
ENVIRONMENTAL ASSESSMENT

ILLINOIS 13/127 (F.A.P. 42) MURPHYSBORO TO PINCKNEYVILLE JACKSON AND PERRY COUNTIES, ILLINOIS

VOLUME I (DOCUMENTATION & APPENDICES)

Illinois 13/127 (F.A.P. 42)
Murphysboro to Pinckneyville
Jackson and Perry Counties, Illinois

ENVIRONMENTAL ASSESSMENT

U.S. Department of Transportation
Federal Highway Administration
and
Illinois Department of Transportation
Cooperating Agencies
Federal Aviation Administration

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The proposed action is to upgrade approximately 23 miles of Illinois Routes 13 and 127 from two lanes to four lanes beginning at the Ava Road intersection north of Murphysboro in Jackson County and ending on Illinois 127 just north of Pinckneyville in Perry County. An eastern bypass of the Village of Vergennes, an interchange at Illinois Route 152, and a western bypass of the City of Pinckneyville, with an interchange at Illinois 154, are proposed. The project would be constructed to meet expressway standards. Major issues with the project include: displacements, farmland conversion and impacts on wetlands and floodplains.

Property acquisition required for this project includes 689 acres of new right of way from 219 parcels. Approximately 644 acres of farmland will be converted to highway use. There are 53 residential relocations and 5 business relocations. Wetland impacts total 15.85 acres from 19 wetland sites. Replacement of these wetlands will be provided in a new wetland bank. U.S. Army Corps of Engineers Section 404 permits will be required for wetland impacts and stream crossings. The Illinois Department of Natural Resources owns and administers Pyramid State Park, a Section 4(f) resource within the project limits. Approximately 5.1 acres of the park will be converted to highway use.

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1.0 PURPOSE OF AND NEED FOR ACTION

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1.1 Purpose of Proposed Project

The purpose of the proposed action is to upgrade a portion of Illinois Routes 13 and 127 in Jackson and Perry Counties in order to close a significant part of the gap in the National Highway System of four-lane highways between the major population centers in southern Illinois and the St. Louis metropolitan area; to comply with the legislative mandate set forth in the Transportation Equity Act for the 21st Century; and to address the needs associated with existing roadway deficiencies, traffic safety, and the region's economic development.

1.2 History and Legislation

In 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) established a National Highway System (NHS) made up of interstate highways and other principal arterial roadways that are important to the nation's economy, defense and mobility. Among the roadways designated to the NHS were portions of Illinois Route 13 and Illinois Route 127. (See **Figure 1.**) The creation of the NHS encouraged states to focus more attention on improving these high priority roadways with the help of federal-aid funds. In 1998, the Transportation Equity Act for the 21st Century (TEA-21) identified Illinois 13/127 between Murphysboro and Pinckneyville as a high priority project and provided funding to study upgrading this highway.

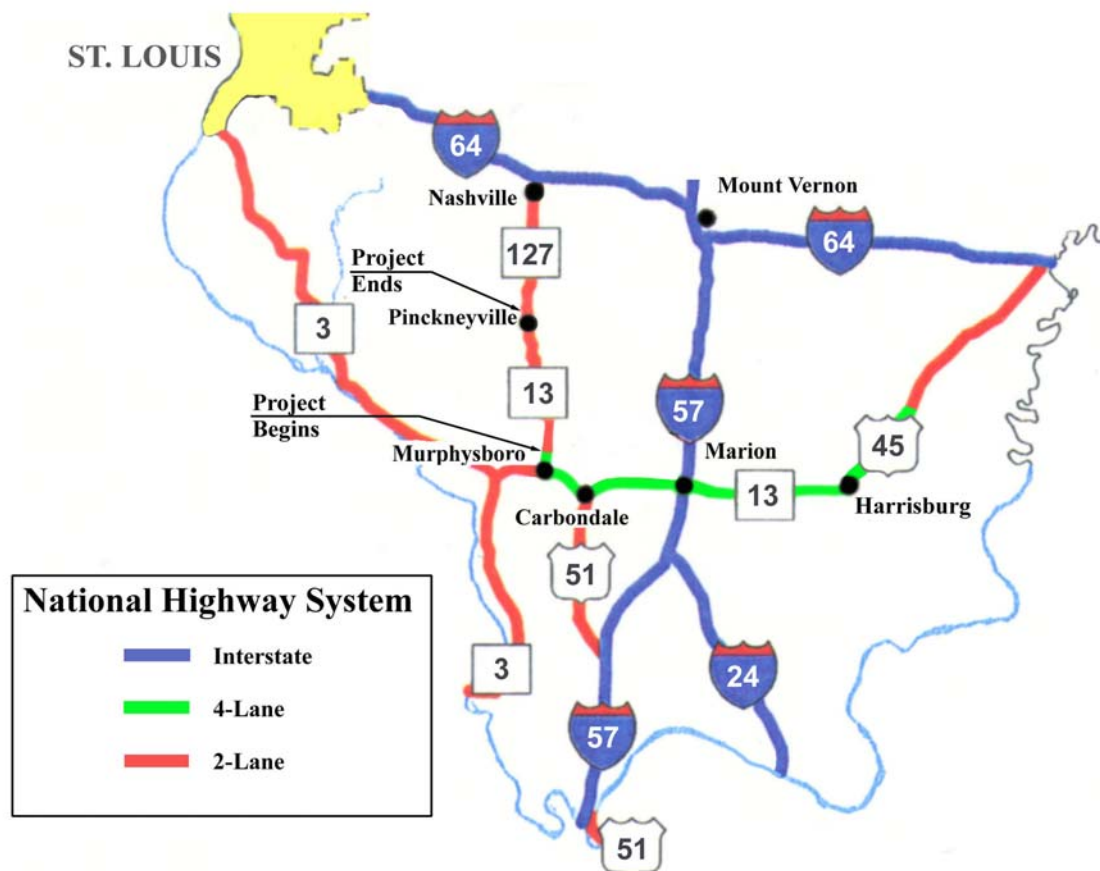


Figure 1

1.3 Project Location and Description

The proposed project involves upgrading existing Illinois Route 13/Illinois Route 127 from two lanes to four lanes beginning at the Ava Road intersection north of Murphysboro in Jackson County and ending on Illinois 127 just north of Pinckneyville in Perry County. Bypass and through-town alternates are considered for both the Village of Vergennes and the City of Pinckneyville. Except for urban-section alternates through these communities, the project would be constructed to meet expressway standards.

The length of the proposed improvement is approximately 23 miles. **Exhibit 1** shows the project location within the State of Illinois. **Exhibits 2 and 3** show the project study corridor within Perry and Jackson Counties.

Illinois Route 13 begins at its intersection with Illinois 15 near Freeburg, Illinois in St. Clair County and extends southeasterly through the cities of New Athens, Marissa, Coulterville and Pinckneyville where it joins with Illinois 127 to head directly south to Murphysboro, where it becomes a four-lane expressway. In Murphysboro, Illinois 13 leaves Illinois 127 and continues east as a four-lane roadway toward the Illinois-Kentucky border passing through the cities of Carbondale, Marion and Harrisburg, where it continues as a two-lane roadway to Kentucky.

Illinois 127 begins as a north-south State Highway that extends north from Route 3 near Cairo, Illinois in Alexander County through the cities of Jonesboro, Murphysboro, Pinckneyville, Nashville, Carlyle, Greenville and Hillsboro, ending at its intersection with Interstate Route 55 near Raymond.

1.4 Need for Proposed Project

The need for the proposed project is based on several factors that make the current transportation system inadequate. The following subsections address the need for the proposed action in terms of system continuity and regional access, existing roadway deficiencies, traffic safety, traffic flow and capacity deficiencies, and regional economic development. In addressing these needs, the proposed action seeks to comply with the legislative mandate described in Section 1.2.

1.4.1 System Continuity and Regional Access

For system continuity and regional access there is a need to close the gap in the system of four-lane freeways and expressways between St. Louis and southern Illinois. Illinois Route 13 from Harrisburg to Murphysboro, and Illinois 13/127 from Murphysboro to Pinckneyville and Illinois 127 from Pinckneyville to I-64 at Nashville are all part of the National Highway System, which is made up of interstate highways and other principal arterial roadways that are important to the nation's economy, defense and mobility. The Murphysboro to I-64 corridor is the last two-lane section in the NHS system of major highways between the St. Louis metropolitan area and the four-lane, east-west axis of Illinois 13 across southern Illinois, which includes the region's largest population centers as well as Southern Illinois University at Carbondale. The proposed project would close a significant portion of the gap in this system of four-lane highways.

1.4.2 Existing Roadway Deficiencies

The need to upgrade Illinois Routes 13 and 127 from Murphysboro through Pinckneyville stems, in part, from roadway deficiencies. The rural portions of existing Illinois 13/127 between Murphysboro and Pinckneyville contain several areas with substandard geometry. Two horizontal curves do not meet the current IDOT expressway policy for minimum radius. In addition, the existing highway profile has 13 vertical curves that do not meet the 55 mph design speed policy for an existing two-lane roadway and 38 vertical curves that do not meet the 70 mph design speed policy for expressways. Approximately 20 percent of the rural portions of existing Illinois 13/127 is made up of no-passing zones.

There is an Illinois 13/127 railroad underpass near the south city limits of Pinckneyville, that is substandard for all horizontal and vertical geometry. This underpass is a major bottleneck for large vehicles with tall and/or wide loads. In addition, there is an active at-grade railroad crossing on Illinois 127 near the north city limits of Pinckneyville. This crossing leads to traffic back-ups when a train is present and is particularly detrimental to the movement of emergency vehicles, such as ambulances to and from the Pinckneyville hospital.

1.4.3 Traffic Safety

The most common crash types in the project area involve rear-end collisions and turning movements at intersections and in the urban areas of Vergennes and Pinckneyville. However, between 1996 and 2000, there were 12 fatalities in the rural areas of the project. Eight of these fatalities were the result of head-on collisions. Recent crash data for the project area are summarized in **Table 1**.

Table 1 Crash Data Summary				
Year	Number of Crashes	Personal Injury Crashes	Type A Injury* Crashes	Number of Fatalities
2001	116	49	2	0
2002	95	31	1	1
2003	109	32	3	0
2004	133	30	5	1
2005	154	72	3	0
Total	607	214	14	2

* An injury, other than a fatal injury, which prevents the injured person from walking, driving, or normally continuing the activities he/she was capable of performing before the injury occurred. This includes severe lacerations, broken/distorted limbs, skull injuries, chest injuries and abdominal injuries.

Crash data obtained from the Illinois Department of Transportation, Division of Traffic Safety

Advantages resulting from upgrading the existing facility to a four-lane expressway would be the increased safety, comfort, and ease of operation provided by separation of the northbound and southbound traffic lanes. This separation, along with other roadway improvements, should eliminate most head-on collisions and sight distance problems associated with existing roadway deficiencies, such as no-passing zones. Also, the construction of additional through-lanes and turn-lanes should reduce the number of rear-end and turning-movement collisions by providing an additional lane for through-traffic to avoid vehicles that are slowing, stopped or turning and by providing auxiliary lanes to allow turning vehicles to exit the through-lanes, prior to slowing and turning.

Because the rural portions of this project are in an agricultural area, farm vehicles frequently use Illinois 13/127 for access to farm fields and to local grain elevators. Upgrading the roadway to four lanes with a wide median and shoulders would improve the convenience and safety associated with this mixing of farm vehicles with automobile and truck traffic.

1.4.4 Traffic Flow and Capacity Deficiencies

Traffic flow and capacity throughout the rural portions of the project operate at Level of Service A.

Level of Service (LOS) is a measure of traffic flow and maneuverability and is evaluated on a scale from A to F with A representing the best range of operating conditions and F the worst. **Table 2** describes the Level of Service scale.

Table 2 Level of Service Scale	
LOS	Description
A	Free-flow operations at average travel speeds. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream.
B	Reasonably unimpeded operations at average travel speeds. The ability to maneuver within the traffic stream is only slightly restricted and stopped delays are not bothersome.
C	Stable operations causing some tension for motorists. The ability to maneuver and change lanes in midblock locations is restricted along with noticeable queues at intersections.
D	Small increases in flow cause substantial increases in delay and decreases in arterial speed. The ability to maneuver is severely restricted.
E	Significant delays and average travel speeds of less than one-third the free-flow speed are experienced.
F	Intersection congestion, long delays and extensive queuing along the arterial cause for extremely low free-flow speeds and stand-still conditions for motorists. The demand exceeds the capacity of the roadway.

Downtown Pinckneyville presents special traffic problems. Illinois Route 127, in traversing Pinckneyville north and south, includes a tight one-way loop around the town's square with the County Courthouse in the center. (See Figure 2.) Northbound and southbound vehicles enter and exit the traffic stream around the square in the middle of the north and south legs of the square. The south leg of the square is Illinois 154, the east-west highway through Pinckneyville. This configuration creates difficult traffic movements at the three close-proximity intersections of the two highways.

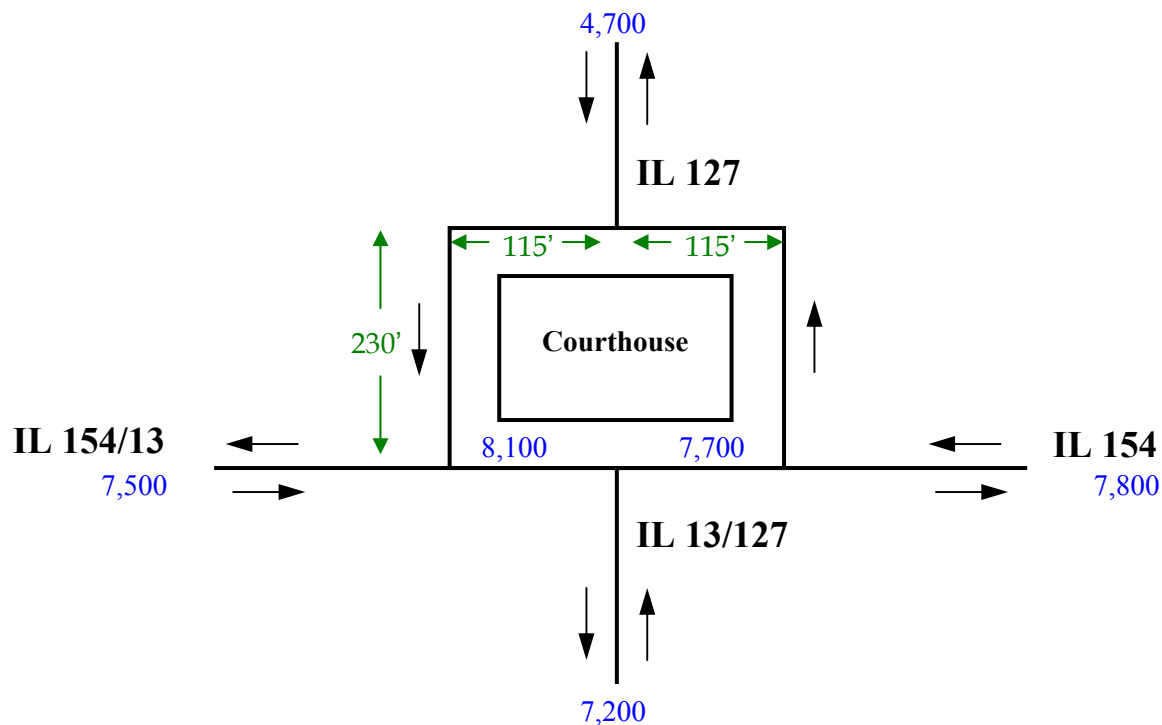


Figure 2
Pinckneyville Square -- Showing Space Constraints and 2006
Traffic Volumes (ADT)

Traffic circulation in this downtown area is a major problem that is compounded by inadequate turning radii, on-street parking and confusing traffic patterns, resulting in a difficult path for vehicles, especially large trucks, which make up 8% – 14% of the total traffic. The downtown intersections currently operate at a Level of Service F.

1.4.5 Regional Planning and Economic Development

There is a need for adequate transportation system support for the existing and future economic growth of the project area as well as southern Illinois in general. An inadequate transportation system can result in increased costs in obtaining supplies and materials as well as accessing areas of employment. Lessened accessibility can lead to a lack of competitive and locational advantages. The proposed project would help address these issues by closing a significant portion of the gap in the four-lane system of highways between St. Louis and southern Illinois,

providing a better opportunity to attract new industries and businesses as well as increased tourist trade throughout southern Illinois.

According to the Greater Egypt Regional Planning and Development Commission, Jackson and Perry Counties are included in the Commission's most current economic development plan, *1992-1993 Overall Economic Development Strategy*, which calls for improving Illinois Route 13 and 127 to four lanes north of Murphysboro to enhance access to markets in the St. Louis metropolitan area. The Cities of Pinckneyville and Carbondale, as well as the Village of Vergennes and the Jackson County Board have all passed resolutions supporting the expansion of Illinois Route 13 and 127 from two lanes to four lanes. **(See Appendix A.)**

2.0 AFFECTED ENVIRONMENT

2.0 AFFECTED ENVIRONMENT

The project area was inventoried for environmental resources. Those cultural, natural, physical, and socio-economic resources, and special waste sites found to be present in the study area are identified in this section and on various exhibits referenced within this section.

2.1 Social/Economic

This project is centrally located in Jackson County and Perry County, Illinois. It begins on Illinois Route 13/127 at the Ava Road intersection north of Murphysboro and ends on Illinois Route 127 just north of Pinckneyville. The majority of the project lies in rural Jackson and Perry Counties. The project will affect the Village of Vergennes and the City of Pinckneyville where both bypass and through-town alternates were considered. The following discussions will focus on the socio-economic conditions of these two counties as well as the Village of Vergennes and the City of Pinckneyville.

2.1.1 Demographics

Demographic data included and referenced in this report were obtained primarily from the U.S. Census Bureau, 2000 Census of Population and Housing. Demographic and employment trends were compared to data from the State of Illinois Department of Commerce and Economic Opportunity (formerly known as the Department of Commerce and Community Affairs) and the U.S. Bureau of Economic Analysis.

Analysis of the data revealed that the study area is made up primarily of a homogenous population, composed of mid-age, middle income, Caucasian families living in their own single family homes. The data presented in the subsections on Population, Race and Ethnicity, and Age includes students at Southern Illinois University Carbondale (SIUC) and individuals at the Pinckneyville Correctional Center and the Murphysboro Illinois Youth Center.

Population

In 2000, the population of the Village of Vergennes was 491 and the population of the City of Pinckneyville was 5,464. **(See Tables 3 and 4.)** The overall population in 2000 of Jackson County and Perry County were 59,612 and 23,094, respectively and 12,419,293 for the State of Illinois. **(See Tables 5, 6, and 7.)** Vergennes has experienced a growth rate increase of 56.4 percent between 1990 and 2000. This is due to the opening of the Murphysboro Illinois Youth Center, a high/medium-security level male juvenile correctional facility, located east of Murphysboro, in 1997. This facility on average, houses 156 youth, who were included in the Vergennes population during the last census.

Pinckneyville has grown 62.0 percent between 1990 and 2000. This is due to the opening of the Pinckneyville Correctional Center located just east of Pinckneyville in 1998. This facility houses, on average, 2,000 individuals, where were included in the Pinckneyville population during the last census. While Perry County has grown 7.9 percent between 1990 and 2000, Jackson County experienced a decline in population of 2.4 percent. Comparatively, the State of Illinois has grown 8.6 percent during that time frame.

Table 3 Vergennes Population Growth		
Year	Population	Population Growth Rate (Per 10 Years)
1970	323	
1980	360	11.5%
1990	314	-12.8%
2000*	491	56.4%

Years	Population Growth Rate
1970 to 2000	52.0%
1990 to 2000	56.4%

* The population growth rate figures for 2000 include 156 individuals at the juvenile correctional facility east of Murphysboro which were included in Vergennes population during the last census.

Table 4 Pinckneyville Population Growth		
Year	Population	Population Growth Rate (Per 10 Years)
1970	3,377	
1980	3,319	-1.7%
1990	3,372	1.6%
2000*	5,464	62.0%

Years	Population Growth Rate
1970 to 2000	61.8%
1990 to 2000	62.0%

* The population growth rate figures for 2000 include approximately 2,000 individuals at the Pinckneyville Correction Center which opened in 1998.

Table 5
Jackson County Population Growth

Year	Population	Population Growth Rate (Per 10 Years)
1900	33,871	
1910	35,143	3.8%
1920	37,091	5.5%
1930	35,680	-3.8%
1940	37,920	6.3%
1950	38,124	0.5%
1960	42,151	10.6%
1970	55,008	30.5%
1980	61,522	11.8%
1990	61,067	-0.7%
2000	59,612	-2.4%

Years	Population Growth Rate
1900 to 2000	76.0%
1950 to 2000	56.4%
1990 to 2000	-2.4%

Table 6
Perry County Population Growth

Year	Population	Population Growth Rate (Per 10 Years)
1900	19,830	
1910	22,088	11.4%
1920	22,901	3.7%
1930	22,767	-0.6%
1940	23,438	2.9%
1950	21,684	-7.5%
1960	19,184	-11.5%
1970	19,757	3.0%
1980	21,714	9.9%
1990	21,412	-1.4%
2000*	23,094	7.9%

Years	Population Growth Rate
1900 to 2000	16.5%
1950 to 2000	6.5%
1990 to 2000	7.9%

* The population growth rate figures for 2000 include approximately 2,000 individuals at the Pinckneyville Correction Center which opened in 1998.

Table 7
State of Illinois Population Growth

Year	Population	Population Growth Rate (Per 10 Years)
1900	4,821,550	
1910	5,638,591	16.9%
1920	6,485,280	15.0%
1930	7,630,654	17.7%
1940	7,897,241	3.5%
1950	8,712,176	10.3%
1960	10,081,158	15.7%
1970	11,113,976	10.2%
1980	11,426,518	2.8%
1990	11,430,602	0.0%
2000	12,419,293	8.6%

Years	Population Growth Rate
1900 to 2000	157.6%
1950 to 2000	42.6%
1990 to 2000	8.6%

Race and Ethnicity

The percentage of minority populations in Vergennes and Pinckneyville differ from those in Jackson or Perry Counties and the State of Illinois due, in part, to the method of reporting by the U.S. Census Bureau. For example, the Murphysboro Illinois Youth Center is included in the Vergennes Census tract and the Pinckneyville Correctional Center is included in the Pinckneyville Census tract. The population of Vergennes, as reported by the U.S. Census Bureau, is 73.3 percent Caucasian, 22.4 percent African-American, with the other 4.2 percent consisting primarily of American Indians and Asians. Pinckneyville's population, as reported by the U.S. Census Bureau, is 71.2 percent Caucasian, 24.2 percent African-American, with the other 4.5 percent consisting of American Indians, Asians and other races.

The population of Jackson County is 80.8 percent Caucasian, 13.0 percent African-American, with the other 6.3 percent consisting primarily of American Indians and Asians. Perry County's population is 89.6 percent Caucasian, 8.0 percent African American, with American Indians and Asians, as well as other races, making up 2.4 percent. The population of Illinois is 73.5 percent Caucasian, 15.1 percent African-American, with other races such as American Indians and Asians making up 11.4 percent. The racial composition of each area is shown in **Table 8**.

Age

The reported median age of residents in Vergennes (population 491) is 17.8 years, however this figure includes 156 youths at the Murphysboro Illinois Youth Center. The median age of the

individuals at the Youth Center is 17 years of age. The median age of the residents of Pinckneyville is 35.0 years. The median age for Jackson County is 27.5 years. (This figure includes students at Southern Illinois University Carbondale (SIUC).) Enrollment in the fall of 2006 was 21,003 students. The median age of residents in Perry County is 37.6 years. The median age for the State of Illinois is 34.7 years. The age composition of each area is shown in **Table 9**.

Table 8 Minority Composition and Income Characteristics of the Study Area				
Census Tract	% Black	% Other Minority*	Median Family Income	% Below Poverty**
Jackson County				
#104	2.8%	2.1%	\$46,250	6.1%
#107 (Murphysboro)	20.2%	4.9%	\$29,815	24.0%
Somerset Twp.	3.4%	1.6%	\$40,526	9.1%
Vergennes Twp.	12.4%	2.7%	\$37,500	20.1%
Vergennes Village	22.4%	5.9%	\$39,028	16.9%
Perry County				
#301	0.3%	0.8%	\$41,289	7.6%
#302	17.4%	3.6%	\$45,308	8.9%
Du Quoin #4	12.1%	2.3%	\$36,912	26.6%
Pinckneyville #2	0.1%	2.0%	\$34,917	6.3%
Pinckneyville #7	49.6%	8.1%	\$41,161	3.8%
Pinckneyville #8	0.4%	0.8%	\$53,580	8.0%

* "Other Minority" includes American Indian/Alaska Native, Hispanic, Asian and Native Hawaiian or Other Pacific Islander.

** The 2000 Census Poverty Level was \$17,029 for a family of four. The Health and Human Services Poverty Guideline for 2007 is \$20,650 for a family of four.

Table 9
Age Composition of Study Area

Area	Age		
	Median Age	1 st Largest Age Group	2 nd Largest Age Group
Vergennes	17.8*	15 to 19 (37.9%)*	25 to 34 (12.4%)*
Pinckneyville	35.0	25 to 34 (21.1%)	35 to 44 (18.6%)
Jackson County	27.5**	20 to 24 (18.7%)**	25 to 34 (14.2%)**
Perry County	37.6	65 and over (16.0%)	35 to 44 (15.6%)
State of Illinois	34.7	35 to 44 (16.0%)	25 to 34 (14.6%)

* These figures include 156 individuals at the juvenile correctional facility east of Murphysboro which were included in Vergennes population during the last census.

** These figures include 21,003 students from SIUC.

Economic Characteristics

A review of median household incomes for 2000 reveals that the median household income in the State of Illinois is higher than the median household incomes in both Vergennes and Pinckneyville and Jackson and Perry Counties. The income data is as follows:

Vergennes	\$36,458
Pinckneyville	\$30,391
Jackson County	\$24,946
Perry County	\$33,281
State of Illinois	\$46,590

The local income levels for Jackson County include the SIUC student population.

Employment

In 2000, Vergennes total work force was 176 of which 171 were employed. The unemployment rate was 2.8 percent. The total work force of Pinckneyville was 1,542 of which 1,451 were employed. The unemployment rate was 5.9 percent. Jackson County's total work force was 30,702 of which 28,213 were employed. The unemployment rate was 7.9 percent. The total work force of Perry County was 9,999 of which 9,197 were employed. The unemployment rate for Perry County was 8.0 percent. The Perry County unemployment rate is expected to increase in mid-2007 due to the closing of Technicolor Universal Media Services (TUMS) on March 31, 2007. TUMS employed approximately 440 individuals at its plant east of Pinckneyville. Illinois total labor force is 6,230,617 of which 5,833,185 were employed. The unemployment rate of Illinois is 6.0 percent.

Poverty Rate

In 2000, Vergennes and Pinckneyville had poverty levels of 19.1 percent and 11.0 percent, respectively. Jackson County had 25.2 percent of its respective populations living below the poverty level. This figure includes the SIUC student population. Perry County had a poverty level of 13.2 percent. The State of Illinois had 10.7 percent of its population living below the poverty level.

Housing Characteristics

Both Vergennes and Pinckneyville are well-established communities. Vergennes was incorporated in 1887 and Pinckneyville was incorporated in 1861. Jackson and Perry Counties are also well-established and were incorporated in 1816 and 1827, respectively.

With respect to housing characteristics, Vergennes has a vacancy rate of 5.5 percent which is lower than the state vacancy rate of 6.0 percent. Pinckneyville's vacancy rate, however, is higher than the state vacancy rate at 9.5 percent. The vacancy rates for Jackson and Perry Counties are higher than the state rate at 9.8 percent and 10.1 percent respectively.

Vergennes has an ownership rate of 75.6 percent which is higher than the state ownership rate of 67.3 percent. Pinckneyville is close to the state ownership rate at 65.0 percent. Jackson County has a relatively low ownership rate of 48.1 percent while Perry County has a high ownership rate of 70.7 percent. The relatively low ownership rate in Jackson County may be due, in part, to SIUC where renter-occupied housing units account for 42.1 percent of all occupied housing units. The median home values for Vergennes, Pinckneyville, Jackson and Perry Counties are between \$62,600 and \$82,400, less than the state's median home value of \$130,800.

Table 10 provides additional information on housing characteristics for the study area.

Table 10					
Housing Characteristics of Study Area					
	Area				
	Vergennes	Pinckneyville	Jackson County	Perry County	State of Illinois
Housing Units	127	1,662	26,844	9,457	4,885,615
Occupied	120	1,504	24,215	8,504	4,591,779
% Owner-Occupied	75.6	65.0	48.1*	70.7	67.3
% Renter-Occupied	18.9	25.5	42.1*	19.2	32.7
Vacancy Rate	5.5%	9.5%	9.8%	10.1%	6.0%
Median Home Value	\$48,400	\$57,300	\$68,200	\$55,000	\$130,800
Median Monthly Rent	\$425	\$335	\$409	\$370	\$605

* These include students from Southern Illinois University Carbondale.

2.1.2 Land Use

Existing land use in the project corridor in Perry and Jackson Counties is primarily agricultural south of the city of Pinckneyville, with prime farmland and row crop production being prevalent. (See **Exhibit 4**.)

Along the Illinois 13/127 highway corridor in Perry County, there is an abandoned railroad right of way, several isolated strip mine lakes, scattered homes and farms, the Pyramid State Park and the Pinckneyville-Du Quoin Airport. East of Pinckneyville there is an area of light industrial land use.

Both surface and underground coal mining were prevalent in Perry County prior to 1990. About 30 percent of the county has been surface mined, with about 60 to 70 percent of that reclaimed for recreational and pasture use. Pyramid State Park is composed of surface-mined land (with mounds and lakes) not reclaimed prior to more stringent reclamation laws. There currently is one active strip mine, the Red Hawk Mine, that operates just outside of the project corridor south and east of Buffalo Curve. This mine, owned by Knight Hawk Coal, LLC, has been in operation since 2000. Truck traffic from the mine accesses Illinois 13/127 at Buffalo Curve from the east via Green Market Road.

In northern Jackson County, land use is primarily agricultural within the project corridor. While there are several small businesses in the Village of Vergennes, only two are adjacent to Illinois 13/127, a gas station/grocery (closed in March, 2006) and an antique store.

The existing land use for Pinckneyville is shown in **Exhibit 5**. This map was jointly produced by the Pinckneyville Perry County Planning Commission and its Tax Increment Financing (TIF) District, established in 1992. It includes about 600 acres of property within Pinckneyville and a narrow corridor along Illinois 154 east of the city. Commercial areas extend from the town square westward along Illinois 154 and for several blocks south of the town square along Main Street and Walnut Street.

Industrial areas are located primarily along Illinois 154 east of the Beaucoup Creek floodplain. Other small areas are located on Illinois 127 north of downtown, on Illinois 154 west of downtown and just southwest of the Illinois 154/Illinois 13 wye west of town.

New housing areas are located northwest, west and southwest of downtown Pinckneyville. Smaller developments are being constructed to the west and southwest of downtown near the county fairgrounds.

2.1.3 Public Facilities and Services

All public lands, institutions, schools, libraries, hospitals and emergency community services located in the project area were inventoried. **Table 11** lists the facilities and services with the project area while **Exhibit 4** shows their locations. Public park lands are discussed in greater detail in Section 2.11, Special Lands.

Table 11
Public Facilities & Services within the Project Area

Churches & Religious Organizations

<u>Murphysboro</u> Jehovah's Witness Murphysboro Congregation	Nine Mile Baptist Food Pantry Oak Grove Baptist Church St. Paul United Church in Christ St. Bruno Church Trinity Assembly of God Church United Methodist Church of Pinckneyville Willow Glen Worship Center Zion Lutheran Church
<u>Pinckneyville</u> Beaucoup Baptist Church Dale Roe's Baptist Church First Apostolic Church First Baptist Church First Christian Church First Pentecostal Church First United Presbyterian Church Holt's Prairie Baptist Church	<u>Vergennes</u> Faith United Methodist Church United Methodist Church Wesley

Emergency Services

<u>Pinckneyville</u> Perry Co. Emergency Services & Disaster Agency Perry Co. Sheriff's Department Pinckneyville Fire Department Pinckneyville Police Department Pinckneyville Volunteer Ambulance Assoc.	<u>Vergennes</u> Vergennes Police Department Vergennes Fire Department
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Government Facilities

<u>Murphysboro</u> IDOT Highway Maintenance Yard	Pinckneyville Post Office Pinckneyville City Hall Pinckneyville-Du Quoin Airport Secretary of State Driver's License Facility USDA/NRCS IDNR/Pyramid State Park Satellite Office
<u>Pinckneyville</u> IDOT Highway Maintenance Yard Perry County Government Building Perry County Courthouse Perry County Health Department Perry County Jail Perry County U of I Extension	<u>Vergennes</u> Vergennes Community Center Vergennes Post Office

Historic Sites

Grange Hall (adjacent to Illinois 13/127 north of Murphysboro)	Perry County Jail Museum (Pinckneyville)
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Hospitals & Medical Facilities

<u>Pinckneyville</u> Pinckneyville Community Hospital Skilled Care Unit Hospital Home Care Hospice of Perry County	Southern Illinois Rehabilitation & Fitness Family Medical Center
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Table 11
Public Facilities & Services within the Project Area

<i>Libraries</i>	
Pinckneyville Public Library	
<i>Public Lands</i>	
Pyramid State Park	Pinckneyville City Park
Perry County Fairgrounds	Pinckneyville Reservoir
<i>Educational Facilities</i>	
<u>Pinckneyville</u>	St. Bruno School (Private Elementary)
Perry County Head Start Program	
Pinckneyville Elementary School District 50	<u>Vergennes</u>
Pinckneyville High School District 101	Elverado Community School District
Pinckneyville Jr. High School District 50	District 196 Elementary/Jr. High School
Rend Lake College Murphy-Wall Pinckneyville Campus	

Public Safety and Medical Services

Vergennes and Pinckneyville each operate its own police and fire protection services. The Perry County and Jackson 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. Protection districts are staffed by full-time and volunteer fire fighters.

Emergency medical services for the project area within Perry County are provided by the Pinckneyville Community Hospital in Pinckneyville. The hospital also offers a family medical center, a number of critical care specialties, a physical therapy unit, a skilled and intermediate care facility and a hospice program. There are seven doctors who have medical practices in Pinckneyville and 22 doctors from the surrounding area who actively practice at the hospital and hold clinics there. There are four dentists with practices in town.

Emergency medical services for the project area within Jackson County are provided by the St. Joseph Memorial Hospital in Murphysboro. There are 14 doctors with medical practices in town and 30 doctors from the surrounding area who practice actively at the hospital. There are two dentists in town, one assisted-living facility and one nursing home.

No relocation of any public safety or medical service will occur as a result of this proposed project. Access and response times for emergency vehicles should be slightly improved as a result of the proposed improvement. Police, fire, and emergency response times may be temporarily affected during construction.

Educational Facilities

Vergennes is served by the Elverado Community School District 196, an elementary/junior high school on the far west side of Vergennes. This school also serves the towns of Elkhaville and Dowell. Vergennes high school-aged students attend Elkhaville High School.

Pinckneyville has a public elementary school and a junior high school (School District 50) and a public high school (School District 101). Consolidated School District 204 maintains a grade school about four miles east of Pinckneyville. There also is one private elementary school (St. Bruno School) in town.

There are no other grade schools, junior high schools or high schools within the project corridor.

An outdoor lab is associated with the Pinckneyville Jr. High School. It is located east of the school and adjacent to Beaucoup Creek. **(See Exhibit 4, Sheet 22.)** This land is owned by the school and is used for outdoor education classes. It, however, does not qualify as a Section 4(f) property and it is not anticipated that any portion of the outdoor lab will be affected by the proposed project.

The project area has one undergraduate college within the project area. Rend Lake College has a satellite facility two and one-half miles east of downtown Pinckneyville on Route 154. Future construction will allow this facility to offer career and vocational programs and associate degrees in the arts and sciences. Other colleges in the region include the main campus of Rend Lake College at Ina, John A. Logan Community College at Carterville and Southern Illinois University at Carbondale.

No school will be directly impacted by the proposed improvement.

Parks and Recreational Facilities

Lake Murphysboro State Park, located in Jackson County approximately one mile west of Murphysboro, with its 145 acre lake, is a popular attraction for those interested in boating, fishing, and swimming.

The Murphysboro Park District contains several parks, the largest, Riverside Park, is near Galum Creek and the Big Muddy River and has baseball fields and a concrete band shell.

Pyramid State Park is located in Perry County, just south and west of Pinckneyville. The eastern portion of the park lies along Illinois 13/127. Several recent land acquisitions have made Pyramid State Park the largest State Park in Illinois at 19,701 acres. The Pyramid landscape is a series of low, ridged mounds left after surface mining and prior to reclamation laws. The mounds are forested. Small lakes are interspersed between ridged areas. Fishing, boating, hiking, horseback riding, mountain hiking and picnicking are some of the recreation activities allowed in the park.

There is a county fairground on the west edge of Pinckneyville adjoining a city park, which includes baseball diamonds and a swimming pool. There also is an American Threshermen's

Association building at the fairground. The Association holds a summer festival in August and a fall festival in October.

There is a temporary soccer field located on city property north of Illinois 13 on the west edge of Pinckneyville currently used by the Perry County Soccer League. Contacts with the economic development coordinator for the City of Pinckneyville revealed that there currently is no approved plan for developing the city-owned property. Previously considered plans have focused on commercial and residential use for the entire property. **(See Exhibit 5.)**

The Pinckneyville Reservoir, a 190 acre impoundment lake, is located approximately three-quarters of a mile north and west of Pinckneyville. The reservoir serves as the city's drinking water supply as well as a popular recreation site. The facility includes paved roads and parking lots, restrooms, a boat launch ramp and dock and picnic facilities.

At Du Quoin, approximately 13 miles southeast of Pinckneyville, there is a large fairground where a regional or "state" fair is held each summer. Harness horse racing has been one of the special features at the Du Quoin State Fair attracting many of the top racing stables from across the nation and Europe.

The 1,300 square mile Shawnee National Forest extends across southern Illinois, affording biking, hiking, boating, camping, hunting, horseback riding and sightseeing opportunities. It draws visitors from throughout the central United States.

Other Public Services

Vergennes has its own U.S. Post Office and a community center, however, both facilities are located outside the study corridor. IDNR maintains a satellite office/storage facility for Pyramid State Park south of Pinckneyville, on Galum Church Road, just west of existing Illinois 13/127.

The U.S. Post Office and the Pinckneyville Public Library are located on South Walnut Street in Pinckneyville. The Perry County Head Start Program for pre-school children and the Perry County Public Health Department are both located on South Main Street in Pinckneyville. The Perry County USDA/NRCS building is located north of the Pinckneyville Square on Illinois 127.

2.1.4 Pedestrian/Bicycle/Transit Facilities

Pedestrian Facilities

Pedestrian and non-motorized vehicles cross Illinois Routes 13 and 127 within Vergennes and Pinckneyville. In Vergennes this traffic occurs most often near the Porter Street intersection where the village's only convenience store/gas station (now closed) is located. In Pinckneyville such traffic occurs primarily around the town square. Sidewalk facilities exist on either side of Illinois Routes 13, 127 and 154 through most of Pinckneyville, but are not present on any other section of the proposed project.

Bicycle Facilities

There are no existing on-road bicycle lanes or off-road bicycle paths that are on or cross the proposed project. The Mississippi Trail bicycle path is within two miles of the project near

Murphysboro; however, this path would not be affected by the proposed project. There also are mountain bike trails within Pyramid State Park, however, such areas lie outside the study corridor and are not affected by the proposed project.

Transit Facilities

There are no existing bus or rail transit services available within the project study area.

2.1.5 Pinckneyville-Du Quoin Airport

The Pinckneyville-Du Quoin Airport, located adjacent to Illinois 13/127 in southern Perry County, falls within the project corridor. **(See Exhibit 4, Sheets 18 and 19.)** The Airport is jointly-owned and operated by the cities of Pinckneyville and Du-Quoin, and while it is a public-use general aviation airport, it does not service commercial flights. The Airport consists of a single, 4,000' runway (Runway 18-36) in a north-south orientation and is designed to accommodate Federal Aviation Administration (FAA) Category B-I aircraft and smaller. This would include most single and twin-engine piston aircraft and some small jets. The runway is equipped with non-precision runway markings and Precision Approach Path Indicators. Non-precision GPS approaches are available at each end of the runway with landing minimums of 500 feet and one mile.

2.2 Agriculture

Agriculture is an important part of the local economy in both Jackson and Perry Counties. **Exhibit 4** shows the existing land use in the project corridor.

Jackson County has 740 farms that have a total of 199,683 acres, and Perry County has 549 farms that have a total of 193,989 acres, as reported in the *2002 Census of Agriculture County Profile*. Farm land accounts for about 52 percent of all the land in Jackson County and 68 percent of all land in Perry County. Soybeans, corn, wheat and forage are the primary crops in both counties. In 2005, total cash receipts for all farm marketing totaled \$43,667,000 in Jackson County and \$45,456,000 in Perry County.

The proposed project will affect current farm operations in both Jackson and Perry Counties. Agricultural land located within the right of way for this project will be taken out of production. Indirect impacts for the farmer include severance and landlocked parcels, adverse travel, and building and facility losses.

One Centennial Farm and two Sesquicentennial Farms, none of which are on or eligible for the National Register of Historic Places, are located within the project area. **Exhibit 4, Sheets 20 and 21** show the location of the Centennial Farm, **Exhibit 4, Sheets 14, 15 and 22** show the location of both Sesquicentennial Farms.

There are no Conservation Reserve Enhancement Program acres or designated agricultural protection areas within the limits of the proposed project.

2.3 Cultural Resources

Pursuant to the National Historic Preservation Act of 1966, as amended, cultural resources studies have been conducted in the corridor for proposed improvements along Illinois 13/127. These studies, conducted in consultation with the Illinois State Historic Preservation Officer (SHPO), have been designed to identify the types of cultural resources present in the study area, to produce data which will allow a determination of their eligibility for the National Register of Historic Places (NRHP), and to aid in the formulation of any necessary mitigation measures. Pedestrian archaeological and architectural surveys have been undertaken by professional personnel under contract to the Illinois Department of Transportation in the approximately 1,000 acres contained within the preferred alignment. Results of these studies have been reviewed by Illinois SHPO staff, and their recommendations have been applied to the findings outlined below.

An architectural document search indicates that there are three structures in the area listed on the National Register of Historic Places: one historic bridge and two standing structures. Field surveys added three potentially eligible buildings and a potentially eligible historic district in Pinckneyville. An archaeological survey was completed for the Preferred Alternative and ten sites were found.

2.3.1 Historic Resources

There is one historic bridge in the project area, a structure over Opossum Creek on Illinois Route 127 north of Pinckneyville, that is listed on the IDOT Historic Bridge Survey.

There are two buildings in the project area that are listed on the NRHP:

1. Grange Hall, located on Illinois 13/127 in the southern part of the project area in Jackson County. This brick structure was constructed in 1912 and was listed on the NRHP in May, 1990.
2. The Perry County Jail, a brick building located on West Jackson Street in Pinckneyville, which was listed on the NRHP in August, 2000.

The former Murphy-Wall State Bank building situated on the northeast corner on Walnut and Illinois 154 in Pinckneyville (currently occupied by the Nine Mile Baptist Association) has been determined to be eligible for listing on the NRHP. (See the IDOT determination of eligibility letter to the SHPO dated 9/3/03 in **Appendix B.**)

The Pinckneyville town square, including the Perry County Courthouse, the Opera House and over a dozen other 19th century buildings, meets the NRHP criteria for listing as a historic district. (See the Illinois Historic Preservation Agency letter to IDOT dated 8/2/02 in **Appendix B.**)

2.3.2 Archaeological Resources

A pedestrian archaeological survey was conducted by University of Illinois personnel over the 1,000 acres project area. Ten archaeological sites were located or revisited by the survey crew. Nine of these sites are prehistoric habitation localities consisting mainly of the remains of small, short-term encampments. These components range in age from Late Archaic (6,000 – 3,000 BP) into the Mississippian period (ca. 1,000 BP). The remaining site is the location of a razed late 19th century church in Allyn Grove. None of the sites are potentially eligible for the National Register of Historic Places.

2.4 Air Quality

The National Ambient Air Quality Standards (NAAQS), established by the U.S. Environmental Protection Agency set maximum allowable concentration limits for six criteria air pollutants. Areas in which air pollution levels persistently exceed the NAAQS may be designated as “non-attainment.” States in which a non-attainment area is located must develop and implement a State Implementation Plan (SIP) containing policies and regulations that will bring about attainment of the NAAQS.

All areas of Illinois currently are in attainment of the standards for four of the six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, and lead.

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

2.5 Noise

Traffic noise analyses have been conducted to determine what impacts, if any, the proposed project would have on noise sensitive areas. Twelve noise sensitive areas were modeled within the project area, representing a total of 278 residential and commercial receptors. **(See Exhibit 6.)** One noise sensitive area was located in Vergennes, another was located along Illinois 13/127 close to the Jackson County/Perry County border and the other ten were located in and around Pinckneyville. The FHWA Traffic Noise Model was utilized to conduct the analysis of existing and proposed design year traffic noise levels. A complete discussion of the existing and projected traffic noise levels is included in Section 4, Environmental Consequences.

2.6 Natural Resources

Natural resources, such as streams, ponds, plant communities, nature preserves, natural areas and threatened and endangered species located in the project area, were inventoried. **Exhibit 7** shows the location of these resources. Specific locations of protected species are not included in this report, in order to protect these resources.

2.6.1 Geology

The project area is located in the Mt. Vernon Hill Country area of the Till Plains Section in the Central Lowland Province. Unlike the Shawnee Hills section to the south, the project area has been glaciated. The local relief in the project corridor is generally flat, with variations in elevation of 20 feet or less.

Bedrock Geology

Uppermost bedrock units in the project area consist of Pennsylvanian-age rocks of the Spoon, Carbondale and Modesto Formations. These formations are characterized by thick and abundant shales, coals, thin limestones, and thick sandstones. The Spoon Formation, the oldest of the three, underlies surficial deposits south of Vergennes. The Carbondale Formation underlies surficial deposits from Vergennes to about one mile south of Pinckneyville. The youngest bedrock unit, the Modesto Formation, underlies glacial deposits near Pinckneyville.

Within the southern portion of the Illinois basin, where the project is located, the strata are broken by a complex of faults. The Du Quoin Monocline and the Ste. Genevieve Fault Zone are the closest group of faults to the project. However, the proposed project does not cross any known fault.

Surficial Geology

In the project area, the uppermost bedrock units described above are covered by glacial deposits, mainly till. These deposits vary from 50 to 100 feet thick north of Pinckneyville to less than 25 feet thick throughout most of Pinckneyville and extending southward approximately six miles. From the area near the intersection of Illinois 152 and Illinois 13/127 to the beginning of the project, north of Murphysboro, these deposits thicken again to 50 to 100 feet thick. These deposits are generally composed of silty deposits of Peoria Silt (formerly Peoria Loess) that overlie the bedrock.

Soils

According to the United States Department of Agriculture (USDA)/Natural Resources Conservation Services (NRCS) soil surveys for Jackson and Perry Counties, the seven most prevalent soil types (out of 66) underlying the proposed highway alignments are Ava silt loam, Belknap silt loam, Bonnie silt loam, Hosmer silt loam, Okaw silt loam, Stoy silt loam and Weir silt loam. Most of these soils are slow to drain and have seasonally high water tables, particularly in late winter and early spring and are, in general, moderately to well suited for cultivated crops, hay, pasture and woodland.

Minerals

There are no currently active mineral resource extraction industries present within the proposed project area.

Oil/Gas Pipelines

There are three natural gas pipelines, two 30 inch mains and one 36 inch main, owned by the Natural Gas Pipeline Company of America, that cross Illinois 13/127 approximately 1,800 feet north of the Pinckneyville-Du Quoin Airport. The pipelines cross the project corridor in a

southwest to northeast direction. The same pipelines run due north through the project corridor east of Pinckneyville, approximately 1,500 feet east of Pick Road. (See Exhibit 4, Sheets 19 and 22, and Exhibit 6, Sheets 3 and 4.)

2.6.2 Threatened and Endangered Species

The presence/absence of threatened and endangered species within the project area are based on coordination with the Illinois Department of Natural Resources' (IDNR) Natural Heritage Database (March 5, 2001 and July 20, 2006), the U.S. Fish and Wildlife Service's (USFWS) "Redbook", and field surveys by the Illinois Natural History Survey (INHS) for threatened and endangered mammals (2001), birds, amphibian/reptiles (2001 & 2002), fish/mussels (2001), and plants (2001 & 2002). The results of the field surveys were coordinated with IDNR and USFWS. (See Appendix B.) Agency Action Reports for this project were submitted to IDNR for screening against the information in the Illinois Natural Heritage Database. The result of this coordination was termination of consultation on July 20, 2006. IDNR agreed that the proposed action would not adversely affect threatened or endangered species or natural areas. (See Appendix B.)

Federally Listed Species

The USFWS North Central Region "Redbook" lists the Indiana bat (*Myotis sodalis*), eastern prairie fringed orchid (*Platanthera leucophaea*), prairie bush clover (*Lespedeza leptostachya*), least tern (*Sterna antillarum*), pallid sturgeon (*Scaphiynchus albus*), and gray bat (*Myotis grisescens*) as occurring in Jackson County. The first three of these species are also listed for Perry County. There is no suitable habitat for the eastern prairie fringed orchid (mesic to wet prairies), prairie bush clover (dry to mesic prairies with gravelly soils), least tern (bare alluvial and dredge spoil), pallid sturgeon (large rivers) or the Gray bat (caves, mines) in the project corridor. There is suitable habitat for the Indiana bat in the project corridor.

There is potential foraging and breeding habitat for the Indiana bat along Beaucoup Creek and its tributaries. The bat has been previously caught (1979, 1980, 1984, 1985, 1987, and 1996) in Jackson and Perry Counties. A few potential roost trees occur along Beaucoup Creek near the existing Illinois 13/127 crossing (Perry County) and in the extensive wooded corridor east of Pinckneyville.

During the environmental survey of the project area one mist net trapping site was established along Beaucoup Creek east of Pinckneyville in mid August 2001. Four mist net trapping sites were established during early and late June of 2002 near Beaucoup Creek southwest (near Chicken Creek), southeast and northeast of Pinckneyville. Bats were caught at four of the five sites; however, none were Indiana bats. One night of trapping was conducted at each site.

Illinois Listed Species

The Illinois Endangered Species Protection Board lists several species as occurring in the project area. The Agency Action Report response (dated March 5, 2001) from IDNR requested a survey for the golden mouse. (See Appendix B.) Additional field surveys within the project area (conducted between April 2001 and March 2002) identified the presence of the Arkansas sedge, tubercled orchid, swollen sedge and marsh rice rat.

Two groupings of Arkansas sedge were observed in a degraded power line right-of-way bordering a floodplain forest. This species occurs just inside the existing highway right-of-way on the east side of Beaucoup Creek in Jackson County. This species occurs in wetland Site 30, which has been described as a wet meadow. See **Exhibit 7, Sheet 1** for the location of this species.

An area of tubercled orchids was observed in a floodplain forest southeast of the Pinckneyville Jr. High School. See **Exhibit 7, Sheet 4** for the location of this species.

A juvenile female marsh rice rat was caught in a floodplain forest near the Beaucoup Creek bridge on Illinois 13/127 in Perry County. (**See Exhibit 7, Sheet 3.**) The habitat for marsh rice rats includes wet swampy fields and marshes. They have been found along drainage ditches, farm ponds, marshy railroad rights of way, lowland meadows, and wet ecotonal areas of wood and grass. The species disperses along streams and rivers. Most likely, this species and the observed individual are dispersing along Beaucoup Creek. Habitat at the bridge site consists of an isolated meander, forested wetlands, and vegetated roadside ditch.

No golden mice were caught during field surveys despite the presence of apparently suitable habitat at the trap-sites. These sites are farther north than any recent records for this species. Furthermore, in 1991 five areas of suitable habitat along Illinois 13/127 between Vergennes and Pinckneyville were searched for golden mouse nests, but none were found. It is concluded that it is unlikely that this species occurs in the project area.

An area of swollen sedge was observed near the Consolidated Mines access road northeast of Pinckneyville. See **Exhibit 7, Sheet 4** for the location of this species.

2.6.3 Nature Preserves

There are no nature preserves within the project area.

2.6.4 Natural Areas

There is one IDNR designated natural area, Lake Pinckneyville Woods, which occurs approximately 1,400 feet west of existing Illinois 127 just north of Pinckneyville near the city reservoir. White oak, black oak and shagbark hickory dominate the area with *mesophytes* occurring locally in the ravines. This 26.95 acre dry-mesic forest lies outside of the project corridor. (**See Exhibit 7, Sheet 4.**)

2.6.5 Plant Communities and Wildlife Habitat

The dominant plant communities within the Beaucoup Creek Watershed are Cropland (48%), Grassland (27%), Upland Forest (16%) and Forested Wetland (5%). Biological surveys were conducted in the project area during 2001 and 2002. Previous Biological surveys had been conducted in 1991 and 1992 for most areas of the project area south of Pinckneyville. The most important wildlife habitats in the project area are the upland forests and forested wetlands. These

two vegetation types form a continuous band along Beaucoup Creek in the project area reaching their greatest diversity on the east side of Pinckneyville.

Where survey data is available, each forested stand will be described by dominant plant species, natural quality, and the presence of breeding bird species (dominants and neotropical migrants). Natural quality of vegetation was evaluated using criteria developed by the Illinois Natural Areas Inventory. These communities described as Grade A (relatively undisturbed communities), Grade B (lightly disturbed communities), Grade C (moderately to heavily disturbed communities), and Grade D (severely disturbed communities) are discussed. When available, the Floristic Quality Index (a measure of floristic quality; see discussion in Section 2.9) is also given. For upland forest communities in the project area, a Floristic Quality Index value of 20 to 30 is equivalent to a grade C community. Bird survey data is from the 2001 and 2002 breeding season. A total of eight stands of forests are described below.

The woodlot south of Vergennes on the west side of IL 13/127 is dominated by scaly-bark hickory, white oak, pignut hickory (sapling stratum), Japanese honeysuckle, Virginia creeper, and poison ivy. **(See Exhibit 4, Sheet 10.)** The woodlot is approximately 20 acres in size. The quality is Grade D (severely disturbed) and has a Floristic Quality Index of 19. The breeding bird survey identified 25 individuals representing 13 species of birds. The dominant species were blue jay and American robin. Neotropical migrants within the stand included the yellow-billed cuckoo, eastern wood-pewee, red-eyed vireo, and indigo bunting.

The woodlot north of Vergennes on the east side of IL 13/127 is dominated by American elm, persimmon, Japanese honeysuckle, multiflora rose, and poison ivy. **(See Exhibit 4, Sheet 11.)** The woodlot is approximately 20 acres in size. The quality is Grade D (severely disturbed). No breeding bird data is available for this site.

The floodplain forest located north of Pyatts and immediately east of IL 13/127 contains a canopy dominated by green ash and American elm. **(See Exhibit 4, Sheet 20.)** The shrub stratum is dominated by common blackberry and the herbaceous stratum by Japanese honeysuckle, common chickweed, and common blue violet. This woodland occurs along an intermittent tributary of Beaucoup Creek and is approximately 25 acres in size. The quality is Grade D (severely disturbed) and has a Floristic Quality Index of 12.4. The breeding bird survey identified 33 individuals representing 15 species of birds. The dominant species were the American Robin, indigo bunting, and common grackle. Neotropical migrants included yellow-billed cuckoo, chimney swift, warbling vireo, common yellowthroat, and Baltimore oriole.

The floodplain forest located east of Pinckneyville near the crossing of Illinois 154 and Beaucoup Creek contains a canopy dominated by pin oak and silver maple. **(See Exhibit 7, Sheet 4 Sub-Mature Floodplain Forest.)** The shrub stratum is dominated by common elderberry, spicebush, corralberry and black haw. This irregularly-shaped forest occurs along Beaucoup Creek and is bordered and/or merges with numerous different wetland types. It is approximately 180 acres in size. The site is considered Grade C (moderately to heavily disturbed) in quality. The breeding bird survey identified 83 individuals representing 25 species of birds. The dominant species were the tufted titmouse, Carolina chickadee and the northern cardinal. Neotropical migrants included Acadian flycatcher and red-eyed vireo.

There is a woodlot located between Illinois Route 13 and Illinois Route 154 on the west side of Pinckneyville. **(See Exhibit 4, Sheet 23.)** The woodland is approximately 45 acres in size. The quality is Grade D (severely disturbed). The breeding bird survey identified 44 individuals from 15 species. The dominant avian species were Carolina chickadee, blue jay, northern cardinal, and common grackle. Neotropical migrants included the eastern wood-pewee, great crested flycatcher, and purple martin.

The Lake Pinckneyville Woods Natural Area is a Grade B forest located north of Pinckneyville between Illinois Route 127 and the Pinckneyville Reservoir. **(See Exhibit 7, Sheet 4.)** The site quality is Grade B.

This wooded area occurs northwest of Pinckneyville between the Canadian National Railroad and the Pinckneyville Reservoir. **(See Exhibit 7, Sheet 4 Dry Upland Forest.)** The site is an open woodland in which the understory is maintained by mowing. Grasses (broomsedge, poverty oat grass, deer tongue-grass, and path rush) and herbs (daisy fleabane, lawn prunella, slender mountain mint, and early goldenrod) dominate the understory. The canopy is dominated by mockernut hickory, white oak, and post oak. The site is considered Grade C (moderately disturbed) in quality. No bird survey data is available for this site.

This open woodland lies south of the Pinckneyville Reservoir. **(See Exhibit 4 sheet 22.)** The site is part of a large woodland that occurs around the Reservoir. The breeding bird survey identified 49 individuals representing 20 species as occurring near this site. The dominant bird species included the American robin, Carolina chickadee, blue jay, and tufted titmouse. Neotropical migrants include the chimney swift, eastern wood-pewee, great crested flycatcher, wood thrush, rose-breasted grosbeak and indigo bunting.

2.7 Water Resources and Water Quality

Seven streams (Beaucoup Creek, Walkers Creek, Youngs Creek, Chicken Creek, Opossum Creek and two unnamed tributaries of Beaucoup Creek) and three strip mine ponds occur within the project area. **(See Exhibit 7.)** These water features are situated within the Beaucoup Creek watershed, which is a part of the Big Muddy River watershed. The streams are generally characterized as slow-moving, turbid waters with silt-clay substrates. They generally have intact riparian zones with overhanging trees.

Beaucoup Creek from its confluence with the Big Muddy River to the Illinois Route 13/127 crossing (Perry County) occurs on the National Park Service's National Rivers Inventory. The streams outstanding resource is its scenic value. This section of river is described by the Park Service as a southern Illinois stream rising in a relatively flat farm country. The lower portion flows through areas of scenic hills. Fishing occurs in the lower reaches and canoeing is fair to poor. The stream has a fairly well wooded riparian corridor.

Pinckneyville Reservoir, the 165 acre water supply source for the City of Pinckneyville, lies northwest of the City, upstream from the project and outside the study corridor.

2.7.1 Water Resources

Beaucoup Creek

Beaucoup Creek originates in the southeast corner of Washington County and flows south to merge with the Big Muddy River in Jackson County. It has permanent flow and has a drainage basin of approximately 696,320 acres. It is the largest stream in the project area and has vegetated areas of high natural quality running parallel to its banks. Twelve species of fish were collected at the Jackson County bridge site. The most abundant species were the red shiner, freckled madtom, mud darter, and river darter. None of the 12 fish species are considered intolerant. No live mussels were observed at the Jackson County bridge site. However, single individuals of two live mussels (fragile papershell and giant floater) were observed at the Perry County bridge site.

Walkers Creek

Walkers Creek is located along the Jackson/Perry County line near Illinois 13/127. In the project area this stream is up to 10 feet wide and between one inch and 21 inches deep. The stream drains 4,064 acres and has permanent flow. Its substrate is almost entirely clay with some pockets of silt and gravel.

Youngs Creek

Youngs Creek also is located close to the Jackson/Perry County line near Illinois 13/127, just north of Walkers Creek. It does not cross into Jackson County. In the project area this stream is up to seven feet wide and between two inches and 13 inches deep. The stream drains 2,029 acres and has permanent flow. Its substrate is almost entirely clay.

Chicken Creek

Chicken Creek is located just south of Pinckneyville. In the project area this stream is up to 15 feet wide and 19 inches and 36 inches deep. The stream drains 3,360 acres and has intermittent flow. Its substrate is a mixture of sand, gravel, and cobble in the shallow riffle areas located upstream of the existing Illinois 13/127 highway bridge.

Opossum Creek

Opossum Creek is located immediately north of Pinckneyville. The stream drains 4,390 acres and has permanent flow. The Pinckneyville Reservoir is fed by Opossum Creek. Eleven species of fish were collected at the Illinois Route 127 bridge site north of Pinckneyville. The most abundant species were the Blackstripe topminnow, mosquitofish, and largemouth bass. None of the 11 fish species are considered intolerant.

Unnamed Tributaries of Beaucoup Creek

The first unnamed tributary of Beaucoup Creek occurs at the south edge of Vergennes. In the project area this tributary is up to three feet wide. The stream drains 800 acres and has intermittent flow. Its substrate is almost entirely clay.

The second unnamed tributary of Beaucoup Creek occurs just north of Illinois 152. In the project area this tributary also is up to three feet wide. It drains 723 acres and has intermittent flow. The stream's substrate is made up of almost entirely clay.

Strip Mine Ponds

Two strip mine ponds lie adjacent to existing Illinois 13/127 just south of Pinckneyville. One pond lies on the west side of the existing pavement and is part of Pyramid State Park. The other occurs east of the existing pavement and is privately owned. These two ponds are approximately 10 acres (western pond) and 14 acres (eastern pond) in size. Several other strip mine ponds occur northeast of Pinckneyville. These ponds are located on lands owned by Consolidated Coal Company and Peabody Development Land Holdings, LLC. Some of these ponds have characteristics of wetlands and are listed on the National Wetland Inventory. However, the Illinois Natural History Survey (INHS) did not identify these ponds as wetlands, because they exhibit some but not all of the characteristics associated with wetlands.

2.7.2 Water Quality

The stream quality assessment was performed by Illinois Environmental Protection Agency's (IEPA) personnel and made available through the Internet. The assessments in the Beaucoup Creek watershed were made primarily using water chemistry and fish tissue analysis. Additional macroinvertebrate sampling was not available through IEPA sources.

The existing water quality conditions of the following streams are described in terms of designated use (i.e. aesthetic quality, aquatic life, fish consumption, primary contact such as swimming and secondary contact such as boating) that can be completely achieved. By definition, the following terms are used to assess water quality conditions:

- *Full Support* – The water quality meets the needs of all designated uses protected by applicable water quality standards.
- *Nonsupport* – Water quality is severely impaired and not capable of supporting the designated use attainment.
- *Not Assessed* – The water quality has not been assessed for any designated uses.

Beaucoup Creek

Based on the *2006 Illinois Integrated Water Quality Report and Section 303(d) List* (2006) Beaucoup Creek is in nonsupport of its aquatic life and primary contact uses. The stream reach (NC-03) at the Illinois 13/127 bridge site (Perry County) is impaired by low dissolved oxygen, sulfates, and total dissolved solids caused by municipal point discharges and surface mining. The stream reach (NC-07) at the Illinois 13/127 bridge site (Jackson County) is impaired by atrazine, iron, low dissolved oxygen, sedimentation/siltation, sulfates, total dissolved solids, total suspended solids, pH, and fecal coliform from crop production, surface mining, natural sources, and unknown sources. The stream is in support of its fish consumption use. The stream's secondary contact and aesthetic quality uses have not been assessed by IEPA.

Because of this degradation to Beaucoup Creek, restoring its quality is crucial in maintaining a healthy environment and ensuring the sustainability of this water for all to use and enjoy. The IEPA prepared a Total Maximum Daily Load (TMDL) for the Beaucoup Creek Watershed in

2004. A TMDL determines the greatest amount of a given pollutant that a water body can receive without violating water quality standards and designated uses. The Beaucoup Creek TMDL sets pollution reduction goals (reduction of phosphorus, sulfates, total dissolved solids, and manganese) that are necessary to improve the water quality of this stream.

Walkers Creek

Walkers Creek is in nonsupport of its aquatic life use. The stream is impaired by alteration in stream side cover, manganese, sulfates, and total dissolved solids caused by stream bank modifications/destabilization, mine tailings, and surface mining. The fish consumption, primary contact, secondary contact, and aesthetic quality uses were not assessed by IEPA. Walkers Creek is a part of the Beaucoup Creek TMDL that was discussed above.

Youngs Creek

Youngs Creek has not been assessed for support levels for any designated uses by the IEPA. Potential causes and sources of impairment, if any exist, were not identified.

Chicken Creek

Chicken Creek also has not been assessed for support levels for any designated uses by the IEPA. Potential causes and sources of impairment, if any exist, were not identified.

Opossum Creek

As with Youngs Creek and Chicken Creek, Opossum Creek has not been assessed for support levels for any designated uses by the IEPA. Potential causes and sources of impairment, if any exist, were not identified.

Unnamed Tributaries of Beaucoup Creek

Neither of the unnamed tributaries of Beaucoup Creek have been assessed by the IEPA. Potential causes and sources of impairment, if any exist, were not identified.

2.7.3 Groundwater Resources

No sole source aquifers, as defined in Section 1424 (e) of the Safe Drinking Water Act, exist in Illinois.

There are no known community water supply wells within 1,000 feet of the project right-of-way. Pinckneyville obtains drinking water from the Pinckneyville Reservoir. Vergennes and Murphysboro obtain drinking water from Kincaid Lake. The Kincaid Reeds Creek Illinois Water Service provides drinking water for Vergennes, Murphysboro, Ava, Oraville, and five other communities in Jackson County.

The nearest community water supplies in Perry County that withdraw groundwater are Cutler and Willisville. The nearest community water supplies in Jackson County that withdraw groundwater are Gorham and Grand Tower. All these communities are miles outside the project corridor.

Aquifers in these two counties are designated by the Illinois Environmental Protection Agency as being in “Full Use Support.” This means that no detections occurred in organic chemical monitoring data and inorganic constituents assessed were at or below background levels for the groundwater source being utilized. No designated groundwater protection areas have been designated by the Illinois Pollution Control Board within or adjacent to the project corridor.

Private drinking water well information for the project area is not complete. However, based on building counts and windshield surveys the number of private drinking water wells in the project corridor is estimated to range between 31 and 58. Any private drinking water wells within the right-of-way limits must be abandoned and properly sealed following the regulations found in the Illinois Water Well Code administered by the Illinois Department of Public Health.

2.8 Floodplains

Flood Insurance Rate Maps, developed by the Federal Emergency Management Agency and the Flood Insurance Administration were reviewed in order to identify base floodplains that are transversed by or adjacent to the study area. According to the Flood Insurance Rate Maps for the project area, the project corridor crosses six floodplains: Beaucoup Creek, Walkers Creek, Youngs Creek, unnamed tributary of Beaucoup Creek north of Pyatts, Chicken Creek and Opossum Creek. There is also a small floodplain in Pinckneyville north of the square that is associated with an unnamed tributary of Beaucoup Creek. The flood zones are located by the main stream crossings in the area. The floodplains are shown on **Exhibit 8**. The Beaucoup Creek is a 100-year floodplain and is the major floodplain within the project area. It is anticipated that transverse encroachments into the 100-year floodplain will occur as part of the proposed project. The dominant natural and beneficial floodplain values in the project area include the natural moderation of floods, water quality maintenance, fish and wildlife resources, agriculture and forestry resources.

2.9 Wetlands

Wetlands in the project area were delineated using the U.S. Army Corps of Engineers’ 1987 Wetland Delineation Manual during field surveys conducted in 2001 and 2002. All potential wetlands in the project area were examined and 350 routine on-site wetland determinations were performed in the project area.

Two hundred forty-nine jurisdictional wetlands, totaling 586 acres, were delineated by the INHS during field surveys conducted for this project in 2001 and 2002. **Exhibit 8** depicts the locations of wetlands in the project area, most of which occur east of Pinckneyville. All of these wetlands are located in the Beaucoup Creek watershed (USGS Hydrologic Unit 7140106). Floodplain forest, wet meadows and ponds are the most common wetland types in the project area, accounting for 284 acres, 94 acres and 51 acres, respectively.

Wetland functions were assessed qualitatively from the field delineations. Specific wetland functions include wildlife habitat, flood storage, floristic quality, presence of threatened or endangered species, and neotropical migrants. These wetland functions are discussed in the following paragraphs.

All wetlands provide habitat for some kind of wildlife. The project area wetlands do provide breeding habitat for resident bird species and neotropical migrants. The wetlands in the project area occur on the floodplain of Beaucoup Creek and are a part of an extensive wetland complex that covers over 5,000 acres of the watershed. Beaucoup Creek has a general south to north orientation and acts as a dispersal corridor for many species of wildlife. Wetlands that are composed of a number of different community types have the potential to provide habitat for a more diverse wetland flora and fauna.

Wetlands have the potential to contain habitat for both federal and state listed species. In the project area the Arkansas sedge (state listed plant species) and the rice rat (state listed mammal species) are known to occur within wetlands adjacent to the project.

In general, wetlands, because of their landscape position, can readily receive floodwaters and provide the greatest flood storage function. This includes wetlands situated in floodplains. Most of the wetlands delineated are located in floodplains or along drainage ways, 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 are assigned a Coefficient of Conservatism (C) that ranges from 0 to 10, with plant species that are intolerant to disturbance receiving high values and those species that tolerate disturbance receiving low values. To arrive at an FQI, a mean C value is calculated by summing the C values for all species present and dividing by the number (N) of species present. This mean C value is then multiplied by the square root of N to obtain the FQI. 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.

Fifty-eight of the 249 delineated wetlands have Floristic Quality Index (FQI) values above 20, indicating a high level of floristic integrity and a low level of disturbance. A majority of these are located in the floodplain along Beaucoup Creek east of Pinckneyville. Fifty-three of these wetlands are considered environmental assets. Wetlands having FQI values that exceed 20 and a mean c value that is greater than 3 can be considered environmental assets. Most of the environmental asset wetlands are designated as floodplain forests and are located along or near Beaucoup Creek and its tributaries throughout the project corridor.

Approximately 131 sites have mid-range FQI values, indicating that they have some level of floristic integrity, but have a moderate level of disturbance.

About 60 sites have low or very low natural quality. Some of these sites have been converted to row crops or are located in heavily-grazed pastures. Most are ponds that have poorly developed vegetation located in former strip mine areas.

A floodplain forest located just south of the Illinois 13/127 bridge over Beaucoup Creek east of the Pinckneyville-Du Quoin Airport is considered a jurisdictional wetland (Site 15). (**See Exhibit 7, Sheet 3 Wet-Mesic Floodplain Forest.**) This forested wetland is approximately 4

acres in size, has a Floristic Quality Index of 32.5 and is considered Grade C (moderately to heavily disturbed) in quality. The canopy is dominated by green ash, honey locust, pin oak and American elm. The state-listed rice rat has been observed in this forest. The breeding bird survey identified 31 individuals representing 16 species of birds. The dominant species were the American robin, indigo bunting, northern cardinal and American goldfinch.

2.10 Special Waste

Preliminary Environmental Site Assessments (ISGS #1309/1309A and ISGS #1309C) of the project corridor were completed on May 20, 2002 and February 15, 2007 by the Illinois State Geological Survey (ISGS).

2.10.1 Hazardous Waste

The USEPA listing of potential, suspected, and known hazardous waste or hazardous substance sites in Illinois (i.e., the Comprehensive Environmental Response Compensation and Liability Information System [CERCLIS] list) has been reviewed to determine whether the proposed project will involve any listed site(s). As a result of this review, it has been determined that one CERCLIS site located within the project corridor is included on the CERCLIS listing as of August 16, 2007. This site, abandoned property currently owned by Perry County Enterprises, LLC and formerly used by the Consolidated Coal Company, is located southwest of Illinois 152. (See Exhibit 4, Sheet 20.)

2.10.2 Non-Hazardous Waste

Preliminary Environmental Site Assessments for sites potentially impacted with regulated substances were completed by the Illinois State Geological Survey on May 20, 2002 and February 15, 2007. These assessments concluded that the project area contains special waste sites in addition to the involvement with the CERCLIS site discussed above. Additional sites contaminated with hazardous waste are not involved. Further investigations will be conducted to determine the risks and liabilities of the involvement.

2.11 Special Lands

2.11.1 Section 4(f) Lands

The project area was examined to determine if there are any publicly-owned park, recreational area, wildlife and waterfowl refuge, or any land from a historic site of national, State, or local significance (Section 4(f) lands). Potential Section 4(f) lands near the project area were evaluated to determine if they warranted Section 4(f) protection. These determinations are summarized below. **Exhibit 4** shows the location of these properties.

Pyramid State Park

Pyramid State Park lies just west of Illinois 13/127 and north of County Highway 4 in Perry County. (See Exhibit 4, Sheets 21 and 22.) This recreation area, which became a park in 1968, consists of heavily forested hills and many lakes and ponds. Land acquisitions over the years

have brought the total overall acreage of the park to 19,701 acres, making it the largest state park in Illinois. Much of the land within the park is reclaimed strip mine land. Pyramid gets its name from a coal mine that once existed there.

Pyramid State Park is administered by the Illinois Department of Natural Resources. Because it is a publicly-owned park and considered a significant resource, it is, by definition, Section 4(f) Land. The property is used primarily for park and recreational activities, including picnicking, hiking, horseback riding, mountain bike riding, fishing, boating, camping and hunting.

The main entrance to the park is from County Highway 4 (FAS 864) on the south. An internal road system runs throughout the park.

Temporary Pinckneyville Soccer Field

A temporary soccer field used by the Perry County Soccer League lies in the project corridor. **(See Exhibit 4, Sheet 22.)** This land is owned by the city of Pinckneyville and is located north of Illinois 13 on the west edge of Pinckneyville. The land lies within the Pinckneyville Tax Increment Finance (TIF) District and is designated commercial. However, due to the lack of current development activities, the property is temporarily being farmed under a tenant lease, with the exception of approximately four acres which is temporarily being used by the Perry County Soccer League for recreational soccer. **(See Appendix B.)**

The city is allowing the soccer league the use of this land until such time that a development plan for the property is approved. The soccer league is aware and accepts that this is only a temporary arrangement. Contacts with the economic development coordinator for the City of Pinckneyville revealed that there currently is no approved development plan for the property. Based on this information, the FHWA has determined that the soccer field on the City's property would not qualify as a Section 4(f) property. **(See Appendix B.)**

Pinckneyville City Park

The Pinckneyville City Park also is located in the project area. **(See Exhibit 4, Sheet 24.)** This facility is owned and maintained by the City of Pinckneyville. Because it is a publicly-owned park and considered a significant resource, it is, by definition, Section 4(f) Land. It is located on the west side of town on Fairground Road, just south of Water Street and adjacent to the fairgrounds. The park includes baseball diamonds and a swimming pool. It is not anticipated that any portion of this park will be affected by the proposed project.

2.11.2 Section 6(f) Lands

There are no lands within the project limits that have Land and Water Conservation (LAWCON) funds involved in their purchase or development.

2.11.3 OSLAD Act Lands

Open Space Lands Acquisition and Development (OSLAD) Act funds were involved in the development of a bituminous concrete walking track at the Pinckneyville City Park. The walking track was completed in the fall of 2003. No portion of this park will be affected by the

proposed project. Therefore, it is not anticipated that the proposed project will involve the use of lands that involved OSLAD funds in their purchase or development.

3.0 PROJECT ALTERNATIVES

3.0 PROJECT ALTERNATIVES

This section briefly describes the alternatives considered for the proposed Illinois Route 13/127 improvement, as well as alternatives for the Pinckneyville-Du Quoin Airport. Reasonable alternatives were evaluated based on their ability to satisfy the purpose and need for the action. Build alternates that did not satisfy the purpose and need for the action or were not practical for engineering, environmental or cost reasons were eliminated from detailed study.

Due to the length of the proposed highway project and the potential for many different combinations of roadway improvement options along its length, the project build alternates have been divided into six rural Project Sections and several Pinckneyville area alternates for ease of analysis and description. The rural Sections are numbered 1 through 6 as shown in **Exhibit 9**. More than one option was analyzed and compared in each rural section. The Pinckneyville area alternates are assigned descriptive names as shown in **Exhibit 10**. The Pinckneyville-Du Quoin Airport lies within rural Project Section 4.

3.1 No-Action Alternative

Under the No-Action Alternative, the proposed improvement would not be constructed and the Pinckneyville-Du Quoin Airport would not be impacted. Only routine maintenance and repairs of the existing facility would be carried out.

The No-Action Alternative would fail to address any of the major components identified in the purpose and need for the project, including system continuity and regional access, existing roadway deficiencies, traffic safety, traffic-flow and capacity deficiencies, and regional economic development.

In terms of system continuity and regional access, the No-Action Alternative would not help to close the gap in the National Highway System (NHS) system of four-lane freeways and expressways between the St. Louis metropolitan area and southern Illinois.

The No-Action Alternative also would not correct existing roadway deficiencies or otherwise address traffic safety concerns. Similarly, the traffic circulation issues in downtown Pinckneyville would not be addressed. Traffic flow in downtown Pinckneyville is a major problem due to the configuration of downtown streets and compounded by inadequate turning radii, on-street parking and confusing traffic patterns. This results in a difficult path for vehicles, especially large trucks, and causes intersections around the downtown square to operate at a low level of service.

Finally, the No-Action Alternative would not address the need for adequate transportation system support for existing and future economic growth in the project area as well as in southern Illinois in general. The No-Action Alternative is not consistent with the Greater Egypt Regional Planning and Development Commission's most current economic development plan, *1992-1993 Overall Economic Development Strategy*, which calls for improving Illinois Route 13 and 127 to four lanes north of Murphysboro to help enhance market access to the St. Louis metropolitan area.

3.2 Build Alternative

The development of this project's alternate alignments resulted from the close coordination and cooperation between the Illinois Department of Transportation and various state and federal agencies, established early in project development. In addition, the project's public involvement program, which included a series of public information meetings; a regional telephone survey of businesses, agencies and other organizations with a regional perspective; a Pinckneyville Area Citizens Advisory Council; and interaction with individuals and small groups served to establish and refine alternates and to further define the scope of the project study.

Under the Build Alternative, Illinois 13/127 would be upgraded to a four-lane facility from the Business Route 13 (Ava Road) intersection north of Murphysboro to just north of Pinckneyville on Illinois 127. All build alternates are similar in that they are intended to address the existing roadway deficiencies, improve traffic safety, help close the gap in the NHS system of four-lane freeways and expressways between the St. Louis metropolitan area and southern Illinois, help alleviate traffic flow and capacity deficiencies in downtown Pinckneyville, and provide needed transportation system support for existing and future economic growth in southern Illinois.

However, there are two important differences that would occur in the areas of Vergennes and Pinckneyville. (1) The through-town alternates in these communities would entail breaks in the expressway design for this project. (2) Traffic flow and capacity problems in Pinckneyville would be alleviated in different ways by through-town alternates versus bypasses. Through-town alternates would reconfigure traffic flow patterns and intersection geometrics. Bypasses would remove much of the through-traffic from the downtown area.

The rural area alternates and the Vergennes and Pinckneyville bypass alternates would be designed to expressway standards, consisting of a four-lane divided highway with a 50' wide median, 10' wide paved shoulders and partial access control. **(See typical section, Exhibit 11.)** A five-lane urban section in Pinckneyville or Vergennes would require a 66' curb to curb width street made up of four travel lanes and a center left-turn lane. **(See typical section, Exhibit 12.)** If a one-way couple through Pinckneyville were constructed, it would require a 36' (min.) curb to curb width street for each leg of the couple. **(See typical section, Exhibit 13.)** In-town urban sections would represent a break in the expressway design for the proposed improvement.

Section 3.4 discusses the special considerations given to the rural area adjacent to the Pinckneyville-Du Quoin Airport.

3.3 Build Alternates Evaluated and Eliminated

The following discussions describe the various rural area and Pinckneyville area alternates that were evaluated and dismissed and the reasons for their dismissals.

3.3.1 Preliminary Rural Area Alternates Eliminated

Several preliminary alignments investigated for the rural area of the project were developed and presented at Public Information Meetings held in October and November of 2001 for public

review and comment. Subsequent to these meetings, some of the alternates were eliminated from further study based on engineering factors, environmental impacts, project costs and/or public comments. **Exhibit 14** shows the location of these eliminated alternates. Reasons for their elimination are discussed below.

Project Section 1 – Widening on the East Side (First Mile Only)

This option within Project Section 1 begins at the intersection of Illinois Route 13/127 and Business Route 13 (Ava Road) just north of Murphysboro and extends north, ending just south of Vergennes. It would add lanes on the east side of the existing pavement. However, this option would encroach on Grange Hall property, located in the northeast quadrant of the Illinois 13/127-Grange Hall Road intersection. Grange Hall is listed on the National Register of Historic Places. While Grange Hall itself would not be taken, anticipated construction limits would come close to the building. Due to this deep encroachment, the first mile of this option was replaced with an option that would center the proposed roadway on the existing pavement and thus would encroach less on the Grange Hall property.

Project Section 2 – Widening on the West Side Option (Through-Town Vergennes)

This option within Project Section 2 begins just south of Vergennes and extends through town, ending just north of Vergennes. It would create a five-lane urban section with all the widening on the west side of the existing pavement. This option would represent a break in expressway standards and speeds. At the time this option was considered it would have taken the only grocery store/service station in Vergennes. The Vergennes Village Board felt that taking this business would not be desirable since there were no other grocery stores or service stations in the vicinity to serve the community. Although this grocery store/service station closed in March, 2006, the Village has been seeking new ownership for this business and still feels that it would not be desirable to take this property. In addition, public concerns were voiced about pedestrian and traffic safety issues associated with running a five-lane roadway through Vergennes. Because of these impacts, this option was eliminated from further consideration.

Project Section 2 – Widening Centered on the Existing Pavement Option (Through-Town Vergennes)

Similar to the one above, this option calls for the creation of a five-lane urban section running through Vergennes but with the improvement centered on the existing pavement. This option also would represent a break in expressway standards and speeds. This option also would heavily impact the grocery store/gas station. The Vergennes Village Board felt that impacting this business would not be desirable since there were no other grocery stores or service stations in the vicinity to serve the community. Although this grocery store/service station closed in March, 2006, the Village has been seeking new ownership for this business and still feels that it would not be desirable to take this property. In addition, public concerns were voiced about pedestrian and traffic safety issues associated with running a five-lane roadway through Vergennes. Therefore, it too was eliminated from further consideration.

Project Section 4 – Cross-Country Relocation Option

This option within Project Section 4 begins south of Buffalo Curve near the Jackson/Perry County line and extends west and north around the curve at the Pinckneyville-Du Quoin Airport, ending at the Century Mineral Resources railroad crossing just south of Illinois 152. The Cross-

Country Relocation option would create a four-lane section of roadway on new alignment between the beginning point south of Buffalo Curve and the Pinckneyville-Du Quoin Airport. Although this preliminary option would avoid the airport property, it would be on completely new alignment for nearly three miles, making construction costs and impacts on natural resources much greater than the other alternates considered, where only southbound lanes would be added to the existing highway. Because of these factors, this option was eliminated from further consideration.

Project Section 4 – Airport Reverse Curve Realignment Option

This option calls for a new reverse curve alignment to take the place of the existing Airport Curve, just south of the Pinckneyville-Du Quoin Airport. While this option would allow for flatter, higher speed curves and would avoid the airport property, it would create two curves where one exists today. It was eliminated from further consideration due to its added costs and added complexity in the highway alignment, with it attendant safety concerns.

Project Sections 4 and 5 – Widening on the East Side

This option calls for all the widening between Buffalo Curve, north of Vergennes, and Pine Cone Road, north of Illinois 152, to be done on the east side of the existing pavement. This option would heavily impact the Pinckneyville-Du Quoin Airport. It would take all of the airport's surface access parking and every building at the airport. Thus, this option was eliminated from further consideration.

3.3.2 Rural Alternates Dismissed after Further Study

After receiving public comments on the preliminary alignments presented at the Public Information Meetings held in October and November of 2001, adjustments were made to the alternates remaining and further study was undertaken. The remaining alternates were studied to a greater degree and presented at Public Information Meetings held in September of 2002 for public comment and review. Subsequent to these meetings, some of these remaining alternates were dismissed from further consideration based on engineering factors, environmental impacts, project costs and/or public comments. **Exhibit 15** shows the location of these dismissed alternates. Reasons for dismissing particular alternates are discussed below.

Project Section 1 – Widening on the East Side Option

This option within Project Section 1 starts at the intersection of Illinois Route 13/127 and Business Route 13 (Ava Road) just north of Murphysboro and extends north, ending just south of Vergennes. It would add new lanes along the east side of the existing pavement, with the exception of the first mile, where the improvement would be centered on the existing pavement with a concrete median barrier. While this option is less expensive than the west side option, it would require more additional right of way and would have greater impacts on the large Farm Service commercial complex, Lightfoot Farms commercial greenhouse and orchards, and would still encroach on the historic Grange Hall property, all located on the east side of the existing roadway. Because of these factors and the availability of a prudent and feasible avoidance alternative for the historic Grange Hall property, this option was eliminated from further consideration.

Project Section 2 - Widening on the East Side Option (Through-Town Vergennes)

This option within Project Section 2 begins just south of Vergennes and extends through town, ending just north of Vergennes. It would create a five-lane urban section with all of the widening being done on the east side of the existing pavement. This option would represent a break in expressway standards and speeds. It also would take an antique store, as well as five homes. Public concerns were voiced about pedestrian and traffic safety issues associated with running a five-lane roadway through Vergennes. For these reasons, this option was dropped from further consideration.

Project Section 3 – Widening on the East Side Option

This option within Project Section 3 starts at the north end of Vergennes and extends north to the south end of Buffalo Curve. It would add new lanes on the east side of the existing pavement. This option takes six residences, four more than the other option under consideration for this section. For this reason, this option was eliminated from further consideration.

Project Section 4 – Realignment from Beaucoup Creek through Airport Curve Option

This option within Project Section 4 begins at the south end of Buffalo Curve and extends west and north around the curve at the Pinckneyville-Du Quoin Airport, ending at the Century Mineral Resources railroad crossing just south of Illinois 152. It would flatten Buffalo Curve and then create a new four-lane rural section on new alignment from Beaucoup Creek through a new Airport Curve. This option would avoid the airport property, but would cost nearly \$4 million more to build than the other option under consideration, would require more additional right of way and would impact more floodplain and wetland areas and farmland. Because of these factors, this option was eliminated from further consideration.

Project Section 5 – Widening on the West Side Using Existing Intersection Option

This option within Project Section 5 starts at the Century Mineral Resources railroad crossing just south of Illinois 152 and extends north to Pine Cone Road, just north of Illinois 152. It would add new lanes on the west side of the existing pavement and realign a portion of Illinois 152 to improve the geometry of the Illinois 13/127–Illinois 152 intersection. This option would have engineering, operational and safety concerns. Even with reworking the existing intersection configuration, there would still be concerns regarding sight distance for all approaches, as well as curve/superelevation problems within the intersection. For these reasons, this option was eliminated from further consideration.

Project Section 6 – Widening on the East Side Option

This option within Project Section 6 begins at Pine Cone Road, just north of Illinois 152, and extends north to 1500' south of Cudgetown Road. It would add new lanes on the east side of the existing pavement. With respect to comparisons of alternates within Project Section 6, this option would involve a greater number of residential displacements. This option would also impact a privately-owned, recreational, strip mine lake south of Cudgetown Road on the east side of the existing Illinois 13/127. In addition, the East Side Option for Project Section 5, south of this location, had previously been eliminated as indicated in Section 3.3.1 of this document. Because the other option in this area (widening on the west side) would tie into Project Section 5 on the west side of the existing pavement and would utilize the old railroad bed to the north, also

on the west side of the existing pavement, the West Side Option was judged to be superior to the one on the east. Thus, the East Side Option was eliminated from further consideration.

3.3.3 Preliminary Pinckneyville Area Alternates Eliminated

Several preliminary alignments investigated for the Pinckneyville area of the project were developed and presented at Public Information Meetings held in October and November of 2001 for public review and comment. Subsequent to these meetings, some of the alternates were eliminated from further study based on engineering factors, environmental impacts, project costs and/or public comments. **Exhibit 16** shows the location of these eliminated alternates. Reasons for their elimination are discussed below.

5-Lane Mill Street

This alternate would create a five-lane urban section through Pinckneyville. It would begin 1500' south of Cudgetown Road as a rural expressway, following existing Illinois Route 13/127 until it approaches the southern limits of Pinckneyville, at which point the roadway would narrow to a four-lane, concrete median barrier section. It would enter Pinckneyville by passing over the Canadian National Railroad (previously Illinois Central Railroad) on a single structure. Once in Pinckneyville, new lanes would transition to a five-lane section along Mill Street with all the proposed improvement centered on the existing pavement. A bridge, similar to that spanning the Canadian National Railroad, would be constructed to span the Union Pacific Railroad on the north side of town. The proposed improvement would transition into existing Illinois 127 north of Opossum Creek.

This alternate would represent a break in expressway standards. It also would create adverse effects on neighborhoods, including impacts on three churches and several residences along Mill Street. A petition was submitted by members of the Pinckneyville Community and the Pinckneyville United Methodist Church stating their support for the project, but asking that routes other than Mill Street be considered because of safety concerns associated with the elementary school, one block east of Mill Street, as well as a pre-school program held in the United Methodist Church. Also, this alternate would not be located along Pinckneyville's Main Street and Walnut Street commercial corridor. As a result of these socio-economic impacts and strong public resistance, this alternate was dropped from further study.

First Street/Gordon Street-Main Street Couple

This alternate would create a one-way couple within Pinckneyville. It would begin 1500' south of Cudgetown Road as a rural expressway, following existing Illinois Route 13/127 until it approaches the southern limits of Pinckneyville, at which point the northbound lanes would separate from the southbound lanes and extend to the north on new alignment for a short distance until joining with First Street. North of Illinois 154 the northbound lanes would jog slightly west from First Street to Gordon Street. This new alignment would pass over the Canadian National Railroad and Union Pacific Railroad on single structures.

The southbound lanes would follow Main Street through Pinckneyville. Two new structures would be constructed to pass over the Canadian National Railroad and the Union Pacific

Railroad. Main and Gordon streets would then combine and extend north, joining with existing Illinois 127 near Opossum Creek.

This alternate would represent a break in expressway standards. The use of Main Street would require removing the courthouse and adversely impacting the square in downtown Pinckneyville. The town square has been determined potentially eligible for inclusion on the National Register of Historic Places as a historic district. This alternate also would impact three churches, a private elementary school and several residences and split several neighborhoods. In addition, the northbound leg of this alternate would not be located in close proximity to Pinckneyville's Main Street and Walnut Street commercial corridor. As a result of these socio-economic and historical resource impacts, this alternate was dropped from further consideration.

Main Street-Mill Street Couple

This alternate would create a one-way couple within Pinckneyville. It would begin 1500' south of Cudgetown Road as a rural expressway, following existing Illinois Route 13/127 until it approaches the southern limits of Pinckneyville, at which point the southbound lanes would separate from the northbound lanes and extend to the northwest on new alignment for a short distance until joining with Mill Street. This new alignment would pass over the Canadian National Railroad and the Union Pacific Railroad on new single structures. The northbound lanes would follow Main Street through Pinckneyville. Two new structures would be constructed to pass over the Canadian National Railroad and the Union Pacific Railroad. Main and Mill streets would continue north and join with existing Illinois 127 near Opossum Creek.

This alternate would represent a break in expressway standards. The use of Main Street would require removing the courthouse and adversely impacting the square in downtown Pinckneyville. The town square has been determined potentially eligible for inclusion on the National Register of Historic Places as a historic district. It also would entail adverse effects on neighborhoods, including impacts on three churches and several residences along Mill Street. A petition was submitted by members of the Pinckneyville Community and the Pinckneyville United Methodist Church stating their support for the project, but asking that routes other than Mill Street be considered because of safety concerns associated with the elementary school one block east of Mill Street as well as a pre-school program held in the United Methodist Church. In addition, the Mill Street leg of this alternate would not be located along Pinckneyville's Main Street and Walnut Street commercial corridor. As a result of these socio-economic and historical resource impacts, this alternate was dropped from further consideration.

Main Street-Walnut Street Couple

This alternate would create a one-way couple within Pinckneyville. It would begin 1500' south of Cudgetown Road as a rural expressway, following existing Illinois Route 13/127 until it approaches the southern limits of Pinckneyville, at which point the southbound lanes would separate from the northbound lanes and extend to the northwest on new alignment for a short distance until joining with Walnut Street. This new alignment would pass over the Canadian National Railroad and the Union Pacific Railroad on new single structures. The northbound lanes would follow Main Street through Pinckneyville. Main and Walnut streets would then combine and join with existing Illinois 127 near Opossum Creek.

This alternate would represent a break in expressway standards. The use of Main Street would require removing the courthouse and adversely impacting the square in downtown Pinckneyville. The town square has been determined potentially eligible for inclusion on the National Register of Historic Places as a historic district. There also are engineering concerns associated with this alternate. The new Main Street/Illinois 154 and Walnut Street/Illinois 154 intersections would be too close together to operate at an acceptable level of service. As a result of the historical resources impacts and the engineering design problems, this alternate was dropped from further study.

Main Street/Locust Street-Walnut Street Couple

This alternate would create a one-way couple within Pinckneyville. It would begin 1500' south of Cudgetown Road as a rural expressway, following existing Illinois Route 13/127 until it approaches the southern limits of Pinckneyville, at which point the southbound lanes would separate from the northbound lanes and extend to the northwest on new alignment for a short distance until joining with Walnut Street. This new alignment would pass over the Canadian National Railroad and the Union Pacific Railroad on single structures. The northbound lanes would follow a combination of Main Street and Locust Street through Pinckneyville. Several blocks south of the square, the northbound lanes would jog slightly east from Main Street to join Locust Street, thus avoiding the square and courthouse. Once north of the square, the northbound lanes would jog back to Main Street. Two new structures would be constructed to pass over the Canadian Railroad and the Union Pacific Railroad. Main and Walnut streets would then combine and join with existing Illinois 127 near Opossum Creek.

This alternate would represent a break in expressway standards. While this alternate would not impact the square, it would impact many of the businesses along Main Street and so was dropped from further study. To avoid these impacts, this alternate was modified to utilize only Locust and Walnut Streets. This modification – the Locust Street-Walnut Street couple – is discussed in Section 3.3.4.

3.3.4 Pinckneyville Area Alternates Dismissed after Further Study

After receiving public comments on the preliminary alignments presented at the Public Information Meetings held in October and November of 2001, adjustments were made to the alternates remaining and further study was undertaken. The remaining alternates were studied to a greater degree and presented at Public Information Meetings held in September of 2002 for public comment and review and discussed at length with the Pinckneyville Area Citizens Advisory Council in a series of several meetings held between May and August of 2004. Subsequent to these meetings, some of these remaining alternates were eliminated from further study based on engineering factors, environmental impacts, project costs and/or public comments. **Exhibit 17** shows the location of these dismissed alternates. Reasons for dismissing particular alternates are discussed below.

Locust Street-Walnut Street Couple

The Locust Street-Walnut Street Couple would create a four-lane couple within Pinckneyville. It would begin 1500' south of Cudgetown Road as a rural expressway, following the old railroad bed alignment until it approaches the southern limits of Pinckneyville, at which point the median

would narrow to a four-lane section. It would enter Pinckneyville by passing over the Canadian National Railroad on a single structure. Once inside Pinckneyville, the new alignment would utilize Walnut Street for both north and southbound traffic for a short distance. The northbound lanes would then separate from the southbound lanes and extend to the northeast to join with Locust Street. Walnut Street to the north would be used for southbound traffic only. Locust Street would be used to carry northbound traffic until it joins with Walnut Street on the north side of Pinckneyville. The Couple would span the Union Pacific Railroad on dual structures. Walnut and Locust streets would then combine as a rural expressway and extend north, joining with existing Illinois 127 north of Opossum Creek.

This through-town alternate would represent a break in expressway standards. It also would require a minor amount (approximately 1.4 acres) of publicly-owned park land from Pyramid State Park (and adjacent to the 3.7 acres of park land that will be required from rural Project Section 6) and would impact the bridge over Opossum Creek, which is on the state's historic bridge list.

While the Locust Street-Walnut Street Couple was given serious consideration for continued project development, it was met with considerable resistance by residents of Pinckneyville and other regional opponents. Specific objections to the Couple included: a) loss of on-street parking, b) adverse effects on hospital and emergency services access, c) residential and commercial displacements, d) pedestrian and vehicular safety, e) noise, f) loss of small-town ambiance, g) adverse effects on downtown historic district and structures, and h) overall impacts on quality of life. These objections led to a Pinckneyville City Council Resolution opposing this alternate. **(See Appendix A.)** Ultimately a citizens advisory council was formed to provide comments and recommendations on the alternatives studied. **(See Section 5.2.8.)** Because of these factors, the alternate was dropped from further consideration.

5-Lane Main Street

This alternate would create a five-lane urban section through Pinckneyville. It would begin 1500' south of Cudgetown Road as a rural expressway, following the old railroad bed alignment until it approaches the southern limits of Pinckneyville, at which point the roadway would narrow to a four-lane, concrete median barrier section. It would then enter Pinckneyville by passing over the Canadian National Railroad on a single structure. Once within Pinckneyville, new lanes would transition to a five-lane section along Main Street with all the proposed improvement being done on the west side of the existing pavement. The Perry County Courthouse, at the intersection of Illinois 13/127 and Illinois 154, would be removed in order to extend the roadway north along Illinois 127. A bridge, similar to that spanning the Canadian National Railroad, would be constructed to span the Union Pacific Railroad on the north side of town. The proposed improvement would transition into existing Illinois 127 in the area of Opossum Creek.

This through-town alternate would represent a break in expressway standards. It also would require a minor amount (approximately 1.4 acres) of publicly-owned park land from Pyramid State Park (and adjacent to the 3.7 acres of park land that will be required from rural Project Section 6) and would impact the bridge over Opossum Creek, which is on the state's historic bridge list. In addition, the use of a Main Street alignment would require removing the

courthouse and adversely impacting the square in downtown Pinckneyville. The town square has been determined potentially eligible for inclusion on the National Register of Historic Places as a historic district. As a result of the impact on the courthouse and historic district, this alternate was dropped from further consideration.

Far East Bypass

The Far East Bypass would create a new four-lane bypass of Pinckneyville. It would begin 1500' south of Cudgetown Road and extend northeasterly, bridging over Beaucoup Creek and the Canadian National Railroad, and then curve back to the north, bridging Illinois Route 154, with a parclo interchange, about 1.5 miles east of downtown Pinckneyville. The alignment would then cross the Union Pacific Railroad and turn to the northwest, crossing Beaucoup Creek for the second time, and then turn north joining with Illinois 127 near the Oak Grove Church and Cemetery north of Pinckneyville.

This bypass alternate is the longest, tying into Illinois 127 three miles north of the Locust Street-Walnut Street Couple's ending point. It would encroach in several floodplain areas, limiting Pinckneyville's opportunities for economic development and would impact several high-quality plant communities and wetlands and take a considerable amount of farm land. Because of these impacts and limitations, this alternate was dismissed from further consideration.

Near East Bypass

The Near East Bypass would create a new four-lane bypass of Pinckneyville. It would begin 1500' south of Cudgetown Road, then follow the old railroad bed alignment until it approaches the southern limits of Pinckneyville where it would veer northeasterly, bridging over the Canadian National Railroad and then curve back to the north, intersecting Illinois Route 154 between the Pinckneyville Jr. High School and Beaucoup Creek. The alignment would then bridge the Union Pacific Railroad and swing back to the west and north, crossing Beaucoup Creek twice and then joining with Illinois 127 north of Opossum Creek.

This alternate would require a minor amount (approximately 1.4 acres) of publicly-owned park land from Pyramid State Park (and adjacent to the 3.7 acres of park land that will be required from rural Project Section 6) and would impact the bridge over Opossum Creek, which is on the state's historic bridge list. In addition, this alternate would longitudinally encroach on the Beaucoup Creek floodplain, limiting Pinckneyville's opportunities for economic development. In addition, it would impact several high-quality plant communities, wetlands and floodplain forests. As result of this alternate's close proximity to the school and Beaucoup Creek, there would be no room for an Illinois 154 interchange if one should be needed in the future. Because of these impacts and limitations, this alternate was dismissed from further consideration.

West Bypass

The West Bypass would create a new four-lane bypass of Pinckneyville. It would begin 1500' south of Cudgetown Road and then follow the old railroad bed alignment until it approaches the southern limits of Pinckneyville where it would veer to the west, skirt the Perry County Fairgrounds, then curve back to the north, bridging, first, Union Pacific Railroad and Illinois Route 154 and then Illinois 13 and the Canadian National Railroad about one mile west of

downtown Pinckneyville. The alignment would then swing back to the east and north joining with Illinois 127 about one mile north of Opossum Creek.

This alternate would require a minor amount ((approximately 1.4 acres) of publicly-owned park land from Pyramid State Park (and adjacent to the 3.7 acres of park land that will be required from rural Project Section 6). In addition, bridging the railroad tracks and state routes on the west would create a 2500' long land bridge with open spans over the tracks and marked state routes. Connectivity to this land bridge is difficult due to poor sight distances created by the crest vertical curves over the railroad tracks. It was dismissed from further consideration due to connectivity and operational problems. Engineering studies determined that space limitations and existing highway and railroad geometry restricted the design of efficient connections that would be needed to provide good access to Pinckneyville, create efficient traffic movements between roadways, and allow for the creation of a future interchange, if needed. Because of these design limitations, this alternate would not meet the purpose and need of the project and was eliminated from further consideration.

3.4 Pinckneyville-Du Quoin Airport Alternatives

The following describes the alternatives considered to address the potential effects the proposed Illinois 13/127 project would have on the Pinckneyville-Du Quoin Airport. IDOT will construct the required Airport improvements as a part of the highway project. The Federal Aviation Administration has agreed to be a Cooperating Agency on this project. **(See Appendix B.)**

3.4.1 Airfield Alternatives Evaluated and Eliminated

The following discussions describe the various airfield-related alternatives that were evaluated and dismissed and the reasons for their dismissals. The Pinckneyville-Du Quoin Airport is shown on Exhibit 4, Sheets 18 and 19.

Alternative A (Airfield) – No Action to Protect the Airfield

Under Alternative A (for the airfield), no action would be taken by the Pinckneyville-Du Quoin Airport or IDOT to protect the approach to Runway 36 from an Illinois 13/127 encroachment or to ensure/maintain compatible land use at the Airport. As a result, Alternative A (for the airfield) would violate FAA Part 77 Standards for objects affecting navigable airspace and therefore, was, eliminated from further consideration.

Alternative B (Airfield) – Adjust Illinois 13/127 Alignment

This option would adjust the proposed Illinois 13/127 alignment in Project Section 4 such that the highway would no longer represent a violation of FAA Part 77 Standards for objects affecting navigable airspace. Three such roadway alignments were considered and dismissed in under Sections 3.3.1 and 3.3.2 of this document.

Alternative C (Airfield) – Relocate Runway 36 Threshold

This alternative would cause the Runway 36 threshold and approach surface to be relocated 205 feet north and away from Illinois 13/127 and a new turnaround taxiway to be constructed. This relocation would ensure that all parts of the roadway clear the runway approach surface by at

least 15 vertical feet, as mandated by FAA. The threshold relocation, however, would reduce the usable length of the runway from 4,000 feet to 3,795 feet for both takeoff and landing of aircraft and would not maintain the same level of service that the Airport currently offers. This reduction in runway length would significantly diminish the functionality of aircraft operations at the Airport. As a result, this alternative was eliminated from further consideration.

3.4.2 Terminal Area Alternatives Evaluated and Eliminated

The following discussions describe the various terminal area alternatives that were evaluated and dismissed and the reasons for their dismissals.

Alternative A (Terminal Area) – No Action to Change the Airport Entrance

Under Alternative A (for the terminal area), the entrance to the Airport would not be closed, moved or modified in any way. As a result, the Airport access road intersection with the proposed Illinois 13/127 would not meet IDOT policies for control of access and entrance spacing, allowing it to operate in a substandard condition. Considering the increased traffic levels and vehicle speeds anticipated with the proposed highway project, this alternative would elevate the risk of serious accidents. As a result, Alternative A (for the terminal area) was eliminated from consideration because it would not address existing deficiencies nor would it address traffic safety.

Alternative B (Terminal Area) – Adjust Illinois 13/127 Alignment

This option would adjust the proposed Illinois 13/127 alignment in Project Section 4 such that the highway would no longer represent a violation of IDOT highway standards. No practical alternate alignment exists that would allow the existing Airport entrance to meet IDOT entrance spacing and access-control policies. Since the spacing of entrances would not change with a change in the roadway alignment and any shift in the alignment to the west to provide adequate access control distance for the Airport entrance would have the following adverse effects: (a) introduce two additional curves in the proposed highway's alignment in order to tie back into existing Illinois 13/127 to the north (an adverse safety consideration), (b) increase the impacts to the large farmstead west of the airport, (c) increase the amount of farmland needed to construct the proposed expressway and (d) increase the cost of the roadway in this area, since the existing pavement would not be used and would need to be removed. Therefore, this alternative was eliminated from further consideration.

Alternative C (Terminal Area) – Modify Existing Airport Entrance

This alternative would modify the configuration of the existing Airport entrance and service roads to comply with IDOT access restriction policies for the proposed Illinois 13/127 alignment. **(See Pinckneyville-Du Quoin Airport Exhibit B.)** Currently there is no access control associated with the Airport entrance. Three interior service roads combine to form the Airport's intersection with Illinois 13/127. The reconfigured Airport entrance would limit Airport access within 300 feet of the proposed highway alignment, thus requiring the relocation of the interior service roads. As a result, this alternative would split the Airport terminal area into halves, causing operational impacts between the large maintenance hangars and the Fixed Based Operator offices, and would require the relocation of several airport buildings, including relocating the hangars away from the large available apron area that offers flexibility in the

operation of aircraft into the hangers. Therefore, this alternative was eliminated from further consideration.

Alternative D (Terminal Area) – Create New Near-North Airport Entrance and Access Road

This alternative would construct a new Airport entrance directly north of the existing Airport terminal area. (See **Pinckneyville-Du Quoin Airport Exhibit B.**) The existing entrance would be closed and removed. The new entrance would serve as a private drive for the properties to the north and as a secondary roadway for Airport vehicular traffic. This configuration, however, would allow the commingling of vehicles accessing private property and those accessing a public facility. In addition, the entrance could not be configured to allow the Airport roadway to be the primary route for Airport vehicles. Airport service roads also would need to be constructed to connect the existing vehicle parking areas and to provide access to airfield areas. This alternative also would require the conveyance of additional Airport property to IDOT for right-of-way purposes and the relocations of the entrances to the remaining private residences, impacting both the value and functionality of these properties. As a result, this alternative was eliminated from further consideration.

Alternative E (Terminal Area) – Create a New Far-North Airport Entrance and Access Road

This alternative would construct a new Airport entrance approximately ¼ mile north of the existing entrance. (See **Pinckneyville-Du Quoin Airport Exhibit B.**) The new entrance would replace the existing entrance which would be closed and removed. The new entrance would be associated with a 1/2-mile long relocation of County Highway 18 (CH18) along the west side of Illinois 13/127, such that the Airport entrance and CH 18 would create a new intersection with Illinois 13/127 and the existing CH 18 intersection would be closed. A new access road would be constructed to join the existing terminal area with the new Airport entrance. Conveyance of additional Airport property to IDOT for right-of-way purposes would be necessary. Although this alternative addresses Airport needs, the long CH 18 relocation would lead to additional costs and severely impact the farmstead and related farmland along the west side of Illinois 13/127. For these reasons, this alternative was eliminated from further consideration.

Alternative F (Terminal Area) – Create a New South Airport Entrance and Access Road

This alternative would construct a new Airport entrance with Illinois 13/127 on a curve south of the Airport terminal area across from a proposed relocation of CH 18. (See **Pinckneyville-Du Quoin Airport Exhibit B.**) The existing entrance would be closed and removed. The new entrance roadway would be located largely on Airport property with the exception of a small portion of IDOT property needed for construction. No building relocations or private property acquisitions would be required for this alternative. However, with the placement of the Airport entrance on a curve, this alternative introduces operational safety concerns for vehicles accessing the Airport and for through-traffic on the proposed four-lane highway. As a result of these safety concerns, this alternative was eliminated from consideration.

3.5 Preferred Alternative

The Preferred Alternative meets the purpose and need for improvements in the Illinois 13/127 project area by addressing system continuity and regional access, existing roadway deficiencies, traffic safety, traffic-flow and capacity deficiencies, and regional economic development. All

other alternatives either result in unacceptable engineering, socio-economic and/or environmental effects or – in the case of the No-Action Alternative and the West Bypass of Pinckneyville – do not satisfy the purpose and need for the project.

3.5.1 Rural Area

The following discussions describe the Preferred Alternative within each Project Section of the rural area and the reasons that the option is preferred. **Exhibit 18** shows the location of each section of the Preferred Alternative.

Project Section 1 – Widening on the West Side Option

The preferred option in Project Section 1 begins at the intersection of Illinois 13/127 and Business Route 13 (Ava Road) just north of Murphysboro and extends north, ending just south of Vergennes. It would begin by adding new lanes on the west side of and contiguous to the existing pavement and then widen to a full 50' median prior to the intersection with Grange Hall Road. It would be 4.99 miles long and require 116 acres of additional right of way. This option would take 13 houses and one business and affect another business, Lightfoot Farms commercial greenhouse and orchards, but, would not encroach on the historic Grange Hall property and compared the other options, would reduce the taking across the front of the large Farm Service commercial complex from three acres to one acre and thus, reducing the adverse effect on large truck circulation within the complex. Some special construction treatment will be necessary adjacent to Grange Hall, in the form of a side road realignment and special ditches along the main line to avoid this historic property. While the initial improvement at Illinois Route 4 is proposed to be an intersection with main-line turn lanes, right of way for a diamond interchange will be acquired for future expansion. This practice is consistent with IDOT's approach to land acquisition in District 9. This additional right of way is three miles north of Grange Hall and will not affect that property.

Project Section 2 – Bypass of Vergennes Option

The preferred option in Project Section 2 begins just south of Vergennes and extends north on new alignment until rejoining the existing alignment just north of Vergennes. It would create a new four-lane bypass of Vergennes about 1600' east of and parallel to the existing roadway. This option is 2.77 miles long, would require 106 acres of additional right of way and would take one house and would affect one business, Vergennes Implement. It would eliminate the need for through-traffic to enter Vergennes and would maintain expressway standards. This Bypass Option would offer the following benefits. It would maintain expressway standards and speeds; it would improve traffic and pedestrian safety in Vergennes; and it can be constructed without affecting main-line traffic or the urban environment in Vergennes. The Village Trustees also have voiced their support for a bypass of Vergennes. While the initial improvement at County Highway 8 (Elkville Road) is proposed to be an intersection with main-line turn lanes, right of way for a diamond interchange will be acquired for future expansion. This practice is consistent with IDOT's approach to land acquisition in District 9.

Project Section 3 – Widening on the West Side Option

The preferred option in Project Section 3 begins at the north end of Vergennes and extends north to the south end of Buffalo Curve. It would add new lanes on the west side of the existing

pavement. This option would be 2.36 miles long, require 34 acres of additional right of way and would take two houses and no businesses. This option was chosen because of the continuity of alignment along the west side of existing Illinois 13/127 and because it would take four fewer residences than any other alternate considered for this section.

Project Section 4 – Widening on the South/West Side Option

The preferred option in Project Section 4 begins at the south end of Buffalo Curve and extends west, bridging Beaucoup Creek, and north around the curve at the Pinckneyville-Du Quoin Airport, ending at the Century Mineral Resources railroad crossing just south of Illinois 152. It would add new lanes on the south/west side of the existing pavement and flatten the existing Buffalo and Airport Curves. This option would be 3.94 miles long, require 61 acres of additional right of way and would take six houses (including the two associated with the Airport entrance) and no businesses. It would have few socio-economic and environmental impacts. This option would encroach into the airport property, requiring a 205-foot northerly extension of the north-south runway.

Project Section 5 – Widening on the West Side with an Interchange at Illinois 152

The preferred option in Project Section 5 begins at the Century Mineral Resources railroad crossing, just south of Illinois 152, adding lanes along the west side of Illinois 13/127 and extending north to Pine Cone Road, just north of Illinois 152. This option is 1.69 miles long and requires 53 acres of additional right of way and would take one house and one business. It would provide a diamond interchange at Illinois Route 152 to alleviate operational and safety deficiencies at the existing intersection. The new interchange would be safer than the existing intersection in that it would eliminate sight distance and curve/superelevation problems at the existing intersection. It also would provide better and more convenient access to Pyramid State Park, to the west, and to the City of Du Quoin and the large commercial landfill to the east.

Project Section 6 – Widening on the West Side Option

The preferred option in Project Section 6 begins at Pine Cone Road, just north of Illinois 152, and extends north to a point 1500' south of Cudgetown Road. It would add new lanes on the west side of the existing pavement. This option would be 0.96 miles long and require 21 acres of additional right of way. It would not impact any houses or businesses and would avoid encroachment into a privately-owned, recreational, strip mine lake south of Cudgetown Road on the east side of existing Illinois 13/127. The entire length of this option would utilize the old railroad bed, adding to its cost, but avoiding farmland. It would use minor amounts (approximately 3.7 acres) of publicly-owned park land from Pyramid State Park, (and adjacent to the 1.4 acres of park land that will be required by the Preferred Alternative in the Pinckneyville Area).

3.5.2 Pinckneyville Area

The following discussion describes the Preferred Alternative in the Pinckneyville area and the reasons that the option is preferred. **Exhibit 19** shows the location of the preferred option.

Modified West Bypass

The Modified West Bypass would create a new four-lane bypass of Pinckneyville. It would begin at a point 1500' south of Cudgetown Road and then follow the old railroad bed alignment until it approaches the south limits of Pinckneyville where it would veer to the west, skirt the Perry County Fairgrounds, then curve back to the north bridging, first, the Union Pacific Railroad and Illinois Route 154 and then Illinois 13 and the Canadian National Railroad about 1.2 miles west of downtown Pinckneyville. It would then swing back to the east and north joining with Illinois 127 about 1.4 miles north of Opossum Creek. This alignment would include a parclo interchange at Illinois 154.

This alternate is 6.61 miles long and requires 268 acres of additional right of way. It would take 30 houses and one business, the Manor at Mason Woods, a supportive-living facility. This alternate would require approximately 1.4 acres of land from Pyramid State Park, (and adjacent to the 3.7 acres of park land discussed in rural Project Section 6). **(See Section 3.5.1 Project Section 6.)**

The Modified West Bypass would relieve the pressure on the existing street network in downtown Pinckneyville, since through-traffic from the north and south, including its large truck traffic, would utilize the new alignment. Since it is on the outskirts of town, there would be relatively few noise impacts and no impacts on properties on or eligible for the National Register of Historic Places. The entire bypass alignment involves no threatened or endangered species or high-quality plant communities and has only minor involvement with wetlands and floodplains. The proposed alignment would not impact the existing bridge over Opossum Creek which is on the state's historic bridge list. It also provides the city the opportunity to develop and attract additional businesses to the Pinckneyville area, including the city-owned property on the west side of the city. A modification of the West Bypass was recommended by the Pinckneyville Area Citizens Advisory Council, a result of the project's Context Sensitive Solutions approach to public involvement. **(See Section 5.2.8.)**

For these reasons, the Modified West Bypass was chosen as the Preferred Alternative in the Pinckneyville area.

3.5.3 Pinckneyville-Du Quoin Airport

The following discussion describes the Preferred Alternative in the Pinckneyville-Du Quoin Airport area for both the airfield and the terminal areas and the reasons that these options were preferred. Pinckneyville-Du Quoin Airport **Exhibit C** depicts the recommended airfield and terminal area alternatives.

3.5.3.1 Airfield

Alternative D (Airfield) – Relocate Runways 18 and 36 Thresholds

Like Alternative C, this alternative would comply with FAA criteria by relocating the Runway 36 threshold and approach surface 205 feet north. In addition, this alternative proposes constructing 205 feet of full strength runway pavement on the north end of the runway to prevent loss of runway length and to mitigate the negative effects to aviation activity that would be

associated with a reduction in runway length. This runway shift would require the Airport to acquire approximately 30 additional acres of farmland to protect the relocated Runway 18 approach surface. As a result, this alternative is recommended as the preferred airfield alternative as it is the only alternative that meets the requirements of the FAA, IDOT and the Airport. **(See Pinckneyville-Du Quoin Airport Exhibit C.)**

3.5.3.2 Terminal Area

Alternative G (Terminal Area) – Create a New Far-North Entrance and Access Road (Variation)

This alternative is similar to Alternative E, in that it would construct a new Airport entrance approximately $\frac{1}{4}$ mile north of the existing entrance. **(See Pinckneyville-Du Quoin Airport Exhibit C.)** The new entrance would replace the existing entrance which would be closed and removed. Unlike Alternative E, however, the new access road connecting the existing terminal area with the new Airport entrance would not require additional Airport property to be transferred to IDOT for right-of-way purposes. In addition, this alternative would not create a long relocation of CH 18, but rather tie CH 18 to Illinois 13/127 near its present intersection. It would create a service drive to serve the farmstead located opposite the existing Airport entrance. This alternative allows fewer buildings to be eliminated in the Airport terminal area and causes easy admittance to the terminal area, as well. Access is easily granted to the far north side of the airport. Also, the private property west of the existing airport entrance has separate access, which creates less interference with airport traffic. As a result, this alternative is recommended as the preferred terminal area alternative.

4.0 ENVIRONMENTAL CONSEQUENCES

4.0 ENVIRONMENTAL CONSEQUENCES

This Section presents the results of the environmental analyses for the proposed action. The proposed action includes the roadway improvements and the improvements to the Pinckneyville-Du Quoin Airport. **Exhibit 20** identifies the sensitive cultural, natural, physical, and socio-economic resources, and special waste sites in the study area. **Table 12** summarizes the effects each build alternate studied in detail would have on these resources and sites. Resources and waste sites potentially impacted by the Preferred Alternative 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 Characteristics and Cohesion

The proposed project is located in Jackson County and Perry County, Illinois. The Preferred Alternative would bypass the Village of Vergennes and the City of Pinckneyville. The characteristics of these two communities are described in detail in Section 2.1.

Existing Illinois Route 13/127 creates a physical barrier to internal movements of vehicles and pedestrians within the communities of Vergennes and Pinckneyville. Because the Preferred Alternative would bypass both Vergennes and Pinckneyville, community cohesion would be enhanced within those communities, since the north-south through-traffic, including most large trucks, would be removed from the downtown areas with no loss of houses and businesses or change in local access. The Vergennes Bypass is shown on **Exhibit 20, Sheets 10 to 13**. The Pinckneyville Bypass is shown on **Exhibit 20, Sheets 28 to 33**.

The Preferred Alternative would impact two residential neighborhoods by creating displacements and adverse travel. These community cohesion effects would be limited to the residential area along Illinois 13 immediately east of the proposed alignment at the west edge of Pinckneyville (**See Exhibit 20, Sheet 31**) and the residential area along interconnected South Lake Road and North Lake Road on the west side of Illinois 127 north of Pinckneyville (**See Exhibit 20, Sheet 33**), as discussed below.

Access changes to the residential area at the west edge of Pinckneyville would be minor. Although the Illinois Street connection to Illinois 13 would be closed, the network of streets in this area would minimize adverse travel to any residence. Any adverse travel would be measured in feet rather than miles. Six displacements are anticipated in this area, all at the northwest corner of the residential area.

Four residences along the western portion of South Lake Road and access to the City of Pinckneyville's reservoir spillway area would require between 0.4 and 0.6 miles of adverse travel to reach the current nearest access to Illinois 127. Three displacements are anticipated near the middle of South Lake Road. Six additional displacements are anticipated near the current North Lake Road/Illinois 127 intersection.

Table 12

Costs and Impacts - All Alternates ⁽¹⁾

Section	Alternate Alignments South of Pinckneyville	Design		Project Costs			Total Cost (\$ million)	Land-Use Conversions				Potential Displacements			Noise (2) Impacted Receptors (number)	Surface Hydrology		Wetland Impacts (acres)	State-Listed Threatened & Endangered Species (3)	Potential Special Waste Sites (number)	Cultural Resources		Section 4f Involvement
		Length (miles)	Additional Right of Way (acres)	Construction (\$ million)	Land Acquisition (\$ million)	Utilities (\$ million)		Cropland (acres)	Pasture (acres)	Woodland (acres)	Residential & Commercial (acres)	Residential	Commercial	Farm Structures		Stream Crossings (number)	Floodplain Impacts (acres)				Archaeological Resources (Sensitivity)	Historic Structures (number)	
1E.	New Lanes along centerline or on East Side of existing pavement - Business Route 13 (Ava Road) to South End of Vergennes OR	5.17	74	10.8	1.6	0.6	13.0	46	12	3	10	10	1	4	0	1	9	4.4	Arkansas sedge	0	Low	0	No
1W.	New Lanes on West Side of existing pavement - Business Route 13 (Ava Road) to South End of Vergennes with future interchange at Rte. 4	4.99	116*	29.5	2.8	3.7	36.0	106	2	0	4	13	2	1	0	1	10	4.4	Arkansas sedge	1	Low	0	No
2A.	5-Lane Section through Vergennes widening on east side - South end of Vergennes to North end of Vergennes OR	2.84	25	6.1	0.7	0.1	6.9	19	1	1	3	4	1	0	2	1	0	<1	---	3	Low	0	No
2B.	Bypass of Vergennes - South end of Vergennes to North end of Vergennes with future interchange at Elkville Road	2.77	106*	14.0	1.8	0.1	15.9	98	0	2	6	1	1	0	2	2	0	0	---	1	Moderate	0	No
3E.	New Lanes on East Side of existing pavement- North end of Vergennes to South end of Buffalo Curve OR	2.26	30	5.4	0.6	0.1	6.1	21	2	0	4	6	1	5	0	1	0	0	---	0	Moderate	0	No
3W.	New Lanes on West Side of existing pavement - North end of Vergennes to South end of Buffalo Curve	2.36	34	13.0	1.2	1.5	15.7	33	1	0	0	2	0	1	0	1	0	0	---	0	Moderate	0	No
4A.	Flattening Buffalo Curve and new alignment from Beaucoup Creek to Airport Curve - South end of Buffalo Curve to Old Mining RR Crossing OR	4.00	64	14.7	0.5	0.1	15.3	46	3	11	3	3	0	1	0	2	48	6.0	rice rat	0	Moderate	0	No
4B.	Highway Alternate New lanes on south/west and flattening existing Airport & Buffalo Curves - South end of Buffalo Curve to Old Mining RR Crossing	3.94	61	29.0	1.6	1.2	31.8	46	2	1	6	6	0	5	0	2	30	5.9	rice rat	0	Moderate	0	No
	Airport Extend Runway to the north and create a New Far-North Entrance and access road (Variation)	---	30	1.0	0.1	0.0	1.1	30	0	0	0	0	0	0	0	0	0	0	---	0	Low	0	No
5A.	New Lanes on West Side of existing pavement with an Interchange at IL 152 - Old Mining RR Crossing to Pine Cone Rd. (North of IL 152) OR	1.69	53	14.4	1.8	0.7	16.9	51	2	0	0	1	1	1	0	1	3	0	---	1	Low	0	No
5B.	New Lanes on West Side of existing pavement using existing intersection- Old Mining RR Crossing to Pine Cone Rd. (North of IL 152)	1.69	30	2.9	0.1	0.5	3.5	25	2	0	2	0	0	0	0	1	3	0	---	1	Low	0	No
6E.	New Lanes on East Side of existing pavement - Pine Cone Rd. (North of IL 152) to Cudgetown Road OR	0.97	18	2.1	0.2	0.0	2.3	9	3	6	0	1	0	0	0	0	0	0	---	0	Low	0	No
6W.	New Lanes on West Side of existing pavement - Pine Cone Rd. (North of IL 152) to Cudgetown Road	0.96	21	7.7	0.5	0.5	8.7	15	3	3	0	0	0	0	0	0	0	0	---	0	Low	0	Yes
Alternate Alignments Pinckneyville Area																							
Far East Bypass of Pinckneyville (Interchange at IL 154) - Cudgetown Rd to Oak Grove Church/Cemetery OR		7.21	375	51.5	3.0	0.1	54.6	164	59	115	22	17	1	0	2	2	199	16.9	Tuberclod Orchid	0	High	0	No
Near East Bypass of Pinckneyville - Cudgetown Road to 2500' North of Opossum Creek OR		4.85	145	32.8	1.4	0.2	34.4	65	20	45	5	6	0	9	3	3	69	6.0	---	0	Low	1	Yes
Locust/Walnut Couple - Cudgetown Road to Opossum Creek OR		3.99	94	18.0	5.1	1.5	24.6	33	12	24	25	65	9	9	13	2	10	<1	---	11	Low	1	Yes
5-Lane Main Street widening on West Side of existing pavement - Cudgetown Road to Opossum Creek OR		3.99	76	17.0	8.5	0.8	26.3	31	9	17	19	42	22	9	3	2	3	<1	---	16	Low	5	Yes
West Bypass of Pinckneyville - Cudgetown Road to 6300' north of Opossum Creek OR		5.62	159	32.7	5.2	0.2	38.1	61	15	36	45	31	1	15	9	2	8	2.2	---	2	Moderate	0	Yes
Modified West Bypass of Pinckneyville (Interchange at IL 154) - Cudgetown Road to north of Opossum Creek		6.61	268	66.8	14.3	1.0	82.1	154	0	84	24	30	1	4	8	2	11	5.6	---	0	Moderate	0	Yes
Preferred Alternative Totals		23.32	689	175.4	24.1	8.7	208.2	533	10	90	40	53	5	12	10	9	54	15.9	Arkansas sedge rice rat	3	Low/Moderate	0	Yes

Notes: (1) 2007 data for Preferred Alternative, 2003 data for all other options considered.

(2) A "receptor" refers to a residence, school, church, commercial building or other structure where humans could be affected by noise.

A negatively impacted receptor is (a) any residential structure where predicted noise levels approach or exceed the noise abatement criterion threshold of 67 dBA Leq (a measurement of noise in decibels over a period of time) or (b) any commercial structure where predicted noise levels approach or exceed the noise abatement criterion threshold of 72 dBA Leq, or (c) or when the predicted noise levels are substantially higher (i.e. are more than 14 decibels greater) than the existing noise levels.

(3) No federally-listed threatened or endangered species were observed during field studies of the project area. Historic records show that an Indiana bat was collected west of the project corridor in 1988. State-listed species shown were sighted in this general area.

* Includes approximately 30 additional acres for potential future interchange.

= Preferred AlternativeIllinois 13/127 (FAP)
Murphysboro to Pinckneyville
Jackson and Perry Counties

4.1.2 Title VI and Environmental Justice

Demographic data on the involved municipalities and counties is included in Section 2.1.1. (See **Table 8.**)

It is the policy of the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) to actively ensure nondiscrimination under Title VI of the *1964 Civil Rights Act* in federally funded activities. Under Title VI and related statutes, each federal agency is required to ensure that no person is excluded from participation in, 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.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that each federal agency shall, to the greatest extent allowed by law, administer and implement its programs, policies, and activities that affect human health or the environment so as to identify and avoid “disproportionately high and adverse” effects on minority and low-income populations.

An analysis of the 2000 Census tract data and several field surveys indicate that fairly high percentages of minorities (approximately 20% of the population) are found in Murphysboro and Vergennes. This is due to the fact that Murphysboro Illinois Youth Center is included in the Vergennes Census tract. The second highest poverty level in the project area (24%) is located in Murphysboro. Neither of these communities will be directly affected by the project.

One census tract in Pinckneyville indicated a high rate of minority residents (50%). This tract includes the Pinckneyville Correctional Center. This same census tract in the Pinckneyville area had a relatively high median family income (\$41,161). The areas to the south of Pinckneyville (Census tract Du Quoin #4) had the highest poverty level (26.6%).

Approximately 6% of the total residential displacements will affect low-income families. No minority families are expected to be displaced by the project. Other community impacts (access changes, noise level increases, loss of public facilities and services) will not disproportionately adversely affect low-income or minority populations.

4.1.3 Public Facilities and Services

Public and Community Buildings and Institutions

Several public buildings and community facilities are located in the vicinity of the project. **Table 11** lists all the community facilities located within the project corridor while **Exhibit 4**, Existing Land Use, depicts their locations.

Right of way would be required from the Jehovahs Witness Murphysboro Congregation property at the beginning of the project. (See **Exhibit 20, Sheet 2.**) Neither the church building nor the parking lot would be impacted. However, access to this facility would be reconfigured. The facility would no longer have direct access to Illinois 13/127. Instead, a service drive would be constructed to provide access from Business Route 13.

No other public buildings or community facilities would be impacted by the Preferred Alternative.

Emergency and Health Services

Police, fire and ambulance services are provided to residents via the appropriate city or county officials depending on their location within the project limits. Vergennes and Pinckneyville operate their own police and fire protection services while Perry County and Jackson 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 would occur as a result of this project. The project would improve access and response times for emergency vehicles utilizing the improved roadway once construction is complete.

Police, fire and emergency response times may be temporarily affected during construction. Coordination with agencies providing emergency services would begin prior to construction and continue throughout the construction period.

Bicycle/Pedestrian/Transit Facilities

These facilities are described in detail in Section 2.1.4. No environmental consequences are expected as a result of the proposed improvement. The proposed facility will have 10' wide paved shoulders throughout the project limits, providing sufficient clearance to safely accommodate bicyclists. The Preferred Alternative would not impact any sidewalks along the entire project and no sidewalks are included in the proposed improvement.

4.1.4 Pinckneyville-Du Quoin Airport

The proposed project would require alterations to the Pinckneyville-Du Quoin Airport entrance and runway. **(See Pinckneyville-Du Quoin Airport Exhibit A, Airport Impacts.)** No major negative effects to the Airport are anticipated. Correspondence regarding design, plan approvals, agreements and impacts to the airport are located in **Appendix B**.

In conjunction with this Environmental Assessment, the Pinckneyville-Du Quoin Airport has updated their Airport Layout Plan (ALP) and Exhibit 'A' Property Line Map to reflect planned improvements at the Airport during the next 20 years, including the changes necessary to accommodate the recommended alternative for the adjustment of Illinois Route 13/127. These documents have been conditionally approved by the Illinois Department of Transportation-Division of Aeronautics and the Federal Aviation Administration (FAA) and are included in their entirety within **Appendix B** to identify the entire 20-year development plan for the Airport. For instance, the Airport has plans to extend the existing runway to a length of 5,000 feet, in the future, if demand warrants, however, this development is not being considered in the current environmental action and will require a separate environmental review by FAA in the future. Airport modifications required for the current proposed adjustment of Illinois Route 13/127 are included within the ALP and Airport Property Line Map, however, **Pinckneyville-Du Quoin Airport Exhibit C** more clearly depicts the Airport improvements proposed under this environmental action.

Entrance

In order to maintain appropriate spacing of intersections along Illinois 13/127 and to provide adequate access control at the airport entrance, it is necessary to move the entrance to the Airport approximately ¼ mile to the north. This move requires some adjustments in the internal operations of the Airport and some revisions in the airport's layout plan. **(See Airport Layout Plan, Appendix B.)**

Runway

Flattening the horizontal curve of Illinois 13/127 at the south end of the airport requires taking six acres of Airport property and encroaching approximately 200 feet farther into the south approach surface to its runway.

Social/Economic

The Pinckneyville-Du Quoin Airport and Illinois 13/127 both play an important role in the regional economy. The availability of enhanced transportation facilities is important to retaining and encouraging industrial and commercial development. The recommended developments will maintain the safety of the Airport and proposed highway, generate temporary employment for those in construction-related fields, stimulate sales for local goods and services which relate to airfield improvements and generally keep the Airport as a transportation hub in the community. As a result, only minor adverse impacts are anticipated.

Relocations (Business, Residential and Agricultural) and Land Acquisition

Airport modifications include the acquisition of 30 acres of farmland. The property is necessary to construct the improvements and protect the critical approach area to Runway 18. In addition, approximately six acres of Airport land will be transferred to IDOT for construction of the proposed roadway. As these lands are being transferred from one public agency to another, no negative impact is expected.

Land Use

The Pinckneyville-Du Quoin Airport exists in a rural environment dominated by agriculture. **Exhibit 4, Sheets 18 & 19**, depict existing land uses surrounding the Airport. Only a few homes exist near the Airport. No part of the project should be incompatible with area residences, as Airport activity levels will remain largely unchanged. The acquisition of farmland as well as the land transfer from the Airport to IDOT are required for the proposed Airport development and will help maintain further Airport-compatible land use.

Agriculture

The Airport proposes to acquire approximately 30 acres of farmland, currently owned by a single owner. The majority of this area would not need to be converted to non-agricultural use with this project. The acquisition of this land will not create any uneconomical or land-locked remnants. Fee acquisition has been minimized to the extent possible in order to preserve farmland and be in accordance with the Federal Aviation Administration (FAA) and IDOT requirements. Those requirements/recommendations include ownership and protection of the Runway Protection Zones (RPZ), approach surfaces and land-use compatibility. Wherever possible the Airport will lease land for agricultural use. As a result, only minor impacts are anticipated.

Cultural Resources

A cultural resource survey of architectural, historical and archaeological resources was completed by IDOT for the entire project area. No archaeological, architectural or historic sites were identified within the proposed project right of way associated with the Airport. The results of the surveys were coordinated with the Illinois Historic Preservation Agency. A sign-off letter from the Deputy State Historic Preservation Officer is included in **Appendix B, Coordination**. If any archaeological sites or artifacts are unearthed during construction, all work will immediately stop and the Illinois Historic Preservation Agency will be notified. No impacts are anticipated.

Air Quality

Perry County is defined as an area “in attainment” for all criteria pollutants. As the proposed Airport improvements are not anticipated to generate an increase in air or ground-related traffic, no increase in vehicle emissions are anticipated. During the grading phase of the construction project, temporary increases in airborne dust levels are anticipated. Construction contracts will require dust control by watering or other measures in areas where there is extensive movement of machinery.

Noise

No major aviation or airport-related vehicle noise impacts are expected from this project that proposes to construct a new Airport access road on the north part of the Airport and also shift Runway 18/36 205 feet to the north. Increased noise pollution around airports is directly dependent upon changes in aircraft mix and operational counts. The Airport is not anticipated to experience an increase in aircraft operation levels or change in fleet mix as a result of the proposed project. No major shifts in aircraft or vehicle operating patterns will be caused by the project. No new larger or noisier aircraft would be anticipated to begin using the Airport as a result of the project. Therefore, aircraft noise levels are expected to remain largely unchanged. A formal noise analysis was not conducted for this project because the existing and anticipated aircraft operational levels fall far below the FAA threshold of 80,000 propellered or 700 annual adjusted jet operations. No noise-sensitive areas will be affected by this shift in traffic patterns.

Energy

The airport-related construction will require standard paving materials that can be purchased locally. The project should have no adverse effect on either the production or consumption of energy and other natural resources, as the amount of energy to be consumed by the aircraft should not be unreasonable.

Natural Resources

The area surrounding the Airport is primarily agricultural with some urban development. Nearby area natural resources are depicted in **Exhibit 7, Sheet 3**. Characteristic animals that inhabit or forage the cultivated fields in the area include birds, small mammals, deer and snakes. Multiple biological surveys were completed for the entire project area and submitted to IDNR and the U.S. Fish and Wildlife Service. Their response letters are included in **Appendix B, Coordination**. The proposed initiatives could displace some species, however, it appears there would be no major impact since there is considerable similar habitat in the vicinity of the project.

Threatened and Endangered Species

The biological surveys identified no known threatened or endangered species or their habitats within the proposed project right of way associated with the Airport.

Water Resources & Water Quality

The Airport is located within the drainage area of an unnamed west branch of the Beaucoup Creek. However, there are no continuous flowing watercourses on the Airport. **Exhibit 7, Sheet 3**, depicts Beaucoup Creek in relation to the Airport. During construction, some erosion may take place and temporarily increase silt flow into streams leading to Beaucoup Creek, diminishing water clarity. These impacts would be temporary in nature and are not expected to alter the existing aquatic communities. Long-term impacts to surface and ground water resources are not anticipated. Construction procedures to minimize erosion, such as seeding all disturbed areas as soon as possible, will be enacted. The Airport will request a National Pollution Discharge Elimination Systems (NPDES) permit for construction and will utilize best management practices to minimize impacts to water quality and comply with Section 401 of the Clean Water Act. The improvements are not expected to induce a need for additional potable water or treatment and disposal of waste.

While Beaucoup Creek is listed on the Nationwide Rivers Inventory, which is a register of river segments that potentially qualify as national wild, scenic or recreational river areas, it is not designated as part of the Wild and Scenic Rivers System.

Floodplains

The Airport is located within the drainage area of an unnamed branch of Beaucoup Creek. The water from the unnamed branch flows east for approximately $\frac{3}{4}$ mile into Beaucoup Creek then south before finally reaching the Big Muddy River. The Airport is surrounded by areas within the 100-year flood zone for Beaucoup Creek, except on its north property boundary. **Exhibit 8, Sheet 3**, depicts the limits of the floodplain of Beaucoup Creek in relation to the Airport. The southern and middle portions of the Airport are within the 100-year floodplain. The action proposed in the project would relocate existing airfield pavement out of the floodplain. No detrimental floodplain impacts are expected.

Wetlands

According to wetland surveys conducted in 2001 and 2002 by the Illinois Natural History Survey, no wetlands exist within the Airport property boundaries. **Exhibit 8, Sheet 3**, shows the nearest identified wetland area to be well outside the Airport boundaries. Therefore, no impact to wetlands is anticipated to occur as a result of the Airport improvements.

Special Waste

Hazardous Waste

The Preliminary Environmental Site Assessments identified no known hazardous waste sites within the area of the Airport.

Non-Hazardous Waste

No spills or releases have been reported to the Office of the State Fire Marshall, The Illinois Emergency Management Agency or the Illinois Environmental Protection Agency at this Airport. Consequently, soil contamination that may have resulted from fuel transfers would be expected to result in de minimus quantities. If minor spillage or an unreported release occurred, the location of the fuel storage tanks at this site further reduces the probability of construction workers encountering contaminated soil while working on the Airport runway extension.

Solid wastes resulting from construction and expanded operations will be hauled in trucks to an Illinois Environmental Protection Agency licensed landfill. Private contractors will transport most of the construction wastes to a landfill as required, while those materials conducive to use in landscaping will be collected and reused. Generally, a minimum of solid waste will result from the airport construction. Solid wastes from construction could involve scrap building materials, debris and similar wastes that can be accepted as existing landfills. Post-construction wastes are not anticipated to increase greatly above existing levels as a result of the proposed project. No major impacts are anticipated.

Special Lands

There are no Section 4(f), Section 6(f) or OSLAD Act lands in the area of the Airport.

Light Emissions

Some new airfield lighting will be required with the new pavement on the north end of the Airport to replace the lights removed with the runway pavement on the south end. The 205 feet of medium-intensity runway lighting that will extend north from the existing lighting is not expected to have any major impacts in this rural setting.

The construction of the proposed north Airport access road will not require street lighting, thus no visual impacts are expected in the immediate vicinity of the airport. Should any negative impacts resulting from either the runway or the access road lighting be identified, mitigation measures would be enacted per the U.S. Department of Transportation Federal Aviation Administration's Nation Policy Order 1050.1E.

Construction Impacts

Construction activities will cause specific impacts resulting solely from, and limited exclusively to, the construction period. Construction impacts are distinct in that they are temporary in nature, and their degree of adversity generally diminishes as work concludes, as noted in the Federal Aviation Administration's Circular 150/5370-10A, *Standards for Specifying Construction of Airports*, Item 156-3.2 Schedule. Prior to the start of construction, the contractor shall submit schedules for accomplishment of temporary and permanent erosion control work, as are applicable for clearing and grubbing; construction; paving; and structures at watercourses. The contractor shall also submit a proposed method of erosion and dust control on haul roads and borrow pits and a plan for disposal of water materials. Work shall not be started until the erosion control schedules and methods of operation for the applicable construction have been accepted by the engineer. The various environmental factors affected by construction activities are evaluated below.

Noise

The major acoustic impact will result from construction vehicles on site and material haul vehicles driving on local roads and streets. Construction vehicles will sound similar to farm implements presently used in the sparsely populated local area. Haul vehicles will sound similar to truck traffic. No blasting will be necessary. This will be temporary in nature.

Air

Dust resulting from earth moving, grading and construction activities will take place. Proper engineering measures will limit the impact on the Airport to a minimum, with no noticeable effects beyond the airport property. As contained in Advisory Circular 150/5370-10A, *Standards For Specifying Construction of Airports*, several methods of controlling dust and other air pollutants include: exposing the minimum area of erodible earth; applying temporary mulch with or without seeding; using water sprinkler trucks; using covered haul trucks; using dust palliative or penetration asphalt on haul roads; and using plastic sheet coverings. Any open burning will comply with State standards. This will be temporary in nature.

Water

During construction, some amount of erosion may occur but will be minimal. Engineering design measures will ensure no perceivable derogation of the existing drainage system or the water therein. To offset any potential degradation, an erosion and sediment control program, including the possible use of silt fences, silt traps, retention basins and/or interim soil stabilization will be developed during the design phase of the project. This will be temporary in nature.

No major impacts are anticipated due to construction.

4.1.5 Changes in Travel Patterns

Overall, the proposed project would not change travel patterns in a major way. With the exception of bypasses of Vergennes and Pinckneyville, the proposed improvement would follow the alignment of the existing pavement, upgrading the roadway from two to four lanes.

Travel patterns in the rural area south of Pinckneyville would remain largely unchanged, except at Vergennes, where a bypass east of the village is proposed. **(See Exhibit 20, Sheets 10 to 13.)** Ten roads will be closed in the rural area. **(See Table 13.)** Exhibit 21 shows the location of each closure and the network of local roads available for continuity of access to Illinois 13/127.

In the Pinckneyville area, existing vehicular traffic, including through-traffic, must travel through Pinckneyville, navigating around the town square. With the development of a bypass of Pinckneyville, most through-traffic from the north and south, including large trucks, will no longer be required to enter the city to connect with other major roadways in the area. This will help reduce traffic congestion around the square along Illinois Routes 13, 154 and 127.

Under the No-Action Alternative, the 2030 Average Daily Traffic (ADT) entering the area of the square from Illinois Routes 127 and 13 (north and south) is projected to be 11,470. With the Preferred Alternative in place, the projected ADT would be 1,830. The percentage of trucks

would be 9.4% from the north and 7.9% from the south for the No-Action Alternative and 2.5% and 3.3%, respectively, with the Preferred Alternative in place.

Table 13 Road Closures			
Road Name	Closure Location	Continuity of Access	Comments
Parrish Road	Rt. Sta. 2740	Bethel Road to IL 13/127	Connection to IL 13/127 closed but existing Parrish Road remains intact
Existing IL 13/127 through Vergennes	Sta. 2796 and Sta. 2925	Elkville Road to Vergennes Bypass (IL 13/127)	Vergennes Bypass closes both ends of direct route through the village
Weil Road/ Lichliter Road Connection	Lt. & Rt. Sta. 2828	Parrish Road to Elkville Road to Vergennes Bypass (IL 13/127)	Connection between Lichliter Road and Weil Road closed. No access for either to Vergennes Bypass
Doerr Road	Rt. Sta. 48 + 30 +/- (Elkville Road)	Cherry Avenue to existing IL 13/127 to Elkville Road	---
Bigham Road	Lt. Sta. 3032	Bigham Road to Dowell Road or Davis Road to IL 13/127	---
Sawmill/Plum Road	Lt. Sta. 3125	Plum (Zoller) Road to Dowell Road or Davis Road to IL 13/127	---
Palm Tree Road	Rt. Sta. 3168	Shady Oak Road to IL 152 to IL 13/127	---
Shady Oak Road	Rt. Sta. 3239	IL 152 to IL 13/127	---
Pine Cone Road	Lt. Sta. 700 (IL 152)	Pine Cone Road north & west to IL 13/127	---
Old IL Rte. 13/127	Lt. Sta. 3330	Old IL 13/127 back to IL 13/127/152	---
Ballpark Road/ Tiger Road	Rt. Sta. 3568	Local road system in area; e.g., Ballpark Road to Fairgrounds Road to Tiger Road Relocation	Connection between Ballpark Road and Tiger Road closed. Tiger Road relocated.
Illinois Street	South side of IL 13, west of Pinckneyville, 1900' northwest of IL 13/154 Wye	Internal street system in the area; e.g., Iowa and Missouri Streets to IL 13	Connection between Illinois Street and IL 13 closed.
South Lake Road	Lt. & Rt. Sta. 3695	South Lake Road to North Lake Road to IL 127	No access to Modified West Bypass

The east-west 2030 ADT entering the area of the square on Illinois 154 would be reduced from 16,060 for the No-Action Alternative to 11,200 with the Preferred Alternative in place. The percentage of trucks would be reduced from 7.4% (west-bound) and 8.3% (east-bound) for the No-Action Alternative to 7.7% and 7.8%, respectively, with the Preferred Alternative in place.

Three roads in the Pinckneyville area will be closed, Ballpark Road at its intersection with Tiger Road, Illinois Street at its intersection with Illinois 13 and South Lake Road approximately 1,300 feet west of its intersection with existing Illinois 127.

4.1.6 Relocations (Business, Residential and Agricultural) and Right-of-Way Acquisition

Business Relocations

Five businesses would be directly affected by the proposed improvement, each a different type of business. (See Table 14.) Four of the affected businesses are located in the rural portion of the project. A supportive-living facility is located in Pinckneyville. (See Exhibit 20, Sheets 3, 5, 12, 23 and 31.)

Table 14 Relocated Businesses				
Business Name (Location)	Type of Business	Number of Employees	Minority Owned	Impact
Sill Brothers (Lt. Sta. 2555)	Repair Shop	2	No	Acquisition of entire property
Lightfoot Farms (Rt. Sta. 2625)	Greenhouse and orchard	5 full-time and 4-6 seasonal	No	Acquisition of a 1.5 acres of the property, displacement of two buildings and reconfiguration of access to business from Finney Road (South)
Vergennes Implement (Lt. Sta. 2885)	Farm Implement Dealer	16 full-time and 2 part-time	No	Acquisition of 4.3 acres of the property, displacement of five buildings and 3 bins and reconfiguration of access to business from Elkhville Road
Egyptian Electric Cooperative (Lt. Sta. 3278)	Power Sub-Station	N/A	No	Acquisition of entire property
Manor at Mason Woods (Lt. Sta. 3629)	Supportive-Living Facility	22 full-time	No	Acquisition of entire property

Of the five impacted businesses, three would be unable to continue their business at the same location. These three businesses are: Sill Brothers, Egyptian Electric Cooperative and Manor at Mason Woods. Only the services provided by the Manor at Mason Woods are considered unique. It is the only supportive-living facility in the project area.

The two remaining businesses, Lightfoot Farms and Vergennes Implement, have sufficient space to adjust their operations and should retain their primary buildings. Both are expected to continue operations at their current locations.

There is sufficient land zoned commercial within the project area that could be used to relocate the displaced businesses. While there is sufficient land available, there may not be enough existing structures in the same general area to accommodate all of the businesses. In particular, there are no facilities in the Pinckneyville area that can provide the long-term care needed by the 40 patients in the 40-unit supportive-living facility called the Manor at Mason Woods, which has an extensive waiting list of persons desiring to live there. IDOT intends to relocate the residents of the supportive-living facility as soon as funding to construct the project becomes available. Negotiations will be undertaken with the facility's owner to provide a new facility prior to moving the residents. The supportive-living facility residents will not be housed in temporary facilities.

All relocations and property acquisition would be conducted under the provisions of the *Uniform Relocation Assistance and Real Property Acquisitions Policies of 1970*, as amended, and the *IDOT Land Acquisition Procedures Manual*.

Residential Relocations

The proposed improvement would impact 50 residential properties, displacing 53 dwelling units, which includes 12 farm homes, 1 duplex, and 39 single family residences. **(See Exhibit 20.)** **Table 15** shows the estimated range of market value of the properties taken as well as the estimated available housing in the area.

Ample housing is locally available within most price ranges. There may be some difficulty in finding comparably priced housing in the \$10,000 to \$19,999 price range and the \$100,000 to \$129,999 price range. It is IDOT's policy to purchase housing that is of equal or greater value than the property being acquired. The general housing demand in the Pinckneyville area is relatively stable. While the amount of available housing stock was inadequate for some specific price ranges at the time of the survey, additional housing may be available at the time relocations might occur. Contempri Homes, a builder of modular homes in Pinckneyville, specializes in home construction that covers the lower price range categories potentially displaced by this proposed project.

All relocations and property acquisition would be conducted under the provisions of the *Uniform Relocation Assistance and Real Property Acquisitions Policies of 1970*, as amended, and the *IDOT Land Acquisition Procedures Manual*. If comparable housing is unavailable at the time of displacement, relocation payments based on Last Resort Housing may be necessary.

Table 15 Properties with Displaced Residences		
Market Value Range	Number of Residential Properties*	Estimated Available Housing**
\$10,000 - \$19,999	6	4
\$20,000 - \$29,999	1	4
\$30,000 - \$39,999	2	8
\$40,000 - \$49,999	3	10
\$50,000 - \$59,999	6	7
\$60,000 - \$69,999	1	4
\$70,000 - \$79,999	3	4
\$80,000 - \$89,999	1	3
\$90,000 - \$99,999	1	4
\$100,000 - \$109,999	10	3
\$110,000 - \$129,999	6	1
\$130,000 - \$159,999	4	8
\$160,000 and over	6	7
Total	50	67

* These numbers do not include the 40 displacements at Manor at Mason Woods assisted lifestyle community for senior adults.

** This estimate is based on area housing available in August 2007.

Agricultural Relocations

The proposed improvement would affect 12 farm structures, other than farm homes (discussed above). Several different types of farm structures would be impacted, including barns, silos and sheds. **(See Exhibit 20.)**

Right-of-Way Acquisition

While right-of-way acquisition is required throughout this project, the amount of private property required has been minimized, in part, by using the existing highway and its right of way. Part of the project also would utilize an inactive mining railroad. While this mining railroad property must be purchased, it is an inactive facility that can be used for upgrading existing Illinois 13/127 to four lanes. The entire project would require approximately 699 additional acres of right of way. Most of this additional right of way is in the form of agricultural land. Temporary construction easements also are necessary for grading, driveway reconstruction, and site restoration. Right of way required for the Preferred Alternative is shown on **Exhibit 20**.

4.1.7 Economics

Business Impacts

The businesses within the project area range from light industry, commercial, retail and service-based. See Section 4.1.6, Relocations, for a detailed description of the businesses to be relocated by the proposed improvement. Displaced businesses are anticipated to stay in the area because they are locally-owned. The total number of persons employed full-time at these displaced businesses is approximately 45 with an additional six to eight part-time and seasonal employees.

In addition to the businesses that may need relocating, there are other businesses which would incur impacts other than relocation. These impacts include minor property takings and access reconfiguration. Five of these additional impacted businesses are located in the rural portion of the project, while the other is located within Pinckneyville. **Table 16** lists these businesses and describes the impact(s) to their properties. **Exhibit 20** shows their locations.

Table 16 Impacted Businesses		
Name of Business	Type of Business	Impact
Burkey Construction	Construction Company	Reconfiguration of access to business from Ava Road and loss of 0.8 acres of the property
Southern FS, Inc. – Murphysboro Location (south of Vergennes)	Farm Service Center	Reconfiguration of access to business from Finney Road (North) and loss of 2.3 acres of the property
Midland Vanities	Warehouse for kitchen and bathroom vanities	Reconfiguration of access to business from Elkhville Road and loss of 0.6 acres of the property
Sawmill (east of Pinckneyville-Du Quoin Airport)	Sawmill	Reconfiguration of access to business from Green Market Road and loss of 1.6 acres of the property
Perry County Enterprises, LLC (formerly Consolidated Coal Company)	Inactive Mining facility	Reconfiguration of access to business from IL 13/127 and loss of 3.6 acres of the property
Barr Trucking	Trucking	Reconfiguration of access to business from IL 154 and loss of 1.0 acres of the property

Burkey Construction, located on Illinois 13/127 near the beginning of the project, just south of Grange Hall Road, would lose a small portion of its property along the eastern edge. Access to the business would be reconfigured and a service drive would be provided from Ava Road.

The Murphysboro location of Southern FS Inc., located south of Vergennes on Illinois 13/127, would lose a small portion of land along the western edge of its property. Access to the business

also would be reconfigured and provided from Finney Road (North). The buildings would not be impacted.

The antique store in Vergennes may experience a loss of business if the bypass of Vergennes is constructed. This business may serve some through-traffic customers who make impulse purchases. Currently there would be no immediate impact on the gas station/grocery in Vergennes, since it closed in 2006. However, if it were to re-open, it also might experience a loss of business if the bypass of Vergennes is constructed. Other businesses in Vergennes, such as Doerr Auction and Realty, are not expected to experience a loss of business because they are not dependent on through-traffic for business.

The existing access to Midland Vanities, located on the north side of Elkhville Road in Vergennes, would be closed and access to the business would be reconfigured. A service drive would be provided from Elkhville Road, approximately 500 feet west of the existing entrance. The building itself would not be impacted, although a small portion of the property would be taken along its frontage. This facility does not serve customers directly. It warehouses kitchen and bathroom vanities and ships them directly to commercial distributors. Consequently, reconfiguring access should not adversely affect business.

The sawmill, located on Illinois 13/127 just east of the Pinckneyville-Du Quoin Airport and Beaucoup Creek, would lose a small portion of land along the southern edge of its property. Access to the business would be reconfigured and a service drive provided along the north side of Illinois 13/127 from Green Market Road west to the sawmill. The sawmill complex itself would not be impacted.

Perry County Enterprises, LLC (formerly Consolidated Coal Company), an inactive mining facility located on Illinois 13/127 just south of Illinois 152, would lose a small portion of land along the eastern edge of its property. Access to the business would be reconfigured and a service drive provided from Illinois 13/127, approximately 2,100 feet south of the existing entrance. The building would not be impacted.

Barr Trucking, located west of Pinckneyville on Illinois 154, opposite the proposed Parco interchange, would lose a small portion of land along the northern edge of its property. Access to the business also would be reconfigured. A service drive would be provided from Illinois 154, approximately 1,000 feet west of the existing entrance. The buildings would not be impacted.

Since the Preferred Alternative would reduce through-traffic in Pinckneyville, it may have the indirect effect of loss of customers for those businesses located within Pinckneyville that are somewhat dependent on through-traffic for their business. Projected Average Daily Traffic (ADT) entering Pinckneyville from the north and south in the year 2030 would be reduced from 11,470 vehicles per day under the No-Action Alternative to 1,830 vehicles per day with the Preferred Alternative in place. Similarly, east-west traffic would be reduced from 16,060 to 11,700 vehicles per day. Fast-food restaurants, service stations and motels are the businesses most likely to experience a reduction in their customer base. There are two fast-food restaurants, one service station and one motel located in downtown Pinckneyville. These businesses probably will experience some reduction in “impulse purchases”, due to through-traffic use of

the bypass of Pinckneyville. Most other businesses in downtown Pinckneyville rely primarily on local trade and will experience little, if any, reduction in business.

Potential negative economic impacts during the construction period may include potential loss of business due to difficult access and general inconveniences caused by construction activities. Every attempt will be made to minimize negative economic impacts during construction. There also may be short periods of inconvenience when driveways are reconstructed. In some cases, access roads would be built where construction requires the business entrances to be closed.

Positive economic effects may be realized during the construction period due to the expenditure of public funds within the area of the project. This includes direct income for construction workers who in turn expend it for services and goods within the area. In addition, local materials suppliers may benefit from providing goods to the construction contractors for the project. The level at which these positive impacts would occur is determined (to a great degree by the contractor) based upon the extent that local labor and materials are used in the construction process.

Tax Revenue Impacts

Construction of this proposed project would remove assessed land and buildings from the property tax base in Jackson and Perry Counties. As a result, a property tax revenue loss analysis was prepared for each taxing district in both counties. Projected loss of property tax revenue to Jackson County due to right-of-way requirements are less than two-tenths of one percent (\$56,514) of the total assessed taxes (\$38,049,700). **(See Table 17.)** Projected loss of property tax revenue to Perry County due to right-of-way requirements are less than nine-tenths of one percent (\$94,252) of the total assessed taxes (\$11,194,890). **(See Table 18.)** Tax revenue losses are expected to be temporary and are expected to become tax revenue gains as the proposed highway improvement leads to increased economic development in the area.

4.1.8 Land Use

Details concerning the current and planned land uses within the project area are included in Section 2.1.2. Direct land-use changes through acquisition of real property for the project are discussed in Section 4.1.6.

Since the proposed project would provide new access to undeveloped property, especially in the area of bypasses, notable land-use changes can be expected in these areas. Most of the land-use changes that would occur involve agricultural land. Of the five businesses displaced, three have the potential to lead to minor land-use changes, Sill Brothers, Egyptian Electric Cooperative and Manor at Mason Woods.

Comprehensive local and regional land-use plans do not exist for any portion of the project area.

4.1.9 Growth and Economic Development

As indicated in Section 1.4.5 of the Purpose and Need Section, there is a need for adequate transportation system support for the existing and future economic growth of the project area as

Table 17
Tax Revenue Loss – Jackson County

Taxing Unit	Additional Right-of-Way Acres ¹	Equalized AssessedV aluationof Land ²	Market Value of Structures ³	Tax Rate for 2002	Revenue Loss In 2002 Dollars ⁴	2002 Total Assessed Taxes ⁵	Tax Loss Percent ⁶
John A. Logan College	263	\$315,600	\$1,570,000	.00478000	\$4,010	\$38,049,700	0.0105
Kinkaid Conservancy	263	\$315,600	\$1,570,000	.00080170	\$672	\$38,049,700	0.0018
Subtotal	263	\$315,600	\$1,570,000	.00558170	\$4,682	\$38,049,700	0.0123
Assessing District 1	181	\$217,200	\$665,000	.00080600	\$354	\$38,049,700	0.0009
Jackson County Tax Assessment	181	\$217,200	\$665,000	.01240460	\$5,444	\$38,049,700	0.0143
Murphysboro-Somerset Fire District	82	\$98,400	\$905,000	.00218620	\$875	\$38,049,700	0.0023
Road and Bridge	82	\$98,400	\$905,000	.00336740	\$1,347	\$38,049,700	0.0035
Road and Building	181	\$217,200	\$665,000	.00215000	\$944	\$38,049,700	0.0025
School District 186	8	\$9,600	\$55,000	.04342470	\$1,213	\$38,049,700	0.0032
School District 196	255	\$306,000	\$1,515,000	.04725140	\$38,321	\$38,049,700	0.1007
Somerset Township	82	\$98,400	\$905,000	.00155850	\$623	\$38,049,700	0.0016
Vergennes Township	181	\$217,200	\$665,000	.00617770	\$2,711	\$38,049,700	0.0071
Total					\$56,514	\$38,049,700	0.1484

¹ Net right-of-way required for construction.

² EAV = (Additional ROW) x (\$1,200/acre for Jackson County).

³ Structures within ROW to be acquired: \$55,000 per residence, \$100,000 per commercial building, \$25,000 per farm building. *

⁴ {EAV + (Market Value / 3)} x (Tax Rate for 2002).

⁵ Total assessed property tax for 2002 (Source: Jackson County Assessment Office).

⁶ Percent of revenue lost from highway construction.

* (Note: These values reflect averages used by the Tax Assessor's office and in no way predict the actual purchase price to be offered to the individual owners properties and/or structures. The fair market value of any portion of a land owner's property needed for a proposed highway improvement will be determined by qualified real estate appraisers.)

Table 18
Tax Revenue Loss – Perry County

Taxing Unit	Additional Right-of-Way Acres ¹	Equalized AssessedV aluationof Land ²	Market Value of Structures ³	Tax Rate for 2002	Revenue Loss In 2002 Dollars ⁴	2002 Total Assessed Taxes ⁵	Tax Loss Percent ⁶
Ambulance Service	393	\$471,600	\$2,430,000	.0020000	\$2,563	\$11,194,890	0.0229
Coop Extension	393	\$471,600	\$2,430,000	.0004710	\$603	\$11,194,890	0.0054
Perry County	393	\$471,600	\$2,430,000	.0124800	\$15,994	\$11,194,890	0.1429
Pinckneyville Grade School	393	\$471,600	\$2,430,000	.0191390	\$24,529	\$11,194,890	0.2191
Pinckneyville High School	393	\$471,600	\$2,430,000	.0190710	\$24,441	\$11,194,890	0.2183
Rend Lake Junior College	393	\$471,600	\$2,430,000	.0059600	\$7,638	\$11,194,890	0.0682
Subtotal	393	\$471,600	\$2,430,000	.0591210	\$75,769	\$11,194,890	0.6768
Pinckneyville City	20	\$24,000	\$440,000	.0121660	\$2,076	\$11,194,890	0.0185
Pinckneyville Community Hospital	373	\$447,600	\$2,430,000	.0037740	\$4,746	\$11,194,890	0.0424
Pinckneyville Library	20	\$24,000	\$440,000	.0013820	\$236	\$11,194,890	0.0021
Pinckneyville Rural Fire Protection	373	\$447,600	\$1,990,000	.0030860	\$3,428	\$11,194,890	0.0306
Road District 5-3	225	\$270,000	\$1,205,000	.0080890	\$5,433	\$11,194,890	0.0485
Road District 5-3A (Pinckneyville)	20	\$24,000	\$440,000	.0016500	\$281	\$11,194,890	0.0025
Road District 6-2	52	\$62,400	\$785,000	.0053620	\$1,738	\$11,194,890	0.0155
Road District 6-3	96	\$115,200	0	.0047370	\$545	\$11,194,890	0.0049
Total					\$94,252	\$11,194,890	0.8418

¹ Net right-of-way required for construction.

² EAV = (Additional ROW) x (\$1,200/acre for Perry County).

³ Structures within ROW to be acquired: \$55,000 per residence, \$100,000 per commercial building, \$25,000 per farm building. *

⁴ {EAV + (Market Value / 3)} x (Tax Rate for 2002).

⁵ Total assessed property tax for 2002 (Source: Perry County Clerk Office).

⁶ Percent of revenue lost from highway construction.

* (Note: These values reflect averages used by the Tax Assessor's office and in no way predict the actual purchase price to be offered to the individual owners properties and/or structures. The fair market value of any portion of a land owner's property needed for a proposed highway improvement will be determined by qualified real estate appraisers.)

well as southern Illinois in general. The proposed project is intended to be a part of an overall plan to provide a continuous four-lane facility between southern Illinois and the St. Louis metropolitan area, resulting in the beneficial effects described in Section 1.4.1 and 1.4.5, including providing a better opportunity to attract new industries and businesses as well as increase tourist trade, providing support for the existing and future economic growth of the region's largest population centers as well as Southern Illinois University at Carbondale, and providing easier access to Pyramid State Park, the state's largest park.

Broad general support for the project has been shown in (a) the results of public comments obtained at four different public meetings on the project, (**See Section 5.2.7**), (b) the results of a survey of businesses and agencies with a regional perspective in the two-county area, (**See Section 5.2.4**), (c) resolutions and letters by a number of governmental agencies, businesses and individuals supporting the project (**See Section 5.2.5**) and (d) the analyses and recommendations of the Pinckneyville Area Citizens Advisory Council (**See Section 5.2.8**). Comments by all of these sources relate to the growth and economic benefits of the proposed improvement.

4.2 Agriculture

This project has been reviewed in accordance with the cooperative working agreements between the Illinois Department of Agriculture (IDOA) and the Illinois Department of Transportation.

Of the approximately 689 acres of additional right of way required for this project, 644 acres of farmland would be converted for highway use. In general, this additional right of way is required to widen existing Illinois 13/127 from two lanes to four lanes and to construct bypasses of Vergennes and Pinckneyville. Of the 644 acres of farmland required, 386 acres of prime farmland and 169 acres of important farmland would be converted. Approximately 30 acres of farmland directly north of the Pinckneyville-Du Quoin Airport will be acquired to protect the revised approach surface of Runway 18. The majority of this land would remain as farmland with the Airport leasing it for agricultural use. (**See Exhibit 20, Sheet 22 and Exhibit C.**)

There are no Conservation Reserve Enhancement Program acres or designated agricultural protection areas within the limits of this project. A small portion of two Sesquicentennial Farms and one Centennial Farm would be acquired for the highway (a total of 5.75 acres). (**See Exhibit 20, Sheets 15, 16, 24, 25, 27 and 28.**)

Table 19 provides a summary of the impacts associated with the Preferred Alternative. The proposed improvement would create 14 severed parcels and 77 affected parcels throughout the length of the project. Project Sections 2, 4 and 5, and the Modified West Bypass would require additional miles traveled by farmers to reach a parcel severed or otherwise affected by the proposed highway. The total adverse travel would be 13.3 miles for the entire project, 3.8 miles in Section 2, 0.5 miles in Section 4, 0.6 miles in Section 5 and 8.4 miles along the Modified West Bypass.

The impact of this project on farmland conversion has been evaluated in accordance with the requirements of the U.S. Department of Agriculture's Natural Resource Conservation Service (NRCS) and the IDOA. Coordination with the NRCS took place in February 2003 and February 2007 to determine the amount of prime and important farmland that would be converted along

Table 19
Agricultural Impact Summary

Impacts	Section 1	Section 2	Section 3	Section 4		Section 5	Section 6	Modified West Bypass	Total
	Widening on West	Vergennes Bypass	Widening on West	<u>Highway Alternate</u> Widening on South/West and Flattening Existing Airport & Buffalo Curves	<u>Airport Alternate</u> Create a New Far-North Entrance and Access Road	Widening on West with Interchange at IL 152	Widening on West		
Prime Farmland (acres)*	23.4	104.5	21.4	30.7	24.1	39.4	3.7	139.3	386.5
Important Farmland (acres)*	58.2	16.5	2.1	12.4	4.2	27.8	8.6	39.1	168.9
Centennial Farms (number)	0	0	0	0	0	0	1	0	1
Sesquicentennial Farms (number)	0	0	1	0	0	0	0	1	2
Severed Parcels (number)	0	2	0	0	1	0	0	11	14
Affected Parcels (number)	15	12	14	11	0	11	7	7	77
Landlocked Parcels (number)	0	0	0	0	0	0	0	0	0
Landlocked Parcels (acres)	0	0	0	0	0	0	0	0	0
Adverse Travel (miles)	0	3.8	0	0.5	0	0.6	0	8.4	13.3

* Information obtained from the NRCS AD-1006 Farmland Conversion Impact Rating Form. See Appendix C for copies of these completed forms.

the project corridor. The completed AD-1006 forms and correspondence are located in **Appendix C**.

The effect on the soils within the area in terms of erosion and sedimentation has the potential to be only slight to moderate, due to the predominately flat topography and the nature of the soils found within the project area.

A site analysis will be performed as a part of further project development. Areas sensitive to erosion will be identified and protected. Specific erosion-control measures will be identified. These specific erosion-control measures will become a part of an erosion-control plan that would be included in the final roadway design plans for the selected alternative, which would address disturbed right of way, including streams, bridges, borrow sites and roadways, as well as protection of surrounding areas.

4.3 Cultural Resources

As discussed in Section 2.3, Cultural Resource Surveys have located a number of archaeological sites and historic structures in the Illinois 13/127 project area. The National Register of Historic Places (NRHP) significance of these sites and properties, as well as potential project impacts to these resources, are evaluated below.

4.3.1 Historic Resources

Based on IDOT cultural resources survey and coordination with the SHPO, the Preferred Alternative will not impact any historic bridges, historic districts or historic buildings listed on or eligible for the National Register of Historic Places. Cultural resource clearances were issued on May 27, 2003, October 31, 2003 and April 17, 2007. **(See Appendix B.)** By shifting Illinois 13/127 alignment to the west at Grange Hall Road, impacts to the historic Grange Hall and its grounds are avoided. Similarly, bypassing Pinckneyville avoids impacting historically significant buildings in Pinckneyville.

4.3.2 Archaeological Resources

Of the ten archaeological sites located within proposed project right-of-way, eight were recommended for subsurface evaluation by University of Illinois archaeologists. No mounds or cemeteries will be impacted by this project. All of the sites slated for further evaluation have NRHP potential due to the data that they may yield concerning prehistoric life-ways in this region of Illinois (Criterion D). No archaeological sites historically associated with federally-recognized Native American tribes were found in the proposed alignment. No archaeological sites that merit preservation in place will be impacted by the Preferred Alternative.

Subsurface testing has been completed at all of the potentially eligible archaeological sites in the proposed route. Six of the sites did not contain intact cultural deposits and the material recovered was confined to the surface and plow zone. Excavations at two sites yielded subsurface features, but low densities of diagnostic artifacts and heavy erosion has limited their

potential to yield significant data. None of the eight sites tested meet the requirements for NRHP eligibility.

Based upon the Illinois Transportation Archaeological Research Program survey reports, the IDOT Cultural Resources Unit concluded that there is the potential to impact one archaeological site within the proposed project right-of-way. Correspondence (dated May 23, 2003, September 29, 2003, October 29, 2003 and April 13, 2007) coordinated the results of the survey reports with the Deputy State Historic Preservation Officer (SHPO). Upon review of this correspondence, the SHPO has concurred with the results of the survey reports and the finding that one archaeological site within the project right-of-way has the potential to be impacted. If this site cannot be avoided, then further evaluation will be required and the site will be processed under the Programmatic Agreement for the Mitigation of Adverse Effects to Illinois Archaeological Habitation Sites. Concurrence from the SHPO was issued on May 27, 2003, October 3, 2003, October 31, 2003 and April 17, 2007. (See Appendix B.)

4.4 Air Quality

The microscale air quality analysis of this project was prepared in accordance with procedures contained in the Illinois Department of Transportation (IDOT) Air Quality Manual dated May 1982, and the Illinois Carbon Monoxide Screen for Intersection Modeling (COSIM) User's Manual dated May 2003.

These procedures were adopted as standard after coordination with the Illinois Environmental Protection Agency (IEPA), Division of Air Pollution Control, and the FHWA, Illinois Division Office. The analysis is consistent with the latest mobile source emission factors issued by the U.S. Environmental Protection Agency (USEPA) known as MOBILE 6.2 and Conformity Regulations dated November 11, 1993, (40 CFR Part 93).

4.4.1 Eight-Hour Carbon Monoxide Concentrations

The air quality effects of the proposed project were analyzed using the Illinois Carbon Monoxide Screen for Intersection Modeling (COSIM). The pre-screen analysis results indicated that a COSIM air quality analysis was not required as the results for the "worst case" receptor were below the 8-hour average National Ambient Air Quality Standards (NAAQS) for carbon monoxide of 9.0 ppm which is necessary to protect the public health and welfare.

4.4.2 One-Hour Carbon Monoxide Concentrations

The detailed analysis of local carbon monoxide levels has focused on the 8-hour standards since this standard has almost without exception been found to be more critical than the 1-hour standard. Analysis of available statewide air quality data, published annually by the IEPA, indicates that excursions above the 1-hour primary standard of 35.0 ppm are extremely rare. Furthermore, the assumptions used in the "worst case" modeling procedure regarding maximum traffic volumes and meteorological persistence would also cause the 8-hour standard to be more stringent. The 1-hour carbon monoxide concentrations did not exceed the NAAQS for the Build Scenario at the chosen sensitive receptor(s).

4.4.3 Conformity

No portion of this project is within a designated non-attainment area for any of the air pollutants for which the USEPA has established standards. Accordingly, 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.

4.4.4 Construction-Related Particulate Matter

Demolition and construction activities can result in short-term increases in fugitive dust and equipment-related particulate emissions in and around the project area. (Equipment-related particulate emissions can be minimized if the equipment is well maintained.) The potential air quality impacts will be short-term, occurring only while demolition and construction work is in progress and local conditions are appropriate.

The potential for fugitive dust emissions typically is associated with building demolition, ground clearing, site preparation, grading, stockpiling of materials, on-site movement of equipment, and transportation of materials. The potential is greatest during dry periods, periods of intense construction activity, and during high wind conditions.

The Illinois Department of Transportation's Standard Specification for Road and Bridge Construction includes provisions on dust control. Under these provisions, dust and airborne dirt generated by construction activities will 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 cooperatively develop specific types of control techniques appropriate to the specific situation. Techniques that may warrant consideration include measures such as minimizing track-out of soil onto nearby publicly-traveled roads, reducing speed on unpaved roads, covering haul vehicles, and applying chemical dust suppressants or water to exposed surfaces, particularly those on which construction vehicles travel. With the application of appropriate measures to limit dust emissions during construction, this project will not cause any significant, short-term particulate matter air quality impacts.

4.4.5 Mobile Source Air Toxics

In addition to the criteria air pollutants for which there are National Ambient Air Quality Standards (NAAQS), 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. The MSATs are compounds emitted from highway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline.

The EPA is the lead Federal Agency for administering the Clean Air Act and has certain responsibilities regarding the health effects of MSATs. The 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 Clean Air Act. In its rule, 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, 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 full 21 and the primary six MSATs.

This Environmental Assessment (EA) includes a basic analysis of the likely MSAT emission impacts of the project. However, available technical tools do not enable us to predict the project-specific health impacts of the emission changes associated with the alternatives carried forward 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 involve several key elements, including emissions modeling, dispersion modeling in order to estimate ambient concentrations resulting from the estimated emissions, exposure modeling in order to estimate human exposure to the estimated concentrations, and then final determination of health impacts based on the estimated exposure. Each of these steps is encumbered by technical shortcomings or uncertain science that prevents a more complete determination of the MSAT health impacts of this project.

1. Emissions. The 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—emission 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 use 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, EPA has identified problems with MOBILE 6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability 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 it 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 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 these 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 EPA efforts. Most notably, the Agency 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 EPA is in the process of assessing the risks of various kinds of exposures to these pollutants. The 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 EPA's IRIS database and represents the Agency's most current evaluations 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 exposure.
- Diesel exhaust (DE) 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 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

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 therein.

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 uncertainties outlined above, a quantitative assessment of the effects of air toxic emission 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 each of the project alternatives 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 any of the alternatives carried forward would have “significant adverse impacts on the human environment.”

In this document, FHWA has provided a qualitative analysis of MSAT emissions relative to the various alternatives carried forward, and has acknowledged that the project alternatives may result in increased exposure to MSAT emissions in certain locations, although the concentrations and duration of exposures are uncertain, and because of this uncertainty, the health effects from these emissions cannot be estimated.

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 for identifying and comparing the potential differences among MSAT emissions – if any – from the various alternatives. 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 Emission Among Transportation Project Alternatives, found at: www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm

For each build alternative carried forward in the Environmental Assessment (EA), the amount of MSATs emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same for each alternative. The VMT estimated for each of the Build Alternatives carried forward is slightly higher than that for the No Build Alternative, because the additional capacity increases the efficiency of the roadway and attracts rerouted trips from elsewhere in the transportation network. This increase in VMT would 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 the EPA’s MOBILE 6 emissions model, emissions of all the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emission decreases will offset VMT-related emission increases cannot be reliably projected due to the inherent deficiencies of technical models.

Because the estimated VMT under each of the Build Alternatives carried forward are nearly the same, varying by less than six percent (6%), it is expected there would be no appreciable difference in overall MSAT emissions among the various alternatives. Also, regardless of the alternative chosen, emissions will likely be lower than present levels in the design year as a result of 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 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 project alternatives will have the effect of moving some traffic closer to nearby homes, schools and businesses; therefore, under each Build Alternative carried forward there may be localized areas where ambient concentrations of MSATs could be higher under certain Build Alternatives than the No Build Alternative. The localized increases in MSAT concentrations would likely be most pronounced along the expanded roadway sections that would be built through and around Vergennes, under all Alternatives and through and around Pinckneyville under all Alternatives. 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 the inherent deficiencies of current models.

In summary, when a highway is widened and, as a result, moves closer to receptors, the localized level of MSAT emissions for the Build Alternative carried forward could be higher relative to the No Build Alternative, but this could be offset due to increases in speeds 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, 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 today.

4.5 Noise

A noise analysis was performed, in accordance with the Code of Federal Regulations, Title 23, Part 772 (23 CFR 772) and the Illinois Department of Transportation (IDOT) Policy, for determining potential noise impacts associated with proposed roadway improvements to Illinois 13/127. The purpose of the analysis is to: 1) identify areas where there are predicted traffic noise impacts, 2) determine if abatement measures are likely to provide a substantial noise reduction, and 3) assess whether those abatement measures are reasonable and feasible to implement.

4.5.1 Methodology

Existing and future noise levels were predicted using the Federal Highway Administration's Noise Model Version 1.1 (TNM) computer program at noise-sensitive locations along the existing and proposed roadways.

All noise levels predicted are in decibels (dB) on the A-weighted scale (dBA), using the Leq descriptor. The A-weighted scale is used because it most nearly matches the response of the human ear to sound. Leq is defined as the most continuous steady-state noise level with the

same total A-weighted acoustic energy as the real fluctuating noise measured over the same time period.

Five separate noise abatement criteria (NAC), A through E, are utilized by the FHWA to assess potential traffic noise impacts. The NAC are based on land use. IDOT's Policy, as defined in Section 26-6 of the *Bureau of Design and Environment Manual*, defines noise impacts as occurring when the predicted traffic noise levels for the design year approach (within 1 dBA) or exceed the NAC, or when they are substantially higher (more than 14 dBA) than over existing levels. **Table 20** describes the five noise abatement criteria.

In determining the applicable noise category for the project, the existing land use was reviewed. Land-use categories B and C apply to this project. The NAC for Category B is 67 dBA Leq, while the NAC for Category C is 72 dBA Leq.

Table 20 FHWA Noise Abatement Criteria (dBA)		
Activity Category	Leq	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of these qualities is essential if the area is to continue to serve its intended purpose
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals
C	72 (exterior)	Developed lands, properties, or activities not included in Category A or B above.
D	---	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

4.5.2 Noise Receptors

A total of 144 receptors were used to estimate traffic noise levels associated with the Preferred Alternative. The predicted noise level changes for the build scenario (in the design year 2030) are compared to the existing year (2000) and No-Action (year 2030) scenarios. **(See Table 21.)** The traffic volumes used to calculate the existing year (2000) noise levels were compared to current traffic volumes in May, 2007. The comparison revealed that throughout the project corridor traffic volumes have not increased. As a result, the existing year (2000) noise levels were not updated. Each receptor represents a noise-sensitive area. The majority of the sites are residential, and the results are compared against an NAC of 67 dBA. There are several sites that are commercial, and those results are compared against an NAC of 72 dBA.

Table 21 (Sheet 1of 4)						
Noise Impact Summary – TNM Modeling Results						
Receptor	Type	Represents	NAC	Existing	Predicted (2030)	
					No-Action	Build
1-1	Residential	1 home	67	56	58	57
1-2	Residential	1 home	67	48	50	49
1-3	Residential	1 home	67	58	60	59
1-4	Residential	1 home	67	54	56	56
1-5	Residential	1 church	67	60	62	65
1-6	Commercial	1 business	72	50	52	52
1-7	Commercial	1 business	72	58	60	63
1-8*	Residential	1 home	67	58	60	62
1-9*	Commercial	1 business	72	62	64	72
1-10	Residential	1 home	67	49	51	49
1-11	Residential	1 home	67	64	66	62
1-12	Residential	1 home	67	47	49	50
1-13*	Residential	1 home	67	62	64	72
1-14*	Residential	1 home	67	60	62	68
1-16*	Residential	1 home	67	62	64	71
1-17*	Residential	1 home	67	61	63	66
1-18*	Residential	1 home	67	58	60	61
1-19	Residential	1 home	67	56	58	53
1-20	Residential	1 home	67	50	52	54
1-21	Residential	1 home	67	54	56	58
1-22*	Residential	1 home	67	59	61	65
1-23	Residential	1 home	67	58	60	53
1-24	Residential	1 home	67	50	52	58
1-25	Residential	1 home	67	59	61	58
1-26*	Residential	1 home	67	58	60	66
1-27	Residential	1 home	67	59	61	51
1-29	Residential	1 home	67	50	52	57
1-30	Residential	1 home	67	64	66	54
1-31	Residential	1 home	67	57	59	50
1-32	Residential	1 home	67	54	56	58
1-33*	Residential	1 home	67	49	51	64
1-34	Residential	1 home	67	58	60	55
1-35	Residential	1 home	67	59	61	55
1-36	Residential	1 home	67	49	51	50
1-37	Residential	1 home	67	47	49	48

* Denotes receptor that would be displaced by construction of the Preferred Alternative.

Boldface indicates the noise levels approach, meet or exceed the FHWA NAC and/or 2030 levels will be greater than 14 dBA over existing levels.

Table 21 (Sheet 2 of 4)						
Noise Impact Summary – TNM Modeling Results						
Receptor	Type	Represents	NAC	Existing	Predicted (2030)	
					No-Action	Build
2-8	Residential	1 home	67	42	44	56
2-9	Residential	1 home	67	43	44	53
2-10	Residential	1 home	67	41	43	57
2-11	Residential	1 home	67	42	44	54
2-12	Residential	1 home	67	41	43	57
2-30	Commercial	1 business	72	49	51	44
2-31*	Residential	1 home	67	41	43	59
2-34	Residential	1 home	67	46	48	57
2-35	Residential	1 home	67	57	59	56
2-36	Residential	1 home	67	52	54	52
3-1	Residential	1 home	67	61	63	61
3-2	Residential	1 home	67	64	66	63
3-3	Residential	1 home	67	60	62	60
3-4*	Residential	1 home	67	60	61	70
3-5	Residential	1 home	67	64	66	63
3-6	Residential	1 home	67	61	63	61
3-7	Residential	1 home	67	55	57	56
3-8	Residential	1 home	67	51	53	52
3-9*	Residential	1 home	67	61	63	63
3-10	Residential	1 home	67	61	63	63
3-11*	Residential	1 home	67	61	63	63
4-1	Residential	1 home	67	48	50	58
4-2	Residential	1 home	67	48	50	58
4-3	Residential	1 home	67	46	48	53
4-4	Residential	1 home	67	42	44	40
4-5	Residential	1 home	67	57	59	60
4-6	Residential	1 home	67	51	53	51
4-7	Commercial	1 business	72	53	55	52
4-8	Commercial	Airport	72	62	64	60
4-9*	Residential	1 home	67	61	63	65
4-10*	Residential	1 home	67	62	64	60
4-11*	Residential	1 home	67	62	64	60
4-12*	Residential	1 home	67	61	63	59

* Denotes receptor that would be displaced by construction of the Preferred Alternative.

Boldface indicates the noise levels approach, meet or exceed the FHWA NAC and/or 2030 levels will be greater than 14 dBA over existing levels.

Table 21 (Sheet 3 of 4)						
Noise Impact Summary – TNM Modeling Results						
Receptor	Type	Represents	NAC	Existing	Predicted (2030)	
					No-Action	Build
5-1 *	Residential	1 home	67	50	52	43
5-2	Residential	1 home	67	43	45	42
5-3	Residential	1 home	67	56	58	46
5-4	Residential	1 home	67	56	58	53
5-5	Residential	1 home	67	52	54	44
5-6	Residential	1 home	67	55	57	59
5-7	Residential	1 home	67	55	57	59
6-1	Residential	1 home	67	60	61	61
6-2	Residential	1 home	67	50	52	53
6-3	Residential	1 home	67	53	55	57
6-4	Residential	1 home	67	53	55	55
6-5	Residential	1 home	67	41	43	40
80	Residential	1 home	67	44	46	47
81	Residential	1 home	67	43	45	45
88	Residential	1 home	67	57	59	58
89	Residential	1 home	67	56	58	56
90	Residential	1 home	67	60	62	61
91	Residential	1 home	67	62	64	64
92	Residential	1 home	67	56	58	57
93	Residential	1 home	67	59	61	60
94	Residential	1 church	67	60	62	63
95	Residential	1 home	67	39	41	66
96	Residential	1 home	67	39	41	60
101	Residential	1 home	67	40	42	47
102	Residential	1 home	67	40	42	54
117	Residential	1 home	67	56	58	59
118	Residential	1 home	67	51	53	59
119	Residential	1 home	67	51	53	54
125	Residential	1 home	67	44	46	54
126	Residential	1 home	67	48	50	52
128	Residential	1 home	67	55	57	54
129	Residential	1 home	67	52	54	52
130	Residential	1 home	67	52	54	52
West 1	Residential	1 home	67	38	40	48
West 2	Residential	1 home	67	38	39	48
West 3	Residential	1 home	67	38	40	56
West 4	Residential	1 home	67	38	40	49

* Denotes receptor that would be displaced by construction of the Preferred Alternative.

Boldface indicates the noise levels approach, meet or exceed the FHWA NAC and/or 2030 levels will be greater than 14 dBA over existing levels.

Table 21 (Sheet 4 of 4)						
Noise Impact Summary – TNM Modeling Results						
Receptor	Type	Represents	NAC	Existing	Predicted (2030)	
					No-Action	Build
West 5	Residential	1 home	67	60	62	58
West 6	Residential	1 home	67	61	63	57
West 8	Residential	1 home	67	46	48	57
West 9	Residential	1 home	67	46	48	51
West 10	Residential	1 home	67	41	43	57
West 11	Residential	1 home	67	41	43	57
West 12*	Residential	1 home	67	40	42	59
West 13	Residential	1 home	67	45	47	56
West 14	Residential	1 home	67	46	48	53
West 15	Residential	cemetery	67	55	57	59
West 16	Residential	1 home	67	66	68	68
West 17	Residential	1 home	67	68	70	71
West 18	Residential	1 home	67	60	62	63
West 19	Residential	1 home	67	53	55	58
West 20	Residential	1 home	67	49	51	55
West 21	Residential	1 home	67	48	50	54
West 22	Residential	1 home	67	48	50	53
West 23	Residential	1 home	67	49	51	53
West 24	Residential	1 home	67	47	48	54
West 25	Residential	1 home	67	46	48	55
West 26	Residential	1 home	67	47	49	57
West 27	Residential	1 home	67	49	51	60
West 28	Residential	1 home	67	44	46	49
West 29	Residential	1 home	67	43	45	49
West 30	Residential	1 home	67	44	45	51
West 31	Residential	1 home	67	44	46	52
West 32	Residential	1 home	67	45	46	52
West 33	Residential	1 home	67	44	46	50
West 34*	Residential	1 home	67	58	60	60
West 35*	Residential	1 home	67	64	65	64
West 36	Commercial	1 business	72	55	57	56
West 38*	Residential	1 home	67	58	60	59
West 39	Residential	1 home	67	40	42	51
West 40	Residential	1 home	67	37	39	47
West 41	Residential	1 home	67	37	39	48
West 42	Residential	1 home	72	45	47	61
West 43	Residential	1 home	72	47	48	59
West 44	Residential	1 home	67	40	42	46
West 45	Residential	1 home	67	40	42	45

* Denotes receptor that would be displaced by construction of the Preferred Alternative.

Boldface indicates the noise levels approach, meet or exceed the FHWA NAC and/or 2030 levels will be greater than 14 dBA over existing levels.

4.5.3 Noise Analysis Results

Existing Traffic Noise

Two residential receptors (West 16 and West 17) already approach or exceed the NAC. The existing noise levels for residences along the Preferred Alternative range from 37 dBA at receptors West 40 & West 41 to 68 dBA at receptor West 17. The existing noise levels for commercial structures along the Preferred Alternative range from 49 dBA at receptor 2-30 to 62 at receptors 1-9 and 4-8.

Build Alternative Traffic Noise

Changes in roadway alignment for the 2030 Preferred Alternative (Build Alternative) resulted in increases and some decreases in noise levels compared to the No-Action Alternative.

Of the 144 noise receptors for the Preferred Alternative, nine residential receptors approach, meet or exceed the 67 dBA NAC, one commercial receptor meets the 72 dBA NAC, and eleven residential receptors show a substantial increase (more than 14 dBA) over existing noise levels.

Receptors 1-13, 1-14, 1-16, 3-4, West 16 and West 17 all exceed the residential NAC of 67 dBA. These receptors exceed the NAC by 1 dBA to 5 dBA. Receptors 1-17, 1-26, and 95 all approach within 1 dBA the residential NAC of 67 dBA. However, six of these nine receptors will be displaced by construction and so do not represent noise impacts.

Receptor 1-9 meets the commercial NAC of 72 dBA. However, this receptor will be displaced by construction and so does not represent a noise impact.

Residential receptors 1-33, 2-10, 2-12, 2-31, 95, 96, West 3, West 10, West 11, West 12 and West 42 all show a substantial increase over existing noise levels. The increases range from 15 dBA at receptor 1-33 to 27 at receptor 95. However, receptors 1-33, 2-31 and West 12 will be displaced by construction and so do not represent noise impacts.

Table 22 summarizes the traffic noise impacts for the impacted receptors identified in **Table 21**.

4.5.4 Noise Abatement

Traffic noise abatement measures were considered for all receptors that approached or exceeded the FHWA residential NAC and for receptors that will have an increase in traffic-generated noise levels of more than 14 dBA from existing to proposed conditions, as shown in **Table 22**. **Exhibit 20** shows the location of each of these receptors.

IDOT noise analyses requirements as outlined in the *Bureau of Design and Environment Manual* indicate that noise abatement measures should be considered when traffic noise impacts are identified. The guidelines require that the noise abatement measures, which can include traffic management measures, alterations to the proposed alignments, acquisition of property rights, or the installation of noise barriers, be evaluated, and that those that are reasonable and feasible be incorporated. When noise abatement measures are being considered, every reasonable effort shall be made to obtain at least an 8 dBA reduction at receptors. Noise abatement is considered

to be economically reasonable if the option does not cost more than IDOT's policy value of \$24,000 per benefited residence. A benefited residence is defined as one that will experience at least a reduction of 5 dBA as a result of the noise abatement.

Table 22
Analysis of Impacted Receptors

Receptor	NAC	Existing (2000)	Predicted Build (2030)	Type of Impact	
				NAC Exceedance	Substantial Increase
2-10	67	41	57		✓
2-12	67	41	57		✓
95	67	39	66	✓	✓
96	67	39	60		✓
West 3	67	38	56		✓
West 10	67	41	57		✓
West 11	67	41	57		✓
West 16	67	66	68	✓	
West 17	67	68	71	✓	
West 42	67	45	61		✓

Traffic management measures most effective in reducing noise levels include prohibition of heavy trucks and use of lower speed limits. Prohibition of heavy trucks along the preferred alternative would not be practical since one of the needs for this project is to address traffic flow and capacity deficiencies associated with downtown Pinckneyville. The new roadway also will serve as a major route for commercial traffic. Lowering the speed limit would not meet expressway standards for the roadway.

Alteration of the horizontal and vertical alignment of the preferred alternative was considered as a potential abatement option. There are, however, other environmental and engineering issues that directed the location of the preferred alternative. These issues include streams, cemeteries, existing railroads, and established neighborhoods. Therefore, alternation of the proposed alignment would result in impacts to these resources and will not be a reasonable noise abatement option for this project. Acquisition of receptor locations by moving or replacing them is not an economically reasonable or practicable noise abatement option for this project because of the potential cost and impact to the property owners. The remaining options deal with changing the noise path between the source and the receptor through the construction of a barrier.

Table 23 identifies the receptors where noise impacts were identified and noise abatement was evaluated, and indicates whether the noise barrier was feasible and reasonable. Noise abatement was not feasible at West 16 and West 17 because of the urban nature of the area. A noise barrier in this situation would require frequent breaks or openings to allow access, which reduces the effectiveness of a barrier as a noise abatement measure. For all the other impacted receptors, 2-10, 2-12, 95, 96, West 3, West 10, West 11 and West 42, a noise barrier is feasible, but not

economically reasonable (cost-effective), as the results were greater than \$24,000 per benefited receptor. Therefore, no noise barriers are proposed.

Table 23
Evaluated Noise Abatement

Receptor	Length (feet)	Average Height (feet as calculated by TNM)	Feasible (achieves 8 dBA reduction)	Noise Abatement Cost (\$25 per square foot ¹)*	Number of Receptors Benefited	Cost per Receptor (dollars)	Economically Reasonable
2-10	640	24.75	Yes	396,500	1	396,500	No
2-12	570	23.75	Yes	338,500	1	338,500	No
95	444	15	Yes	166,500	1	166,500	No
96	496	17.46	Yes	216,600	1	216,600	No
West 3	215	15	Yes	80,700	1	80,700	No
West 10, West 11	680	29.52	Yes	502,200	2	251,100	No
West 16	-	-	No	-	-	-	-
West 17	-	-	No	-	-	-	-
West 42	520	18.85	Yes	245,000	1	245,000	No

* Cost is based on actual TNM calculations – the true height of the barrier is used by TNM and not the average height.

¹ The average unit cost of noise wall construction used for the barrier evaluation is \$25 per square foot (including materials and installation). This cost is based on Illinois construction costs, and walls built. Information taken from the Noise Abatement section of the Illinois Department of Transportation's Highway Traffic Noise - Frequently Asked Questions web page (<http://www.dot.state.il.us/desenv/noise/faqAbatement.html>) August 2, 2007.

4.5.5 Construction Noise

Noise generated by construction equipment would vary greatly, depending on the equipment type and model, mode and duration of operation, and specific type of work in progress. Impacts resulting from construction noise are anticipated to be localized, temporary, and transitory. Construction noise would be controlled in accordance with Article 107.35 of the *IDOT Standard Specifications for Road and Bridge Construction*.

4.6 Energy

Construction of the proposed Illinois Route 13/127 improvement would 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 would 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 would

result in less direct and indirect vehicular operational energy consumption for the Build Alternative than for the No-Action 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.

4.7 Natural Resources

The following details the natural resources impacted by the Preferred Alternative. For natural resource information on the entire project corridor, refer to Section 2.6.

4.7.1 Geology

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

There are no active mineral resource extraction industries within the project limits.

As discussed in Section 2.6.1, three natural gas pipelines owned by the Natural Gas Pipeline Company of America cross Illinois 13/127 approximately 1,800 feet north of Pinckneyville-Du Quoin Airport. While the Preferred Alternative would cross these pipelines, it is unlikely the pipelines would need to be relocated or placed at a greater depth. However, it is likely that the pipelines will need to be encased. Coordination with the utilities will be handled in Phase II design with a utilities agreement.

4.7.2 Threatened and Endangered Species

One federally listed species (Indiana bat) and two state listed species (Arkansas sedge and rice rat) occur in the project area. Potential project impacts to these species are discussed below.

Federally-Listed Species

Only the Indiana bat has the potential to occur within the project area. This species has been collected in Perry and Jackson Counties. During the summer, the Indiana bat frequents the corridors of small streams with well-developed riparian woods, as well as mature lowland and upland forests. In the Illinois Natural History Survey's Mammal Survey (dated March 29, 2002) they make the observation that "the potential exists for Indiana bats to occur in the vicinity of the project corridor". Since the proposed project will require the removal of trees and since there is no information which suggests the trees to be cleared would not provide potentially suitable habitat for Indiana bat summer roosting, it is recommended that tree clearing be prohibited from April 1 to September 30 to avoid impacting this species.

The Biological Resource Review Memorandum (dated December 8, 2003) coordinated the survey results outlined above with USFWS. Provided the tree clearing restriction is incorporated, the USFWS has concurred, in their e-mail dated June 6, 2007, that the proposed

project is not likely to adversely affect any known federally-listed threatened and endangered species. **(See Appendix B.)**

Illinois-Listed Species

Two state-listed species (Arkansas sedge and rice rat) occur within the project area. The Arkansas sedge occurs at the edge of the existing right-of-way at the Beaucoup Creek (Jackson County) crossing. **(See Exhibit 7, Sheet 1.)** Work in this area involves removal and reconstruction of the bridge over the stream. To avoid impacts to the sedge, its location will be identified on the design plans. The area will be identified as a “no intrusion area” and will be fenced off during construction. With these provisions in place, the project will not impact the Arkansas sedge.

The rice rat was observed at the Beaucoup Creek (Perry County) crossing. **(See Exhibit 7, Sheet 3.)** Work in this area includes widening the existing roadway and the building of an additional bridge. The rice rat is considered to be a migrant individual utilizing Beaucoup Creek as a migration corridor. Bridging the creek will allow rice rats safe passage up and down stream. The project will not impact the rice rat.

The Biological Resource Review Memorandum (dated December 8, 2003) coordinated the survey results outlined above with IDNR. Upon review, IDNR has concurred with the results and findings of no impacts to endangered and threatened species outlined in the memorandum. **(See Appendix B.)** Consultation with IDNR was closed on July 20, 2006.

4.7.3 Nature Preserves

There are no nature preserves within the project limits.

4.7.4 Natural Areas

The Preferred Alternative would not impact any IDNR-designated natural areas.

4.7.5 Plant Communities

Of the eight woodland sites within the project corridor, four of them will be impacted by the project. Approximately 75 acres of woodlands will be cleared by the proposed project. The site locations and number of acres being cleared are described as follows: 1.5 acres of woodland will be cleared from the woodlot north of Vergennes (Exhibit 20, sheet 13) by the Vergennes bypass; 1 acre of floodplain forest will be cleared by the expansion of the existing highway north of Pyatts (Exhibit 20, sheets 23 & 24); 45.5 acres of woodland will be cleared from the woodlot west of Pinckneyville by the Pinckneyville bypass at the interchange with IL Route 154 (Exhibit 20, sheet 31); and 27.3 acres of woodland will be cleared on the Pinckneyville bypass south of the Pinckneyville Reservoir (Exhibit 20, sheet 32).

It is estimated that 90 acres of trees will be removed by construction of the project. Trees which are required to be removed will be replaced according to IDOT’s Departmental Policy D&E-18 (Preservation and Replacement of Trees). For trees removed from forest areas or from wooded

riparian corridors, the intent of replacement plantings will be to provide comparable functional replacement. Where comparable functional replacement cannot be achieved within the right-of-way, consideration will be given to replacement off the right-of-way. For replacement of isolated trees or small groups of trees (i.e., not in forests or riparian corridors) replacement plantings will be provided within the right-of-way, to the extent practicable.

All of these wooded areas contain breeding neotropical migrants. These species are common migrants and summer residents in Illinois. None of these species are area sensitive, that is, require large blocks (over 250 acres in size) of forest breeding habitat.

4.8 Water Quality/Resources

Construction and operational effects were considered for water resources in the project area. For a description of these resources, see Section 2.7. For a discussion on permits, see Section 4.13.1.

4.8.1 Construction Impacts to Surface Waters

There are nine existing bridge structures along Illinois 13/127 that are within the proposed project limits. Bridge structures include bridges and multi-cell box culverts having a total span greater than 20 feet. These bridge structures would be widened or replaced to accommodate the proposed roadway design. Construction activities would consist of grading, excavation for piers and bank stabilization.

Construction of bridge structures is proposed for the following (**See Exhibit 20**):

- 1) Bridge over Beaucoup Creek north of Murphysboro – 2 new structures
- 2) Triple Reinforced Concrete Box Culvert over an unnamed creek south of Vergennes
- 3) Double Reinforced Concrete Box Culvert over an unnamed creek south of Elkhaville Road
- 4) Bridge over Walkers Creek – existing bridge to remain (NB lane), new SB structure
- 5) Double Reinforced Concrete Box Culvert over Youngs Creek
- 6) Bridge over Beaucoup Creek east of the Pinckneyville-Du Quoin Airport – 2 new structures and grade raise
- 7) Double Reinforced Concrete Box Culvert over an unnamed creek just south of Pine Cone Road
- 8) Bridge over Chicken Creek – existing bridge to remain (NB lanes), new SB structure
- 9) Bridge over Opossum Creek – 2 new structures, grade raise

The two crossings of the Beaucoup Creek are listed on the National Park Service's National Rivers Inventory. Since the Preferred Alternative will replace and add structures over both Beaucoup Creek crossings, coordination with the National Park Service was required. Comments from the National Park Service were received by IDOT on August 3, 2007. (**See Appendix B.**) IDOT will comply with the recommendations provided and will incorporate them into the final design plans and specifications.

The proposed construction may temporarily affect the water quality in each of the streams. Increased total suspended solids would be expected from construction activity in and near the

streams. These impacts would be temporary and are not expected to alter the existing aquatic communities. No long-term impacts are anticipated for any of the streams. No appreciable quantity of stream habitat would be permanently lost.

Beaucoup Creek and its tributaries are subject to the IEPA TMDLs. The construction of this project will involve the release of Total Dissolved Solids (cations and anions of calcium, magnesium, chloride, sulfate, phosphate, and nitrates that make up soil) which have been identified as a pollutant of concern in the watershed. The Illinois water quality standard for Total Dissolved Solids is 500 parts per million. As a best management practice to reduce the release of Total Dissolved Solids into the project area streams during construction, the Illinois Department of Transportation Joint Design/Construction Procedure Memorandum on Erosion and Sediment Control would be implemented. All disturbed areas will be seeded or sodded as soon as practical after construction activities in the area have concluded.

4.8.2 Operational and Maintenance Impacts to Surface Waters

Stormwater runoff will be collected through a system of vegetated ditches and released into area streams. During the operation of the roadway many pollutants from vehicles are introduced onto the roadway. These pollutants include oils, grease, rubber and heavy metals (lead, zinc, copper). Most heavy metals tend to accumulate and remain within the vegetated ditches. Other roadway pollutants tend to be more mobile. The FHWA has conducted research on the operational affects of highways on surface waters. This research has indicated that there is a proportional connection between the amount of pollutants from vehicles and the average daily traffic (ADT). The FHWA found that ADT's under 30,000 vehicles per day have the potential for very minor water quality impacts. The existing (2006) ADT's along the route range from 3,350 to 7,200 vehicles per day. The future (2030) ADT's are estimated to be between 4,800 and 10,300 vehicles per day. Based on the ADT, the expansion of Illinois 13/127 will have only minor impacts on water quality.

Temporary maintenance impacts are associated with snow removal due to the application of deicing salt (sodium chloride) to control ice and snow on roadway surfaces during the winter months. The application of deicing salts varies from year to year depending on the number and severity of storms. During FY 2004, District 9 (southern Illinois) used 3.57 tons of salt per lane mile. The FY 2004 statewide average was 9.83 tons of salt per lane mile.

The water quality standard for chloride is 500 parts per million. Chloride is a highly mobile element and passes easily through flowing streams and rivers. The streams in the project area are large enough that winter concentrations of chloride should not exceed the water quality standard. There is no water quality standard for sodium. The sodium ion tends to bind with clay and becomes immobile within the highway rights-of-way. Maintenance impacts on the areas surface waters are temporary and minor.

4.8.3 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 improvements. The additional impervious area presented by the proposed roadway surface represents a 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 community water supply wells. Pinckneyville obtains drinking water from the Pinckneyville Reservoir and Vergennes and Murphysboro obtain drinking water from Kincaid Lake.

One private drinking water well would be taken by the Preferred Alternative. However, the residence that it serves also would be taken. No other known private drinking water wells would be impacted by the proposed project.

This project should 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.

4.9 Floodplains

The proposed project has been reviewed in accordance with Executive Order 11988 *Flood Plain Management*; U.S. Water Resources Council’s *Flood Plain Management Guidelines for Implementing Executive Order 11988*; and the U.S. Department of Transportation Order 5650.2 *Protection and Management of Flood Plains*.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps for Perry and Jackson Counties (revised August 1, 1980) were examined to identify base floodplains which would be impacted by the project. Beaucoup Creek and Opossum Creek are the only streams in the project corridor that have a FEMA regulatory floodway. All floodplain encroachments for this project would be transverse. **Table 24** summarizes these encroachments.

While a portion of the Beaucoup Creek floodplain encroachment in the area of the Pinckneyville-Du Quoin Airport might appear to be longitudinal, as seen in **Exhibit 8, sheet 3**, that portion of the roadway actually is crossing minor (and unnamed) tributaries of Beaucoup Creek at right angles. **Exhibit 6, Sheet 3**, shows those streams more clearly. The overall effect of continuing to use the existing roadway alignment for the roadway improvement in this area is to limit the impact on the floodplain.

There are no practical alternatives to construction in floodplains and floodways since, with the exception of the transverse crossing of Opossum Creek, all proposed fills are associated with existing encroachments. Modification of the existing roadway alignment to reduce the amount of fill is not possible, since utilizing the existing embankment in floodplain areas minimizes the projected floodplain and floodway fill.

All of the project's proposed structures would have an effective waterway opening equal to or greater than their corresponding existing structures. Backwater surface elevations are not expected to increase. As a result, there would be no adverse impacts on natural and beneficial floodplain values; there would be no adverse change in flood risks; and there would be no increase in potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that these encroachments would not be significant.

Table 24 Floodplain Encroachments		
Location (Station)	Encroachment	Length of Fill in Floodplain (ft.)
Station 2585 + 32 – 2610 + 72 (Beaucoup Creek just north of Murphysboro)	Transverse	2,840
Station 3087 +05 – 3108 +60 (Youngs Creek at Buffalo Curve)	Transverse	2,155
Station 3128 + 10 – 3129 + 32 (just west of Buffalo Curve on IL 13/127)	Transverse	122
Station 3136 + 06 – 3260 + 26 (Beaucoup Creek and its unnamed tributaries between Buffalo Curve and Airport Curve)	Transverse	12,420
Station 3329 + 60 – 3339 + 31 (just north of IL 152 and CH 4)	Transverse	971
Station 3442 +65 – 3455 +79 (Chicken Creek just south of Pinckneyville)	Transverse	1,314
Station 3668 + 00 – 3684 +5 0 (Opossum Creek north of Pinckneyville)	Transverse	1,650

4.10 Wetlands

A total of 15.85 acres of wetlands will be directly impacted from 19 wetland sites by the Preferred Alternative. **(See Exhibit 20.)** Fourteen of the wetland sites are adjacent to the existing roadway. **Table 25** identifies the wetland type, the National Wetland Inventory Code (if any), the dominant vegetation, the Floristic Quality Index, the wetland size, and the wetland acres affected.

The plant community types of the 19 impacted wetlands include nine forested wetlands, four wet meadows, three marshes, two ponds and one wet shrubland. Two of these wetland sites are considered to have a relatively high functional value and are discussed below. Both of the

**Table 25 (Sheet 1 of 3)
Impacted Wetlands**

Wetland Site No.	Wetland Type	NWI Classification	Dominant Vegetation	Floristic Quality Index	Wetland Size (Acres)	Acres Affected
29R*	Floodplain Forest	PF01A	<i>Aster simplex</i> , <i>Acer saccharinum</i> , <i>Fraxinus pennsylvanica</i> , <i>Senecio glabellus</i>	13.7	1.64 ¹	1.64
30*	Wet Meadow	None ²	<i>Acer saccharinum</i> , <i>Fraxinus pennsylvanica</i> , <i>Aster simplex</i> , <i>Elymus virginicus</i> , <i>Polygonum sp.</i>	13.5	0.90	0.90
31*	Wet Meadow	None ²	<i>Aster simplex</i>	6.8	1.85 ¹	1.85
23*	Floodplain Forest	PF01A/PEMA	<i>Cara illinoensis</i> , <i>Fraxinus pennsylvanica</i> , <i>Poa pratensis</i>	12.1	3.9	2.10
20*	Floodplain Forest	None ²	<i>Acer negundo</i> , <i>Acer saccharinum</i> , <i>Fraxinus pennsylvanica</i> , <i>Platanus occidentalis</i>	15.1	0.57	0.03
19*	Wet Meadow	PEMA	<i>Apocynum cannabinum</i> , <i>Carex vulpinoidea</i> , <i>Fraxinus pennsylvanica</i> , <i>Rumex crispus</i>	11.9	1.00	0.71
17*	Wet Shrubland	None	<i>Acer saccharinum</i> , <i>Fraxinus pennsylvanica</i>	23.3	0.70	0.70

* Label corresponds to INHS report from May 30, 2002

** Label corresponds to INHS report from October 25, 2002

*** Label corresponds to INHS survey conducted June through August 2001

¹ Area affected identified by INHS but the total wetland size was not delineated. In these cases the INHS did note that the wetland's total size was bigger than the acres affected.

² Identified by INHS but not on NWI mapping.

Table 25 (Sheet 2 of 3)
Impacted Wetlands

15*	Floodplain Forest	PF01A	<i>Carex squarrosa</i> , <i>Fraxinus pennsylvanica</i> , <i>Gleditsia triacanthos</i>	32.5	4.20	0.90
13*	Marsh	PUBFx	<i>Polygonum amphibium</i> , <i>Scirpus atrovirens</i>	14.2	0.48	0.48
11*	Marsh	PEMA ^{df}	<i>Salix nigra</i> , <i>Carex lupulina</i> , <i>Ludwigia palustris</i> <i>americana</i> , <i>Polygonum amphibium</i> , <i>Scirpus atrovirens</i>	12.4	0.48	0.48
10*	Pond	PUBFx	<i>Salix nigra</i> , <i>Ludwigia palustris</i> <i>americana</i> , <i>Typha latifolia</i>	9.4	0.48	0.48
6*	Pond	PUBGx	<i>Salix exigua</i> <i>Aster simplex</i> , <i>Carex bicknellii</i> , <i>Eleocharis macrostachya</i> , <i>Ludwigia palustris</i>	14.7	1.45	1.45
1*	Marsh	PEMF	<i>Fraxinus pennsylvanica</i> , <i>Eleocharis erythropoda</i> , <i>Festuca pratensis</i> , <i>Phragmites australis</i> , <i>Typha angustifolia</i>	16.2	0.18	0.18

* Label corresponds to INHS report from May 30, 2002

** Label corresponds to INHS report from October 25, 2002

*** Label corresponds to INHS survey conducted June through August 2001

¹ Area affected identified by INHS but the total wetland size was not delineated. In these cases the INHS did note that the wetland's total size was bigger than the acres affected.

² Identified by INHS but not on NWI mapping.

Table 25 (Sheet 3 of 3)
Impacted Wetlands

2*	Floodplain Forest	PF01A ²	<i>Glyceria striata</i> , <i>Phragmites australis</i> , <i>Fraxinus pennsylvanica</i> , <i>Cornus drummondii</i> , <i>Juncus effusus</i>	21.3	3.30	1.07
29***	Wet Meadon	None ²	<i>Juncus effuses</i> , <i>Polygonum hydropiper</i> , <i>Scirpus atrovirens</i>	10.8	0.29	0.29
36***	Floodplain Forest	PFO1A	<i>Acer saccharinum</i> , <i>Fraxinus pennsylvanica</i> , <i>Glyceria striata</i>	14.3	2.27	1.83
42***	Floodplain Forest	None ²	<i>Salix nigra</i> , <i>Bidens frondosa</i> , <i>Ludwigia palustris</i>	19.0	0.52	0.37
50***	Floodplain Forest	PFO1A	<i>Betula nigra</i> , <i>Ulmus Americana</i> , <i>Boehmeria cylindrical</i> , <i>Glyceria striata</i> , <i>Leersia virginica</i>	14.5	0.42	0.08
52***	Floodplain Forest	PFO1A	<i>Acer negundo</i> , <i>Polygonum punctatum</i> , <i>Saururus cernuus</i>	13.6	0.31	0.31
Total Affected Acres						15.85

* Label corresponds to INHS report from May 30, 2002

** Label corresponds to INHS report from October 25, 2002

*** Label corresponds to INHS survey conducted June through August 2001

¹ Area affected identified by INHS but the total wetland size was not delineated. In these cases the INHS did note that the wetland's total size was bigger than the acres affected.

² Identified by INHS but not on NWI mapping.

wetland sites are adjacent to the existing road and occur where additional lanes and bridges will be constructed.

The first site occurs at the Beaucoup Creek (Jackson County) crossing. This site is a complex of three wetland types (Sites 29R, 30, & 31) that occurs within the Beaucoup Creek floodplain. Approximately 4.39 acres of this wetland complex will be removed; 1.64 acres of forested wetland (Site 29R) and 2.75 acres of wet meadow (Sites 30 & 31). The forested wetland (Site 29R) is dominated by silver maple and green ash and has a FQI of 13.7. The first of the two wet meadows (Site 30) was formed from forested wetland by the clearing of trees and the establishment of a powerline. This site is maintained as a wet meadow and is dominated by shrubby silver maple and green ash and contains four species of sedges, one of which is state listed (Arkansas sedge). This state listed plant species will be protected during construction. The FQI for this wet meadow is 13.5. The other wet meadow (Site 31) was an unplanted (mid May) agricultural field dominated by herbaceous species. The FQI of this site is 6.8.

This interspersed of different wetland types adjacent to the creek and agricultural lands contained the highest number of bird species and neotropical migrants. The breeding bird survey identified 53 individuals representing 26 species. The dominant species included warbling vireo, red-winged blackbird, European starling, brown-headed cowbird, and indigo bunting. Neotropical migrants within this complex included the yellow-billed cuckoo, ruby-throated hummingbird, eastern wood-pewee, Acadian flycatcher, yellow-throated vireo, warbling vireo, red-eyed vireo, blue-gray gnatcatcher, indigo bunting, and dickcissel. Functions lost will include wildlife habitat (neotropical bird migrants) and flood storage.

The second site occurs along Beaucoup Creek (Perry County) crossing. This site is a complex of two wetland types (Sites 15 & 17) that also occurs within the Beaucoup Creek floodplain. Approximately 1.60 acres of this wetland complex will be removed; 0.90 acres of forested wetlands (Site 15) and 0.70 acres of wet shrubland (Site 17). The forested wetland is dominated by green ash, honey locust, pin oak, and American elm and has and has a FQI of 32.5. The wet shrubland (Site 17) occurs within a powerline right-of-way and is dominated by shrubby silver maple and green ash. It has a FQI of 23.3. The state listed rice rat is known to disperse up and downstream through this area but is not known to breed at this location. The breeding bird survey identified 31 individuals representing 16 species. The dominant species were the American robin and indigo bunting. Neotropical migrants within this complex included the chimney swift, eastern wood-pewee, Acadian flycatcher, warbling vireo, blue-gray gnatcatcher, common yellowthroat, and the summer tanager. Functions lost will include wildlife habitat (neotropical migrants) and flood storage.

4.10.1 Avoidance, Minimization and Mitigation

Executive Order 11990 (Protection of Wetlands) requires federal agencies to avoid, to the extent practicable, the long and short-term adverse impacts associated with the destruction or modification of wetlands. The order directs federal agencies to avoid new construction in wetlands unless there is no practicable alternative and where wetlands cannot be avoided, the proposed action must include all practicable measures to minimize harm to wetlands. The Illinois Interagency Wetland Policy Act of 1989 has similar wording.

The proposed project is composed of two types of work. The first type is the expansion of the existing roadway north of Murphysboro to south of Pinckneyville. A total of 12.97 acres of wetland loss occurs within this portion of the project. Avoidance of wetlands along this stretch of road is not possible because they occur either on both sides of the existing road or on one side with the other side being constrained by Airport facilities or geometric problems. The second type is the bypass of Pinckneyville on new alignment. A total of 2.88 acres of wetland loss occurs within this portion of the project. A number of east and west bypasses around Pinckneyville were studied as well as several through-town options. The eastern bypass alternates of Pinckneyville would involve two crossings of Beaucoup Creek, its floodplain, and large acreages of wetlands with high functional values. Through-town alternatives would involve historic, business, and residential displacements. The Preferred Alternative, the Modified West Bypass, has the fewest wetland impacts of the bypass alternatives. It also has fewer business, residential, noise and community cohesion impacts compared to the through-town alternates, thereby making it the Least Environmentally Damaging Practicable Alternative. See **Table 12** for information on the specific impacts associated with each of the Pinckneyville alternates and Section 3.3.4 for a detailed description of why several of the alternates with few wetland impacts were not considered practicable.

Minimization of wetland impacts was an important factor in the development and screening of alternatives. Alignments associated with the “Buffalo Curve” and the eastern bypass of Pinckneyville were eliminated from consideration because of potential wetland impacts. In the future design phase, IDOT will investigate additional measures to minimize wetland impacts, such as keeping roadway side slopes as steep as practicable, employing strict erosion and sediment control measures to minimize sedimentation and siltation into adjacent wetlands, and keeping construction sites within wetlands free of construction debris.

Where there is no practicable alternative to filling wetlands, state and federal regulations require compensatory mitigation. The wetland losses will be mitigated at the proposed IDOT Sugar Camp Creek Mitigation Bank in Franklin County. The proposed Bank and the project area occur within the Big Muddy River Basin. Under the IDNR implementing procedures for the interagency wetland policy act the following mitigation ratios are required for a project whose impacts will be mitigated off-site and in-basin. Impacts to wetlands under a half acre in size are mitigated at a 2:1 ratio. Impacts to wetlands equal to or greater than half acre in size are mitigated at a 4:1 ratio. Wetland site 30 is mitigated at a ratio of 5.5:1 because of the presence of the state listed Arkansas sedge. The total off-site mitigation required for the project is 62.01 acres.

The Illinois Department of Transportation Joint Design/Construction Procedure Memorandum on Erosion and Sediment Control will be implemented to minimize impacts to wetlands. Several erosion control measures will be utilized to minimize impacts to wetlands. Perimeter barrier fencing will be erected around the perimeter of each wetland. The only runoff that will be allowed to leave the construction zone will be through sedimentation/stilling basins. In addition, all disturbed areas will be seeded or sodded as soon as practical after construction activities in that area have been concluded.

4.11 Special Waste

4.11.1 Hazardous Waste

A Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) site will be involved with the project but there is no prudent or feasible alternative for avoidance. The site, abandoned property currently owned by Perry County Enterprises, LLC and formerly used by the Consolidated Coal Company (**See Exhibit 20, Sheet 23**), includes identified hazardous wastes. The nature and extent of the involvement with the CERCLIS site is known, all areas of contamination will be addressed to protect human health and the environment in accordance with applicable Federal and State laws and regulations, and all risks and liabilities (costs, etc.) of the involvement are known and are acceptable to IDOT.

4.11.2 Non-Hazardous Waste

Two Preliminary Environmental Site Assessments for special waste were conducted by the Illinois Geological Survey. The assessments concluded that the Preferred Alternative could involve sites potentially impacted with regulated substances. Further, it has been determined that not all of the sites can be avoided. Two such sites, Sill Brothers and Midland Vanities, are shown in **Exhibit 20, Sheets 3 & 12**. Neither site involves petroleum contamination from leaking underground storage tanks. The nature and extent of the involvement are known and the areas of contamination will be managed and disposed of in accordance with applicable Federal and State laws and regulations and in a manner that will protect human health and the environment. The quantities to be disposed are not expected to have a significant effect on landfill capacity. A copy of the Special Waste Waiver is located in **Appendix B**.

4.12 Special Lands

4.12.1 Section 4(f) Lands

The Preferred Alternative would require the taking of a small portion of land for right of way on the eastern edge of Pyramid State Park. (**See Exhibit 20, Sheets 25, 26 and 27.**) Pyramid State Park, the largest State Park in Illinois, is under the jurisdiction of the Illinois Department of Natural Resources. Impacts to the Park are subject to protection under Section 4(f) of the US DOT Act of 1966.

4.12.1.1 Section 4(f) Resource

Pyramid State Park lies just west of Illinois 13/127 and north of County Highway 4 in Perry County. (**See Exhibit 7, Sheet 4.**) The Illinois Department of Natural Resources (IDNR) maintains jurisdictional authority over the Park and has provided property descriptions for use in this project. A small portion of Park land would be needed to expand the existing roadway to four lanes. Encroachment on the Park would begin approximately 2,650 feet south of Cudgetown Road and extend north for approximately 5,775 feet along the Park's eastern edge.

Pyramid State Park is primarily used for park and recreational activities, including picnicking, hiking, horseback riding, mountain bike riding, fishing, boating, camping and hunting. This recreational area, which became a park in 1968, consists of heavily forested hills and many lakes and ponds. Land acquisition over the years has brought the total overall acreage of the Park to 19,701 acres, making it the largest state park in Illinois. Much of the land within the Park is reclaimed strip mine land. Pyramid gets its name from a coal mine that once existed there.

The Park's existing amenities include parking lots, small picnic groves with picnic tables and charcoal grills, one picnic shelter, three Class C camping areas, Class D hike-in campsites, a small equestrian camp, youth group camping area, toilet facilities, and boat launches at some of the larger lakes. There are, however, no electrical hookups in the camping areas. The main entrance to the Park is from County Highway 4 (FAS 864) on the south. An internal road system runs throughout the Park.

4.12.1.2 Impacts on Section 4(f) Resource

To meet the project purpose and need, the proposed action is the Build Alternative. The Build Alternative provides for widening Illinois 13/127 from two lanes to four lanes. To accommodate these improvements the project will impact the Section 4(f) property described above. **(See Exhibit 20, Sheets 25, 26 and 27.)** The widening of Illinois 13/127 west of the existing pavement would use an inactive mining railroad bed and impact a narrow strip of woody and herbaceous vegetation between the railroad bed and a strip mine pond within the Park. This narrow strip of land is isolated from the remainder of the park and has no recreational value. It should be noted that some of the railroad bed is within the Park boundaries.

Under the Preferred Alternative, approximately 5.1 acres of the Park would be converted to highway use. This represents less than 0.1 percent of the approximate 19,700 acres of the Park. The conversion of the Section 4(f) lands to highway use would not adversely affect or hinder the existing allowed uses and function of the Park. The existing access to the Park would not be affected.

4.12.1.3 Efforts to Avoid, Minimize and Mitigate

The encroachment into the Park is limited to a narrow strip of land that is isolated by water from the remainder of the Park, and thus not useable for the Park's intended functions. **(See Exhibit 20, Sheets 25, 26 and 27.)** Therefore, there would be little harm to the Park in that regard. Potential for harm does exist, however, at those locations where roadway construction might encroach into the strip-mine lake paralleling the inactive mining railroad and the proposed new expressway.

IDOT will avoid any encroachment into the strip-mine lake by providing steeper roadway slopes and installing guardrails. The IDOT Joint Design/Construction Procedure Memorandum on Erosion and Sediment Control also would be implemented to minimize impacts to surface water resources. All disturbed areas will be seeded or sodded as soon as practical after construction activities in the area have concluded.

Several mitigation strategies were considered to minimize impacts to the Park. At an August 14, 2003 meeting with IDNR and Pyramid State Park officials, it was suggested that new access be provided to the strip-mine lake from Galum Church Road. This suggestion was dismissed from further consideration due to several factors including 1) soil contamination along the existing alignment of Galum Church Road, 2) poor location and geometry due to IDOT's access control policy and 3) poor topography. Another mitigation strategy suggested involved the prospect of interagency cooperation to construct a bicycle/hiking trail from Pinckneyville to Pyramid State Park. Issues such as funding, construction, location and maintenance were discussed and it was agreed that the trail would be investigated; however, if the concept did not come to fruition, then it was agreed that mitigation for the impacts would be accomplished by applying compensation of equal value to improvements within the park system.

As a result of their discussions with IDNR on mitigation strategies, IDOT proposes to mitigate for the taking of 5.1 acres (actual taking, reduced from the 5.5 acres anticipated) of park property by assessing the value of the property and then providing improvements of equal value to the system of park roads or trails at Pyramid State Park.

4.12.1.4 Coordination

The Illinois Department of Transportation has coordinated its efforts with the Illinois Department of Natural Resources (IDNR) and the Federal Highway Administration (FHWA) regarding the Section 4(f) issues associated with this project. Coordination efforts included meetings and letters. Copies of the meeting minutes and correspondence are located in **Appendix B**.

A summary of the Section 4(f) meetings is as follows:

- August 14, 2003 – This meeting was held with IDNR. The purpose of the meeting was to discuss the Section 4(f) issues involved with the acquisition of property from Pyramid State Park. IDNR agreed that 1) the area of impact to the park could be considered a “minor involvement”, 2) the acquisition of approximately 5.5 acres from the site and the removal of the existing access was not considered to be a significant impact, 3) there was no prudent and feasible alternative to the use of park property through this area of the improvement, and 4) mitigation for the impacts at this location could be accomplished by applying compensation of equal value to improvements within the Pyramid State Park system.
- August 20, 2003 – This meeting was held with FHWA. The purpose of the meeting was to request that the Section 4(f) work be process as a Nationwide Programmatic Evaluation for Minor Involvements.

A summary of the Section 4(f) written correspondence is as follows:

- July 1, 2003 – This letter was written by IDOT and requested background information from IDNR regarding Pyramid State Park.

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- August 25, 2003 – This e-mail was written by IDOT and requested e-mail concurrence from FHWA on the agreement to process the Section 4(f) involvement at Pyramid State Park as a Nationwide Programmatic Evaluation for Minor Involvement.
 - August 25, 2003 – This e-mail was written by FHWA and provided concurrence that the action met the criteria for processing as a Nationwide Programmatic Evaluation for Minor Involvements.
 - August 27, 2003 – This letter was written by IDOT and requested final, written concurrence from IDNR that 1) the project meets the established criteria and conditions for processing as a Nationwide Programmatic Section 4(f) Evaluation for Minor Involvements 2) the impact to Pyramid State Park is insignificant and that there is no prudent and feasible alternative, 3) the proposed foreslopes will be steepened and a guardrail will be placed to avoid the pond, and 4) mitigation for the property taken will be accomplished by assessing the value of the property then providing improvements of equal value to the system of park roads or trails at Pyramid State Park.
 - September 2, 2003 – IDNR provided written concurrence on the points outlined in the August 27, 2003 letter from IDOT.
 - July 27, 2007 – This letter was written by IDOT and notifies IDNR that IDOT will pursue a 4(f) finding of “De Minimis” as outlined in Section 6009 of SAFETEA-LU for the impacts to the Park.

4.12.2 Section 6(f) Lands & OSLAD Act Lands

The Preferred Alternative would not take any lands that have Land and Water Conservation (LAWCON) funds or Open Spaces Land Acquisition and Development (OSLAD) Act funds involved in their purchase or development.

4.13 Permits/Certifications Required

4.13.1 Water Resources

It is anticipated that wetland impacts associated with stream crossings (specifically Beaucoup Creek, Youngs Creek and Chicken Creek) will exceed 0.5 acres. Therefore, the project will be processed as an individual Section 404 permit. In addition, an individual Section 401 Water Quality Certification will be required from the IEPA. As such, an anti-degradation review will be required and will be subject to public review before water quality certification will be issued. This may be concurrent with the public review of the individual Section 404 permit application.

Because many of the construction sections anticipated for this project would result in the disturbance of one or more acres of total land area, they would be subject to the requirement for a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges from the construction sites. Permit coverage would 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 would be followed, including preparation of a Stormwater Pollution Prevention Plan before any construction would begin. This plan will identify potential sources of pollution, which may reasonably be expected to affect the quality of stormwater discharges from the construction site. It also will describe and ensure the implementation of practices that would be used to reduce the pollutants in discharges associated with construction site activity and to assure compliance with the terms of the permit.

4.13.2 Floodplains

Fill placed within the Beaucoup Creek and Opossum Creek floodways also would require construction permits from the IDNR Office of Water Resources. This permit program is described in Part 3700 of the Illinois Administrative Code.

4.13.3 Wetlands

Construction of the Preferred Alternative would involve impacting 15.85 acres of wetlands. An individual Section 404 permit will be required as discussed in Section 4.13.1. Any wetland identified as an “isolated wetland” by the U.S. Army Corps of Engineers would fall under the jurisdiction of IDNR and the Illinois Interagency Wetland Policy Act of 1989. Under this Act and its implementing rules the mitigation of wetland impacts are to be discussed in a Wetland Compensation Plan which will require approval from IDNR.

Final approval of the mitigation ratios and mitigation site will be coordinated through the IDNR and the U.S. Army Corps of Engineers. The project will be in compliance with the Illinois Interagency Wetland Policy Act of 1989.

4.14 Other Issues

4.14.1 Cumulative Impacts

Cumulative impacts “...is 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” (40 CFR 1508.7). Wetland resources have been impacted by past and present activities. In the project area, pre-settlement wetlands have been impacted by farming and surface mining.

More recently, some of the project wetlands occurring between Illinois Route 4 north of Murphysboro to Pinckneyville were impacted in 2000 by work on this section of roadway. A total of 1.29 acres of wetland were impacted by this project. Current wetland sites 10 (0.09 acre loss), 11 (0.10 acre loss), and 17 (0.13 acre loss) were also impacted by the 2000 construction. Sites 10 and 11 would be completely removed by the current project. A forested wetland that was part of the upland woods north of Piatt was filled in its entirety (loss of 0.96 acres) during the 2000 project. Some areas of small wet meadows/farmed wetlands which were delineated in 1991 were not delineated in 2001. It is assumed these were converted back to farmland. A total of 2.85 acres of mitigation was required for the 2000 project. A local road project just west of

the project area (Pyatts blacktop) impacted 2.12 acres of wetland in 1998. A total of 11.54 acres of mitigation was required for the 1998 project. The mitigation goals for both of these projects have not been achieved. Other than the proposed project, there are no known foreseeable future impacts on wetlands by IDOT or others.

4.14.2 Indirect Impacts

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

The proposed improvement has the potential to cause indirect economic impacts within the project area. Some development may occur at rural intersections/interchanges over time, depending on local land-use controls. Given the rural nature of the project area south of Pinckneyville, such development in that area is expected to be limited. However, the Modified West Bypass of Pinckneyville is expected to induce development on the city’s west side. The City of Pinckneyville has already created a Tax Increment Finance (TIF) District that includes commercial and residential areas on the west side of Pinckneyville. The City is in the process of actively marketing a piece of city-owned property north of Water Street and Illinois 13, just east of the Modified West Bypass. **(See Exhibit 5.)** When developed, the city-owned property would convert approximately 93 acres of farmland and 23 acres of wooded area for residential and commercial use.

4.14.3 Construction Impacts

Construction impacts that may occur include inconveniences to motorists that choose to take alternative routes, excessive traffic delays within the project limits due to construction activities, and inconveniences to motorists due to temporary lane closures. Construction activities also may temporarily affect police, fire, and emergency vehicle response times. Coordination with agencies that provide emergency services within the adjacent communities has been ongoing and will continue throughout the construction process. A construction schedule will be developed and distributed to local authorities and the media to keep services, motorists, and authorities advised.

When construction begins on the rural portion of the expressway, where two lanes are added to the existing two-lane facility, the existing roadway will continue to be used while the new lanes are being built. After the new lanes are finished, traffic will then be diverted to the newly built lanes while existing Illinois 13/127 is being reconstructed. In the areas where four new lanes are proposed, existing Illinois 13/127 will be open to traffic during construction. This will help reduce motorist inconveniences and traffic flow disruptions.

At the Illinois 152 interchange location, a run-around detour at the existing intersection would be necessary to accommodate Illinois 152 traffic while the proposed interchange is constructed. The Illinois 154 interchange west of Pinckneyville would be built under traffic (stage construction).

4.15 Environmental Commitments

- The IDOT Bureau of Construction will notify the local governments within the project area (Perry County, Jackson County, Pinckneyville and Vergennes) prior to construction so that they may inform emergency service providers to ensure that service will not be interrupted during the construction phase.
- Public notification will be made prior to road closures and lane restrictions to make motorists aware of detours and other impediments during the construction phase.
- One federally-listed species (Indiana bat) has the potential to occur in the vicinity of the project corridor (based on the Illinois Natural History Survey's Mammal Survey dated March 29, 2002). During the summer, the Indiana bat frequents the corridors of small streams with well-developed riparian woods, as well as mature lowland and upland forests. Since the proposed project will require the removal of trees and since there is no information which suggests the trees to be cleared would not provide potentially suitable habitat for Indiana bat summer roosting, tree clearing will be prohibited from April 1 to September 30 to avoid impacting this species. With this provision in place, the proposed project is not likely to adversely affect the Indiana bat.
- Two state-listed species (Arkansas sedge and marsh rice rat) occur within the project area. The Arkansas sedge occurs at the edge of the existing right-of-way at the Beaucoup Creek (Jackson County) crossing (**Exhibit 7, Sheet 1**). Work in this area involves removal and reconstruction of the bridge over the stream. To avoid impacts to the sedge, its location will be identified on the design plans. The area will be identified as a "no intrusion area" and will be fenced off during construction. With these provisions in place, the project will not impact the Arkansas sedge. While the marsh rice rat was observed at the Beaucoup Creek (Perry County), it is considered to be a migrant individual utilizing the creek as a migration corridor. Bridging the creek will allow marsh rice rats safe passage up and down stream. As a result, the project will not impact the marsh rice rat.
- The expressway will be designed and constructed in such a way as to eliminate encroachment onto the Grange Hall property. A design exception will be required to provide access to the Grange Hall property from Grange Hall Road.
- Trees which are required to be removed will be replaced according to IDOT's Departmental Policy D&E-18. It is estimated that 90 acres of trees will be removed on this project. Final tree removal quantities will be calculated and mitigation sites identified in the Phase II design plans.
- Coordination with USFWS, U.S. Army Corps of Engineers, Illinois EPA and IDNR will occur again prior to any wetland impacts and mitigation efforts.
- The IDOT Joint Design/Construction Procedure Memorandum on Erosion and Sediment Control will be implemented to minimize impacts on wetlands. Several erosion control measures will be utilized to minimize impacts to wetlands. Perimeter barrier fencing will be

erected around the perimeter of each wetland. The only runoff that will be allowed to leave the construction zone in these areas will be through sedimentation/stilling basins. In addition, all disturbed areas will be seeded or sodded as soon as practical after construction activities in that area have been concluded.

- There are still outstanding special waste issues to be addressed. A Special Waste Waiver has been approved which allows design approval to be granted prior to completion of special waste studies. Right of way required from any contaminated parcel will not be acquired until the Preliminary Site Investigation, or subsequent studies, are completed.
- IDOT will secure an individual Section 404 permit and an individual Section 401 Water Quality Certification prior to project construction. The project would also require a National Pollutant Discharge Elimination System (NPDES) permit for stormwater discharges since one or more acres of total land area will be disturbed during construction.
- The IDOT Joint Design/Construction Procedure Memorandum on Erosion and Sediment Control would be implemented to minimize impacts to surface water resources. All disturbed areas will be seeded or sodded as soon as practical after construction activities in the area have concluded.
- Three natural gas pipelines owned by the Natural Gas Pipeline Company of America cross Illinois 13/127 approximately 1,800 feet north of the Pinckneyville-Du Quoin Airport. While it is unlikely that these pipelines would need to be relocated or placed at a greater depth, it is likely that they will need to be encased. Coordination with the Natural Gas Pipeline Company of America will be handled in Phase II design with a utilities agreement.
- In accordance with its Letter of Understanding with the Cities of Pinckneyville and Du Quoin, IDOT has agreed to the following commitments related to the Pinckneyville-Du Quoin Airport. **(See Appendix B.)**
 - Make the surveys, prepare the plans and special provisions, receive bids, award the contract, furnish engineering inspection during construction, and cause the improvement to be built in accordance with the approved plans, specifications and contract.
 - Construct a new airport terminal access road to and from Illinois Route 13 & 127 to the north of the existing entrance for the Pinckneyville-Du Quoin Airport.
 - Acquire approximately 30 acres of land and three (3) residences to protect and extend the Runway 18 end and corresponding approach surface and allow for construction of the new airport terminal access road. The ownership of this land will be transferred to the Cities of Pinckneyville and Du Quoin for the benefit of the Pinckneyville-Du Quoin Airport
 - Assume all land acquisition, construction, and engineering costs associated with the improvement.
- There is the potential to impact one archaeological site within the proposed project right-of-way. If this site cannot be avoided, then further evaluation will be required and the site will be processed under the Programmatic Agreement for the Mitigation of Adverse Effects to

Illinois Archaeological Habitation Sites. The SHPO concurred with these findings on April 17, 2007.

- IDOT intends to relocate the residents of the supportive-living facility as soon as funding to construct the project becomes available. Negotiations will be undertaken with the facility's owner to provide a new facility prior to moving the residents. The supportive-living facility residents will not be housed in temporary facilities.

5.0 COMMENTS AND COORDINATION

5.0 COMMENTS AND COORDINATION

This section summarizes the coordination and public involvement efforts that have occurred throughout the project development process.

5.1 Coordination with Federal, State and Local Agencies

The Illinois Department of Transportation (IDOT) has coordinated the project study with many federal, state and local agencies which have varying degrees of jurisdiction and expertise concerning the area's natural resources and the socio-economic outcomes of building a four-lane highway in the project area.

5.1.1 Scoping Process

A formal scoping meeting was held January 10, 2001 at IDOT District 9 Office in Carbondale, Illinois. The meeting included a field review to help define the scope of the project study. Representatives of the following organizations attended the meeting:

- Federal Highway Administration
- Illinois Department of Transportation, Central Office, Bureau of Design and Environment
- Illinois Department of Transportation, District 9 Office
- Johnson, Depp & Quisenberry, Engineering and Environmental Consultants

Areas of concern and focus discussed at the meeting included (a) how the project is funded and whether the project is listed in the Statewide Transportation Improvement Program, (b) historic structures, (c) wetland impacts and mitigation, and (d) the logical termini for the project.

The scoping process continued throughout the project study with continual input from government agencies and the public as further described in this section.

5.1.2 NEPA/404 Process

Two NEPA/404 Merger meetings were held for this project. The first meeting was held at the IDOT District 4 Office in Peoria, Illinois on Monday, April 28, 2003. Representatives of the following organizations attended the meeting:

- U.S. Environmental Protection Agency
- Federal Highway Administration
- Illinois Department of Agriculture, Bureau of Land and Water Resources
- Illinois Department of Natural Resources
- Illinois Department of Transportation, Central Office, Bureau of Design and Environment
- Illinois Department of Transportation, District 9 Office
- Johnson, Depp & Quisenberry, Project Consultant

All three concurrence points were sought at this meeting, i.e., 1) the purpose and need for the project, 2) the alternatives to carry forward, and 3) the Preferred Alternative. Concurrence was granted on all three points by the committee members present. It was noted that representatives of the U.S. Army Corps of Engineers (USACE) and U.S. Fish and Wildlife Service (USFWS)

who cover the Murphysboro to Pinckneyville area were not present at the meeting. The Federal Highway Administration (FHWA) coordinated with USACE and USFWS to obtain their concurrence on all three points.

Correspondence showing that concurrence was granted on all three points by the U.S. Army Corps of Engineers and USFWS on June 30, 2003 and June 27, 2003, respectively, is included in **Appendix B**.

Subsequent to obtaining all three concurrence points, public involvement activities led to the addition of another alternate alignment west of Pinckneyville identified as the Modified West Bypass. After carefully considering all of the alternate alignments, IDOT decided to select the Modified West Bypass as its Preferred Alternative in the Pinckneyville area. As a result, it became necessary to revisit the second and third concurrence points.

The second NEPA/404 Merger meeting was held at the Federal Highway Administration Office in Springfield, Illinois on May 29, 2007. Representatives of the following organizations attended the meeting:

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- Federal Highway Administration
- Illinois Department of Agriculture, Bureau of Land and Water Resources
- Illinois Department of Natural Resources
- Illinois Department of Transportation, Central Office, Bureau of Design and Environment
- Illinois Department of Transportation, District 9 Office
- Johnson, Depp & Quisenberry, Project Consultant

The last two concurrence points were sought at this meeting, i.e., 2) the alternatives to carry forward, and 3) the Preferred Alternative. Concurrence was obtained from USEPA and USACE at the meeting. FHWA coordinated with USFWS following the meeting and obtained concurrence from them via an e-mail dated June 6, 2007. **(See Appendix B.)**

5.1.3 Agency Coordination

Coordination efforts between IDOT and agencies interested in the proposed project have covered issues regarding sensitive environmental resources, including threatened and endangered species, wetlands, floodplains, Section 4(f) lands, noise impacts and various socio-economic issues. Coordination has occurred with the following agencies:

- Federal Aviation Administration
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- Illinois Department of Agriculture
- Illinois Department of Natural Resources
- Illinois Department of Transportation, Division of Aeronautics

Illinois Emergency Management Agency
Illinois Environmental Protection Agency
Illinois Historic Preservation Agency
Illinois Natural History Survey
Pyramid State Park
City of Carbondale
City of Du Quoin
City of Murphysboro
City of Pinckneyville
Jackson County Board
Perry County Board
Pinckneyville-Du Quoin Airport
Pinckneyville Planning Commission
Village of Vergennes

Copies of correspondence are included in **Appendix B**.

5.2 Public Involvement

One of the major components of this project's coordination efforts is its public involvement program. Throughout the project study, public input was integrated into the project development process.

To assure the concerns of all citizens were heard, IDOT developed and maintained a dialogue with the public and solicited comments using a variety of approaches including:

- news releases and notices
- an information center
- small group meetings
- a regional opinion survey
- citizen correspondence
- newsletters
- public information meetings and questionnaires
- Pinckneyville Area Citizens Advisory Council with interest group components
- public hearing

This approach utilized a customized mix of techniques and public involvement practices to (a) disseminate information, (b) assure that the public would be involved in the environmental assessment process, and (c) facilitate a two-way dialogue about issues and concerns. A range of techniques also were applied to give individuals a means to access information and participate in the dialogue at his or her own level of interest and availability.

5.2.1 News Releases and Notices

IDOT carried out communications with the news media throughout the project study to help assure that the citizens would understand and be able to participate in the engineering design and

environmental assessment process. Press releases were distributed periodically. Public notice advertisements announcing all public meetings were placed in the *Southern Illinoisan*, *Du Quoin Evening Call*, *Pinckneyville Democrat*, and *Murphysboro American*.

A news and feature clip file was maintained throughout the study process to monitor and document news media coverage of project issues.

5.2.2 Information Center

Information was made available at the IDOT District 9 Office in Carbondale so that those residents who wanted more detailed information could learn more about the study. Project information, such as engineering drawings, environmental baseline studies, detailed maps and public meeting exhibits, were available for the public to view. At the request of the Pinckneyville city officials, the exhibits from the September 5, 2002 Public Information Meeting were left on display at the city hall to extend the timeframe stakeholders could view the exhibits locally.

Many interested citizens viewed exhibits and discussed the project with IDOT District 9 staff. The District 9 Office received approximately 15 visits per year and fielded approximately 25 phone calls regarding the proposed project. The frequency of visits would increase after the public meetings. Approximately 10-15 persons interested or affected by the project would visit the District 9 Office for an informal meeting and discussion on the project after a public meeting.

5.2.3 Small Group Meetings

Small group meetings were held with various groups throughout the project study to answer questions and gain input on the proposed project. Several small group meetings were held in 2001 in Pinckneyville with local business leaders to gain an insight into how the proposed project would affect the business community. Meetings also were held with the Pinckneyville Planning Commission, Pinckneyville Chamber of Commerce, Pinckneyville Strategic Planning Committee, Pinckneyville City officials, Perry County officials, Perry County Historical Society, Village of Vergennes Trustees, Citizens Against Reckless Expansion (CARE) and 4-127.

5.2.4 Regional Opinion Survey

An opinion survey was conducted of area businesses and organizations that had a regional perspective to seek their opinions of the need for a new four-lane highway serving southern Illinois.

The objectives of this survey were 1) to point out the regional significance of this particular project, 2) to learn how this project would potentially benefit various individuals/groups, 3) to learn how this project might adversely affect various individuals/groups, and 4) to request written comments describing why individuals/groups support or oppose this project. A contact list was compiled which included 52 organizations in the areas of city government, county government, planning commissions, education, agriculture, business, recreation, tourism and

special interest groups. For a complete listing of the 52 organizations contacted, see **Appendix D**.

Telephone calls were made to everyone on the contact list. Of the 52 individuals/groups on the list, contact was made with 45. Of the 45 reached, 36 were in favor of the project and nine were undecided. The undecided were primarily from counties outside the project area who did not see a direct benefit to them.

5.2.5 Local Government Resolutions and Regional Letters of Comment

Resolutions supporting the expansion of Illinois Routes 13 and 127 from two lanes to four lanes were passed by the cities of Pinckneyville and Carbondale, as well as the Village of Vergennes and the Jackson County Board. Copies of these four resolutions are contained in **Appendix A**.

IDOT also has received over 30 letters commenting on the expansion of Illinois Routes 13 and 127 from government entities, college and university officials, business and economic development groups, individual businesses and recreation facilities within the region. Copies of these letters are contained in **Appendix E**.

5.2.6 Citizen Correspondence

IDOT received numerous letters from citizens. Of the responses received, two requested to be added to the project mailing list; seven requested meeting materials, maps, newsletters, etc.; eight suggested changes to the alignments and/or the study corridor; and 39 individuals wrote in opposition to the project. IDOT or its consultants responded to each inquiry.

Two petitions also were received. The first petition, received November 15, 2001, gathered 94 signatures and stated the following: “We, members of the Pinckneyville Community and of the Pinckneyville United Methodist Church, commend the IDOT proposal to widen highway 127 and encourage its speedy completion. However, because our community elementary school traffic empties on to Mill Street and three churches are located on Mill Street, as well as a pre-school program in our church, we urge, for safety reasons, that other routes than Mill Street be used.” Based on the impacts of a Mill Street Alternate as well as the result of this petition and public input from the November 2001 Pinckneyville Public Information Meeting, alternates using Mill Street were dismissed from further consideration.

The second petition, received December 2003, gathered 146 signatures and stated the following: “We, the undersigned, as effected residents believe the financial, economical, and ecological costs of a four lane Illinois Route 127 far out way he possible benefits. We hereby voice our position for the No Build options for the four lane Illinois Route 127 expansion (S. Locust & S. Walnut Included).” As a result of this petition and opposition to the Locust/Walnut Couple by the Pinckneyville City Council, the Pinckneyville Citizens Advisory Council was formed to help recommend an alternate for the Pinckneyville area. **(See Section 5.2.8.)**

5.2.7 Public Information Meetings and Questionnaires

Four open-house Public Information Meetings were held during the project study. At all the meetings, attendees were asked to complete a public comment form. A summary of each meeting's comments are included in **Appendix F**.

The first meeting was held in Vergennes at the Vergennes Community Center on October 25, 2001 where 134 individuals attended. The meeting was held to provide the public an opportunity to review and comment on the preliminary alignments for the rural portion of the project between Murphysboro and the southern limits of Pinckneyville. The second meeting was held in Pinckneyville at the Pinckneyville Jr. High School on November 15, 2001 where 236 individuals attended. This meeting was held to provide the public an opportunity to review and comment on the preliminary alignments for the portion of the project in the area of Pinckneyville. A summary of comments for each meeting are included in **Appendix F**.

The third and fourth meetings, held back-to-back, covered the entire project. They were held on September 4, 2002 at McElvain Elementary School in Murphysboro where 126 individuals attended and on September 5, 2002 at the Pinckneyville Jr. High School where 308 individuals attended. At these meetings the public was able to review and comment on the revised alignments and their costs and impacts. At each meeting, IDOT and consultant staff were available to answer questions. A summary of comments for each meeting are included in **Appendix F**.

5.2.8 Pinckneyville Area Citizens Advisory Council

Background

In January 2003, IDOT announced that its preferred alternative for the Illinois 13/127 project included a one-way couple through Pinckneyville. IDOT's recommendation came after conducting both engineering and environmental studies as well as conducting two sets of Public Information Meetings to gather public comments regarding the alternate alignments. **(See Section 5.2.7.)**

However, many residents of the Pinckneyville area were not in favor of IDOT's preferred alternative through Pinckneyville. **(See the last paragraph of Section 5.2.6.)** As a result, public opposition led the Pinckneyville City Council to pass a resolution, in December 2003, opposing the one-way couple. **(See Appendix A.)**

Because of this public opposition, the IDOT District 9 Office decided to assemble an Illinois 13/127 Pinckneyville Area Citizens Advisory Council to gain insight into the issues and values of the public in the Pinckneyville area in hopes of better understanding what highway option would best serve the community.

The intent for forming an Illinois 13/127 Pinckneyville Area Citizens Advisory Council was to provide an effective means for public discussion on the five alternate alignments under consideration in the Pinckneyville area. **(See Exhibit 17.)** Sixteen council members plus four technical advisors served on the assembled group. **Table 26** shows the makeup of the Council.

The Council formally developed rules and elected officers (chairman and vice-chairman) and identified constituents among the public, interested organizations and stakeholders. Each Interest Group developed a mailing list of constituents with whom they could communicate about the project and gain input on potential impacts.

Table 26 Pinckneyville Area Citizens Advisory Council	
Interest Group	Representatives
Agriculture	1) Perry County Farm Bureau 2) Natural Resource Conservation Service (NRCS)
Business	Pinckneyville Chamber of Commerce 1) Downtown Business 2) Other area Business
Community Affairs	1) Citizens Against Reckless Expansion (CARE) 2) Pinckneyville Ministerial Alliance
Economic Development	1) Perry County Economic Development Commission 2) 4-127 (private economic development group)
Environment	Illinois Department of Natural Resources (IDNR) 1) Pyramid State Park 2) IDNR Headquarters
Government Services/ Emergency Services	1) Perry County Board of Supervisors 2) Pinckneyville City Council
Historical Resources	1) Perry County Historical Society 2) Illinois Historic Preservation Agency (IHPA)
Local and Regional Planning	1) Pinckneyville Planning Commission 2) Greater Egypt Regional Planning & Development Commission
Technical Advisors	1) CARE member 2) IDNR Regional Natural Heritage Biologist 3) Perry County Engineer 4) Southern Illinois University Associate Vice-Chancellor for Economic Development

The Advisory Council and Interest Group structure provided a format for dialogue at the grassroots level, guided by volunteers who were familiar with local issues and who could communicate directly with citizens and convey concerns to IDOT. Council members discussed the impacts of project alternatives with local residents and elected officials throughout the Council's tenure.

The Council structure provided a representative body for specific interest groups, such as Citizens Against Reckless Expansion (CARE) and the Pinckneyville Chamber of Commerce, to discuss both common and divergent needs. The Council's structure also allowed the group to consider majority/minority opinions by fostering an understanding of individual concerns as well as the trade-offs necessary to provide for common community needs for improved transportation.

Overall, the Council served as a coordinating body and a forum to compare, synthesize and prioritize public concerns, build consensus locally, and develop recommendations to IDOT regarding highway location and impacts.

Activities

Three Advisory Council working sessions and a formal meeting were held, all open to the public. Working sessions consisted of procedural matters and developing and implementing a methodology for gauging impacts. The formal meeting involved the Council presenting its findings and recommendations to IDOT and the public.

Press releases were issued announcing each meeting. News reporters attended meetings and reported to the community on the progress of the Interest Groups and Council and on issues identified in the study. Advisory Council members often were interviewed directly by the media.

Openness with the media helped to assure that the Council's viewpoints and concerns were portrayed objectively to the community. Project managers, engineers and environmental and public involvement specialists from IDOT and project consultants also were interviewed on project design and public concerns.

Alternates Studied

Council members studied five alternate alignments developed by IDOT. **(See Exhibit 17.)**

- 1) Far East Bypass Alternate,
- 2) Near East Bypass Alternate,
- 3) Locust/Walnut Couple Alternate,
- 4) 5-Lane Main Street Alternate, and
- 5) West Bypass Alternate.

Meetings Schedule

Advisory Council working sessions were held through-out the summer of 2004. Council Members worked on refining their own impact criteria and developing a quantitative and qualitative scale for ranking the alternates regarding the severity of impacts.

Advisory Council meetings were held as follows:

Working Sessions

- May 27, 2004 – Developed methods and means for public input and selected core criteria.
- June 29, 2004 – Reviewed preliminary criteria mailing results and finalized criteria measurements.

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- August 17, 2004 – Interest Groups presented draft reports for Council review. Advisory Council discussed findings and recommendations.

Formal Meeting

- October 5, 2004 – Council’s report to IDOT and the public.

Premises for Recommendations

The Council’s recommendations were based on the following premises:

- ◀ Council members would step out of their roles as individual Interest Group representatives or special interest representatives and into a role of citizens representing the community as a whole;
- ◀ Council members would determine whether they felt a four-lane expressway is needed in the Pinckneyville area;
- ◀ Council members would determine which alternative (including No-Build) best serves their community and the overall public interest; and
- ◀ Council members would ensure that both majority and minority opinions were provided to IDOT.

Community Vision

Council members discussed their vision for the future of Pinckneyville as it related to this project. Components of this vision, articulated by the Council, included:

- ◀ the assurance of safe travel, unimpeded by downtown congestion;
- ◀ working to keep the community viable while preserving its small-town character;
- ◀ continuing focus on economic development to provide a healthy, sustainable business and industrial economy and to provide jobs for future generations;
- ◀ a dedication to preserving quality of life issues, including community cohesion; and
- ◀ a serviceable connection to other major roadways in the area, such as I-64 and the St. Louis metropolitan area.

Other Impacts and Major Issues

The Council also took into consideration impacts that were not addressed by any of the Interest Groups. Such impacts included cost, noise, archaeological resources and Section 4(f) sites.

Findings and Recommendations

The following is a summary of Council findings and recommendations. “The Illinois 13/127 Pinckneyville Area Citizens Advisory Council believes that the proposed Illinois 13/127 Expressway in the Pinckneyville Area is needed and recommends that the Illinois Department of Transportation (IDOT) build the West Bypass Alternate.”

The Council supported this recommendation with the following observations. A West Bypass:

- ◀ improves safety in relation to the mixing of farm traffic with commercial and high-speed traffic;
- ◀ minimizes the loss of existing businesses;

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- improves traffic flow in downtown Pinckneyville;
 - minimizes downtown parking impacts;
 - minimizes disruptions to community cohesion;
 - enhances community appeal for future generations;
 - helps provide convenient and safe access and connectivity to I-64 and the St. Louis Metropolitan area;
 - has the least impact on travel times;
 - maximizes marketability for industrial, commercial, recreational and residential development;
 - provides the most developable land;
 - provides convenient and safe access and connectivity to other major roadways in or near Pinckneyville;
 - minimizes large commercial vehicles turning movements in downtown Pinckneyville;
 - has the least impact on threatened and endangered species; and
 - has the least impact on Pinckneyville's historical character and unique local charm.

“While the Council recommends the West Bypass Alternate, it would like to see the alignment moved somewhat to the west (a) to minimize displacements of homes, farm splitting and environmental and social impacts, and (b) to optimize economic development potential.”

In a final resolution, the Council adopted the following: “The Council wants to be absolutely clear that it is recommending that IDOT proceed with the recommendation to implement the Illinois 13/127 project utilizing the West Bypass in the Pinckneyville area. We make this recommendation with the acknowledgement that some adjustment or “tweaking” of the precise corridor/alignment may be necessary in the planning and design phases of the project. Any such adjustment(s) should not require further Council (or other task force) study or consideration. Such adjustments should be made with this report as a guide and the Council's clear recommendation for the West Bypass as the Preferred Alternative.”

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