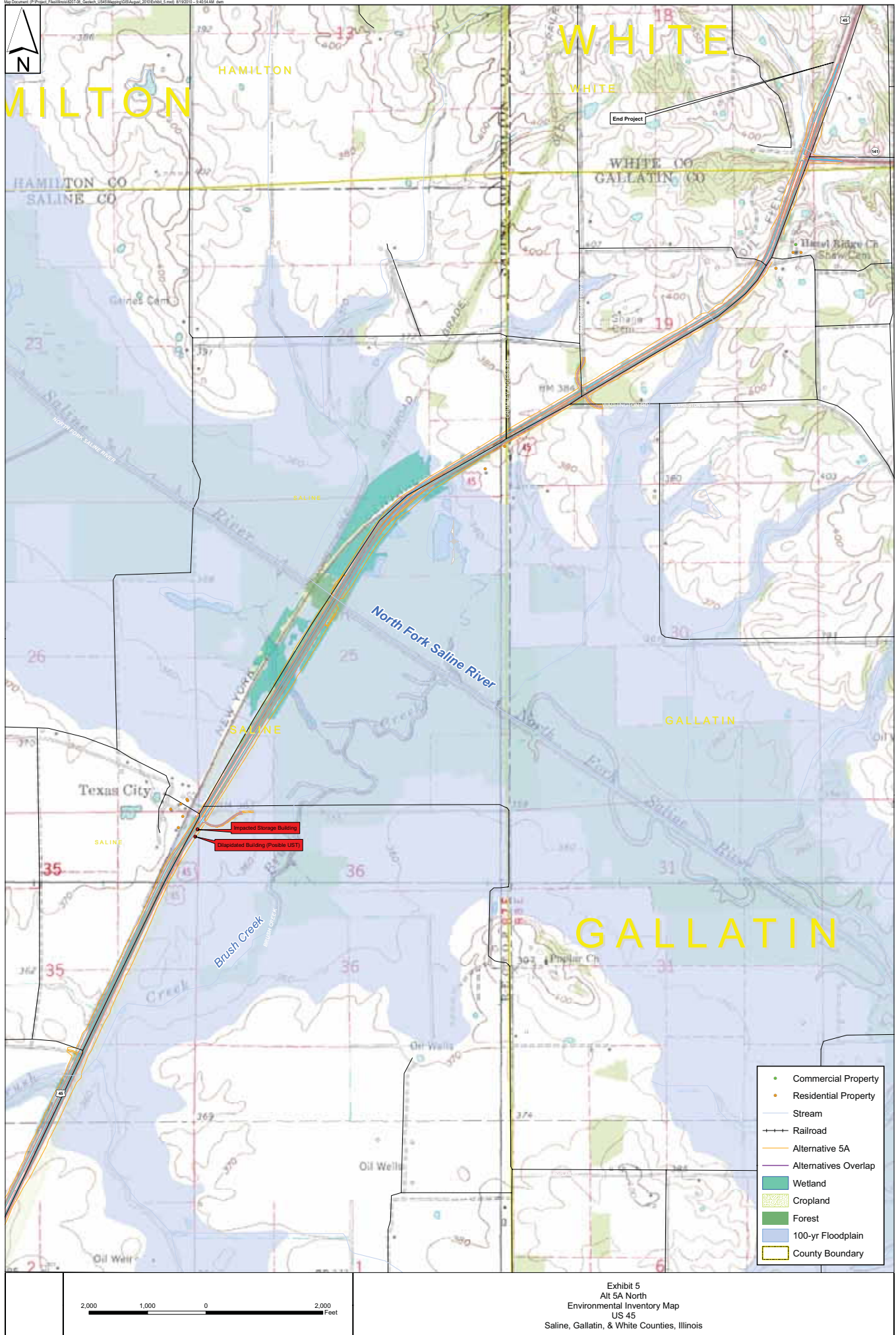


Exhibit 3
Alt 5A South
Environmental Inventory Map
US 45
Saline, Gallatin, & White Counties, Illinois





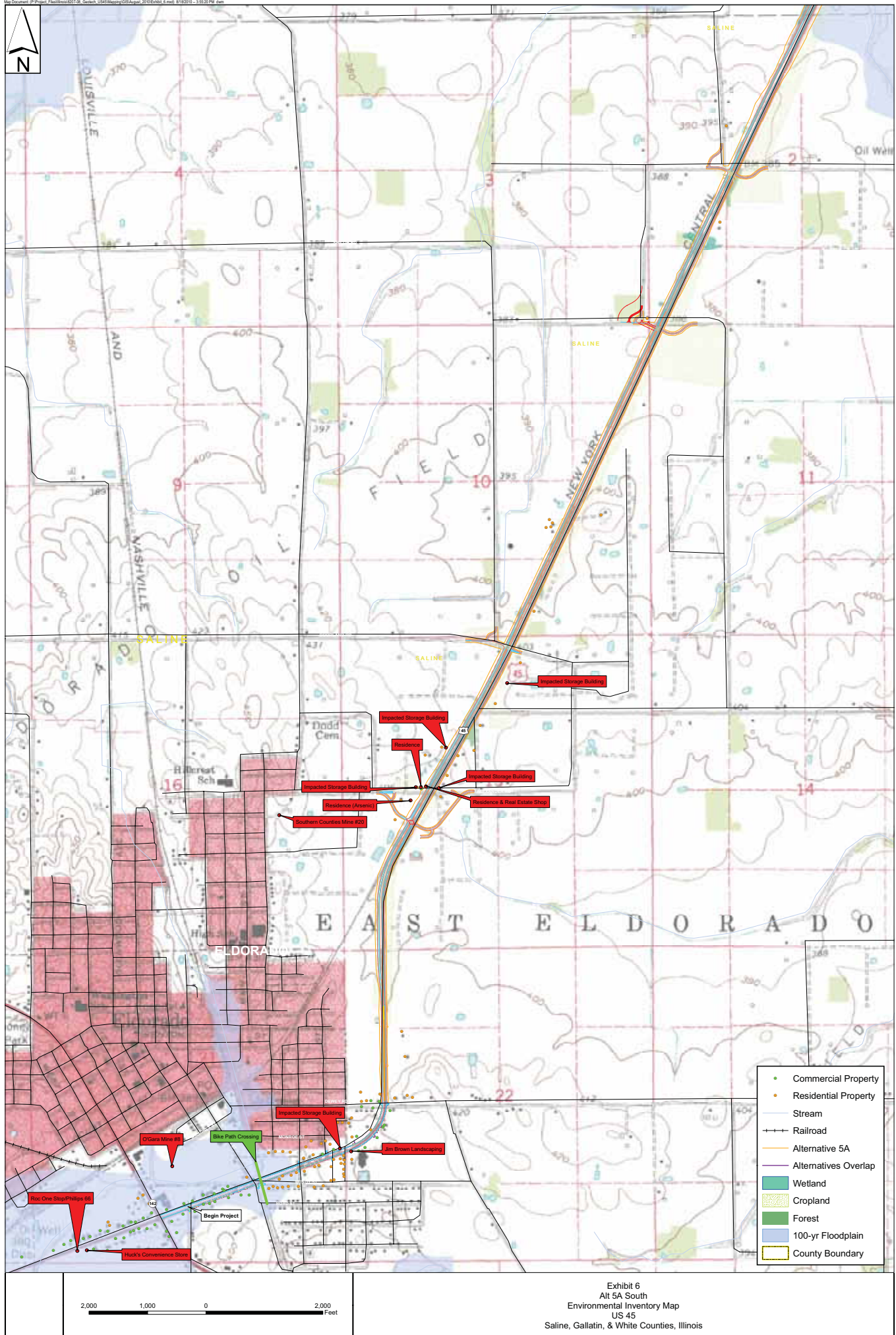


Exhibit 6
Alt 5A South
Environmental Inventory Map
US 45
Saline, Gallatin, & White Counties, Illinois

In 2007, the US Census estimated Saline County's population to be 26,102, a 2.4 percent drop from the county's population in 2000. Gallatin County's estimated population of 6,025 dropped 6.5 percent from 2000, and White County's estimated population of 14,657 dropped 4.6 percent during this same time. The population of the State of Illinois in general, however, grew 12.4 percent over this same period.

All areas studied have a much lower percentage of minority residents than Illinois as a whole (Table 3). Minority residents comprise 5.9 percent of the population of Saline County. With 2.5 percent of the population composed of minority individuals, CT 9556 BG 2 contains the most minority residents in the project area.

TABLE 3 – POPULATION DATA

GEOGRAPHIC AREA	POPULATION	MINORITY*	HISPANIC OR LATINO**	UNDER AGE 18	OVER AGE 65	MEDIAN AGE	MEDIAN HOUSEHOLD INCOME (1999)	INDIVIDUALS BELOW POVERTY LINE (1999)
Illinois	12,419,293	26.5%	12.3%	26.1%	12.1%	34.7	\$46,590	10.7%
Saline County	26,733	5.9%	1.0%	24.0%	19.0%	39.9	\$28,768	14.2%
CT 9555	2,544	1.8%	1.3%	21.6%	26.1%	42.8	\$20,839	23.9%
CT 9556 BG 1	711	1.0%	0%	24.1%	17.6%	41.1	\$35,500	4.8%
CT 9556 BG 2	888	2.5%	0.3%	22.1%	16.8%	41.9	\$37,222	12.9%
Gallatin County	6,445	1.6%	0.9%	22.2%	18.2%	40.7	\$26,118	20.7%
CT 9727 BG 2	759	0.7%	0%	22.3%	18.8%	39.8	\$26,250	18.7%
White County	15,371	1.8%	0.7%	21.5%	20.9%	42.0	\$29,601	12.5%
CT 9584 BG 3	839	1.4%	0.7%	23.4%	12.8%	38.9	\$39,167	4.3%

*The US Census considers Hispanic Origin to be an ethnicity, not a separate race; therefore, Hispanic Origin is not included in percentage of minorities in order to avoid duplication, though individuals of Hispanic Origin who identified themselves as "nonwhite" during the 2000 US Census are included in this category.

**As Hispanic Origin is not considered a separate race, the number shown is counted twice, once as Hispanic Origin and once as one of the US Census' six other racial groups: White, Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, or Some Other Race.

Source: 2000 US Census, American FactFinder

With the exception of CT 9556 BG 1 and CT 9584 BG 3 (both of which have just over 4 percent of the population living below the poverty line), a higher percentage of project area residents are living below the poverty line than in the State of Illinois as a whole. CT 9555 contains the highest percentage of residents living below the poverty line: 23.9 percent.

As the 2000 US Census is ten years old at the time of this study, the Illinois Department of Commerce and Economic Opportunities' population estimates for 2005 were examined to determine if any population shifts had occurred between 2000 and 2005 regarding Hispanic or Latino individuals due to increasing percentages of Hispanic or Latino residents nationally. The percentage of Hispanic or Latino residents remained the same in White and Gallatin Counties in 2005, but increased slightly to 1.8 percent in Saline County.

Just over half of CT 9555 households are “family households,” defined by the US Census Bureau as a household maintained by a family (a group of two or more people living together who are related by birth, marriage, or adoption), including any unrelated individuals also residing in the household. This is much lower than the state average, as well as the percentage of family households in the rest of the project area. CT 9584 BG 3 has a much higher percentage of family households compared to the rest of the project area, as Table 4 shows. With the exception of CT 9555, where 66.8 percent of residents are homeowners, a higher percentage of project area residents are homeowners than in the State of Illinois as a whole. With the exception of renters in CT 9584 BG 3, project area homeowners and renters have, on average, lived in their current home as long as or longer than Illinois homeowners as a whole.

TABLE 4 – HOUSEHOLD DATA

GEOGRAPHIC AREA	FAMILY HOUSEHOLDS	VACANT HOUSING UNITS	OWNER-OCCUPIED HOUSING UNITS	MEDIAN YEAR HOUSEHOLDER MOVED INTO UNIT (HOMEOWNER/ RENTER)	MEDIAN YEAR STRUCTURE BUILT
Illinois	67.7%	6.0%	67.3%	1991/1997	1962
Saline County	65.8%	11.1%	76.5%	1990/1997	1961
CT 9555	57.0%	15.7%	66.8%	1988/1997	1954
CT 9556 BG 1	69.5%	8.8%	90.4%	1979/1994	1964
CT 9556 BG 2	77.4%	9.8%	90.8%	1991/1997	1978
Gallatin County	67.4%	11.2%	81.1%	1986/1997	1967
CT 9727 BG 2	64.5%	11.9%	83.6%	1979/1996	1970
White County	67.0%	11.6%	78.0%	1988/1997	1958
CT 9584 BG 3	85.6%	14.7%	89.7%	1988/1999	1968

Source: 2000 US Census, American FactFinder

2.1.2 Land Use and Transportation

Saline County has a land area of 387 square miles, with an average population density of 70 persons per square mile. Gallatin County is 328 square miles in size, with a population density of 20 persons per square mile, and White County is 502 square miles, with a population density of 31 persons per square mile. Development is densest at the project’s southern terminus, in Eldorado. Many businesses and residences line the roadway in Eldorado near the US 45 intersection with IL-142 to Dewey Road. Roughly north of the US 45 intersection with Dewey Road, the project corridor is much more rural. An abandoned rail bed parallels US 45 to the west from just south of Alexander Street to the project’s northern terminus.

Eldorado, Harrisburg, and, to a lesser extent Carrier Mills, are the largest towns in Saline County; US 45 connects them all. US 45 is an important north-south corridor through not only the project corridor, but the region as well, as it connects to I-64 to the north and I-24 to the south.



*Residential and Commercial Land Use in
Southern Portion of Project Corridor*



*Rural Land Use in Project Corridor North of
Eldorado*

2.1.3 Public Facilities and Services

Eldorado is the largest community within the project area, and though it is not the largest town in Saline County, nor is it the county seat, Eldorado still contains community features that include a number of churches, several schools, and Ferrell Hospital, a 52-bed facility founded in 1925. The Egyptian Health Department also serves the area. The City of Eldorado operates its own fire and police departments, with the portions of the project area outside the city limits served by the Saline and Gallatin County Sheriffs. Eldorado contains a public library, and three schools: an elementary school, a middle school, and a high school. Residents of the portion of the project in Gallatin County are served by Gallatin County elementary, junior high, and high schools, all of which are located in Junction, Illinois. Residents of the portion of the project in White County are served by the Norris City-Omaha-Enfield Community Unit School District No. 3, with schools in Norris City and Enfield, Illinois.

2.1.4 Pedestrian and Bicycle Facilities

In June 2005, the Saline Valley Conservancy District approved a regional bike plan for Saline County. The plan's goals include creating a safe and connected system of bicycle trails and improving quality of life and economic development opportunities. As individual trails existed in the county at the time, many along abandoned railroad corridors, connecting separate paths was also a goal. One bike path is currently present in the project area. It is located in Eldorado and crosses US 45 near 4th Street.

2.2 Agriculture

Consistent with statewide trends, the 2007 US Census of Agriculture indicated that the number of farms in the project area increased, while the amount of land in farms decreased since the last agriculture census in 2002. In 2007, Saline County had 497 farms, with the average farm 236 acres in size. The average market value of production per farm was \$84,430. Gallatin County had 210 farms, with the average farm 885 acres in size. The average market value of production per farm was \$345,538. White County had 481 farms, with the average farm 617 acres in size. The average market value of production per farm was \$213,483.

Forty-eight percent of Saline County farmers list farming as their primary occupation, which is the same percentage as Illinois farmers as a whole. Slightly fewer (45 percent) of White County farmers list farming as their primary occupation, while 56 percent of Gallatin County farmers are primarily employed by farming.

The majority of land in farms in Saline, Gallatin, and White Counties is cropland. Corn and soybeans are the leading crop items in all three counties. Though many southern Illinois farmers produce these crops, the region contains more vineyards and orchards than the rest of the state. Shawnee Hills was named an American Viticultural Area (AVA) in 2006, which specifies the geographic location where at least 85 percent of the grapes used in a wine are grown. Shawnee Hills AVA is 2,140 miles square, and includes portions of Saline and Gallatin Counties, as well as Alexander, Hardin, Jackson, Johnson, Pope, Pulaski, Randolph, Union, and Williamson. The AVA contains 55 vineyards, with 300 acres of grapes and 18 wineries.



Row Crop Agriculture in Project Area; Forested Former Rail Bed in Background

2.3 Cultural Resources

A Section 106 and Cultural Resource Assessment was conducted to ensure that the proposed project is completed in accordance with Section 106 of the National Historic Preservation Act, which provides a procedure for evaluating the impacts of federally funded projects on historic and cultural resources and for encouraging public comment regarding the evaluation. The Section 106 process includes determining whether any ancient, historic, or potentially historic properties or sites are located within the project impact area. An Area of Potential Effect (APE) delineating the geographic extent of the evaluation is prepared based on direct (acquisition) and indirect (noise, visual, induced growth, etc.) effects, then resources within the APE are examined to determine the project effects on resources determined to be eligible for the National Register of Historic Places (NRHP) according to methods specified in 36 CFR 60.

Pursuant to Section 106 and other state and federal regulations, an Archaeological Report and Phase I documentation concerning historical and archeological properties and sites that could potentially be impacted by the proposed project was prepared. Three archaeological sites, 11-SA-560, 11-SA-578, and 11-G-452 were recorded. 11-SA-560 and 11-G-452 represent front yard portions of 19th and 20th century farmsteads. 11-SA-578 is a prehistoric Late Archaic habitation component that was tested with heavy equipment during the first week of December 2008. No subsurface features or intact deposits were found. The report concluded that 11-SA-578 does not meet the criteria for listing on the NRHP.

No historic structures or districts are located within the project area. The former Eldorado City Hall (now home to the Eldorado Chamber of Commerce), located at 1604 Locust Street,

approximately 1,750 feet from the project's southern terminus, is listed on the NRHP. The proposed project will not impact this resource.

The Illinois State Historic Preservation Officer concurred with the report's findings that no sites subject to protection under Section 106 of the National Historic Preservation Act will be affected by the proposed project. A copy of this concurrence is contained in Appendix A.

The Section 106 process requires that Native American tribes with an interest in archaeological sites and findings be allowed to comment on the project. Native American Coordination was initiated in February 2011 (Appendix B.) No responses have been received thus far.

2.4 *Air Quality*

No portion of the project is located within a designated non-attainment area or maintenance area.

2.5 *Traffic Noise*

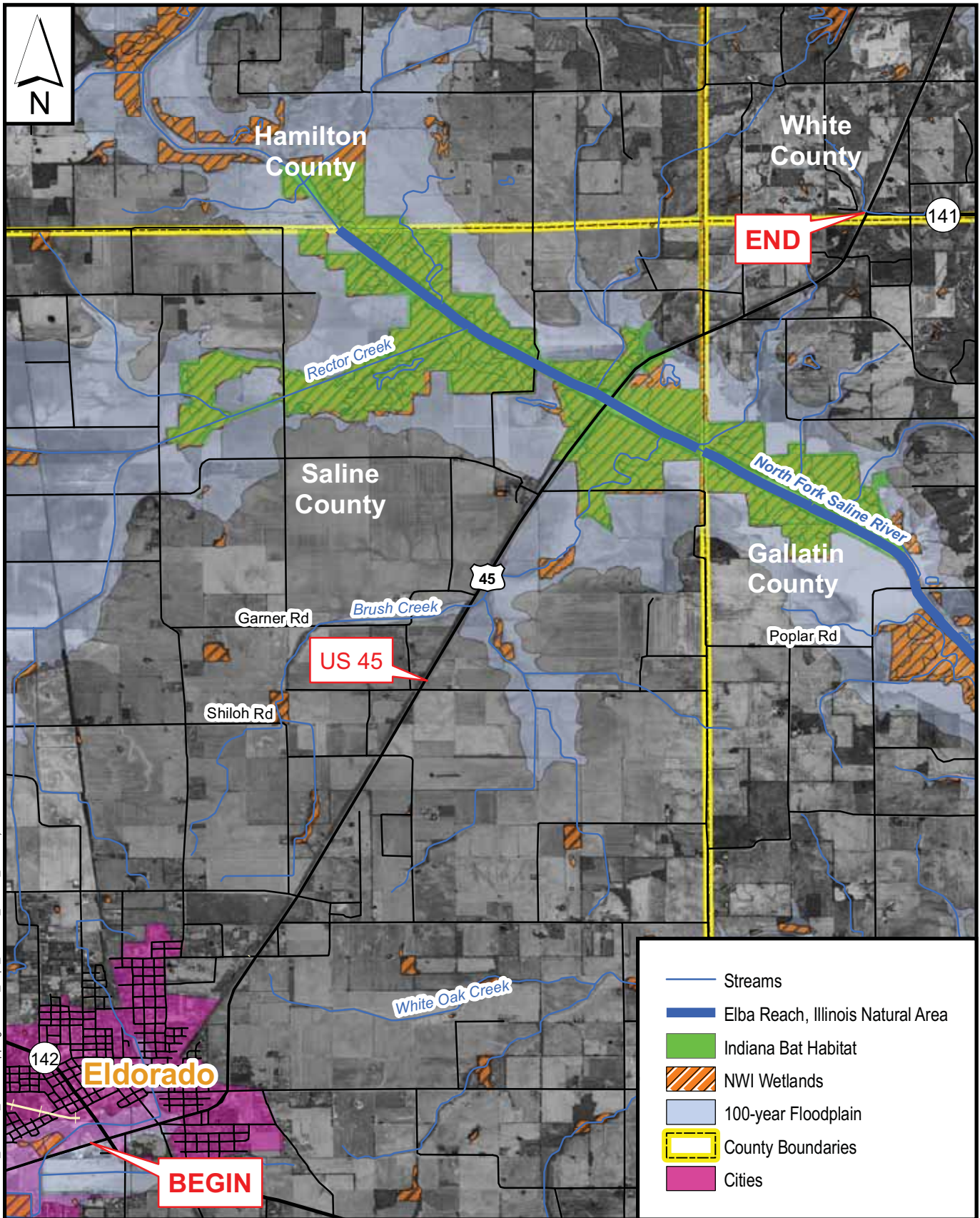
Traffic noise analyses have been conducted to determine what impacts, if any, the proposed project will have on noise sensitive areas. Fourteen noise sensitive areas (NSA) were identified within the project corridor and assessed for potential noise impacts at representative receptor locations. Traffic noise impacts were predicted in five of the fourteen NSAs modeled. FHWA Traffic Noise Model results indicate that the Noise Abatement Criteria (NAC) of 67 decibels on the A-weighted scale (dBA, so chosen because it most closely approximates the response of the human ear to sound) for residential facilities is approached or exceeded at three NSAs (1, 7 and 16) and the commercial NAC of 72 is approached or exceeded at two NSAs (11 and 12). No substantial increases (14 dBA) from existing noise levels are predicted. A complete discussion of the existing and predicted traffic noise levels is included in Section 4, *Environmental Consequences*.

2.6 *Natural Resources*

The project corridor's natural resources (including streams, ponds, plant communities, nature preserves, natural areas, and threatened and endangered species) were inventoried. These resources and/or their habitats are shown on Exhibit 7, page 16.

Correspondence from the Illinois Department of Natural Resources (IDNR), dated November 20, 2007, is located in Appendix C. Surveys for copperbelly water snake (*Nerodia erythrogaster neglecta*) and the northern harrier (*Circus cyaneus*) were requested by IDNR. It was also noted in the IDNR correspondence that the North Fork Saline River is an Illinois Natural Areas Inventory (INAI) site that occurs within the project area.

Map Document: (P:\Project_Files\Illinois\8207-08_Geotech_US45\Mapping\GIS\EA_Sept_2010\EA_Exhibit_11.mxd) 12/16/2010 -- 1:44:36 PM dwn



All data sets were downloaded from the Illinois Natural Resources Geospatial Data Clearinghouse hosted by the Illinois State Geological Survey (ISGS)



Exhibit 7

Natural Resources

US 45 Reconstruction

Saline, Gallatin and White Counties, Illinois



*Elba Reach of the North Fork Saline River,
Illinois Natural Area*



*Elba Reach of the North Fork Saline River,
Illinois Natural Area*

Correspondence from the Illinois Nature Preserves Commission, dated April 23, 2009, is located in Appendix C. According to the Illinois Natural Heritage Database, there are no Illinois Nature Preserves in the project area.

The Illinois Natural History Survey (INHS) prepared several technical reports for IDOT to document natural resources within the project area. These reports are summarized in the following sections.

2.6.1 Geology

The topmost bedrock unit in the project area is the Pennsylvanian-age Shelburn-Pakota Formation. The formation is primarily composed of limestones and a few sandstones.

The total thickness of surface deposits in the project corridor varies from less than 20 feet at the southwest and northeast ends of the project area to 20 to 50 feet in the central part of the project corridor. Surface materials from the southwest and northeast ends of the corridor consist of Wisconsinian-age silts, clays, and sands of the Equality Formation according to a stack-unit map of the area. The Equality Formation is underlain by loamy and sandy deposits of the Glasford Formation in the central section of the project corridor (Preliminary Environmental Site Assessment, 2008).

The Natural Resource Conservation Service (NRCS) has classified hydric soils in the project area as Wynoose and Weir silt loams, Bonnie silt loam, Racoon silt loam, and Patton silty clay loam. Non-prime farmland soils in the project area are Ava silt loam (2-7% slope), Belknap silt loam (0-2% slope, frequently flooded), Bonnie silt loam (wet), Hickory loam (4-10% slope), Hickory soils (7-18% slope, severely eroded), Hurst silt loam, Markland silt loam (3-7% slope, eroded), Orthents loam, and Wynoose and Weir silt loam.

The Illinois Coal Mine Map of Saline County indicates that coal mining has occurred in the project vicinity (Exhibit 8, page 19). The two nearest mines are the O’Gara Mine #8 and the Southern Counties Mine #20. The O’Gara Mine #8, mined from 1903 to 1927, had a production shaft located approximately 656 feet northwest of existing US 45 and 755 feet northeast of IL 142, and it undermined the project area from the southwest project limit to 525 feet southwest of Dewey Street in Eldorado. The Southern Counties Mine #20, which was mined from 1907 to 1924, had a production shaft located within the project limits approximately 230 feet northwest of US 45 and 312 feet south of Alexander Street and an air shaft approximately 377 feet northwest of US 45 and 197 feet south of Alexander Street. This mine undermined the project area from 0.7 mile southwest of Alexander Street to Bourland Road. Both mines worked the Springfield coal seam at a depth of about 400 feet by the modified room-and-pillar method, and therefore may be subject to subsidence.

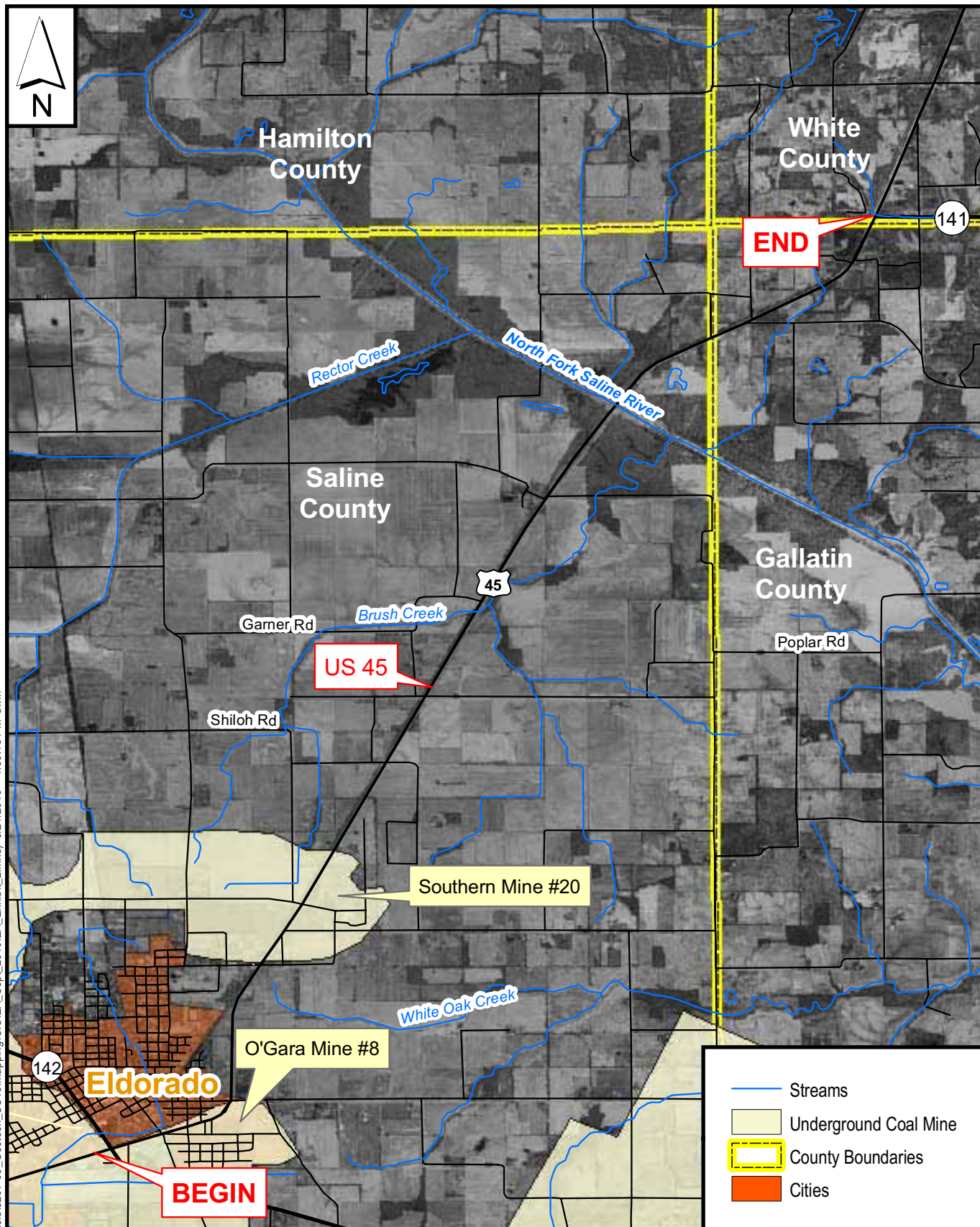
The project also crosses two oil extraction fields (Exhibit 9, page 20). The Eldorado Oil Field extends from approximately 0.5 mile southwest to 1.4 miles northeast of Alexander Street. The Roland Oil Field extends from 0.9 mile southwest of IL 141 to the northeast outside of the project area. These oil fields have been active since 1941 and 1939, respectively. Both areas are likely underlain by numerous active and abandoned crude oil collection lines.

2.6.2 Upland Plant Communities

According to the Illinois Wildlife Action Plan (Natural Divisions of Illinois), most of the project corridor occurs within the Wabash Border Natural Division. In the project corridor, this Natural Division encompasses the bottomland forests, sloughs, and wetlands along the North Fork of the Saline River and its tributaries. Small portions of the project corridor occur within the Southern Till Plain Natural Division, which has rolling, hilly topography.

Based on the Illinois Land Cover statistics for 1999 to 2000 (Illinois Department of Agriculture), Saline and adjacent counties are dominated by cropland (48 percent) and grassland (20 percent). Additional land cover types include forest (15 percent), wetlands (10 percent), urban/residential (5 percent), and other (2 percent). Within the project corridor cropland (59 percent), forest (23 percent), urban/residential (16 percent), and grassland (2 percent) predominate. These land cover types are depicted on Exhibit 10, page 21.

A 740-acre area of forested land (Exhibit 10, page 21) occurs along both sides of the North Fork of the Saline River. This large parcel extends eastward and is composed of a mosaic of upland forest and forested wetlands. A 7-acre upland forest site occurs within the southwest quadrant of the US 45 crossing of the North Fork of the Saline River. This upland forest community occurs within the floodplain of the North Fork of the Saline River. Its canopy is dominated by cherrybark oak, post oak, shagbark hickory, and winged elm. The understory of the forested community is dominated by saplings of the dominant canopy species and the herbs wild garlic, meadow sedge, and sea oats. This site and the adjacent forested wetlands were rated as Grade C for Natural Quality (which is based on the degree of disturbance). A Grade C rating indicates a moderately to heavily disturbed plant community.



All data sets were downloaded from the Illinois Natural Resources Geospatial Data Clearinghouse hosted by the Illinois State Geological Survey (ISGS)

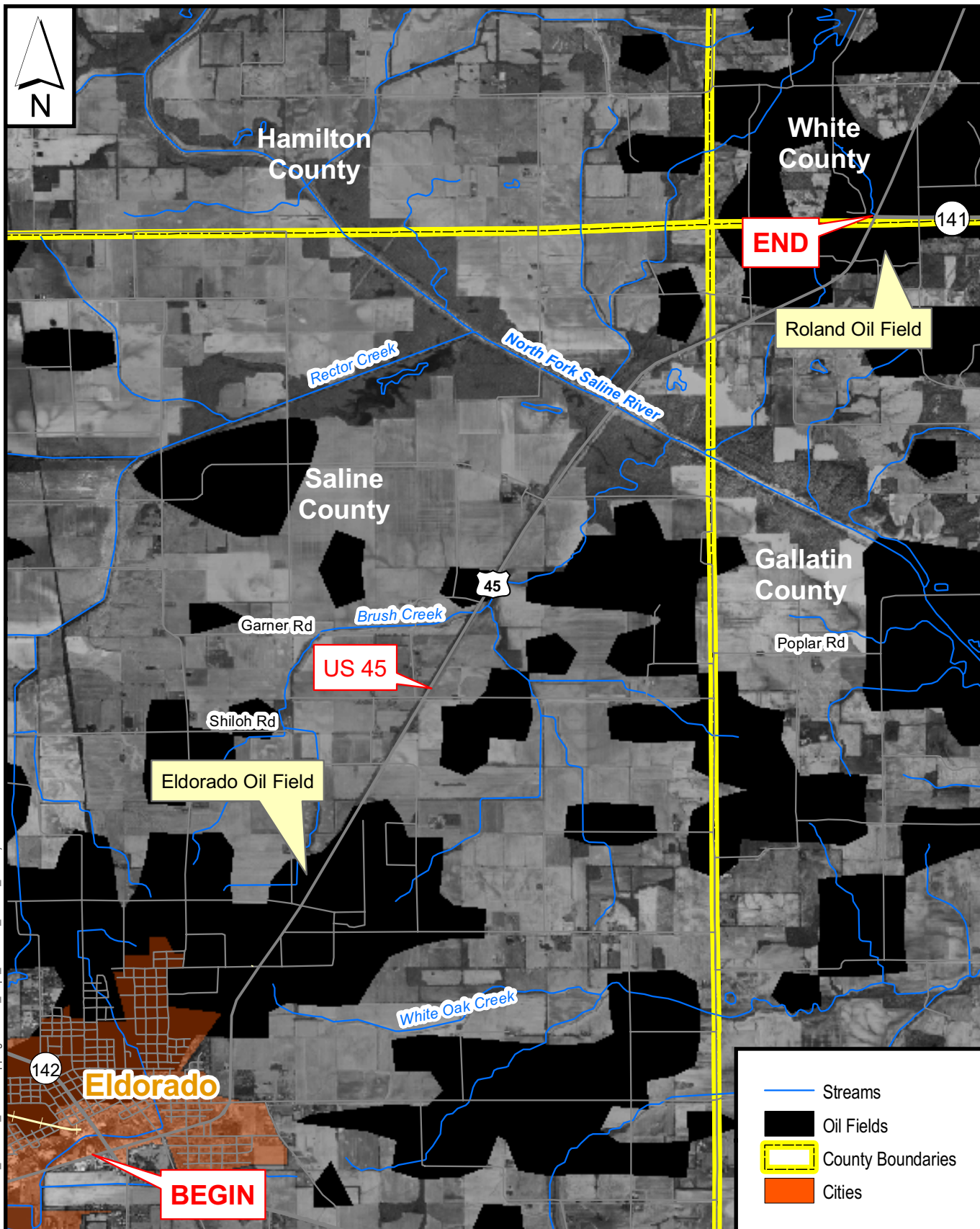
1 0.5 0 1 Miles

Exhibit 8

Underground Coal Mines - Active/Abandoned

US 45 Reconstruction

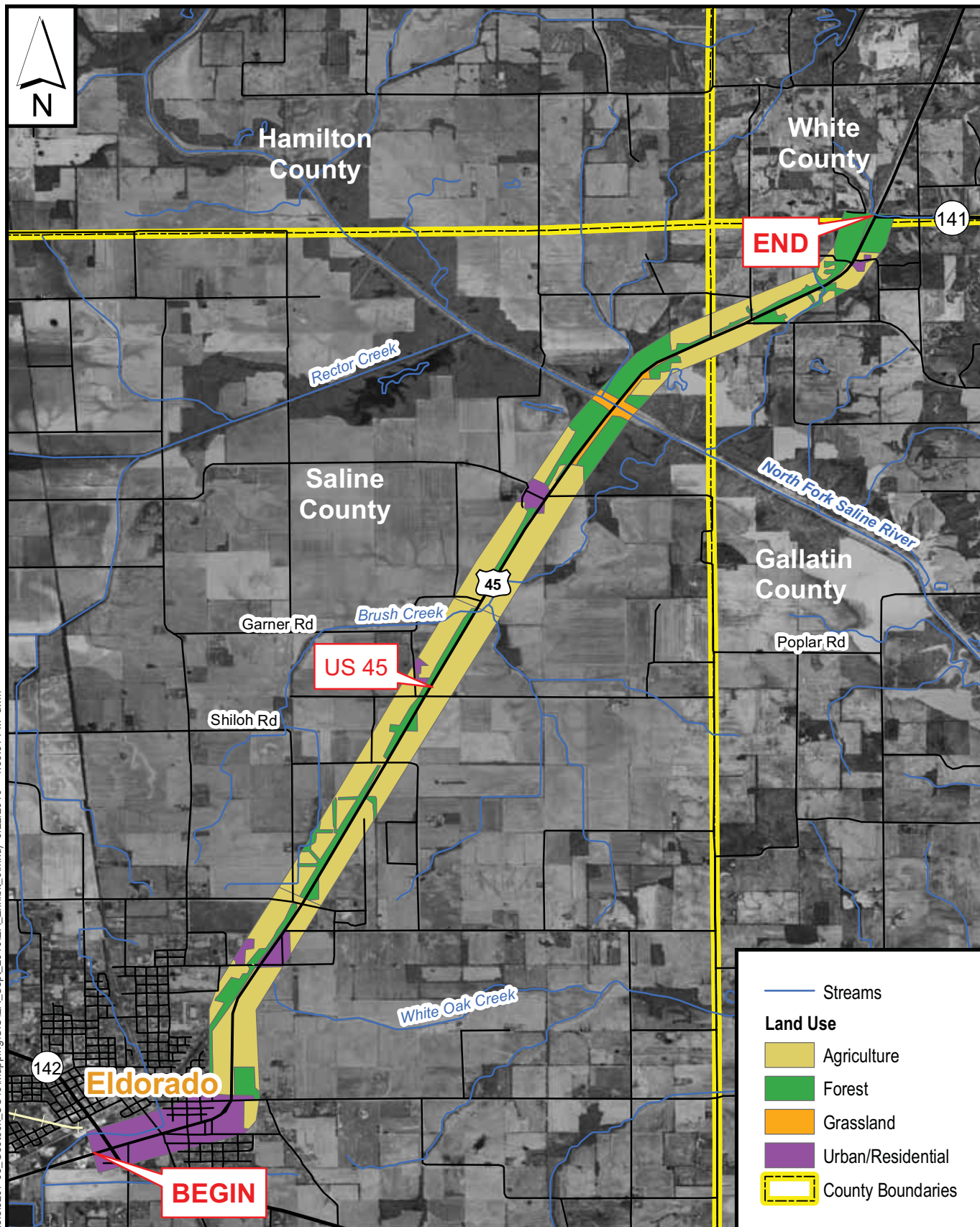
Saline, Gallatin and White Counties, Illinois



All data sets were downloaded from the Illinois Natural Resources Geospatial Data Clearinghouse hosted by the Illinois State Geological Survey (ISGS)

1 0.5 0 1 Miles

Exhibit 9
Oil Fields
US 45 Reconstruction
Saline, Gallatin and White Counties, Illinois



All data sets were downloaded from the Illinois Natural Resources Geospatial Data Clearinghouse hosted by the Illinois State Geological Survey (ISGS)

1 0.5 0 1 Miles

Exhibit 10

Land Use

US 45 Reconstruction

Saline, Gallatin and White Counties, Illinois

2.6.3 Wildlife Resources

The forested wetlands and uplands associated with the North Fork of the Saline River (Exhibit 10, page 21) are the most important wildlife habitats in the project corridor. These forested areas contain habitat for the copperbelly water snake, the Illinois Watch List's Bell's vireo, and potential Indiana bat habitat is present as well. They also provide habitat for frogs, toads, turtles, and snakes.

Important summer residents in these forested areas are neotropical migrants. Neotropical migrants are species of birds that winter in the American tropics but breed in Illinois during the spring and summer. The clearing of forests has reduced the population levels of some of these species; especially those that require large forested tracts greater than 500 acres in size. Fifteen neotropical migrant bird species were observed during an avian survey in the grasslands and forests along the North Fork of the Saline River (Exhibit 10, page 21). All of these species, except Bell's vireo, are common migrants and summer residents. None of these species are dependent on large areas of unbroken forest.

Two of these neotropical migrant species (Bell's vireo and field sparrow) are listed in the Illinois Wildlife Action Plan as Illinois Species in Greatest Need of Conservation and are identified as Critical within the Southern Till Plain Natural Division. Critical species are those that need to be managed within the Natural Division if they are to be effectively conserved in Illinois. Only a small portion of the project corridor occurs within the Southern Till Plain Natural Division and habitat for these two species within this Division does not occur within the project area.

2.6.4 Threatened and Endangered Species

The possible occurrence of state or federally threatened and endangered species near or within the project area was determined by accessing the IDNR Natural Heritage Database (January 2008), the US Fish and Wildlife Service (USFWS) List of Threatened and Endangered Species (February 2009), and field surveys performed by the INHS for threatened and endangered mammals (2008-2009), plants (2008-2009), birds (2008), and amphibians and reptiles (2008).

2.6.4.1 Federally Listed Species

The USFWS list of threatened and endangered species lists the Indiana bat, *Myotis sodalis*, (known occurrence in Saline County, potential habitat in all counties); fanshell mussel, *Cyprogenia stegaria* (White County); fat pocketbook, *Potamilis capax* (Gallatin and White Counties); and Mead's milkweed, *Asclepias meadii* (Saline County), as occurring in the counties where the project area is located (Table 5, page 23).

There is potential foraging habitat and roost trees for the Indiana bat in the corridor. No habitat for fanshell mussel (Wabash River), fat pocketbook (Mississippi, Wabash, Little Wabash and Ohio Rivers), or Mead's milkweed (virgin prairies) is present in the project area.

TABLE 5 – FEDERALLY PROTECTED SPECIES

SPECIES	COMMON NAME	STATUS	HABITAT REQUIRED	HABITAT PRESENT?
Mammal Species:				
<i>Myotis sodalis</i>	Indiana bat	Endangered (Gallatin, Saline & White Counties)	Caves, mines (hibernacula); small stream corridors with well developed riparian woods, upland forests (foraging)	Yes
Mussel Species:				
<i>Potamilis capax</i>	Fat pocket	Endangered (Gallatin & White Counties)	Mississippi, Wabash, Little Wabash, Ohio Rivers	No
<i>Cyprogenia stegaria</i>	Fanshell	Endangered (White County)	Wabash River	No
Plant Species:				
<i>Asclepias meadii</i>	Mead's milkweed	Threatened (Saline County)	Virgin prairies	No

A survey for Indiana bats was conducted on May 25 and 26, 2010 using mist nets in the general area where US 45 crosses the North Fork Saline River. No bats were captured at the survey site; however, this does not prove conclusively that Indiana bats do not occur in the area. Indiana bats have been documented at Bankston Fork of the Saline River west of Harrisburg in Saline County (INHD). Indiana bat maternity colonies primarily roost beneath slabs of exfoliating bark on dead trees and snags, but also have been found beneath the "shaggy" bark of certain live hickories (*Carya* spp.) and oaks (*Quercus* spp.), as well as in tree crevices (Cope *et al.* 1973; Humphrey *et al.* 1977; Gardner *et al.* 1991; Kurta *et al.* 1993a, b, 1996, 2002; Callahan *et al.* 1997; Carter and Feldhamer 2005). The project corridor includes wooded areas along the railroad embankment on the west side of the existing highway and large forested tracts near the North Fork Saline River. The INHS observed hickories and dead trees with exfoliating bark in the forest east of US 45 and north of the river. Given the amount of forested habitat in the corridor, it is likely that additional potential roost trees are present, and it is possible that Indiana bats occur there.

2.6.4.2 Resource of Concern

Copperbelly water snake, *Nerodia erythrogaster neglecta*, (Saline, Gallatin, and White Counties) is a resource of concern in the project area. The copperbelly water snake's preferred habitat, vegetated wetlands with areas of higher ground, occurs within the project corridor primarily where US 45 crosses the North Fork Saline River. The INHS herpetological survey resulted in the collection of two copperbelly water snakes in the area where US 45 crosses the North Fork Saline River. Other copperbelly water snakes have been collected "dead-on-road" within the same area. A visual inspection of the corridor indicated that the predominantly forested floodplain area near where US 45 crosses the North Fork Saline River would provide suitable habitat for copperbelly water snakes. Copperbelly water snake hibernacula are also suspected to

occur in the same area around the abandoned New York Central Railroad, which parallels US 45 in this area.

2.6.4.3 Illinois Listed Species

The Illinois Natural Heritage Database of Illinois Threatened and Endangered Species by County (January 2008) indicates that numerous listed species occur in Saline, Gallatin, and White Counties. The INHS surveyed for species with potential to occur within the project area. Those species included the marsh rice rat (*Oryzomys palustris*), golden mouse (*Ochrotomys nuttali*) (2009), northern harrier (*Circus cyaneus*) (2008), and a number of plant species (2009).

The mammal survey for marsh rice rat and golden mouse resulted in the collection of no listed mammals despite the presence of suitable habitat in the project area. No northern harriers or suitable nesting habitat for the species were observed within the boundaries of the project corridor.

During the botanical survey, three species of Illinois listed plants were located in or near the project corridor: Arkansas sedge (*Carex arkansana*), water hickory (*Cayra aquatica*), and Wolf's bluegrass (*Poa wolfii*). None of these species has been found previously within this project corridor, and these are new records for this area. Arkansas sedge is known to occur in Illinois only in Saline and Douglas Counties. Previously documented locations were in the area of the Middle Fork of the Saline River just east of Harrisburg. Arkansas sedge was found at seven different botanical sites. Five water hickory trees were found scattered at the margin of a single botanical site, a shrub swamp. Wolf's bluegrass has historically been collected only in the northwest portion of Illinois. It was found at botanical site eight in a southern flatwoods with some floodplain forest species present. All three species of plants are predominantly located in the general area where US 45 crosses the North Fork Saline River.

2.6.5 Nature Preserves

There are no nature preserves located within the project area.

2.6.6 Natural Areas

The Illinois Natural Areas Inventory (INAI) database indicates that the Elba Reach of the North Fork Saline River is considered a natural area due to the high diversity of freshwater mussels present. It is classified as *Category VI – Unusual Concentrations of Flora or Fauna and High Quality Streams*, and is listed as Site #1517. This site is located within the project corridor (Exhibit 11, page 25). Although abundant mussels are present, no federally or state listed mussel species are known to occur here.

2.7 Water Resources and Water Quality

Seven streams (North Fork Saline River, Brush Creek, unnamed tributary of North Fork Saline River #1, #2, #3, and #4, and an unnamed tributary of White Oak Creek), 11 ponds, and 47 wetlands occur within the project area (Exhibit 12, page 26). These water features are all situated within the Saline River watershed.

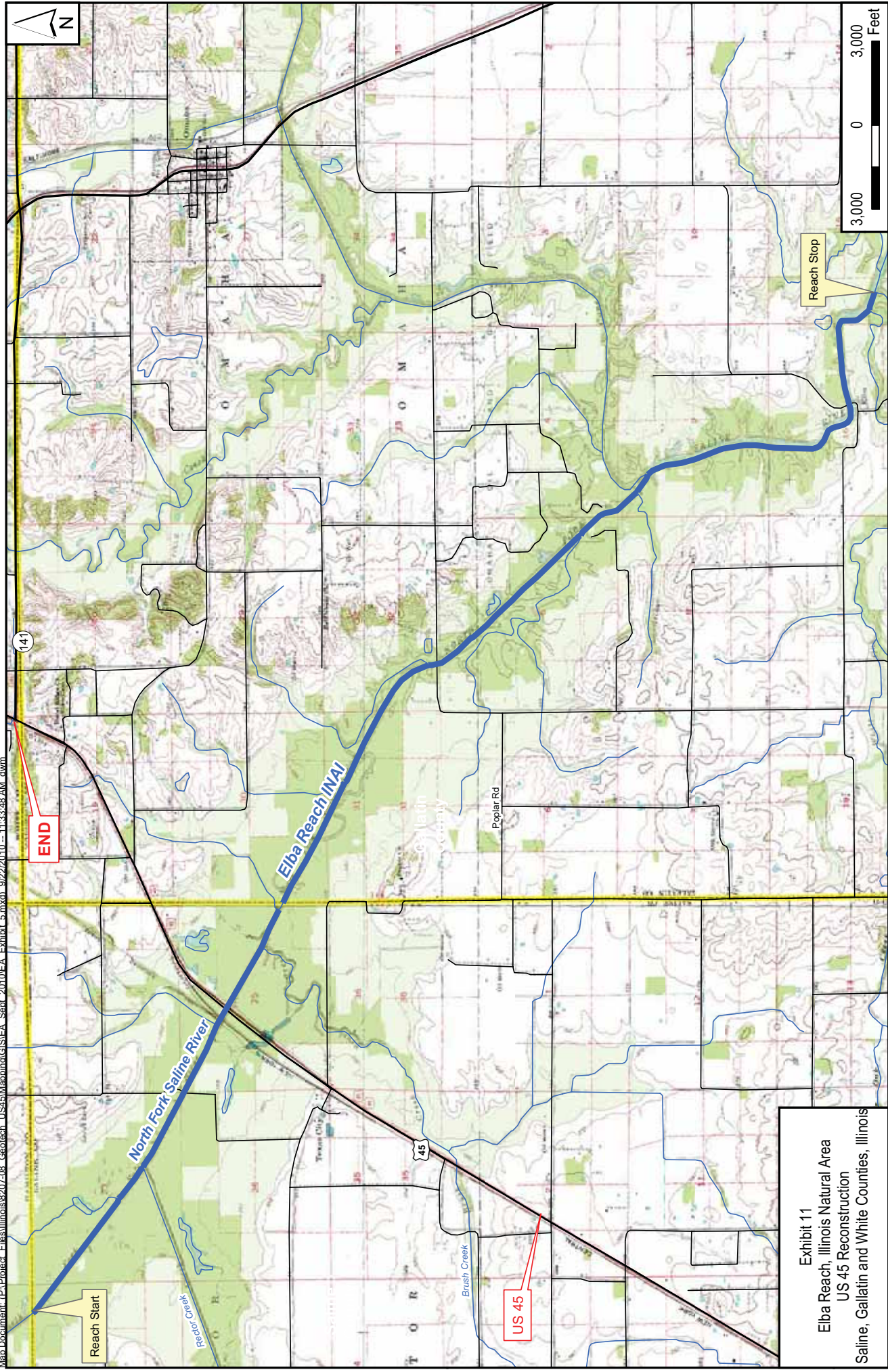
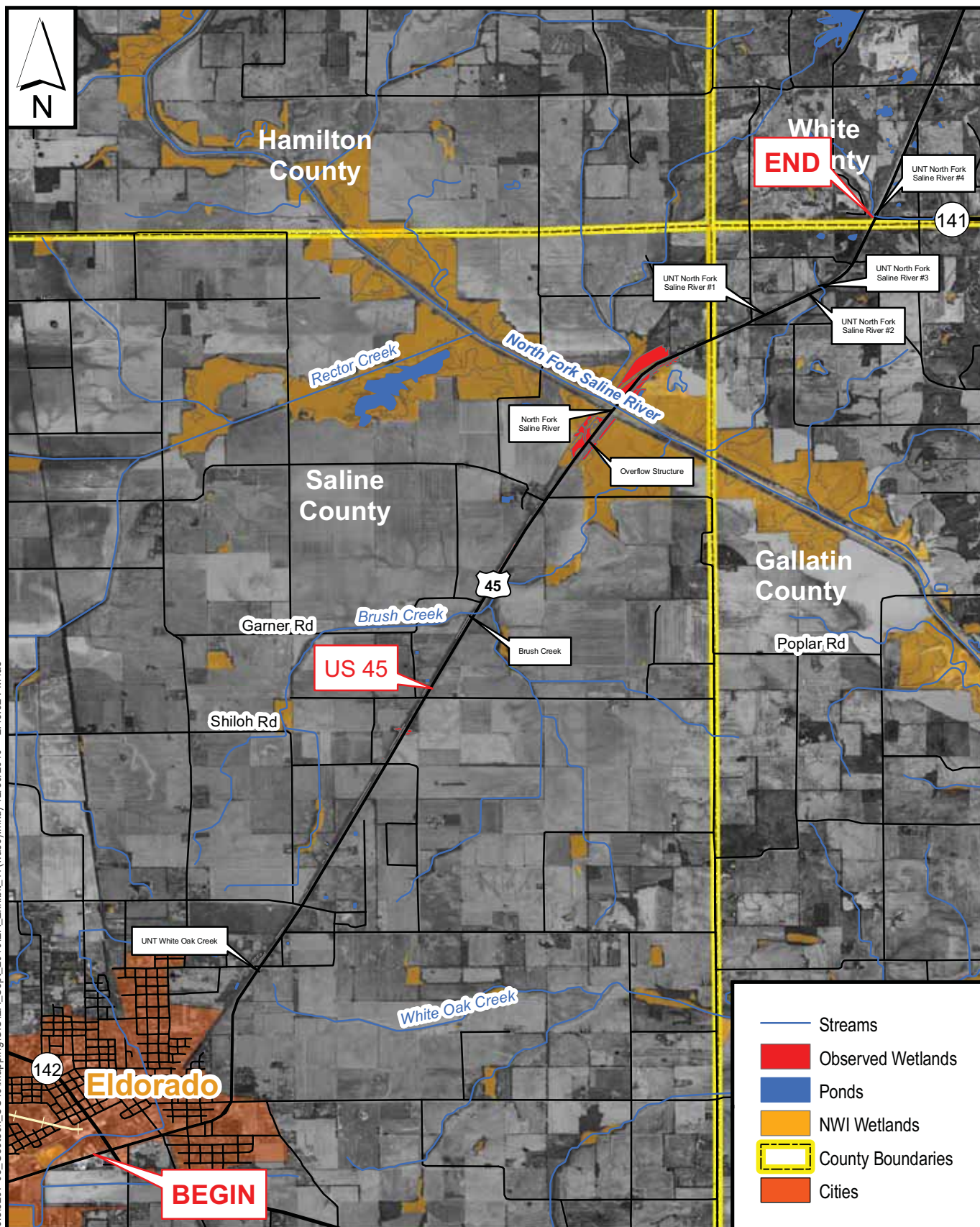


Exhibit 11
Elba Reach, Illinois Natural Area
US 45 Reconstruction
Saline, Gallatin and White Counties, Illinois



All data sets were downloaded from the Illinois Natural Resources Geospatial Data Clearinghouse hosted by the Illinois State Geological Survey (ISGS)

1 0.5 0 1 Miles

Exhibit 12

Water Resources

US 45 Reconstruction

Saline, Gallatin and White Counties, Illinois

The Illinois State Geological Survey (ISGS) conducted an assessment of water resources in the project area in November 2008. In the southern end of the project area, surficial drainage tends to flow westward towards an unnamed tributary to the Middle Fork Saline River. Surface drainage in the rest of the project area is generally to the east, except where the project area crosses the North Fork Saline River, Brush Creek, and unnamed tributaries to the North Fork Saline River. Drainage is typically northeast and southwest at these crossings. Surficial runoff in portions of the project area in the City of Eldorado will be controlled by the city's storm sewer systems; these systems are typically designed to follow natural drainage patterns.

2.7.1 Water Resources

2.7.1.1 North Fork Saline River

US 45 crosses the North Fork Saline River within the project corridor to the north of Texas City Road and to the south of Washington Road. At the US 45 bridge, the North Fork Saline River is approximately 75 feet wide and was approximately two to three feet deep at the time of the field survey. The flow rate of the perennial river was slow and the water was fairly clear. The substrate is composed of sand and silt.

At the project site, the North Fork Saline River is a deeply entrenched, channelized ditch, with steep-sided banks on both sides of the stream. At the summit, the banks are covered in predominantly non-native grasses and forbs. The river is bordered by floodplain forest and wet floodplain forest. Within the project corridor, the North Fork Saline River is not rated under the Biological Stream Rating System (BSRS); however, two segments of the stream outside the project area are rated. The first is a 1.6-mile segment approximately four miles upstream of the project area that has a diversity rating of A (excellent biotic resource). The second is a 3.4-mile stream segment approximately 15 miles downstream of the project area that has a diversity rating of C (fair biotic resource). This section of the North Fork Saline River, Elba Reach, is also an Illinois Natural Areas (INAI) Category VI site (Number 1517) due to the high diversity of freshwater mussels present in the river. The USGS hydrologic unit code for this basin is 505140204 (Saline 16 River), and the drainage area of the river at the project site is approximately 249 square miles. The North Fork Saline River is navigable approximately three miles south of US 45 but is not navigable in the project area. It is not considered a "Wild and Scenic River."



Existing US 45 Bridge over North Fork Saline River, Looking Northeast

2.7.1.2 Brush Creek

Brush Creek drains most of the project area, flowing toward the southwest to its confluence with the North Fork Saline River. US 45 crosses Brush Creek just south of Abell Road and just upstream of the convergence of the headwaters from the eastern and western sides of the project corridor. Brush Creek is a perennial stream, approximately 15 feet wide and three feet deep or less in the project area. The substrate is predominantly silt, and the flow rate was slow on the

day of the field survey. Agricultural land and wet floodplain forest border the creek at the project site. The drainage area of Brush Creek at the US 45 bridge crossing is approximately 2.6 square miles.

2.7.1.3 Unnamed Tributary of North Fork Saline River #1

This small tributary to the North Fork Saline River begins northwest of the corridor and flows southeast beneath US 45 north of Shane Cemetery Road.

2.7.1.4 Unnamed Tributary of North Fork Saline River #2

This small tributary to the North Fork Saline River begins northwest of the corridor and flows southeast beneath US 45 north of Shane Cemetery Road and the unnamed tributary of North Fork Saline River #1.

2.7.1.5 Unnamed Tributary of North Fork Saline River #3

This small tributary to the North Fork Saline River begins north of the corridor and intersects US 45 midway between Washington Road and Hazel Ridge Road.

2.7.1.6 Unnamed Tributary of North Fork Saline River #4

This small tributary in the North Fork Saline River drainage begins just northwest of the northern terminus of the project corridor and flows east under US 45 at approximately the intersection of IL141 and US 45. It continues to flow southeast to its confluence with Bear Creek.

2.7.1.7 Unnamed Tributary of White Oak Creek

This small tributary to White Oak Creek begins northwest of the corridor and flows southeast beneath US 45 south of Cook Road.

2.7.2 Water Quality

The Illinois Environmental Protection Agency (IEPA) characterizes the resource quality of each water body by determining the level of support (attainment) of each applicable designated use. The designated uses are aquatic life, fish consumption, swimming, boating, and aesthetic quality. For each water body and for each designated use applicable to that water body, the IEPA assessment concludes with one of two possible use-support levels: Fully Supporting or Not Supporting. Fully Supporting (good resource quality) means that the water body attains the designated use; Not Supporting (fair or poor resource quality) means the designated use is not attained. Designated uses determined to be Not Supporting are also referred to as impaired. For each impaired use, the IEPA attempts to identify potential causes and sources of the impairment.

According to the August 2010 IEPA *Illinois Integrated Water Quality Report and Section 303(d) List (Draft)*, the portion of the North Fork Saline River crossed by the project has been assessed as Category 5 stream, “water quality standard not attained.” This 5.15-mile reach of the river has been assessed as not supporting aquatic life, fish consumption, and primary contact. The reach was not assessed for secondary contact or aesthetic quality. Causes of non-attainment are listed as silver, mercury, loss of instream cover, and fecal coliform bacteria. Sources of the above are listed as petroleum/natural gas activities, surface mining, channelization, and “source unknown.” No other streams in the project area have been assessed for water quality.

2.7.3 Groundwater Resources

No sole-source aquifers as defined by Section 1424(e) of the Safe Drinking Water Act are present in Illinois.

The project area is located in Zone 7 for groundwater recharge potential (Keefer and Berg 1990), indicating the lowest potential for groundwater recharge. Groundwater recharge potential information is provided for a general regional perspective only.

The project area is located in Zone C5 of the “Potential for Contamination of Shallow Aquifers from Land Burial of Municipal Wastes” (Berg *et al.* 1984) wherein Zone A indicates the highest potential for contamination and Zone G the lowest. Zone C5 is described as fine-grained materials with discontinuous sand and gravel locally present within 49 feet of the land surface. This information is provided for a general regional perspective only.

The ISGS did not determine near-surface or shallow unconfirmed groundwater flow for the project, but they typically follow local topography. No water was encountered in boreholes completed to depths of up to eight feet during the ISGS field visit in November 2008. ISGS did not conduct borings to a depth of 50 feet to verify the site’s geology.

No known public water wells are present within 1,000 feet of the project right-of-way and no IDOT facility work is planned for the proposed project, thus there should be no impact on IEPA Division of Public Water Supplies setback zones. ISGS records indicate that water in the project area is generally obtained from sandy clays at depths ranging from 17 to 25 feet below the surface. ISGS located these wells in T8S R7E Sections 2, 3, and 21 and T7S R7E Section 25, though other wells not in the ISGS database may be present near the project area.

2.8 Floodplains

Floodplains are hydrologically important, environmentally sensitive, and ecologically productive areas that perform many natural and beneficial functions, including flood storage and conveyance, water quality maintenance, groundwater recharge, and wildlife habitat. Floodplains are beneficial to wildlife by providing a variety of habitats for fish and other animals. Floodplains provide a broad area to spread out and temporarily store floodwaters. This reduces flood peaks and velocities and the potential for erosion. In their natural vegetated state, floodplains slow the rate at which incoming overland flow reaches the main water body. Floodplains serve an important function in protecting the physical, biological, and chemical integrity of water. Water that runs off quickly over the surface, as on a barren floodplain, is capable of carrying with it large amounts of sediment and debris to the main water body. A vegetated floodplain slows the surface runoff, causing it to drop most of its sediment load on the floodplain. Vegetation also filters incoming floodwaters. The slowing of runoff across the floodplain allows additional time for the runoff to infiltrate and recharge available groundwater aquifers.

According to the Flood Insurance Rate Maps developed by the Federal Emergency Management Agency (FEMA), the project route crosses the Special Flood Hazard Area (land area subject to inundation by a flood that has a 1 percent probability of being equaled or exceeded in any given year) of North Fork Saline River from 1.6 km (1 mile) southwest of Texas City Road to 2.3 km

(1.4 miles) northeast of Texas City Road. Flooding, standing water, and saturated soils may be encountered in this area, particularly during periods of high or extended rainfall or spring snowmelt. Based on the FEMA Draft Flood Insurance Rate map (FIRM) Panel 0137 and 0141 (<http://www.illinoisfloodmaps.org/>), there is also a 100-year floodplain in Eldorado from IL 142 (State Street) to Jefferson Street. This floodplain is associated with the Eldorado Tributary. Panel 0150 depicts floodplain at Brush Creek, which parallels US 45 on the east side until it meets the North Fork of the Saline River floodplain at Texas City Road (Panel 0075). These floodplains are shown on Exhibit 7, page 16.

2.9 Wetlands

Wetlands in the project area were delineated using the *1987 US Army Corps of Engineers Wetlands Delineation Manual* during field surveys conducted by the INHS during the spring and summer of 2008. All potential wetlands in the project area were examined and 65 determinations were performed.

Forty-seven of the potential sites met the wetland criteria and a total of 59.3 acres of wetlands was delineated by the INHS. Eleven sites were identified as ponds, 10 with deepwater habitat and one with wetland habitat. Exhibit 12, page 26, depicts the locations of these wetlands. When the identified wetlands continued outside of the project corridor, only the acreage within the corridor was calculated. The highest concentration of good quality wetland is located in the floodplain of the North Fork Saline River.

All wetlands provide some wildlife habitat and provide breeding habitat for resident bird species and neotropical migrants. Habitat for federal and state listed species, including Indiana bat, Arkansas sedge, and water hickory, is present in these wetlands. Habitat for copperbelly water snake, a resource of concern, is also present in these wetlands.

Because of their landscape position, wetlands can readily receive floodwaters and provide important flood storage capacity. This includes wetlands situated in floodplains. Most of the wetlands delineated in the US 45 corridor are located in floodplains or along drainageways, with hydrology mainly influenced by flooding and sheet flow.

Floristic quality is measured by the Floristic Quality Index (FQI), which is a measure of the integrity of the plant community as related to its history of disturbance. All plant species native to Illinois (non-native species are excluded) are assigned a Coefficient of Conservatism (C) ranging from 0 to 10, with high values indicating intolerance to disturbance and low values tolerance. The mean C value is calculated at each site by summing the C values for all species present and dividing by the number (N) of species present. To calculate the FQI, this mean C value is divided by the square root of N. FQI values less than 10 indicate low natural plant community quality, while an FQI of 20 or more indicates a plant community that could be an environmental asset.

Table 6, pages 31 and 32, lists the wetland type, acreage, FQI, mean C value, and whether an IEPA Case Specific Water Quality Certification is required for each identified wetland. Ten of the sites were described as having good natural quality and were classified as environmental assets (FQI above 20, mean C above 3). Twenty-eight sites had fair natural quality (FQI

between 20 and 10), and nine had poor natural quality (FQI below 10). Twenty-eight sites require an IEPA Case Specific Water Quality Certification.

TABLE 6 – DELINEATED WETLANDS IN PROJECT CORRIDOR

INHS WETLAND ID#	WETLAND TYPE	WETLAND QUALITY	FQI	MEAN C	SIZE (ACRES)	IEPA CASE SPECIFIC WATER QUALITY CERTIFICATION?
2	Pond					
3	Forested	Fair	16.5	3.1	0.08	Y
4	Pond					
5	Forested	Poor	9.6	2.6	0.02	
6	Forested	Fair	11.8	3.1	0.07	Y
7	Forested	Fair	10.7	2.9	0.08	Y
8	Pond					
9	Forested	Fair	14.5	3.3	0.27	Y
10	Emergent	Fair	13.3	3.3	2.21	
11	Forested	Fair	16.8	4.3	0.98	Y
12	Forested	Fair	14.0	3.2	1.32	Y
15	Forested	Good	24.1	3.5	16.51	Y
16	Forested	Fair	15.3	3.6	0.91	Y
17	Emergent	Fair	11.2	1.6	0.99	
18	Emergent	Fair	13.1	1.9	2.01	
19	Forested	Fair	11.2	3.0	0.56	Y
20	Pond					
21	Forested	Good	27.0	3.9	6.23	Y
22	Forested	Fair	16.5	3.2	0.67	Y
24	Forested	Good	30.1	3.9	1.98	Y
25	Emergent	Fair	19.4	3.7	2.54	
28	Forested	Good	26.7	4.0	11.75	Y
30	Scrub-shrub	Fair	15.8	3.8	1.29	
31*	Forested	Good	27.0	3.5	1.05	Y
32	Forested	Fair	18.1	3.4	0.37	Y
34	Forested	Fair	10.8	2.5	0.04	
35	Forested	Good	22.5	3.8	0.55	Y
36	Forested	Fair	11.1	2.4	0.04	
37	Forested	Fair	13.0	2.9	0.08	
38	Forested	Fair	12.3	2.8	2.06	Y
39	Forested	Good	23.4	3.3	0.98	Y
40	Pond					
41	Forested	Fair	15.4	3.5	0.16	Y
42	Emergent	Fair	10.8	3.0	0.02	
43	Forested	Good	20.8	3.5	0.85	Y

TABLE 6 – DELINEATED WETLANDS IN PROJECT CORRIDOR, CONTINUED

INHS WETLAND ID#	WETLAND TYPE	WETLAND QUALITY	FQI	MEAN C	SIZE (ACRES)	IEPA CASE SPECIFIC WATER QUALITY CERTIFICATION?
44	Forested	Good	20.5	3.6	0.31	Y
45	Pond					
46	Forested	Fair	17.3	3.3	0.37	Y
47	Pond					
48	Emergent	Poor	9.9	2.3	0.44	
49	Emergent	Fair	16.7	3.4	0.10	
50	Pond/Wetland	Poor	8.3	2.8	0.11	
51	Forested	Fair	11.8	3.1	0.09	Y
52	Forested	Good	20.3	3.4	0.55	Y
53	Emergent	Poor	5.7	1.9	0.06	
54	Forested	Fair	14.2	2.8	0.05	Y
55	Forested	Fair	13.5	2.6	0.08	Y
56	Forested	Fair	12.2	2.7	0.20	Y
57	Pond					
58	Forested	Poor	8.3	2.2	0.23	
59	Forested	Poor	5.1	1.6	0.03	
60	Forested	Poor	8.0	2.1	0.04	
61	Forested	Poor	6.6	2.0	0.06	
62	Forested	Poor	8.2	2.6	0.06	Y
63	Pond					
64	Pond					
65	Emergent	Fair	13.1	2.7	0.23	

*Only approximately 60% of this area is wetland.

2.10 Special Waste

ISGS conducted a Preliminary Environmental Site Assessment (PESA) for the project; the final report was submitted on December 15, 2008.

The project area contains current and historic coal mining and crude oil extraction activities, and numerous active and abandoned crude oil lines are likely to underlay the area. Many residences in the project area likely pre-date 1979, and thus could contain asbestos materials and/or lead-based paint. Several commercial and agricultural properties in the project area are the current or former sites of underground and above ground storage tanks (USTs and ASTs), used motor oil and tire storage sites, and dump sites.

The assessment concluded that the project has a high risk for the occurrence of regulated substances or natural hazards, which are discussed in greater detail in Section 4, *Environmental Consequences*.

2.10.1 Hazardous Waste

The US Environmental Protection Agency (US EPA) listing of potential, suspected, and known hazardous substance sites in Illinois has been reviewed to ascertain whether the proposed project will involve any listed sites. As a result of this review, it has been determined that the proposed project will not require right-of-way from sites listed in the US EPA-provided database.

2.10.2 Non-Hazardous Waste

The ISGS Preliminary Environmental Site Assessment (PESA) for the project determined that, despite the fact that no sites listed on US EPA-provided hazardous substance databases will be impacted by the project, the project area does contain potential special waste sites. However, if land acquisition procedures are followed and if construction excavation and utility relocation does not exceed the maximum testing depth at each site and does not exceed the stipulations discussed in Section 4, *Environmental Consequences*, the project will comply with IDOT's Hazardous Waste Policy LEN-13 and no additional preliminary testing will be required. These special waste sites are discussed in greater detail in Section 4, *Environmental Consequences*. Additional sites contaminated with hazardous waste are not involved.

2.11 Special Lands

2.11.1 Section 4(f) Lands

Section 4(f), as established by the US Department of Transportation (US DOT) Act of 1966 and amended in 1989 (49 USC. Section 303), states that all park and recreation lands, wildlife and waterfowl refuges, and historic sites must be considered in transportation project development. Section 4(f) applies to all projects that receive federal funding or require approval by any agencies of the US DOT. It requires that an alternative that uses a Section 4(f) resource only be selected if it can be proven that no other prudent and feasible alternatives exist, and that the selected alternative minimizes disturbance to the resource. In 2005, Section 4(f) was amended to allow *de minimis* ruling in the event any impacts would not appreciably alter the attributes, features, or function of the resource.

Neither wildlife or waterfowl refuges nor sites listed on eligible for listing on the National Register of Historic Places will be affected by the project. No parks will be affected by the project but a bike path near Eldorado will be crossed by the project, near 4th Street. This facility is discussed in greater detail in Section 4, *Environmental Commitments*. No other recreational sites will be affected by the project.

2.11.2 Section 6(f) Lands

Section 6(f) of the Land and Water Conservation Fund Act (LWFCFA) of 1965 (16 USC. 4601-4) established a funding source for both federal acquisition of parks and recreation lands and matching grants to state and local governments for recreation planning, acquisition, and development. It set requirements for state planning and provided a formula for allocating annual LWCFCA appropriations to the states. Section 6(f) concerns transportation projects that propose impacts to, or the permanent conversion of, outdoor recreation property that was acquired or developed with LWCFCA grant assistance, which is distributed by the Interagency Committee for Outdoor Recreation of the Office of the Interagency Committee in Washington, D.C. Any right-of-way taking from a public park that has received LWCFCA funding is considered a Section 6(f)

impact and requires coordination with, and approval from, the National Park Service and the US Department of the Interior.

No parks or recreation areas in the project area have received LWCFA monies.

2.11.3 OSLAD Act Lands

The Open Space Lands Acquisition and Development (OSLAD) program is a state program similar in nature to the Land and Water Conservation Fund Act. The program, administered through the IDNR, provides financial assistance that enables local governments to acquire and develop land for public parks and open space. Projects range from small neighborhood parks to larger city and community recreation and/or nature areas.

No parks or recreation areas in the project area have received funding assistance from the OSLAD program.

A bike path will be crossed by the proposed project in Eldorado. This bike path, funded in part with grants from IDNR's Bike Path Grant Program and IDOT, crosses existing US 45 near 4th Street.

3. PROJECT ALTERNATIVES

The proposed project consists of improvements of US 45 from IL 142 in Eldorado, Saline County to IL 141, which is located on the county line for Gallatin and White Counties, Illinois. Within the project corridor, US 45 will primarily be widened from two to four lanes. The project corridor is approximately 9 miles in length.

The purpose of the proposed project is to improve regional connectivity and promote economic development in an economically depressed portion of Illinois. The project is needed because Southern Illinois has lagged behind the rest of the state in employment, new job creation, and economic opportunities for its citizens.

3.1 No-Build Alternative

Under the No-Build Alternative, the proposed improvement will not be constructed. The "No-Build" Alternative denotes that only minor improvements, such as safety improvements and normal maintenance, would be made to the existing road and intersection areas. This alternative will not improve regional connectivity, nor will it promote economic development. The No-Build alternative does not satisfy the project's purpose and need; however, it will be carried forward throughout the NEPA process to serve as a baseline for the build alternatives.

3.2 Build Alternatives

The existing rural two-lane roadway will be reconstructed as a four-lane roadway, with two through lanes in each direction. Six Build Alternatives were developed for the project. All Build Alternatives share a common urban section: from the existing 5-lane section in Eldorado to Dewey Road the existing two-lane roadway will be widened to provide four travel lanes and a center turn lane. North of Dewey Road, the Build Alternatives are similar as all propose to primarily utilize the existing roadway (which ranges from 30 to 50 feet wide), with new lanes paralleling the existing either to the east (Alternatives 1 and 3) or to the west (Alternatives 2, 4,

and 5), or a combination of the two (Alternative 5A) until the project's northern terminus at IL 141.

As discussed above, the Build Alternatives share southern (just east of the US 45/IL 142 intersection, where the existing five-lane roadway tapers to two lanes) and northern (US 45/IL 141 intersection) termini. These termini were considered the most logical means of meeting the project's purpose of improving regional connectivity.

The southern terminus was selected because US 45 has recently been upgraded to a four-lane expressway between the cities of Harrisburg and Eldorado. The southern terminus of the proposed project connects with this existing four through lane section in Eldorado.

The northern terminus was ultimately selected after consideration of the project area's rural setting, lagging economy and subsequent transportation needs, in conjunction with traffic data. Rural settings do not have the congestion and mobility issues that confront urban roadways, but these areas do need reasonable access to the nation's interstate system if they are to compete in the global market. US 45 connects with I-64 north of IL 141. Although I-64 and Evansville are both destinations for traffic north of the IL 141 intersection, traffic data indicated that traffic volumes drop off at IL 141 to a level that do not support continuation of the four-lane section north of IL 141 to I-64 or along IL 141 to Evansville. Thus, IL 141 was determined to represent the logical northern terminus for the project.

Each of the six Build Alternatives developed for the project is discussed in greater detail, below.

3.3 Build Alternatives Eliminated from Consideration

3.3.1 Build Alternative 1: Add Lanes East of Existing Alignment with Barrier Median

Alternative 1 is primarily a four-lane roadway that will utilize the existing two-lane roadway to carry southbound traffic, with two new lanes constructed on the east side of the existing pavement to carry northbound traffic. This alternative begins at the existing five-lane section in Eldorado and will continue the five-lane section 1.1 miles to Dewey Lane. At Dewey Lane, the center turn lane will be replaced with a concrete barrier median between the north- and southbound lanes for 8.0 miles until the project's northern terminus at IL 141.

This alternative will require the conversion of a total of 74.4 acres to roadway right-of-way. It will convert 46.2 acres of cropland, 0.9 acres of pasture, and 17.3 acres of woodland to right-of-way. Six residences and 9 storage buildings will potentially be displaced. A traffic noise analysis indicated that this alternative will impact 54 receptors. Four streams will be crossed (North Fork Saline River, two unnamed tributaries to North Fork Saline River, and Brush Creek.) Floodplain impacts will total 7.8 acres and wetland impacts will total 4.3 acres. Federally and state listed threatened and endangered species in the area include Indiana bat, Arkansas sedge, water hickory, marsh rice rat, and golden mouse. Copperbelly water snake, a resource of concern, is also present in the area. Six potential special waste sites are present. The SHPO has concurred that this alternative will have no effect on significant cultural resources. Right-of-way from a former railroad bed will be utilized for a bike trail.

By increasing the number of through lanes, this alternative meets the project's purpose and need, because the additional lanes improve regional connectivity and economic development in the region. However, a concrete barrier median is much costlier (by approximately \$5 million dollars) to construct than an open grass median. In addition, a concrete barrier would not be an aesthetic fit in this rural setting. It was determined that this alternative would meet the Purpose and Need for the project, but was dismissed due to increased costs associated with a concrete barrier median.

3.3.2 Build Alternative 2: Add Lanes West of Existing Alignment with Barrier Median

Alternative 2 is primarily a four-lane roadway that will utilize the existing two-lane roadway to carry northbound traffic, with two new lanes constructed on the west side of the existing pavement to carry southbound traffic. This alternative begins at the existing five-lane section in Eldorado and will continue the five-lane section 1.1 miles to Dewey Lane. At Dewey Lane, the center turn lane will be replaced with a barrier median between the north- and southbound lanes for 8.0 miles until the project's northern terminus at IL 141.

This alternative will require the conversion of a total of 65.4 acres to roadway right-of-way. It will convert 21.1 acres of cropland, 2.0 acres of pasture, and 38.3 acres of woodland to right-of-way. One residence and six storages buildings will potentially be displaced. A traffic noise analysis indicated that this alternative will impact 52 receptors. Four streams will be crossed (North Fork Saline River, two unnamed tributaries to North Fork Saline River, and Brush Creek.) Floodplain impacts will total 1.5 acres and wetland impacts will total 7.9 acres. Federally and state listed threatened and endangered species in the area include Indiana bat, Arkansas sedge, water hickory, marsh rice rat, and golden mouse. Copperbelly water snake, a resource of concern, is also present in the area. Six potential special waste sites are present. The SHPO has concurred that this alternative will have no effect on significant cultural resources. Twenty feet of proposed right-of-way from a former railroad bed will be utilized for a bike trail.

By increasing the number of through lanes, this alternative meets the project's purpose and need, because the additional lanes improve regional connectivity and economic development in the region. However, a concrete barrier median is much costlier (by approximately \$5 million dollars) to construct than an open grass median. In addition, a concrete barrier would not be an aesthetic fit in this rural setting. It was determined that this alternative would meet the Purpose and Need for the project but was dropped from further discussion due to increased costs.

3.3.3 Build Alternative 4: Add Separated Lanes West of Existing Alignment

Alternative 4 is primarily a four-lane roadway that will utilize the existing two-lane roadway to carry northbound traffic, with two new lanes constructed in a former railroad right-of-way to the west of existing pavement to carry southbound traffic. This alternative begins at the existing five-lane section in Eldorado and will continue the five-lane section 1.1 miles to Dewey Lane. At Dewey Lane, the center turn lane will be eliminated for 8.0 miles until the project's northern terminus at IL 141. The new southbound lanes would separate from the existing alignment for approximately 3.2 miles before tying back in just south of the intersection with IL Route 141.

This alternative will require the conversion of a total of 88.4 acres to roadway right-of-way. It will convert 43.5 acres of cropland, 2.2 acres of pasture, and 40.3 acres of woodland to right-of-way. One residence and six storage buildings will potentially be displaced. A traffic noise analysis indicated that this alternative will impact 52 receptors. Four streams will be crossed (North Fork Saline River, two unnamed tributaries to North Fork Saline River, and Brush Creek.) Floodplain impacts will total 1.5 acres and wetland impacts will total 8.0 acres. Federally and state listed threatened and endangered species in the area include Indiana bat, Arkansas sedge, water hickory, marsh rice rat, and golden mouse. Copperbelly water snake, a resource of concern, is also present in the area. Six potential special waste sites are present. The SHPO has concurred that this alternative will have no effect on significant cultural resources. Twenty feet of proposed right-of-way from a former railroad bed will be utilized to accommodate a proposed bike trail.

By increasing the number of through lanes, this alternative meets the project's purpose and need, because the additional lanes improve regional connectivity and economic development in the region. However, this alternative would result in privately owned land being located between the northbound and southbound lanes, causing a land-locked condition. Therefore, this land would also be required for acquisition. As the existing railroad right-of-way was not wide enough, additional right-of-way would need to be purchased for the roadway as well as the future bike trail. It was determined that this alternative would meet the Purpose and Need for the project but was dropped from further discussion due to higher land acquisition requirements and its impact on the copperbelly water snake.

3.4 Build Alternatives Evaluated and Eliminated from Consideration

3.4.1 Build Alternative 3: Add Lanes East of Existing Alignment with Open Median

Alternative 3 is primarily a four-lane roadway that will primarily utilize the existing two-lane roadway to carry southbound traffic, with two new lanes constructed on the east side of the existing pavement to carry northbound traffic. This alternative begins at the existing five-lane section in Eldorado and will continue the five-lane section 1.1 miles to Dewey Lane. At Dewey Lane, the center turn lane will be replaced with an open, grass median between the north- and southbound lanes for 8.0 miles until the project's northern terminus at IL 141.

This alternative will require the conversion of a total of 90.6 acres to roadway right-of-way. It will convert 56.5 acres of cropland, 1.2 acres of pasture, and 21.4 acres of woodland to right-of-way. Seven residences and 10 storage buildings will potentially be displaced. A traffic noise analysis indicated that this alternative will impact 54 receptors. Seven streams will be crossed (North Fork Saline River, four unnamed tributaries to North Fork Saline River, an unnamed tributary to White Oak Creek, and Brush Creek.) Floodplain impacts will total 25.2 acres and wetland impacts will total 13.1 acres. Federally and state listed threatened and endangered species in the area include Indiana bat, Arkansas sedge, water hickory, Wolf's bluegrass, marsh rice rat, and golden mouse. Copperbelly water snake, a resource of concern, is also present in the area. Four potential special waste sites are present. The SHPO has concurred that this alternative will have no effect on significant cultural resources. Right-of-way from a former railroad bed will be utilized for a bike trail.

By increasing the number of through lanes, this alternative does meet the project's purpose and need, because the additional lanes improve regional connectivity and economic development in the region. However, this alternative results in the highest amount of land conversion and requires the highest number of residential displacements. This alternative was eliminated due to the high amount of land conversion and residential displacements.

3.4.2 Build Alternative 5: Add Lanes West of Existing Alignment with Open Median

Alternative 5 is primarily a four-lane roadway that will utilize the existing two-lane roadway to carry northbound traffic, with two new lanes constructed on the west side of the existing pavement to carry southbound traffic. This alternative begins at the existing five-lane section in Eldorado and will continue the five-lane section 1.1 miles to Dewey Lane. At Dewey Lane, the center turn lane will be replaced with an open, grassy median between the north- and southbound lanes for 8.0 miles until the project's northern terminus at IL 141.

This alternative will require the conversion of a total of 72.4 acres to roadway right-of-way. It will convert 23.3 acres of cropland, 2.2 acres of pasture, and 42.5 acres of woodland to right-of-way. One residence and six storage buildings will potentially be displaced. A traffic noise analysis indicated that this alternative will impact 52 receptors. Seven streams will be crossed (North Fork Saline River, four unnamed tributaries to North Fork Saline River, an unnamed tributary to White Oak Creek, and Brush Creek.) Floodplain impacts will total 25.2 acres and wetland impacts will total 15.1 acres. Federally and state listed threatened and endangered species in the area include Indiana bat, Arkansas sedge, water hickory, Wolf's bluegrass, marsh rice rat, and golden mouse. Copperbelly water snake, a resource of concern, is also present in the area. Five potential special waste sites are present. The SHPO has concurred that this alternative will have no effect on significant cultural resources. Twenty feet of proposed right-of-way from a former railroad bed will be utilized to accommodate a proposed bike trail.

By increasing the number of through lanes, this alternative does meet the project's purpose and need, because the additional lanes improve regional connectivity and economic development in the region. However, this alternative impacts copperbelly water snake habitat that is present on the west side of the existing roadway near the North Fork Saline River. Because of the impacts this alternative would have on copperbelly water snake habitat, this alternative was eliminated.

3.5 Preferred Alternative

The preferred alternative for the project is *Build Alternative 5A: Add Lanes West of Existing Alignment With Open Median, Variation at North Fork Saline River*. This alternative is similar to Alternative 5, and was developed to minimize Alternative 5's potential impacts to copperbelly water snake habitat near the North Fork Saline River. Alternative 5A is shown on Exhibits 3 through 6, pages 7 through 10. The typical section for Alternative 5A is included in Appendix D.

Alternative 5A begins at the existing five-lane section in Eldorado and will continue the five-lane section 1.1 miles to Dewey Lane. At Dewey Lane, the center turn lane will be replaced with an open, grassy median between the northbound and southbound lanes for 8.0 miles until the project's northern terminus at IL 141. Alternative 5A will primarily utilize the existing two-lane roadway to carry northbound traffic, with new lanes constructed on the west side of the existing

pavement to carry the majority of southbound traffic. However, for the portion of the project that traverses the North Fork Saline River floodplain area from Texas City to the horizontal curve on the north side of the river, the new lanes will be constructed to the east of the existing roadway to minimize impacts to copperbelly water snake habitat present on the west side of the existing roadway in this area. The median will still be open for this portion of the roadway. Though an open median has a larger footprint than a concrete barrier median, a concrete barrier could trap snakes migrating across the roadway and ultimately result in higher mortality rates for the species.

This alternative will require the conversion of a total of 75.6 acres to roadway right-of-way. It will convert 23.3 acres of cropland, 2.2 acres of pasture, and 45.7 acres of woodland to right-of-way. One residence and six storage buildings will potentially be displaced. A traffic noise analysis indicated that this alternative will impact 52 receptors. Seven streams will be crossed (North Fork Saline River, four unnamed tributaries to North Fork Saline River, an unnamed tributary to White Oak Creek, and Brush Creek.) Floodplain impacts will total 25.2 acres and wetland impacts will total 15.4 acres. Federally and state listed threatened and endangered species in the area include Indiana bat, Arkansas sedge, water hickory, Wolf's bluegrass, marsh rice rat, and golden mouse. Copperbelly water snake, a resource of concern, is also present in the area. Six potential special waste sites are present. The SHPO has concurred that this alternative will have no effect on significant cultural resources. Twenty feet of proposed right-of-way from a former railroad bed will be utilized to accommodate a proposed bike trail.

Table 7, page 40, summarizes the effects each build alternative evaluated would have on affected resources and sites. Due to Alternative 5A's lower cost, need for fewer acres of additional right-of-way, fewer displacements, and minimized impact to copperbelly water snakes and their habitat, Alternative 5A is the preferred alternative for the project.

TABLE 7 – SUMMARY OF IMPACTS

Alternative	Design		Project Costs			Land Use Conversions				Potential Displacements			Noise Impacted Receptors (number)	Surface Hydrology		Wetlands Impacts (acres)	Federally and State-Listed Threatened & Endangered Species; Resource of Concern Species	Potential Special Waste Sites (number)	Cultural Resources		Section 4f Involvement
	Length (miles)	Additional Right of Way (acres)	Construction (\$ million)	Land Acquisition (\$ million)	Utilities (\$ million)	Total Cost (\$ million)	Cropland (acres)	Pasture (acres)	Woodland (acres)	Residential & Commercial (acres)	Residential	Commercial	Storage Buildings	Stream Crossings (number)	Floodplain Impacts (acres)				Archaeological Resources (Sensitivity)	Historic Structures (number)	
Alternative 3	9.0	90.6	48.5	4.6	1.9	55.0	56.5	1.2	21.4	11.5	7	0	10	54	25.2	13.1	6	4	Low	0	Closing/rerouting bike path during construction may represent a Section 4(f) impact; IDOT will coordinate with FHWA
Alternative 5	9.0	72.4	41.7	3.4	1.0	46.0	23.3	2.2	42.5	4.4	1	0	6	52	25.2	15.1	6	5	Low	0	
Alternative 5A	9.0	75.6	41.7	3.4	1.1	46.2	23.3	2.2	45.7	4.4	1	0	6	52	25.2	15.4	6	6	Low	0	

4. ENVIRONMENTAL CONSEQUENCES

This section discusses the results of the environmental analyses of the Preferred Alternative (Alternative 5A) for the proposed project. Resources potentially impacted by the proposed action or that require discussion pursuant to applicable laws and regulations are addressed in this section. The affected resources and sites and the mitigation proposed are discussed within the individual environmental issue areas that follow.

4.1 Social/Economic

4.1.1 Community Impacts

The majority of the project's impacts will be to residents of Saline County, particularly those living in Eldorado, as the project is primarily within this county and Eldorado contains the highest density of homes and businesses in the corridor.

Alternative 5A will follow the existing alignment, utilizing the existing lanes to carry northbound traffic except in the vicinity of the North Fork Saline River, where the existing lanes will carry southbound traffic. Because the reconstructed roadway will follow the existing alignment, the project will not bisect any communities or introduce a new roadway where one is not currently present. The existing transportation network will not be altered since the route of existing US 45 will not change, nor will any local roads be removed.

As shown on Exhibits 3 through 6, pages 7 through 10, Alternative 5A will reconfigure intersecting roadways, improving their geometry to make accessing US 45 safer at these points.

In addition, no features central to the community, such as schools, libraries, churches, parks, community centers, or local businesses will be relocated by the project. Access to community features will remain essentially the same and may ultimately be enhanced in that the additional lanes will prevent traffic from backing up behind left-turning vehicles, making it easier for motorists to access these facilities.

Emergency and Health Services

Police, fire, and ambulance services are provided to residents via the appropriate city or county agencies depending on their location within the project limits. Eldorado operates its own police and fire station, while the Saline, Gallatin, and White County Sheriffs' Departments protect rural or unincorporated areas in their respective counties. Fire protection is achieved through fire districts set up for rural and unincorporated areas in each county. No relocation of these services will occur as a result of this project. Response time for emergency service providers will benefit from the additional lanes as well, as they will be able to travel more efficiently along the roadway.

Bicycle/Pedestrian Facilities

The urban section will include a 5-foot sidewalk and the rural section will include 12 feet of right-of-way for a future bike trail along the roadway. For the rural portion of the project, the 10-foot paved shoulders will provide a means for pedestrians to safely utilize the roadway corridor for those wishing to do so, as well as bicyclists until the bike trail is complete.

4.1.2 Relocations and Displacements

Alternative 5A will require one residential relocation; however, no commercial relocations will be required.

4.1.2.1 Residential Relocations

Alternative 5A will impact one household. Owners and/or tenants of the relocated residence will be assisted with locating decent, safe, and sanitary housing that is a comparable replacement dwelling. The residential acquisition will be conducted in accordance with the *Uniform Relocation Assistance and Real Property Policies Act of 1970*, as amended, and relocation resources are available to relocated persons without discrimination. All right-of-way acquisitions will also be conducted in accordance with the *IDOT Land Acquisition Procedures Manual*.

A June 2010 search for available homes for sale in Eldorado on the National Association of REALTORS® website revealed 22 homes available for sale. Adequate replacement housing appears to be available for relocates within the project area.

It is not anticipated that any other projects in the area will prevent the relocated household from finding housing. IDOT will provide housing of last resort if comparable housing is not available at the time of displacement, though the use of Last Resort Housing is not anticipated to be necessary for the project.

Six storage buildings will be impacted by the project.

4.1.2.2 Commercial Relocations

No commercial relocations will occur as a result of the proposed project.

4.1.3 Environmental Justice and Title VI

It is the policy of the FHWA to ensure nondiscrimination under Title VI of the 1964 Civil Rights Act, designed to ensure that no person is excluded from participation in, or denied the benefit of, or subjected to discrimination under any program or activity receiving federal financial assistance on the basis of race, color, national origin, age, sex, disability, or religion. Additionally, pursuant to Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, the project area was examined for any minority or low-income populations that may be impacted by the project. Executive Order 12898 ensures that minority and low-income populations do not bear a disproportionate share of high and adverse human health or environmental impacts by identifying and addressing the impacts a project may have on these populations.

As discussed in Section 2.2.1, *Demographics*, very few minority residents are present in the project area. Saline County contains the highest percentage of minority residents (5.9 percent), but the census tracts located along US 45 in the project area contain much fewer minorities than the county average. It is not likely that the project will have a disproportionate impact on minority populations given the small number of minorities present in the community as a whole.

As is often the case in rural communities such as Eldorado and the surrounding area, impacts to low-income communities are the more likely Environmental Justice concern as these areas tend

to have lower median income levels, and higher poverty levels. Median income is lower in the project area than in Illinois as a whole, especially in Census Tract (CT) 9555, where the median income in 2000 was \$20,839. Twenty-three percent of CT 9555 residents are living below the poverty level. To look for more specific low-income communities in this area, census data for the four block groups that comprise CT 9555 was examined (for privacy reasons, the block level is as specific as census data gets in terms of economic data.) Block Groups 3 and 4, which are located along US 45 south of Dewey Road to the west and east, respectively, have a lower median income and higher poverty level than the census tract as a whole. In 1999, the most recent data available, the median household income in Block Group 3 was \$16,597 and \$15,536 in Block Group 4. Thirty-one percent of Block Group 3 residents live below the poverty level, as do 35 percent of Block Group 4 residents. This is much higher than the project area as a whole, and indicates that more low-income residents are present in this area than elsewhere in the project area. None of these residents will be relocated as a result of the project. Other community impacts (such as access changes and noise level increases) will not disproportionately adversely affect low-income or minority populations.

4.1.4 Economic Impacts

Illinois' central location and multimodal transit systems have long made the state an important agricultural and manufacturing hub. Infrastructure improvements that facilitate the ability of the region to provide goods and services to the rest of the state, as well as the nation, are crucial to the economy of southern Illinois.

Due to the abundance of natural resources in southern Illinois, coal mining and oil drilling are large industries in the area. Illinois is estimated to contain a 250-year supply of coal, with the largest reported bituminous coal resources of any US state. Coal is an approximately \$1 billion industry in Illinois and is mined in 12 counties in the state. Saline County is home to American Coal Company's Galatia Mine, the largest underground coal mine in Illinois, employing approximately 500 people. Coal mining provides the largest percentage of industrial employment in Saline County. Other county employers include medical, social, and state services. The region has a diverse economic base and a diverse workforce. Healthcare, education, retail, and manufacturing are the largest areas of employment in the region. Ninety-eight percent of local businesses are small businesses with fewer than 100 employees.

Southern Illinois has seen many benefits from the *Opportunity Returns* program, initiated by former Illinois governor Rod Blagojevich in 2003. *Opportunity Returns* is a comprehensive economic development strategy whereby the state was divided into 10 regions to ensure that economic initiatives under the plan are tailored to specific Illinois regions. In addition to Saline, Gallatin, and White Counties, the southern Illinois region includes Alexander, Edwards, Franklin, Hamilton, Hardin, Jackson, Jefferson, Johnson, Massac, Perry, Pope, Pulaski, Union, Wabash, Wayne, and Williamson Counties.

Six goals were established to address the economic and workforce development needs of southern Illinois: modernizing and expanding local business, improving local infrastructure, strengthening education and job training, supporting the coal industry and the use of renewable fuel, promoting regional tourism, and assisting entrepreneurs and small business.

The program works hand in hand with the *Critical Skill Shortages Initiative*, designed to distribute training funds throughout the state to create jobs and spur economic growth. The goals of the plan are to identify key sectors and industries driving each region's economy, identify shortages in these sectors/industries, and to develop solutions to address these shortages. Healthcare and Manufacturing were identified as key to southern Illinois' economy; thus, initiatives have been developed to address shortages in these industries, such as a lack of career awareness and development services, low education levels, and few skill training programs.

Programs such as *Opportunity Returns* are crucial in the region, as unemployment has historically been high in southern Illinois. Table 8 compares unemployment data from the nation, state, and three counties that comprise the project area. Between 1997 and 2007, Local Workforce Investment Area #26, which comprises Saline, Gallatin, and White Counties, in addition to Wayne, Edwards, Wabash, Hamilton, Hardin, Pope, Johnson, Union, Alexander, Pulaski, and Massac, had a total of 27 layoff events (whereby at least 50 employees were laid off for more than 30 days), laying off 3,722 workers. Neighboring Local Workforce Investment Area #25 had a total of 93 layoffs during this time, affecting 16,669 workers.

TABLE 8 – UNEMPLOYMENT DATA

REGION	2007	2006	2005	2004	2003
US	4.6%	4.6%	5.1%	5.5%	6.0%
Illinois	5.0%	4.6%	5.8%	6.2%	6.7%
Saline	6.6%	5.6%	6.1%	7.1%	7.7%
Gallatin	6.4%	5.9%	6.5%	7.3%	8.8%
White	5.4%	4.9%	5.1%	5.1%	5.7%

Source: Illinois Department of Employment Security

As discussed in Section 1, *Purpose and Need*, economic development is a key component of the project. Southern Illinois has trailed the rest of the state in terms of economic opportunities. The reconstructed roadway will enhance access to the interstate system and facilitate the safe and efficient movement of goods through the corridor. A goal of the project is to enhance economic development in the area, and a reconstructed US 45 is believed to be crucial to stimulating the economy not just along the highway itself but also throughout southern Illinois by encouraging new investments in the region. Though the conversion of 75.6 acres to roadway right-of-way will initially remove this land from property tax rolls, it can be anticipated that these tax income losses will be temporary and are expected to become tax revenue gains as the proposed project indirectly enhances business growth and job creation.

Potential negative short-term impacts during the construction period will be minimal and may include potential loss of business due to difficult access and general inconveniences caused by construction activities. There may also be short periods of inconvenience while driveways are reconstructed. Negative economic impacts will be minimized during construction to the extent practicable.

Beneficial short-term impacts include direct income for construction workers, who in turn expend it for goods and services in the area, including food and fuel. Local contractors and materials suppliers may also benefit from providing goods and services to the construction crews.

4.2 Agriculture

The project will require the conversion of land currently being used for agriculture to roadway right-of-way. Alternative 5A will convert 23.3 acres of cropland and 2.2 acres of pasture to roadway right-of-way. As Alternative 5A closely follows the existing roadway (utilizing it to primarily carry northbound traffic), farmland acquired by the project will be acreage abutting existing roadway right-of-way; thus, no farms will be bisected, creating uneconomical or remnant parcels.

The US Department of Agriculture Natural Resource Conservation Service (USDA NRCS) District Conservationist for each county impacted by the project (Saline, Gallatin, and White) was consulted to determine the impact each alternative would have on prime and unique farmland, as well as statewide and locally important farmland, as well as the percentage of farmland in the county that will be converted to roadway right-of-way by the proposed project. The District Conservationist for each county completed NRCS-CPA-106, the “Farmland Conversion Impact Rating Form for Corridor Type Projects,” contained in Appendix E. Their combined estimates, based upon a review of the project construction limits overlain on aerial mapping, are included in Table 9.

TABLE 9 – PRIME, STATEWIDE, AND LOCAL IMPORTANT FARMLAND IMPACTS

ALTERNATIVE	PRIME FARMLAND (ACRES)	STATEWIDE AND LOCAL IMPORTANT FARMLAND (ACRES)
Alternative 5A	17.8	35.3

The farmland being converted to roadway right-of-way by the project represents a very low percentage of the overall farmland in each county impacted by the project, as Table 10 shows.

TABLE 10 – PERCENTAGE OF OVERALL FARMLAND BEING CONVERTED, BY COUNTY

ALTERNATIVE	SALINE COUNTY (ACRES)	GALLATIN COUNTY (ACRES)	WHITE COUNTY (ACRES)
Alternative 5A	0.015	0.008	0.002

Alternative 5A was designed to minimize impacts to farmland, while ensuring that the project’s purpose and need and current geometric safety standards are met. The project follows the existing alignment, will not bisect any farms, and will convert to right-of-way a low percentage of overall farmland in each county. Therefore, only minor impacts to farmland are anticipated. The project may ultimately represent a beneficial impact to area farms, as the reconstructed roadway will make it easier for farm equipment and motorists to share the roadway. The new roadway will also enhance area farmers’ abilities to get their crops to market.

As with all roadway construction projects, erosion may occur during the construction of the roadway, though the implementation of Best Management Practices (BMPs) will minimize the impacts of erosion. Areas sensitive to erosion will be identified and protected. A specific erosion and sedimentation control plan will be included in the final roadway design for the

preferred Build Alternative. This plan will address disturbed right-of-way, including streams, bridges, and roadways, as well as protection of surrounding areas.

4.3 Cultural Resources

An Archaeological Report and Phase I documentation concerning historical and archeological properties and sites that could potentially be impacted was prepared for the proposed project. Three archaeological sites were recorded, none of which meet the criteria for listing on the NRHP.

No historic structures or districts are located within the project area. The former Eldorado City Hall (now home to the Eldorado Chamber of Commerce), located at 1604 Locust Street approximately 1,750 feet from the project's southern terminus, is listed on the NRHP. The proposed project will not impact this resource, which is located outside of the viewshed of the roadway.

The Illinois State Historic Preservation Officer (SHPO) concurred with the report's findings that no sites subject to protection under Section 106 of the National Historic Preservation Act of 1966, as amended, will be affected by the proposed project. A copy of this concurrence is contained in Appendix A. In addition, the project will not affect any bridges listed on the Illinois Historic Bridge Survey.

4.4 Air Quality

4.4.1 Microscale Analysis

In accordance with the provisions of an "Agreement on Microscale Air Quality Assessments for Illinois Department of Transportation Sponsored Transportation Projects; Illinois Department of Transportation and Illinois Environmental Protection Agency," a Carbon Monoxide Screening for Intersection Modeling (COSIM) analysis was not completed, as the project will not add any signalized intersections and no sensitive receptors are located within 1,000 feet of the non-signalized intersections present along the corridor.

4.4.2 Conformity

No portion of the project area is within a designated non-attainment area for any of the six air pollutants for which the USEPA has established standards. Therefore, a conformity determination under 40 CFR Part 93 ("Criteria and Procedures for Determining Conformity to State or Federal Implementation Plans of Transportation Plans, Programs, and Projects Funded or Approved Under Title USC or the Federal Transit Act") is not required.

4.4.3 Construction-Related Particulate Matter

Demolition and construction activities can result in increases in fugitive dust and equipment-related particulate emissions in and around the project area, though equipment-related emissions can be minimized if the equipment is well maintained. These potential impacts will be short-term, as they will only occur while demolition and construction work is in progress, and if local conditions are appropriate.

The potential for dust emissions is typically associated with building demolition, ground clearing, site preparation, grading, materials stockpiling, on-site equipment movement, and

materials transport. The potential is greatest during dry periods, periods of intense construction activity, and/or high wind conditions.

IDOT's *Standard Specification for Road and Bridge Construction* includes guidance for dust control, specifying that dust and airborne dirt generated by construction procedures shall be controlled through dust control procedures or a specific dust control plan, when warranted. The contractor and IDOT will meet to review the nature and extent of dust-generating activities and will work in conjunction to develop specific dust-control measures appropriate for the project, including measures such as minimizing track-out soil from migrating onto nearby roads, covering haul vehicles, and applying chemical dust suppressants or water to exposed surfaces, particularly those upon which construction equipment will travel. With the appropriate minimization measures, the project will not cause any significant, short-term particulate matter air quality impacts.

4.4.4 Mobile Source Air Toxics

In addition to the criteria pollutants for which there are National Ambient Air Quality Standards (NAAQS), the US EPA also regulates air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries.)

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics defined by the Clean Air Act (CAA). MSATs are compounds emitted from highway vehicles and non-road equipment and include toxic compounds present in fuel emitted when fuel evaporates or passes through the engine unburned. Other toxics are emitted from incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil gasoline.

The US EPA is the lead Federal Agency for administering the CAA and has certain responsibilities regarding the health effects of MSATs. The US EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources (66 FR 17229, March 29, 2001). This rule was issued under the authority in Section 202 of the CAA. In its rule, US EPA examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, FHWA projects that even with a 64 percent increase in vehicle miles traveled (VMT), these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 percent to 65 percent, and will reduce on-highway diesel PM emissions by 87 percent.

As a result, US EPA concluded that no further motor vehicle emissions standards or fuel standards were necessary to further control MSATs. The agency is preparing another rule under authority of CAA Section 202(I) that will address these issues and could make adjustments to the 21 and the six primary MSATs.

This EA includes a basic analysis of the likely MSAT emission impacts of the proposed project. However, available technical tools do not enable us to predict the project-specific health impacts of the emissions changes associated with the preferred alternative in this EA. Due to these

limitations, the following discussion is included in accordance with CEQ regulations (40 CFR 1502.22(b)) regarding incomplete or unavailable information.

Evaluating the environmental and health impacts from MSATs on a proposed highway project would include several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling to estimate human health exposure to the estimated concentrations, then a final determination of health impacts based upon the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevent a more complete determination of the MSAT health impacts of this project.

1. Emissions. The US EPA tools to estimate MSAT emissions from motor vehicles are not sensitive to key variables determining emissions of MSATs in the context of highway projects. While MOBILE 6.2 is used to predict emissions at a regional level, it has limited applicability at the project level. MOBILE 6.2 is a trip-based model – emissions factors are projected based on a typical trip of 7.5 miles, and on average speeds for this typical trip. This means that MOBILE 6.2 does not have the ability to predict emission factors for a specific vehicle operating condition at a specific location at a specific time. Because of this limitation, MOBILE 6.2 can only approximate the operating speeds and levels of congestion likely to be present on the largest-scale projects, and cannot adequately capture emissions effects of smaller projects. For particulate matter, the model results are not sensitive to average trip speed, although the other MSAT emission rates do change with changes in trip speed. Also, the emissions rates used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, US EPA has identified problems with MOBILE 6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capacity of MOBILE 6.2 to estimate MSAT emissions. MOBILE 6.2 is an adequate tool for projecting emissions trends, and performing relative analyses between alternatives for very large projects, but is not sensitive enough to capture the effects of travel changes tied to smaller projects or to predict emissions near specific roadside locations.

2. Dispersion. The tools to predict how MSATs disperse are also limited. The US EPA's current regulatory models, CALINE3 and CAL3QHC, were developed and validated more than a decade ago for the purpose of predicting episodic concentrations of carbon monoxide to determine compliance with the NAAQS. The performance of dispersion models is more accurate for predicting maximum concentrations that occur at some time at some location within a geographic area. This limitation makes it difficult to predict accurate exposure patterns at specific times at specific highway project locations across an urban area to assess potential health risk. The NCHRP is conducting research on best practices in applying models and other technical methods in the analysis of MSATs. This work will also focus on identifying appropriate methods of documenting and communicating MSAT impacts in the NEPA process and to the general public. Along with the general limitations of dispersion models, FHWA is also faced with a lack of

monitoring data in most areas for use in establishing project-specific MSAT background concentrations.

3. Exposure Levels and Health Effects. Finally, even if emission levels and concentrations of MSATs could be accurately predicted, shortcomings in current techniques for exposure assessment and risk analysis preclude us from reaching meaningful conclusions about project-specific health impacts. Exposure assessments are difficult because it is difficult to accurately calculate annual concentrations of MSATs near roadways, and to determine the portion of a year that people are actually exposed to those concentrations at a specific location. These difficulties are magnified for 70-year cancer assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over a 70-year period. There are also considerable uncertainties associated with the existing estimates of toxicity of the various MSATs, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population. Because of these shortcomings, any calculated difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with calculating the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against other project impacts that are better suited for quantitative analysis.

Research into the health impacts of MSATs is ongoing. For different emission types, there are a variety of studies that show that some either are statistically associated with adverse health outcomes through epidemiological studies (frequently based on emissions levels found in occupational settings) or that animals demonstrate adverse health outcomes when exposed to large doses.

Exposure to toxics has been a focus of a number of US EPA efforts. Most notably, the US EPA conducted the National Air Toxics Assessment (NATA) in 1996 to evaluate modeled estimates of human exposure applicable to the county level. While not intended for use as a measure of or benchmark for local exposure, the modeled estimates in the NATA database best illustrate the levels of various toxics when aggregated to a national or state level.

The US EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The US EPA Integrated Risk Information System (IRIS) is a database of human health effects that may result from exposure to various substances found in the environment. The IRIS database is located at <http://www.epa.gov/iris>. The following toxicity information for the six prioritized MSATs was taken from the IRIS database Weight of Evidence Characterization summaries. This information is taken verbatim from US EPA's IRIS database and represents the agency's most current evaluation of the potential hazards and toxicology of these chemicals or mixtures.

- Benzene is characterized as a known human carcinogen.
- The potential carcinogenicity of acrolein cannot be determined because the existing data are inadequate for an assessment of human carcinogenic potential for either the oral or inhalation route of exposure.

- Formaldehyde is a probable human carcinogen, based on limited evidence in humans, and sufficient evidence in animals. 1,3-butadiene is characterized as carcinogenic to humans by inhalation.
- Acetaldehyde is a probable human carcinogen based on increased incidence of nasal tumors in male and female rats and laryngeal tumors in male and female hamsters after inhalation exposures.
- Diesel exhaust is likely to be carcinogenic to humans by inhalation from environmental exposures. Diesel exhaust as reviewed in this document is the combination of diesel particulate matter and diesel exhaust organic gases.
- Diesel exhaust also represents chronic respiratory effects, possibly the primary noncancer hazard from MSATs. Prolonged exposures may impair pulmonary function and could produce symptoms, such as cough, phlegm, and chronic bronchitis. Exposure relationships have not been developed from these studies.

There have been other studies that address MSAT health impacts in proximity to roadways. The Health Effects Institute, a non-profit organization funded by US EPA, FHWA, and industry, has undertaken a major series of studies to research near-roadway MSAT hot spots, the health implications of the entire mix of mobile source pollutants, and other topics. The final summary of the series is not expected for several years.

Some recent studies have reported that proximity to roadways is related to adverse health outcomes – particularly respiratory problems². Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Because of the shortcomings outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from the Preferred Alternative cannot be predicted with enough accuracy to be useful in estimating health impacts (as noted above, the current emissions model is not capable of serving as a meaningful emissions analysis tool for smaller projects.) Therefore, the relevance of the unavailable or incomplete information is that it is not possible to make a determination of whether Alternative 5A would have “significant adverse impacts on the human environment.”

As discussed above, technical shortcomings of emissions and dispersion models and uncertain science with respect to health effects prevent meaningful or reliable estimates of MSAT emissions and effects of this project. However, even though reliable methods do not exist to accurately estimate the health impacts of MSATs at the project level, it is possible to qualitatively assess the levels of future MSAT emissions under the project. Although a qualitative analysis cannot identify and measure health impacts from MSATs, it can give a basis

² South Coast Air Quality Management District, Multiple Air Toxic Exposure Study-II (2000); Highway Health Hazards, The Sierra Club (2004) summarizing 24 studies on the relationship between health and air quality; NEPA’s Uncertainty in the Federal Legal Scheme Controlling Air Pollution from Motor Vehicles, Environmental Law Institute, 35 ELR 10273 (2005) with health studies cited herein.

for identifying and comparing the potential differences among MSAT emissions, if any, from the No-Build and Preferred Alternative. The qualitative assessment presented below is derived in part from a study conducted by the FHWA entitled *A Methodology for Evaluating Mobile Source Air Toxic Emissions Among Transportation Project Alternatives*, found at: www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm

For the Preferred Alternative, the amount of MSAT's emitted would be proportional to the vehicle miles traveled (VMT), assuming that other variables such as fleet mix are the same for the Build and No-Build Alternatives. The VMT estimated for the Preferred Alternative is higher than that for the No-Build Alternative, because the additional capacity will increase the efficiency of the roadway and attract rerouted trips from elsewhere in the transportation network. This increase in VMT will lead to higher MSAT emissions for the action alternative along the highway corridor, along with a corresponding decrease in MSAT emissions along the parallel routes. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to US EPA's MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emissions decreases will offset VMT-related emissions increase cannot be reliably projected due to the inherent deficiencies of current technical models.

There is likely to be no expected appreciable difference in overall MSAT emissions among various alternatives compared with the Preferred Alternative. Also, emissions will likely be lower than present levels in the design year as a result of US EPA's national control programs that are projected to reduce MSAT emissions by 57 to 87 percent between 2000 and 2020. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the US EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases.

The additional travel lanes contemplated as part of the Preferred Alternative will have the effect of moving some traffic closer to nearby homes, schools and businesses; therefore, there may be localized areas where ambient concentrations of MSATs could be higher under Alternative 5A than the No-Build Alternative. However, as discussed above, the magnitude and the duration of these potential increases compared to the No-Build Alternative cannot be accurately quantified due to inherent deficiencies of current models.

In summary, when a highway is widened or relocated and, as a result, moves closer to receptors, the localized MSAT emissions for the Preferred Alternative could be higher relative to the No-Build Alternative, but this could be offset due to increases in speed and reductions in congestion (which are associated with lower MSAT emissions). Also, MSATs will be lower in other locations when traffic shifts away from them. However, on a regional basis, US EPA's vehicle and fuel regulations, coupled with fleet turnover, will over time cause substantial reductions that, in almost all cases, will cause region-wide MSAT levels to be significantly lower than existing levels.

4.5 Traffic Noise

A traffic noise assessment was conducted in accordance with FHWA's *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, contained in 23 CFR 772, and FHWA's *Highway Traffic Noise Analysis and Abatement – Policy and Guidance* (June 1995), as

well as The IDOT Noise Policy as presented in Section 26 of the *IDOT Bureau of Design and Environment (BDE) Manual* and the companion guidance manual *Highway Traffic Noise Assessment Manual* (2007), which incorporates FHWA procedures and Noise Abatement Criteria contained in 23 CFR 772.

The noise assessment was conducted to determine areas with predicted traffic noise impacts. As per FHWA and IDOT regulations and policy, a traffic noise “impact” is defined as noise levels approaching (within 1 decibel [dBA]) or exceeding the Noise Abatement Criteria (NAC) for a receptor’s land use category or substantially exceeding (greater than 14 dBA) existing noise levels.

This assessment also determined whether abatement measures would provide a substantial noise reduction, and determine if the implementation of those abatement measures is reasonable and feasible.

4.5.1 Traffic Noise Background Information

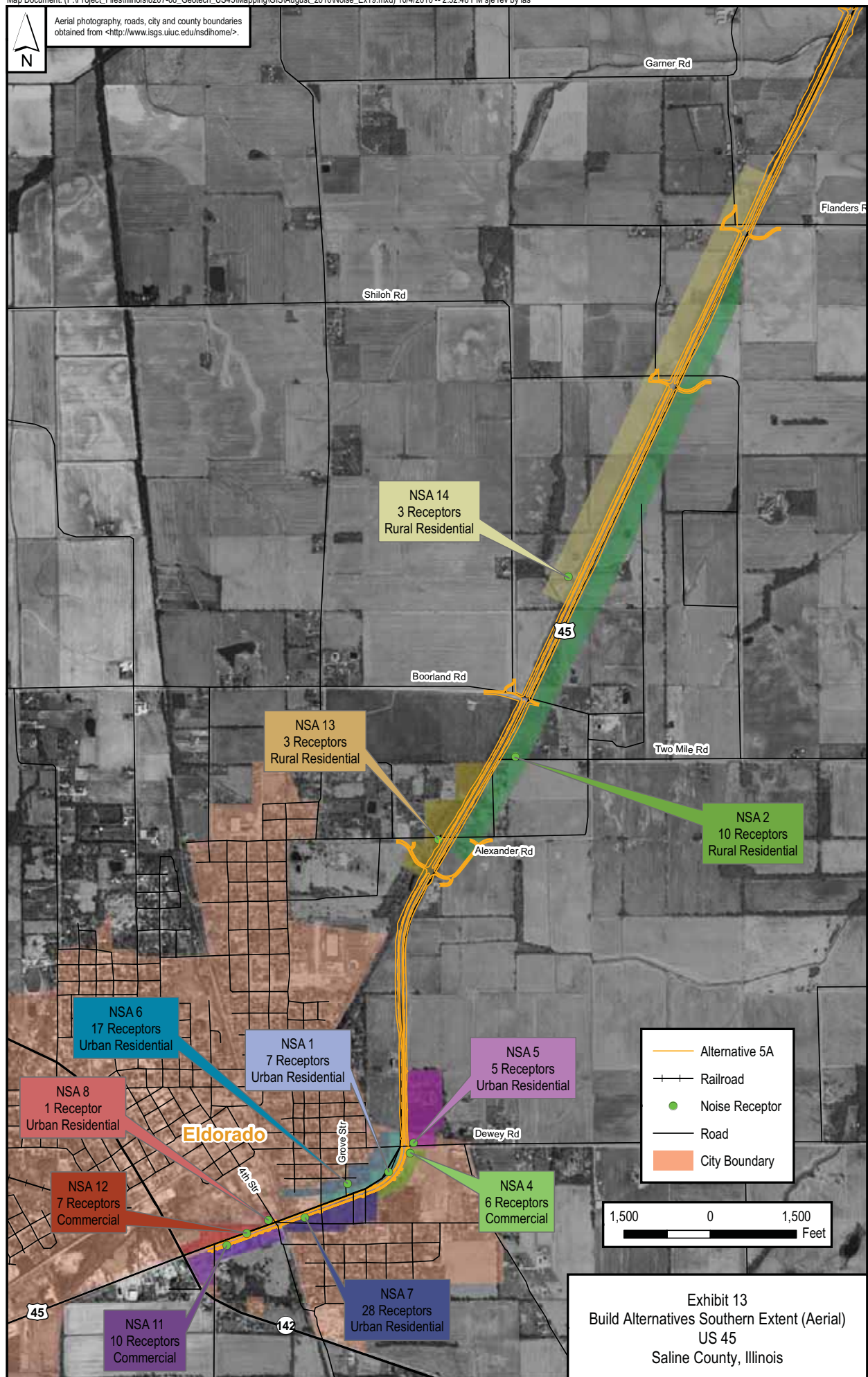
Traffic noise is generated by the vibration created from engines, transmissions, exhaust, tires, and the aerodynamics of vehicles traveling on roadways. All noise levels predicted in this study are in logarithmic scale units of decibels (dB) on the A-weighted scale (or dBA) using the L_{eq} descriptor. The A-weighted scale is used because it most nearly matches the response of the human ear to sound. $L_{Aeq1-hr}$ (shortened in this report to L_{eq}) is the A-weighted equivalent steady state sound level, which in one hour contains the same acoustic energy as the time varying sound level during one hour.

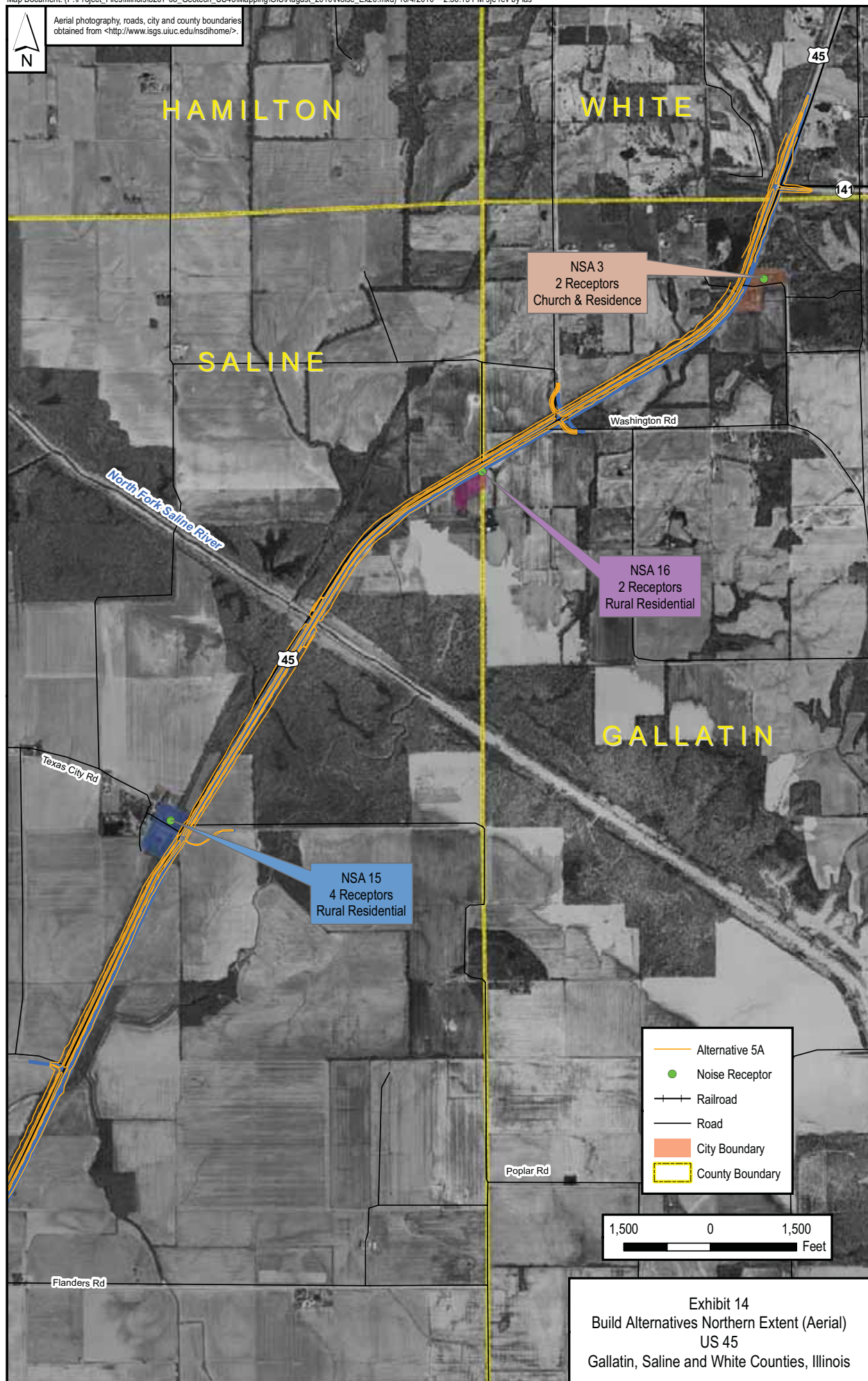
Because noise is measured on a logarithmic scale, addition and subtraction of noise levels is not conducted by ordinary arithmetic. A doubling of the noise source results in an increase of the noise level by 3 dBA, a change that is barely perceptible by the human ear. An increase in the noise level of 10 dBA is perceived by the human ear to be a doubling of the sound level.

Because noise spreads by sound waves, noise levels are reduced as the distance from the source increases. Over grassy or soft ground surfaces, noise levels decrease approximately 4.5 dBA, and over paved surfaces levels decrease approximately 3 dBA when the distance from the source is doubled.

4.5.2 Noise Receptor Selection and Modeling

Fourteen receptor locations were identified as noise sensitive areas (NSAs) of human use through analysis of mapping and visual inspection of the project corridor (Exhibits 13 and 14, pages 53 and 54). These were selected for modeling purposes because of accessibility, representative proximity to the existing roadway, and potential sensitivity to noise impacts. The receptors monitored represent Noise Abatement Criteria (NAC) Categories B (picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals) and C (other developed lands, properties, or activities not included in Category B), which are defined by FHWA as 67 and 72 dBA, respectively. Each measured receptor is representative of the worst-case conditions for similar noise sensitive areas (NSAs).





Existing noise levels were measured on November 18 and 19, 2008 at three locations, and February 23 and 24, 2009 at eleven locations identified on Exhibits 13 and 14, pages 53 and 54. Traffic counts and average traffic speed were also recorded.

These noise measurements were used to model the existing conditions in FHWA Traffic Noise Model (TNM). The FHWA TNM results are summarized in Table 11 for the Existing, No-Build, and Build Alternative 5A.

TABLE 11 – NOISE ANALYSIS RESULTS (L_{EQ}) SUMMARY

MEASURED RECEPTOR # / NSA #	NUMBER OF RECEPTORS REPRESENTED	NAC (dBA)	2008 EXISTING L _{EQ} (dBA)	2033 PREDICTED L _{EQ} (dBA)	
				NO BUILD	ALTERNATIVE 5A
1	7	67	63	64	66
2	10	67	55	56	54
3	2	67	54	54	54
4	6	72	60	61	64
5	5	67	58	59	61
6	17	67	57	58	59
7	28	67	68	69	70
8	1	67	61	62	64
11	10	72	69	70	72
12	7	72	70	71	72
13	3	67	60	61	60
14	3	67	54	55	57
15	4	67	54	55	55
16	2	67	61	62	63

NOTE: Yellow shading indicates noise level either approaches or exceeds the NAC.

Existing noise levels were predicted based on published traffic from 2008. The No-Build and Build (Alternative 5A) scenarios were predicted based on future traffic data for year 2033, twenty years after the proposed construction completion date of 2013. Table 12, page 56, indicates the predicted future change from the existing noise levels for each NSA.

As summarized in Table 13, page 56, traffic noise impacts were predicted in four of the 14 NSAs modeled. Modeling results indicate that the Noise Abatement Criteria (NAC) of 67 dBA for residential facilities is approached or exceeded at two NSAs (1 and 7) and the commercial NAC of 72 is approached or exceeded at two NSAs (11 and 12). No substantial increases (>14 dBA) from existing noise levels are predicted.

TABLE 12 – PREDICTED NOISE LEVEL CHANGES FROM EXISTING NOISE LEVELS (L_{EQ})

MEASURED RECEPTOR # / NSA #	2033 PREDICTED L _{EQ} INCREASE (dBA)	
	NO BUILD	ALTERNATIVE 5A
1	1	3
2	1	-1
3	0	0
4	1	4
5	1	3
6	1	2
7	1	2
8	1	3
11	1	3
12	1	2
13	1	0
14	1	3
15	1	1
16	1	2

TABLE 13 – SUMMARY OF TRAFFIC NOISE IMPACTS

ALTERNATIVE	IMPACTED RESIDENTIAL RECEPTORS	IMPACTED COMMERCIAL RECEPTORS	TOTAL IMPACTED RECEPTORS
2008 Existing	28	0	28
2033 No-Build Alternative	28	7	35
2033 Build Alternative 5A	35	17	52

4.5.3 Traffic Noise Abatement

Because the widening of US 45 will significantly change the horizontal and vertical alignment of the existing roadway, it is classified as a Type I project. When traffic noise impacts are predicted for federally funded Type I projects, mitigation options must be considered, including traffic management measures, alteration of horizontal and vertical alignments, acquisition of undeveloped lands for buffer zones, and construction of noise barriers.

Traffic management measures include the installation of traffic control devices, highway signs prohibiting certain vehicles types, modified speed limits, and exclusive land designation. A reduction of 20 mph is typically required to reduce the traffic noise level by 5 dBA. Because such measures would impact the ability of the project to meet the purpose and need, traffic management measures are not reasonable for this project.

Alteration of the horizontal and vertical alignment also will not provide reasonable mitigation for noise impacts. The topography of the project area is relatively flat, offering no substantial topographical elevations that could be used to reduce traffic noise. As a widening project, the number of horizontal alternatives is inherently limited. The Build Alternatives modeled represent the extent of reasonable alignment shifts that still utilize the existing roadway.

Undeveloped land outside of the Eldorado city limits may be purchased as a noise buffer zone to prevent future noise impacts. The buffer zone width could be determined based on the setback distances at which noise impacts are no longer predicted to occur. Because buffer zones would not mitigate for impacts at presently developed receptor areas and no future developments are currently planned along the corridor, noise buffer zones are not a reasonable mitigation option.

Because traffic management, alteration of the alignment for abatement, or the purchase of noise buffer zones are not reasonable alternatives for abatement, construction of a noise barrier was considered for this project.

IDOT policy requires that three general criteria must be met before a noise barrier shall be recommended for implementation. These include the following:

- Noise barriers shall be designed to address noise impacts to the exterior ground floor activities of abutting buildings
- Noise barriers shall be feasible (can be built, can achieve a substantial (8 dBA) noise reduction)
- Noise barriers shall be reasonable (may not exceed \$24,000 per benefited receptor)

NSA 1, 7, 11, and 12 are each located in areas of unrestricted access along US 45. The design of a noise wall in these areas would require breaks for driveway openings, intersecting streets, public safety access. Therefore, a noise barrier is not feasible for these locations because frequent breaks reduce the effectiveness such that a substantial reduction cannot be obtained.

Thus, a noise barrier is not a feasible abatement measure for noise impacts in the project area.

4.5.4 Construction Noise

Construction trucks and other machinery will produce noise which may affect some land uses and activities during the construction period. Residents along the alignment will at some time experience perceptible construction noise from implementation of the project. Construction noise will be controlled in accordance with Article 107.35 of IDOT's *Standard Specifications for Road and Bridge Construction*. Any additional abatement measures may be developed specifically for the action and may contain the following options, as appropriate:

Construction Staging

- Construction of temporary noise barriers during initial construction phases
- Routing construction traffic away from sensitive receptors
- Operating equipment as far from sensitive receptors as possible.

Sequence of Operations

- Conducting louder operations during the day and not at night when people are more sensitive
- Conduct multiple loud operations at one time to reduce the total duration of the elevated noise level

Alternative Construction Methods

- Evaluation of alternative pile driving methods
- Evaluation of quieter demolition methods
- Usage of special muffler systems or enclosed equipment

4.6 Energy

Construction of the proposed US 45 improvement will require indirect consumption of energy for processing materials, construction activities, and maintenance for the lane miles to be added within the project limits. Energy consumption by vehicles in the area may increase during construction due to possible traffic delays.

Construction of the proposed improvement will reduce traffic congestion and turning conflicts along the route and thereby reduce vehicular stopping and slowing conditions. Additional benefits would be realized from increased capacity and smoother riding surfaces. This will result in less direct and indirect vehicular operation energy consumption for the Build Alternatives than for the No-Build Alternative. Thus, in the long term, post-construction operational energy requirements should offset construction and maintenance energy requirements and result in a net savings in energy usage.

The project includes provisions for improved bicycling and walking conditions, thereby encouraging travel by these non-motorized and thus non-energy consuming modes of transportation.

4.7 Natural Resources

The following details the natural resources impacted by the Preferred Alternative, Alternative 5A. An Environmental Survey Request (ESR) was submitted due to the need to acquire additional right-of-way or easement for widening the road and in-stream work would need to be performed to complete road construction.

Correspondence from the Illinois Department of Natural Resources (IDNR), dated November 20, 2007, is located in Appendix C. Surveys for copperbelly water snake (*Nerodia erythrogaster neglecta*) and the northern harrier (*Circus cyaneus*) were requested by IDNR. See Sections 4.7.2.2 and 4.7.2.3.6 for a description of the survey results. It was also noted in the IDNR correspondence that the North Fork Saline River is an Illinois Natural Areas Inventory (INAI) site that occurs within the project area.

4.7.1 Geology

Geological resource impacts for the project limits are described for bedrock, surface geology, and mineral resources.

The project area is not expected to impact bedrock resources. Some impact to surface geology and topography would be expected during construction, including excavation, grading, and filling over the near-surface deposits. These effects would include minor changes to surface soils in the construction zone that would increase soil compaction and effectively decrease hydraulic conductivity.

Since the two coal mines located with the project area have been closed since 1927 at the latest, no impacts to coal mineral resources are expected. However, because the modified room-and-pillar method was used to mine the sites, some subsidence could occur in these areas. The project will also cross two active oil extraction fields, the Eldorado Oil Field and the Roland Oil Field, and impacts to these resources may occur. Both areas are likely underlain by numerous active and abandoned crude oil collection lines, the locations of which are generally known only to those who installed them. Therefore, the extent of impacts to these fields is currently unknown. A thorough geotechnical study of the project corridor will be conducted to identify specific areas of concern for old mines and oil wells/distribution lines. Special notes will be included on project plans to advise the contractor of these concerns.

4.7.2 Threatened and Endangered Species

Habitat for one federally listed species (Indiana bat) occurs within the wooded areas along the North Fork of the Saline River and its tributaries. Copperbelly water snake, a resource of concern, is also present in the area. Five state listed species – three plant species (Arkansas sedge, water hickory, and Wolf's bluegrass) and two animal species (marsh rice rat and golden mouse) – or their habitats occur in the project area. Potential impacts to these species and their habitats are outlined below.

4.7.2.1 Federally Listed Species

An Indiana bat survey was performed by the INHS on May 25 and 26, 2010 near the US 45 crossing over the North Fork Saline River. No Indiana bats were collected. However, the survey does not prove conclusively that there are no Indiana bats in the area. Indiana bats congregate and roost in caves or abandoned mines during winter hibernation and disperse during the warmer months, roosting in trees with exfoliating bark. Indiana bats prefer foraging areas of narrow, wooded corridors around streams and ponded water and through mature forests. A mammal survey performed in 2008 by the INHS indicated that there is suitable Indiana bat summer roosting habitat in the form of dead trees with exfoliating bark or trees with “shaggy” bark or crevices located in the project corridor and more habitat likely exists in the nearby forested areas. Indiana bats have historically been collected in Saline County and possibly occur in the project area.

Alternative 5A utilizes the existing US 45 alignment to minimize disturbance. Impacts cannot be avoided, but greater overall impact to the watershed and the floodplain forest that parallels the North Fork Saline River can be minimized by utilizing the existing alignment, which is where the highest quality Indiana bat habitat is located. To further minimize potential impacts to Indiana bats, tree removal within the construction corridor will be restricted to occur only between September 30 and April 1 (Biological Resources Review, December 16, 2009 [Appendix F]) when Indiana bats will be using caves for roosting and hibernating instead of trees (See Section 4.17, *Environmental Commitments*.) Based on having the tree clearing restrictions in place, the project will not affect the Indiana bat.

4.7.2.2 Resource of Concern

The herpetological survey performed by the INHS resulted in the collection of two copperbelly water snakes. The copperbelly water snake is considered imperiled in Illinois because of its very restricted range, few populations, steep declines in populations, and other factors making it

vulnerable to extirpation (NatureServe 2010). Threats include drainage of wetlands, removal of aquatic vegetation, and loss of border habitat suitable for amphibians (Phillips *et al.* 1999).

The INHS survey found the two snakes within the project area between existing US 45 and the abandoned New York Central Railroad corridor, near the North Fork Saline River. Two documented roadkill (dead-on-road) specimens of the copperbelly water snake from 1987 and 1997 are also reported along this same section of US 45.

According to correspondence between IDNR's Natural Heritage Biologist/Herpetologist and the USFWS, copperbelly water snake habitat is present both west and east of existing US 45 from 0.25 mile north of the Texas City Road junction to 0.25 mile south of the Saline/Gallatin County line. The area west of US 45 has alternating higher grassy areas with depressions/wet areas from the adjacent slough. The slough in that area has patchy emergent vegetation, very similar to buttonbush swamp structure, with portions of open canopy among the lightly to moderately timbered area. Crayfish burrows were noted in the higher grassy areas and at the base of the old railroad embankment to the west of US 45. That portion east of the current US 45 alignment is more uniformly flat without the higher grassy areas. This area is also lightly to moderately timbered. The slough is similar here as to the west of US 45. The only crayfish burrows found to the east of US 45 were at the base/toe of the highway berm.

In an unpublished report to the USFWS, Brandon and Blanford (1995) recognized five separate clusters/metapopulations of copperbelly water snakes in southeastern Illinois. The proposed US 45 widening is within one of those metapopulations that Brandon and Blanford identified as #2, the Saline River basin metapopulation of Saline, Gallatin, and White Counties. This metapopulation was described as "*scattered and highly isolated local remnants in greatly disturbed areas, and is quite vulnerable to extirpation*" because of the "*populations being small and few.*" During a meeting of the Copperbelly Water Snake Technical Advisory Committee at Falls of the Ohio State Park in Indiana (circa 1995), management recommendations for this metapopulation included "*conservation easements or land acquisition to maintain and widen the North Fork Saline River corridor from Route 45 upstream to Lantham Cemetery, and from Route 45 downstream to Elba.*" The slough in the project area falls within that recommended conservation easement area.

In a conservation assessment to the US Forest Service, Brandon (2005) stated that based on a Kingsbury and Coppola (2000) telemetry study of copperbelly water snakes in southern Indiana and northwest Kentucky hibernacula, "*snakes did not make long migrations away from their summer habitat*" and while they "*showed area fidelity*" to hibernating sites, they did not show "*precise hibernation site fidelity.*" Therefore, while they returned to the same hibernating sites each fall, they did not necessarily return to the same crayfish burrow each fall. It was also learned that "*individuals did not aggregate but hibernated alone.*" This indicates that copperbelly water snakes do not use communal dens for hibernation as some species do, but instead select individual places to hibernate such as crayfish burrows.

Based on field surveys, natural history and habitat selection, IDNR's Natural Heritage Biologist/Herpetologist made the following recommendations in an email dated February 9, 2010 (Appendix G):

- 1) Any construction activities along the US 45 corridor to widen it within copperbelly water snake habitat will negatively impact the snake. While the hibernacula habitat seems to be along the west corridor of US 45, that open slough to east of US 45 undoubtedly offers much summer foraging habitat as well. Not moving forward with expansion of US 45 in this area (0.25 mile north of the Texas City road junction and continue north until 0.25 mile south of the Saline/Gallatin county line) would be the best-case scenario. Hibernacula and foraging areas would not be destroyed and there would not be an increase in traffic or concrete surface area, which would increase vehicular mortality on the snake.
- 2) If construction to widen US 45 is pursued, there can be some minimization by abandoning the idea to use the old New York Central Railroad embankment as additional lanes for the expansion project. This old railroad embankment and adjacent habitat provides hibernating habitat to the copperbelly water snake. In doing the field surveillance, I also surveyed potential habitat both south and north of the slough area from Texas City to the Saline/Gallatin county line. Minimization of negative impacts to the snake could occur if the current US 45 alignment was used as the new southbound lanes near suitable copperbelly water snake habitat. This would begin 0.25 mile north of the Texas City road junction and continue north until 0.25 mile south of the Saline/Gallatin county line on US 45. This would involve moving the construction area east for a total of 1.2 miles in/near the slough area. However, increasing traffic and concrete surface area in this stretch of highway will also increase vehicular mortality on the snake.
- 3) If construction activities are pursued as currently planned to widen US 45 and utilize the old New York Central Railroad embankment and adjacent habitat west of US 45 as additional lanes for the expansion project, this population of copperbelly water snakes will in all likelihood become extirpated. The hibernacula will be destroyed and increased traffic and concrete surface area in this stretch of highway will also increase vehicular mortality on any snakes remaining.

After IDNR made these comments concerning impacts to the copperbelly water snake, representatives of the other participating agencies discussed this issue at the NEPA/404 Merger Meeting held on February 18, 2010. A revised alternative to minimize impacts was discussed, and a subsequent meeting was planned for agency representatives to review the location of copperbelly habitat and determine if the revised alternative would minimize impacts. The meeting, which was held on April 26, 2010, resulted in the conclusion that Alternative 5A, a modification of Alternative 5, would have less impact on the copperbelly water snake.

Alternative 5A uses the existing US 45 lanes for northbound traffic and designates construction of the southbound US 45 lanes to be west of existing US 45 except in the area from the intersection of US 45 and Texas City Road to approximately 1,750 feet southwest of the intersection of US 45 and Grumley Access Road. In this area, the northbound US 45 lanes will

be constructed east of existing US 45, and existing US 45 will become the southbound US 45 lanes. Construction of northbound US 45 east of the existing highway in this area would avoid and minimize impacts to copperbelly water snake hibernacula located in the area of the abandoned New York Central railroad grade west of US 45. Removal of some forested wetlands is unavoidable in this area. However, road slopes will be reduced to 3:1 to minimize the “footprint” of the road and minimize disturbance to this sensitive area. Utilizing a concrete barrier between the northbound and southbound lanes to further narrow the “footprint” of the road was considered for this area but was rejected due to concerns of the barrier trapping animals, particularly copperbelly water snakes, on the highway thus increasing road mortality. As a result of this concern a grass median will be used in this area instead of a concrete barrier.

Copperbelly water snake habitat (wetland) loss from construction of the highway will be mitigated in a wetland mitigation area in proximity to the area that will be impacted. This wetland will provide increased foraging and hibernating areas for copperbelly water snakes. Also, during road construction workers will be informed that any snakes encountered must not be killed. See Section 4.17, *Environmental Commitments*.

4.7.2.3 State Listed Species

4.7.2.3.1 Arkansas Sedge

The botanical surveys were conducted by INHS on July 9 through 11, August 7 through 8, and September 17 through 18, 2008. Follow-up surveys were performed May 4 through 5, and July 2 through 3, 2009. The Illinois State Endangered Arkansas sedge was found at seven of 34 botanical sites along the US 45 corridor. Thousands of plants were estimated to occur within these sites. The largest populations were at Botanical Sites 6 (hundreds), 21 (thousands), and 24 (hundreds), while smaller populations occurred at Botanical Sites 6A, 16, 17, and 20. This sedge is previously known to occur in Saline County just east of Harrisburg.

Alternative 5A utilizes the existing US 45 alignment to minimize disturbance. Impacts cannot be avoided, but other alternatives would have greater overall impact to the watershed and the floodplain forest that parallels the North Fork Saline River. It is anticipated that there will be unavoidable impacts to the Arkansas sedge in the area east of US 45 near the North Fork Saline River in an area under the existing large utility line. To mitigate for these impacts, the district will relocate (with the assistance of the Illinois Natural History Survey) identified populations of Arkansas sedge to the area under the newly re-located aerial utility line. This will occur prior to any impacts from the construction of the preferred alternative to the area. Remaining populations of Arkansas sedge at or near the edge of the construction limits can be flagged or fenced-off to eliminate or reduce further impact.

4.7.2.3.2 Water Hickory

The botanical surveys were conducted by INHS on July 9 through 11, August 7 through 8, and September 17 through 18, 2008. Follow-up surveys were performed May 4 through 5, and July 2 through 3, 2009. The Illinois State Threatened Water Hickory was found scattered at the margin of a single botanical site, a shrub swamp designated as Botanical Site 19. Five individuals were found, two of which were within the study corridor. This is the first report known from Saline County. Previous historic records in Illinois were from Gallatin, Union, Johnson, Alexander, Pulaski, and Massac Counties.

No water hickory trees are located within the project disturbance limits therefore no water hickory trees will be impacted. Any water hickory trees near the project corridor should be flagged to prevent disturbance during construction.

4.7.2.3.3 *Wolf's Bluegrass*

Wolf's bluegrass (Meadow bluegrass), endangered in Illinois, was found in the vicinity of the project area during the botanical survey conducted in 2009 but it was not positively identified until March 2010. A follow up survey in May 2010 resulted in the finding of seven individuals of this grass, located outside (southeast) of the construction limits based upon a survey marker located 42 m northwest of the population. This is the first finding of this grass in southern Illinois. Previous occurrence records indicate it has been found only in northwestern Illinois, predominately in Brown and Pike counties.

No individuals of Wolf's bluegrass are located within the project construction limits. Therefore, this project will have no impact upon Wolf's bluegrass.

4.7.2.3.4 *Marsh Rice Rat*

Potential marsh rice rat habitat was sampled along the US 45 corridor on the nights of May 19 through 21, 2008. No marsh rice rats were collected. Due to the ease with which rice rats are captured and the marginal marsh rice rat habitat in the corridor, it is unlikely the species is present in the corridor. Historic collection records for the marsh rice rat were from Saline and White Counties. The project will not impact the marsh rice rat.

4.7.2.3.5 *Golden Mouse*

Potential habitat for the golden mouse was sampled along the US 45 corridor on the nights of April 14 through 16, 2009. No golden mice were collected in this survey or in a previous marsh rice rat survey conducted May 19 through 21, 2008. Historic collection records for the golden mouse were from the southern portion of Saline County. The project will not impact the golden mouse.

4.7.2.3.6 *Northern Harrier*

An avian survey focusing on northern harriers was conducted on May 25 and July 17, 2008. No northern harriers were found, and no habitat conducive to nesting by the northern harrier exists within the boundaries of the project corridor. Historic northern harrier records are from the North Fork Saline River Illinois Natural Area Inventory site located just north of the northeast end of the project corridor. The project will not impact the northern harrier.

4.7.3 *Nature Preserves*

There are no dedicated Illinois Nature Preserves within the project limits.

4.7.4 *Natural Areas*

The Elba Reach of the North Fork Saline River is Illinois Natural Area Inventory (INAI) Category VI site due to its high abundance of freshwater mussels within the project corridor.

Currently, one bridge (SN 083-0001) and one overflow structure (SN 083-0002) are present over the Elba Reach of the North Fork Saline River. The existing bridge is a three-span concrete

bridge with concrete footings on timber piles, and the overflow structure is a four-span concrete bridge with concrete footings on timber piles. Alternative 5A will replace both structures.

Alternative 5A proposes to replace the existing bridge structure with two identical bridges with three spans. The bridge carrying the reconstructed roadway's southbound traffic will have the same alignment as the existing bridge, and the bridge carrying northbound traffic will be constructed on the east side of the existing bridge location. Both bridges will have zero skew at the crossing. The bridges will have a 2-foot waterway clearance.

The existing overflow structure will be replaced with two identical structures having three spans. One overflow structure will have the same alignment as the existing, and the other will be constructed near the existing location. Both structures will have zero skew at the crossing. The structures will have a 2-foot waterway clearance.

Work pads will be necessary for staging equipment and materials, though their location is unknown at this time. The construction contractor will determine where to place the work pads; they will likely be within the ROW limits, near the bridges.

Siltation of stream and rivers resulting from soil erosion is known to have a negative impact upon freshwater mussels and aquatic life, and roadway construction projects have the potential to increase erosion during construction, subsequently increasing sediment inputs into the river. To minimize the potential for erosion and prevent adverse impacts from occurring, the contractor will adhere to IDOT's guidelines, which include BMPs for erosion and sedimentation control in accordance as well as re-seeding and mulching all disturbed areas immediately. Riprap placed within the channel will also prevent erosion.

Alternative 5A will widen US 45 along the existing alignment to minimize disturbance. Any other alternatives would have greater overall impact to the watershed and the floodplain forest that parallels the North Fork Saline River. Because impacts to the Elba Reach of the North Fork of the Saline River will be minimized through Alternative 5A's use of the existing alignment as well as the use of BMPs to minimize erosion, the project will not have an adverse impact on the INAI site.

4.7.5 Plant Communities and Wildlife Habitat

Alternative 5A will require the conversion of a total of 75.6 acres to highway right-of-way. It will convert 23.3 acres of cropland, 2.2 acres of pasture, and 45.7 acres of forest to right-of-way. There are no practicable alternatives to the proposed project that meet the project's purpose and need. All practicable measures to minimize impacts to plant communities have been incorporated into the project design. Widening along the existing highway will minimize impacts compared to constructing on new alignment, and the alternatives, particularly the preferred, were designed to avoid and minimize impacts.

The loss of 47.9 acres of wildlife habitat (forest and pasture) will have an affect on federal and state listed species as was discussed previously. Fifteen species of neotropical migratory birds breed within the project corridor. However, with the Indiana bat tree cutting restrictions in place, nesting neotropical migrants will not be affected.

4.8 Water Resources and Water Quality

4.8.1 Surface Water

Construction, operational, and maintenance effects (erosion and sedimentation, pollution from runoff) were considered for the seven streams located in the project area. North Fork Saline River and four unnamed tributaries of this river are crossed in the northern project area, and Brush Creek and an unnamed tributary of White Oak Creek are crossed in the central project area. An additional stream, an unnamed tributary of the Middle Fork Saline River, runs near the alignment in Eldorado but appears to be outside the construction limits of the project. BMPs for erosion and sedimentation control will be required during construction in accordance with IDOT guidelines. Disturbed areas will be re-vegetated immediately to reduce erosion and to filter runoff before it reaches streams. This will minimize impacts to water resources and water quality.

4.8.1.1 Construction Impacts to Surface Waters

Two existing bridge structures are present along US 45 within the project limits. The existing bridge over the North Fork Saline River (SN 083-0001) is a three-span concrete bridge with concrete footings on timber piles. The overflow structure (SN-083-0002) is a four-span concrete bridge with concrete footings on timber piles. These existing bridge structures would accommodate the southbound traffic. New bridges, to accommodate northbound traffic, will be constructed parallel to the existing bridges. The new bridges over the North Fork Saline River and the overflow area will both be three-span bridges set upon piers. This will create two sets of twin bridges. The culvert for Brush Creek (SN 083-2000) is currently an 11-foot by 11-foot box culvert. The final size of the culvert is yet to be determined. Other water conveying structures within the corridor are the unnamed tributary crossing under US 45 between Washington Road and Hazel Ridge Road which currently has a 4-foot by 4-foot box culvert, the unnamed tributary crossing under US 45 just north of the intersection with IL 141 which flows through a 60 inch pipe then a 6-foot by 5-foot box culvert, the two small unnamed tributaries north of Shane Cemetery Road which flow through 3-foot by 30-foot box culverts, and the tributary of White Oak Creek which flows through a 3-foot by 6-foot box culvert.

Construction of bridge or culvert structures is proposed for the water bodies listed in Table 14, page 66.

Potential impacts include increased erosion from construction disturbance and the resulting increased sediment inputs into surface waters. Siltation of streams and rivers resulting from soil erosion is known to have a negative impact upon water quality and aquatic life. Using BMPs for erosion and sedimentation control in accordance with IDOT guidelines and re-seeding and mulching all disturbed areas immediately will minimize impacts at surface water channel crossings. Alternative 5A utilizes the existing US 45 alignment in order to minimize disturbance.

TABLE 14 – PROPOSED BRIDGE OR CULVERT STRUCTURES

STREAM	CROSSING TYPE	LENGTH (FEET) OF STREAM WITHIN ALTERNATIVE 5A RIGHT-OF-WAY *	EXISTING CULVERT/ BRIDGE LENGTH (FEET)
North Fork Saline River	Bridge	125	30
Overflow Structure	Bridge	125	30
UNT of White Oak Creek	Box Culvert	232	50
Brush Creek	Box Culvert	356	55
UNT of North Fork Saline River near Shane Cemetery Road, #1	Box Culvert	245	60
UNT of North Fork Saline River near Shane Cemetery Road, #2	Box Culvert	202	60
UNT of North Fork Saline River between Washington and Hazel Ridge Roads, #3	Box Culvert	202	50
UNT of North Fork Saline River near IL 141, #4	Box Culvert	225	80
Total Impact Length		1,712	N/A

*Includes stream length located in median and in existing culvert/bridge.

The proposed construction may temporarily affect water quality in the streams by increasing sedimentation and turbidity during construction activity in and near streams. However, these impacts would be temporary and are not expected to alter the existing aquatic communities. No long-term impacts or appreciable loss of stream habitat is anticipated for the project.

Potential indirect impacts due to increased impervious cover are expected to be minimal.

4.8.1.2 Operational and Maintenance Impacts

Highway operation includes vehicular use and maintenance practices. Highway runoff pollution may affect water quality of receiving waters through shock or acute loadings and through chronic effects from long-term accumulation within the receiving water. During the operation of the highway many pollutants from vehicles, including oils, grease, rubber and heavy metals (lead, zinc, copper), are introduced onto the pavement. Most heavy metals tend to accumulate and remain within the vegetated ditches, but other pollutants tend to be more mobile.

FHWA has conducted research on the operational effects of highways on surface waters and found that the amount of pollutants is proportional to the average daily traffic (ADT). When the ADT is under 30,000 vehicles per day, few impacts are likely to occur. Traffic data for US 45 indicates a range of ADT values from 2,800 to 10,300 in 2007, and from 3,630 to 13,340 predicted for the year 2033. Since these values are well below 30,000 ADT, potential

operational impacts are expected to be only short term, localized, temporary water quality degradation.

Deicing salt (sodium chloride) and plowing are the main tools used during the winter months to control ice and snow on roadway surfaces. Sand is used alone or in mixtures with deicing chemicals to provide skid-free road surfaces during snow events in some areas. Deicing salt maintains public mobility and safe roadway conditions during the winter months. Road salt moves through the environment as runoff, splash, and spray. The salt is carried by melt water runoff to the roadway stormwater management system and then to receiving streams. The water quality standard for chloride, a component of road salt, is 500 milligrams/liter (mg/L). Salt is also transported by splash or spray generated by moving vehicles coming into contact with brine, slush, or dry residue. Studies (Frost *et al.* 1981; Diment *et al.* 1973; Lipka and Aulenbach 1976; and Sucoff 1975) indicate that 60 to 80 percent of salt is carried by surface runoff into nearby water bodies, 15 to 35 percent occurs as splash, and up to three percent occurs as spray. The amount of salt entering the environment depends on the number of snowstorms per season and the number of salt applications per year. IEPA water quality sampling (IEPA 2003) between 1997 and 2000 show a maximum chloride concentration of 266 mg/L but the majority of results were less than 100 mg/L. The increased roadway runoff is not expected to exceed the water quality standard for chloride. Potential impacts are expected to involve minor short-term water quality degradation with no chronic effects.

4.8.2 Groundwater

There are no designated groundwater protection management zones or other sensitive recharge areas located in the project corridor. No measurable change to the available water supply is anticipated for the proposed project. The additional impervious area presented by the proposed roadway surface represents a very small reduction in groundwater recharge area.

While deicing salt storage is considered a source of groundwater contamination, no IDOT storage facility is planned for this project. The potential for contamination of groundwater supply wells is determined by proximity to contamination sources, well construction, geological conditions, and management of stormwater.

Highways are not considered sources of groundwater contamination by the Illinois Groundwater Protection Act. However, setbacks for community water supply wells (400 feet for municipal wells and 200 feet for private wells) are used to evaluate vulnerability from potential contamination and as a tool to prevent potential impacts. Within the project area, there are no public water supply wells within 1,000 feet.

According to the ISGS Preliminary Environmental Site Assessment (2008), no sole-source aquifers as defined by Section 1424(e) of the Safe Drinking Water Act are present, so no aquifers will be affected by the project. This project will not create any new potential “routes” for groundwater pollution or any new potential “sources” of groundwater pollution as defined in the Illinois Environmental Protection Act (415 ILCS 5/3, *et seq.*). Accordingly, the project is not subject to compliance with the minimum setback requirements for community water supply wells or other potable water supply wells as set forth in 415 ILCS 5/14, *et seq.*

The project is not expected to cause any violation of groundwater quality standards. For projects that will not cause a violation of surface water quality standards, modeling results have indicated it is generally unlikely that the project will cause a violation of groundwater standards, due to the filtering effects of grassed drainage ways, retention/detention facilities, and/or the underlying geology. No surface water quality standards are expected to be violated as a result of the project. Studies have shown that grassed drainage ways can remove up to 83 percent of the suspended solids, which account for most of the pollutants in highway runoff.

The ISGS found arsenic in levels exceeding the ingestion value for the IEPA Tier 1 residential TACO objective, but below the total metals pH dependent Class I groundwater ingestion exposure route value. This sample was collected from 0.4 feet below the surface at a residence just south of Alexander Street (near the former air shaft and production shaft of Southern Counties Mine #20).

4.9 Floodplains

Floodplain encroachment cannot be avoided by the project. Construction of additional travel lanes is necessary to meet the purpose and need of the project, which is to improve regional connectivity and traffic mobility and efficiency to promote economic development opportunities due to the fact that southern Illinois lags behind the rest of the state in employment, new job creation, and investment in economic opportunities.

It is not possible to construct these additional lanes without crossing several streams and subsequently impacting their floodplains. Approximately 400,000 cubic yards of fill will be placed on the east side of the existing roadway to construct the northbound lanes in the vicinity of the bridge over the North Fork Saline River. This is required to maintain the freeboard criteria. The roadway has been overtopped by floodwaters since 2008. Table 15 lists the floodplain impacts, type of encroachment, and amount of fill material that will be placed in each floodplain. The floodplains are shown on Exhibit 7, page 16.

TABLE 15 – FLOODPLAIN IMPACTS

Tributary	Acres of Impact	Type of Encroachment	Amount of Fill (Cubic Yards)
North Fork Saline River	20.4	Transverse	400,000
Brush Creek	3.1	Transverse & Longitudinal	70,000
Eldorado Tributary	1.7	Transverse & Longitudinal	2,600

The unavoidable encroachment into the floodway of the North Fork Saline River will require a floodway construction permit from IDNR. Floodplain impacts were minimized by utilizing the existing alignment to carry either northbound or southbound traffic. The project has also been designed to have steeper side slope embankments in fill areas in order to minimize the footprint of the area that must be filled.

4.10 Wetlands

The INHS identified 47 wetland sites totaling 59.3 acres and 11 ponds within the project area. Not all of these wetlands will be impacted by the Alternative 5A. As shown in Table 16, page 70, Alternative 5A will impact 15.4 acres of wetlands. These wetlands provide fair to good wildlife habitat and floodwater storage. Wildlife habitat includes breeding habitat for resident and neotropical migrant bird species, breeding and foraging habitat for reptiles, amphibians, and small mammals, as well as habitat for federal and state listed species of wetland plants and animals. Floodwater storage occurs because most of the wetlands delineated are located in floodplains or along drainage ways, with hydrology mainly influenced by flooding and sheet flow.

Although Alternative 5A impacts the largest amount of wetlands, it is the Preferred Alternative since it minimizes impacts to the highly valuable area of copperbelly water snake hibernacula. All practicable measures to minimize impact to wetlands have been incorporated into the project design. Widening along the existing highway will minimize impacts compared to constructing on new alignment, and the alternatives, particularly the preferred, were designed to avoid and minimize impacts. NEPA/404 Merger Meetings were held to explain and discuss the proposed road construction alternatives and their impacts. All regulatory agency representatives were briefed on the amount of impact upon each resource, including wetlands, for each alternative. After considering all potential impacts of each alternative, all agencies concurred with the preferred alternative. Based upon the above considerations, it was determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed project includes all practicable measures to minimize wetland impacts.

4.10.1 Wetland Mitigation

As the project will permanently impact a total of 15.44 acres of wetland, requiring a total of 57.005 acres of compensation. The mitigation site acreage was determined in accordance with the approved IDOT Wetlands Action Plan required by the Interagency Wetland Policy Act of 1989; the project is being processed as a Programmatic Review Action. IDNR concurred with the processing category, wetland impacts, and proposed mitigation on February 25, 2011. A copy of this concurrence is included in Appendix C.

The wetland mitigation site will ideally be located in the vicinity of where US 45 crosses over the North Fork Saline River. This potential wetland mitigation site could also provide additional hibernacula and summer feeding areas for the copperbelly water snake. Upon design approval, a site will be selected and coordinated with the IDNR, USFWS, and US Army Corps of Engineers (USACE.) If landowners are unwilling to sell, alternative wetland mitigation sites within the vicinity will be pursued. Some wetland mitigation enhancement options include planting swamp rose and buttonbush, which are desirable plants for copperbelly water snakes, in the mitigation wetland, along with creating elevated areas within the wetland to provide feeding, loafing, and hibernating areas for copperbelly water snakes.

NEPA/404 Merger Meetings were held to explain and discuss the proposed road construction alternatives. All regulatory agency representatives were briefed on the amount of impact upon each resource, including wetlands, for each alternative. After considering all potential impacts of each alternative, all agencies concurred with the preferred alternative. An individual USACE 404 permit will be necessary.

TABLE 16 – WETLAND IMPACTS

INHS Wetland ID#	Wetland Type	Function and Quality			Floodwater Storage & Wildlife Habitat	Size (Acres)	Impact (Acres)	On-Site Mitigation	
		Wetland Quality	FQI	C				Ratios	Acres
							Alt 5A	Alt 5A	Alt 5A
10	Emergent	Fair	13.3	3.3	Fair	2.21	1.53	5.5	1.53
11	Forested	Fair	16.8	4.3	Good	0.98	0.98	1.5	1.47
16	Forested	Fair	15.3	3.6	Good	0.91	0.91	1.5	1.365
17	Emergent	Fair	11.2	1.6	Fair	0.99	0.53	1	0.53
18	Emergent	Fair	13.1	1.9	Good	2.01	0.78	1	0.78
19	Forested	Fair	11.2	3	Good	0.56	0.56	1.5	0.84
21	Forested	Good	27	3.9	Good	6.23	1.38	5.5	7.59
25	Emergent	Fair	19.4	3.7	Fair	2.54	2.54	5.5	13.97
28	Forested	Good	26.7	4	Good	11.75	0.90	5.5	4.95
30	Scrub-shrub	Fair	15.8	3.8	Good	1.29	0.35	5.5	1.925
32	Forested	Fair	18.1	3.4	Good	0.37	0.36	5.5	1.98
35	Forested	Good	22.5	3.8	Good	0.55	0.52	5.5	2.86
37	Forested	Fair	13	2.9	Fairly Good	0.08	0.08	1.5	0.12
38	Forested	Fair	12.3	2.8	Fairly Good	2.06	2.06	1.5	3.090
39	Forested	Good	23.4	3.3	Fairly Good	0.98	0.78	5.5	4.29
42	Emergent	Fair	10.8	3	Fair	0.02	0.02	1	0.02
44	Forested	Good	20.5	3.6	Fairly Good	0.31	0.31	5.5	1.705
48	Emergent	Poor	9.9	2.3	Fair	0.44	0.01	1	0.01
49	Emergent	Fair	16.7	3.4	Fair	0.1	0.10	1	0.10
51	Forested	Fair	11.8	3.1	Good	0.09	0.09	1.5	0.135
56	Forested	Fair	12.2	2.7	Good	0.2	0.20	1.5	0.30
58	Forested	Poor	8.3	2.2	Fair	0.23	0.22	1.5	0.33
65	Emergent	Fair	13.1	2.7	Fair	0.23	0.23	1	0.23
Total						35.5	15.44		57.005

4.11 Permits/Certifications Required

The project has been reviewed under the NEPA/404 Merger Process. Agencies involved indicated that the proposed alignments minimize impacts and that the remaining impacts to wetlands are unavoidable. Final approval of mitigation ratios and mitigation sites will be

coordinated through IDNR and the USACE. The project is in compliance with the Illinois Interagency Wetland Policy Act of 1989 (IDNR Concurrence Received February 25, 2011, Appendix C.)

Due to the project's unavoidable encroachment into the floodplain of the North Fork Saline River, a floodway construction permit from IDNR will be required. The IDOT BDE Manual, Chapter 41, Construction Site Stormwater Pollution Control, will be implemented to minimize impacts to the North Fork Saline River and its tributaries. Several methods will be utilized to minimize impacts to these waterways including the erection of perimeter barrier fencing along waterways. In addition, any disturbed area will be seeded or sodded as soon as practical after construction activities in that area have concluded.

4.11.1 Section 404

This project will be impacting 15.4 acres of jurisdictional wetlands. Therefore, a permit will be required from the USACE Louisville District, under Section 404 of the Clean Water Act. Based upon the level of impacts discussed in Sections 4.8, *Water Quality/Resources* and 4.10, *Wetlands*, an individual permit is anticipated. Compensation for unavoidable wetland impacts is proposed to be mitigated via the creation of a mitigation wetland in the vicinity of the North Fork Saline River, discussed in Section 4.10.1, *Wetland Mitigation*. IDOT or their consultant for the contract plans will prepare the USACE 404 Permit application.

4.11.2 Section 401 Water Quality Certification

Section 404 permits require Water Quality Certification (WQC) from the IEPA under Section 401 of the Clean Water Act. An individual 404 permit will require an individual 401 WQC.

4.11.3 Section 402 National Pollutant Discharge Elimination System (NPDES) Construction Permit

This project will result in the disturbance of one or more acres of total land area. Accordingly, it is subject to the requirement for a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from the construction site. Permit coverage for the project will be obtained either under the IEPA General Permit for Stormwater Discharges from Construction Site Activities (NPDES Permit No. ILR10) or under an individual NPDES permit. Requirements applicable to such a permit will be followed, including the preparation of a Stormwater Pollution Prevention Plan. Such a plan shall identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the construction site. It shall also describe and ensure the implementation of practices that will be used to reduce the pollutants in discharges associated with construction site activity and to assure compliance with the terms of the permit. All permits will be applied for in phase II.

4.12 Special Waste

ISGS prepared a *Preliminary Environmental Site Assessment* (PESA) on December 15, 2008 to identify natural and man-made environmental hazards in the existing and proposed right-of-way. ISGS determined that the project has high risks for the occurrence of regulated substances or natural hazards. This risk is based on the presence of potentially occurring compounds, either those detected by ISGS by on-site testing or as documented by the IEPA. As such, ISGS recommended that further soil boring and sample analysis should be performed to determine the

precise nature and extent of contamination at all potential special waste sites if excavation or additional right-of-way is required at these locations.

No sites listed on US EPA's listing of potential, suspected, and known hazardous substance sites will be impacted by the project, but the PESA conducted by ISGS concluded that the proposed project could involve sites potentially impacted with regulated substances. Numerous existing UST tanks are present at gas stations within the corridor – Huck's Convenience Store, Roc One Stop/Phillips 66, and Casey's General Store are all listed as currently containing USTs that are outside of existing right-of-way, but could potentially be impacted by the project. Several old UST sites are present as well. Many of the USTs have been removed, but two magnetic abnormalities were detected in or adjacent to existing right-of-way at a dilapidated building across US 45 from Texas City Road. These magnetic abnormalities may be due to the presence of underground storage tanks at the site. Several above-ground storage tanks are present in the general project area as well. None are located within existing right-of-way, but these tanks could potentially be impacted by the project. Dumping has occurred on several vacant properties.

Volatile Organic Compounds (VOCs) significantly above background levels were detected in soil gas and the headspace of soil samples taken at four sites: Huck's Convenience Store, Roc One Stop/Phillips 66, Jim Brown Landscaping, and Brown's Resale Shop/Residence.

Additionally, in a soil sample taken from 0.4 feet below the surface from a residence just south of Alexander Street (near the former air shaft and production shaft of Southern Counties Mine #20), arsenic was found, exceeding the ingestion value for the IEPA Tier 1 residential TACO objective. However, the sample did not exceed the total metals pH dependent Class I groundwater ingestion exposure route (soil component) value for the IEPA Tier 1 residential TACO objective for this metal. Further investigation into the presence of heavy metals at this site may be warranted, if it cannot be avoided.

A summary of these substances is located in Table 17. The location of each site is shown on Exhibits 3 through 6, pages 7 through 10.

TABLE 17 – SUMMARY OF POTENTIAL SPECIAL WASTE SITES/POTENTIAL UST SITE

PROPERTY NAME	PROPERTY ADDRESS	POTENTIAL SPECIAL WASTE DETECTED
Huck's Convenience Store	1112 US 45, Eldorado	VOCs
Roc One Stop/Phillips 66	1100 US 45, Eldorado	VOCs
Jim Brown Landscaping	600 US 45, Eldorado	VOCs
Residence	73 Alexander Street, Saline County	Arsenic
Residence and Brown's Resale Shop	48 Alexander Street, Saline County	VOCs
Residence	US 45 across from Texas City Road	Potential UST Site

It is the opinion of the Bureau of Design and Environmental, in conjunction with the Chief Counsel's Office, that if right-of-way acquisition includes a parcel with UST(s) and land acquisition procedures are followed, and if construction excavation and utility relocation do not

exceed the maximum testing depth at each site and does not exceed the stipulations listed in Table 18, then the project will comply with IDOT's Hazardous Waste Policy LEN-13 and no additional preliminary testing for the project is necessary. If these stipulations cannot be met, additional investigations into the nature of the potential special waste will be conducted.

TABLE 18 – POTENTIAL SPECIAL WASTE STIPULATIONS

PROPERTY NAME	PROPERTY ADDRESS	MAXIMUM EXCAVATION DEPTH (METERS/FEET)	RADIUS OF INFLUENCE (METERS/FEET)
Huck's Convenience Store	1112 US 45, Eldorado	0.9/3	Entire Site
Roc One Stop/Phillips 66	1100 US 45, Eldorado	No Excavation or Grading	Entire Site
Jim Brown Landscaping	600 US 45, Eldorado	No Excavation or Grading	15/50
Residence	73 Alexander Street, Saline County	No Excavation or Grading	Entire Site
Residence and Brown's Resale Shop	48 Alexander Street, Saline County	0.6/2	15/50

Other considerations noted in the PESA include two crude oil extraction fields crossed by the project (Exhibit 9, page 20). Saline County's Eldorado Oil Field extends from approximately 0.5 mile southwest of Alexander Street to 1.4 miles northeast of Alexander Street and has been active since 1941. The Roland Oil Field extends from approximately 0.9 mile southwest of IL 141 to northeast of the project area and has been active since 1939. Current active pumping wells, tank batteries, and unknown pipelines and collection lines are likely only a small fraction of those historically present. In addition, both oil fields are likely underlain by numerous active and abandoned crude oil lines, most of which are not mapped. As historic information regarding the locations and types of these oil lines is lacking, ISGS could not locate all potential hazards relating to the oil extraction fields. Two former pipelines, one of which crosses US 45, are present in the general project area, as are several inactive oil wells.

A railroad embankment parallels US 45 from 0.6 mile north of Dewey Street to the northeast project termini. The Eldorado City Clerk indicated that the rails were removed in the 1960s. Plat maps ranging in date from 1908 to 1968 show no railroad facilities to have been present along the line in the corridor. No spills were identified along the rail line, so no testing was conducted along the line in the project area.

Two former coal mines are located near the project area in Saline County. The O'Gara Mine #8 was active from 1903 to 1924 and was located northwest of US 45 in Eldorado. Coal depth is approximately 403 feet, and the project area was undermined from the southwest project limit to 525 feet southwest of Dewey Street. Southern Counties Mine #20, which was active from 1907 to 1924, was located south of Alexander Street and west of US 45. Coal depth is approximately 400 feet and the project area was undermined from 0.7 mile southwest of Alexander Street to Bourland Road. Both mines worked the Springfield coal seam by the modified room-and-pillar method; thus, the southern end of the project area may be subject to subsidence (movement of

the ground surface due to collapse or failure of underground mine structures.) The mines are shown on Exhibit 8, page 19.

Aerial photographs show buildings in the project area that were constructed prior to 1979. These buildings may contain friable asbestos-containing materials in floor tiles, wall and pipe insulation, roof materials, patching or painting compounds, ceiling materials, or stove and furnace insulation.

4.13 Special Lands

4.13.1 Section 4(f) Lands

No land from a significant publicly owned park or wildlife and waterfowl refuge will be acquired by the project. No parks or wildlife or waterfowl refuges will be impacted by the project. No sites listed on or eligible for listing on the National Register of Historic Places will be affected by the project.

The City of Eldorado Bicycle/Pedestrian Path travels parallel to 4th Street near US 45 and crosses the project corridor (Exhibit 3, page 7). This facility, owned by the city and constructed with funding from IDOT and IDNR's Bike Path Grant Program, provides Eldorado-area residents with recreational and fitness opportunities. The path runs from IL 142 to Bourland Road and crosses existing US 45 just east of 4th Street. No right-of-way will be purchased from the City of Eldorado.



Existing Bike Path Crossing of US 45

As the project is widening the existing roadway, a temporary closure/rerouting of the bike path will be required during construction of the roadway in the vicinity of the crossing. IDOT has coordinated this impact with the City of Eldorado (the property owner) and FHWA. As the path is a linear corridor crossing the existing alignment perpendicularly, no prudent or feasible alternatives exist to avoid impacting the facility. At the impact site, the bike path crosses the road. This crossing will be restored once construction of the roadway is complete. Additionally, the path will be enhanced through the inclusion of pavement markings at the crossing to alert motorists to the presence of bicyclists crossing US 45 at that location. No such markings are currently present.

Because the impact to the bike path is minimal, IDOT is pursuing a temporary occupancy exception to Section 4(f) as per 23 CFR 774.13(d) because the following five criteria are satisfied:

1. Duration must be temporary, *i.e.*, less than the time needed for construction of the project, and there should be no change in ownership of the land;
2. Scope of the work must be minor, *i.e.*, both the nature and the magnitude of the changes to the Section 4(f) property are minimal;

3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
4. The land being used must be fully restored, *i.e.*, the property must be returned to a condition which is at least as good as that which existed prior to the project; and
5. There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.

IDOT sent a notification letter to Rocky James, the City of Eldorado's mayor, on April 12, 2011 notifying him of the project, the minimal impacts to the bike path, the proposed mitigation measures, and that IDOT is pursuing an exception to Section 4(f) as the project meets the five criteria listed above. IDOT's letter also requested concurrence from Mr. James that the project does not adversely affect the activities, features, and attributes that qualify the bike path for protection under Section 4(f). Mr. James issued this concurrence on behalf of the City of Eldorado on April 12, 2011. Copies of this correspondence are included in Appendix H.

4.13.2 Section 6(f) Lands

No parks or recreation areas in the project area have received Land and Water Conservation Fund Act monies; therefore, the project will have no Section 6(f) impacts.

4.13.3 OSLAD Act Lands

The selection of the Preferred Alternative will not result in the acquisition of any lands that have utilized Open Spaces Land Acquisition and Development funds.

A bike path, funded by grants from IDNR's Bike Path Grant Program, is located perpendicular to US 45 and will be crossed by the proposed project in Eldorado. This bike path crosses existing US 45 near 4th Street (Exhibit 3, page 7). Though the project will not impact the function of this resource, *i.e.*, the bicycle path will remain in use once the project is completed, due to the state funds involved in the acquisition of the corridor and development of the path, any bike path right-of-way converted to roadway right-of-way will have to be replaced by the City of Eldorado. Replacement property must be the same value or higher than the land acquired for the roadway, and the property must currently be privately owned. Replacement property does not need to be adjacent to the bike path, and may be used for any form of public recreation, *i.e.*, it is not required to be a bicycle path. Coordination with IDNR will be required to convert bicycle path right-of-way to roadway right-of-way.

As discussed previously, the 3,000 square feet of bike path right-of-way that will be impacted by the project will be maintained as a trail crossing across the newly-constructed roadway. The project will also include pavement markings in the vicinity of the crossing to alert motorists to the presence of bicyclists crossing US 45.

4.14 Construction Impacts

All roadway construction projects have some level of inconvenience, through disruptions to residents, businesses, and travelers. Traffic maintenance, access to properties adjoining the road, and utility relocations are construction-related impacts that affect all roadway projects.

The existing two-lane roadway will primarily be utilized as the northbound lanes of the reconstructed roadway. As such, the existing roadway can be utilized while new lanes are being built, which will minimize construction delays.

4.15 Cumulative Impacts

“Cumulative impacts” are defined in 40 CFR 1508.7 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 or person undertakes action.”

Beneficial cumulative impacts related to employment may occur as a result of the project. As discussed in Section 1, *Purpose and Need*, Saline and Gallatin Counties are among the 252 counties and parishes along the Mississippi River corridor that comprise the most distressed area of the country, and unemployment in southern Illinois is higher than in the state as a whole. A major component of the project’s purpose and need is to stimulate new business and job creation in the area via an improved regional transportation system. When combined with other programs designed to stimulate the regional economy, such as *Opportunity Returns*, the project may ultimately bring new jobs and businesses to the region.

Wetland resources have been impacted by past and present activities. In the past, area wetlands have been impacted by farming, and the proposed project will impact additional wetland acres. However, proposed mitigation measures have been designed to compensate for the loss of wetland acres as a result of the project, subsequently, there will be no net loss of wetland acres in the project corridor. Copperbelly water snakes will ultimately benefit from the project, as mitigation for the project’s impacts to the species will provide increased foraging and hibernating areas.

4.16 Indirect Impacts

“Indirect impacts” are defined in 40 CFR 1508.8 as being those “which are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable.”

The project has the potential to cause favorable indirect economic impacts. Southern Illinois’s lagging economy, when compared to the rest of the state, is at the core of the project’s purpose and need. Though the roadway will not create economic development opportunities in and of itself, it is hoped that the enhanced transportation network will encourage business growth and subsequent job creation in the region.

An Enterprise Zone is located along US 45 at the southern portion of the project corridor. The zone begins at Greenhill Road, south of the project’s terminus, and continues to Dewey Road. Enterprise zones, located in communities throughout the country, are designed to encourage business development. Benefits to businesses that locate within Saline County enterprise zones include graduated property tax abatements for the first five years of business, as well as sales tax abatements on construction/remodeling projects if materials are purchased in Illinois. It is reasonably foreseeable that the upgraded US 45 facility that provides access to Eldorado’s enterprise zone could encourage businesses to locate within the zone, or to other locations near the reconstructed roadway.

4.17 Environmental Commitments

The project's environmental commitments are as follows:

- Alternative 5A will be implemented to minimize impacts to copperbelly water snake in the vicinity of the North Fork Saline River. Concurrence for this preferred alternative was received at the June 9, 2010 NEPA/404 meeting. To minimize impacts to copperbelly water snakes, construction workers will be informed that if any snake is encountered that it is not to be harmed.
- Impacts to Indiana bats will be mitigated by implementing a tree clearing restriction that will allow tree clearing only during the period of time between September 30 and April 1. During this time period Indiana bats are utilizing caves for roosting and not trees.
- Wetland impacts will be mitigated by the creation of a mitigation wetland within the nearby area. The mitigation wetland will be designed to provide habitat for the copperbelly water snake by planting desirable plants such as swamp rose and button bush and by having areas of higher elevation which can provide winter hibernacula.
- It is anticipated that there will be unavoidable impacts to the Arkansas sedge in an area east of the North Fork Saline River under an existing aerial utility line. To mitigate these impacts, IDOT agrees to relocate (with the help of the INHS) identified populations of the species to the area under the newly relocated aerial utility line. This will occur prior to any impacts from construction of the preferred alternative in this area. Remaining populations of Arkansas sedge at or near the edge of the construction limits can be flagged or fenced-off to eliminate or reduce further impact.
- A thorough geotechnical study of the project corridor will be conducted to identify specific areas of concern for old mines and oil wells/distribution lines. Special notes will be included on project plans to advise the contractor of these concerns.

5. COMMENTS AND COORDINATION

5.1 Coordination with Federal, State, and Local Agencies

IDOT has coordinated the project study with federal, state, and local agencies with varying degrees of jurisdiction and expertise regarding the area and its resources.

5.1.1 NEPA/404 Process

IDOT and FHWA have held three NEPA/404 Merger meetings for the project. The first NEPA/404 Merger meeting was held on June 24, 2009 to seek concurrence for the purpose and need for the proposed project. In addition to IDOT and FHWA, representatives from Geotech Engineering and Testing, Inc. (project engineer) and Third Rock Consultants, LLC (environmental consulting firm) were present to provide information regarding the project and the purpose and need. Representatives of the following agencies were in attendance:

- Illinois Department of Agriculture (ILDA)
- US Army Corps of Engineers (USACE), St. Louis and Louisville Regulatory Districts
- Illinois Division of Natural Resources (IDNR)

- US Environmental Protection Agency (US EPA)

Each agency concurred with the project's purpose and need. Representatives of US Fish and Wildlife Service were not present at the meeting held on June 24, 2009; therefore, concurrence with this agency was obtained outside of the meeting. USFWS concurred with the project via email to FHWA on July 20, 2009.

A second NEPA/404 merger meeting was held on February 18, 2010 to seek concurrence for the alternatives carried forward for the proposed project. Representatives from IDOT, FHWA, Geotech, and Third Rock presented information regarding the project alternatives, the alternatives carried forward (Alternatives 3 and 5), and the preferred alternative (which was Alternative 5 at that point in the project development process). USFWS and INDR expressed concern about Alternative 5's impacts to the copperbelly water snake habitat on the west side of the roadway along the North Fork Saline River. As a result of these concerns, the project team committed to designing a modification of Alternative 5, named Alternative 5A, to minimize impacts to the water snake's habitat. All agencies present (ILDA, USACE, IDNR, USFWS, and US EPA) concurred with Alternatives 3, 5, and 5A being carried forward.

The third NEPA/404 merger meeting was held June 9, 2010 to seek concurrence for the Preferred Alternative for the proposed project. Representatives from IDOT, FHWA, Geotech, and Third Rock were present to provide information and answer questions regarding the Preferred Alternative (Alternative 5A). Representatives from each agency in attendance (US EPA, USFWS, and IDNR) concurred with the preferred alternative. USACE was not present at the meeting.

5.1.2 Agency Coordination

Coordination with other federal, state, and local agencies and organizations potentially interested in the proposed project was initiated in April 2009 and continued throughout project development as additional area agencies were identified. Third Rock Consultants, LLC sent letters to the following agencies/organizations to describe the project and request comment:

- City of Eldorado
- Eldorado Chamber of Commerce
- Saline, Gallatin, and White County Boards
- Saline, Gallatin, and White County Engineers
- Saline, Gallatin, and White County Farm Bureaus
- Saline Valley Conservation District
- Saline County Tourism Bureau
- Saline County Chamber of Commerce
- Town of Norris City
- League of Illinois Bicyclists
- Illinois State Geological Survey
- Illinois Department of Natural Resources
- Illinois Office of Water Resources
- Illinois Nature Preserves Commission
- Illinois Environmental Protection Agency (Region 7)

- US Fish and Wildlife Service – Marion, Illinois Field Office
- US Department of Agriculture – Saline and Gallatin County NRCS
- Illinois Department of Agriculture
- Saline and Gallatin County Soil and Water Conservation Districts
- Federal Emergency Management Agency (Region V)
- Southeastern Illinois Regional Planning and Development Commission
- Illinois State Police District 19
- Eldorado Police Department
- Norris City Police Department
- Eldorado Fire Department
- Norris City Fire District
- Omaha Volunteer Fire Department
- Saline, Gallatin, and White County Sheriff's Departments
- Eldorado Community Unit School District #4
- Regional Office of Education
- Gallatin Community Unit School District #7
- Norris City-Omaha-Enfield School District
- Saline, Gallatin, and White County Historical Societies

Three agencies responded: the Illinois Office of Water Resources, the Illinois Nature Preserves Commission, and the Southeastern Illinois Regional Planning and Development Commission. A copy of each agency's response is contained in Appendix I.

Additionally, FHWA sent invitations to the following agencies in January 2011 requesting them to become cooperating agencies due to their jurisdiction by law or special expertise regarding the project's environmental impacts:

- US Fish and Wildlife Service
- US Environmental Protection Agency
- US Army Corps of Engineers, Louisville District
- Illinois Department of Agriculture
- Illinois Environmental Protection Agency
- Illinois Historic Preservation Agency
- Illinois Department of Natural Resources

The Illinois Department of Agriculture, Illinois Historic Preservation Agency, and Illinois Department of Natural Resources accepted the invitation to become cooperating agencies. A copy of each agency's response is contained in Appendix I.

5.2 Public Involvement

Two public meetings have been held for the project thus far. The first public informational meeting was held at the Eldorado Community Center on December 11, 2008. The meeting was conducted as an open house, with representatives from IDOT, the design engineer, and environmental consultants present to receive input, provide information, and answer questions on an informal basis. Project alternatives were shown overlain on aerial photography, and attendees

were furnished a fact sheet with project details and a pre-addressed form they could use to submit comments on the project.

Fifty attendees returned the comment form. Comments received concerned drainage impacts, wetland impacts, and right-of-way maintenance, as well as questions regarding impacts to residences such as bringing traffic closer, when relocations would occur, and what properties would be acquired. Many attendees also expressed concerns regarding project costs, and one individual worried that enhanced access to Evansville would draw shoppers out of the project area, decreasing tax revenues. Many individuals were concerned about impacts to farms along the existing roadway, and business owners were concerned about changes to the visibility and ability to access their properties. Despite these concerns, other attendees felt the project would greatly benefit the region by increasing access, interstate connectivity, local employment opportunities, and adding turn lanes. Attendees overwhelmingly preferred new lanes be built within the former railroad right-of-way (to the west) to reduce the project cost and impacts to residents, businesses owners, and farmers.

Also included on the comment form was an issues matrix, which attendees could use to indicate how important various issues were to them on a scale to 1 to 5, with 1 being “Not Important” and 5 being “Very Important.” Table 19, page 81, summarizes how many respondents ranked each issue by importance. The issue most important to respondents was “Property Impacts,” with “Residential Property Access” a close second.

A second information meeting to show the public the refined Build Alternatives was held on October 6, 2009. This meeting was also conducted as an open house, with representatives from IDOT, the design engineer, and environmental consultants present to receive input, provide information, and answer questions on an informal basis. Project alternatives were shown overlain on aerial photography, and attendees were furnished a fact sheet with project details and a comment form.

Fifteen attendees returned the form. Of these 15, six were identified as residential owners, three as farm owners, and four as business owners (some respondents did not provide this information, others identified as multiple categories, *e.g.* residential and business owner). The comments received were similar to those shared at the December 2008 meeting and included concerns regarding property acquisition, access, drainage, farm equipment movement, project cost, and the proximity of the project to the filled-in mine shaft at Alexander Road.

Of those who expressed a preference, three individuals favored widening the road to the east (Alternative 3) while four favored widening the road to the west (Alternatives 5 and 5A).

TABLE 19 – ISSUES MATRIX SUMMARY

ISSUES	NOT IMPORTANT ←		→ VERY IMPORTANT		
	1	2	3	4	5
Vehicle Safety	1	--	2	4	22
Pedestrian Safety	3	2	4	4	15
Bicycle Safety	4	1	7	1	14
Travel Time	3	4	7	4	9
Recreational Traffic	5	6	9	1	7
Residential Property Access	--	--	3	2	25
Business and Industrial Property Access	2	1	4	--	20
Community Facility and School Access	1	--	6	6	14
Supporting Current Businesses	1	--	5	1	21
New Business Development	--	2	5	5	16
Community Character	1	2	7	6	12
Property Impacts	2	--	1	3	27
Business Impacts	--	--	2	7	18
Farmland Impacts	1	1	2	3	20
Low-Income and/or Minority Populations	3	1	10	2	11
Historic Preservation	6	--	12	2	10
Environmental Impacts	2	4	6	4	13
Other: Mature Tree Impacts	--	--	--	--	1
Other: Fencing Impacts	--	--	--	--	1
Other: Wildlife Impacts	--	--	--	--	1
Other: Noise Impacts	--	--	--	--	1
Other: Local Job Impacts	--	--	--	--	1
Other: Drainage Impacts	--	--	--	--	2
Other: Loss of 5-Generation Farmstead	--	--	--	--	1

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APPENDICES

**APPENDIX A – STATE HISTORIC PRESERVATION OFFICE
CONCURRENCE**



Illinois Department of Transportation

Memorandum

To: Mary Lamie Attn: Julie Klamm
From: Charles Ingersoll By: J. A. Walthall
Subject: Cultural Resource Concurrence
Date: January 28, 2009

Saline, Gallatin & White Counties
FAP 332, US 45
Sec. (29,29X,100,101-2)R
Job No. P-99-001-08
Seq. #14105

Attached is a letter of concurrence from the State Historic Preservation Officer indicating that the proposed project referenced above will have no effect on significant cultural resources.

This completes the necessary coordination relative to evaluating the impact of this project on significant cultural resources.

A handwritten signature in black ink, appearing to read 'J. A. Walthall'.

Attachment

JAW:km



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

January 15, 2009

Saline, Gallatin, and White Counties
FAP 332, US 45
Eldorado
Project: P-99-001-08

IDOT Seq# 14105
ITARF# 07187

FEDERAL 106 PROJECT

Ms. Anne Haaker
Deputy State Historic Preservation Officer
Illinois Historic Preservation Agency
Springfield, Illinois 62701

Dear Ms. Haaker:

Enclosed are two copies of an Archaeological Report and Phase I documentation completed by University of Illinois personnel concerning historical and archaeological properties and sites potentially to be impacted by the 380 acre project referenced above. Three archaeological sites, 11-SA-560 & 578, and 11-G-452 were recorded. Two of these sites represent front yard portions of 19th - 20th century farmsteads. The third site, 11-SA-578, is a prehistoric Late Archaic habitation component and was subjected to testing utilizing heavy equipment during the first week of December, 2008. No subsurface features or intact deposits were found and it appears that SA-578 does not meet the criteria for listing on the National Register. A complete report concerning this testing program will be submitted to your office at a later date.

In accordance with the established procedure for coordination of Illinois Department of Transportation projects, we request the concurrence of the State Historic Preservation Officer in our determination that no sites subject to protection under Section 106 of the National Historic Preservation Act of 1966, as amended, will be affected by this proposed project.

Very truly yours,

A handwritten signature in dark ink, appearing to read 'John A. Walthall'.

John A. Walthall, PhD
Cultural Resources Unit

CONCUR

By: A handwritten signature in dark ink, appearing to read 'Anne E. Haaker'.
Deputy State Historic Preservation Officer

Date: JAN 15/09

APPENDIX B – NATIVE AMERICAN COORDINATION



U.S. Department
of Transportation
**Federal Highway
Administration**

Illinois Division

February 23, 2011

3250 Executive Park Dr.
Springfield, IL 62703
(217) 492-4640
www.fhwa.dot.gov/ildiv/index.htm

In Reply Refer To:
HPER-IL

Mr. John A. Barrett
Citizen Potawatomi Nation
1601 S. Gordon Cooper Drive
Shawnee, OK 74801-9002

Subject: U.S. 45 from IL 142 to IL 141 Saline, Gallatin, and White Counties, Illinois
Section 106 Consulting Party Request

Dear Mr. Barrett:

The Federal Highway Administration (FHWA), in cooperation with the Illinois Department of Transportation (IDOT), is preparing an Environmental Assessment (EA) for the proposed upgrade of U.S. 45 from two, to four lanes, from IL 142 in Eldorado, Saline County, to IL 141 at the Gallatin/White County Line. The FHWA and IDOT have developed the project in accordance with the Illinois' NEPA-404 merger process because the project will likely require an Individual 404 permit. The FHWA hereby invites you to be a Section 106 consulting party for this project pursuant to 36 CFR 800.3(f).

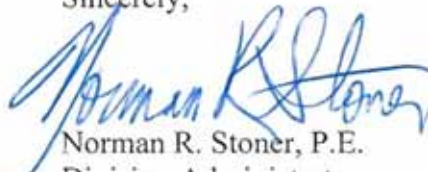
The FHWA and IDOT are developing the U.S. 45 - IL 142 to IL 141 EA in accordance with the National Environmental Policy Act, and Section 106 of the National Historic Preservation Act. Since the inception of the project, substantive efforts are being made to identify specific alternatives to be addressed in the EA. Archaeological surveying and testing were conducted in 2007 and 2008 and yielded no sites eligible for the National Register of Historic Places. The Illinois State Historic Preservation Officer concurred with this determination February 24, 2009.

Since this portion of Illinois is an area in which your Tribe has expressed an interest, we are inviting you to be a Section 106 consulting party for this proposed project. If your Tribe has a Traditional Cultural Property, or a site of religious or cultural interest in this project area, we are requesting that you contact Dr. John Walthall, Chief Archaeologist with IDOT at (217) 785-2831 or by email at John.Walthall@illinois.gov. However, if you prefer that FHWA maintain the lead role in all correspondence with your Tribe, please either respond accordingly to this letter, or contact Matt Fuller of FHWA at (217) 492-4625 or by email at Matt.Fuller@dot.gov.



The FHWA and IDOT look forward to cooperating with your Tribe concerning your interest in this project.

Sincerely,



Norman R. Stoner, P.E.
Division Administrator

Enclosure

cc: Ms. Christine Reed, Division of Highways, IDOT
Ms. Barbara Stevens, Bureau of Design and Environment IDOT
Ms. Mary C. Lamie, Division of Highways, IDOT
Dr. John Walthall, Bureau of Design & Environment, IDOT
Ms. Anne Haaker, State Historic Preservation Office
Ms. Carol Legard, Advisory Council on Historic Preservation

Identical letters were sent to:

Ms. Tamara Francis
The Delaware Nation
P.O. Box 825
Anadarko, OK 73005-0825

Mr. Marlon Frye
Kickapoo Tribe of Oklahoma
P.O. Box 70
McCloud, OK 74851-0700

Ms. Crystal Douglas
Kaw Nation
Drawer 50
Kaw City, OK 74641-0050

Mr. George Strack
Miami Tribe of Oklahoma
202 S. Eight Tribes Trail
Miami, OK 74354-1004

Mr. Juan Garza, Jr.
Kickapoo Traditional Tribe of Texas
HCR1, Box 9700
Eagle Pass, TX 78852-9752

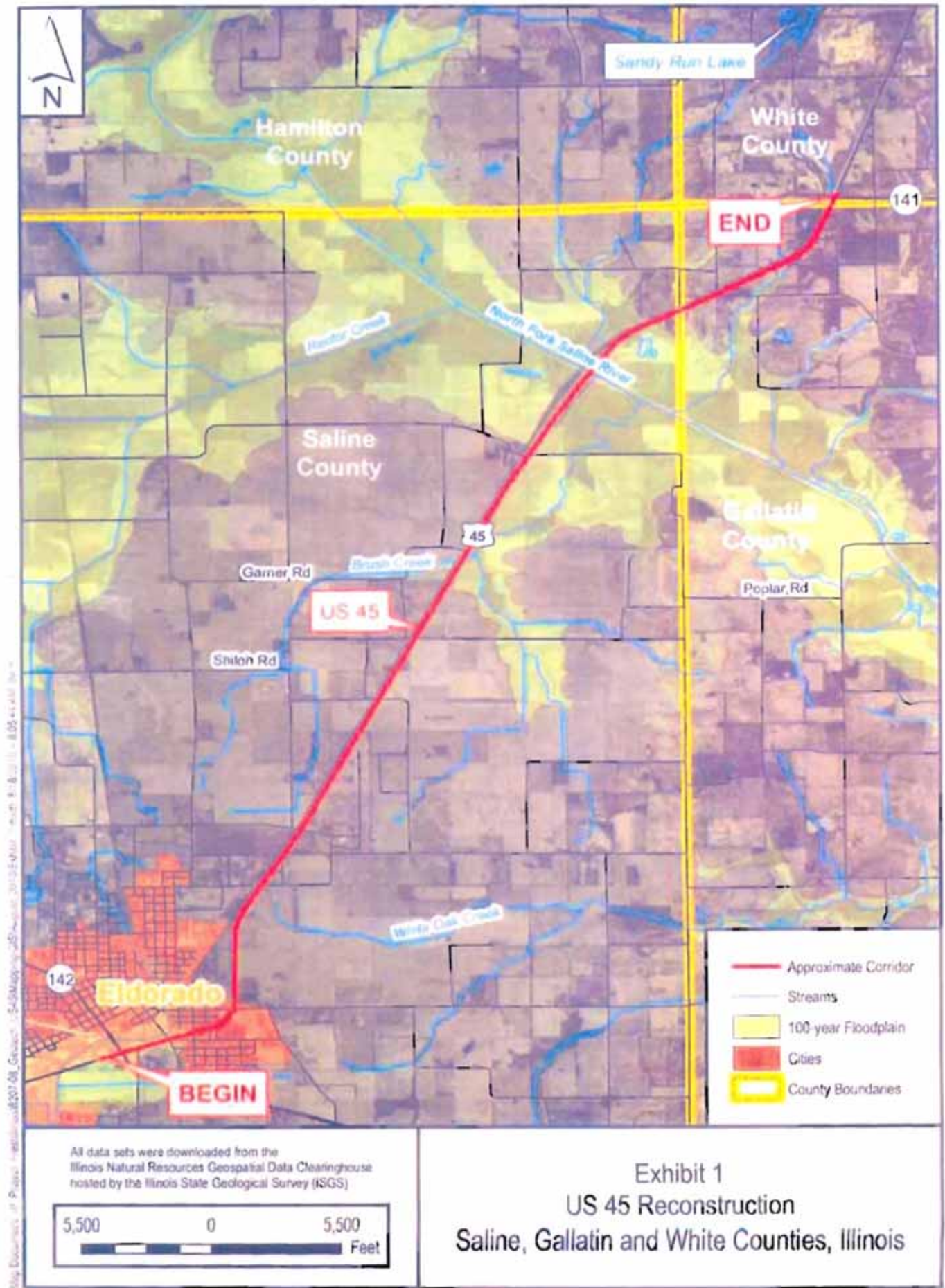
Dr. Andrea A. Hunter
Osage Nation
627 Grandview
Pawhuska, OK 74056-4201

Mr. Kenneth Jeseppe
Kickapoo Tribe in Kansas
1107 Goldfinch Road
Horton, KS 66439-9537

Mr. Gary Robinette
Ponca Tribe of Nebraska
P.O. Box 288
Niobrara, NE 68760-0288

Mr. Delbert Cole
Ponca Tribe of Oklahoma
20 White Eagle Drive
Ponca City, OK 74601-8310

Mr. John A. Barrett
Citizen Potawatomi Nation
1601 S. Gordon Cooper Drive
Shawnee, OK 74801-9002



APPENDIX C – NATURAL RESOURCE AGENCY CORRESPONDENCE



Illinois Department of Natural Resources

One Natural Resources Way • Springfield, Illinois 62702-1271
<http://dnr.state.il.us>

Rod R. Blagojevich, Governor

Sam Flood, Acting Director

November 20, 2007

Mr. Tom Brooks
Bureau of Design & Environment
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62674

RE: US 45/Eldorado to IL 141
Saline, White, Gallatin Co.

IDNR #0805815
ATTN: Barb Traeger

Dear Mr. Brooks:

This letter is in response to the above referenced project that was screened through the Illinois Department of Natural Resources Eco-CAT review tool.

Based on the results of further review several listed species occur in the project area with possible adverse impacts. Surveys for the Copperbelly Water Snake and the Northern Harrier will be needed along with any potential habitat for these species. Please coordinate the results of the surveys along with a map of the area surveyed. It should also be noted that the North Fork of the Saline River is an INAI site that occurs within the project area. This project will remain open for consultation until these issues have been addressed.

If you have any questions on the above, please contact me at 217-785-5500.

Sincerely,

Steve Hamer
Transportation Review Program
Division of Environment and Ecosystems

RECEIVED
NOV 26 2007
Printed on recycled and recyclable paper
**ENVIRONMENT
SECTION**

Illinois Nature Preserves



Commission

One Natural Resources Way
Springfield, IL 62702-1271
217/785-8686

April 23, 2009

Rebecca Colvin
Third Rock Consultants, LLC
2526 Regency Road, Suite 180
Lexington, KY 40503

Dear Ms. Colvin,

I have reviewed the information you provided in your letter dated 4/15/09 regarding the proposed improvement of US 45 from IL 142 in Eldorado, Illinois to IL 141. According to the Illinois Natural Heritage Database, there are no Illinois Nature Preserves in the specified area of Saline County. However, please note that the following sensitive resources exist within the project area:

North Fork Saline River – Elba Reach Illinois Natural Areas Inventory (INAI) site

Because there are no nature preserves in the indicated area, the site does not pose a threat to a dedicated nature preserve pursuant to the Illinois Natural Areas Preservation Act (525 ILCS 30).

Please be aware that the Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of significant natural features in Illinois. The Department of Natural Resources can only summarize the existing information known to us at the time of the request. This report should not be regarded as a final statement on the area being considered, nor should it substitute for field surveys required for environmental assessments.

This letter is separate from the Illinois Department of Natural Resources consultation requirement under the Illinois Endangered Species Act (530 ILCS 10/11) and the Illinois Natural Areas Preservation Act (525 ILCS 30/17). For more information on this process, please contact the Illinois Department of Natural Resources, Division of Resource Review and Coordination, at One Natural Resources Way, Springfield, Illinois 62702-1271 or by telephone at (217)785-5500.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Heidorn', with a long horizontal flourish extending to the right.

Randy Heidorn
Assistant Director

RH:tgk

cc: Keith Shank, IDNR, Resource Review & Coordination (w/ attachments)



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

February 24, 2011

Mr. Patrick Malone
Illinois Department of Natural Resources
Division of Resource Review and Coordination
One Natural Resources Way
Springfield, Illinois 62702-1271

Re: US 45 (FAP 332)
Section (29,29X,100,101-2)R
IL 142 in Eldorado to IL 141
Job No. P-99-001-08 (Seq. #14105)
Saline, Gallatin and White Counties

CONCUR
By *[Signature]*
Division of Impact Analysis
~~IDOC~~ DNR
IWRPA
2-25-11

Dear Mr. Malone:

Enclosed for your review are the Wetland Report and the Wetland Impact Evaluation form for the subject project.

Since this project occurs adjacent to existing right of way, it is being processed as a Programmatic Review Action in accordance with the IDOT Wetlands Action Plan. An Individual 404 permit will be required for this project. This project has been discussed at NEPA/404 merger meetings.

Mitigation has been proposed to occur on site. There are a few potential sites with mitigation qualities in the quadrants of US 45 and the North Fork Saline River. Upon design approval, a site will be selected and coordinated with the resource agencies.

There are 23 sites being impacted totaling 15.44 acres of permanent impacts which will require a total of 57.005 acres of compensation. Sites 10, 25, 28, 30, 31, 32, 35 have habitat for listed species and sites 21, 26, 35, 39, 44 have an FQI greater than 20; therefore, the mitigation ratio for these sites is 5.5 to 1.

We request your concurrence with the processing category, wetland impacts and proposed mitigation.

If you have any questions, please contact Barb Traeger at 217/785-0202.

Sincerely,

Barbara H. Stevens
Barbara H. Stevens
Chief of Environment

cc: Richard Nelson (USFWS)

Enclosures

Wetlands

Submittal Date: 11/01/2007		Sequence No.: 14105	
District: 9	Requesting Agency: DOH		Project No.:
Contract #:		Job No.: P-99-001-08	
Counties: Saline, Gallatin, White			
Route: FAP 332		Marked: US 45	
Street:		Section: (29,29X,100,101-2)R	
Municipality(ies): Eldorado		Project Length: 14.48 km 9 miles	
FromTo (At): IL 142 in Eldorado to IL 141			
Quadrangle: Eldorado, Broughton, Norris City		Township-Range-Section: T. 7, 8 S., R. 7, 8 E., Sec. 22,15,10,11,2,35,36,25,24,19	
Anticipated Design Approval: 01/01/2009		Cleared for Design Approval: 03/02/2011	
Cleared for Letting:		Mitigation:	

Wetland Impacts Evaluation

Submittal Date:	02/15/2011	Submitted By:	
Does the project have wetland impacts?	Yes	Type:	Permanent
Briefly describe the measures considered to avoid and minimize adverse impacts to the wetlands:	minimized slopes and used guardrail where possible		
Summarize briefly why there are no practicable alternatives to the use of the wetland(s):	The preferred alternative minimized impacts to the copperbelly watersnake and habitat near the N Fork Saline River. However, this alternative impacted the wetlands in the area. Proposed mitigation is anticipated to be in the same area		
Wetland mitigation is being proposed:	at site of the impact (on-site)		☒ Reviewed

Memo Date:	03/02/2011	Memo By:	Barb Traeger
Memo:	Received WIE concurrence from IDNR.		
Memo Date:	02/23/2011	Memo By:	Barb Traeger
Memo:	This memo is in response to the Wetland Impact Evaluation form dated February 15, 2011. Since this project occurs on existing and contiguous alignment, it qualifies to be processed as a Programmatic Review Action under the IDOT Wetlands Action Plan. Since this project will require an Individual 404 permit, coordination with IDNR and USFWS is required. The mitigation ratios were assigned in accordance with the Implementing Procedures for the Interagency Wetlands Policy Act. There are 23 sites being impacted totaling 15.44 acres of impact with a total of 57.005 acres of required compensation. Wetland sites 10, 25, 28, 30, 31, 32, 35 have habitat for listed species and sites 21, 28, 35, 39, 44 have an FQI greater than 20 therefore, the mitigation ratio for these sites is 5.5 to 1. Mitigation has been proposed to occur on site. There are a few potential sites with mitigation qualities in the quadrants of the North Fork Saline River within the project limits for this project. Further coordination with this office is required when a Conceptual Mitigation Plan is developed. Upon receipt of IDNR's concurrence with the proposed processing and the proposed on-site mitigation concept, the project will be cleared for design approval.		

Wetland Impacts and Mitigation Required

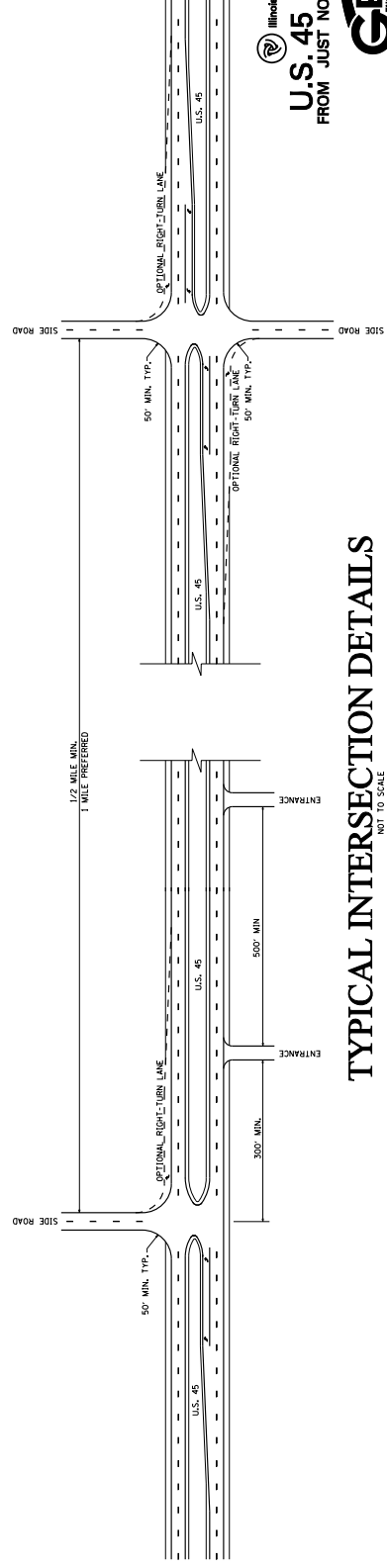
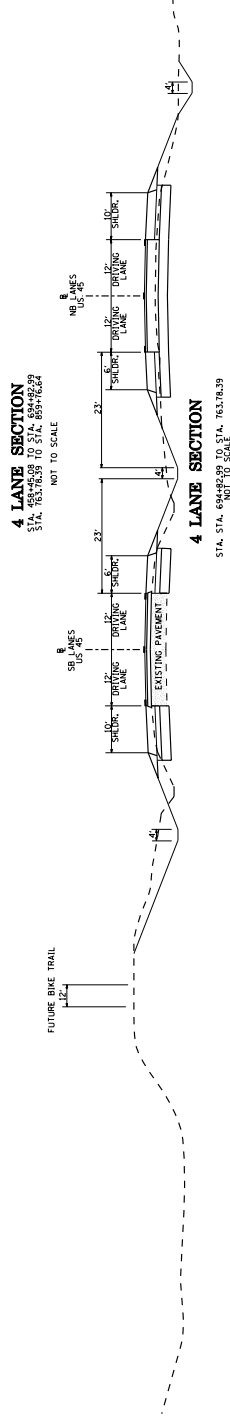
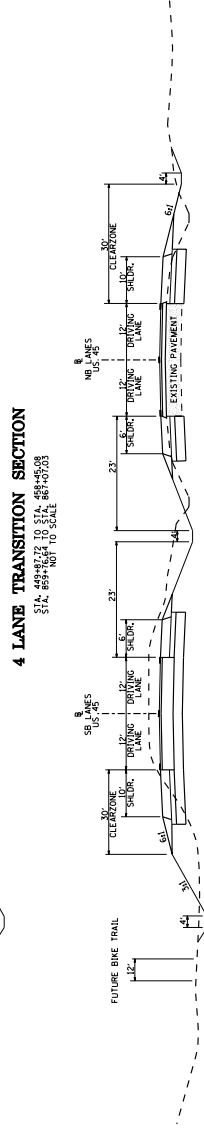
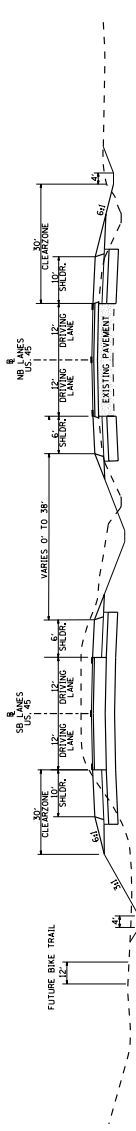
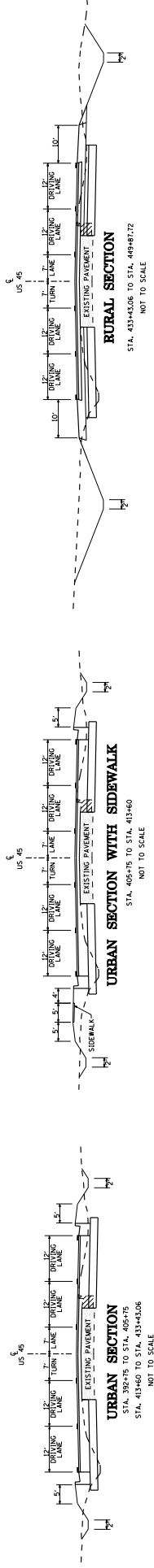
Site No.	Type	T&E	Nature Preserve	Natural Area	Essential Habitat	Size (acres)	Acres of Impact	Ratio	Acres of Compensation
10	Wet Mead	Yes	No	No	No	2.21	1.530	5.5	8.415
Basin	05140204	Quadrangle	Broughton		FQI	13.3			
Describe the work:		Fill							
11	Forested	No	No	No	No	0.98	.980	1.5	1.470
Basin	05140204	Quadrangle	Broughton		FQI	16.8			
Describe the work:		Fill							

16	Forested	No	No	No	No	0.91	.910	1.5	1.365
Basin	05140204	Quadrangle	Broughton	FQI	15.3				
Describe the work:	Fill								
17	Wet Mead	No	No	No	No	0.99	.530	1.0	.530
Basin	05140204	Quadrangle	Broughton	FQI	11.2				
Describe the work:	Fill								
18	Wet Mead	No	No	No	No	2.01	.780	1.0	.780
Basin	05140204	Quadrangle	Broughton	FQI	13.1				
Describe the work:	Fill								
19	Forested	No	No	No	No	0.56	.560	1.5	.840
Basin	05140204	Quadrangle	Broughton	FQI	11.2				
Describe the work:	Fill								
21	Forested	No	No	No	No	6.23	1.380	5.5	7.590
Basin	05140204	Quadrangle	Broughton	FQI	27				
Describe the work:	Fill								
25	Wet Mead	Yes	No	No	No	2.54	2.540	5.5	13.970
Basin	05140204	Quadrangle	Broughton	FQI	19.4				
Describe the work:	Fill								
28	Forested	Yes	No	No	No	11.75	.900	5.5	4.950
Basin	05140204	Quadrangle	Broughton	FQI	26.7				
Describe the work:	Fill								
30	Wet Shrub	Yes	No	No	No	1.29	.350	5.5	1.925
Basin	05140204	Quadrangle	Broughton	FQI	15.8				
Describe the work:	Fill								
32	Forested	Yes	No	No	No	0.37	.360	5.5	1.980
Basin	05140204	Quadrangle	Broughton	FQI	18.1				
Describe the work:	Fill								
35	Forested	Yes	No	No	No	0.55	.520	5.5	2.860
Basin	05140204	Quadrangle	Broughton	FQI	22.5				
Describe the work:	Fill								
37	Forested	No	No	No	No	0.08	.080	1.5	.120
Basin	05140204	Quadrangle	Broughton	FQI	13				
Describe the work:	Fill								
38	Forested	No	No	No	No	2.06	2.060	1.5	3.090
Basin	05140204	Quadrangle	Eldarado	FQI	12.3				
Describe the work:	Fill								
39	Forested	No	No	No	No	0.98	.780	5.5	4.290
Basin	05140204	Quadrangle	Eldarado	FQI	23.4				
Describe the work:	Fill								
42	Wet Mead	No	No	No	No	0.02	.020	1.0	.020
Basin	05140204	Quadrangle	Eldarado	FQI	10.8				
Describe the work:	Fill								
44	Forested	No	No	No	No	0.31	.310	5.5	1.705
Basin	05140204	Quadrangle	Eldarado	FQI	20.5				
Describe the work:	Fill								
48	Wet Mead	No	No	No	No	0.44	.010	1.0	.010
Basin	05140204	Quadrangle	Eldarado	FQI	9.9				
Describe the work:	Fill								
49	Wet Mead	No	No	No	No	0.1	.100	1.0	.100
Basin	05140204	Quadrangle	Eldarado	FQI	16.7				
Describe the work:	Fill								
51	Forested	No	No	No	No	0.09	.090	1.5	.135
Basin	05140204	Quadrangle	Eldarado	FQI	11.8				
Describe the work:	Fill								

56	Forested	No	No	No	No		0.2			.200	1.5		.300
Basin	05140204	Quadrangle	Eldarado			FQI	12.2						
Describe the work:		Fill											
58	Forested	No	No	No	No		0.23			.220	1.5		.330
Basin	05140204	Quadrangle	Eldarado			FQI	8.3						
Describe the work:		Fill											
65	Wet Mead	No	No	No	No		0.23			.230	1.0		.230
Basin	05140204	Quadrangle	Eldarado			FQI	13.1						
Describe the work:		Fill											
Total										15.440			57.005

APPENDIX D – TYPICAL SECTION, ALTERNATIVE 5A

TYPICAL SECTIONS FOR ALTERNATE 5A



APPENDIX E – FARMLAND CONVERSION IMPACT RATING FORMS

**FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS**

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 6/15/10	4. Sheet 1 of 1
1. Name of Project US Route 45		5. Federal Agency Involved Federal Highway Administration	
2. Type of Project Highway Widening		6. County and State Saline, Illinois	
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 6/15/10	2. Person Completing Form James R. Warder
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☒ NO ☐		4. Acres Irrigated 0	Average Farm Size 300
5. Major Crop(s) Corn, Soybeans, Wheat	6. Farmable Land in Government Jurisdiction Acres: 225,255 % 93	7. Amount of Farmland As Defined in FPPA Acres: 208,400 % 86	
8. Name Of Land Evaluation System Used Illinois Statewide LE	9. Name of Local Site Assessment System Statewide	10. Date Land Evaluation Returned by NRCS 6/17/10	

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Alt. 3	Alt. 5	Alt. 5A	Corridor D
A. Total Acres To Be Converted Directly	71	52.3	55.5	
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0	0	
C. Total Acres In Corridor	71	52.3	55.5	

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	1.0	6.8	6.8	
B. Total Acres Statewide And Local Important Farmland	3.8	24.5	24.3	
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	.00002	.00015	.00015	
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	37.2	37.2	37.2	

PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)	1.5**	116.4	118.2	118.2	
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PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))		Maximum Points				
1. Area in Nonurban Use		15				
2. Perimeter in Nonurban Use		10				
3. Percent Of Corridor Being Farmed		20				
4. Protection Provided By State And Local Government		20				
5. Size of Present Farm Unit Compared To Average		10				
6. Creation Of Nonfarmable Farmland		25				
7. Availability Of Farm Support Services		5				
8. On-Farm Investments		20				
9. Effects Of Conversion On Farm Support Services		25				
10. Compatibility With Existing Agricultural Use		10				
TOTAL CORRIDOR ASSESSMENT POINTS	*150	160	0	0	0	0

PART VII (To be completed by Federal Agency)						
Relative Value Of Farmland (From Part V)	*150	100				
Total Corridor Assessment (From Part VI above or a local site assessment)	*150	160	0	0	0	0
TOTAL POINTS (Total of above 2 lines)	*300	260	0	0	0	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐
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5. Reason For Selection:

* When utilizing the state site assessment corridor factors, 150 points are assigned to the land evaluation portion, and 150 points are assigned to the site assessment portion, for a maximum score of 300 total points.

** When project is for road corridor, the normal RV factor is multiplied by 1.5 to obtain RV to be entered.

Signature of Person Completing this Part:

DATE

NOTE: Complete a form for each segment with more than one Alternate Corridor

**FARMLAND CONVERSION IMPACT RATING
FOR CORRIDOR TYPE PROJECTS**

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 6/15/10	4. Sheet 1 of 1
1. Name of Project US 45		5. Federal Agency Involved Federal Highway Administration	
2. Type of Project Highway Widening		6. County and State Gallatin County, Illinois	
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 12/21/09	2. Person Completing Form Rick Street
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☒ NO ☐		4. Acres Irrigated Average Farm Size 0 Ac. 885 Ac.	
5. Major Crop(s) Corn, Soybeans, Wheat	6. Farmable Land in Government Jurisdiction Acres: 0 % 47		7. Amount of Farmland As Defined in FPPA Acres: 7.5 % 47
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System		10. Date Land Evaluation Returned by NRCS 6/16/10

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Alternative 3	Alternative 5	Alternative 5A	Corridor D
A. Total Acres To Be Converted Directly	18	16	16	0
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0	0	0
C. Total Acres In Corridor	18	16	16	0

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	8	8	8	0
B. Total Acres Statewide And Local Important Farmland	8	8	8	0
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	44	50	50	0
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	0	0	0	0

PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)				
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PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points				
1. Area in Nonurban Use	15	15	15	15	0
2. Perimeter in Nonurban Use	10	10	10	10	0
3. Percent Of Corridor Being Farmed	20	5	5	5	0
4. Protection Provided By State And Local Government	20	0	0	0	0
5. Size of Present Farm Unit Compared To Average	10	0	0	0	0
6. Creation Of Nonfarmable Farmland	25	0	0	0	0
7. Availability Of Farm Support Services	5	0	0	0	0
8. On-Farm Investments	20	0	0	0	0
9. Effects Of Conversion On Farm Support Services	25	0	0	0	0
10. Compatibility With Existing Agricultural Use	10	0	0	0	0
TOTAL CORRIDOR ASSESSMENT POINTS	160	30	30	30	0

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100				
Total Corridor Assessment (From Part VI above or a local site assessment)	160	30	30	30	0
TOTAL POINTS (Total of above 2 lines)	260	30	30	30	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐
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5. Reason For Selection:

Signature of Person Completing this Part:	DATE
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NOTE: Complete a form for each segment with more than one Alternate Corridor

FARMLAND CONVERSION IMPACT RATING FOR CORRIDOR TYPE PROJECTS

PART I (To be completed by Federal Agency)		3. Date of Land Evaluation Request 6/15/10	4. Sheet 1 of 1
1. Name of Project US 45		5. Federal Agency Involved Federal Highway Administration	
2. Type of Project Highway widening		6. County and State White County, Illinois	
PART II (To be completed by NRCS)		1. Date Request Received by NRCS 12/21/09	2. Person Completing Form Bill Webber
3. Does the corridor contain prime, unique statewide or local important farmland? (If no, the FPPA does not apply - Do not complete additional parts of this form). YES ☒ NO ☐		4. Acres Irrigated Average Farm Size 0 ac. 435	
5. Major Crop(s) Corn, Soybeans, Wheat	6. Farmable Land in Government Jurisdiction Acres: 0 % 50		7. Amount of Farmland As Defined in FPPA Acres: % 50
8. Name Of Land Evaluation System Used	9. Name of Local Site Assessment System		10. Date Land Evaluation Returned by NRCS 6/28/10

PART III (To be completed by Federal Agency)	Alternative Corridor For Segment			
	Alternative 3	Alternative 5	Alternative 5A	Corridor D
A. Total Acres To Be Converted Directly	2	4	4	0
B. Total Acres To Be Converted Indirectly, Or To Receive Services	0	0	0	0
C. Total Acres In Corridor	2	4	4	0

PART IV (To be completed by NRCS) Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	1	3	3	0
B. Total Acres Statewide And Local Important Farmland	1	3	3	0
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	70	70	70	0
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	0	0	0	0

PART V (To be completed by NRCS) Land Evaluation Information Criterion Relative value of Farmland to Be Serviced or Converted (Scale of 0 - 100 Points)				
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PART VI (To be completed by Federal Agency) Corridor Assessment Criteria (These criteria are explained in 7 CFR 658.5(c))	Maximum Points				
1. Area in Nonurban Use	15	15	15	15	0
2. Perimeter in Nonurban Use	10	10	10	10	0
3. Percent Of Corridor Being Farmed	20	0	0	0	0
4. Protection Provided By State And Local Government	20	0	0	0	0
5. Size of Present Farm Unit Compared To Average	10	0	0	0	0
6. Creation Of Nonfarmable Farmland	25	0	0	0	0
7. Availability Of Farm Support Services	5	0	0	0	0
8. On-Farm Investments	20	0	0	0	0
9. Effects Of Conversion On Farm Support Services	25	0	0	0	0
10. Compatibility With Existing Agricultural Use	10	0	0	0	0
TOTAL CORRIDOR ASSESSMENT POINTS	160	25	25	25	0

PART VII (To be completed by Federal Agency)					
Relative Value Of Farmland (From Part V)	100				
Total Corridor Assessment (From Part VI above or a local site assessment)	160	25	25	25	0
TOTAL POINTS (Total of above 2 lines)	260	25	25	25	0

1. Corridor Selected:	2. Total Acres of Farmlands to be Converted by Project:	3. Date Of Selection:	4. Was A Local Site Assessment Used? YES ☐ NO ☐
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5. Reason For Selection:

Signature of Person Completing this Part: _____ DATE _____

NOTE: Complete a form for each segment with more than one Alternate Corridor

CORRIDOR - TYPE SITE ASSESSMENT CRITERIA

The following criteria are to be used for projects that have a linear or corridor - type site configuration connecting two distant points, and crossing several different tracts of land. These include utility lines, highways, railroads, stream improvements, and flood control systems. Federal agencies are to assess the suitability of each corridor - type site or design alternative for protection as farmland along with the land evaluation information.

- (1) How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?

More than 90 percent - 15 points
90 to 20 percent - 14 to 1 point(s)
Less than 20 percent - 0 points

- (2) How much of the perimeter of the site borders on land in nonurban use?

More than 90 percent - 10 points
90 to 20 percent - 9 to 1 point(s)
Less than 20 percent - 0 points

- (3) How much of the site has been farmed (managed for a scheduled harvest or timber activity) more than five of the last 10 years?

More than 90 percent - 20 points
90 to 20 percent - 19 to 1 point(s)
Less than 20 percent - 0 points

- (4) Is the site subject to state or unit of local government policies or programs to protect farmland or covered by private programs to protect farmland?

Site is protected - 20 points
Site is not protected - 0 points

- (5) Is the farm unit(s) containing the site (before the project) as large as the average - size farming unit in the County ?

(Average farm sizes in each county are available from the NRCS field offices in each state. Data are from the latest available Census of Agriculture, Acreage or Farm Units in Operation with \$1,000 or more in sales.)
As large or larger - 10 points
Below average - deduct 1 point for each 5 percent below the average, down to 0 points if 50 percent or more below average - 9 to 0 points

- (6) If the site is chosen for the project, how much of the remaining land on the farm will become non-farmable because of interference with land patterns?

Acreage equal to more than 25 percent of acres directly converted by the project - 25 points
Acreage equal to between 25 and 5 percent of the acres directly converted by the project - 1 to 24 point(s)
Acreage equal to less than 5 percent of the acres directly converted by the project - 0 points

- (7) Does the site have available adequate supply of farm support services and markets, i.e., farm suppliers, equipment dealers, processing and storage facilities and farmer's markets?

All required services are available - 5 points
Some required services are available - 4 to 1 point(s)
No required services are available - 0 points

- (8) Does the site have substantial and well-maintained on-farm investments such as barns, other storage building, fruit trees and vines, field terraces, drainage, irrigation, waterways, or other soil and water conservation measures?

High amount of on-farm investment - 20 points
Moderate amount of on-farm investment - 19 to 1 point(s)
No on-farm investment - 0 points

- (9) Would the project at this site, by converting farmland to nonagricultural use, reduce the demand for farm support services so as to jeopardize the continued existence of these support services and thus, the viability of the farms remaining in the area?

Substantial reduction in demand for support services if the site is converted - 25 points
Some reduction in demand for support services if the site is converted - 1 to 24 point(s)
No significant reduction in demand for support services if the site is converted - 0 points

- (10) Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of surrounding farmland to nonagricultural use?

Proposed project is incompatible to existing agricultural use of surrounding farmland - 10 points
Proposed project is tolerable to existing agricultural use of surrounding farmland - 9 to 1 point(s)
Proposed project is fully compatible with existing agricultural use of surrounding farmland - 0 points

APPENDIX F – BIOLOGICAL RESOURCES REVIEW



Illinois Department of Transportation

Memorandum

To: Mary C. Lamie Attn: Carrie L. Nelsen
From: Charles J. Ingersoll By: Thomas C. Brooks
Subject: Biological Resources Review
Date: December 16, 2009

Thomas C. Brooks

U 45 (FAP 332)
Section (29,29X,100,101-2)R
IL 142 in Eldorado to IL 141
Job No. P-99-001-08 (Seq. #14105)
Saline, Gallatin and White Counties

Introduction

The proposed project involves the extension of 4-lane section of US 45 from IL 142 in Eldorado to IL 141 on the Gallatin/White County line. Approximately 62.3 acres of additional right of way will be required.

The proposed project is being processed as an Environmental Assessment. This project is being processed through the NEPA/404 Merger Process. The Purpose and Need was concurred with at the June 24, 2009 meeting. Alternatives and Preferred Alternative will be presented for concurrence at the February, 2010 meeting. Based on the information your office has provided regarding the scope of work, a discussion of relevant biological resources is provided.

Endangered and Threatened Species

The U.S. Fish and Wildlife Service Region 3 list of threatened or endangered species in Illinois (<http://midwest.fws.gov/index.html>) lists the Indiana bat (*Myotis sodalis*) as occurring statewide and lists Mead's milkweed (*Asclepias meadii*) as occurring in Saline County, Fat pocketbook mussel (*Potamillia capax*) as occurring in Gallatin and White Counties and Fanshell mussel (*Cyprogenia stegaria*) as occurring in White County.

Appendix 2 of the Indiana bat (*Myotis sodalis*) Draft Recovery Plan: First Revision lists suitable maternity summer habitat for *Myotis sodalis* in Saline County.

The project corridor includes wooded areas along the railroad embankment on the west side of the highway and large forest tracts near the North Fork Saline River. The INHS observed hickories and dead trees with exfoliating bark in the forest east of US 45 and north of the river while trapping for the marsh rice rats.

These well developed riparian woods and upland forests are potentially suitable habitat for the Indiana bat. The 9 mile long project will remove approximately 18 acres of trees. The removal of trees during the maternity summer season could affect the Indiana bat. Because of this potential impact, a tree clearing restriction from April 1 to September 30 shall be used throughout the project area. Based on the tree clearing restriction being in place, the project will not adversely affect the Indiana bat.

The habitat for Mead's milkweed is virgin prairies. The IDOT Inventory of Roadside Prairies depicts the area northeast of Eldorado along US 45 as being mowed, therefore no prairie was mapped in the project area. Since there is no virgin prairie in the project corridor, there will be no impacts to Mead's milkweed.

The habitat for the Fat pocketbook mussel is the Mississippi, Wabash, Little Wabash and Ohio Rivers. Since none of these rivers occur within the project corridor, there will be no impact to the Fat pocketbook mussel.

The habitat for the Fanshell mussel is the Wabash River. The Wabash River does not occur within the project corridor, therefore there will be no impact to the Fanshell mussel.

The Illinois Endangered Species Protection Board lists a number of species as occurring in Saline, Gallatin, White and adjacent counties. The IDNR Natural Heritage Database has records of the Copperbelly water snake, Northern harrier and the North Fork Saline River INAI Site within the project corridor (IDNR EcoCAT Response letter dated November 20, 2007). Although the Copperbelly water snake is not listed as endangered or threatened, it is a resource of concern and take or possession of a Copperbelly water snake is a violation of 17 ILL. ADM. CODE CH 1, SEC. 880.

The INHS performed field surveys for amphibians, reptiles, mammals, birds and plants. The results of those surveys are attached and discussed below.

A field survey for amphibians and reptiles was conducted on April 24 and May 21, 2008. Two Copperbelly water snakes were found in the corridor south of the North Fork Saline River between the current US 45 alignment and the western edge of the abandoned New York Central Railroad right of way (Figure 1, Location A). This area consists of wooded ditches and temporary pools of water which are suitable habitat and foraging areas for Copperbelly water snake.

The District is proposing to mitigate on-site for wetland impacts. INHS herpetologists will be consulted for recommendations on requirements of the design of the mitigation site that would provide suitable habitat for the Copperbelly water snake. INHS will monitor for the Copperbelly water snake concurrent with monitoring of the wetland mitigation site. Monitoring will include going back to locations where the Copperbelly water snake was found in 2008. We will coordinate both monitoring efforts. This mitigation will compensate for loss of habitat for the Copperbelly water snake. Also a commitment to inform workers on the project that any snakes encountered must not be killed will be incorporated into the project plans.

A field survey for mammals was conducted on May 19-21, 2008. No marsh rice rats were captured during this survey. A survey for golden mouse was conducted on April 14-16, 2009. No golden mice were captured during this survey or the preliminary survey done in 2008. See attached survey results.

A field survey for birds was conducted on May 25 and July 17, 2008. No listed species were observed within the project area. No habitat conducive to nesting by the Northern Harrier exists within the boundaries of the project corridor.

Botanical surveys were conducted in July, August and September 2008 and in May and June 2009. Two listed species, the Arkansas sedge (endangered) and Water hickory (threatened), were found within the study corridor. The Arkansas sedge was found in open sedge-grassland habitats at seven botanical sites (Site 6, 6A, 16, 17, 20, 21, 24) in the vicinity of North Fork Saline River (Maps 3 and 4). The Water hickory was found scattered at the margin of a shrub swamp site (Site 19) south of the North Fork Saline River (Map 4). Two individuals were found in the study corridor. See attached survey results. GPS point locations of these plants are included in the botanical report. Impacts to these plants should be avoided. For unavoidable impacts, this office should be notified for mitigation recommendations.

Natural Area

The North Fork of the Saline River is listed as a Natural Area in the project area. The site is listed as a high diversity mussel stream. The INHS was contacted concerning the necessity of performing a mussel survey. In a conversation with IDNR, it was determined that a survey was not warranted based on the fact that they have no knowledge of mussels in the area. Only a handful of species have been found there and the majority of them were not live.

Wetlands

The National Wetland Inventory Map (Eldorado, Broughton and Norris City Quadrangles) depicts wetlands in the project area. The project was sent for field survey. Attached is a copy of the Wetland Report and aerial photograph. The results of the survey indicate the presence of 47 jurisdictional wetlands within the project area.

Sites 3, 6, 7, 9, 11, 12, 15, 16, 19, 21, 22, 24, 28, 31, 32, 35, 38, 39, 41, 43, 44, 46, 51, 52, 54, 55, 56, 62 require IEPA Case Specific Water Quality Certification due to the presence of hickories, oaks, buttonbush, pecan, and river birch.

In accordance with Section V of the IDOT Wetlands Action Plan, wetland impacts are to be avoided, minimized and then mitigated.

For unavoidable impacts, please fill out the Wetland Impact Evaluation Form (WIE Tab in the Wetland Form of the Project Monitoring Database) and submit the form to this office.

Streams

The project crosses North Fork of the Saline River and Brush Creek. The IDNR Biological Stream Rating (BSR) indicates that these portions of North Fork of the Saline River and Brush Creek are not rated. This section of the North Fork of the Saline River is channelized.

Instream work involves that which is necessary to remove and replace the existing structures over North Fork of the Saline River and Brush Creek.

Because of the construction activity in and around the stream, short-term sedimentation will occur. In accordance with Chapter 59, Section 8 of the BDE Manual, an erosion and sediment control plan will be designed incorporating measures to minimize sedimentation effects.

Tree Removal

Project construction will involve the removal of approximately 18 acres of trees. No trees shall be removed from April 1 to September 30. Trees should be replaced in accordance with Departmental Policy D&E-18.

Commitments

A tree clearing restriction from April 1 to September 30 shall be used throughout the project area.

Workers on the project should be informed that any snakes encountered must not be killed.

Coordination

By copy of this memorandum, IDNR and USFWS are being notified of this project. Their mitigation recommendations and our recommendations for further coordination will be forwarded to your office upon receipt of a response.

Conclusion

Project development may proceed with no additional Biological Resources Review unless (a) the scope of work is changed or otherwise different from that described to us, (b) IDNR or USFWS coordination response requires further coordination, or (c) otherwise notified by this office.

Attachments

cc: Steve Hamer (IDNR)
Richard Nelson (USFWS)

BT

APPENDIX G – COPPERBELLY WATER SNAKE CORRESPONDENCE

From: Ballard, Scott

Sent: Tuesday, February 09, 2010 4:56 PM

To: Ballard, Scott; Heidi_Woeber@fws.gov

Cc: Joyce_Collins@fws.gov; Hamer, Steve

Subject: RE: copperbelly watersnake and IDOT project (Highway 45, Eldorado, Saline County)

Steve, Heidi, and Joyce,

I got to get out last Thursday, February 4th to do field surveillance of the U.S. 45 proposed construction corridor. My findings concur with those of the Kuhns and Phillips (2008) Illinois Natural History Survey (INHS) report to IDOT regarding available copperbelly watersnake habitat.

On that portion west of the current U.S. 45 alignment, I found alternating higher grassy areas with depressions/wet areas from the adjacent slough. The slough itself had patchy emergent vegetation and was very similar to buttonbush swamp structure. Portions of the slough had open canopy, allowing sun to penetrate the emergent vegetation. The entire area was lightly to moderately timber. In those high grassy areas I noted several crayfish burrows. These numerous crayfish burrows were also noted at the base of the old railroad embankment to the west of U.S. 45. The northernmost part of this western portion had more interspersed pooled areas containing water, but the crayfish burrows were not as abundant here except at the base of the old railroad embankment. To the west of this old railroad embankment is an agricultural field with a ditch running down the middle of it.

That portion east of the current U.S. 45 alignment was more uniformly flat without the higher grassy areas and also lightly to moderately timber, although much more leaf litter was on the ground here. I did not note any crayfish burrows in the wooded part of this area, however this was a quick walk-through and there was some snow on the ground. The slough in this portion seemed to be the same quality as the slough in the more western portion. The only crayfish burrows I found east of U.S. 45 was directly at the base/toe of the highway berm. On this east side of U.S. 45, there were poles carrying powerlines as well as an underground buried Verizon cable.

I have attached a jpeg map of the area of U.S. 45 that contains copperbelly watersnake habitat. On that map there are four orange dots. Two of those dots represent roadkill (DOR) specimens of the copperbelly watersnake. These are serendipitous records that were obtained from people salvaging the DOR specimens as they were encountered. The DOR specimens were taken on May 27, 1987 and also June 2, 1997. The other two orange dots are from the actual fieldwork conducted by the INHS during the spring of 2008. The dates of those live encounters were April 24th and May 21st, and are during a time of the year when the snakes would have been just coming out of hibernation, or still very near hibernating sites. The INHS staff spent a total of one hour on April 24th and then 1:15 on May 21st and found those two snakes on those two days. There are two highlighted yellow lines on the map. The more western yellow line is the approximate 500' boundary of the west ESR limit from the existing centerline of U.S. 45 as stated by IDOT in their proposed plans. The more eastern yellow line is the approximate 200' boundary of the east ESR limit from the existing centerline of U.S. 45 as stated by IDOT in their proposed plans. Additionally, IDOT states that *"there is a real potential for the old railroad embankment (that is located parallel to the roadway along the west side) to be used for the additional lanes. If it is realized during the survey process that the ESR limits need to be extended out farther to incorporate that, please do so"*.

In an unpublished report to the USFWS, Brandon and Blanford (1995) recognized five separate clusters/metapopulations of copperbelly watersnakes in southeastern IL. The

proposed construction/widening to four lanes of U.S. 45 fall within one of those metapopulations that Brandon and Blanford identified as #2, the Saline River basin metapopulation of Saline, Gallatin, and White counties. This metapopulation was described as *"scattered and highly isolated local remnants in greatly disturbed areas, and is quite vulnerable to extirpation"* because of the *"populations being small and few"*. During a meeting of the Copperbelly Watersnake Technical Advisory Committee at Falls of the Ohio State Park in Indiana (ca. 1995), management recommendations for this metapopulation included *"conservation easements or land acquisition to maintain and widen the North Fork Saline River corridor from Route 45 upstream to Lantham Cemetery, and from Route 45 downstream to Elba"*. This slough in question falls within that recommended conservation easement area.

In a conservation assessment to the U.S. Forest Service, Brandon (2005) stated that based on a Kingsbury and Coppola (2000) telemetry study of copperbelly watersnakes in southern IN and northwest KY hibernacula, *"snakes did not make long migrations away from their summer habitat"* and while they *"showed area fidelity"* to hibernating sites, they did not show *"precise hibernation site fidelity"*. Therefore, while they returned to the same hibernating sites each fall, they didn't necessarily return to the same crayfish burrow each fall. It was also learned that *"individuals did not aggregate but hibernated alone"*. So there were not communal dens as how some snakes hibernate, but instead individual selection of places to hibernate like individual crayfish burrows.

Based on observations made in the field and what we know about copperbelly watersnake natural history and habitat selection, I would make the following statements based on my professional opinion:

- 1) Any construction activities along the U.S. 45 corridor to widen it within copperbelly watersnake habitat will negatively impact the snake. While the hibernacula habitat seems to be along the west corridor of U.S. 45, that open slough to east of U.S. 45 undoubtedly offers much summer foraging habitat as well. Not moving forward with expansion of U.S. 45 in this area (0.25 mile north of the Texas City road junction and continue north until 0.25 mile south of the Saline/Gallatin county line) would be the best case scenario. Hibernacula and foraging areas would not be destroyed and there would not be an increase in traffic or concrete surface area which would increase vehicular mortality on the snake.
- 2) If construction to widen U.S. 45 is pursued, there can be some minimization by abandoning the idea to use the old New York Central Railroad embankment as additional lanes for the expansion project. This old railroad embankment and adjacent habitat provides hibernating habitat to the copperbelly watersnake. In doing the field surveillance, I also surveyed potential habitat both south and north of the slough area from Texas City to the Saline/Gallatin county line. Minimization of negative impacts to the snake could occur if the current U.S. 45 alignment was used as the new southbound lanes near suitable copperbelly watersnake habitat. This would begin 0.25 mile north of the Texas City road junction and continue north until 0.25 mile south of the Saline/Gallatin county line on U.S. 45. This would involve moving the construction area east for a total of 1.2 miles in/near the slough area. However, increasing traffic and concrete surface area in this stretch of highway will also increase vehicular mortality on the snake.
- 3) If construction activities are pursued as currently planned to widen U.S. 45 and utilize the old New York Central Railroad embankment and adjacent habitat west of U.S. 45 as additional lanes for the expansion project, this population of copperbelly watersnakes will in all likelihood become extirpated. The hibernacula will be destroyed and increased

traffic and concrete surface area in this stretch of highway will also increase vehicular mortality on any snakes remaining.

There could be more minimization recommendations forthcoming depending on which choice is made by IDOT as far as timing and length of the project, specifically if option **2)** is chosen. Some additional exclusion recommendations to keep snakes out of the construction area can be made as well as activities pre-construction and during construction that can minimize negative impacts to the snake. Should option **3)** be chosen, I really don't see what, if any, minimization recommendations can be made. That option will destroy currently utilized foraging and hibernating habitat.

I would be happy to make myself available if any of you are interested in doing an on-site visit to this site. It is easier to point out and discuss the impacts I've discussed when being on-the-ground to see it for yourselves.

Thanks,
Scott Ballard
IL Dept. Natural Resources
Natural Heritage Biologist/Herpetologist
9053 Route 148, Suite B
Marion, IL 62959
(618) 993-7023

APPENDIX H – SECTION 4(f) CORRESPONDENCE



Illinois Department of Transportation

Division of Highways / Region 5 / District 9
P.O. Box 100 / Carbondale, Illinois / 62903-0100
Telephone 618/549-2171

April 12, 2011

City of Eldorado
Mayor Rocky James
901 Fourth St.
Eldorado, IL 62930

IN RE: City of Eldorado Path from IL 142 to Bourland Road
US 45 (FAP 332)
Section (29,29X,100,101-2)R
Saline, Gallatin and White Counties

Dear Mayor James:

The Illinois Department of Transportation is proposing an action to provide an improved transportation system along US 45 from IL 142 in Eldorado, Saline County to IL 141, which is located on the county line between Gallatin and White Counties, Illinois. Within the project corridor, US 45 will primarily be widened from two lanes to four lanes, two in each direction separated by a grass median in the rural section and reconstructing the existing two-lane to provide four travel lanes and a center turn lane in the urban section. The length of the project corridor is approximately 9.0 miles.

The bike path that travels parallel to 4th street will be crossed by the project. No right-of-way will be purchased from the City of Eldorado. The project will include pavement markings in the vicinity of the crossing to alert motorists to the presence of bicyclists crossing US 45 in that location. Due to the nature of the proposed project, a widening of the existing roadway, a temporary closure/rerouting of the bike path will be required during construction of the roadway in the vicinity of the bike path crossing.

Section 4(f) of the Department of Transportation Act, 49 U.S.C. § 303 and 23 U.S.C. § 138, provides an important opportunity for the protection of historic resources from potentially adverse impacts of federal transportation projects.

Because of the minimal impact to the bike path, this letter serves as notification that IDOT will pursue an exception to Section 4(f) because the following five criteria are satisfied:

1. Duration must be temporary, *i.e.* , less than the time needed for construction of the project, and there should be no change in ownership of the land;
2. Scope of the work must be minor, *i.e.* , both the nature and the magnitude of the changes to the Section 4(f) property are minimal;
3. There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;
4. The land being used must be fully restored, *i.e.* , the property must be returned to a condition which is at least as good as that which existed prior to the project; and
5. There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.

IDOT District 9 is requesting your concurrence on the aforementioned agreements pertaining to this action. This information will be conveyed in the final Environmental Assessment for the project. The Federal Highway Administration will ultimately be the agency to sign-off on this issue by reviewing and signing the Environmental Assessment.

If you have any questions or comments concerning the above please call Julie Klamm, Environmental Studies Coordinator, District 9 at (618) 549-2171 ext. 286.

Sincerely,

Mary C. Lamie, P.E.
Deputy Director of Highways,
Region Five Engineer



By: Carrie Nelsen
Program Development Engineer

The City of Eldorado concurs that the above mentioned criteria are satisfied for the plans made by the Illinois Department of Transportation for their use of the City of Eldorado Bike Path from Route 142 to Bourland and in the determination that the US 45 Expressway will not have an adverse effect on the activities, features, and attributes that qualify the City of Eldorado Path from Route 142 to Bourland for protection under Section 4(f).



Mayor Rocky James
City of Eldorado

Date

APPENDIX I – AGENCY COORDINATION RESPONSES

From: Colvin, Rebecca

Sent: Friday, April 24, 2009 2:09 PM

To: Kerley, Amanda; Goodman, Virginia; 'kcrider@geotechengineers.net'; 'Gina Morris'

Cc: 8207-08_Geotech_US45

Subject: FW:

fyi. This is the first response we have received on the coordination letters for US 45. I will forward as we receive them.

Rebecca

-----Original Message-----

From: Bishoff, Jeremy [mailto:Jeremy.Bishoff@Illinois.gov]

Sent: Monday, April 20, 2009 9:25 AM

To: Colvin, Rebecca

Subject:

Rebecca, we received your letter dated April 15, 2009. The Illinois Department of Natural Resources, Office of Water Resources regulates activities in the floodways of streams which have a drainage area exceeding 1 square mile in an urban or urbanizing area, or 10 square miles in a rural area. It appears that between Eldorado and the White/Gallatin County line, the only stream on the Route 45 corridor to fall under our jurisdiction is the North Fork Saline River. Any new or replacement bridges over this waterway is regulated under our Part 3700 Floodway Construction Rules. These can be viewed online at <http://www.dnr.state.il.us/owr/resman/3700RULE.htm>. Please consult with this office further if work is proposed which involves this waterway. My direct number is 217/558-6617.

Jerry Bishoff, P.E.

Permit Engineer

Illinois Department of Natural Resources

Office of Water Resources

Illinois Nature Preserves



Commission

One Natural Resources Way
Springfield, IL 62702-1271
217/785-8686

April 23, 2009

Rebecca Colvin
Third Rock Consultants, LLC
2526 Regency Road, Suite 180
Lexington, KY 40503

Dear Ms. Colvin,

I have reviewed the information you provided in your letter dated 4/15/09 regarding the proposed improvement of US 45 from IL 142 in Eldorado, Illinois to IL 141. According to the Illinois Natural Heritage Database, there are no Illinois Nature Preserves in the specified area of Saline County. However, please note that the following sensitive resources exist within the project area:

North Fork Saline River – Elba Reach Illinois Natural Areas Inventory (INAI) site

Because there are no nature preserves in the indicated area, the site does not pose a threat to a dedicated nature preserve pursuant to the Illinois Natural Areas Preservation Act (525 ILCS 30).

Please be aware that the Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of significant natural features in Illinois. The Department of Natural Resources can only summarize the existing information known to us at the time of the request. This report should not be regarded as a final statement on the area being considered, nor should it substitute for field surveys required for environmental assessments.

This letter is separate from the Illinois Department of Natural Resources consultation requirement under the Illinois Endangered Species Act (530 ILCS 10/11) and the Illinois Natural Areas Preservation Act (525 ILCS 30/17). For more information on this process, please contact the Illinois Department of Natural Resources, Division of Resource Review and Coordination, at One Natural Resources Way, Springfield, Illinois 62702-1271 or by telephone at (217)785-5500.

Sincerely,

A handwritten signature in black ink, appearing to read 'R. Heidorn', with a long horizontal flourish extending to the right.

Randy Heidorn
Assistant Director

RH:tgk

cc: Keith Shank, IDNR, Resource Review & Coordination (w/ attachments)

Southeastern Illinois Regional Planning & Development Commission

230 WEST POPLAR - P.O. BOX 606 / HARRISBURG, ILLINOIS 62946 / 618-252-7463 / Fax 618-252-7464
<http://www.sirpdc.org> sirpdc@clearwave.com

July 23, 2010

Ms. Rebecca Colvin
Third Rock Consultants, LLC
2526 Regency Road, Ste 180
Lexington, KY 40530

**RE: US 45 Reconstruction
Saline, Gallatin and White Counties, Illinois**

Ms. Colvin:

This letter is in regards to the *Illinois Department of Transportation's* information gathering phase of the Environmental Assessment for the proposed improvement of US 45 from just north of IL 142 in Eldorado, Saline County to IL 141, which serves as the county line for Gallatin and White Counties, Illinois.

This project, for the US 45 reconstruction is consistent with the goals and objectives of our 2010 Comprehensive Economic Development Strategy. The project will benefit the residents of the region by upgrading the infrastructure and increasing their safety. This is a priority item for our agency. The Southeastern Illinois Regional Planning and Development Commission supports the project.

If you have any questions or require additional information, please feel free to call me.

Sincerely,



Julie Patera
Executive Director

From: Haaker, Anne [mailto:Anne.Haaker@Illinois.gov]
Sent: Friday, January 28, 2011 9:18 AM
To: Fuller, Matt
Subject: U.S. 45 from IL 142 to IL 141

Matt,

We accept your invitation to be a consulting party in compliance with section 106 of the National Historic Preservation Act of 1966, as amended.

Anne Haaker
Deputy State Historic Preservation Officer



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
<http://dnr.state.il.us>

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FEB - 7 2011
ILLINOIS
DIVISION

Pat Quinn, Governor

Marc Miller, Acting Director

January 31, 2011

Mr. Matt Fuller P.E.
Federal Highway Administration
3250 Executive Drive
Springfield, IL 62703

RE: US 45 From IL. 142 to IL.141
Environmental Assessment
Saline Co.
IDNR Cooperating Agency

Dear Mr. Fuller:

Thank you for the opportunity to participate as a Cooperating Agency in the development of the Environmental Assessment for the above referenced project. It is important that the Illinois Department of natural Resources be involved in the review process to assure resources protection and compliance with the state Endangered Species Protection Act and the Illinois Wetlands Protection Act of 1989.

Please address all correspondence and meeting agenda to Mr. Steve Hamer of the Office of Realty and Environmental Planning at One Natural Resources Way, Springfield, IL. 62702-1271.

If you have any questions on the above, please contact me at 217-785-4862.

Sincerely,
Steve Hamer
Transportation Review Program
Division of Environment and Ecosystems

file

From: Savko, Terry [mailto:Terry.Savko@Illinois.gov]
Sent: Monday, January 31, 2011 10:54 AM
To: Fuller, Matt
Cc: Chard, Steve
Subject: IDOA Cooperating Agency Request - US 45

Subject: US 45 from IL 142 to IL 141
Saline, Gallatin and White Counties
Environmental Assessment

Hi Matt,

Thank you for your January 27, 2011 correspondence notifying the Illinois Department of Agriculture (IDOA) that the Federal Highway Administration, in cooperation with the Illinois Department of Transportation (IDOT), is preparing an Environmental Assessment for proposed transportation improvements in Saline, Gallatin and White Counties, Illinois.

Proposed improvements include the proposed upgrade of U.S. 45 from two to four lanes from IL 142 in Eldorado, Saline County, to IL 141 at the Gallatin/White County Line. The project area is rural and the current land use is primarily agricultural.

The IDOA accepts your invitation to become a participating agency in the development of the Environmental Assessment.

Terry

Terry Savko, Bureau of Land and Water Resources
State Fairgrounds, Springfield, IL 62794-9281
217-785-4458 Fax 217-557-0993 terry.savko@illinois.gov