

ENVIRONMENTAL ASSESSMENT

Interstate 55 (FAI 55) at Arsenal Road (CH 17) Interchange

Blodgett Road
to
Arsenal Road

Job No. P-91-035-02

Will County, Illinois

August 2008



Illinois Division Office



Illinois Department
of Transportation

Division of Highways/Region 1/District 1



Will County Department of Highways

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Will County, Illinois**

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by the
U. S. Department of Transportation
Federal Highway Administration
and
Illinois Department of Transportation

8/8/08
Date of Approval

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For IDOT

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Abstract

The purpose of the proposed action is to address capacity, operational, and safety deficiencies of the interchange at Interstate 55 and Arsenal Road in Will County, Illinois by providing an improved interchange.

This Interstate 55 at Arsenal Road interchange project is included in the 2007-2012 Transportation Improvement Program (TIP) endorsed by the Policy Committee of the Chicago Metropolitan Agency for Planning (CMAP), the Metropolitan Planning Organization (MPO) for the region in which the project is located, and is a part of the 2030 Regional Transportation Plan (RTP) for northeastern Illinois endorsed by CMAP. Major issues with the project include: the Eastern Prairie Fringed Orchid, False Mallow, Blanding's Turtle, wetland impacts, floodplain fill, and special waste.

Property acquisition required for this project includes 88.3 acres of new right-of-way from four (4) businesses and a ComEd easement. There are no residential or business relocations. Wetland impacts are 2.84 acres from 8 wetland sites. Replacement of these wetlands will be at the U.S. Forest Service's Midewin National Tallgrass Prairie. A U.S. Army Corps of Engineers Individual Section 404 permit will be required for the wetland impacts, minor fill in the floodplain, and discharge into waters of the United States.

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1. PURPOSE AND NEED OF THE PROPOSED ACTION

1. PURPOSE AND NEED OF THE PROPOSED ACTION

1.1 Purpose

The purpose of the proposed action is to address capacity, operational, and safety deficiencies of the interchange at Interstate 55 and Arsenal Road in Will County, Illinois.

The project is located in an unincorporated section of western Will County, Illinois. The study limits are Blodgett Road to the south and Arsenal Road to the north, a distance of approximately three miles (See Figure 1 - Project Location Map). Blodgett Road is a logical southern terminus because it is the next overpass south of the existing Interstate 55 at Arsenal Road interchange and could have been a logical location to relocate the existing interchange. Arsenal Road is a logical northern terminus because it is an east-west arterial roadway which connects the Village of Elwood and the Centerpoint Intermodal Center (CIC) at Deer Run to the existing Interstate 55 at Arsenal Road interchange. The Des Plaines River is approximately 600 feet north of Arsenal Road on Interstate 55. Therefore the logical termini could not be moved north of Arsenal Road. The study area is comprised of industrial areas adjacent to the corridor, the Des Plaines Fish and Wildlife Area near the project's western boundary, the Midewin National Tallgrass Prairie near the project's eastern limits, the Des Plaines River just to the north of the existing interchange, and the Kankakee River approximately five miles south of the existing interchange. The Village of Elwood is located approximately four miles east of the project and the Village of Channahon is immediately north of the Des Plaines River.

Interstate 55 is a fully access controlled north-south facility that serves local, regional, and interstate traffic. It is a vital link in the transportation network for the Chicago Metropolitan Area and Will County. Interstate 55 is also a part of the Primary National Defense Network and the National Highway System (NHS), which is a network of Interstate and other major routes. The purpose for these designations is to have a network of roadways that can be used during times of national crisis or need. Interstate 55 is one of only two Interstate facilities (the other being Interstate 57) between the Chicagoland area and downstate Illinois. Interstate 57 is approximately 23 miles east of Interstate 55 at this location.

Arsenal Road is an east-west arterial roadway under the jurisdiction of the Will County Department of Highways (County). Signalized intersections connect Arsenal Road to the northbound and southbound ramps of Interstate 55, and the east and west frontage roads. Arsenal Road is a Class II truck route and provides interstate access to the Village of Elwood, the ExxonMobil Corporation Refinery, Dow Chemical Company (Dow), INEOS Nova (INEOS) (formerly BASF Corporation), Stepan Company, Hoffman Transport Company and the CenterPoint Intermodal Center (CIC) at Deer Run located within the former Joliet Arsenal Site. The CIC is home to the BNSF Logistics Park Chicago, a 621-acre rail facility site. The rail facility was opened on October 14, 2002. Also proposed within the CIC is a 1,100-acre industrial park proposed to be completed by 2014.

A Traffic Impact Study was prepared for the Joliet Arsenal Site by the developer, CenterPoint Properties, in October 1999 to determine the potential impacts of the site-generated traffic on the transportation network in the surrounding area. The study concluded that the Interstate 55 interchange at Arsenal Road must be improved in order to address safety needs and accommodate future traffic growth, but that site generated volumes did not require additional lane capacity on

mainline Interstate 55. Specific capacity information is detailed further in Section 1.3.1, Capacity Deficiencies of this document.

Based on this, the project study limits are limited to the area of the interchange and does not include mainline Interstate 55 except for the construction of the auxiliary acceleration and deceleration lanes. The termini as described are logical and of sufficient length (or coverage) to address environmental matters on a broad scope. Additionally, the proposed improvements at the Arsenal Road interchange as described herein, has independent utility in that it is useable and is a reasonable expenditure even if no additional transportation improvements in the area are made. The implementation of this project does not in any way restrict the consideration of alternatives for other reasonably foreseeable transportation improvements.

1.2 History

The interchange of Interstate 55 and Arsenal Road was constructed in 1959. As discussed previously, the BNSF Logistics Park began operations in October of 2002 with the industrial park proposed for completion in 2014.

Between 1995 and 2001, Interstate 55 traffic volumes experienced tremendous growth in Will County, increasing an average of approximately 3.8 percent per year. However, travel patterns have not changed significantly. Based on information provided by the Chicago Metropolitan Agency for Planning (CMAP) for available 2030 data, traffic growth is expected to continue due to the anticipated growth in population, influx of new business, and increased commercial and residential developments in the area, but at a more moderate rate of 1.3 percent per year. The development of the CIC has contributed to and will continue to contribute to the traffic growth anticipated in Will County. Arsenal Road traffic volumes are expected to experience substantial growth as the BNSF Logistics Park increases operations and the 1,100-acre industrial park is completed and fully operational. The ADT along Arsenal Road is expected to grow from 5,800 in 2001 to 35,900 by 2030. The 2030 projected volumes along Interstate 55 vary from 77,200 vpd south of Arsenal Road to 102,000 vpd north of Arsenal Road.

To accommodate projected traffic volumes on Arsenal Road, the County has developed plans for the reconstruction of Arsenal Road from the Interstate 55 ramps to Baseline Road. The project will widen Arsenal Road to provide a four-lane facility. The project is staged into two sections: a grade separation over the BNSF tracks and the section east and west of the grade separation. The grade separation contract was let for construction in December 2003 and construction was completed in December 2005. The contract for east and west of the grade separation was let for construction in May 2006 and is scheduled to be completed in the summer of 2008. The proposed reconstruction of Arsenal Road will be compatible with any improvements to Interstate 55/Arsenal Road interchange.

This Interstate 55 at Arsenal Road interchange project is included in the 2007-2012 Transportation Improvement Program (TIP) endorsed by the Policy Committee of the Chicago Metropolitan Agency for Planning (CMAP), the Metropolitan Planning Organization (MPO) for the region in which the project is located, and is a part of the 2030 Regional Transportation Plan (RTP) for northeastern Illinois endorsed by CMAP.

1.3 Need for the Proposed Action

1.3.1 Capacity Deficiencies

The 2001 average daily traffic (ADT) volumes along Interstate 55 in the vicinity of Arsenal Road are 39,400 vehicles per day (vpd) and 44,500 vpd to the south and north of the interchange, respectively (See Figure 2 – 2001 and 2030 ADT with Existing Geometry). The projected ADT by the year 2030 is based on the CMAP Regional Transportation Plan. The 2030 projected volumes along Interstate 55 vary from 77,200 vpd south of Arsenal Road to 102,000 vpd north of Arsenal Road. The ADT along Arsenal Road is expected to grow from 5,800 vpd in 2001 to 35,900 vpd by 2030 (See Figure 2 – 2001 and 2030 ADT with Existing Geometry). This projection has been reviewed and approved by CMAP as part of the County's Arsenal Road reconstruction project, and has accounted for the additional traffic volumes generated from the CIC and anticipated from the proposed industrial park. In addition to the high ADT volumes along Arsenal Road, the CenterPoint Traffic Impact Study determined that Arsenal Road would be a heavily traveled truck route, with 26 percent of the total traffic volume being trucks and would generate additional volumes at the Interstate 55/Arsenal Road interchange.

The quality of flow of a freeway section can be measured by its operating speed, density (number of cars per mile per lane), and flow rate (number of cars per hour per lane). These variables can be quantified and graded on a letter scale of A to F, called the level-of-service (LOS). LOS A condition is when the operating speed is at the optimum free flow speeds, and the density and flow rates are at the optimum low. Conversely, LOS F condition is when the operating speed is low, and the density and flow rates are high resulting in a congested stop and go condition.

A minimum LOS C is desirable while LOS D is acceptable in some circumstances for some interchange elements. Section 37-2.04 of the BDE Manual states that individual interchange elements can operate at one level of service below that of the basic freeway section. In 2030 the LOS of the mainline sections will be operating at D or worse without a third lane being added in each direction on Interstate 55. The addition of a third lane is not a part of this project because it would cause impacts to the Des Plaines River bridge which is just north of this project. LOS C provides for near free flow speeds, but the density and flow rates are such that maneuverability and lane changes become noticeably restricted. At LOS D, the speeds tend to decline slightly from LOS C and the density and flow rate are increased such that maneuverability is more limited.

For the project area under current conditions, the existing mainline and ramp configurations operate within acceptable standards, LOS C or better, during both the a.m. and p.m. peak hours. The existing geometric conditions under 2030 volumes, which include the traffic generated by the proposed CIC development, will exceed the design capacity of the interchange resulting in an unacceptable level-of-service (LOS F) during the peak hours. As a result, excessive delays and congestion are anticipated along Arsenal Road and the interchange ramps affecting freeway operation on Interstate 55.

With such a high percentage of multi-unit trucks (26 percent), the existing interchange will not accommodate future volumes efficiently and safely. For existing mainline Interstate 55 with two lanes in each direction, the analysis showed that the threshold for

maintaining a LOS C or better limited the one-way design hourly volume (DHV) to 3,000 vehicles per hour (vph) or less. The 2030 projected one-way DHV volumes along Interstate 55 vary from 3,120 vph south of Arsenal Road to 5,000 vph north of Arsenal Road. The proposed interchange is planned to accommodate future mainline improvements on Interstate 55. The mainline traffic conditions will be maintained with the proposed interchange because the number of access points to the mainline will not change. This reconfirms the Arsenal Road Interchange project's independent utility from any other improvements along mainline Interstate 55.

1.3.2 Operational Deficiencies

The interchange of Interstate 55 and Arsenal Road, constructed in 1959, was resurfaced in 1969 and again in 1974. The bridge deck of the Arsenal Road overpass was rehabilitated in 1999. The existing geometric configuration within the project limits impacts traffic operations and safety. The general operational deficiencies along Interstate 55 include inadequate entrance and exit terminal length and tight ramps requiring substantial speed reductions.

The existing southbound exit ramp horizontal alignment has three successive curves which provide an initial exiting speed of 40 mph (the standard initial exiting speed is 50 mph) and quickly reduces to 20 mph in 125 feet. The deceleration length along southbound Interstate 55 is limited by the Interstate 55 bridge over the Des Plaines River. This abrupt speed reduction on the ramp restricts the operating speed of the exiting vehicles on the ramp. The slow exiting speeds on the loop ramp causes back-ups on the mainline through lanes.

The existing northbound entrance ramp to Interstate 55 provides only 798 feet of merging length. The standard required length is 950 feet. The horizontal alignment of the ramp consists of three successive 25-35-40 mph (standard minimum controlling ramp curve is 50 mph) curves. The speed of entering vehicles is less than 45 mph while the entering speed should be at least 55 mph for the 65 mph posted mainline speed. The merge length is limited by the Interstate 55 bridge over the Des Plaines River and restricts the operating speeds of the merging vehicles. The merging of slow moving traffic with high speed interstate traffic in such a short distance does not adequately allow cars and trucks to safely merge and enter the freeway and is a likely cause of the rear end and sideswipe crashes discussed in Section 1.3.3.

1.3.3 Safety Deficiencies

A review of the crash history within the project limits for the study period of 2001 to 2003 indicated that a total of 122 crashes occurred, of which 23 involved injuries and none involved a fatality (Type K). Of the crashes involving injuries, there was one Type A severity crash in 2001 which was an overturn crash, one in 2002 which was an overturn crash, and four in 2003 which were two rear end crashes, one overturn crash, and one other object crash, for a total of 6 (5 percent of the 122 total crashes). Based on this it can be concluded that there was not a significant number of fatality (Type K) or severe injury (Type A) crashes in the study period. The predominant crash types were rear end (31 percent), sideswipe (12 percent), overturn (12 percent) and fixed object (11 percent). The reviewed data included 81 crashes along Interstate 55 mainline, 9 crashes along the interchange ramps, and 32 crashes along Arsenal Road. The reviewed data

included crashes along Interstate 55 mainline and the interchange areas at Interstate 55 and Arsenal Road. Crash data reviewed for the study is the most current information available.

The majority of the crashes occurred at the ramp terminal areas along Interstate 55. Nine crashes were reported along the interchange ramps and there were no crashes reported on the East or West Frontage Roads during the study period. Along Arsenal Road, 14 intersection crashes were reported, while 18 crashes occurred on roadway sections between intersections with a large number of those occurring on the section between the Interstate 55 ramps.

Within the project limits, there were 81 crashes on Interstate 55 of which 17 involved injuries. A total of 11 crashes took place within the merging section of the northbound entrance ramp, including 3 rear-end and 4 sideswipe crashes. A total of 13 crashes took place within the diverging section of the northbound exit ramp, including 6 rear-end accidents. A total of 14 crashes took place within the merging section of the southbound entrance ramp, including 3 rear-end and 3 sideswipe crashes. A total of 16 crashes took place within the diverging section of the southbound exit ramp, including 7 rear-end and 3 side swipe crashes.

The accident history for both the mainline and the interchange areas exhibits a need for improvement to the existing facility. The predominant crash types of rear ends and sideswipes are consistent with substandard geometrics for this facility. This supports the need for improvement of merge conditions and geometric improvements at the interchange ramps. The improvement will make the merge and diverge points safer because there will be standard auxiliary lanes and standard 50 mph initial/controlling curves which will allow the merging/diverging traffic to accelerate/decelerate safely outside of the mainline traffic.

2. AFFECTED ENVIRONMENT

2. AFFECTED ENVIRONMENT

The project area was inventoried for environmental resources. Those cultural, natural, physical, socio/economic resources, and special waste sites found to be present in the study area are identified in this section and on the Environmental Inventory Map (See Figures 3 and 4).

2.1 Social/Economic

The project is located in an unincorporated section of western Will County, Illinois. The study limits are Blodgett Road to the south and the Des Plaines River to the north, a distance of approximately three miles (See Figure 1).

The nearest municipalities are the Villages of Elwood and Channahon. The Village of Elwood is located approximately four miles east of the project. The western limit of Elwood's planning boundary is Interstate 55 within the project limits. The Village of Channahon primarily lies on the north and west sides of the Des Plaines River. It has no direct access to the project area or the Arsenal Road interchange except for a small portion south of and adjacent to the river. The planning boundary for the Village of Channahon extends along the west side of Interstate 55 south to Blodgett Road. Although the project is located in unincorporated Will County, these discussions will also include the Social/Economic conditions of these two villages.

2.1.1 Demographics

Data included and referenced in this report were obtained from the following documents:

U.S. Census Bureau, Census 2000 (www.census.gov)
2030 Regional Transportation Plan, CATS October 2003
Northeastern Illinois Planning Commission (NIPC) 2030 Forecasts

Analysis of the data revealed that the study area is made up primarily of a homogenous population comprised of mid-age, middle class, Caucasian families living in their own single family homes.

Population

In 2000, the populations of the Village of Elwood and the Will County portion of the Village of Channahon were estimated to be 1,620 and 7,235, respectively. The overall population in 2000 of Will County was 502,266 and 12,419,293 for the State of Illinois. Based on U.S. Census Bureau data, the population in Will County experienced a growth rate of 10.1 percent between 1980 and 1990 and a growth rate of 40.6 percent between 1990 and 2000.

Race and Ethnicity

Both the Village of Elwood and the Village of Channahon have a lower minority population than Will County and the State of Illinois (See Table 2.1).

TABLE 2.1 RACIAL COMPOSITION OF STUDY AREA (2000)			
Municipality	Caucasian	Black	Other Minority
Village of Elwood	97.6%	0.0%	2.4%
Village of Channahon	97.2%	0.4%	2.4%
Will County	81.8%	10.5%	7.7%
State of Illinois	73.5%	15.1%	11.4%

Age

In general, the median age of residents in the Village of Elwood is slightly older as compared to the rest of the County and the State. The median age of residents in the Village of Elwood is 35.2 years. The Village of Channahon has a median age of 33.5 years which is higher than the County but lower than the State. Comparatively, the median age for Will County is 33.3 years and for the State of Illinois is 34.7 years. The age composition of the Villages, County, and State is shown in Table 2.2.

TABLE 2.2 AGE COMPOSITION OF STUDY AREA (2000)			
Municipality	Median Age	1st Largest Age Group	2nd Largest Age Group
Village of Elwood	35.2	25-34 (17.8%)	35-44 (15.7%)
Village of Channahon	33.5	35-44 (21.3%)	45-54 (14.2%)
Will County	33.3	35-44 (18.1%)	25-34 (14.8%)
State of Illinois	34.7	35-44 (16.0%)	25-34 (14.6%)

Economic Characteristics

In 2000 (1999 dollars), a review of the median family income showed that the Village of Elwood had a lower median family income than Will County, but higher median family income than the State of Illinois. The Village of Channahon had a higher median family income than both the County and the State. The income data was as follows:

Village of Elwood	\$60,707
Village of Channahon	\$74,481
Will County	\$69,608
State of Illinois	\$55,545

Education

In 2000, a review of the education level showed that both Villages have a higher percentage of high school graduates compared to the County or State, but have a lower percentage of residents with bachelor's degrees or higher than the County or State. The education comparison of the Villages, County and State is shown in Table 2.3.

TABLE 2.3 EDUCATION COMPOSITION OF STUDY AREA (2000)		
Municipality	Percent High School Graduate or Higher	Percent Bachelor's Degree or Higher
Village of Elwood	88.6%	10.5%
Village of Channahon	94.0%	18.6%
Will County	86.9%	25.5%
State of Illinois	81.4%	26.1%

Employment

Table 2.4 provides a summary of the employment composition for 2000.

TABLE 2.4 EMPLOYMENT COMPOSITION OF STUDY AREA (2000)		
Municipality	Total Labor Force	Armed Forces
Village of Elwood	64.0%	0.2%
Village of Channahon	74.8%	0.0%
Will County	70.3%	<0.1%
State of Illinois	65.4%	0.2%

Neither of the Villages have any major employers or corporate offices located within their municipal limits. The Interstate 55 at Arsenal Road project study area has a variety of industrial businesses that are adjacent to these villages.

The CenterPoint Intermodal Center (CIC) at Deer Run is located within the former Joliet Arsenal Site and is the largest economic development in the area. The CIC is home to the BNSF Logistics Park Chicago, a 621-acre rail facility site. Also proposed within the CIC is a 1,100-acre industrial park proposed to be completed by 2014.

Other employers include ExxonMobil Corporation along the east side, INEOS Nova (INEOS) (formerly BASF Corporation) in the northwest corner of the project study area, Hoffman Transport Company just south of INEOS, and Dow Chemical Company (Dow) south of Hoffman Transport Company. The Stepan Company is located east of the interchange along Arsenal Road. See Figures 3 and 4 for the location of these businesses.

Poverty Rate

Poverty rates are based on the number of people living in a household with a given annual income below a value defined by the Department of Health and Human Services. Based on the 2000 Census data, in 1999, the Village of Elwood had a poverty level of 4.3 percent and the Village of Channahon had a level of 1.8 percent. Comparatively, Will County and the State of Illinois had 3.4 percent and 7.8 percent of its population living below the poverty level. There are no low income groups located in the project study area. The 2007 Health and Human Services Poverty Guideline for a family of four is \$20,650.

Housing Characteristics

In 2000, a review of housing values showed that the Village of Elwood has a lower median home value as compared to the County but higher when compared to the State. The Village of Channahon has a higher median home value than either the County or the State. Both Villages have a higher owner-occupied rate than either the County or the State. The housing composition is summarized in Table 2.5.

TABLE 2.5 HOUSING COMPOSITION OF STUDY AREA (2000)				
	Village of Elwood	Village of Channahon	Will County	State of Illinois
Housing Units	678	2,281	175,524	4,885,615
Occupied	640	2,230	167,542	4,591,779
% Vacancy Rate	5.6	2.2	4.5	6.0
% Owner-Occupied	82.2	93.0	82.0	62.4
% Renter-Occupied	17.8	7.0	18.0	37.6
Median Home Value	\$132,300	\$157,700	\$154,300	\$130,800
Median Monthly Rent	\$493	\$825	\$630	\$605

2.1.2 Land Use

The project study area consists of industrial areas adjacent to the corridor, the Des Plaines Fish and Wildlife Area along the west side of Interstate 55 at the southern boundary of the project, and the Midewin National Tallgrass Prairie east of the project limits. The adjacent industrial areas include the ExxonMobil Corporation refinery southeast of the existing interchange, and Dow, Hoffman Transport Company and INEOS southwest of the interchange. The Stepan Company and the CenterPoint Intermodal Center are located east of the interchange along Arsenal Road.

Arsenal Road is a Class II truck route and provides interstate access for the Village of Elwood, the ExxonMobil Refinery, Dow, INEOS, Stepan, Hoffman Transport, the CIC and surrounding area.

The land east of Interstate 55 is within the Village of Elwood planning boundaries and is zoned for office, research and light industrial use. The land west of the interstate is within the Village of Channahon planning boundaries and is zoned for office, research and industrial use.

2.1.3 Public Facilities and Services

The Abraham Lincoln National Cemetery is located almost three miles east of the project limits. No other public facilities or services are located within the project limits. The proposed project will not affect community access to any community facilities or services.

2.1.4 Pedestrian/Bicycle/Transit Facilities

Pedestrian Facilities

Because Interstate 55 at Arsenal Road is a fully access controlled interstate interchange facility, non-motorized vehicles and pedestrians are prohibited. Therefore there are no existing sidewalks within the project limits. The adjacent land uses are all industrial; therefore there are no sidewalks proposed on the West or East Frontage Roads or Arsenal Road for this project.

Bicycle Facilities

There are currently no existing on-road bicycle lanes or off-road bicycle paths within the project study area. The Northeastern Illinois Regional Greenways & Trails Plan (Openlands Project) map shows a proposed trail (Channahon to Des Plaines Conservation Area Corridor) along the East Frontage Road of Interstate 55 from the existing I&M Canal State Trail south to Blodgett Road (See Figure 5, Sheet 1). The map also shows a proposed trail (Des Plaines Conservation Area/Midewin Trail System) from the existing I&M Canal State Trail east through the Des Plaines Fish and Wildlife Area and Midewin National Tallgrass Prairie which crosses Interstate 55 along the existing Blodgett Road bridge. The North Prairie Parklands Trails Plan (Final Draft 11-12-01) map shows a proposed sub-regional trail traveling along Arsenal Road and the Interstate 55 West Frontage Road from Arsenal Road to Blodgett Road where it travels east-west along Blodgett Road (See Figure 5, Sheet 2).

The roadways within the project limits have the following designations based on the Illinois Bicycle Map (2006) included on Figure 5, Sheet 3:

Arsenal Road

Cautionary On-Street Bike Route from west of Interstate 55 to Illinois Route 52.

West Frontage Road

On-Street Bike Route Not Recommended from Arsenal Road to Blodgett Road.

East Frontage Road

On-Street Bike Route Not Recommended from Arsenal Road to Blodgett Road.

Durkee Road

Cautionary On-Street Bike Route from the West Frontage Road west toward the Des Plaines River.

Blodgett Road

Cautionary On-Street Bike Route from East Frontage Road to Will/Grundy County Line.

Equestrian Facilities

There are no equestrian facilities within the project study area.

Transit Facilities

There is one Pace bus route (Route 511) which serves the Deer Run Industrial Park. The route has one morning and one evening peak hour round trip between Joliet and the industrial park.

2.2 Agricultural

The east and west portions of the Dow property are presently agricultural land. The total area of farmed land is approximately 200 acres. The land is currently leased by Dow to a local farmer. This land has limited viability for long-term agricultural production due to the surrounding nonagricultural land uses. It is also within the municipal planning boundaries for the Village of Channahon and is zoned office/research/industrial. There are no protected farmlands or agricultural based businesses within the project limits.

2.3 Cultural

Cultural Resources Clearance for this project was issued on August 24, 2005 and the State Historical Preservation Officer (SHPO) concurrence date was July 3, 2003 (See Section 5.3, Coordination Correspondence).

2.3.1 Archeological Sites

An Archeological Survey Short Report (ASSR) was prepared. It stated that the project area contains one site, 11WI2635 which consists of a late 19th century basement foundation that has been previously recommended for clearance. The site is located east of the BNSF Railroad mainline and outside any potential construction area for the interchange improvement.

2.3.2 Historic Bridges

The Cultural Resources Survey determined that there are no historic bridges within the project limits. Coordination for compliance with Section 106 historic bridges is not required.

2.3.3 Historic Districts and Buildings

The project is located within the Illinois and Michigan Canal National Heritage Corridor (National Park Service), but is not listed in the National Register of Historic Places or designated by local ordinance. There are no historic districts identified within the limits of the project study area.

2.4 Air Quality

The Interstate 55/Arsenal Road interchange study area is located within the Chicago metropolitan area in an unincorporated section of Will County. 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 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. The Chicago Metropolitan Area for air quality attainment purposes is defined as Cook, DuPage, Kane, Lake, McHenry, and Will Counties; Aux Sable and Goose Lake townships in Grundy County; and Oswego Township in Kendall County. This area

is a moderate non-attainment area for the 8-hour NAAQS for the pollutant ozone. In addition the Chicago Metropolitan Area is nonattainment for PM_{2.5}. Lake Calumet Area and Lyons Township in Cook County have been classified as Maintenance Areas for PM₁₀.

A complete listing of the NAAQS is shown in Table 2.6.¹ The primary standards are established at levels which are intended to protect the public health. Secondary standards are required to protect the public welfare from any known or anticipated adverse effects of a pollutant.

TABLE 2.6 NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)			
Pollutant	Average Time	Primary	Secondary
Particulate Material 10 micrometers (PM ₁₀)	24-hour	150 µg/m ³	Same
	Annual Arithmetic Mean	50 µg/m ³	
Particulate Material 2.5 micrometers (PM _{2.5})*	24-hour	35 µg/m ³	Same
	Annual Arithmetic Mean	15 µg/m ³	
Sulfur Dioxide (SO ₂)	24-hour	0.14 ppm	None
	Annual Arithmetic Mean	0.03 ppm	None
	3-hour	None	0.5 ppm
Carbon Monoxide (CO)	8-hour	9 ppm	Same
	1-hour	35 ppm	Same
Ozone (O ₃)	8-hour/day	0.075 ppm	Same
Nitrogen Dioxide (NO ₂)	Annual Arithmetic Mean	0.053 ppm	Same
Lead (Pb)	Quarterly Arithmetic Mean	1.5 µg/m ³	Same

* The ozone 8-hour standard and the PM_{2.5} standards are included for information only and have not been adopted by the State of Illinois at this time.

In addition to the SIP requirements, metropolitan planning organizations (MPO) are required to undertake conformity determinations on metropolitan transportation plans and transportation improvement programs before they are adopted, approved, or accepted. Section 176(c)(4) of the Clean Air Amendments of 1990 requires that transportation plans, programs, and projects which are funded or approved under Title 23 U.S.C. must be determined to conform with State or Federal air implementation plans. Conformity to an implementation plan is defined in the Clean Air Act as conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. The implementing regulations for determining conformity of transportation projects are found in 40 C.F.R. 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 23 U.S.C. or the Federal Transit Act". Highway or transit projects which are funded or approved by the Federal Highway Administration (FHWA) or the Federal Transit Administration (FTA) must also be included in a conforming plan before they are approved or funded by DOT or an MPO.

The closest air quality monitoring stations are located at Braidwood and Joliet (2 stations) with the pollutants measured at these sites. In 2006, no sites in Illinois had a fourth high value above

¹ Illinois Environmental Protection Agency, Bureau of Air, *Illinois Annual Air Quality Report 2006*, www.epa.state.il.us/air/air-quality-report/2006 [accessed March 14, 2008]

the 0.08 ppm standard for 8-hour Ozone. For the three year period from 2004 to 2006, no sites had fourth high averages above 0.08 ppm. In 2006, a total of 3 sites recorded averages above the annual standard of 15.0 ug/m³ for PM_{2.5} and no sites exceeded the 24-hour standard of 65 ug/m³ for PM_{2.5}. None of the other pollutants (PM₁₀, Carbon Monoxide, Sulfur Dioxide, Nitrogen Dioxide, or lead) exceeded any of the standards in 2006.²

The Air Quality Index (AQI) is the current national standard method for reporting air pollution levels to the general public. The AQI is based on the short-term Federal National Ambient Air Quality Standards (NAAQS), the Federal episode criteria, and the Federal Significant Harm levels for six of the “criteria pollutants,” namely, ground-level Ozone (O₃), Sulfur Dioxide (SO₂), Carbon Monoxide (CO), Particulate Matter (PM₁₀), Particulate Matter (PM_{2.5}), and Nitrogen Dioxide (NO₂). The AQI levels have been divided into six categories: “Good” (0-50), “Moderate” (51-100), “Unhealthy for Sensitive Groups” (101-150), “Unhealthy” (151-200), “Very Unhealthy” (201-300), and “Hazardous” (301-500).

The AQI classification of “Unhealthy for Sensitive Groups” occurs on occasion in Illinois under the 8-hour ozone and PM_{2.5} standards. AQI classifications of “Unhealthy” are uncommon and classifications of “Very Unhealthy” are rare in the State. To date, no classifications of “Hazardous” air quality have occurred in Illinois.

Air quality was in the “Good” category most often in 2006. Most sectors had a higher frequency of “Good” than “Moderate” and “Unhealthy for Sensitive Groups”. The exception was the Metro-East sector. The Lake County, Aurora & Elgin, Joliet & Will County, Rockford, Quad Cities, Champaign, Normal, Decatur and Springfield sectors had 75 percent or more of the days in the “Good” category. Within AQI sectors there were no occurrences of “Unhealthy” and 7 occurrences of “Unhealthy for Sensitive Groups” air quality in 2006. The sector breakdown for “Unhealthy for Sensitive Groups” was 3 in Metro-East, 2 in Chicago, 1 in the North & West Suburbs, and 1 in Lake County. Outside of AQI sectors there was 1 additional occurrence of “Unhealthy for Sensitive Groups” and no additional occurrences of “Unhealthy”. In 2006, there were no Ozone Advisories issued in the State.

2.5 Noise

There are no sensitive receptors identified within the study area which would be affected by the relocation of the interchange and the associated roadway improvements. The nearest potential receptor is a residence located on the north side of Blodgett Road east of Interstate 55 which is approximately one mile south of the southernmost ramp of the relocated interchange and approximately 1,500 feet east of Interstate 55. Based on that distance, there would be no perceivable increase in sound levels between existing and build conditions due to the relocation of the interchange.

² Illinois Environmental Protection Agency, Bureau of Air, *Illinois Annual Air Quality Report 2005*, www.epa.state.il.us/air/air-quality-report/2006 [accessed March 14, 2008]

2.6 Natural Resources

2.6.1 Geology

The area has both botanical and geologic interest. The Kankakee Torrent and to a lesser degree, the later Lake Chicago and Lake Nipissing floods, removed glacial deposits and scoured out the area of the lower Des Plaines River valley and beyond well down the Illinois River valley in a relatively short period of time. This rapid series of floods removed most of the glacial sands and rock that had been deposited on top of the level dolomite and limestone bedrock characteristic of the region. In some areas little soil has built up on the landscape during the subsequent millennia. The soil association present in the project area has been described as the Channahon-Rockton Faxon association or the Channahon-Dodgeville-Ashdale association and the soils are thin, droughty, and are thought to have developed as prairie soils where the depth could support such plant communities. The following information was provided in the Preliminary Environmental Site Assessment dated August 13, 2003 prepared by the Illinois State Geological Survey.

Bedrock Geology

The uppermost bedrock units throughout the project area are Silurian-age rocks of the Joliet Formation, which consist of dolomite with occasional layers of shale less than one foot thick. The Joliet Formation is approximately 70 feet thick in the northern part of the project area and thins to about 50 feet in the southern part of the project area. Dissolution and corrosion have subsequently enlarged fractures and cavities in these carbonate units, especially near the bedrock surface.

Surficial Geology

Surficial materials in the entire project area are less than 20 feet thick and consist of less than 20 feet of silt, sand, and gravel deposits of the Henry Formation of the Mason Group, which overlies bedrock. In the northern part of the project area, field observations indicated that surficial materials were less than four feet thick in many places. Outcrops of Joliet Formation dolomite bedrock were observed in some areas.

Soils

Five soil types are prominent within the project area. These include orthents, Romeo silt loam, Channahon silt loam, Joliet silt loam, and the Lorenzo loam. Orthents (loamy, undulating) are areas of disturbed soil. These areas are associated with the Interstate 55 interchanges at Arsenal Road and Blodgett Road. There is also a large area just east of Interstate 55 and south of the ExxonMobil complex. The Romeo silt loam (0 to 2 percent slopes) and Joliet silt loam (0 to 2 percent slopes) are considered hydric soils and are the dominant soils within the project areas wetlands. Both soil types have a perched water table. Neither of these is considered prime farmland soils. The Channahon silt loam (0 to 2 percent and 2 to 4 percent slopes) and Lorenzo loam (2 to 4 percent slopes) are well drained soils with a water table greater than six feet in depth. Neither of these is hydric nor prime farmland soils.

Mineral Resources

A series of former rock quarries are located on the ExxonMobil Surface Impoundments parcel. The western edge of the quarry limit was approximately 1,200 feet east of the centerline of Interstate 55. According to plat maps, these quarries began operations sometime before 1941. Based on a 1968 aerial photograph, the quarries appeared to be no longer active. Some of these quarries are currently used for surface impoundments.

Petroleum Pipelines

A petroleum pipeline owned by Midwest Gas Transmission parallels the eastern side of Interstate 55 from the southern project limit to the ExxonMobil Refinery West Tank Farm, a distance of approximately 2.5 miles. One 8-inch pipeline owned by Teppco crosses Interstate 55 north of Drummond Road and two 6-inch pipelines owned by Kinder Morgan Energy Partners L.P. cross Interstate 55 south of Drummond Road. The pipelines have been shown on Figure 3.

2.6.2 Threatened and Endangered Species

The threatened and endangered species assessment was accomplished through consultation with State and Federal resource agencies, review of published information, and field surveys. Consultation with the Illinois Department of Natural Resources (IDNR) was through the submittal of an Agency Action Report. The IDNR response indicated the occurrence of a number of state listed species occurring within the project area. Section 7 consultation with the U.S. Fish and Wildlife Service was based on the list of federal species known to occur in Will County. This list was obtained from the Fish and Wildlife Service website.

Federally Listed Species

The U.S. Fish and Wildlife Service lists the Indiana bat, eastern prairie fringed orchid, and prairie bush clover as occurring statewide and lists the Hine's emerald dragonfly, lakeside daisy, leafy prairie clover, and Mead's milkweed as occurring in Will County.

Indiana bat

During the winter months, Indiana bats congregate in caves or abandoned mines for hibernation. There are no caves or mines in the project area. The closest hibernaculum is the Blackball Mine near Utica (LaSalle County), which is approximately 42 miles west of the project area.

Density of potential roost trees seems to be the most important factor in determining summer habitat requirements for the Indiana bat. Maternity colonies primarily roost beneath slabs of exfoliating bark on dead trees, but also have been found beneath the "shaggy" bark of certain live hickories and oaks, and in tree cavities or crevices. Males and non-reproductive females roost in caves, mines, bridges, artificial roosting structures as well as trees during the summer. Many known maternity roost trees have been relatively large (over 12 inches in diameter). Many different tree species have been used by Indiana bat maternity colonies in Illinois. The bats use more than one roost tree during the summer. Trees used by Indiana bats in Illinois have been located in upland and floodplain forests, a swamp, and pastures. Habitats used by foraging Indiana bats include riparian corridors, wetlands, upland forests, ponds, and fields.

The dominant cover types in the project area are industrial, grass-forblands, non-native grasslands, wet meadows, woodlands, and cropland. A tree survey in and adjacent to the right-of-way of Interstate 55 and the Arsenal Road interchange identified 1,990 trees. The most common trees were red cedar (19 percent), black locust (10 percent), Osage orange (10 percent), white mulberry (9 percent), and white ash (7 percent). Six percent of the trees were dead. Two hundred seventy nine of these trees were removed during the 2006 Arsenal Road improvement. Nine hundred eighteen trees will be impacted by the current project.

There are no records of the Indiana bat occurring in Will County. Gardner, Hofmann, and Garner (1996) netted four sites (Forked, Plum, Grant, and Prairie Creeks) in Will County during the late 1980's and early 1990's. No Indiana bats were captured at these four sites. Grant Creek, which occurs just south of the project area, was netted again during 2005 (Whitaker and Everson 2005). No Indiana bats were captured or observed at this site. Also during 2005, Jackson Creek, just east of the project area, was netted (Hofmann 2005; Whitaker and Everson 2005). No Indiana bats were captured or observed at these sites. Several other streams (Des Plaines River, Spring Creek (2 sites), Long Run Creek, and Black Partridge Creek) in Will County were also netted during 2006. No Indiana bats were captured at these sites. It is concluded, based on the above information, that the project as proposed will have no adverse affect on the Indiana bat.

Eastern prairie fringed orchid

The eastern prairie fringed orchid is a perennial, long-lived herb that occurs in a wide variety of habitats, from mesic prairie to wetland communities such as sedge meadows, marsh edges and even bogs. It requires full sunlight for optimum growth and flowering, which restricts it to grass and sedge-dominated plant communities. Disturbance also appears important in eastern prairie fringed orchid seedling establishment. The substrate of the sites where it occurs ranges from more or less neutral to mildly calcareous and in the local area glacial soils derived from either from loess, glacial drift, or lake plain deposits of sand or coarse silt (Bowles 1999). The eastern prairie fringed orchid is known to occur approximately one mile south of the southern terminus of the project area. The species occurs within a mesic prairie site in the Grant Creek Natural Area, a part of the Des Plaines Conservation Area. There remains some suitable habitat for the eastern prairie fringed orchid in the general vicinity of the project, but none of the area within the proposed right-of-way line appeared to be suitable habitat (Hill 2007).

Prairie bush clover

The prairie bush clover is a perennial herb that occurs on dry gravel and sand prairies (Herkert and Ebinger 2002). There are no historical records of this species from Will County. Plant surveys during 2002 and 2003 did not identify this species in the project area. Habitat for this species does not occur within the project area. Therefore, the proposed project will not impact the prairie bush clover.

Hine's emerald dragonfly

The Hine's emerald dragonfly habitat consists predominantly of wetland systems used for breeding and foraging. The larval stage is aquatic, occupying rivulets and seepage areas within these wetland systems. The dragonfly occupies marshes and sedge meadows fed by calcareous groundwater seepage and underlain by dolomite bedrock.

In general, these areas are characterized by the presence of slowly flowing water, sedge meadows and prairies, and nearby or adjacent forest edges (USFWS 2006). In Will County, the dragonfly occurs along the Des Plaines River north of Joliet. The dragonfly is not known to occur in the project area and there is no suitable habitat for this species in the project area. The project will not have an adverse affect on the Hine's emerald dragonfly.

Lakeside daisy

The lakeside daisy is a perennial herb. Habitat for this species includes outcrops of dolomite or limestone bedrock, dry, thin-soiled degraded prairies, or gravelly prairies on terraces or hills associated with major river systems (Des Plaines). Historically, this species occurred in Will County. There are no extant natural populations of lakeside daisy in Illinois (Herkert and Ebinger 2002). Plant surveys during 2002 and 2003 did not find this species. The project will have no affect on the lakeside daisy.

Leafy prairie clover

The leafy prairie clover is a perennial herb that occurs within mesic dolomitic prairie habitat. Populations of this species are known from the ExxonMobil property and the Midewin National Tallgrass Prairie (wetland sites INHS 14, 16, 17, 18, and 20). These sites occur outside the project area and some of them are monitored and managed by the Midewin National Tallgrass Prairie staff and the U.S. Fish and Wildlife Service (Hill 2003). These colonies occur approximately 2000 feet east of the proposed interchange. Wetland sites within the project area do not contain suitable habitat for this species. There remains some suitable habitat for the leafy prairie clover in the general vicinity of the project, but none of the area within the proposed right-of-way line appeared to be suitable habitat (Hill 2007).

Mead's milkweed

Mead's milkweed is a long-lived perennial plant that occurs within eastern mesic prairies. The species requires moderately wet to moderately dry upland tallgrass prairie or glade/barren habitat characterized by vegetation adapted for drought and fire. It persists in stable late-successional prairie (USFWS 2005). Historically, the species is not known to occur in Will County (Herkert and Ebinger 2002). Plant surveys during 2002 and 2003 did not identify this species as occurring in the project area. The project will have no affect on Mead's milkweed.

Illinois Listed Species

An Agency Action Report identifying the proposed project was submitted to the IDNR. The IDNR responded on August 2, 2002 indicating that a number of state listed species, natural areas, land and water resources, and IDNR sites occur near the project area. A request for plant and animal surveys within the project area was made. Surveys were conducted for state listed plants (Hill 2003), birds (Amundsen 2004), mammals (Hofmann 2005), leafhoppers (Dietrich 2004), and reptiles (Petzing and Phillips 2005).

Butler's quillwort

This plant species is a small (up to 12 inches high) perennial herb with linear grass like basal leaves. It grows in seasonably wet areas in thin soils over dolomitic bedrock. In Illinois, it is known only from Will County (Herkert and Ebinger 2002). The species is known from the project area and was observed during the 2002 and 2003 botanical survey of the project area (Hill 2003). Nine populations of this species have been identified, six of these occurring within the project area (see Figure 3). The number of individual plants within these populations range from 3 to 200-300. Three of the populations occur on public lands (Midewin, Des Plaines Conservation Area). The remaining populations occur on private land. The project will not affect the Butler's quillwort.

False mallow

This plant species is a small (8 to 20 inches tall) summer annual herb that occurs in dry, usually rocky prairies and barrens. In Illinois, the species is known only from Will County (Herkert and Ebinger 2002). The species is known from the project area and was observed during the 2002 and 2003 botanical survey of the project area (Hill 2003). Twenty populations of this species have been identified, eight of these occurring within the project area (see Figure 3). The number of individual plants within these populations range from 10 to 5,000-10,000. Four of these populations occur on public land (Midewin, Des Plaines Conservation Area) with the remaining populations occurring on private land. One of these populations occurs on highway right-of-way and will be affected by the project.

Slender sandwort

This plant species is a small (4 to 8 inches tall) winter annual herb that occurs on rock ledges and dolomite prairies along the Des Plaines, Fox, and Illinois Rivers (Herkert and Ebinger 2002). The species is known from Will County and was observed during the 2002 and 2003 botanical survey of the project area (Hill 2003). Ten populations of this species has been identified, six of these occurring within the project area. The number of individual plants within these populations range from 20 to 10,000. Four of these populations occur on public land (Midewin, Des Plaines Conservation Area). The project will not affect the slender sandwort.

Ear leafed foxglove

This plant species is an annual herb that occurs in disturbed prairies, savannas, and successional fields. The species has occurred in Will County in the past. The species was not observed during the 2002 and 2003 botanical survey of the project area (Hill 2003). The project will not affect this species.

Bald eagle

The bald eagle is listed as breeding and wintering in Will County. Eagles inhabit areas near large rivers and lakes that are relatively free of human activity. Nests are usually located in high branches of old trees and are used for a number of years (Herkert 1992). During winter, the eagle is a common migrant along rivers and lakes in Illinois. The eagle is known as a winter migrant along the Des Plaines River north of the project area (Midewin FEIS). There is no breeding or wintering habitat in the project area. Therefore, the project will not have an impact on the bald eagle.

Henslow's sparrow (*Ammodramus henslowii*)

This bird species originally nested in prairie habitat, but now utilizes abandoned fields, hayfields, and pastures with tall-dense cover. The species is known to occur in Will County and does occur in the project vicinity (Grant Creek Natural Area). This site occurs south of the Blodgett Road/Interstate 55 interchange and thus, lies outside the project area. An avian survey of the project area during June 2003 did not observe this species within the project area (Amundsen 2004). The project will not affect this species.

Common moorhen (*Gallinula chloropus*)

This bird species inhabits freshwater marshes, canals, lakes, and ponds with emergent aquatic vegetation (cattails and bulrushes). The species is known to occur in Will County. An avian survey of the project area during 2003 did not observe this species within the project area (Amundsen 2004). The project will not affect this species.

Least bittern (*Ixobrychus exilis*)

This bird species inhabits shallow freshwater lakes and marshes where it nests among tall dense vegetation (Herkert 2002). An avian survey of the project area did not observe this species within the project area (Amundsen 2004). The project will not affect this species.

Loggerhead shrike (*Lanius ludovicianus*)

This bird species inhabits open, agricultural areas interspersed with grassland habitat. Most nest sites found in Illinois occur in Osage orange, honey locust, multiflora rose and red cedar (Herkert 2002). An active Shrike nest was observed (Amundsen 2004) on the Midwin property approximately 4,600 feet northeast of the Blodgett Road bridge over Interstate 55. This site lies outside the project area. The project will not affect this species.

Blanding's turtle

This species is a medium-sized semi-aquatic turtle. The species typically nests in sandy dry habitat near various wetland habitats, such as emergent marshes, prairie wetlands, sedge meadows, and shallow vegetated lakes. At least seven turtles in four different locations have been observed (May 1993) in a shallow marsh complex approximately 2,800 feet east to northeast of the Blodgett Road bridge. A turtle has been observed (July 2005) at Drummond (just southeast of the ExxonMobil property). During the survey (July and August 2005) for this species (Petzing and Phillips 2005), one individual turtle was observed on the Dow property, approximately 1.25 miles west of the project area (Petzing and Phillips 2005). A second survey was completed in July of 2006 and no Blanding's turtles were found. A third survey was completed in June of 2007 also resulted in no Blanding's turtles being captured or encountered. Wetland site INHS-42 may contain suitable habitat for this species.

Franklin's ground squirrel

Franklin's ground squirrel is a true hibernator and is active less than half of the year (April to September). It is diurnal and spends less than 10 percent of its life above ground. The most important habitat for the ground squirrel consists of tall, dense cover of grasses, forbs, shrubs, and small trees on deep, loamy soils. Two Franklin's ground squirrels were observed (July 2004) in the Des Plaines Fish and Wildlife Area, south and west of the Blodgett Road bridge. A survey of the project area in August 2005 (Hofmann 2005) determined that the area does not contain suitable habitat for the squirrel. Parts of the area do not provide the appropriate vegetative cover or are composed of poorly drained or shallow soils. The project will not affect the Franklin's ground squirrel.

Red-tailed prairie leafhopper

This species is a flight-limited herbivorous insect that feeds and oviposits exclusively on one species of perennial prairie grass, prairie dropseed. A survey of the project area was conducted in 2003 (Dietrich et al, 2004). Four areas contained populations of leaf hoppers (Figure 3). Two of the areas are on public land; the other two are on private land. The project will not affect the red-tailed prairie leafhopper.

2.6.3 Nature Preserves

There are no dedicated Illinois Nature Preserves located within the study area. The nearest preserve was the Grant Creek Prairie Nature Preserve located approximately one half mile due south of the Blodgett Road crossing over Interstate 55, which is the

southern limit of the project corridor and approximately one mile south of the proposed interchange.

2.6.4 Natural Areas

The study area does contain portions of two designated Illinois Natural Area Inventory sites. The first site is the eastern margin of the Blodgett Road Dolomite Prairie Natural Area which occurs within the Des Plaines Fish and Wildlife Area. The significant features of this site are the presence of state-listed plant species (buffalo clover, Butler's quillwort, false mallow, slender sandwort), birds (Henslow's sparrow), and insects (red-tailed prairie leafhopper). The second site, the Joliet Army Ammunition Plant Natural Area, occurs within the Midewin National Tallgrass Prairie. The significant features of this site are the presence of state-listed plant species (false mallow, slender sandwort) and birds (king rail, loggerhead shrike, northern harrier).

2.6.5 Plant Communities

The project site is located within a portion of the Prairie Parklands Area, a designated state resource-rich area of northeastern Illinois encompassing approximately 1,477 square miles. The Resource Rich Area is an IDNR program that identifies large areas containing concentrated natural resources (forests, wetlands, natural areas/nature preserves, and biologically important streams) so that cooperative public-private partnerships can be formed that merge natural resource stewardship with compatible economic and recreational development. Six plant communities (cover types) were identified in the project area. These include industrial, grass-forbland, wooded, cropland, non-native grassland, and wetlands.

The grass-forbland cover type comprises 364 acres in the project area. This cover type occurs on shallow soils over bedrock and contains areas of outcrops and shallow depressions. In the past, the area has been disturbed by farming, grazing, mowing, scraping, and filling. Because of these past and continuing disturbances, the plant community is very heterogeneous with regards to species composition. The dominant grasses are the introduced species such as the bluegrasses (Canada, Kentucky, annual) and the brome grasses (hairy chess, downy, Hungarian, Japanese chess). Dominant native grasses include rough dropseed, sheathed rush grass, and false redtop. Other native grasses such as side-oats grama (shallow soils), big bluestem, and switch grass are also scattered throughout this area. The dominant herbs include tall goldenrod, Queen-Anne's lace, common ragweed, thyme-leaved sandwort, tall boneset, and prickly pear. Scattered shrubs/small trees occur throughout this cover type and include common buckthorn, Morrow's honeysuckle, downy hawthorn, and Osage orange. Within this plant community, three listed state species occur: Butler's quillwort, slender sandwort, and false mallow. The distributions of these species within the grass-forbland cover type are depicted on Figure 3.

The industrial cover type comprises 316 acres in the project area. This cover type includes the ExxonMobil, Dow, Hoffman Transport, and INEOS facilities. This includes associated buildings, parking lots, roads, and lawns.

The non-native grassland comprises approximately 117 acres in the project area. This cover type includes all of the Interstate 55 right-of-way including the Arsenal Road interchange (Figure 3). This cover type consists of pavement (travel lanes, frontage

roads, ramps) and grasses that make up the state right-of-way. The grassed areas consist of various blends of fescue, bluegrasses and weedy forbs which are mowed at regular intervals. It also includes horticultural plantings and volunteer woody plants.

The wooded cover type comprises approximately 20 acres in the project area. This cover type occurs along the areas associated with the unnamed tributary of the North Fork of Grant Creek. Portions of these areas have been delineated as wetlands (Site B-13 on Figure 3). This cover type consists of concentrations of woody plants (trees and shrubs) dominated by box elder, common buckthorn, Tartarian honeysuckle, multiflora rose, downy hawthorn, and black willow. Cropland (200 acres) and wetlands (74 acres) are discussed in Section 2.2 and Section 2.9 respectively. A total of 1,990 trees were identified within the study corridor. The corridor begins at the Interstate 55/Arsenal Road interchange and extends south an approximate distance of 2.1 miles. In general, the width of the study corridor is 250 feet east and west of the existing centerline of Interstate 55 except at the Interstate 55/Arsenal Road interchange and in the vicinity of the proposed interchange south of existing Drummond Road. At the Interstate 55/Arsenal Road interchange, the study corridor extended 300 feet east and west of the existing Interstate 55 entrance/exit ramps and tapered down to the 250-foot width about 1,650 feet south of Arsenal Road. In the vicinity of the proposed interchange, the study corridor extends an approximate distance of 50 feet outside the proposed right-of-way. Thirty-five (35) varieties of trees were identified in the project area. The most common types were: red cedar (*Juniperus virginiana*) – 19 percent; black locust (*Robinia pseudoacacia*) – 10 percent; osage orange (*Maclura pomifera*) – 10 percent; white mulberry (*Morus alba*) – 9 percent and white ash (*Fraxinus americana*) – 7 percent. The majority of the trees in the project area are in good to fair condition. When rated for health, 70 percent were found to be “good”, 18 percent “fair”, 6 percent “poor” and 6 percent were dead.

In addition, wooded vegetation occurs in most of the other cover types.

2.7 Water Resources and Water Quality

Three streams (the Des Plaines River, North Fork of Grant Creek, and an Unnamed Tributary to North Fork of Grant Creek) are located within the project area and are associated with the Des Plaines River Watershed. These water bodies receive storm water runoff from local communities and represent an urbanized watershed within the study area.

2.7.1 Water Resources

Des Plaines River

The Des Plaines River rises in southern Wisconsin just west of Kenosha and flows southward primarily through marshland as it crosses into Illinois. The river turns to the west and flows through woodland forest preserve districts in Lake County and Cook County. The river continues as a suburban stream through the City of Des Plaines and continues northwest as a large urbanized river flowing west of Chicago. Eventually the river turns southwest and joins with the Chicago Sanitary & Ship Canal in Lockport before flowing through the City of Joliet in Will County. In the heavily industrialized area around Joliet, dams control the water level. Just west of Joliet, the Des Plaines River converges with the Kankakee River to form the Illinois River. Sections of the Des Plaines River have been preserved in a mostly natural state and are used for conservation and recreation, while substantially altered sections of the river serve as an important

industrial waterway and drainage channel. In the study area, the Des Plaines River flows through a highly developed industrialized area. The river is approximately 150 miles in length and associated with a drainage basin of 1,307 square miles. The Des Plaines River is considered a Class I navigable water body though it is not classified as a “Wild and Scenic” river in the project area.

In the project area, the waterway flows through a highly developed commercial and industrial setting from approximate River Mile 277.3 to approximate River Mile 278.3. Interstate 55 crosses over the Des Plaines River via the Smith Bridge just north of the Arsenal Road interchange. Just south and west of the project area the Des Plaines River flows through the Des Plaines Fish and Wildlife Area near River Mile 275 and the Grant Creek Cut Off.

North Fork of Grant Creek

The North Fork of Grant Creek originates east of the project study area and crosses under Interstate 55 at the south end of the ramps for the new interchange. This stream has perennial flow and is impounded in the project area.

Unnamed Tributary to North Fork of Grant Creek

The Unnamed Tributary to North Fork of Grant Creek originates just south of the Dow Gate C driveway and approximately 225 feet west of the existing West Frontage Road and travels south on the west side of the west project limits for the proposed interchange. It connects to the North Fork of Grant Creek just south of the south project limits on the west side of the West Frontage Road. This stream is very small but has permanent flow.

2.7.2 Water Quality

The General Use Water Quality Standards apply to the Des Plaines River, North Fork of Grant Creek, and the Unnamed Tributary to the North Branch of Grant Creek. These Standards are intended to protect aquatic life, wildlife, agriculture, swimming, boating, and most industrial uses.

The Illinois EPA determines the resource quality of each water body by determining the level of support (attainment) of each applicable designated use. The designated uses are aquatic life, fish consumption, swimming, boating, and aesthetic quality. For each water body and for each designated use applicable to that water body, the IEPA assessment concludes with one of two possible use-support levels: Fully Supporting or Not Supporting. Fully Supporting (good resource quality) means that the water body attains the designated use; Not Supporting (fair or poor resource quality) means the designated use is not attained. Designated uses determined to be Not Supporting are also called impaired. For each impaired use the IEPA (2006) attempts to identify the potential causes and sources of the impairment.

Des Plaines River

The Des Plaines River in the project area (segment G-01) is in Non-Support of its aquatic life and fish consumption designated uses. The potential causes of these impairments are from DDT, PCBs, mercury, sedimentation/siltation, total suspended solids, phosphorus (total), and other flow regime alterations. The potential sources of these impairments are from contaminated sediments, impacts from hydrostructure flow regulation/modifications, urban runoff/storm sewers, municipal point discharges, and unknown sources. This segment of the river is impaired and considered to be of poor

resource quality. The designated uses swimming, boating, and aesthetic quality were not assessed by IEPA.

North Fork of Grant Creek/Unnamed Tributary of the North Fork of Grant Creek

The designated uses of these two streams have not been assessed by IEPA (2006).

2.7.3 Groundwater Resources

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

The project area is located in Zone A1, according to the map “Potential for Contamination of Shallow Aquifers from Land Burial of Municipal Wastes” (Berg et al., 1984). Zone A1 is described as permeable bedrock at or within 20 feet of land surface, with variable overlying material. Zone A indicates the highest potential for contamination and Zone G the lowest. This information is provided for a general regional perspective only.

The ISGS well records indicate that water in the project area is obtained from limestone at depths ranging from 13 to 200 feet below the surface. Four wells are in the project right-of-way or within 200 feet of the project right-of-way according to ISGS well records. Two of these wells are on the ExxonMobil Refinery West Tank Farm parcel. The two other wells are on or within 200 feet of the project right-of-way on the Ty Walk parcel on the south end of the project east of Interstate 55 near Blodgett Road. Other wells not in the ISGS database may be present near the project area.

There are no known municipal water wells within 1,000 feet of the project right-of-way, and no IDOT facility work is planned for the proposed project, so there should be no impact on any setback zones as determined by the IEPA Division of Public Water Supplies.

2.8 Flood Plains

Flood Insurance Rate Maps (FIRM), developed by the Federal Emergency Management Agency (FEMA) and the Flood Insurance Administration, were reviewed in order to identify base flood plains that are traversed by or adjacent to the study area. They show special flood hazard areas, corresponding approximately to the 100-year flood elevation. Only one flood plain is directly associated with a stream. According to the FIRM, there are eight 100-year flood plains in the project study area (See Figure 3 and Figure 6, Flood Plain Map, Sheets 1 and 2). Seven of the flood plains are Zone A which means no Base Flood Elevations were determined, and one of the flood plains (FP-1) is Zone AE which means the Base Flood Elevations were determined. It is anticipated that both longitudinal and transverse encroachments to the 100-year flood plain will occur as part of the proposed improvements.

The first 100-year flood plain (FP-1) is at the northern project limit on the southern bank of the Des Plaines River. This flood plain is outside of the project limits.

The second 100-year flood plain (FP-2) which was located on the INEOS property before the area was developed is no longer there because of the BASF/INEOS development.

The third 100-year flood plain (FP-3) is on the south side of Durkee Road, west of the West Frontage Road and contains populations of the state-listed plant species false mallow and Butler's quillwort. This flood plain will be impacted or destroyed by the planned Hoffman Transport development in this area. The Hoffman Transport development permit was submitted to the Will County Land Use Department for review and the County has submitted the first set of comments on the permit submittal.

The fourth 100-year flood plain (FP-4) crosses Interstate 55 and both the East and West Frontage Roads and is associated with a wetland area on both sides of Interstate 55. It is located south of Drummond Road on the Dow property and the ExxonMobil property. It will be impacted by construction of the SB exit ramp and NB entrance ramp terminals, the extension of Arsenal Road down the east frontage of Interstate 55, and the West Frontage Road. The FIRM map (Figure 6, Sheet 2) shows this flood plain crossing Interstate 55 however based on the flood plain encroachment evaluations the flood plain does not cross Interstate 55. The base flood elevations obtained from the Interstate 55 flood plain encroachment evaluations show the Interstate 55 roadway profile to be above the 100-year flood elevation.

The fifth 100-year flood plain (FP-5) is associated with a wetlands area west of the proposed West Frontage Road and south of Drummond Road on the Dow property. This flood plain will not be impacted by construction on the west side of Interstate 55.

The sixth 100-year flood plain (FP-6) crosses Interstate 55 and both the East and West Frontage Roads and is associated with a wetland area on both sides of Interstate 55. It is located approximately 3,000 feet south of Drummond Road. It will be impacted by construction of the NB entrance ramp, SB exit ramp, and the proposed detention ponds on the west side of Interstate 55 within the infield of the proposed SB exit ramp and on the east side of Interstate 55 within the infield of the proposed NB entrance ramp. The FIRM map (Figure 6, Sheet 2) shows this flood plain crossing Interstate 55 however based on the flood plain encroachment evaluations it appears that the flood plain does not cross Interstate 55. The base flood elevations obtained from the Interstate 55 flood plain encroachment evaluations show the Interstate 55 roadway profile to be above the 100-year flood elevation.

The seventh 100-year flood plain (FP-7) is associated with a wetlands area west of the West Frontage Road and approximately 3,800 feet south of Drummond Road. This flood plain is outside the limits of the project.

The eighth 100-year flood plain (FP-8) is associated with the North Fork of Grant Creek that crosses Interstate 55 at the southern limit of the project approximately 6,600 feet south of Drummond Road. It extends both east and west of Interstate 55 and will be impacted by the regrading/excavation of the ditch along the west side of the existing West Frontage Road, the ditch between Interstate 55 and the existing West Frontage Road, the ditch between Interstate 55 and the existing East Frontage Road, and the ditch along the east side of the existing East Frontage Road.

2.9 Wetlands

Nineteen wetlands were delineated in the project area during late March and April of 2002 and September, October, and November of 2003. All of the wetlands were delineated following the procedures outlined in the Corps of Engineers Delineation Manual (1987). To be delineated as a wetland, an area must have a predominance of hydrophytic vegetation, hydric soils (low chroma

matrix), and wetland hydrology. The wetlands are depicted on Figures 3 and 7. All of the wetland soils meet the hydric condition of a low chroma mix.

Wetland communities were rated according to their natural quality. The 2002 report used the FQI system in Swink and Wilhelm's Plants of Chicago Region, 4th Edition (1994) and the 2004 report used Taft et al (1997). These two publications give different mean Coefficient of Conservatism or mean C values for some species. These mean C Values are integers from 0 to 10 and are assigned to each species in the Illinois flora by the authors cited previously, based on their experience of a plant's tendency to be restricted to high quality plant communities. Exotic species are not assigned a C value, though they can be factored into the FQI. The FQI is a measure of the ecological integrity of the vegetation communities. To determine the FQI, plant species were assigned values based on a scale of 0 to 10 for native vegetation. Introduced or exotic species are entirely excluded from the FQI analysis. FQI values less than 10 indicate low natural quality, while sites with values of twenty or more have at least some evidence of native character and may be considered environmental assets. For wetlands with FQI values between 10 and 20, other wetland functions are assessed to determine site value. Eight of the wetlands had an FQI less than 10, four had FQI's between 10 and 20, and one had an FQI greater than 20. This document is using the native FQI.

TABLE 2.7 WETLAND SITES					
Wetland Site No.¹	FQI²	Dominant Vegetation	Plant Communities	Size (acres)	NWI Classification Wetland Hydrology
B-1	6.5	Green ash Common tussock sedge Knee grass Common rush	Wooded wetland	0.11	Not mapped
B-5	7.9	Broad-leaved cattail Narrow-leaved cattail	Emergent marsh	0.22	Not mapped
B-6	12.7	Common tussock sedge Blue joint grass Blue vervain	Wet meadow	0.94	Not mapped
B-7	16.0	Prairie cord grass Common tussock sedge Common reed Sandbar willow Box elder Blue joint grass Broad-leaved cattail Common teasel	Wet meadow, Emergent marsh	11.90	Not mapped
B-12	3.7	Broad-leaved cattail, Narrow-leaved cattail Brown fox sedge Reed canary grass Sandbar willow Prairie Indian hemp	Emergent marsh, Wet meadow, Scrub/shrub	1.62	Not mapped

1 B=Burke (2002); INHS=Kurylo (2004)

2 Native FQI without adventives

3 ND=Not Determined

**TABLE 2.7 (contd.)
WETLAND SITES**

Wetland Site No.¹	FQI²	Dominant Vegetation	Plant Communities	Size (acres)	NWI Classification Wetland Hydrology
B-13	17.1	Common reed Sandbar willow Reed canary grass Broad-leaved cattail Narrow-leaved cattail Brown fox sedge Poison ivy Swamp agrimony Common beggar's ticks Box elder River bulrush American elm Sawtooth sunflower Common tussock sedge Blue flag Lance-fruited oval sedge	Wet meadow, Emergent marsh, Wooded wetland, Scrub/shrub	12.71	PEMC Seasonally flooded PFO1C Seasonally Flooded PUBFx Semi-permanently flooded
B-14	ND ³	Black Willow	Pond	0.05	Not mapped
B-16	6.5	Reed canary grass	Wet meadow	0.02	Not mapped
B-17	2.5	Reed canary grass	Wet meadow	0.04	Not mapped
B-18	3.5	Eastern cottonwood Brown fox sedge	Wooded wetland	0.10	Not mapped
B-19	4.5	Reed canary grass Barnyard grass	Wet meadow	0.17	Not mapped
INHS-39	9.7	Fox sedge	Wet meadow	1.03	PEMC Seasonally flooded
INHS-41	14.7	red top blunt broom sedge fox sedge common ironweed	Wet meadow	0.80	Not mapped
INHS-42	31.3	Narrow-leaved cattail	Marsh	44.02	PEMC Seasonally flooded PEMF PUBFx PEMFx Semi-perm. flooded

1 B=Burke (2002); INHS=Kurylo (2004)

2 Native FQI without adventives

3 ND=Not Determined

2.10 Special Waste

A special waste assessment was completed within the Interstate 55/Arsenal Road interchange study area. The details of the assessment can be found in the Illinois State Geological Survey (ISGS) Preliminary Environmental Site Assessment (PESA) Reports ISGS #1415A/B and 1415C.

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 ascertain whether the proposed project will involve any listed site(s). As a result of this review, it has been determined that the proposed undertaking will require right-of-way from three sites included in the CERCLIS listing as of June 9, 2008 on the USEPA website. The three sites are listed below and are shown on Figure 8, Special Waste Site Maps.

- INEOS Nova Bulk Storage Facility and the INEOS Nova Polymer Plant; west side of Interstate 55 south of Arsenal Road; Archived CERCLIS site (BASF Corporation; IEPA #1970455008; US EPA #ILD 089813588),
- Dow Chemical Plant; west side of Interstate 55 south of Arsenal Road; Archived CERCLIS site (Dow Chemical-Joliet Plant; IEPA #1970800005; US EPA #ILD 093154599), and
- ExxonMobil Marine Loading Terminal, ExxonMobil Refinery West Tank Farm and ExxonMobil Surface Impoundments; east side of Interstate 55 south of Arsenal Road; Current CERCLIS (Mobil Oil Corporation; IEPA #1978090004; US EPA #ILD 064403199).

A Preliminary Environmental Site Assessment for sites potentially impacted with regulated substances was completed by the ISGS in August, 2003 and in August, 2005. The assessment concluded that the build alternative will not involve any other special waste sites except for the current CERCLIS site (IEPA #1978090004; US EPA #ILD 064403199) indicated above. Sites contaminated with hazardous wastes are 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

Public lands of a publicly owned park, recreational area, wildlife and waterfowl refuge, and any land from a historic site of national, State, or local significance (Section 4(f) lands) were examined within the project area for potential impacts related to the proposed improvements. The following Section 4(f) lands located near the project area are summarized below. See Figure 4, Environmental Inventory Map for the location of Section 4(f) properties in relation to the project area.

Midewin National Tallgrass Prairie

The first Section 4(f) resource site is located east of Interstate 55 and south of Arsenal Road. It is known as the Midewin National Tallgrass Prairie and is owned by the U.S.

Forest Service. The current size of Midewin is 15,454 acres and it will ultimately include 19,165 acres of land. A comprehensive Land and Resource Management Plan was developed for the property which includes the management and restoration of native vegetation and grassland habitats. The current uses for the Tallgrass Prairie includes limited hiking, biking and equestrian trails; picnicking; interpretive tours; exploration activities; and hunting. The west property line for Midewin is almost 4,000 feet east of the eastern limit of the proposed interchange. As a result, none of this property will be impacted or converted for highway use.

Des Plaines Fish and Wildlife Area

The Des Plaines Fish and Wildlife Area is located west of Interstate 55 near the south end of the project area. It includes over 5,000 acres of land of which approximately 200 acres are water. Activities include picnicking, fishing, camping, boating, hunting and shooting sports, and dog training. There is also an 80-acre nature preserve on the property. The north property line near Interstate 55 is located south of the proposed improvement and none of this property will be impacted or converted for highway use.

Abraham Lincoln National Cemetery

The Abraham Lincoln National Cemetery was dedicated in October 1999 as the 117th national cemetery. When fully developed, the 982-acre cemetery will provide 400,000 burial spaces. The initial phase developed approximately 150 acres including 25,000 gravesites and 2,000 lawn crypts for casketed remains; 3,000 columbaria niches and 2,300 garden niches for cremated remains; a public information center; three committal service shelters; a memorial walkway; and a carillon and Kiosk grave locator. The property is located over two miles southeast of the proposed improvement and none of the property will be impacted or converted for highway use.

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. A Section 6(f) Evaluation will not be required for this project.

2.11.3 OSLAD Act Lands

There are no lands within the project limits that have Open Space Lands Acquisition and Development (OSLAD) Act funds involved in their purchase or development.

3. ALTERNATIVES

3. ALTERNATIVES

This section describes the alternatives considered for the Interstate 55 (FAI 55) at Arsenal Road (County Highway 17) Interchange Improvement project. Reasonable alternatives were evaluated based on their ability to satisfy the purpose and need for the action. Proposed alternatives that did not satisfy the purpose and need for the action were eliminated from detailed study. The principle features of each alternative are presented, and each alternative is discussed in terms of its ability to meet the purpose and need for the action. A complete engineering description of each alternative will be provided in the Combined Design Report (CDR) prepared for this project.

3.1 No-Action Alternative

The No-Action Alternative would include rehabilitating the existing interchange pavement structure and other short-term improvements at the ramp terminals and the frontage road intersections. The No-Action Alternative does not adequately correct the safety and operational deficiencies. In addition, the No-Action Alternative does not accommodate the projected growth in traffic volumes due to regional development.

The existing interchange facility is unable to accommodate the existing traffic volumes and truck volumes without the occurrence of frequent delays and heavy congestion. Traffic volumes are expected to increase by the year 2030. Congestion, delays, and operating conditions would continue to worsen (See Figure 9 – Level of Service with Existing Geometry and Figure 10 – Summary of Operational Analyses).

Rehabilitating the existing interchange pavement and providing signalization at the Arsenal Road ramp terminals and frontage road intersections will alleviate some of the accidents and operational delays that occur due to the poor condition of the pavement and inadequate traffic control. However, a decrease in accidents from rehabilitating the existing pavement and the interim signalization improvements would be offset by the anticipated increase in accidents due to existing interchange ramp configuration deficiencies and increased travel and truck traffic demands. The accident history within the project corridor supports the need for capacity and operational improvements.

A summary of the consequences resulting from the No-Action Alternative include:

- Increased congestion and delays resulting in increased energy consumption and increased vehicle emissions from idling and accelerating vehicles.
- Increased accident potential as traffic and truck volumes continue to increase without capacity and operational improvements.

Interstate 55 is a vital component of the local, regional, and national transportation networks. The No-Action Alternative does not address the safety, operational, and capacity deficiencies that are associated with this interchange for Interstate 55. The No-Action Alternative does not satisfy the Purpose and Need for the improvement.

3.2 Access Management Techniques

Two different types of access management techniques were studied. The first type involved the removal of the existing interchange at Interstate 55 and Arsenal Road. The removal of the Arsenal Road interchange is not practical as it provides the only interchange access to Arsenal Road and the nearby surrounding area. The closest interchanges to Interstate 55 with access to and from the east are at U.S. Route 6 (East Eames Street), approximately 3 miles to the north, and River Road, approximately 4.4 miles to the south. Access to these existing interchanges from Arsenal Road would require significant adverse travel of approximately 18.5 miles both north and south. The north travel route would consist of Arsenal Road east to Illinois Route 53, and then traveling north to Interstate 80, and back west to Interstate 55. The south travel routes would consist of Arsenal Road east to Illinois Route 53, south to North River Road, then west back to Interstate 55. Full access currently exists at the Arsenal Road interchange location, serving the surrounding businesses and communities. Removal of the interchange was briefly analyzed and dismissed because it was not practical.

The second access management technique studied was ramp metering, which involves placing traffic signals along the entrance ramps of the interchange. The primary benefit of ramp metering is that it regulates the flow of traffic onto the interstate from the arterial interchanges. Providing ramp metering on the existing facility would not address the facility's safety and operational deficiencies. Installing ramp metering would only serve to disrupt the proposed free-flow merge configurations and operations. Therefore, this alternative was dismissed because it did not satisfy the project's purpose and need, in particular the safety and operational deficiencies, and was eliminated from further study.

3.3 Build Alternatives

The Build Alternative will improve the deficient safety conditions, expand interchange capacity to maintain an acceptable level of service, and minimize the operational deficiencies. Several different alternatives for reconfiguring the existing roadway and interchange were evaluated with the goal of correcting the safety, operational, and capacity deficiencies described in Section 1, Purpose and Need of the Proposed Action, while minimizing impacts to the natural and human environment. Of prime importance is the avoidance or minimization of impacts to the Midewin National Tallgrass Prairie, the Des Plaines Fish and Wildlife Area, and other natural areas adjacent to the Interstate 55/Arsenal Road interchange. See the Alternative Comparison Matrix included with the March 1, 2005 NEPA/404 Merger Meeting minutes in Section 5.3 for comparisons of Alternatives. The following is a brief discussion of the various roadway and interchange configurations that were evaluated.

Alternative 1 – Split Interchange

Development of this alternative attempts to improve the existing interchange to current standards at its current site of Arsenal Road. However, because of the proximity and constraint of the existing truss bridges over the Des Plaines River, maintaining the northbound entrance and southbound exit ramps at this location was not possible. This alternative provides a Split Interchange to provide the standard truck acceleration length for the northbound entrance ramp. This required the northbound half of the interchange be located ("split") approximately one mile south of Arsenal Road to avoid ExxonMobil's main facilities.

This alternative maintains the southbound exit and entrance ramps at their current location at Arsenal Road. The Split Interchange only provides a 30 mph loop ramp for the southbound exit

ramp to avoid impacts to INEOS's Hydrocarbon pipeline located west of the loop ramp. The project footprint impacts approximately 7.8 total acres of flood plain and 0.5 total acres of wetlands. Approximately 80 industrial parking spaces would be impacted due to the relocation of the west frontage road. The projected volume on the southbound exit loop ramp is approximately 1,700 vehicles with 27 percent trucks in the peak hour. A 30 mph loop ramp can typically accommodate 800 to 1,200 vehicles in the peak hour.⁴ Back-ups or slow movements would occur. In addition, the tight radii for the loop ramp increase the potential for truck rollovers. Because of this design's geometrics not being able to handle projected traffic volumes, it was not as desirable as compared to the other alternatives and it was eliminated from further consideration (See the Alternative Comparison Matrix included with the March 1, 2005 NEPA/404 Merger Meeting minutes in Section 5.3 and Figure 11 - Alternative 1 – Split Interchange).

Alternative 2 – Modified Parclo Interchange

This alternative is a modification of the existing interchange type of a Partial Cloverleaf (Parclo) updated to current standards. To provide the standard truck acceleration lengths, this interchange was located 1.1 miles south of Arsenal Road. Single lane, 30 mph loop ramps were provided for the heaviest ramp movements on the southbound exit ramp and the northbound entrance ramp. The project footprint impacts approximately 8.1 total acres of flood plain and 2.1 total acres of wetlands. Expected design capacities for single lane loop ramps range from 800 to 1,200 vph (vehicles per hour), where the higher figures are generally achievable where the design speed is 30 mph or higher and few trucks use the loop.⁴ Projected volumes on the Arsenal Road southbound exit ramp and the northbound entrance ramp each exceed 1,700 vph and truck volumes are in excess of 25 percent. Because of this design's geometrics not being able to handle projected traffic volumes, it was not as desirable as compared to the other alternatives and it was eliminated from further consideration (See the Alternative Comparison Matrix included with the March 1, 2005 NEPA/404 Merger Meeting minutes in Section 5.3 and Figure 12 - Alternative 2 – Modified Parclo Interchange).

Alternative 3 – Full Southern Interchange

The full southern interchange located 1.1 miles south of Arsenal Road is a variation of a conventional diamond interchange by providing a 50 mph, two-lane flyover ramp for the southbound exit ramp. This alternative is able to better handle the high percentage of truck traffic compared to the loop ramp design in Alternatives 1 and 2. Heavy truck volumes are expected with the operation and development of the BNSF Logistics Park Chicago (LPC) intermodal facility and the CenterPoint Intermodal Center (CIC) industrial park. This alternative extends Arsenal Road approximately one mile south along the east side of Interstate 55 to the relocated interchange and provides the option of removing both Arsenal Road and Blodgett Road bridges.

This alternative is able to accommodate projected traffic volumes and traffic conditions, but connections to the frontage roads were less than desirable. In addition, because of the larger "footprint" of the full interchange, it introduced new impacts to Dow and ExxonMobil properties, as well as impacts to open lands which contain threatened and endangered species. The project footprint impacts approximately 10.0 total acres of flood plain and 4.7 total acres of wetlands. Due to the impacts to open spaces and sensitive natural areas, Alternative 3 was eliminated from further consideration (See the Alternative Comparison Matrix included with the March 1, 2005 NEPA/404 Merger Meeting minutes in Section 5.3 and Figure 13 - Alternative 3 – Full Southern Interchange).

⁴ Illinois Department of Transportation, Bureau of Design and Environment Manual, December 2002, Section 37-3.06(b)

Alternative 4 – Southern Flyover (Preferred)

This alternative is similar to Alternative 1 for northbound entering and exiting traffic and is also similar to Alternative 3 for southbound exiting traffic by providing a 50 mph, two-lane flyover ramp. The northbound entrance and exit ramps, as well as the southbound exit ramp would be relocated approximately one mile south to accommodate truck acceleration lanes. Alternative 4 simplifies the traffic movements and connections to the frontage roads as compared to Alternative 3. The Arsenal Road bridge over Interstate 55 would be reconstructed to provide access to the West Frontage Road and southbound entrance ramp.

Based upon its minimization of impacts (8.3 total acres of flood plain and 1.2 total acres of wetlands), its ability to provide free flow, 40 and 50 mph design speed movements for all ramps, its ability to provide acceleration and deceleration lanes for safe merging/diverging of traffic, and its ability to provide two lane ramps where required, this configuration was selected as the preferred configuration for the Interstate 55/Arsenal Road interchange. This alternative meets the Purpose and Need of the project (See the Alternative Comparison Matrix included with the March 1, 2005 NEPA/404 Merger Meeting minutes in Section 5.3 and Figure 14 - Alternative 4 – Southern Flyover (Preferred Alternative)). See Section 3.4 below for a more detailed description of why this is the Preferred Alternative.

Alternative 5 – South ExxonMobil By-Pass (Options A, B, & C)

In an effort to address comments from ExxonMobil concerning eliminating traffic along Arsenal Road, Alternative 5 was developed to provide alignments that did not pass along the frontage of their property (primarily along their west property line and their north property line along Arsenal Road). Three potential options to relocate Arsenal Road on new alignment south of the ExxonMobil Refinery were developed. It should be noted that these options would require building a new roadway through the Midewin National Tallgrass Prairie. The prairie is covered by the stipulations of the 1996 Illinois Land Conservation Act, which prohibits construction of any new roadway through or across any portion of the Midewin National Tallgrass Prairie.

Three potential options to relocate Arsenal Road on new alignment south of the ExxonMobil Refinery were developed:

Option A realigns Arsenal Road along the western edge of the BNSF Railroad to a point north of Midewin National Tallgrass Prairie and then passes over the BNSF mainline track, CIC industrial lead tracks, and Jackson Creek, intersecting the existing Arsenal Road alignment approximately 0.75 miles west of Baseline Road.

Option B realigns Arsenal Road to the northeast across the BNSF mainline track, through Midewin National Tallgrass Prairie, over the CIC industrial lead tracks and Jackson Creek intersecting the existing Arsenal Road alignment approximately 0.75 miles west of Baseline Road. This alternative impacts approximately 12 acres of the Midewin National Tallgrass Prairie. This alternative directly impacts a primary portion of the Dolomite prairie, considered to be a special micro-ecosystem. Threatened and endangered species, including the Leafy Prairie Clover (Federal Endangered), are also known to exist in this section of Midewin.

Option C realigns Arsenal Road east across the BNSF mainline track and then through Midewin National Tallgrass Prairie along the north edge of the ComEd easement. The alignment then crosses over the CIC industrial lead tracks and Jackson Creek intersecting the existing Arsenal Road alignment approximately 0.75 miles west of Baseline Road. This alternative also impacts approximately 23 acres of the Midewin National Tallgrass Prairie. This alternative impacts the

southern tip of the Dolomite prairie. Threatened and endangered species are known to exist in this section of Midewin.

Each option would require construction of about 2.5 miles of new roadway through the prairie, requiring new crossings of the BNSF mainline track and Jackson Creek before connecting to Arsenal Road approximately 0.75 miles west of Baseline Road. The various Alternative 5 options would impact approximately 16.2 to 29.5 total acres of flood plain, 13.3 to 29.3 total acres of wetlands and 12 to 23 total acres of Midewin National Tallgrass Prairie. Due to the impacts to natural areas and resources, the stipulations of the 1996 Illinois Land Conservation Act, and concerns voiced by ExxonMobil of the proximity of these options to the eastern limits of their plant, Alternative 5 was eliminated from further consideration (See the Alternative Comparison Matrix included with the March 1, 2005 NEPA/404 Merger Meeting minutes in Section 5.3 and Figure 15 – Alternative 5 – South ExxonMobil By-Pass Options A, B, and C).

Alternative 6 – Blodgett Road (Options A & B)

Similar to Alternative 5, this alternative was developed based on comments from ExxonMobil to eliminate traffic along their north frontage on Arsenal Road. This alternative would locate the interchange three miles south to Blodgett Road. This would entail constructing a new roadway through the Midewin National Tallgrass Prairie by extending Blodgett Road to the east. Placing the interchange at this location will impact the Midewin National Tallgrass Prairie and the Des Plaines Fish and Wildlife Area. Two options were developed:

Option A would require the construction of approximately 3.0 miles of new roadway through Midewin, along the Blodgett Road corridor between Interstate 55 and Illinois Route 53, which would impact approximately 34 acres of Midewin National Tallgrass Prairie. In the vicinity of Baseline Road, the proposed alignment would shift to the south to avoid Lincoln National Veterans Cemetery.

Option B would require the construction of approximately two miles of new roadway through Midewin, along the Blodgett Road corridor between Interstate 55 and Baseline Road, which would impact approximately 14 acres of Midewin National Tallgrass Prairie. Traffic would utilize Baseline Road from Blodgett Road to East Access Road, and East Access Road from Baseline Road to Illinois Route 53. These recently reconstructed roadways (2002) would need to be widened and reconstructed to accommodate the traffic volume and increased percentage of multi-unit trucks.

The two options of Alternative 6 would impact approximately 56 to 57.1 total acres of flood plain, 30.4 total acres of wetlands, 14 to 34 total acres of Midewin National Tallgrass Prairie, and 48 total acres of the Des Plaines Fish and Wildlife Area. Due to the impacts to the Midewin National Tallgrass Prairie, which is covered under the stipulations of the 1996 Illinois Land Conservation Act, and other natural areas, Alternative 6 was eliminated from further consideration (See the Alternative Comparison Matrix included with the March 1, 2005 NEPA/404 Merger Meeting minutes in Section 5.3 and Figure 16 - Alternative 6 – Blodgett Road Options A & B).

Alternative 7 – Single Point Urban Diamond Interchange

The Single Point Urban Diamond Interchange (SPUD) alternative was evaluated to determine if a SPUD was capable of handling the heavy traffic demands of the interchange. The SPUD configuration simplifies the traffic movements and connections to the frontage roads when compared to the other alternatives, by converging all the turning movements into a single, large signalized intersection area. This alternate also shifts the entire interchange 1.1 miles south of

Arsenal Road. The environmental/ROW impacts for this alternative are similar to those of Alternative 4, impacting approximately 9.6 total acres of flood plain, and 2.7 total acres of wetlands. The SPUD is anticipated to be more expensive due to the requirements for a wider and longer structure and retaining walls to separate the ramps from the mainline interstate. This alternative extends Arsenal Road approximately one mile south along the east side of Interstate 55 to the relocated interchange and provides the option of removing both the Arsenal Road and the Blodgett Road bridges.

Preliminary capacity analyses indicate that a standard SPUD configuration would not provide adequate levels of service (LOS) due to conflicting movements. The northbound exit ramp right turn traffic conflicts with the southbound exit ramp left turn movement, resulting in a LOS F for the northbound exit ramp right turn and LOS E for the southbound exit ramp left turn during the A.M. peak hour. Further capacity analysis revealed that replacing the northbound exit ramp right turn lane with a free flow exit ramp from northbound Interstate 55 does help resolve the conflict and results in an improved level of service (Option B), but leaves no flexibility for future growth because the projected traffic volume approaches the intersection capacity. Replacing the westbound right turn lane with a free flow entrance ramp to northbound Interstate 55 provides a better free flow movement for the northbound entrance ramp traffic (Option A). Because the signalized intersection is unable to handle projected traffic volumes, it was not as desirable when compared to the other alternatives and it was eliminated from further consideration (See the Alternative Comparison Matrix included with the March 1, 2005 NEPA/404 Merger Meeting minutes in Section 5.3 and Figure 17 - Alternative 7 – Single Point Urban Diamond Interchange).

3.4 Preferred Build Alternative (Alternative 4)

The Preferred Build Alternative (Alternative 4) was selected because of its ability to satisfy the Purpose and Need of the project while reducing impacts to the natural and human environment.

The Preferred Build Alternative addresses the existing safety deficiencies by ensuring that the proposed roadway meets current engineering design standards and accommodates increased traffic demands. As noted in the Purpose and Need, the improvement of the interchange has independent utility even if additional transportation improvements in the area are not made. The free-flow northbound entrance ramp junction (PM LOS F), the southbound flyover exit ramp junction (AM LOS F), the northbound exit ramp (AM and PM LOS E), and the southbound entrance ramp (AM and PM LOS D) will not provide the required capacity for the interchange through the 2030 design horizon unless the Interstate 55 mainline is widened to a six lane section (See Figure 10 – Summary of Operational Analyses and Figure 18 – 2030 Level of Service with Proposed Geometry). The poor LOS's are due to the mainline traffic volumes however adding lanes on Interstate 55 would impact the existing truss bridges over the Des Plaines River and is not currently a part of this interchange project. Once that occurs, the ramp junctions will operate at the desired improved design capacity. Only the mainline sections north of the interchange would operate at less than LOS C. The ramps proper will provide the required capacity through the 2030 design horizon because the proposed ramps have been designed with the number of lanes required by the 2030 traffic volumes (See Figure 19 – Projected 2030 Design Hour Volumes with Proposed Geometry and Figure 20 – Preferred Conceptual Configuration). For the 2030 build alternative versus the 2030 no-build alternative, the southbound exit ramp junction LOS in the PM is improved from LOS E to LOS B, the northbound entrance ramp junction in the AM is improved from LOS E to LOS C, and the southbound entrance ramp junction in the AM is improved from LOS E to LOS D (See Figure 10 – Summary of Operational Analyses).

Alternatives 1 and 2 would not provide the required capacity through 2030 because the projected volume on the southbound exit loop ramp is approximately 1,700 vehicles with 27 percent trucks in the peak hour. A 30 mph loop ramp can typically accommodate 800 to 1,200 vehicles in the peak hour. Back-ups or slow movements would occur. In addition, the tight radii for the loop ramp increase the potential for truck rollovers.

Alternative 3 is able to accommodate projected traffic volumes and traffic conditions, but connections to the frontage roads were less than desirable. In addition, because of the larger “footprint” of the full interchange, it introduced new impacts to Dow and ExxonMobil properties, as well as impacts to open lands which contain threatened and endangered species. The project footprint impacts approximately 10.0 total acres of flood plain and 4.7 total acres of wetlands. Due to the impacts to open spaces and sensitive natural areas, Alternative 3 was eliminated from further consideration.

Each Alternative 5 option would require construction of approximately 2.5 miles of new roadway through the prairie, requiring new crossings of the BNSF mainline track and Jackson Creek before connecting to Arsenal Road approximately 0.75 miles west of Baseline Road. The various Alternative 5 options would impact approximately 16.2 to 29.5 total acres of flood plain, 13.3 to 29.3 total acres of wetlands and 12 to 23 total acres of Midewin National Tallgrass Prairie. Due to the impacts to natural areas and resources, the stipulations of the 1996 Illinois Land Conservation Act, and concerns voiced by ExxonMobil of the proximity of these options to the eastern limits of their plant, Alternative 5 was eliminated from further consideration.

The two options of Alternative 6 would impact approximately 56 to 57.1 total acres of flood plain, 30.4 total acres of wetlands, 14 to 34 total acres of Midewin National Tallgrass Prairie, and 48 total acres of the Des Plaines Fish and Wildlife Area. Due to the impacts to the Midewin National Tallgrass Prairie, which is covered under the stipulations of the 1996 Illinois Land Conservation Act, and other natural areas, Alternative 6 was eliminated from further consideration.

Preliminary capacity analyses for Alternative 7 indicate that a standard SPUD configuration would not provide adequate levels of service (LOS) due to conflicting movements. The northbound exit ramp right turn traffic conflicts with the southbound exit ramp left turn movement, resulting in a LOS F for the northbound exit ramp right turn and LOS E for the southbound exit ramp left turn during the A.M. peak hour. Further capacity analysis revealed that replacing the northbound exit ramp right turn lane with a free flow exit ramp from northbound Interstate 55 does help resolve the conflict and results in an improved level of service (Option B), but leaves no flexibility for future growth because the projected traffic volume approaches the intersection capacity.

The Preferred Build Alternative improves operational deficiencies by providing free-flow and 40-50 mph design speed movements for the predominant travel directions, proper number of lanes on the ramps for the 2030 traffic volumes ((See Figure 19 – Projected 2030 Design Hour Volumes with Proposed Geometry and Figure 20 – Preferred Conceptual Configuration), channelization along Arsenal Road and the East Frontage Road, and longer truck acceleration and deceleration lanes to reduce merge and diverge turbulence along the mainline. A detailed engineering description of the Preferred Build Alternative will be contained in the Combined Design Report (CDR).

The Preferred Build Alternative implements several Congestion Management System (CMS) strategies to sustain the effectiveness of the proposed improvement. CMS strategies are

alternatives which maintain the functional integrity of the proposed improvements. The CMS strategies that have been incorporated into the Preferred Build Alternative are traffic signal improvements and roadway geometric improvements. The Preferred Build Alternative satisfies the project's purpose and need.

4. ENVIRONMENTAL CONSEQUENCES

4. ENVIRONMENTAL CONSEQUENCES

This Section presents the results of the environmental analysis for the proposed action. The Environmental Inventory Map (Figures 3 and 4) identifies all sensitive cultural, natural, physical, and socio-economic resources, and special waste sites in the study area. Resources potentially impacted by the proposed action or that require discussion pursuant to applicable laws and regulations are addressed in this Section. The affected resources and the mitigation proposed are discussed by environmental issue areas.

4.1 Social/Economic

4.1.1 Community Characteristics and Cohesion

The proposed project is located in Will County, Illinois and passes through unincorporated Will County. The Village of Elwood with a population of 1,620 (year 2000) is the nearest community and is located approximately four miles east of the project. Most of the Village of Channahon, with a population of 7,235 (year 2000), lies north and west of the project. However, as noted in Section 2.1, there is a small portion south of and adjacent to the Des Plaines River which is near the project. The physical barrier of the Des Plaines River separates most of Channahon from Elwood and from the project area. The proposed project is essentially an upgrade of the existing route, therefore it will not disrupt community cohesion or result in any notable negative impacts to either of the involved municipalities beyond the current conditions. The bridges over Interstate 55 for Arsenal Road and Blodgett Road are being maintained. The project will not be removing or changing any access between the east and west sides of Interstate 55.

4.1.2 Title VI and Environmental Justice

Demographic data is included in Section 2.1.1. This information indicates that the percentage of minorities within the Villages of Elwood and Channahon are substantially below that of Will County as a whole. No racial, ethnic or religious minority groups were identified during public involvement activities or during reviews of the project area.

Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” reinforced the principles of Title VI of the Civil Rights Act and extended such protection to low-income populations. An analysis of available data from the affected communities suggests that no low-income persons (as defined by the Department of Health and Human Services poverty guidelines) are located within the project area. In addition, this project will comply with the requirements of the “Americans with Disabilities Act Accessibility Guidelines,” where applicable.

There are no minority or low-income populations within the project area, therefore the project will have no disproportionately high and adverse effects upon these groups.

4.1.3 Public Facilities and Services

Public and Community Buildings and Institutions

There are no public buildings or community facilities located within the project vicinity. Abraham Lincoln National Cemetery is located about two miles southeast of the project

and will not be affected by the project. The proposed project will not affect community access to any community facilities or services.

Emergency and Health Services

Police services along Interstate 55 and the frontage roads are provided by the Illinois State Police, District 5. The remainder of the project area, which is in unincorporated Will County, is served by the Will County Sheriff's Police. Fire and ambulance services west of Interstate 55 and north of Blodgett Road are provided by the Channahon Fire Protection District. East of the interstate, services are provided by Elwood Fire Protection District. No change in the boundaries for these services will occur as a result of the project.

The project will have little or no effect on access and response times for emergency vehicles utilizing the improved roadways to access the local properties once construction is complete. However, relocation of the interchange over one mile south of its present location may have an impact on travel distance and response times when the call involves an incident on Interstate 55 north of Arsenal Road. If the incident occurs north of the Des Plaines River, it would likely be responded to by the Channahon Fire Protection District, in which case there would be no change in travel time or distance. If the Elwood Fire Protection District is required to respond to an incident north of the river, there would be an increased travel distance of approximately three miles, or just over four minutes assuming an average travel speed of approximately 40 mph. The Channahon Fire Protection District serves the west side of Interstate 55 as far south as Blodgett Road, therefore to respond to an incident south of the Des Plaines River on the west side of Interstate 55 there would be an increased travel distance of approximately three miles, or just over four minutes assuming an average travel speed of approximately 40 mph. There would be negligible change in travel time and distance for an incident occurring south of the river on the east side of Interstate 55 since this area is responded to by the Elwood Fire Protection District.

Police, fire and emergency response times may be temporarily affected during construction. 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. The proposed traffic signal will include emergency vehicle preemption equipment.

Transit Facilities

Pace Route 511 provides service between Joliet and the Deer Run Industrial Park. No change or disruption in service will occur as a result of this project.

Multi-Use Trails and Facilities

There are no existing on-road bicycle lanes or off-road bicycle paths within the project study area. Various plans show proposed trails traveling along both the east and west frontage roads to Interstate 55 and crossing the interstate on the Blodgett Road bridge. The Illinois Bikeway Map (2006) currently designates Arsenal Road as a "Cautionary On-Street Bike Route" and both the East and West Frontage Roads are currently designated as "On-Street Bike Route Not Recommended". Both frontage roads will have continuity between Blodgett Road and Arsenal Road after construction of the project, therefore there are no impacts to existing route designations as a result of the

improvements. During construction, this continuity may not be available at all times. Any road closures will be posted well in advance.

4.1.4 Changes in Travel Patterns

Interstate 55 is an important north-south travel corridor from central Illinois to Chicago. The proposed improvements will strengthen this corridor and improve the function of the Interstate 55/Arsenal Road interchange by addressing capacity, operation and safety needs of the interchange. These improvements will result in minor changes to access and existing travel patterns. With the relocation of the interchange approximately one mile south of the existing interchange, certain residents and businesses will see either a minor increase or a minor decrease in travel distance and time, depending on where they are located. The existing frontage road system will be maintained and all properties will still have direct access to the frontage roads or the extension of Arsenal Road. However, there will be some alignment shifts of the frontage roads to the east or west of their existing alignments to provide room to construct the new ramps.

The project will maintain local access, will not provide new roadways or interchanges, and will not eliminate access to adjacent properties. Therefore, no changes in local or regional travel patterns are expected as a result of the project.

At a February 22, 2008 Stakeholder meeting, INEOS had requested that their access at the west end of the existing Arsenal Road be eliminated in the proposed condition. They stated that this private access point is seldom used and is a safety concern for their property. INEOS wrote a letter documenting that they would like this access point eliminated. A copy of the letter is included in Section 5.3 of this report. This access point will be eliminated with this project.

Construction impacts that may occur include inconveniences to motorists that take alternative routes, excessive traffic delays within the project limits due to construction activities, and inconveniences to motorists due to temporary ramp and lane closures.

4.1.5 Relocations (Business and Residential) and Right-of-Way Acquisition

No businesses or residential properties will need to be relocated for this project.

Right-of-Way Acquisition

Right-of-way acquisition is required for this project. These acquisitions have been shown on Figure 14, Alternative 4 – Southern Flyover Interchange (Preferred Alternate). Right-of-way acquisition has been minimized by refining the geometric designs of the ramps to reduce the project footprint, while still applying the appropriate design speed for each ramp. A total of 88.3 acres of land will be acquired from four businesses and a ComEd Easement (See Table 4.1). Temporary construction easements are also necessary for grading, driveway reconstruction, and site restoration from four parcels totaling approximately 0.74 acres of land. All property acquisition will be conducted under the provisions of the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*, as amended, and the *IDOT Land Acquisition Procedures Manual*.

TABLE 4.1 RIGHT-OF-WAY ACQUISITION			
Name of Business	Total Property Size	Size of Acquisition	% of Whole
ExxonMobil Refinery	1,133 acres	66.1 acres	5.8%
Dow Chemical Company (Dow)	883 acres	21.2 acres	2.4%
ComEd Easement	51 acres	0.1 acres	0.2%
Hoffman Transportation	28 acres	0.4 acres	1.4%
INEOS Nova (INEOS)	108 acres	0.5 acres	0.5%

4.1.6 Economics

The businesses within the project area are primarily industrial or trucking companies. None will be relocated. Although right-of-way will be acquired from four businesses, the acquisitions are occurring either on vacant portions of each parcel or along the frontage and the operations occurring within the remainder of the parcel will not be affected by the acquisition. In addition, although the acquisitions are somewhat substantial in size for two of the businesses (ExxonMobil and Dow), they represent a small proportion of the total property holdings for each of those businesses at this location. There will be no parking losses for either business. The setbacks to the ExxonMobil West Tank Farm will be reduced by a minimal amount. Twelve of the 200 acres of land (6 percent) which Dow currently leases to a local farmer will be acquired for the project. A minor loss of income for Dow will result, as well as a minor reduction in crop yield for the farmer. As a result, the project will have minimal effect on the economic viability of these businesses.

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

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, although none of the businesses are retail businesses which rely on easy access by their customers. Every attempt will be made to minimize negative economic impacts during construction. Existing driveways along the frontage roads will be maintained throughout construction to prevent disruption of access to businesses. There may be short periods of inconvenience when driveways themselves are reconstructed. Temporary access roads could also be built for the periods when construction requires the entrances to major businesses be closed.

Property Values

The existing businesses within the project corridor will benefit from the improvements to Interstate 55/Arsenal Road interchange which will improve safety and operation. No loss in business property values is anticipated.

Tax Revenues

The right-of-way acquisition would only minimally alter the overall tax base due to the conversion of 88.30 acres to highway use and public ownership. With the removal of a portion of the East Frontage Road and the interchange ramps in the southeast quadrant of the existing interchange, there may be an opportunity for all or part of the excess property to be granted to ExxonMobil in exchange for property at the new interchange location. The total loss of real property due to the project is relatively small compared to the tax base of the project area; therefore, no substantial impacts are expected to the tax base of the affected local governments.

4.1.7 Land Use

Details concerning the current and planned land uses within the project area are included in Section 2.1.2. New access to undeveloped property will not be provided as part of the proposed project and the project is not intended to encourage economic growth or development. As a result, the project is not expected to result in any notable land use changes within the project area. The proposed project is consistent with local and regional land use plans developed by the Villages of Channahon and Elwood.

4.1.8 Growth and Economic Development

Growth and economic activity is not an identified purpose for the proposed action. The goal of the project is to meet traffic, operational, and safety needs of the existing transportation corridor. Therefore, the project is not expected to influence growth and development in the project area.

4.2 Agricultural

As noted in Section 2.2, there is farmland on the Dow property. Of the approximately 200 acres of farmed area, 12 acres will be converted to highway use. The additional right-of-way is required for the relocation of the Interstate 55/Arsenal Road interchange and the relocation of the adjacent frontage roads.

The impacted farmland has limited viability for long-term agricultural productions due to the surrounding nonagricultural land uses. The impacted farmland has not been identified as a protected agricultural area nor is it considered prime farmland. There will be no impedance to or involvement with farm travel; field access involvement with farm travel; or diagonal severance or landlocked parcels.

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. The impact of this project on farmland conversion has been evaluated in accordance with the requirements of the U.S. Natural Resources Conservation Service (NRCS) and the IDOA. The project will convert three acres or less of farmland per mile and the conversion will not result in

more than minor impacts. Therefore, further coordination with NRCS or the IDOA on this project will not be necessary.

If off-site agricultural land is considered for mitigating wetland impacts or tree replacement, coordination with the Illinois Department of Agriculture would be required.

4.3 Cultural Resources

4.3.1 Archaeological Sites

As discussed in Section 2.3.1, the Archaeological Survey Short Report for the project area found only one historic archaeological site (11WI2635). The site is outside the proposed project area and will not be affected.

4.3.2 Historic Bridges

There are no historic bridges listed or eligible for the National Register of Historic Places within the project area.

4.3.3 Historic Districts & Buildings

There are no historic districts or buildings listed or eligible for the National Register of Historic Places within the project area. Cultural Resources Clearance was issued on August 24, 2005 and the State Historical Preservation Officer (SHPO) concurrence date was July 3, 2003 (See Section 5.3, Coordination Correspondence).

4.4 Air Quality

4.4.1 Carbon Monoxide (CO) Analysis

The nearest potential sensitive receptor in the project area is a residence located on Blodgett Road one mile south of the proposed interchange improvement and approximately 1,500 feet east of Interstate 55. Based on this distance, a CO analysis is not required.

4.4.2 Conformity

This Interstate 55 at Arsenal Road interchange project is located within a designated nonattainment area but is a project type which the USEPA has designated to be exempt from regional emissions analyses of transportation plans and Transportation Improvement Programs for purposes of determining conformity with the State Implementation Plan (SIP). This designation is based on USEPA's determination that the nature of the project is such that it would not affect the outcome of a regional emissions analysis.

4.4.3 Hot-Spot Analysis in PM_{2.5} Non-Attainment and Maintenance Areas

This project does not meet the definition of a project of air quality concern as defined in 40 CFR 93.123(b) (1). Due to the Interstate 55 at Arsenal Road Interchange project

being an interchange reconfiguration project which has been designed to improve traffic flow and vehicle speeds and not involve any increases in idling, it has been determined that the project will not cause or contribute to any new localized PM_{2.5} or PM₁₀ violations or increase the frequency or severity of any PM_{2.5} or PM₁₀ violations. USEPA has determined that such projects meet the Clean Air Act's requirements without any further Hot-Spot analysis.

4.4.4 Mobile Source Air Toxics (MSATs)

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 VMT, these programs will reduce on-highway emissions of benzene, formaldehyde, 1,2-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(l) that will address these issues and could make adjustments to the full 21 and the primary six MSATs.

This Environmental Assessment, includes a basic analysis of the likely MSAT emission impacts of this 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 Environmental Assessment. 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 used in MOBILE 6.2 for both particulate matter and MSATs are based on a limited number of tests of mostly older-technology vehicles. Lastly, in its discussions of PM under the conformity rule, EPA has identified problems with MOBILE6.2 as an obstacle to quantitative analysis.

These deficiencies compromise the capability of MOBILE 6.2 to estimate MSAT emissions. MOBILE6.2 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 can 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 also will 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 problems.⁵ Much of this research is not specific to MSATs, instead surveying the full spectrum of both criteria and other pollutants. The FHWA cannot evaluate the validity of these studies, but more importantly, they do not provide information that would be useful to alleviate the uncertainties listed above and enable us to perform a more comprehensive evaluation of the health impacts specific to this project.

Because of the uncertainties outlined above, a quantitative assessment of the effects of air toxic emissions impacts on human health cannot be made at the project level. While available tools do allow us to reasonably predict relative emissions changes between alternatives for larger projects, the amount of MSAT emissions from each of the project alternatives and MSAT concentrations or exposures created by 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, of MSAT emissions relative to the various alternatives carried forward, and has acknowledged that (some, all, or identify by alternative) 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 Emissions Among Transportation Project Alternatives, found at:

www.fhwa.dot.gov/environment/airtoxic/msatcompare/msatemissions.htm.

⁵South 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.

For each build alternative carried forward in this Environmental Assessment, the amount of MSATs emitted would be proportional to the vehicle miles traveled or 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 some or all of the interchange ramps are being relocated, leading to an increased travel distance for some of those movements. This increase in VMT would lead to higher MSAT emissions for the action alternative along the highway corridor. The emissions increase is offset somewhat by lower MSAT emission rates due to increased speeds; according to EPA's MOBILE6 emissions model, emissions of all of the priority MSATs except for diesel particulate matter decrease as speed increases. The extent to which these speed-related emission decreases will offset VMT-related emission increases cannot be reliably projected due to the inherent deficiencies of technical models. Also, regardless of the alternatives 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.

Because of the specific characteristics of the project alternatives (i.e. relocated frontage roads), under each alternative carried forward there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore it is possible that localized increases and decreases in MSAT emissions may occur. The localized increase in MSAT emissions would likely be most pronounced along the new roadway sections that would be built at the new ramps and frontage roads under all of the alternatives. However, even if these increases do occur, they too will be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations.

In summary, under all Build Alternatives carried forward in the design year, it is expected there would be an increase in MSAT emissions in the immediate area of the project, relative to the No Build Alternative, due to increased VMT associated with relocation of some or all of the interchange ramps but there is expected to be reduced MSAT emissions due to EPA's MSAT reduction programs. In comparing various project alternatives, MSAT levels could be higher in some locations than others, but current tools and science are not adequate to quantify 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.

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 Department's Standard Specifications for Road and Bridge Construction include 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 the Department 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.

4.5 Noise

As noted in Section 2.5, there are no sensitive noise receptors within the vicinity of the relocated interchange. As a result, a detailed noise analysis was not performed for this project.

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 will be controlled in accordance with Article 107.35 of the IDOT Standard Specifications for Road and Bridge Construction.

4.6 Natural Resources

Geologic conditions in the area of the Interstate 55/Arsenal Road interchange produce sensitive habitats. In this area the dolomite bedrock is less than 20 feet from the surface. In the northern part of the project area the surficial materials actually thin to four feet with outcrops of the Joliet Formation dolomite bedrock also observed in some areas. The Kankakee Torrent and the later Lake Chicago and Lake Nipissing floods removed glacial deposits and scoured out the area, removing most of the glacial sands and rock that had been deposited on top of the dolomite and limestone bedrock. The soils that did remain developed as prairie soils where the depth could support plant communities.

The construction and operating impacts of the proposed roadway were evaluated and design changes implemented to minimize potential impacts. The interchange ramps were configured to reduce right-of-way requirements, particularly along the east side of Interstate 55.

Drainage in this area was collected and directed away from sensitive areas adjacent to both sides of the interchange to minimize potential groundwater impacts.

Soils within the existing and proposed Interstate 55/Arsenal Road interchange area are designated as primarily silty clay loams. Construction of stormwater systems in these soils minimizes the potential for change in groundwater quality and quantity.

4.6.1 Geology and Mineral Resources

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

The project area is not expected to impact bedrock resources. The profile of the proposed ramps and relocated/reconstructed East and West Frontage Roads was set to avoid excavation of bedrock. Some impact to surface geology and topography would be expected during construction, including excavation, grading, and filling over the near-surface deposits. These effects would include minor changes to surface soils in the construction zone that would increase soil compaction and effectively decrease hydraulic conductivity.

There would be no operating mineral/material resource businesses within Will County affected by the project. Overall, this project would potentially increase short-term demand and sales for construction related products within the area during the construction phase. Upon completion of construction, demand and sales would be expected to return to previous levels.

Due to the development within the corridor and the protected undeveloped lands, there are no impacts to potential sand, gravel, or bedrock resources.

Four pipelines have been identified in the project area. One, owned by Midwest Gas Transmission, parallels the eastern side of Interstate 55 throughout the project limits. It is approximately 900 feet east of the East Frontage Road from the south end of the ExxonMobil property to Drummond Road. North of Drummond Road it turns west, then runs north along the east side of the East Frontage Road. This pipeline will either be maintained under the ramps or relocated along the east side of the ramps. Relocation of this pipeline east of the proposed interchange ramps would further impact one or two of the wetlands, therefore maintaining it in its existing location and providing protection would be preferred. In addition, north of Drummond Road the required minimum distance of 15 feet between the pipeline and the East Frontage Road edge of pavement will probably not be maintained (the exact location of the pipeline is not known at this time). This section of the pipeline will have to be relocated further east if the minimum distance cannot be provided. Pipeline location information is based on available atlas pages from the pipeline company. Test holes have not been performed. Further coordination with Midwest Gas Transmission on these issues is required in the Design Phase (Phase II).

One 8-inch pipeline owned by Teppco crosses Interstate 55 north of Drummond Road and two 6-inch pipelines owned by Kinder Morgan Energy Partners L.P. cross Interstate 55 south of Drummond Road. These would not be relocated but extension of the casings or other protection would be required because of the relocation/widening of the West Frontage road and the extension of Arsenal Road down the east frontage of Interstate 55.

4.6.2 Threatened and Endangered Species

Endangered and threatened species consultation has been accomplished with the U.S. Fish and Wildlife Service and the Illinois DNR by a Biological Resources Review Memorandum dated August 17, 2006 and October 30, 2006. Responses (See Section 5.3)

were received from the U.S. Fish and Wildlife Service (September 11, 2006 and April 3, 2008) and the IDNR (October 30, 2006).

Federally Listed Species

The eastern prairie fringed orchid is known to occur south of the Blodgett Road interchange on the east side of Interstate 55. This location lies outside of the project area. The U.S. Fish and Wildlife Service (letter dated September 11, 2006, See Section 5.3) has indicated that 27 wetland sites within the project vicinity could provide habitat for this species. Their assessment is based on the presence of plant species known to occur with the eastern prairie fringed orchid and the presence of suitable wetland habitats. None of the plant and wetland surveys within the project area were conducted during the blooming dates (June 28 to July 11, early as June 15 in Will County) of this species. Of these 27 sites, five will be impacted by the project. These are sites B-6, B-7, B-13, INHS-41, and INHS-42. See Sections 2.9 and 4.9 of the document for descriptions of these wetland sites. An additional plant survey for this species was conducted during the blooming dates in the five wetland sites mentioned above on June 28, July 5-6, and July 9, 2007 (letter dated July 30, 2007, See Section 5.3). The survey found no individuals of this species during the three site visits. In coordination with the USFWS, IDOT agreed to provide orchid habitat replacement and wetland replacement at the United States Forest Service's Midewin National Tallgrass Prairie. The USFWS concurred in their response letter dated April 3, 2008 (See Section 5.3).

Illinois Listed Species

False Mallow

During the field survey (Hill 2003), ten false mallow plants were located within three areas (3-4 per area); each area approximately 34 square feet in size. The population of false mallow at this site will be impacted by the proposed project. This population is located in the northeast corner of the Dow property, just inside Gate B. The site is approximately 30 feet west of the west edge of pavement for the West Frontage Road (Figure 3). Up to 0.01 acres (650 square feet) of land within this site will be disturbed by reconstruction of the Dow entrance onto the frontage road and construction of the proposed West Frontage Road ditch. The IDNR (letter dated October 30, 2006, See Section 5.3) indicated that a mitigation strategy of collecting the seed, storing the seed, and then sowing the seed into suitable habitat should be determined by the Illinois Natural History Survey. The Department will follow the IDNR mitigation strategy by reseeding the area adjacent to the impact site that occurs on highway right-of-way.

Botanical Site 10 is located on the east side of the East Frontage Road on ExxonMobil property, north of Drummond Road. It is located in an area 60 to 300 feet from the east edge of pavement of the frontage road. Butler's quillwort and false mallow were found within this site. A 55-foot wide strip of additional right-of-way will be acquired along this portion of the project. There will still be approximately 60 feet between this site and the proposed right-of-way limit; therefore, this site will not be impacted.

Blanding's Turtle

Surveys for Blanding's turtle were also conducted. None were captured in the immediate vicinity of the interchange improvement. However, one was captured on the far northwest corner of the Dow property near a detention pond which is well over one mile away from the proposed improvement (Petzing and Phillips 2005). The wetland located near that site is marginally suitable for Blanding's turtle but will not be impacted by the

improvement. Wetland B-13 along the west edge of the proposed interchange and Wetland INHS-42 along the east side of the East Frontage Road immediately north of the proposed interchange also appear to be marginally suitable. Less than one acre (six to seven percent) of Wetland B-13 and 0.35 acres (0.8 percent) of Wetland INHS 42 will be impacted through construction of the proposed improvement.

The IDNR has indicated (letter dated October 30, 2006, See Section 5.3) that the information on the Blanding's turtle surveys was insufficient to conclude whether or not the project will impact the species. The IDNR recommended additional surveys for the turtle. The surveys were conducted under the IDNR incidental take authority. Those surveys were completed during June 2007 with no Blanding's turtles captured. The incidental take authorization conservation plan was submitted to IDNR in August 2007 with publication of the Public Notice for the plan occurring on March 26, April 2 and April 9, 2008.

There will also be a cumulative impact to some listed species habitat such as false mallow and Blanding's turtle. As part of the Incidental Take (IT) for the Blanding's turtle done for this project, there will be BMP's used to minimize the impacts to these listed species. The disturbed areas within the construction limits will be restored to the pre-construction contours and vegetation type, where feasible native species of plants will be used in the restoration. The listed plant species will be transplanted wherever they cannot be protected from the construction work. Super silt fencing will be installed and diligently maintained along the construction perimeter to minimize undue encroachment into and disturbance of the habitat area. To further minimize construction impacts, the IDOT's Erosion and Sediment Control, Landscape Design Criteria Manual will be used. This Manual utilizes the latest techniques in sediment and erosion control design and implementation. Pre-construction awareness training will be provided for all contractors. The contractors and their employees will be made aware of the possibility that these listed species may be present and that **NO listed species should be destroyed or killed**. A picture of the listed species will be provided to the workers so they can be informed of the particular listed species in need of protection. If a listed species is found in the project area, a contact phone number will be made available so proper identification and handling or transplantation of the listed species is afforded. This will be a qualified person from IDNR, INHS or an environmental consultant. A retaining wall will be used adjacent to the high quality wetland INHS-42 along the east side of the Arsenal Road extension. At a maximum height of 4 feet, the retaining wall should not affect aspects such as wildlife movement. It may protect any migrating wildlife by keeping them off of the highway.

Consultation

The State listed endangered and threatened species discussed in this document have been coordinated with the IDNR. The IDNR has closed consultation based on the Department's applying for an incidental take authorization (turtle surveys). The Public Notice for the incidental take authorization occurred on March 26, April 2, and April 9, 2008. An INHS Memorandum report for the eastern prairie fringed orchid and leafy prairie clover surveys conducted on June 28, July 5-6, and July 9, 2007 was sent to the USFWS on July 30, 2007. The USFWS responded with a letter on April 3, 2008 (See Section 5.3) which states that providing wetland replacement at Midewin National Tallgrass Prairie would be acceptable mitigation for this project. See Section 4.9.1 for Mitigation ratios.

4.6.3 Plant Communities

Six plant communities (cover types) were identified in the project area. These include industrial, grass-forbland, wooded, cropland, non-native grassland, and wetlands.

The grass-forbland cover type comprises 364 acres in the project area. This cover type occurs on shallow soils over bedrock and contains areas of outcrops and shallow depressions. In the past, the area has been disturbed by farming, grazing, mowing, scraping, and filling. This community type will be impacted along the west side of the proposed West Frontage Road from just south of Dow Gate C to Durkee Road, along the east side of the proposed extension of Arsenal Road down the east side of Interstate 55 from ExxonMobil Gate C to the south, and on the east side of Interstate 55 for the construction of the ramps and East Frontage Road. The work which will impact this community type includes embankment fill and roadway ditches and the southern detention ponds for the project. Approximately 61 acres of this community type will be impacted by this project. The listed species will be transplanted or protected depending on their vicinity to the construction operations.

The industrial cover type comprises 316 acres in the project area. This cover type includes the ExxonMobil, Dow, Hoffman Transport, and INEOS Nova (INEOS) facilities. This community type will be impacted along the west side of the proposed West Frontage Road from Durkee Road north and along the east side of the proposed extension of Arsenal Road down the east side of Interstate 55 from ExxonMobil Gate C north to just north of ExxonMobil Gate A. The work which will impact this community type includes embankment fill and ditches for these roadways. Approximately four acres of this community type will be impacted by this project.

The non-native grassland comprises approximately 117 acres in the project area. This cover type includes all of the Interstate 55 right-of-way including the Arsenal Road interchange. This community type will be impacted by the removal of the existing interchange ramps and frontage roads and any of the proposed interchange roadways, ditches, and northern detention ponds within the existing Interstate 55 right-of-way. Approximately 112 acres of this community type will be impacted by this project.

The wooded cover type comprises approximately 20 acres in the project area. This cover type occurs along the areas associated with the unnamed tributary of the North Fork of Grant Creek. Approximately four acres of this community type will be impacted along the west side of the proposed interchange area. It is estimated that of the 1,990 trees identified in the original surveys, 279 (14.0%) were removed for the Arsenal Road improvements being constructed during 2006. Of the remaining 1,711 trees, 918 (53.7%) will be impacted by the proposed project, 283 (16.5%) may or may not be impacted pending the outcome of the drainage studies, and 510 (29.8%) will not be impacted.

The final geometric alignment of the proposed Interstate 55/Arsenal Road interchange was evaluated and revised numerous times to minimize any potential impact on the existing arboreous areas. The major impact on tree species will result from the proposed interchange configuration. Minor impacts will occur to small tree species growing along the existing right-of-way.

On the east side of Interstate 55 in the area of the proposed interchange, terrestrial habitat consists primarily of shrub-grassland/old field plant communities. This interchange area

is located between two sections of dolomite prairie including the prairie in the Des Plaines Fish and Wildlife Area and the prairie south of Drummond Road. The area appears to be former pasture land as evidenced by a barn foundation, barbed wire fencing and feeding troughs. The area is in transition, reverting once again to a forested community. The most common type of tree in this section of the proposed interchange is Osage orange (*Maclura pomifera*) 62%; black locust (*Robinia pseudoacacia*) 33% and 5% other tree species. On the west side of Interstate 55 in the area of the interchange, the most common tree type is white ash (*Fraxinus americana*) 45%; green ash (*Fraxinus pennsylvanica*) 35%; hackberry (*Celtis occidentis*) 11%; black locust (*Robinia pseudoacacia*) 6% and 3% other tree species.

The proposed project would result in an increase of paved areas and a reduction of permeable areas with turf cover. All areas disturbed by construction will be restored to turf cover by the contractor in accordance with the Illinois Department of Transportation, "Guidelines for Use of Landscape Items" (as appropriate for the location). Tree removal will be kept to a minimum, in accordance with Departmental Policy D&E 18, "Preservation and Replacement of Trees." Protection and care of existing trees and shrubs to remain within the project limits will be provided in accordance with the Illinois Department of Transportation "Special Provision for Protection and Care of Trees and Shrubs to Remain." Trees to remain, as well as those to be removed will be delineated on the plans. Protecting these areas with fencing will prevent accidental damage during construction.

No wooded areas over 10 acres will be bisected by the proposed improvements to the Interstate 55/Arsenal Road interchange. Tree impacts will be limited to small trees located along the edges of existing right-of-way as well as isolated, scattered trees and landscape materials located along the entire project length and through existing developed areas.

In addition, wooded vegetation occurs in most of the other cover types.

4.7 Water Quality/Resources

Construction and operational effects were considered for the three streams located near the project area. The Des Plaines River and North Fork of Grant Creek are located just north and south, respectively, of the study area and will receive minor impact from the proposed project. An Unnamed Tributary to the North Fork of Grant Creek is located just west of the proposed interchange and will receive minor impact from the proposed project.

4.7.1 Construction Impacts on Surface Waters

The proposed project does not directly cross any of these water bodies. There will be no in-stream work as part of the project and no loss of stream habitat. With no widening of existing bridge structures, no modification to piers and bridge abutments or placement of rock channel protection, there will be no direct construction impacts on surface waters.

Indirect impacts to aquatic resources generally result from the discharge of stormwater from highways. New roadway construction for the proposed project will result in a very small increase of existing impervious cover and therefore may increase the volume and

velocity of stormwater runoff. Indirect impacts to the Unnamed Tributary to the North Fork of Grant Creek may occur as a result of increased impervious cover associated with the construction of West Frontage Road (north and south) and the interchange ramps on the west side of Interstate 55. However, no adverse effects or changes are expected to occur to the water quality of the unnamed tributary to the North Fork of Grant Creek or the Grant Creek Drainage Area as a result of the proposed project.

4.7.2 Operational Impacts to Surface Waters

The existing drainage system consists of ditches between Interstate 55 and the East and West Frontage Roads, in the median of Interstate 55, and along the outside of the East and West Frontage Roads. There are also ditches along the existing Interstate 55 at Arsenal Road interchange ramps and existing Arsenal Road. The drainage divide is located approximately 2,500 feet south of the existing Arsenal Road bridge, with the water north of the divide draining to the Des Plaines River approximately 800 feet north of the existing Arsenal Road bridge and the water south of the divide draining to the Unnamed Tributary to the North Fork of Grant Creek just west of the proposed interchange or to the North Fork of Grant Creek approximately 200 feet south of the south project limits. There are three existing enclosed storm sewer systems within the project limits. The first is an 800 foot stretch of 18-inch pipe between Interstate 55 and the East Frontage Road which begins approximately 5,750 feet south of the existing Arsenal Road bridge and conveys water from north to south from one ditch to another. The second is a 580 foot stretch of 24-inch pipe in the median of Interstate 55 and under the southbound lanes of Interstate 55 which begins approximately 1,900 feet south of the existing Arsenal Road bridge on the south side of a median crossover and conveys water from the median ditch north under the crossover and then west to another ditch on the west side of Interstate 55. The third is a 660 foot stretch of 24-inch pipe in the median of Interstate 55 and under the southbound lanes of Interstate 55 which begins approximately 525 feet south of the existing Arsenal Road bridge on the south side of a median crossover and conveys water from the median ditch north under the crossover and then west to another ditch on the west side of Interstate 55.

The proposed drainage system will consist of ditches along both sides of the interchange ramps and the East and West Frontage Roads, along the east side of the proposed Arsenal Road extension, and along the west side of Arsenal Road except where there is not enough separation between Arsenal Road and the northbound entrance ramp auxiliary lane to construct a ditch. An enclosed storm sewer system will be utilized at that location. In addition, there will be a concrete barrier along Arsenal Road where there is less than 56 feet of separation between the edge of the auxiliary lane and the edge of Arsenal Road. There will be approximately 5,100 feet of enclosed storm sewer required in this area of which 4,500 feet will convey water south and 600 feet will convey water to the north. An enclosed sewer system will also be utilized between the proposed southbound exit ramp auxiliary lane and the proposed West Frontage Road because there is not enough room to construct a ditch. In addition, there will be a concrete barrier along the West Frontage Road where there is less than 56 feet of separation between the edge of the auxiliary lane and the edge of the West Frontage Road. The enclosed storm sewers will convey water from one ditch to another or into a stormwater detention area.

All four of the existing outlets will be utilized for storm water discharge. This includes two outlets to the Des Plaines River and the two outlets to the North Fork of Grant Creek.

The proposed ditch system will be vegetated and will extend a distance of over 50,000 feet in the proposed Interstate 55/Arsenal Road interchange area. This will provide an opportunity for settling of large sediment particles. Storm water detention facilities will also be provided in the project area based upon the storm water management analysis. There will be a three detention facilities, one on the west side of Interstate 55 for water draining north to the Des Plaines River and one on each side of Interstate 55 for water draining south to the North Fork of Grant Creek. The one to the north will be located within the infield of the existing southbound exit ramp. The two to the south will be located in the infield of the proposed southbound exit ramp and in the infield of the proposed northbound entrance ramp.

The 2001 ADT along Interstate 55 is 44,500 vpd and 39,400 vpd north and south of the existing interchange, respectively. The projected 2030 ADT along Interstate 55 is 102,000 vpd and 77,200 vpd south of the existing interchange, respectively. Since the ADT's are above 30,000 vpd, FHWA research has found that heavy metals could degrade surface waters. Motor vehicle operations generate accumulations of heavy metals (engine and automotive wear) as well as oil and grease and other pollutants. Three metals, lead, copper and zinc, were used as the primary indicators of transportation-related pollutants, and total suspended solids (TSS) provided additional information regarding possible water quality changes. Concentrations of these pollutants were compared to the general use water quality standards. The calculated acute water quality standards for lead and copper are 0.390 mg/L and 0.06 mg/L, respectively. The maximum concentrations for lead, copper, and zinc achieve the applicable water quality standards for the Des Plaines River and Grant Creek. Operational effects to the receiving streams were predicted using a regression analysis developed by the Federal Highway Administration (Driscoll et al., 1990).

The Des Plaines River drainage area is approximately 2.7 square miles within the project area. The existing right-of-way area is approximately 0.55 square miles. The existing impervious area that drains to the Des Plaines River within the project limits is approximately 0.03 square miles or approximately 1 percent of the total drainage area. The proposed right-of-way area will be increased by approximately 0.01 square miles to a total of 0.56 square miles. The proposed impervious area, tributary to the Des Plaines River, will be increased by approximately 0.04 square miles to a total of 0.07 square miles.

The maximum stream concentrations of copper, lead, and zinc are 0.04 mg/L, 0.08 mg/L, and 0.26 mg/L, respectively. These maximum stream water quality concentrations achieve the general use water quality standards.

The Grant Creek drainage area is approximately 8.9 square miles within the project area. The existing right-of-way area is approximately 0.05 square miles. The existing impervious area that drains to Grant Creek within the project limits is approximately 0.02 square miles or approximately 0.22 percent of the total drainage area. The proposed right-of-way area will be increased by approximately 0.15 square miles to a total of approximately 0.20 square miles. The proposed improvements within this right-of-way will increase the impervious area draining to Grant Creek by approximately 0.014 square miles to a total of approximately 0.034 square miles.

As a result of this roadway runoff, the copper, lead, and zinc concentrations in Grant Creek are estimated to be increased to 0.04 mg/L, 0.09 mg/L, and 0.27 mg/L,

respectively. These concentrations can be considered maximum values and achieve the general use water quality standards.

The general use water quality standards for the three metals were achieved in both receiving streams under the existing and proposed conditions. Reductions in metals levels, not accounted for in the analyses, are also expected in areas where runoff flows through existing drainage ditches and swales. No adverse changes or effects to the two streams are anticipated as a result of the proposed Interstate 55/Arsenal Road interchange project.

4.7.3 Maintenance Impacts

Deicing salt (sodium chloride) and plowing are the main tools used during the winter months for controlling ice and snow on roadway surfaces. Sand is used alone or in mixtures with deicing chemicals to provide skid free road surfaces during snow events in some areas. Deicing salt maintains public mobility and safe roadways during the winter months.

Road salt moves through the environment as runoff, splash, and spray. The salt is carried by the melt water runoff to the roadway drainage swales, ditches or storm sewers to the receiving stream or other water body. Salt is also transported by splash or spray generated by moving vehicles coming in contact with brine, slush or dried residue. Studies (Frost et al., 1981; Diment et al., 1973; Lipka and Aulenbach, 1976; and Sucoff, 1975) indicate that 60 to 80 percent of salt is carried by surface runoff into water bodies, 15 to 35 percent occurs as splash, and up to three percent occurs as spray. The amount of salt entering the environment depends on the number of snowstorms per season and the number of salting events per storm.

Maximum and average chloride concentrations were estimated from equations developed by the U.S. Geological Survey. Each stream was assessed using the combined loading from all the outfalls to that stream. Surface water chloride concentrations were estimated for each receiving stream using the number of lane miles within the project limits for each drainage area and the average salt application per season of 36 tons per lane mile.

In the Des Plaines River, the annual daily average incremental chloride concentration in the stream will increase from the existing value of 9 mg/L to 11 mg/L in the proposed improvement, and the annual daily maximum concentration will also be increased from 41 mg/L to 52 mg/L. This growth is attributed to the increase in impervious area draining to the river. The associated lane miles discharging to the Des Plaines River are increased by approximately 22 percent. Existing chloride concentrations in the stream achieve the Illinois general use water quality standard for chlorides of 500 mg/L.

In Grant Creek the annual daily average and annual daily maximum chloride concentrations will increase from the existing values of 7 mg/L and 33 mg/L, to 10 mg/L and 48 mg/L, respectively. This growth is attributed to the increase in impervious area draining to the creek. The associated lane miles discharging to Grant Creek would increase by approximately 46 percent. Existing chloride concentrations in the stream achieve the Illinois general use water quality standard for chlorides of 500 mg/L.

In the unnamed tributary to Grants Creek, located at about the mid-point of the study area west of I-55, the annual daily average incremental chloride concentration in the tributary

will increase from approximately 6 mg/L to approximately 8 mg/L with the proposed improvement and the annual daily maximum will also be increased from approximately 28 mg/L to approximately 41 mg/L. The growth is attributed to the increase in impervious surface area draining to the tributary. The associated lane miles discharge to the unnamed tributary would increase by approximately 30 percent. Existing chloride concentrations in the tributary achieve the Illinois general use water quality standard for chlorides of 500 mg/L.

There are potential operational impacts to plant communities related to roadway runoff and salt deposition from deicing procedures. Salt deposition patterns in northeastern Illinois have been presented in two studies conducted by the Illinois State Water Survey and the Morton Arboretum (Williams, et al., 2000 and Kelsey and Hootman, 1992, respectively). Both studies investigated the relationship between roadways and salt deposition patterns. Both studies confirmed that salt concentrations decrease as a function of distance.

The study by the Illinois State Water Survey (Williams et al., 2000) investigated deposition patterns by analyzing snow samples in close proximity to the six lanes of Interstate 55 in the Chicago area. This study investigated dry deposition as a deposition mechanism and also characterized the change in deposition as a function of distance. Williams et al. concluded their results showed dry deposition might be an important transport mechanism. Also, the importance of wind direction was documented in samples collected north and south of Interstate 55. According to their results, Williams et al. (2000) stated that the deposition pattern was four times higher on the west side of Interstate 55 as compared to the east side. During storm events the wind direction may have been from the south or southwest but after the storm, the wind originated from the north and carried salt particles south of the roadway. A best-fit curve was developed to describe the deposition pattern as a function of distance on the north and south sides of the expressway.

Kelsey and Hootman (1992) studied salt deposition at the Morton Arboretum site where a berm had been placed adjacent to a new tollway (North-South Tollway, I-355). The Tollway parallels the existing East-West Tollway (Interstate 88) for approximately 1.1 miles along the southern border of the arboretum. Here 12 to 16 lanes of roadway have been constructed. The berm height varies from 25 feet to 48 feet above the East-West Tollway pavement. This berm reduced deposition and a distance of 390 feet was viewed as a zone of significant deposition.

In both studies, salt deposition declined with distance and the pattern of the deposition is also consistent in both studies. Deposition drops rapidly with distance from the roadway. In the Illinois State Water Survey study, salt deposition in snow samples declined by 85 percent between 160 feet and 820 feet or 8.1 lb/acre to 1.2 lb /acre, respectively. In the Morton Arboretum study, mean sodium deposition declined from 2.8 lb/acres at 50 feet to 1.4 lb/acre at 500 feet from Interstate 355. Therefore, the salt deposition zone for Interstate 55/Arsenal Road interchange would be expected to be smaller than that encountered in the Illinois State Water Survey and Morton Arboretum Study.

The use of salt for deicing will be increased as a result of the proposed increase in travel lanes. However, the quantity of the increase is considered very minimal compared to the existing usage. Salt is very soluble and dissipates quickly in surface soil and drainage ways. Salt spray has little effect on dormant grasses in the highway right-of-way and is

generally flushed through surface soils during spring rains. No sensitive plant species were identified within the highway right-of-way during the ecological site visit and the additional use of salt will have no impact on the existing plant communities. As discussed previously, the additional salt runoff into nearby streams will be lower than the Illinois general use water quality standard for chlorides.

Mowing is the standard method for management of desirable grasses along IDOT right-of-way. However herbicides are more effective for eliminating weeds and woody brush from highway roadsides. The thistles and teasel, common roadside vegetation, are noxious weeds that, by law, must be controlled because of the damage they can do to agricultural crops. At the same time, IDOT must also protect "ornamentals," including oak, maple, ash, pear and Hawthorn. Since 1998 IDOT has been using an herbicide known as Garlon 3A to control vegetation. This herbicide is not soil active which means it does not leach into the soil and kill the roots of ornamentals or contaminate shallow groundwater. Furthermore, this herbicide dilutes readily and does not contaminate surface waters. IDOT workers have been trained to avoid spraying near ornamentals to prevent the herbicide from drifting onto desirable plants. Vegetation in the project area consists generally of mowed grass within the highway right-of-way. Areas of proposed right-of-way will be disturbed through grading and planted with grass species. During the ecological site visit, no sensitive plant species were identified within the highway right-of-way. The use of herbicides will not be increased as a result of the proposed project and will have no impact on existing plant communities.

4.7.4 Groundwater

No measurable change to the available water supply is anticipated for the proposed improvements. The additional impervious area represents a small reduction in recharge area.

Highways are not considered sources of groundwater contamination by the Illinois Groundwater Protection Act. However, the setbacks for sources are used as a surrogate to model potential impacts. The minimum setback for municipal wells is 400 feet and for private wells is 200 feet.

Although deicing salt storage is considered a source of groundwater contamination, no IDOT storage facility is planned for the project. The potential for contamination of groundwater supply wells is determined by proximity to sources, well construction, geological conditions, and management of stormwater. No municipal water supplies are located within 1,000 feet of the proposed right-of-way. This distance is greater than the setback zones established by the IEPA Division of Public Water Supplies to protect wells from potential contamination. Therefore, no municipal wells will be affected by the proposed improvements.

According to the USEPA's list of designated sole-source aquifers (September 2001), there are no sole-source aquifers in Illinois as defined by Section 1424(E) of the Safe Drinking Water Act, and so the project will not affect any such aquifers in Illinois. This project will not create any new potential "routes" for groundwater pollution or any new potential "sources" of groundwater pollution as defined in the Illinois Environmental Protection Act (415 ILCS 5/3, et seq.) Accordingly, the project is not subject to compliance with the minimum setback requirements for community water supply wells or other potable water supply wells as set forth in 415 ILCS 5/14, et seq.

Four private wells are located either on the project right-of-way or within 200 feet of the right-of-way. Two are located on the ExxonMobil Refinery West Tank Farm parcel and the other two are located on the south end of the project east of Interstate 55 near Blodgett Road. Other wells not in the ISGS database may be present in the project vicinity. ISGS well records indicate that groundwater in the project area is obtained from limestone at depths ranging from 13 to 200 feet below the surface. The silty loam and silty clay loam soils in this area are conductive materials with a potential for contamination. The drainage system associated with the interchange minimizes potential impacts to the shallow groundwater table by collecting all roadway runoff in storm sewers and ditches and directing the runoff to the North Fork of Grant Creek and to the Des Plaines River.

The two ExxonMobil Tank Farm Wells are used for industrial purposes and obtain water from an approximate depth of 1,570 feet. The proposed project will only involve the disturbance of the surface soils and will not have an effect on groundwater recharge patterns, especially to a depth of 1,570 feet. Any increase in the application of roadway salt or herbicides would be completely diluted before they could reach a depth of 1,570. Water quality is generally very poor at such a deep depth and the well water is only used for industrial purposes. The proposed project would have no negative effect on these groundwater wells. The two other groundwater wells are located a distance of 1,000 and 3,200 feet south of the project work limits. Furthermore, the two wells are located on the opposite side of Grant Creek. Any potential groundwater contamination would flow toward the east and away from these two wells. The proposed project will only involve the disturbance of the surface soils and will not have an effect on the local groundwater recharge patterns. The proposed project is located too far from these wells to have any effect on drinking water quality.

A retaining wall will be constructed on the east side of the extension of Arsenal Road down the east frontage of Interstate 55 adjacent to the high quality wetland INHS-42 in order to minimize impacts to the wetland. The construction and location of the retaining wall is considered very important to the project to minimize any impact on this high quality wetland. The length of the retaining wall would be approximately 800 feet and would be constructed to a depth of approximately 4 feet in the hydric Joliet silty clay loam soil. The minor surface area occupied by the proposed retaining wall would have no effect on surface water recharge. Being limited to a depth of 4 feet (just below the frost line) the proposed retaining wall would have no effect on shallow groundwater migration or on the existing wetland hydrology. The proposed retaining wall could actually benefit the quality of the wetland by acting as a barrier to the migration of any applied roadway salt or herbicides in this section of the project. At a maximum height of 4 feet, the retaining wall should not affect aspects such as wildlife movement. If anything, it may protect any migrating wildlife by keeping them off of the highway.

Construction of the retaining wall may reduce the recharge area for near surface groundwater flow in this area. The near-surface shallow unconfined groundwater flow direction was not specifically determined; but generally mimics local topography. (ISGS, August, 2003). This direction would be south toward the North Fork of Grant Creek. Depending upon the conductivity of the soils at the base of the retaining wall and backfill material, the groundwater recharge could be reduced in this area by the area of new right-of-way acquisition that is, 0.43 acres to the east. There will also be a retaining wall constructed between the extension of Arsenal Road down the east frontage of Interstate

55 and the northbound entrance ramp auxiliary lane. Construction of the retaining wall may reduce the recharge area for near surface groundwater flow in this area. The near-surface shallow unconfined groundwater flow direction was not specifically determined; but generally mimics local topography. (ISGS, August, 2003). This direction would be south toward the North Fork of Grant Creek.

The areas where there is near surface groundwater and biologically sensitive areas will not be compacted or drained during any and all excavations below groundwater.

4.8 Flood Plains

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; U.S. Department of Transportation Order 5650.2 “Protection and Management of Flood Plains”; Federal Highway Administration regulations on Location and Hydraulic Design of Encroachments on Flood Plains (23 CFR 650A); Title 92 Illinois Administration Code 708, implementing Sections 23, 29, and 30 of the Rivers, Lakes, and Streams Act, 615 ILCS 5/23, 29a, and 30; Section 24-3.07(j) “Flood Plains” in the IDOT Design and Environment Manual; Section 26-7 “Flood Plain Finding” in the IDOT Design and Environment Manual; and the IDOT Drainage Manual.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the County of Will (September 6, 1995) was examined for identified base flood plains which were either traversed by or adjacent to the project (See Figure 6, Flood Plain Map). The FIRM indicates two transverse encroachments and one longitudinal encroachment of base flood plains within the project. The flood plains are noted as Zone A on the FIRM map and are not regulatory flood plains. A description of the encroachment into each flood plain is discussed below. Table 4.2 summarizes the encroachments and the provided compensatory storage as described in this Section.

TABLE 4.2 FLOOD PLAIN ENCROACHMENT SUMMARY				
Location	Encroachment	Fill in Flood Plain	Compensatory Storage Provided	
		(cu. yds.)	(cu. yds.)	Location
FP-4 (East)	Transverse	1,306	2,047	Adjacent and north of existing flood plain up to Drummond Road

Flood Plain 4 (FP-4)

This is an isolated flood plain which crosses Interstate 55 and the East and West Frontage Roads approximately 800 feet south of Drummond Road. A transverse encroachment will result due to the construction of the southbound exit and northbound entrance ramp terminals and resultant relocation of the West Frontage Road and removal of the East Frontage Road/extension of Arsenal Road down the east frontage of Interstate 55. The flood plain is approximately 500 to 900 feet wide at this location. There will be 1,306 total cubic yards of fill in this flood plain and therefore compensatory storage will be required. This is a depressional flood plain and therefore the Will County Stormwater Ordinance requires a 1:1 mitigation ratio. There will be 2,047 cubic

yards of compensatory storage which will be provided adjacent and to the north of the existing flood plain and will extend northward to just south of Drummond Road.

The modifications to drainage structures included in this project will result in an insignificant change in their capacity to carry flood water. This change will cause a minimal increase in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural and beneficial flood plain values; they will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or termination of emergency service or emergency evacuation routes; therefore, it has been determined that this encroachment is not significant.

Flood Plain 6 (FP-6)

This is an isolated flood plain which crosses Interstate 55 and the East and West Frontage Roads approximately 3,000 feet south of Drummond Road. A transverse encroachment will result due to construction of the northbound entrance ramp, southbound exit ramp, and proposed detention ponds on the west side of Interstate 55 within the infield of the proposed southbound exit ramp and on the east side of Interstate 55 within the infield of the proposed northbound entrance ramp. The existing East and West Frontage Roads will be removed at this location. The flood plain is approximately 250 to 400 feet wide at this location. There will be more excavation (cut) than fill within this flood plain due to the removal of the existing East and West Frontage Roads and the excavation of the proposed detention ponds. The proposed detention pond on the east side of Interstate 55 within the infield of the proposed northbound entrance ramp will be from 4 feet to 7 feet lower than the existing grade within the flood plain. The proposed detention pond on the west side of Interstate 55 within the infield of the proposed southbound exit ramp will be from 2 to 4 feet lower than the existing grade within the flood plain. Therefore, there is no compensatory storage required for this flood plain.

The modifications to drainage structures included in this project will result in an insignificant change in their capacity to carry flood water. This change will cause a minimal increase in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural and beneficial flood plain values; they will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or termination of emergency service or emergency evacuation routes; therefore, it has been determined that this encroachment is not significant.

Flood Plain 8 (FP-8)

This floodplain is associated with the North Fork of Grant Creek that crosses Interstate 55 at the southern limit of the project approximately 6,600 feet south of Drummond Road. It extends both east and west of Interstate 55. A transverse encroachment will result due to the regrading/excavation (lowering the ditch grades) of the ditch along the west side of the existing West Frontage Road, the ditch between Interstate 55 and the existing West Frontage Road, the ditch between Interstate 55 and the existing East Frontage Road, and the ditch along the east side of the existing East Frontage Road. The impacts to this floodplain will only be excavation for the lowering of the ditches and therefore will not require any compensatory storage.

The modifications to drainage structures included in this project will result in an insignificant change in their capacity to carry flood water. This change will cause a minimal increase in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural and beneficial flood plain values; they will not result in any significant change in flood risks or damage; and they do not have significant potential for interruption or

termination of emergency service or emergency evacuation routes; therefore, it has been determined that this encroachment is not significant.

Avoidance Measures

There are no practical alternatives to construction in the flood plain. Filling within the flood plain is unavoidable because these fills result from existing encroachments. Modifying or altering the alignment of the proposed improvement will not avoid the proposed fill. Flood plains 4 and 6 encompass both sides of Interstate 55. Selection of the preferred alternate was made in part because it minimized the environmental impacts. Reduced fill in the flood plain was one of the environmental considerations. The proposed improvement will utilize retaining walls to minimize proposed fills.

4.9 Wetlands

There are fourteen wetlands in the project area which have the potential of being impacted by the improvement as shown on Figure 7. It was determined that eight of those fourteen wetlands will be directly affected by the implementation of the Build Alternative. Section 2.9 describes each individual wetland as to type, dominant vegetation, plant communities, size, and hydrology. A total of 2.84 acres from the eight sites will be directly impacted. Table 4.3 summarizes the impacts to wetlands, along with estimated wetland functions and minimization measures. Wetland impacts are unavoidable at each site for the following reasons:

Wetland B-5

This roadside emergent marsh wetland is located along the east side of the East Frontage Road on ExxonMobil property within one of the flood plains. All of this 0.22 acre wetland site will be disturbed through the removal of the existing East Frontage Road and the construction of a detention pond within the infield of the proposed northbound entrance ramp. Seven alternatives were evaluated for this interchange including improvements at different locations and different interchange configurations. This alternative addressed the safety and operational problems identified in the Purpose and Need while minimizing overall wetland impacts, particularly to Wetland INHS-42 which is a high quality wetland.

Wetland B-6

This site is an isolated wet meadow located east of Wetland B-5 on the ExxonMobil property. It is located within the infield area of the proposed interchange ramps east of Interstate 55. The wetland is 0.94 acres in size. This site will not be impacted by the construction of the interchange ramps but the entire 0.94 acre wetland site will be impacted by the proposed detention pond located within the infield of the proposed northbound entrance ramp. As noted previously, of the seven alternatives analyzed, the Build alternative addressed the safety and operational problems identified in the Purpose and Need while minimizing overall wetland impacts, particularly to Wetland INHS-42.

Wetland B-7

This wet meadow and emergent marsh is located at the southern limit of the project on ExxonMobil property. Construction of the northbound Interstate 55 exit ramp and relocation of the East Frontage Road will impact approximately 2.1 percent (0.25 acres) of this 11.90 acre wetland. As noted previously, of the seven alternatives analyzed, the Build alternative addressed the safety and operational problems identified in the Purpose and Need while minimizing overall wetland impacts, particularly to Wetland INHS-42.

Wetland B-12

This emergent marsh, wet meadow, scrub/shrub wetland is located just south of the Dow Gate H entrance on the west side of the existing West Frontage Road. The portion of the wetland which will be impacted is within the existing right-of-way and will be impacted by regrading/lowering of the ditch along the west side of the existing West Frontage Road to provide positive drainage for the proposed improvements. The regrading of the ditch will impact approximately 5.2 percent (0.08 acres) of this 1.62 acre wetland. As noted previously, of the seven alternatives analyzed, the Build alternative addressed the safety and operational problems identified in the Purpose and Need while minimizing overall wetland impacts, particularly to Wetland INHS-42.

Wetland B-13

Site B-13 is comprised of emergent marsh, wet meadow, wooded wetland, and scrub/shrub communities. It extends the length of the Dow property. Approximately 6.4 percent (0.81 acres) of the 12.71 acre wetland will be impacted by the construction of the southbound Interstate 55 exit ramp, relocation of the West Frontage Road, and the proposed stormwater detention pond within the infield of the proposed southbound entrance ramp on the west side of Interstate 55. As noted previously, of the seven alternatives analyzed, the Build alternative addressed the safety and operational problems identified in the Purpose and Need while minimizing overall wetland impacts, particularly to Wetland INHS-42.

Wetland B-19

This wet meadow is located adjacent to a farm field at the eastern limit of the Dow property, west of the West Frontage Road. It is located within the infield area of the proposed interchange ramps west of Interstate 55. All of this 0.17 acre wetland site will be disturbed through the removal of the existing West Frontage Road and the construction of a detention pond within the infield of the proposed southbound exit ramp on the west side of Interstate 55. As noted previously, of the seven alternatives analyzed, the Build alternative addressed the safety and operational problems identified in the Purpose and Need while minimizing overall wetland impacts, particularly to Wetland INHS-42.

Wetland INHS-41

This wet meadow is located approximately 1,200 feet east of the East Frontage Road on the ExxonMobil property. Approximately 2.5 percent (0.02 acres) of the 0.80 acre wetland will be impacted by the relocation of the East Frontage Road and the potential relocation of the 30" MGT gas pipeline to the east of the proposed interchange. As noted previously, of the seven alternatives analyzed, the Build alternative addressed the safety and operational problems identified in the Purpose and Need while minimizing overall wetland impacts, particularly to Wetland INHS-42.

Wetland INHS-42

This site is a marsh that extends from the East Frontage Road to Lower Dump Road on the ExxonMobil property. The extension of Arsenal Road down the east frontage of Interstate 55 will result in 0.80 percent (0.35 acres) of the 44.02 acre wetland being impacted. As noted previously, of the seven alternatives analyzed, the Build alternative addressed the safety and operational problems identified in the Purpose and Need while minimizing overall wetland impacts, particularly to Wetland INHS-42. In order to minimize impacts to this high quality wetland, a retaining wall will be constructed along the east side of the Arsenal Road extension.

**TABLE 4.3
SUMMARY OF WETLAND IMPACTS**

Wetland Site No.¹	NWI Class	FQI²	Total Area (acre)	Direct Impacts (acre)	Percent Loss	Estimated Functions	Minimization Measures
B-5	Not mapped	7.9	0.22	0.22	100.0	Stormwater detention pond	None
B-6	Not mapped	12.7	0.94	0.94	100.0	Stormwater detention pond	None
B-7	Not mapped	16.0	11.90	0.25	2.1	Drainage ditch, wildlife habitat	Steeper side slopes
B-12	Not mapped	3.7	1.62	0.08	5.2	Regraded ditch	Steeper side slopes
B-13	PEMC PFOIC PUBFx	17.1	12.71	0.81	6.4	Stormwater detention pond	Steeper side slopes
B-19	Not mapped	4.5	0.17	0.17	100.0	Stormwater detention pond	Steeper side slopes
INHS-41	Not mapped	14.7	0.80	0.02	2.5	Drainage ditch	Steeper side slopes
INHS-42	PEMC PEMF PUBFx PEMFx	31.3	44.02	0.35	0.8	Wildlife habitat, flood storage	Retaining wall, min. distance between NB entrance ramp auxiliary lane and Arsenal Road (31 feet designed for potential future outside third lane on I-55)

¹ B = Burke (2002); INHS = Kurylo (2004)

² Native FQI without adventives

Measures to minimize wetland encroachments will include the use of steeper side slopes and the addition of retaining walls. Wetland areas to remain will be protected from construction activities using non-intrusion fencing and signage, and appropriate erosion control measures as specified by IDOT Joint Design/Construction Procedure Memorandum on Erosion and Sediment Control and the "Erosion Control Plan" that will be prepared during the design phase.

Impacts resulting from the operation of the roadway currently occur due to the close proximity of the wetlands to the existing roadway. Based on the current drainage network along the roadways, it appears that wetlands B-5, B-7, B-12, B-13, B-19, and INHS-42 are subject to direct stormwater runoff from the roadway surface. This runoff contains pollutants common to all roadways and includes sodium chloride for road deicing in the winter season. Wetlands B-1 and B-6 currently receive pollutants from roadway splash and spray. This condition is expected to continue with slight increases in potential pollutant dispersion due to an increase in lane miles adjacent to the wetlands.

In order to minimize impact on the adjacent wetlands and botanical sites, shielding of the lights will be included to reduce the amount of light falling beyond the interchange ramps. A retaining

wall will be used adjacent to the high quality wetland INHS-42 along the east side of the Arsenal Road extension which could actually benefit the quality of the wetland by acting as a barrier to the migration of any applied roadway salt or herbicides in this section of the project.

4.9.1 Wetland Mitigation

As depicted in the Table 4.4, there will be a loss of 2.84 acres of wetlands. The mitigation ratio will be 2.0:1 for wetlands B-5, B-12, and B-19 and 5.5:1 for wetlands B-6, B-7, B-13, INHS-41 and INHS-42. The 5.5:1 mitigation ratios are used for the wetlands with potential habitat for the Blanding's turtle, Eastern prairie fringed orchid or both. At these replacement ratios, 13.975 acres of mitigation will be required. Wetland impacts will be mitigated at the U.S. Forest Service's Midewin National Tallgrass Prairie.

TABLE 4.4 WETLAND IMPACTS AND MITIGATION RATIOS				
Wetland Sites¹	FQI²	Area of Impact (acre)	Mitigation at U.S. Forest Service's Midewin National Tallgrass Prairie (acre)	
B-5	7.9	0.22	2.0:1.0	0.44
B-6	12.7	0.94	5.5:1.0	5.17
B-7	16.0	0.25	5.5:1.0	1.375
B-12	3.7	0.08	2.0:1.0	0.16
B-13	17.1	0.81	5.5:1.0	4.455
B-19	4.5	0.17	2.0:1.0	0.34
INHS-41	14.7	0.02	5.5:1.0	0.11
INHS-42	31.3	0.35	5.5:1.0	1.925
Total		2.84		13.975

¹ B = Burke (2002); INHS = Kurylo (2004)

² Native FQI without adventives

Sites B-5 and INHS-42 are identified as marshes. Total marsh impacts are 0.57 acres. Sites B-6, B-19 and INHS-41 are identified as wet meadow. The impact to these communities is 1.13 acres. Sites B-7, B-12, and B-13 contain both marsh and wet meadow. The impact to these communities is 1.14 acres.

Functional losses resulting from the proposed Build Alternative are expected to be minimal. Wildlife habitat impacts would be considered minimal, as large areas of contiguous habitat currently exist in the nearby Des Plaines Fish and Wildlife Area and the Midewin National Tallgrass Prairie. The losses of flood plain storage can be offset by the addition of stormwater detention basins and proposed compensatory storage areas required for flood plain fill. These constructed basins and storage areas can also replace the minimal functional impacts to sediment/toxicant trapping which is expected to occur.

4.10 Special Waste

Special waste assessments were completed within the Interstate 55/Arsenal Road interchange study area. The details of the assessments can be found in the Illinois State Geological Survey (ISGS) Preliminary Environmental Site Assessment (PESA) Reports ISGS #1415A/B (August, 2003) and 1415C (August, 2005).

4.10.1 Hazardous Waste

A CERCLIS site will be involved with the project but there is no prudent or feasible alternative for avoidance. The site does include 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 the Department.

A Preliminary Environmental Site Assessment for special waste was conducted by the Illinois State Geological Survey. The assessment concluded that the build alternative could involve sites potentially impacted with regulated substances. Further, it has been determined that this site cannot be avoided. The site which cannot be avoided is the Exxon-Mobil Refinery West Tank Farm (ISGS Boring 1415C-4; 1415-7) at the southeast corner of the Interstate 55/Arsenal Road interchange (See Figure 8 – Special Waste Site Maps). This parcel is an RCRA waste generator and is part of a current CERCLIS site (Mobil Oil Corporation; IEPA # 1978090004, US EPA # ILD 064403199). Hazardous waste generated at this parcel includes petroleum naphtha, amine sludge, crude oil sludge, acid soluble oil, cleaning solvents, and waste lubricants. These wastes are removed from the parcel periodically for disposal.

There were two All Appropriate Inquiries Environmental Site Assessments (AAI) completed August 1, 2007 within the proposed project area (ISGS 1415D1 and ISGS 1415D2). The ISGS 1415D1 AAI was a 500-foot wide strip along the east side of the existing East Frontage Road, from Arsenal Road south approximately 2.5 miles on the ExxonMobil property. This area will be impacted by the proposed extension of Arsenal Road down the east side of Interstate 55 to the proposed interchange location and the proposed interchange ramps on the east side of Interstate 55. The recommendation of this AAI was for additional delineation and characterization of possible PNA-affected soil materials on the subject property, additional analysis for VOC-affected soil materials on the subject property, and more detailed screenings of the right-of-way for the Midwestern Gas Transmission Company natural gas pipeline, the two Kinder Morgan Energy Partners, L.P. liquid petroleum/natural gas pipelines, and the Alliance Pipeline Ltd. natural gas pipeline which all cross or adjoin the property.

The ISGSD2 AAI was a 500-foot wide strip along the west side of the existing West Frontage Road from Drummond Road south for a little over one mile. This area will be impacted by the proposed West Frontage Road relocation and the proposed interchange ramps on the west side of Interstate 55. The recommendation of this AAI was to conduct testing for benzo(a)pyrene and VOC's on the subject property.

A Preliminary Site Investigation (PSI) Work Order was submitted to IDOT Central Office on September 19, 2006 (See Section 5.3 for copy of letter). A waiver to complete

the PSI in the design phase was requested and granted on February 6, 2008 (See Section 5.3 for copy of letter). The nature and extent of the involvement will not be known until the PSI is completed and at that time 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.

4.11 Special Lands

There are two public lands used for recreational purposes within the Interstate 55/Arsenal Road project area as described in Section 2.11. These include Midewin National Tallgrass Prairie and Des Plaines Fish and Wildlife Area. No changes in the use of land, access, or functional recreational use are anticipated for the two properties. No permanent right-of-way acquisition or temporary construction easement will be required from either property.

There are no lands that have Land and Water Conservation (LAWCON) funds or Open Space Lands Acquisition and Development (OSLAD) Act funds involved in their purchase or development.

4.12 Permits/Certifications Required

The project has been reviewed under the NEPA – 404 Merger Process. Agencies involved indicated that the proposed alignments minimize impacts and that the remaining impacts to wetlands are unavoidable. Final approval of mitigation ratios and mitigation sites will be coordinated through the Illinois Department of Natural Resources and the U.S. Army Corps of Engineers. The project is in compliance with the Illinois Interagency Wetland Policy Act of 1989.

The Illinois Department of Transportation Joint Design/Construction Procedure Memorandum on Erosion and Sediment Control will be implemented to minimize impacts to the Des Plaines River and Grant Creek. Several methods will be utilized to minimize impacts to these waterways including the erection of perimeter barrier fencing along the Des Plaines River and Grant Creek. The only runoff that will be allowed to leave the construction zone will be through sedimentation basins. In addition, any disturbed area will be seeded or sodded as soon as practical after construction activities in that area have concluded.

4.12.1 Section 404

This project will be impacting 2.84 acres of jurisdictional wetlands. Therefore, a permit will be required from the U.S. Army Corps of Engineers, Chicago District, under Section 404 of the Clean Water Act. Based upon the level of impacts, an individual permit is anticipated. For details regarding the impacts, see Section 4.7 Water Quality/Resources and Section 4.9 Wetlands.

Compensation for unavoidable wetland impacts is proposed to be mitigated at the U.S. Forest Service's Midewin National Tallgrass Prairie in Will County. See Section 4.9.1 Wetland Mitigation. The Illinois Department of Transportation (IDOT) or their consultant for the contract plans will prepare the U.S. Army Corps of Engineers 404 Permit application.

4.12.2 Section 401 Water Quality Certification

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

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

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

4.12.4 Will County Stormwater Management Permit

There are no regulatory floodways which are within the project limits. No permit will be required from the IDNR- Office of Water Resources but because the construction will disturb more than one acre of ground cover a Will County Stormwater Management Permit will be required. The construction of the new interchange will disturb as much as 80 acres of ground cover, therefore a permit will be required.

4.13 Indirect and Cumulative Impacts

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act of 1969 (NEPA) defines indirect impacts as those:

“...effects which are caused by the proposed action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”⁶ These actions are often referred to as “but for” actions.

Cumulative impacts are those impacts:

“...on the environment which results from the incremental consequences of the action when added to other past, present, and reasonable foreseeable future actions”⁷

⁶ Code of Federal Regulations, Title 40, Section 1508.8(b)

⁷ Code of Federal Regulations, Title 40, Section 1508.7

The assessment of indirect and cumulative impacts for the Interstate 55 at Arsenal Road Interchange project focuses on the following issues:

- Land Use and Economics
- Visual Resource
- Transportation
- Social/Community
- Air Quality
- Natural Resources
- Water Quality

Geographic Limits

The geographic limits considered for the analysis included the Des Plaines River on the north and west, River Road on the south and Illinois Route 53 along the east. These limits were selected because they represent the area which will most be influenced by the improvement of the Arsenal Road interchange.

Past Studies and Actions

Interstate 55 Widening – Weber Road to Interstate 80

There is a current project to construct a third lane in each direction on Interstate 55 from Weber Road to Interstate 80 (approximately 4.7 miles north of the Arsenal Road interchange). The Illinois Department of Transportation is constructing the project. Advance work was completed in 2007, with the widening scheduled for the 2008 and 2009 construction seasons.

Blodgett Road Bridge Improvement Study

The rehabilitation or replacement of the Blodgett Road Bridge, located approximately 2.7 miles south of existing Arsenal Road, was under study by the Illinois Department of Transportation. In fact, one of the alternatives for the Arsenal Road interchange improvement included relocation of the interchange to Blodgett Road. The alternative was not selected as the preferred improvement because Blodgett Road does not continue east of the East Frontage Road. To extend Blodgett Road east would require going through part of the Midewin National Tallgrass Prairie. By law the road would not be allowed to be extended through Midewin. The prairie is protected by the stipulations of the 1996 Illinois Land Conservation Act which prohibits new construction of any highway through or across any portion of the Midewin National Tallgrass Prairie. As a result, IDOT has postponed the bridge study and is considering removing the bridge rather than rehabilitating it.

BNSF Logistics Park and CenterPoint Intermodal Center (CIC) Traffic Study

A Traffic Impact Study was prepared for the Joliet Arsenal Site by the developer, CenterPoint Properties, in October 1999 to determine the potential impacts of the site-generated traffic on the transportation network in the surrounding area. The study concluded that the Interstate 55 interchange at Arsenal Road must be improved to address safety deficiencies and accommodate future traffic growth, but that site generated volumes did not require additional lane capacity on mainline Interstate 55.

Arsenal Road Widening and Interim Interchange Ramp Terminal Improvements

To accommodate projected traffic volumes on Arsenal Road, the County has widened and reconstructed Arsenal Road from the Interstate 55 ramps to Baseline Road. The project widened Arsenal Road to provide a four-lane facility. The ramp terminals and frontage road intersections were signalized and channelized. The project was staged into two sections: a grade separation

over the BNSF tracks and the sections east and west of the grade separation. The grade separation construction was completed in December 2005. The contract for the sections east and west of the grade separation was let for construction in May 2006 and is almost complete. All that remains is the final landscaping and the project should be completed by the summer of 2008. The proposed widening and reconstruction of Arsenal Road will be compatible with any improvements to the Interstate 55/Arsenal Road interchange.

Present and Reasonably Foreseeable Actions

It is reasonably foreseeable that growth will continue to occur in the vicinity of the Arsenal Road interchange as a result of the improvements and other events. The interchange reconstruction will provide more capacity and an improved road facility, thereby improving the desirability to construct new developments because of the improved interstate access. The U.S. Army is also declassifying and releasing additional properties within the former Joliet Arsenal Site for sale and redevelopment. These properties are along the north side of Arsenal Road east of the interstate.

In addition to future expansion of the BNSF Logistics Park (located east along Arsenal Road), other developments are being proposed. The CenterPoint East development consists of warehousing facilities and will be located on the east side of Illinois Route 53 at Walter Strawn Drive. It will be under construction in 2008. There are also other proposals to potentially redevelop property located north of Arsenal Road into additional intermodal, industrial and warehousing facilities.

Land Use and Economics

Continued growth of the Villages of Elwood and Channahon is reasonably foreseeable. Land use decision making is the responsibility of the county and municipality. Both communities are annexing adjacent unincorporated areas of Will County. Per the Chicago Metropolitan Agency for Planning, the Village of Elwood is projected to grow from a population of 1,620 in 2000 to 19,188 in 2030, a growth of 1,184 percent. For the Village of Channahon it is projected to grow from a population of 7,235 in 2000 to 22,231 in 2030, a growth of 307.3 percent.

The adjacent industrial areas in the vicinity of the Arsenal Road interchange include the ExxonMobil Corporation refinery southeast of the existing interchange, and Dow, Hoffman Transport Company and INEOS Nova southwest of the interchange. The Stepan Company and the CenterPoint Intermodal Center are located east of the interchange along Arsenal Road.

The Proposed Land Use Maps of the Villages of Elwood and Channahon indicate a zoning of office, research and industrial uses along the Interstate 55 corridor. It is reasonably foreseeable that with the proposed project and the current and future developments in the area will result in a cumulative effect of increased employment and improved local economics. The increase in employment in Elwood is projected to increase from 12 jobs in 2000 to 17,795 jobs in 2030. The corresponding projection for Channahon is from 2,384 jobs in 2000 to 6,531 jobs in 2030. It is also reasonably foreseeable that a cumulative effect of the proposed project improvements will encourage development through improved access, additional capacity, and system connectivity.

Also located in the project study area are the Des Plaines Fish and Wildlife Area along the west side of Interstate 55 at the southern boundary of the project and the Midewin National Tallgrass Prairie east of the project limits. Finally, the Abraham Lincoln National Cemetery is located almost three miles east of the project limits. It is reasonably foreseeable the reconstruction of the interchange will result in improved access to these three properties, thereby supporting further development and increased use of these properties.

Visual Resource

The proposed project, in combination with past, present and reasonably foreseeable future developments, would contribute to greater change in the project viewshed's character and quality as compared to the visual change with just the proposed project. Just the enormity of the interchange configuration and flyover loop ramps will produce a visual impression as travelers approach it. The ability to incorporate aesthetic features into the reconstructed interchange including, special finish treatments for bridges and retaining walls would result in a change to the visual environment. It is reasonably foreseeable that the interchange area, viewed from the south, could be a gateway for the Joliet Arsenal developments (BNSF Logistics Park and CenterPoint Intermodal Center) could become a dominant feature of the corridor.

Transportation

Once completed, construction of the proposed project would improve transportation facilities for residents of the project study area and region, as well as local business and service providers. The proposed project includes improved geometrics of the ramps, longer acceleration/deceleration merge lanes, and improved frontage roads. It is reasonably foreseeable that travelers (including trucks) would experience improved safety, less congestion, and better travel speeds in accessing Interstate 55.

Social/Community

It could be reasonably foreseeable that the proposed project in combination with other projects could result in continued development which would result in economic growth in the region. This growth of businesses would in turn bring about growth in population and jobs for both Elwood and Channahon. As noted previously, both population and job growth in these communities are projected to experience substantial growth by 2030.

Air Quality

Construction related effects on air quality due to the proposed project and other projects in the area should be localized, temporary, and of low magnitude with mitigation measures in place.

Once completed, the proposed project will alleviate identified congestion problems of the existing interchange and would improve traffic flow through the interchange and along the corridor.

Natural Resources

Wetlands

Wetlands in the study area are protected by federal, state, and local (Will County) regulations. Accordingly, induced development is not expected to affect wetlands, since developments induced by the project would tend to exclude wetlands to avoid mitigation costs. While development has the potential to affect wetlands, in Illinois, historically, the conversion of open land to agricultural use has had more of an effect on wetlands than development caused by human population growth. The exact locations of these impacts are under control of area land use plans, zoning and development decisions by the local jurisdictions.

Wetlands affected by the project will be mitigated. An environmental commitment of the project will be to relocate certain plant species which are able to be transplanted. The result will be an improved quality for the wetland to which they are moved as a result in an increased population within that wetland. Special provisions will be included in the project contract documents for plant and soil slab removal, transplantation, and maintenance and monitoring.

Streams/Water Quality

The interchange improvement is within the Des Plaines River watershed with drainage outfalls to both the Des Plaines River and the North Branch of Grant Creek. Project induced development will not necessarily have an indirect impact on water quality however; they would be required to provide on-site detention based on Will County regulations. The project itself will have a positive impact through the use of Best Management Practices including provision of bio-swales and detention facilities.

Conclusion

The Interstate 55 at Arsenal Road Interchange project will have both indirect and cumulative impacts on the resources and issues detailed above. The indirect impacts hinge on construction of the proposed project and the associated developments which would not occur without improved roadway access to Interstate 55. The cumulative effects of actions taken will primarily be those associated with new development which will occur based on improved access of undeveloped properties to the interstate.

4.14 Commitments

- Prior to construction commencing in the Interstate 55/Arsenal Road interchange area, the location of the false mallow and red-tailed prairie leafhopper will be identified and fencing will be erected around the area to prevent the intrusion of personnel and vehicles. Also, a training session will be held at the pre-construction meeting to alert construction personnel of the sensitivity of the plant and animal species and the need to avoid accidental intrusions or spills in the area. The training session will also address avoiding accidental intrusions into the noteworthy botanical areas that will not be impacted.
- A retaining wall is proposed along the east side of the extension of Arsenal Road along the east frontage of Interstate 55 to minimize right-of-way acquisition from the high quality wetland and flood plain.
- Sensitive environmental resources including wetlands, waterways, threatened and endangered species habitats/areas and natural areas will be fenced off and otherwise protected from construction activities. A discussion implementing erosion controls to minimize impacts to the sensitive environmental resources is included in each pertinent section that discusses each environmental resource. The sensitive environmental resources that will be protected (and the corresponding section where the discussion of the resource can be found) include noteworthy botanical areas (Section 4.6.2), threatened and endangered species (Section 4.6.2), and the high quality wetland (Section 4.9 and 4.9.1).
- The sensitive environmental areas will be protected from construction activities using appropriate erosion control measures as specified by IDOT Joint Design/Construction Procedure Memorandum on Erosion and Sediment Control and the “Erosion Control Plan” that will be prepared during the design phase. The “Erosion Control Plan” will identify areas to be protected by perimeter barrier fencing, ditch checks, vegetation preservation and implementation of proper signage of sensitive areas and any other necessary erosion control measures and implementation of proper signage of sensitive areas and any other necessary erosion control measures will be included in the “Erosion Control Plan”. The “Erosion Control Plan” will also identify the locations where “no intrusion” fencing will be placed.
- The IDNR Incidental Take Authorization for the Blanding's Turtle shall be executed prior to project award.

- The coordination with U.S. Forest Services's Midewin National Tallgrass Prairie, Corlands, U.S. Army Corps of Engineers, IDNR, and U.S. Fish and Wildlife will continue during Phase II so that an interagency agreement specifying the wetland mitigation location, mitigation, and plan can be completed.
- The "Erosion Control Plan" will be part of an overall Erosion Control Strategy. The main objectives of the Erosion Control Strategy will be to limit the amount of exposed earth and protect sensitive environmental resources during the construction phase.
- High mast interchange lighting will be installed as part of the interchange improvement. In order to minimize impact on the adjacent wetlands and botanical sites, shielding of the lights will be included to reduce the amount of light falling beyond the interchange ramps.

5. COMMENTS AND COORDINATION

5. COMMENTS AND COORDINATION

This section summarizes the coordination efforts that have occurred throughout the project development process. Coordination has been ongoing with interested agencies and the local communities through a series of meetings and written correspondence. Coordination with the public occurred via a Public Informational Meeting that was held on November 3, 2003. A Stakeholder Meeting with local businesses and local agencies was held on February 22, 2008.

The numerous coordination efforts between Will County Department of Highways, IDOT and the interested agencies have covered issues regarding sensitive environmental resources, threatened and endangered species, Section 4(f) lands, wetlands, noise impacts, and air quality. The agencies coordinated with include the following:

- Forest Preserve District of Will County
- Illinois Department of Natural Resources
- U.S. Department of the Interior – Fish and Wildlife Service
- U.S. Department of the Interior – Illinois & Michigan Canal
- U.S. Department of Agriculture – Midewin National Tallgrass Prairie
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- Illinois & Michigan Canal National Heritage Corridor Commission
- Illinois Historic Preservation Agency
- Illinois Natural History Survey – Center for Biodiversity
- Illinois State Geological Survey
- Illinois Department of Agriculture
- Abraham Lincoln National Cemetery
- Des Plaines Fish & Wildlife Area
- Will/South Cook Soil and Water Conservation District
- Northeastern Illinois Planning Commission
- Chicago Area Transportation Study
- Will County Government League
- Village of Elwood
- Village of Channahon
- City of Joliet
- Openlands Project
- Rails to Trails Conservancy
- Chicagoland Bicycle Federation
- League of Illinois Bicyclists
- Pace Suburban Bus System
- Burlington Northern Santa Fe Railroad
- CenterPoint Intermodal Center
- Ponder Solutions
- BASF Corporation (now INEOS Nova)
- Dow Chemical Company
- ExxonMobil Refining & Supply Company
- Joliet Arsenal Development Authority
- Stepan Company

Copies of correspondence are included in Section 5.3.

5.1 SUMMARY OF PUBLIC INVOLVEMENT MEETINGS AND NEPA MERGER MEETINGS

See the Combined Design Report (CDR) Volume 7 for the Public Informational Meeting Summary, CDR Volume 8 for the Public Hearing Summary (to be done at future date), and Section 5.3 for the NEPA/404 Merger meeting minutes.

On November 3, 2003, an open house Public Informational Meeting was held at Jackson Township Hall, 100 W. Mississippi Avenue, in Elwood, Illinois. The major concerns expressed at the meeting were as follows:

Environmental Resources – Opposition to any alternate which would impact Midewin National Tallgrass Prairie.

Geometry – Attendees generally concurred with the preferred Alternative Nos. 1 and 4 but suggested that Alternative No. 4 had better potential for future long range traffic needs of the area and that Alternative No. 1 utilizes tight single lane ramps which would pose operational difficulties and would reduce access to INEOS (formerly BASF) delivery trucks. ExxonMobil verbally reiterated their objection to any alternate which routes all additional traffic to Arsenal Road adjacent to their tank farm.

Impact to Adjacent Properties – Under Alternative No. 1, the ramps would be in very close proximity of the INEOS hydrocarbon pipe line creating safety and security concerns.

The first NEPA/404 meeting was held on February 5, 2004. Concurrence on the first concurrence point, the Purpose and Need, and the second concurrence point, alternatives carried forward, were granted at this meeting. It was decided that Alternatives 1, 3, 4, 5, and 6 would be carried forward for further study.

The second NEPA/404 meeting was held on March 1, 2005. Conditional concurrence on the third and final concurrence point, the Preferred Alternative, was granted at this meeting. Pending determination of potential impacts to the Franklin's Ground Squirrel and the Indiana Bat, conditional concurrence to proceed with Alternative 4 as the Preferred Alternative was received. Since this meeting, the project has been cleared for both the Franklin's ground squirrel and the Indiana bat.

The third NEPA/404 meeting was held on November 14, 2006. At this meeting, the IDNR stated that the submittal and processing of the Incidental Take (IT) would be acceptable to them for the Blanding's turtle and therefore the Public Hearing could proceed without the additional turtle surveys.

The Stakeholder Meeting held on February 22, 2008 allowed local interested businesses and agencies the opportunity to hear an update on the proposed improvement plans and on anticipated construction staging. The major concerns included potential closure of a portion of the West Frontage Road during construction, safety of access at several of the unsignalized intersections and driveways, structural adequacy of the Blodgett Road bridge, and closure of the north access driveway into INEOS Nova.

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**5.3 AGENCY CORRESPONDENCE AND
COORDINATION MEETING MINUTES**

AGENCY COORDINATION



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

August 13, 2002

Mr. Scott Czaplicki, P.E.
TranSystems Corporation
1051 Perimeter Drive, Suite 1025
Schaumburg, Illinois 60173-5058

Dear Mr. Czaplicki:

Thank you for your July 17 letter requesting information on bicycle trails in the study area of your project. I have referred to our maps and Enhancement Program grant applications to determine if there are any existing or proposed projects in the area. According to our information no projects exist or are proposed in the study limits. However, our information is not complete and I would encourage you to contact local government agencies to determine locally sponsored projects and plans in this area.

I understand that there is local interest in connecting the recreation areas on the west side of I-55 to the Midewin National Tallgrass Prairie. A crossing, either over or under the interstate may need to be built to accommodate cyclists and pedestrians. The I&M Canal Bicycle Trail also is located a short distance to the west of the project area which may attract or generate traffic to the Midewin area.

I hope this information is useful to you. If you need other information, please contact me at (217) 785-2148.

Sincerely,

A handwritten signature in cursive script that reads "Todd Hill".

Todd Hill
Bicycle and Pedestrian Coordinator



Illinois
Department of
Natural Resources

<http://dnr.state.il.us>

524 South Second Street, Springfield, Illinois 62701-1787

George H. Ryan, Governor • Brent Manning, Director

August 27, 2002

Mr. Scott Czaplicki
TranSystems Corporation
1051 Perimeter
Suite 1025
Schaumburg, Illinois 60173

Dear Czaplicki:

Thank you for your letter dated August 9, 2002 on the proposed road and bridge improvements to Route I-55 at Arsenal Road Interchange to Blodgett Road to the Desplaines River in Will County.

The Department recommends direct communication with the Villages of Channahon, Elmwood and Manhattan regarding their bike/trail plans for the area. Additionally the Department directs you to work with the Forest Preserve District of Will County regarding their greenway and trail development plans and projects regarding this corridor.

You should contact the League of Illinois Bicyclists and the Chicagoland Bicycle Federation which has resources to determine existing level of service and or anticipated future usage along the adjacent frontage corridor and I-55 crossings. The Chicago Area Transportation Study is can also determine level of service and anticipated increase in usage.

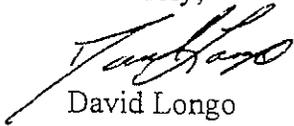
In regards to greenway and trails plans consult with the Northeastern Illinois Planning Commission (Northeastern Illinois Regional Greenways Plan) and Openlands Project (Grand Illinois Trail and the North Prairie Parklands Trails Plan).

The proposed improvements as indicated in your letter have the potential to link numerous existing and planned greenways and trails project within the vicinity .This would include connections and linkages to the Old Plank Road Trail, the Wauponsee Glacial Trail (planned) the Grand Illinois Trail, the I& M Canal Trail, the Rock Run Trail and others as outline in the North Prairie Parklands Trails Plan. Will County Forest Preserves, National Midewin Tall Grass Prairie and several State Parks and Fish and Wildlife Areas. (see enclosed material) are also potential links within the corridor.

The Department recommends full accommodation for cycling be incorporated into the project scope for this project, especially recommended width for bike path shoulders on the crossings over I-55.

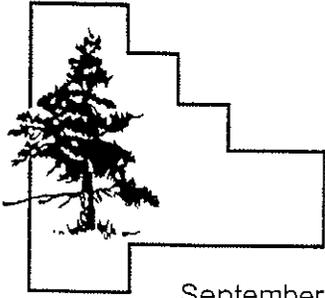
If you have any questions or concerns regarding IDNR comments, please contact me at 815/363-3919.

Sincerely,



David Longo
Northeastern Illinois
Greenways and Trails Program Manager

cc: Dick Westfall
Larry Kennedy



FOREST PRESERVE DISTRICT OF WILL COUNTY

22606 S. CHERRY HILL ROAD
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JOLIET, ILLINOIS 60434-1069
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KERRY SHERIDAN, President
SUSAN RILEY, Vice President
MARY ANN GEARHART, Secretary
GLENN WARNING, Treasurer
MICHAEL PASTERIS, Executive Director

September 25, 2002



Scott Czaplicki
TranSystems Corporation
1051 Perimeter Drive, Suite 1025
Schaumburg, IL 60173-5058

Re: Interstate 55 at Arsenal Road Interchange
Section No. 00-00117-11-GS
Channahon Twp., Will County

Dear Mr. Czaplicki:

The District has received your request for information relevant to defining an appropriate roadway configuration to accommodate bicyclists and where those needs may exist.

As I am sure you are aware, Midewin National Tallgrass Prairie is planning the implementation of an extensive multi-use trail system. The ability to safely cross Interstate 55 will be imperative to the success of a regional trail system in that area. The District supports a non-motorized connection between the I & M Canal Trail, the Des Plaines Conservation Area and Midewin sometime in the future. The roadway and bridge engineering and design work should allow for adequate roadway width to accommodate bicyclists and pedestrians in the event that a connection does become possible. The District recommends that at a minimum, the AASHTO standards of a 5-foot paved shoulder along Arsenal Road and the bridge crossing I-55 be included in the designs.

I have also enclosed a copy of the North Prairie Parklands Trails Plan, which highlights the area's existing trails, planned trails and potential trails. If you need additional information or would like to further discuss the District's comments, please contact me.

Thank you for your time and consideration in the preliminary studies for this interstate improvement project.

Sincerely,

Vicki Gerberich
Environmental Planner



October 17, 2002

Mr. Sheldon Latz, P.E.
Will County Department of Highways
16841 W. Laraway Road
Joliet, IL 60433

Att: Mr. Mark Bagherpour

Dear Mr. Latz:

Thank you for your request for input on bicycle accommodations at the Interstate 55 at Arsenal Road interchange in Will County. Attached are regional and federal policies in support of including bicyclists' needs in transportation projects. Also, please see the attached caveat regarding data sources.

Description of Project Corridors

The new alignment of Arsenal Road will likely be an important corridor for cyclists, for it will provide access across I-55. The new alignment will also provide access to Midewin National Tallgrass Prairie, Des Plaines Conservation Area, and planned industrial parks.

The Will County Bikeway Plan and NIPC's Greenways and Trails Plan propose a trail in the I-55 corridor. A trail would provide connectivity between the communities north of the Des Plaines River and the State and National conservation areas in the southern half of the project corridor.

Existing and Anticipated Bicycle Usage

The Channahon, Manhattan, and Wilmington areas can be expected to see high population and employment growth in the years ahead. With the continuing boom in population in Will County, use of the planned trail system in Midewin National Tallgrass Prairie will be significant. High trail usage can be expected on summer weekends, with many accessing the Prairie from the I&M Canal Trail and communities north of the Des Plaines River via two planned river crossings.

Although CATS does not have bicycle counts on this corridor, the project area's mix of destinations, area bikeway facilities and barriers (discussed below) suggests the existence and potential for bicycle activity.

Destinations

Like any other mode, cycling can be used to access a variety of destinations, such as recreation, education, employment and retail areas. We have identified destinations within a 1.2-mile buffer of the project that might generate non-motorized activity along or across the I-55 corridor:

Recreation

- Midewin National Tallgrass Prairie. The nation's first National Tallgrass Prairie covers approximately 20,000 acres and is owned by the U.S. Forest Service. A campground and visitors center are planned near the intersection of IL Rt. 53 and Hoff Road.
- Des Plaines Conservation Area. Hiking trails, picnic areas and a campground are located at the 4,200-acre site owned by the Illinois Department of Natural Resources.

Employment

- The Des Plaines Conservation Wildlife Headquarters and several industrial uses are located near the existing Arsenal Road interchange.
- Planned Industrial Parks. Approximately 3,000 acres of the relinquished Joliet Arsenal have been allocated for industrial use.

Planned Bikeway Facilities

The realigned Arsenal Road could provide access to the planned on and off-road bicycle facilities by accommodating cyclists who might use them as a link in their trip and by using them as trail connections. The Will County 2020 Transportation Framework Plan (1996) and the Northeastern Regional Greenways & Trails Plan (1997) identified many planned facilities in the 1.2 mile project buffer.

Planned facilities in the project area include:

Off-Road Path:

- I-55 Corridor Trail This is a planned trail along the east side of I-55 and is identified by NIPC as the Channahon to Des Plaines Conservation Area Corridor. The I-55 Corridor Trail will provide access to Midewin National Tallgrass Prairie and Des Plaines Wildlife Conservation Area and intersects roadways and two major trails where cycling activity is expected.
- I & M Connector This planned east-west trail through the Des Plaines Conservation Area will provide a unique crossing opportunity over the Des Plaines River and connection with the I&M Canal Trail. The proposed trail would provide critical access across I-55, which acts as a barrier to the western portion of the Des Plaines Conservation Area.
- Abandoned US Gov. RR Trail This trail, along with the I&M connector are identified by NIPC as part of the Des Plaines Conservation Area/Midewin Trail System.

Side-path:

- Arsenal Road This is a planned bike path along Arsenal Road from I-55 Corridor Trail to the Village of Manhattan.

Barrier Access

Barriers such as rivers, railroads, highways, busy roads and parcels of land with limited through access can impede bicycle travel, especially since cyclists are very detour sensitive.

The realignment of Arsenal Road could provide access across barriers, such as I-55, industrial uses, and Midewin National Tallgrass Prairie. Also, the Des Plaines River acts a significant barrier to bicyclists. Currently, there are no bicycle and pedestrian crossing opportunities over a 20-mile segment of the Des Plaines River between Route 47 in Morris and Brandon Road in Joliet. The possibility of adding a bicycle path onto the I-55 bridge should be explored if this facility is improved in the future.

Suggested Strategies

The new alignment of Arsenal Road will likely be an important corridor for cyclists. The corridor provides access to existing and planned destinations. The new alignment will provide access across I-55, which acts as a barrier to access to the peninsula formed by the Des Plaines and Kankakee. Additional cycling improvements are planned in the area. In keeping with the policies of the *2020 Regional Transportation Plan*, bicycle accommodations merit serious consideration in project engineering in this interchange.

To accommodate safe and comfortable bicycle travel at the relocated Arsenal Road interchange, consider a design that will reduce the impact on pedestrians and bicyclists of high-speed merging exit and entrance ramp traffic. Free-flow movements at the intersections of the ramps and Arsenal Road should be avoided; consider urban interchange designs. Also, accommodate cyclists (and pedestrians) in any traffic signal modernization, such as ped-actuated signals and detection loops that register bikes. Well-marked crosswalks communicate to motorists that non-motorized users can be expected to cross the ramps. Consider maintaining right-of-way along the realigned Arsenal Road to allow for a future sidepath and allowing enough outside lane width to accommodate current on-road bicycle usage.

Opportunities should be explored for bicycle accommodations in relation to the removal of the existing Arsenal Road interchange and bridge. For example, the grading along northbound I-55 as it approaches the Des Plaines River bridge could be designed to accommodate the planned I-55 Corridor Trail. Significant bicycle and pedestrian usage could be expected if a crossing accommodation were provided with future bridge projects.

We hope this discussion of destinations, bikeway facilities and barriers meets your need for information on bicycle usage, bicycle trip generators, and existing, planned and programmed bikeway facilities. Please note the attached overview of data sources.

Thank you again for this opportunity to comment. If you have any questions, please contact Ms. Gin Kilgore at 312.793.0451.

Sincerely,

A handwritten signature in black ink, appearing to read "Aristide E. Biciunas". The signature is fluid and cursive, with a long horizontal stroke at the end.

Aristide E. Biciunas
Executive Director

Enc:

Data Sources

Policy Support for Considering Bicyclists' Needs in Transportation Projects

Map of Project Area

cc: Mr. Scott Czaplicki, P.E.--TransSystems Corporation

CAVEAT
REGARDING THE USE OF CATS BICYCLE PLANNING DATA SUPPLIED AT THE
REQUEST OF
TRANSYSTEMS CORPORATION

CATS bicycle planning information is suitable for planning-level analysis of proposed bicycle accommodations on arterial roadways. The information is the most recent available. However, this information has certain limitations that should be kept in mind when using it. These limitations are described below.

Inventory of Bicycle Facilities.

The inventory is updated on an on-going basis. It is a secondary source. To update the information, municipalities, county governments, regional and subregional agencies are polled. The inventory does not contain all local facilities. Known errors and omissions are corrected before distribution. In addition, the Chicagoland Bicycle Federation map is used to check the inventory. The Chicagoland Bicycle Federation map was last updated in 1999.

Digital Aerial Photo. The digital aerial photograph provided with the inventory of bicycle facilities dates from 2001. The aerial photograph was generated using EMSView 2.2, a product of Engineering Mapping Solutions, Inc.

Rand McNally StreetFinder. The Rand McNally Six County StreetFinder (2001 edition) was used to name major attractions in the vicinity of the project.

Will County Bicycle and Pedestrian Plan The Will County Bicycle and Pedestrian Plan was consulted.

Policy Support for Considering Bicyclists' Needs in Transportation Projects

The *Will County Bicycle and Pedestrian Plan* (1995) states "Integrate the consideration of non-motorized facilities into all planning, design, construction, and maintenance activities of IDOT, county highway and transportation departments, and of local units of government."

From the Bicycle and Pedestrian Policies included in the 2000 Edition of the 2020 Regional Transportation Plan (RTP) for northeastern Illinois:

- *Accommodate safe, convenient bicycle and pedestrian travel in transportation and development decisions.*
- *Consider the specific access needs of bicyclists and pedestrians in arterial and collector project planning, especially on those routes that provide unique access to destinations or access across barriers.*

From FHWA Guidance on Bicycle and Pedestrian Provisions of Federal Transportation Legislation:

TEA-21 confirms and continues the principle that the safe accommodation of non-motorized users shall be considered during the planning, development and construction of all Federal-aid transportation projects and programs. To varying extents, bicyclists and pedestrians will be present on all highways and transportation facilities where they are permitted and it is clearly the intent of TEA-21 that all new and improved transportation facilities be planned, designed and constructed with this fact in mind.

"The Secretary shall not approve any project or take any regulatory action under this title that will result in the severance of an existing major route or have significant adverse impact on the safety for non-motorized transportation traffic and light motorcycles, unless such project or regulatory provides for a reasonable alternate route or such a route exists."(23 U.S.C. Section 108(n))



MINUTES OF MEETING

CATS Coordination Meeting

Interstate 55 at Arsenal Road Interchange
Section No. 00-00117-11-GS
Will County

Date: November 12, 2002
Time: 11:00 a.m.
Place: Chicago Area Transportation Study
Attendance: Ms. Gin Kilgore, Chicago Area Transportation Study
Mr. Tom Murtha, Chicago Area Transportation Study
Ms. Claire Bozic, Chicago Area Transportation Study
Mr. Steve Breese, Chicago Area Transportation Study
Mr. Mark Bagherpour, Will County Department of Highways
Mr. Scott Czaplicki, TranSystems Corporation
Mr. Sagar Sonar, TranSystems Corporation

The purpose of the meeting was to discuss proposed bicycle facilities in the project area and to present and discuss the traffic volume projections for the year 2020 for the Interstate 55 at Arsenal Road Interchange project.

I. Introduction

- Mr. Scott Czaplicki gave a brief overview of the project and discussed the land use in the project area. One and a half miles to the east of the project is the CenterPoint Intermodal Center (CIC) at Deer Run (also known as the Joliet Arsenal Redevelopment), the main driver behind the need for the interchange reconstruction. The redevelopment includes the construction of an intermodal facility and an estimated 17 million square feet of industrial/warehousing facilities within the 2,200-acre site. The CIC is the primary traffic generator and will place heavy traffic demand of the Interstate 55 and Arsenal Road interchange and Arsenal Road.

II. Interstate 55 Traffic Projections

- TranSystems provided CATS the Existing and Projected Average Daily Traffic Map for the Interstate 55 at Arsenal Road Interchange project. Also included in the submittal was a project description, location map, methodology of how the projections were determined, concurrence letter dated June 20, 2001 from CATS for Arsenal Road's 2020 ADT and the June 18, 2001 submittal letter to CATS from TranSystems. The June 18, 2001 letter is the request for concurrence for projected 2020 ADT for Arsenal Road and other internal roadways for the CIC.



- Mr. Sagar Sonar described the traffic volume projection process and mentioned that the additional site traffic generated by the CIC was distributed as 80 percent to the north of the interchange and 20 percent to the south of the interchange.
- Mr. Mark Bagherpour requested CATS review the traffic projections and provide concurrence.

III. Proposed Bicycle Facilities

- Ms. Gin Kilgore stated that the Bicycle Accommodation and Facilities Information Map created by CATS was developed from the information provided by NIPC and other local agencies. Mr. Tom Murtha indicated that the map is an inventory of other agencies bicycle plans.
- Mr. Mark Bagherpour indicated that Will County is concerned about the safety of the bicyclists along Arsenal Road and other high traffic roadways. He stated that adequate funding for bike facilities is not available at this time.
- Mr. Tom Murtha said that Will County is a developing area with high recreational demands. Under these circumstances, a future bike facility should be considered during the design process for Arsenal Road as well as the Interstate 55 corridor. He indicated that if a separate ROW bike path is not feasible along Arsenal Road, Will County should consider wide unsigned shoulders to accommodate bicyclists.
- Mr. Mark Bagherpour indicated that Will County is proposing ten foot wide shoulders along Arsenal Road and agreed that the shoulders may be used as a bicycle facility, but should not be designated as such. A separate bike path is not feasible along Arsenal Road due to right-of-way restrictions with ExxonMobil.
- CATS will provide a letter to Will County regarding the acceptability of ten foot wide shoulders along Arsenal Road in relation to the region's future bicycle accommodation plan.

The meeting concluded at 12:00 p.m.

By: _____

Sagar R. Sonar

cc: All Attendees
Mr. Jarrod Cebulski, PE – IDOT/Programming
Mr. Tom Slattery, PE – IDOT/BLRS



Illinois
Department of
Natural Resources

One Natural Resources Way • Springfield, Illinois 62702-1271

<http://dnr.state.il.us>

Rod R. Blagojevich, Governor

May 30, 2003

Mr. Michael J. Matkovic
Section Chief
Illinois Department of Transportation
Division of Highways
201 W. Center Ct.
Schaumburg, Illinois 60196

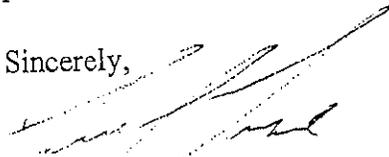
Dear Mr Matkovic:

The Illinois Department of Natural Resources reviewed the preliminary scope for bridge replacement at Arsenal Road. A letter dated August 27, 2002 to IDOT's preliminary engineering consultant (TransSystem Corp.) recommended accommodations for bicycle usage within the project's scope. In further review of this bridge replacement, it appears the bridge will be realigned and moved to a new location further south on Interstate 55. The Illinois Department of Natural Resources request that the old bridge be examined as a potential overpass crossing for bicycle, pedestrian and other trail use linking the communities of Channahon, Elwood, and Manhattan and their future neighborhoods with the Midewin Tall Grass Prairie, the I&M Canal Trail, the DesPlaines Fish and Wildlife Area and other future local and regional trail connections.

The North Prairie Parklands Trails Working Group adopted the North Prairie Parklands Trails Plan in November of 2002 with the endorsement of local, county and state officials.(see attached). The plan proposes trail crossings over I-55 and the DesPlaines River. With the abandonment of the current Arsenal Bridge, an opportunity arises to use this bridge for a trail crossing.

The IDNR would like to meet with IDOT staff to discuss this possibility. Also, if you have any questions or need additional information I can be contacted at 847-608/3100, ext 2037.

Sincerely,



David Longo

Northeastern Illinois

Green ways and Trails Program Manager

cc: Scott Czaplicke (TransSystem Corp)

Jarrold Cebulski (IDOT)

Tom Slattery (IDOT)

Ders Anderson (Openlands)

Ed Barsotti (LIB)

George Bellovics (IDNR)

Barry Hart (IDNR)



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

June 30, 2003

Will County
FAI 55/I-55
Section: 00-00117-11-GS

IDOT Seq. # 10581
ITARP# 02161

FEDERAL 106 PROJECT

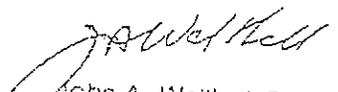
Ms. Anne Haaker
Deputy State Historic Preservation Officer
Illinois Historic Preservation Agency
Springfield, Illinois 62701

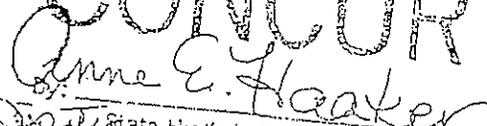
Dear Ms. Haaker:

Attached is a report from the Illinois Transportation Archaeological Research Program concerning the results of survey of the 920 acre project area referenced above. No archaeological, architectural, or historic sites were identified within the proposed project right-of-way.

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

Very truly yours,


John A. Wallhall, PhD
Cultural Resources Unit

CONCUR

Anne E. Haaker
Deputy State Historic Preservation Officer
Date: 7/3/03



Illinois Department of Transportation

Memorandum

To: D. O'Keefe Attn: M. Matkovic
From: Michael Hine By: J. A. Walthall
Subject: Cultural Resource Clearance
Date: August 24, 2005

Will County
FAI 55, I-55
Sec. 00-00117-11-GS
Job No. P-91-035-02
Elwood - I-55 @ Arsenal Road

Attached is a copy of the "Environmental Survey Request Form" submitted for the above project. It is the opinion of our professional staff that no Cultural Resource Survey is required for this project. This determination follows the stipulations of the joint agreement for the Exclusion of Classes of "No Effect" from Illinois SHPO Coordination ratified by FHWA, the SHPO, and IDOT on July 17, 1995. The signed request form attached is your evidence of coordination.

A handwritten signature in cursive script, appearing to read "J. A. Walthall".

Attachment

JAW:km

cc. Sam Mead



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Services Field Office
1250 South Grove Avenue, Suite 103
Barrington, Illinois 60010
Phone: (847) 381-2253 Fax: (847) 381-2285

IN REPLY REFER TO:
FWS/AES-CIFO/5-0286

April 5, 2006

Mr. William Garfield
Chicago Regional Office
Economic Development Administration
U.S. Department of Commerce
111 N. Canal Street, Suite 855
Chicago, Illinois 60606-7208

Dear Mr. Garfield:

This is in reference to EDA grant 06-01-04956 for the Will County Department of Transportation's Arsenal Road widening project. Specifically, your grant included a special condition relating to endangered species concerns as follows:

ENDANGERED SPECIES MITIGATION Prior to disbursement of funds for the EDA Project, the Recipient shall provide evidence satisfactory to the Government that it has conducted a survey or analysis and mitigated any impacts on Hine's emerald dragonfly located in proximity to Arsenal Road from Interstate 55 to Baseline Road in Will County, Illinois, in accordance with the specifications of the U.S. Fish & Wildlife Service under Section 7 of the Endangered Species Act.

In response to that special condition, a survey for Hine's emeralds was conducted during summer 2005. As discussed in our letter to you dated October 24, 2005, the study indicated that the drought experienced in northern Illinois during summer 2005 precluded effective Hine's emerald larval sampling. Adult surveys did not discover any Hine's emeralds, only mocha emeralds (*S. linearis*). In that letter we concurred with Dr. Soluk's recommendation that another attempt at larval surveying be made.

We are now in receipt of a March 13, 2006 report entitled *Evaluation of the presence of larval Hine's emerald dragonflies (Somatochlora hineana) along Arsenal Road in the vicinity of Jackson Creek in Will County, Illinois*, by Dr. Daniel A. Soluk and submitted to Sheldon Latz, Will County Engineer. This report provided the results of Hine's emerald larval surveys conducted during March 2006. Based on Dr. Soluk's conclusions that no Hine's emeralds were

William Garfield

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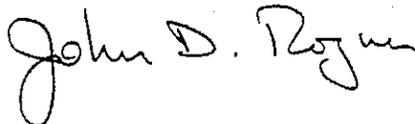
detected either as adults or larvae, and that the site has a very limited area of potentially suitable habitat conditions, and the site is isolated from other known sites, we concur that the Hine's does not likely occupy the site at this time. Thus, we believe that the applicant, Will County, has fully satisfied the condition of your grant and is not responsible for any further actions in regard to this listed species.

Based on the evidence discussed above, we concur with your determination that the project is not likely to adversely affect the Hine's emerald dragonfly or any other listed species. This precludes the need for further consultation in accordance with section 7 of the Endangered Species Act of 1973, as amended. Should project modifications or new information indicate that endangered or threatened species may be affected; consultation with the Service should be re-initiated.

This letter provides comment under the authority of, and in accordance with, the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act of 1973, as amended (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Thank you for your cooperation during the consultation for this project. If you have any questions regarding our comments, please contact Jeff Mengler at 847-381-2253, ext. 226.

Sincerely,



John D. Rogner
Field Supervisor

cc: Sheldon Latz, Will County Hwy. Dept.
Jon Johnston, Farnsworth Group



Illinois Department of Transportation

Memorandum

To: Diane M. O'Keefe Attn: Richard J. Young
From: Michael L. Hine By: Thomas C. Brooks
Subject: Coordination with USFWS
Date: September 14, 2006

Thomas C. Brooks

FAI 55 (I-55) and Addenda A and B
Sec. 00-00117-11-GS
Job No. P-91-035-02 (Seq. 10581, 10581A, and 10581B)
At Arsenal Road
Will County

Attached is a copy of the results of coordination with USFWS for the above mentioned project.

USFWS has requested further federally listed plant surveys. This office plans to review their request upon receipt of the Wetlands Impact Evaluation form and we will respond to USFWS. We will send you a copy of their response.

Attachment

SED



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Services Field Office
1250 South Grove Avenue, Suite 103
Barrington, Illinois 60010
Phone: (847) 381-2253 Fax: (847) 381-2285

IN REPLY REFER TO:
FWS/AES-CIFO/(4-0215/5-0644)/ 6-2224

September 11, 2006

Mr. Michael L. Hine
Illinois Department of Transportation
Bureau of Design and Environment
2300 S. Dirksen Parkway, Room 330
Springfield, Illinois 62764

Dear Mr. Hine:

This responds to your letter dated August 17, 2006 requesting information on endangered or threatened species on or near the proposed construction of a new full-diamond interchange of I-55 with Arsenal Road (FAI 55 (I-55) and Addenda A, B, and C / Section # 00-00117-11-GS / Job No. P-91-035-02). This proposed project is located at T34N, R9E, Sections 21, 22, 23, 26, 27, 28, 33, and 34 in or near the City of Wilmington, Will County, Illinois as depicted on the maps you enclosed.

Please note, according to the Biological Stream Characterization (BSC) which is a biological assessment of Illinois stream quality, Jackson Creek is classified as a Class "B" stream. Class "B" waters may substantially influence aquatic ecosystems, functioning as buffers for "A" streams, nursery areas, or refugia for aquatic communities. As with "A" streams these areas are biologically diverse and are critical in recovery of degraded systems. We caution you to avoid impacts to Jackson Creek.

Wetland surveys for the original project and Addendum A were conducted by Christopher B. Burke, Engineering, Ltd. on March 28, April 18, and April 23, 2002. The report of the results of these surveys, dated June 3, 2002, indicate 19 wetlands were identified along with 1 "waters of the United States". We believe four of these wetlands could provide habitat for the federally endangered eastern prairie fringed orchid (*Platanthera leucophaea*). Our assessment is determined by the native mean C, the Floristic Quality Assessment, and the various associate species of the orchid within these wetlands as follow:

<u>Wetland</u>	<u>Mean C</u>	<u>FOI</u>	<u>Associate species of <i>Platanthera leucophaea</i></u>
2	3.6	19.1	<i>Carex stricta</i> , <i>Pycnanthemum virginianum</i> , <i>Solidago graminifolia nuttallii</i>
6	2.8	12.7	<i>Carex stricta</i> , <i>Helianthus grosseserratus</i> , <i>Pycnanthemum virginianum</i> , <i>Solidago</i> <i>graminifolia nuttallii</i>
7	3.4	16	<i>Carex stricta</i> , <i>Helianthus grosseserratus</i> , <i>Pycnanthemum virginianum</i> , <i>Solidago</i> <i>graminifolia nuttallii</i>
13	3.0	17.1	<i>Carex stricta</i> , <i>Helianthus grosseserratus</i> , <i>Pycnanthemum virginianum</i>

In addition, the Illinois Natural History Survey performed wetland surveys for Addendum B on September 29, 30, October 1, 20-22, 29, and November 6, 7, 12, 14, 17-19, and 24, all within 2003. Their results are in a report dated March 11, 2004. These results are based on a fall season inventory and it is assumed that other species could be added if the survey was done within the growing season. Seventy-two sites were listed in this report. We believe 23 of these 72 sites may provide habitat for the eastern prairie fringed orchid. The 23 sites are listed below:

<u>Site</u>	<u>Mean C</u>	<u>FOI</u>	<u>Associate species of <i>Platanthera leucophaea</i></u>
3	2.6	14.0	<i>Helianthus grosseserratus</i>
4	2.9	18.4	<i>Helianthus grosseserratus</i>
5	2.8	18.5	
7	2.7	19.3	
13	2.9	18.9	
14	3.1	19.0	<i>Andropogon gerardii</i> , <i>Aster ericoides</i> , <i>Helianthus</i> <i>grosseserratus</i>
16	3.4	26.9	<i>Andropogon gerardii</i> , <i>Aster ericoides</i>
17	2.8	15.5	<i>Andropogon gerardii</i> , <i>Aster ericoides</i>
18	3.4	26.9	<i>Andropogon gerardii</i> , <i>Aster ericoides</i> , <i>Euthamia</i> <i>graminifolia</i> , <i>Liatris spicata</i>
19	2.3	14.0	<i>Andropogon gerardii</i>
20	3.3	16.9	<i>Andropogon gerardii</i> , <i>Aster ericoides</i> , <i>Euthamia</i> <i>Graminifolia</i>
21	3.1	20.6	<i>Euthamia graminifolia</i>
22	3.1	19.8	<i>Aster ericoides</i> , <i>Helianthus grosseserratus</i>
25	2.7	17.1	<i>Aster ericoides</i>
28	2.7	17.9	
30	2.5	16.0	<i>Aster ericoides</i> , <i>Euthamia graminifolia</i>
32	3.0	19.7	<i>Aster ericoides</i> , <i>Liatris spicata</i>
41	3.0	14.7	<i>Andropogon gerardii</i> , <i>Liatris spicata</i>
42	3.8	31.3	<i>Liatris spicata</i>
43	3.4	15.8	
57	3.5	14.3	

<u>Site</u>	<u>Mean C</u>	<u>FQI</u>	<u>Associate species of <i>Platanthera leucophaea</i></u>
71	3.1	17.2	<i>Helianthus grosseserratus</i>
72	2.9	20.9	<i>Aster ericoides</i>

It is unclear whether it would be necessary for project modifications included in Addendum C to have wetland surveys conducted.

Botanical surveys were conducted within the project corridor on September 10, 2002, October 18, 2002, May 12-17, 2003, July 17-18, 2003, and August 25-27, 2003 by the Illinois Natural History Survey. Results were presented in a report dated December 31, 2003. None of the survey dates coincide with the bloom date of the orchid which would be June 28 through July 11. In Will County, orchids have been known to bloom as early as June 15 (2004), however the botanical surveys were not conducted near this date.

Possible habitat of the eastern prairie white fringed orchid includes mesic prairie, sedge meadows, marsh edges and bogs. Soils of these habitats include glacial soils, lake plain deposits, muck, and peat. We request that a search for these types of habitat be conducted within the wetlands and the various sites indicated above. If any of these habitat remnants are found within any of the project areas, we request that searches for this species be conducted.

We have noticed that in northeastern Illinois orchid populations can bloom sporadically rather than all plants blooming at the same time. Because of this pattern, and small population numbers, it is possible to conduct an orchid search and not detect orchids even when they are present.

If potential habitat is observed and a field search should be conducted, we recommend conducting the field search during the bloom date of the orchid; June 28 through July 11, with searches conducted a minimum of three non-concurrent days within this time period. Using this approach, we could be more confident of negative survey results. As an alternative, if project plans can assure that potential orchid habitat would not be affected, then even if the orchid is present, the project could be completed without adversely affecting the orchid. We look forward to the results of your findings.

Site 18 as listed above is also a known location of the federally endangered leafy prairie clover (*Dalea foliosa*). Due to this location, other areas of the proposed project could encompass habitat for this species. This endangered plant grows in prairie remnants that occur on thin-soil areas overlying dolomite. In a letter from Ms. Susan Dees of the Illinois Department of Transportation to Mr. Shawn Cirton of our office, Ms. Dees indicates that *Dalea foliosa* was found by botanist Mr. Steve Hill at the following locations: Botanical site 11 (=Wetland Site 14 at Midewin), Botanical Site 12a (= Wetland Site 16 at Midewin), and Botanical Site 13a (= Wetland Sites 17, 18, and 20 at Exxon-Mobil-East). It is unclear whether all prairie remnants found within the project area have been searched for this species. If any prairie remnants are found within the project area, we request that searches for this species be conducted from late July through August, as this is when the clover typically flowers and is most identifiable.

Mr. Michael L. Hine

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In regards to the federally listed Indiana bat (*Myotis sodalis*), mist netting was conducted in 2005 for Indiana bats by Dr. Joyce Hofmann of the Illinois Natural History Survey and Dr. John O. Whitaker's team from Indiana State University. Netting locations were determined by the USFWS, Dr. Hofmann, and Ms. Susan Dees of IDOT. Netting locations were at Midewin National Tallgrass Prairie and the Joliet Army Training Area. No Indiana bats were netted, therefore the project as proposed is not likely to adversely affect the Indiana bat.

In regards to the federally listed Hine's emerald dragonfly, we have previously stated that there is no suitable habitat for the species in the project area. Additionally, Hine's emerald surveys were conducted summer 2005 for adults and March 2006 for larvae approximately two miles northeast of the approved alignment on Joliet Army Training property as part of another project along Arsenal Road. No Hine's emerald dragonflies were found.

This letter only addresses federally listed species; the Illinois Department of Natural Resources should be contacted for information on State-listed species. This letter does not preclude separate evaluation and comment by the U.S. Fish and Wildlife Service on wetland impacts proposed for section 404, Clean Water Act authorization.

If you have any questions, please contact Ms. Cathy Pollack at 847/381-2253 ext. 239, or Ms. Karla Kramer at 847/381-2253 ext. 230.

Sincerely,




John D. Rogner
Field Supervisor

cc: ACOE, Kathy G. Chernich (applicant: IDOT)
IDOT, Thomas C. Brooks



Illinois Department of Transportation

201 West Center Court
Schaumburg, IL 60196-1096

Informal Transmittal

To:	John Baczek
Bureau:	Programming/CSU
Attn:	Mir Mustafa/Patrick Rinoso

Date:	09/19/2006
-------	------------

From:	Sam Mead
Bureau:	Programming
	Environmental Studies
Subject:	I-55 @ Arsenal Road
	PSI Request

Please check appropriate box below:

- Take Necessary Action
- For Your Comments
- Per Your Request
- For Your Approval

- For Your Information
- See Me About the Attached
- Draft (Letter)(Memo) For My signature

- Reply
- Return
- Route
- File

Message

Based upon your response to the depth stipulations for the above-mentioned project, a PSI Request is necessary. Attached is a copy of the Waste Assessment Work Order/ PESA Response form that was sent to C.O. to initiate the PSI survey. If you have any questions please contact me @ x4101.

Signature

Copies to
Response

PESA File	Judy Cortese – Land Acq.	
-----------	--------------------------	--

Signature



Illinois Department of Transportation

Memorandum

To: Barbara Stevens
From: John P. Kos By: Rick J. Young
Subject: Preliminary Site Investigation Request
Date: September 19, 2006

PSI REQUEST

FAI 55 (Interstate Route 55) (Stevenson Expressway)
@ Arsenal Road
P-91-035-02
Will County
ISGS #1415C Sequence #10581C

In addition to the Special Waste Assessment Screen/Survey Request Form, please find enclosed:

- Location Map
- Plan View Drawing
- Aerial Photography
- Ground Level Photography
- Other

Please advise us of any potential contamination present at or near the highlighted sites on the attached exhibits.. Thank you for your input on this project. If you have any questions, please call Sam Mead at (847)705-4101.

PESA Response/Work Order

Attention: Central Office BD&E
Environment Section
Special Waste Unit
Room 330

Submittal Date: 05/26/2005 Sequence No: 10581 C
District: 1 Requesting Agency: DOH Project No:
Contract #: Job No.: P-91-035-02
Counties: Will
Route: FAI 55 Marked: Interstate Route 55
Street: Stevenson Expressway Section: 00-00117-11-GS
Municipality(ies): Elwood Project Length: 4.1360 km 2.57 miles
From To (At): @ Arsenal Rd.
Quadrangle: Channahon Township-Range-Section: T34N-R9E,
4,3,9,10,16,15,21,22,28,27,33,34
Anticipated Design Approval: 12/31/2005 Anticipated Letting Date: 06CY08

PESA Response PESA Number: 1415 Submittal Date: 09/19/2006
Action District will not need ROW from the contaminated property
Taken by Avoid Site
District: Excavation will not exceed recommended depths
 Further Investigation 09/19/2006
 Other - Use Comments Section
Comments:
Contact Person: Sam Mead Telephone: (847) 705-4101 ext.

Work Order Submittal Date: 09/19/2006
Project Description: With selection of the Preferred Improvement Plan the Dow Chemical and Exxon/Mobil properties must be surveyed.
Survey Type: Potential Waste Site(s) UST-LUST Miscellaneous and Testing
Reason Why Site(s) Cannot Be Avoided: Excavation for pavement removal and establishing of ditches/grading
Property to be surveyed is owned by IDOT: Yes
Property Owner/Tenants has been notified of future survey by certified letter:



Illinois Department of Transportation

Memorandum

To: Diane M. O'Keefe Attn: Richard J. Young
From: Michael L. Hine By: Thomas C. Brooks
Subject: Coordination with IDNR
Date: November 9, 2006

Thomas C. Brooks

FAI 55 (I-55) and Addenda A and B
@ Arsenal Road
Job No. P-91-035-02 (Seq. 10581, 10581A, and 10581B)
Will County

Attached is a copy of the results of coordination with IDNR for the above mentioned project.

Please review the IDNR recommendations and inform the agency of how the District plans to proceed with this project as it pertains to their resource concerns. Please send a copy of your response to this office for our files.

This concludes our early coordination activities. If this office can be of any assistance during further project phases, please contact us at your convenience.

Attachment

SED



Illinois Department of Natural Resources

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

Rod R. Blagojevich, Governor

Joel Brunsvold, Director

October 30, 2006

Mr. Michael L. Hine
Illinois Dept. Of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

RE: FAI (I-55) Addenda A,B,C
Sec. #00-00117-11-GS
@ Arsenal Road
Will County

Dear Mr. Hine:

The Department of Natural Resources (DNR) has reviewed the Biological Resources Review on the above referenced project and has the following comments.

- 1) The project was updated for new resource occurrences per the BRR request. A database review found that there were no new resource occurrences that would be impacted by the project. IDNR project code 0702058.
- 2) The information on the Blandings turtle surveys was insufficient to conclude that an incidental take of the Blandings turtle is likely from this project, but neither can it be determined that such a take is unlikely. The Incidental Take Authorization (ITA) Committee recommends additional surveys for the Blandings turtle to better support a recommendation on this issue. If IDOT is satisfied that an incidental take is likely, it may seek an ITA without further surveys.

The recent correspondence with the IDOT Central Office indicated that IDOT District One in Schaumburg would prefer to go ahead with application of the ITA. This process must be coordinated with Joseph Kath, Terrestrial Endangered Species Project Manager, Office of Resource Conservation, Illinois Dept. Of Natural Resources. Based on the fact that your office is applying for the ITA, consultation with my program is closed.

- 3) The state endangered false mallow plants that are likely to be adversely impacted by the project can follow the mitigation strategy of seed collection, storage of the seed and then sow them in suitable habitat as determined by the INHS. If you have any questions on the above, please contact me at 217-785-5500.

Sincerely,

Steve Hamer

Transportation Review Program
Division of Environment and Ecosystems

Cc: Joseph Kath/IDNR



Illinois
Department of
Natural Resources

One Natural Resources Way • Springfield, Illinois 62702-1271

DEPARTMENT OF
NATURAL RESOURCES
OCT 19 2006

OREP <http://dnr.state.il.us/orep/>
Randy Blagovitch, Governor

CONSULTATION AGENCY ACTION REPORT
(Illinois Administrative Code Title 17 Part 1075)
Division of Resource Review and Coordination

Date Submitted: October 18, 2006
If this is a re-submittal, include previous IDNR response if available.

FOR DEPARTMENT USE ONLY
PROJCODE: 12702058 DUE DATE: _____

Applicant: Illinois Department of Transportation Phone: (217) 785-0150
Contact Person: Susan Dees Fax: (217) 524-9356
Applicant Address: Bureau of Design and Environment, Room 330 Email: Susan.Dees@illinois.gov
2300 S. Dirksen Parkway, Springfield, IL 62764

LOCATION OF PROPOSED ACTION
A MAP SHOWING LOCATION OF PROPOSED ACTION IS REQUIRED

Project Name: FAI 55 (I-55) & Add. A, B, & C; Job No. P-91-035-02 County: Will
Project Address (if available): _____ BDE Seq. No. 10581
City, State, Zip: _____
Township/Range/Section (e.g. T45N, R9E, S2): T34N-R9E-Sec. 21-23, 26-28, 33-34
Brief Description of Proposed Action: New interchange for I-55 @ Arsenal Rd; ECAD: listed spp., INAI, NPs; surveys conducted & coord. via kBRR dated 8/17/06 plus ongoing meetings. Updated AAR requested by Haimer incl. updated Blanding's turtle report (2006 survey, attached) plus updated NRRT map.
Projected Start Date and End Date of Proposed Action: _____

Will state funds or technical assistance support this action? [Yes | No] If Yes, the Interagency Wetland Policy Act may apply. Contact funding agency or this Division for details.

Local/State Agency with Project Jurisdiction: _____
Contact: _____ Phone: _____
Address: _____ Fax: _____

FOR DEPARTMENT USE ONLY

Are endangered/threatened species or Natural Areas present in the vicinity of the action? Yes No
Could the proposed action adversely affect the endangered/threatened species or Natural Area? Yes No
Is consultation terminated? Yes No
Comments: No new resource occurrences that would be impacted were found. BRR addresses previous concerns with no adverse impacts

Evaluated by: Steve Haimer
Division of Resource Review & Coordination (217) 785-5500 Date: 10-30-06

Environmental Survey Request

A. Project Information

Bio Cultural Wetlands Special Waste

Submittal Date: 07/17/2002 Sequence No: 10581
District: 1 Requesting Agency: DOH Project No:
Contract #: Job No.: P-91-035-02
Counties: Will
Route: FAI 55 Marked: I-55
Street: Section: 00-00117-11-GS
Municipality(ies): Elwood Project Length: km miles
From To (At): @ Arsenal Rd.
Quadrangle: Channahon Township-Range-Section: T34N-R9E,
4,3,9,10,16,15,21,22,28,27,33,
34
Anticipated Design Approval: 08/30/2003

B. Reason for Submittal: (Check all that apply)

- Acquisition of additional ROW or easement ha/ acres
 In-Stream Work Stream Name: Des Plaines River and Grand Creek
 Other: Wetlands have been delineated by Christopher B. Burke Engineering, LTD. Report attached. Des Plaines Wildlife Conservation Area @ southern end of project limits.

C. Project Description:

Phase I Engineering Study for the relocation of a full access diamond interchange with I-55 and Arsenal Rd. Project includes construction of a new interchange within approx. 1.5 mi. of the existing interchange, which will be eliminated.

Proposed Work: Highway Bridge Bike Trail Other

D. Tree Removal?: Yes Number?: 0 ha/ acres

Existing Bridge(s) Structure Number:	099-0181	On Historic Bridge List:	No
Existing Bridge(s) Structure Number:	099-0182	On Historic Bridge List:	No
Existing Bridge(s) Structure Number:	099-0300	On Historic Bridge List:	No
Existing Bridge(s) Structure Number:	099-0180	On Historic Bridge List:	No
Existing Bridge(s) Structure Number:	099-0008	On Historic Bridge List:	No
Existing Bridge(s) Structure Number:	099-0009	On Historic Bridge List:	No

Historic District Involved? No Historic Buildings Involved? No

Section 4(f) Lands Involved? Yes Section 6(f) Lands Involved? Don't Know

Wetland delineation performed by:

E. Funding: Federal State TBP MFT Local Non-MFT
 404 Permit Required Anticipated Processing: ECAD

F. Contact Person: Kim Majerus Local Contact Person: Jarrod Cebulski
Telephone #: (847) 705-4122 ext. Telephone #: (847) 705-4125 ext.
Env. Contact: E-Mail:
Telephone #: Title/Company:

Field Sign Off (Bio & Cultural Only) Received in CO 07/23/2002

Sequence No: 10581

Memo Date: 11/27/2006 Memo By: V. Ruiz

Memo: Telephone conversation between Steve Hamer, IDNR, and Vanessa Ruiz, ESU D-1. Steve is recommending further surveys for back up to the Incidental Take permit, to be included the conservation plan

Memo Date: 09/19/2002 Memo By: V. Ruiz

Memo: Based on 9/19/02 email from JJC. "We will be staying out of the Des Plaines Conservation Area/Natural Area".

Memo Date: 08/12/2002 Memo By: V. Ruiz

Memo: Per KM field review Project Limits, I-55 just south of Des Plaines River to Blodgett Rd., and 1100' to east and west of I-55.

Memo Date: 07/07/2002 Memo By: V. Ruiz

Memo: "ROW needs unknown at this time." Existing ROW for I-55 is 300' with varying widths at the interchanges. The Env. Surv. Limit to the west runs adjacent to a railroad spur track. The spur track serves several of the industries included in the survey limits. The southeastern limit is parallel to but excludes the BNSF Railway.



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

July 30, 2007

Mr. John D. Rogner, Field Supervisor
United States Department of the Interior
Fish and Wildlife Service
Chicago Ecological Services Field Office
1250 South Grove Avenue, Suite 103
Barrington, Illinois 60010

RE: FAI 55 (I-55) and Addenda A and B
@ Arsenal Road
Job No. P-91-035-02 (Seq. 10581, 10581A, and 10581B)
Will County

Dear Mr. Rogner:

In accordance with our March 21, 2007 letter to you, surveys were performed for the following federally listed species with respect to the above project: endangered leafy prairie clover (*Dalea foliosa*) and eastern prairie fringed orchid (*Platanthera leucophaea*). On June 28, July 5-6, and July 9, 2007, the Illinois Natural History Survey (INHS) surveyed the approved project alignment, as well as areas just beyond it, including entire wetland and botanical sites adjacent to it. No one site was surveyed on consecutive dates. Even though *D. foliosa* was surveyed outside its bloom time, its growth habit is so distinctive that it would have been recognized easily in the vegetative state and the botanist felt a return visit unnecessary. No individuals of either species were found, nor was suitable habitat found within the project corridor's proposed right-of-way line.

By way of review, in addition to the botanical survey discussed above, botanical and wetland surveys were previously conducted by INHS and Christopher B. Burke, Engineering, Ltd. for the entire project area. Botanical surveys were conducted by INHS on September 10, 2002, October 18, 2002, May 12-17, 2003, July 17-18, 2003, and August 25-27, 2003. Wetland surveys for the original project and Addendum A were conducted by Christopher B. Burke, Engineering, Ltd., on March 28, April 18, and April 23, 2002. INHS performed wetland surveys for Addendum B on September 29, 30, October 1, 20-22, 29, and November 6, 7, 12, 14, 17-19, and 24, all within 2003. In addition to the surveys listed above, various areas of the project area have been well surveyed previously during other survey efforts. It is the opinion of this office that given the number of survey efforts over the years and the fact that INHS did not find the two federally listed plant species in 2007 during their bloom time and time of recognition, there will be no effect on federally listed plant species by the project.

If you have questions, please contact Susan Dees at 217/785-0150.

Very truly yours,

Eric E. Harm, P.E.
Interim Engineer of Design and Environment

A handwritten signature in cursive script that reads "Barbara Stevens".

By:
Barbara Stevens
Environment Section Chief

Cc: D. O'Keefe ATTN: Peter Harmet ✓

Attachments

file



Illinois Department of Transportation

2300 South Dirksen Parkway / Springfield, Illinois / 62764

August 10, 2007

Mr. Joseph A. Kath
Terrestrial Endangered Species Project Manager
Office of Resource Conservation
Illinois Department of Natural Resources
One Natural Resources Way
Springfield, Illinois 62702-1271

RE: Incidental Take Authorization Submittal
FAI 55 (I-55) and Addenda A and B
@ Arsenal Road
Job No. P-91-035-02 (Seq. 10581, 10581A, and 10581B)
Will County

Dear Mr. Kath:

Please find enclosed five copies each of the conservation plan for the state threatened species Blanding's turtle (*Emydoidea blandingii*), as well as the draft Public Notice, pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10/5.5) for the above project. Also enclosed in this submittal are the 2007 Illinois Natural History Survey results for the Blanding's turtle in the project area. Conversation with Mr. Glen Kruse indicated that five copies of each publication would be most convenient for your office. This project involves construction of a new interchange for I-55 and Arsenal Road. Extensive coordination has taken place over a period of several years between IDOT, IDNR, USFWS, and other resource agencies, resulting in an alignment approved by mutual agreement with said agencies.

If you have any questions, please contact Susan Dees at 217/785-0150 or Susan.Dees@illinois.gov. Thank you very much in advance for your consideration.

Very truly yours,

Eric E. Harm, P.E.
Interim Engineer of Design and Environment

By:
Barbara Stevens
Environment Section Chief

CC: Diane O'Keefe ATTN: Peter Harmet

Attachments



**Illinois Department
of Transportation**
201 West Center Court
Schaumburg, IL 60196-1096

Informal Transmittal

To:	John Baczek
Bureau:	Programming/CSJ
Attn:	Mir Mustafa/Patrick Rhosa

From:	Sam Mead
Bureau:	Programming
	Environmental Studies Unit
Subject:	I-55 @ Arsenal Road
	Special Waste Waiver

Date:	02/07/2008
-------	------------

Please check appropriate box below:

- | | | |
|--|---|---------------------------------|
| <input type="checkbox"/> Take Necessary Action | <input checked="" type="checkbox"/> For Your information | <input type="checkbox"/> Reply |
| <input type="checkbox"/> For Your Comments | <input type="checkbox"/> See Me About the Attached | <input type="checkbox"/> Return |
| <input type="checkbox"/> Per Your Request | <input type="checkbox"/> Draft (Letter)(Memo) For
My signature | <input type="checkbox"/> Route |
| <input type="checkbox"/> For Your Approval | | <input type="checkbox"/> File |

Message

Attached is a copy of the approval Special Waste Waiver Request form. This allows design approval to be obtained prior to the completion of special waste studies. A copy of this form along with a copy of the PESA Review cover memos for ISGS #1415C, dated August 25, 2005, must accompany the request for design approval.

If you have any questions, please call me at x-410.

Signature

Copies to	John Erdmann - Design	Judy Cortese - Land Acq.	PESA File
-----------	-----------------------	--------------------------	-----------

Response

Signature



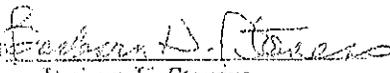
Illinois Department of Transportation

Memorandum

To: Barbara H. Stevens
From: Dianne O'Keefe By: Peter E. Harnet
Subject: Special Waste Waiver Request*
Date: February 6, 2008

FAI 55 (Interstate Route 55)
@ Arsenal Road
P-91-035-02
Will County
ISGS #1415C Sequence #10581

We are requesting approval to waive waiting for the results of further special waste investigations prior to design approval per BDE Manual Section 27-2.06, Item 4. According to the PESA Review Memo for ISGS #1415C dated August 23, 2005, the ISGS detected contamination at several sites. Proposed excavation for roadway construction consisting of a new interchange will exceed the depth stipulations at one or more sites. This proposed improvement will occur on the existing alignment and does not include the purchase of any underground storage tanks. Right of way required from any contaminated parcel will not be acquired until the PSI, or subsequent studies are completed. The scheduled letting for this project is 06CY09. **Note: The PSI was requested on September 19, 2006. This waiver is being requested solely for Design Approval.**

Concurrence: 
Barbara H. Stevens
Chief of Environment
Bureau of Design and Environment

Date 2/6/08

Discuss _____

By:
Peter E. Harnet, P.E.
Interim Chief of Programming

Note: The following applies if PESA date is six months old or more: Our district office has re-evaluated the project area for new releases (LUST and CERCLIS Sites), and new land uses of potential concern. We have not discovered new sites within the project area.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Services Field Office
1250 South Grove Avenue, Suite 103
Barrington, Illinois 60010
Phone: (847) 381-2253 Fax: (847) 381-2285

IN REPLY REFER TO:
FWS/AES-CIFO/7-FA-0614

April 3, 2008

Mr. Eric E. Harm
Illinois Department of Transportation
Bureau of Design and Environment
2300 S. Dirksen Parkway, Room 330
Springfield, Illinois 62764

Dear Mr. Harm:

This responds to your letter dated March 3, 2008 in response to a draft letter from this office on February 7, 2008 regarding potential affects to the federally threatened eastern prairie fringed orchid (orchid) from the proposed Interstate 55 Arsenal Road interchange.

In our correspondence of February 7, 2008 we stated our belief that the orchid may be adversely affected by the proposed project because the implementation of the proposed project may result in the loss of undetected orchids and/or the loss of orchid habitat. We further recommended that the Illinois Department of Transportation (IDOT) provide six acres of in-kind replacement for each acre of orchid habitat lost.

Your response explained that because suitable habitat for the orchid within the proposed project area is primarily emergent wetland, then all required wetland replacement should be emergent wetlands. And although wetland impacts total 2.84 acres, only 2.37 acres are identified as suitable for the orchid. Your correspondence offered a replacement ratio of 3.75 to 1, however in a phone conversation with Mr. Tom Brooks on March 14 and March 17, 2008, he indicated to Ms. Cathy Pollack of my staff that this ratio should be 4.11 to 1. Therefore IDOT proposes 9.74 (2.37 acres at a 4.11:1 ratio) acres of replacement wetlands.

You have contacted the United States Forest Service at Midewin National Tallgrass Prairie with a proposal to perform habitat restoration on their lands.

We believe that providing 9.74 acres of wetland replacement at Midewin National Tallgrass Prairie would be acceptable mitigation for this proposed project. We commend IDOT in its efforts to address this issue and we look forward to the results of your work.

Mr. Eric E. Harm

2

These comments only address federally listed species. Please contact the Illinois Department of Natural Resources for information on State-listed species. Also, we may have the opportunity to review the project for a broader range of fish and wildlife impacts if it requires a Section 404 permit. We are willing to work with you in advance of formal submittal if it would help streamline the approval process.

If you have any questions, please contact Ms. Cathy Pollack at 847/381-2253 ext. 20, or Ms. Karla Kramer at 847/381-2253 ext. 12.

Sincerely,

A handwritten signature in black ink, appearing to read "John D. Rogner". The signature is written in a cursive style with a large initial "J" and "R".

John D. Rogner
Field Supervisor

Wetlands

Submittal Date: 07/17/2002		Sequence No: 10581		Project No: <input type="text"/>	
District: 1		Requesting Agency: DOH		Job No.: P-91-035-02	
Contract #: <input type="text"/>		Counties: Will		Marked: I-55	
Route: FAI 55		Street: <input type="text"/>		Section: 00-00117-11-GS	
Municipality(ies): Elwood		Project Length: <input type="text"/> km		<input type="text"/> miles	
FromTo (At): @ Arsenal Rd.		Quadrangle: Channahon		Township-Range-Section: T34N-R9E, 4,3,9,10,16,15,21,22,28,27,33,34	
Anticipated Design Approval: 08/30/2003		Cleared for Design Approval: 01/28/2008		Mitigation Completed: <input type="text"/>	
Cleared for Letting: 01/28/2008		Mitigation: Yes			

Initial Survey and WIE		Addendum No: <input type="text"/>							
Initiated	Due Date	Results Received	Wetland Present	District Notified	WIE Requested	WIE Received	Wetland Impacts	Resp to District	Coord Complete
06/03/2002		07/23/2002	Yes	08/14/2002	Yes	01/25/2008	Yes	01/28/2008	Yes

Comments: 8/14/02 was email from Amy K. to D-1. Tom B. asked Sue D. to review Burke's wet. del. to determine if acceptable. 1/28/08: WIE covers all addenda (SED)

Clearances: Cultural: 7/9/2003 Bio: SW: 2/6/2008

Submittal Date: 05/01/2003		Sequence No: 10581		Project No: <input type="text"/>	
District: 1		Requesting Agency: DOH		Job No.: P-91-035-02	
Contract #: <input type="text"/>		Counties: Will		Marked: I-55	
Route: FAI 55		Street: <input type="text"/>		Section: 00-00117-11-GS	
Municipality(ies): Elwood		Project Length: 4.1360 km		2.57 miles	
FromTo (At): @ Arsenal Rd.		Quadrangle: Channahon		Township-Range-Section: T34N-R9E, 4,3,9,10,16,15,21,22,28,27,33,34	
Anticipated Design Approval: 12/31/2003		Cleared for Design Approval: 01/28/2008		Mitigation Completed: <input type="text"/>	
Cleared for Letting: 01/28/2008		Mitigation: Yes			

Initial Survey and WIE		Addendum No: B							
Initiated	Due Date	Results Received	Wetland Present	District Notified	WIE Requested	WIE Received	Wetland Impacts	Resp to District	Coord Complete
07/16/2003	11/03/2003		Yes	12/29/2004	Yes	01/25/2008	Yes	01/28/2008	Yes

Comments: 8/17/06: All wet. del. coordinated w/ USACOE via BRR this date & sent to FWS previously. 1/28/08: WIE covers all addenda (SED)

Clearances: Cultural: 6/24/2003 Bio: SW:

Processing: Standard Action

Individual Compensation Plan Required:

404 Individual Permit Required:

Mitigation Site: Off-Site
 Mitigation Basin: In-Basin
 Bank: No
 Accumulation: No

Owner:	USDA - Forest Service
Name:	Midwin National Tallgrass Prairie
Location:	<input type="text"/>
Size:	<input type="text"/>
Types:	<input type="text"/>
Quad:	<input type="text"/>
Basin:	<input type="text"/>

Processing Comments: This project is not entirely adjacent to existing rights-of-way and therefore should be processed as a Standard Review Action under our approved wetlands action plan. On March 14, 2008, via telephone conversation with Pat Malone (IDNR wetlands) occurred with the processing category. TCB

Wetland Impact Evaluation

Submittal Date:	01/18/2008	Submitted By:	
Does the project have wetland impacts?	Yes	Type:	Permanent
Briefly describe the measures considered to avoid and minimize adverse impacts to the wetlands:	Steeper slopes, went with minimum distance (50') between ramps and frontage road. Regarding INHS-42: Minimized the separation between the ramp and extension of Arsenal and added retaining wall to minimize footprint.		
Summarize briefly why there are no practicable alternatives to the use of the wetland(s):	See memo below dated 1/18/2008		
Wetland mitigation is being proposed:	wetland bank site		<input type="checkbox"/> Reviewed

Memo Date: 04/22/2008 **Memo By:** Susan Dees

Memo: Mitigation ratios have been changed from 2.0:1.0 to 5.5:1.0 to reflect suitable habitat as determined by USFWS in Wetland Sites #I-41, #B-7, and #B-6 for the federally listed eastern prairie fringed orchid (*Platanthera leucophaea*). This changes the acres of compensation from 9.74 to 13.975.

Memo Date: 04/15/2008 **Memo By:** Susan Dees

Memo: This memo is to update and clarify the memo dated 1/28/08. Since this project is not entirely adjacent to existing rights-of-way, it shall be processed as a Standard Review Action under our approved wetlands action plan. Pat Malone of IDNR concurs. The wetlands will be mitigated per agreement with US Forest Service at Midewin National Tallgrass Prairie. Mitigation ratios shall be 2:1 and 5.5:1 as used in the WIE Continued screen.

Memo Date: 02/05/2008 **Memo By:** Susan Dees

Memo: It has come to our attention that Wetland Site B13 contains suitable habitat for the state listed Blanding's turtle. Therefore, the mitigation ratio has been revised to reflect that. Impacts of 0.81 acres to that wetland will be mitigated at a ratio of 5.5:1.0, in the amount of 4.455 acres. Total mitigation acreage is now 9.74 acres for all wetland impacts. The Essential Habitat box was also changed from Yes to No, as no state listed species has designated essential habitat. If there are questions, please call Susan Dees at 217/785-0150.

Memo Date: 01/28/2008 **Memo By:** Susan Dees

Memo: The Wetland Impact Evaluation form was received January 25, 2008 and is acceptable to this office, with some changes. The changes are as follows: Wetlands B7, B13, and B12 are described in the WIE Continued screen as containing listed species. The Illinois watchlisted species Bell's vireo was found adjacent to Wetland Site B7 but not within it. The term "watchlisted" confers no legal protection but merely is an informal designation by IDNR to indicate that populations of a species are being studied to determine if future endangered or threatened (legal) listing may be warranted later. No listed species have been found in those wetlands; therefore, the T & E box was changed from Yes to No. Listed plants occur in Botanical Sites 4, 4b, and 5, which are near but not contiguous with the afore-mentioned wetlands. Therefore, impacts to Wetlands B7, B13, and B12 will be mitigated at the usual lower rate for banked impacts.

Wetland I42 has a FQI of 31.3, indicating its high quality. Wetlands with a FQI of 20 or higher must be mitigated at a 5.5:1.0 ratio. This wetland also contains suitable habitat for the state threatened Blanding's turtle.

Because this project occurs on existing and contiguous alignment, it qualifies to be processed as a Programmatic Review Action, according to the IDOT Wetlands Action Plan. Therefore, coordination at this time with IDNR and USFWS is not necessary. Impacts have been proposed to be banked. This office concurs. As previously mentioned Wetland I42 will be mitigated at a 5.5:1.0 ratio; thus impacts of 0.35 acres to that wetland will be mitigated at 1.925 acres. Impacts to the remaining wetlands will be mitigated at either a 1.5:1.0 ratio if the bank is in-basin, or a 2.0:1.0 ratio if the bank is out-of-basin. Thus total mitigation acreage is either 5.66 acres or 6.905 acres, depending on the mitigation ratio.

This project is now clear for construction with respect to wetlands. If there are questions, please contact Susan Dees at 217/785-0150.

Memo Date: 01/18/2008 **Memo By:** V. Ruiz

Memo: Seven alternatives were evaluated for this interchange including improvements at different locations and different interchange configurations. This alternative addressed the safety and operational problems identified in the Purpose and Need while minimizing overall wetland impacts, particularly to Wetland INHS-42 which is a high quality wetland. Sites designated as B# are from the Wetland Delineation Report by CBEL dated June 3, 2002. Sites designated as I# were delineated by INHS and summarized in their report dated March 11, 2004.

Site B-7: The Bell's Vireo (Illinois Watch-list Species of Special Concern) was found within the ComEd easement adjacent to this wetland. No direct evidence of breeding was found, however, suitable nesting habitat exists just south of this wetland along the Grant Creek tributary area.

Site B-12: Botanical Site 4 (Regionally Exceptional Natural Area) which has the T&E False Mallow and Slender Sandwort and Botanical Site 5 (Stateide Significant Natural Area) which has the T&E Butler's Quillwort, False Mallow and Slender Sandwort are associated with this wetland site.

Site B-13: Botanical Site 4 (Regionally Exceptional Natural Area) which has the T&E False Mallow and Slender Sandwort and Botanical Site 4b which has the T&E False Mallow are associated with this wetland, but are located southwest of the impacted area.

Memo Date: 09/11/2002 **Memo By:** Susan Dees

Memo: The wetland delineations by Christopher B. Burke Engineering Ltd. were reviewed and found acceptable by this office. Please note that Wetland 2 has a FQI of 19.1 and mean C of 3.6. It is in the vicinity of 3 listed plant species per IDNR Natural Heritage Database. Botanical surveys are ongoing. Results will be coordinated with Amy Karhliker if listed plants are found in the delineated wetlands. If so, mitigation ratios will be 5.5:1. Please note that Wetland Site 3 had a mean C of 4.0. Also please note that the survey area for wetland delineations was smaller than the actual project area depicted on the aerials transmitted with the original ESR. If the project will encompass a larger area than already surveyed for wetlands, more delineations will be necessary. A WIE is being requested at this time. If there are any questions, please call me at 217/785-0150.

Wetland Impacts and Mitigation Required

Site No.	Type	T&E	Nature Preserve	Natural Area	Essential Habitat	Size (acres)	Acres of Impact	Ratio	Acres of Compensation
I42	Marsh	Yes	No	No	No	44.02	.350	5.5	1.925
Basin	07120004	Quadrangle	Channahon		FQI	31.3			
Describe the work:		Fill							
I41	Wet Mead	No	No	No	No	0.8	.020	5.5	.110
Basin	07120004	Quadrangle	Channahon		FQI	14.7			
Describe the work:		Fill							
B7	Wet Mead	No	No	No	No	11.9	.250	5.5	1.375
Basin	07120004	Quadrangle	Channahon		FQI	16			
Describe the work:		Vegetation Removal							
B19	Wet Mead	No	No	No	No	0.17	.170	2.0	.340
Basin	07120004	Quadrangle	Channahon		FQI	4.5			
Describe the work:		Excavation							
B13	Wet Mead	No	No	No	No	12.71	.810	5.5	4.455
Basin	07120004	Quadrangle	Channahon		FQI	17.1			
Describe the work:		Excavation							
B12	Marsh	No	No	No	No	1.62	.080	2.0	.160
Basin	07120004	Quadrangle	Channahon		FQI	3.7			
Describe the work:		Excavation							
B-6	Wet Mead	No	No	No	No	0.894	.940	5.5	5.170
Basin	07120004	Quadrangle	Channahon		FQI	12.7			
Describe the work:		Excavation							
B-5	Marsh	No	No	No	No	0.22	.220	2.0	.440
Basin	07120004	Quadrangle	Channahon		FQI	7.9			
Describe the work:		Excavation							
Total							2.840		13.975

Mitigation Site Suitability Study

INEOS NOVA

Project: I-55 at Arsenal Road Interchange Project
Date: 5/21/08
To: Kathleen Meyerkord

Wednesday, May 21, 2008

TranSystems
Attn: Ms. Kathleen Meyerkord, Project Manager
1051 Perimeter Drive, Suite 1025
Schaumburg, IL 60173

RECEIVED

MAY 24 2008



By ordinary mail and email

RE: I-55 at Arsenal Road Interchange Project

Dear Ms. Meyerkord,

As you know the above-captioned project currently contemplates the placement of a north access driveway at the north end of the INEOS NOVA property (25846 SW Frontage Rd). As we have discussed, INEOS NOVA does not require this access driveway and we prefer that it be eliminated from the scope of your project and therefore this access driveway be closed. Could you please revise your project scope to include this request. Please call me if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "L W Sorich".

Lawrence Sorich

ENVIRONMENTAL RESOURCE AGENCY MEETING MINUTES

AGENDA ITEM #5
NEPA/404 Merger Meeting
Minute of Meeting

Interstate 55 at Arsenal Road Interchange
Section No. 00-00117-11-GS
Will County

February 5, 2004

Time: 12:45 p.m.
Place: IDOT – LL Conference Room B
Attendance: See attached Attendance Sheet

This was the first NEPA/404 meeting with the Environmental Resource Agencies for the Interstate 55 at Arsenal Road Interchange project. The purpose of the meeting was to obtain approval of the first concurrence point, the Purpose and Need, and to present the range of alternatives, including the No Action Alternative, currently under evaluation. The next steps in the NEPA merger process will also be discussed.

Introduction/History

The Phase I study for the Interstate 55 at Arsenal Road Interchange project began in January, 2002. The project was originally processed as an Environmental Class of Action Determination (ECAD), with the ECAD walk through taking place on August 6, 2002. It was noted that Scoping Documents depicting five alternatives were sent to local industrial and environmental stakeholders in May, 2003. The purpose of the Scoping Documents was to provide the stakeholders with the opportunity to provide early input during the development of this project.

At the October, 2003 FHWA coordination meeting FHWA/BDE suggested that due to the environmental resources within the project area it would be necessary to revise the environmental processing from an ECAD to an Environmental Assessment (EA). In addition, the FHWA added that since this is considered a new interchange location, they will require an EA. At the request of the Resource Agencies, it was agreed that the project would proceed under the NEPA/404 merger process.

An open house Public Informational Meeting was held on November 3, 2003, at Jackson Township Hall, in Elwood, Illinois. The purpose of the meeting was to present the proposed interchange alternatives of the Interstate 55 Interchange at Arsenal Road to the public, and to solicit input. The attendees included officials from public agencies, representatives of local industrial and environmental stakeholders, and local residents. Exhibits depicting traffic data, accident analysis, and operational deficiencies of the existing interchange were on display, as well as the conceptual interchange alternatives.

Description of Environmental Involvement

The project is located in an unincorporated section of western Will County, Illinois. The study limits are Blodgett Road to the south and the Des Plaines River to the north, a distance of approximately 3.0 miles. The Village of Elwood is located approximately 4.0 miles east of the project. Interstate 55 serves local, regional, and interstate traffic. Arsenal Road is an east-west arterial roadway under the jurisdiction of the Will County Department of Highways (County). Unsignalized intersections connect Arsenal Road to the northbound and southbound ramps of Interstate 55, and the east and west frontage roads. Both frontage roads are under County jurisdiction.

Arsenal Road is a Class II truck route and provides interstate access to the Village of Elwood, the ExxonMobil Refinery in the southeast quadrant, and the BASF and Dow Chemical plants in the southwest quadrant. Also served by Arsenal Road is the CenterPoint Intermodal Center (CIC) at Deer Run located within the former Joliet Arsenal Site. The CIC is home to the BNSF Logistics Park Chicago, a 621-acre rail facility site. The rail facility was opened on October 14, 2002. Also proposed within the CIC is a 1,100-acre industrial park proposed to be completed by 2014.

Environmental areas located within the vicinity of the project include the Des Plaines Conservation Area near the project's western boundary, the Midewin National Tallgrass Prairie near the project's eastern limits, and the Grant Creek Prairie Nature Preserve located just south of Blodgett Road. The Midewin National Tallgrass Prairie is covered by the stipulations of the 1996 Illinois Land Conservation Act, which prohibits construction of any new roadway through or across any portion of the prairie. The Lincoln National Cemetery, as well as, sections of Dolomite Prairie are also located within the project study limits. Major waterways include the Des Plaines River at the northern project limit, and Jackson and Grant Creeks located to the east of the corridor.

Environmental field studies are on going for this project. Preliminary wetland delineations, initial identification of threatened and endangered species, and hazardous waste surveys have been received. Preliminary findings include the presence of major wetland environments within the study limits. Multiple threatened and endangered species, including Leafy Prairie Clover, *Malvastrum Hispidum* "Mallo", and a Leaf Hopper are known to be located within the project limits. The draft PESA states that there is a high risk for the occurrence of hazardous materials. Four CERCLIS sites are located along the project route.

The interchange of Interstate 55 and Arsenal Road was constructed in 1959. Interstate 55 is a fully controlled access facility which provides two lanes in both the southbound and northbound direction. The existing Partial Cloverleaf – Type C provides full access to all movements. All ramps are single lane with stop controlled intersections at Arsenal Road. The east and west frontage roads each provide one lane in the southbound and northbound direction and also have stop controlled intersections at Arsenal Road. The Des Plaines River constrains the northern project limit. Industrial constraints in the proximity of the interchange include ExxonMobil's

elevated conveyor over Arsenal Road and the ExxonMobil tank farm located in the southeast quadrant of the interchange. An above ground hydro-carbon pipeline is located on the BASF property in the southwest quadrant of the interchange.

Purpose and Need of the Project

The purpose of the proposed action is to address capacity, operational, and safety deficiencies of the interchange at Interstate 55 and Arsenal Road by providing an improved interchange.

Capacity Deficiencies

The 2001 existing average daily traffic (ADT) volumes along Interstate 55 in the vicinity of Arsenal Road are 39,400 vehicles per day (vpd) and 44,500 vpd to the south and north of the interchange, respectively. The projected ADT by the year 2020 (currently available projections) is based on the CATS Regional Transportation Plan. Year 2030 projections have been requested from CATS and all studies described herein will be updated when the 2030 volumes are available. The 2020 projected volumes along Interstate 55 vary from 53,000 vpd south of Arsenal Road to 71,500 vpd north of Arsenal Road. The ADT along Arsenal Road is expected to grow from 5,800 in 2001 to 30,600 by 2020. This projection has been reviewed and approved by CATS as part of the County's Arsenal Road reconstruction project, and has accounted for the additional traffic volumes generated from the CIC and that anticipated from the proposed industrial park. In addition to the high ADT volumes along Arsenal Road, the CenterPoint Traffic Impact Study determined that Arsenal Road would be a heavily traveled truck route, with 26 percent of the total traffic volume being trucks and would generate additional volumes at the Interstate 55/Arsenal Road interchange.

Expected design capacities for single-lane loops range from 800 to 1200 vph (vehicles per hour), where the higher figures are generally only achievable where the design speed is 30 mph or higher and few trucks use the loop. The projected 2020 volumes for southbound exit ramp and the northbound entrance ramp approach 1,600 vph, with 27% trucks. The current interchange cannot accommodate future capacity needs.

A four-lane interstate cross section can serve 80,000 vehicles per day with acceptable delays. For mainline Interstate 55, the analysis showed that the threshold for maintaining a LOS D or better limited the one-way design hourly volume (DHV) to 3,600 vehicles per hour (vph) or less. The preliminary 2030 projected one-way DHV volumes along Interstate 55 vary from 2,500 vph south of Arsenal Road to 3,300 vph north of Arsenal Road. These 2030 ADT volumes will be verified with CATS once more information is made available. Future separate studies are planned to improve mainline operations on Interstate 55. The Arsenal Road Interchange project maintains independent utility from any other improvements along mainline Interstate 55.

Operational Deficiencies

The interchange of Interstate 55 and Arsenal Road, constructed in 1959, was resurfaced in 1969 and again in 1974. The bridge deck of the Arsenal Road overpass was rehabilitated in 1999. The existing geometric configuration within the project limits impacts traffic operations and safety. The general operational deficiencies along Interstate 55 include inadequate entrance and exit terminal length and tight ramps requiring substantial speed reductions.

In particular both loops ramps do not meet current interstate truck design standards. The substandard geometry of the loop ramps causes abrupt speed reductions for the SB exit ramp and not enough lengths to accelerate and merge with mainline traffic for the NB entrance ramp. These conditions cause back-ups on the mainline through lanes.

The current interchange configuration is deficient and compromises safety. The existing interchange is past the end of its design service life of 40 years and is in poor condition. The poor pavement condition further reduces speeds and hinders desirable vehicular operations.

Safety Deficiencies

A review of the crash history within the project limits for the study period of 1999 to 2001 indicated that a total of 165 crashes occurred, of which 33 involved injuries and 1 involved a fatality. The predominant crash types were rear end (45 percent), sideswipe (19 percent), and fixed object (15 percent). The reviewed data included crashes along Interstate 55 mainline and the interchange areas at Interstate 55 and Arsenal Road.

The majority of the crashes occurred at the ramp terminal areas along Interstate 55. Within the project limits, there were 142 crashes on Interstate 55 of which 30 involved injuries and 1 involved a fatality. Four areas exceeded the statewide critical rate and critical frequency. A total of 7 crashes occurred within the Arsenal Road segment between the southbound entrance ramp and northbound entrance ramp (AR2). A total of 45 crashes took place within the merging segment of the northbound entrance ramp, including 30 rear-end and 10 sideswipe crashes (IN3). A total of 31 crashes took place within the diverging segment of the northbound exit ramp, including 15 rear-end and 6 sideswipe accidents (IN3). A total of 21 crashes took place within the diverging segment of the southbound exit ramp, including 13 rear-end and 2 side swipe crashes (IS3).

The accident experience for both the mainline and the interchange areas exhibits a need for improvement to the existing facility. The predominant crash types of rear ends and sideswipes are consistent with substandard geometrics for this facility. This supports the need for improvement of merge conditions and geometric improvements at the interchange ramps.

Request for Concurrence on Purpose and Need

Based on the above, J.D. Stevenson asked for concurrence on the Purpose and Need of the project. Concurrence to proceed with the project based on the Purpose and Need as presented was received from:

<u>Representative</u>	<u>Agency</u>	<u>Purpose and Need</u>
Newton Ellens	USEPA	Concur
Steve Hamer	IDNR	Concur
Ron Abrant	USACE	Concur
Terry Savko	IL D of Ag.	Concur
Jeff Mengler	USFWS	Concur

Alternatives

A general discussion on the alternates under consideration was then presented.

No-Action Alternative

The No-Action Alternative would include rehabilitating the existing interchange pavement structure and other short-term improvements at the ramp terminals and the frontage road intersections. The No-Action Alternative does not address the safety and operational deficiencies nor accommodate the projected growth in traffic volumes due to regional development. It is not consistent with the CATS 2030 Regional Transportation Plan, and does not satisfy the purpose and need for the improvement.

Build Alternatives

Several different alternatives for reconfiguring the existing roadway and interchange were evaluated with the goal of correcting the safety, operational, and capacity deficiencies, while minimizing impacts to the natural and human environment. Of prime importance is the avoidance or minimization of impacts to the Midewin National Tallgrass Prairie, the Des Plaines Conservation Area, and other natural areas adjacent to the Interstate 55/Arsenal Road interchange.

Alternative 1 – Split Interchange

Development of this alternative attempts to improve the existing interchange to current standards at its current site of Arsenal Road. However, because of the proximity and constraint of the existing truss bridges over the Des Plaines River, maintaining the northbound entrance and exit ramps at this location was not possible. This alternative provides a Split Interchange to provide the standard truck acceleration length for the northbound entrance ramp. This required the northbound half of the interchange be located (“split”) approximately one mile south of Arsenal

Road to avoid ExxonMobil's main facilities. This alternative maintains the southbound exit and entrance ramps at their current location at Arsenal Road. This alternative will need additional studies to refine the design and assess the details of any impacts as it relates to the BASF and ExxonMobil properties.

Alternative 2 – Modified Parclo Interchange

This alternative is a modification of the existing interchange type of a Partial Cloverleaf (Parclo) but updated to current standards. This design's geometrics are not able to handle projected traffic volumes, it was not as desirable as compared to the other alternatives and it was eliminated from further consideration early in the process. It was noted that these same concerns apply for Alternative 1 as well.

Alternative 3 – Full Southern Interchange

The full southern interchange located 1.1 miles south of Arsenal Road is a variation of a conventional diamond interchange by providing a 50 mph, two-lane flyover ramp for the southbound exit ramp. This alternative is able to better handle the high percentage of truck traffic compared to the loop ramp design in Alternatives 1 & 2. This alternative extends Arsenal Road approximately one mile south along the east side of Interstate 55 to the relocated interchange and provides the option of removing both Arsenal Road and Blodgett Road bridges.

This alternative is able to accommodate projected traffic volumes and traffic conditions, but connections to the frontage roads and unconventional traffic movements are less than desirable. In addition, because of the larger "footprint" of the full interchange, it introduced new impacts to Dow and ExxonMobil properties, as well as impacts to open lands which contain natural species of interest.

Alternative 4 – Southern Flyover

This alternative is similar to Alternative 1 for northbound entering and exiting traffic and is also similar to Alternative 3 for southbound exiting traffic by providing a 50 mph, two-lane flyover ramp. The northbound entrance and exit ramps, as well as the southbound exit ramp would be relocated approximately one mile south to accommodate truck acceleration lanes. Alternative 4 simplifies the traffic movements and connections to the frontage roads as compared to Alternative 3. The Arsenal Road bridge over Interstate 55 would be retained to provide access to the West Frontage Road and southbound entrance ramp. The two-lane exit and entrance ramps flow naturally into the four-lane Arsenal Road extension.

Given the constraints this alternate offers a clean and simple design. It meets the purpose and need for improvements in the Interstate 55/Arsenal Road Interchange project area by addressing the capacity, operational, and safety deficiencies associated with the existing facility.

Alternative 5 – South Exxon Mobil By-Pass (Options A, B, & C)

In response to "Homeland Security Concerns" expressed by ExxonMobil, Alternative 5 was developed to provide alignments that did not pass along the west and north frontage of their

property along Arsenal Road and the east frontage road, respectively. Three potential options to relocate Arsenal Road on new alignment south of the ExxonMobil Refinery were developed:

Option A realigns Arsenal Road along the western edge of the BNSF Railroad to a point north of Midewin National Tallgrass Prairie and then passes over the BNSF mainline track, CIC industrial lead tracks and Jackson Creek, intersecting the existing Arsenal Road alignment approximately $\frac{3}{4}$ of a mile west of Baseline Road. ExxonMobil rejected this option because it violates the clear zone for the refinery Flare System.

Option B realigns Arsenal Road to the northeast across the BNSF mainline track, through Midewin National Tallgrass Prairie, over the CIC industrial lead tracks and Jackson Creek intersecting the existing Arsenal Road alignment approximately $\frac{3}{4}$ of a mile west of Baseline Road. This alternative has major environmental impacts to the Midewin National Tallgrass Prairie. This alternative directly impacts a primary portion of the Dolomite prairie, considered to be a special micro-ecosystem. Threatened and endangered species, including the Leafy Prairie Clover (Federal Endangered), are also known to exist in this section of Midewin.

Option C realigns Arsenal Road east across the BNSF mainline track and then through Midewin National Tallgrass Prairie along the north edge of the ComEd easement. The alignment then crosses over the CIC industrial lead tracks and Jackson Creek intersecting the existing Arsenal Road alignment approximately $\frac{3}{4}$ of a mile west of Baseline Road. This alternative also has major environmental impacts to the Midewin National Tallgrass Prairie. This alternative impacts the southern tip of the Dolomite prairie. Threatened and endangered species are known to exist in this section of Midewin.

It was noted that Options B & C would require building a new roadway through the Midewin National Tallgrass Prairie. As discussed, the prairie is protected by the stipulations of the 1996 Illinois Land Conservation Act which prohibits new construction of any highway through or across any portion of the Midewin National Tallgrass Prairie.

Each option would require construction of about 2.5 miles of new road. Each also has impacts to the prairie, requires new crossings of the BNSF mainline track and Jackson Creek before connecting to Arsenal Road approximately $\frac{3}{4}$ of a mile west of Baseline Road. Alternative 5's various options would impact approximately 12 to 23 acres of Midewin National Tallgrass Prairie.

Alternative 6 – Blodgett Road (Option A & B)

Similar to Alternative 5, this alternative was developed based on preliminary comments from ExxonMobil to reduce traffic along their north frontage on Arsenal Road. This alternative would locate the interchange three miles south to Blodgett Road. This would entail constructing a new roadway through the Midewin National Tallgrass Prairie by extending Blodgett Road to the east. Placing the interchange at this location will impact the Midewin National Tallgrass Prairie and the Des Plaines Conservation Area. Two potential options were developed:

Option A would require the construction of approximately 3.0 miles of new roadway through Midwin, along the Blodgett Road corridor between Interstate 55 and Illinois Route 53. In the vicinity of Baseline Road, the proposed alignment would shift to the south to avoid Lincoln National Veterans Cemetery.

Option B would require the construction of approximately 2.0 miles of new roadway through Midwin, along the Blodgett Road corridor between Interstate 55 and Baseline Road. Traffic would then utilize Baseline Road from Blodgett Road to East Access Road, and East Access Road from Baseline Road to Illinois Route 53. These recently reconstructed roadways (2002) would need to be widened and reconstructed to accommodate the traffic volume and increased percentage of multi-unit trucks.

As with Alternative 5, it was noted that Options A & B would require building a new roadway through the Midwin National Tallgrass Prairie, which is protected by the stipulations of the 1996 Illinois Land Conservation Act. Alternative 6's two options would impact approximately 14 to 34 acres of Midwin National Tallgrass Prairie, and 48 acres of the Des Plaines Conservation Area.

Request for Comments on Alternatives currently under consideration

Alternatives 3, 5 and 6 were discussed. The agency representatives indicated the following with respect to carrying Alternatives 3, 5 and 6 forward for further study:

<u>Representative</u>	<u>Agency</u>	<u>Alternative 3</u>	<u>Alternative 5</u>	<u>Alternative 6</u>
Newton Ellens	USEPA	Carry forward	No further study	No further study
Steve Hamer	IDNR	-	No further study	No further study
Ron Abrant	USACE	-	No further study	No further study
Terry Savko	IL D of Ag	-	No further study	No further study
Jeff Mengler	USFWS	No further study	No further study	No further study

USFWS suggested removing Alternative 3 from future study. While the USEPA recognized that Alternative 3 did not have much potential for being selected as the Preferred Improvement Plan, they felt that it was premature to remove it from future consideration at this time. For the time being it was decided to carry Alternative 3 forward.

Alternative 1, Alternative 3 and Alternative 4, as well as, Alternatives 5 and 6 will be carried forward for future study. It was also noted that IDOT, District 1, has requested that a Single Point Urban Diamond Interchange Alternative be developed for evaluation. This alternate will be developed once 2030 traffic projections are available.

Next steps in the NEPA Merger Process

The consultant will complete the preliminary design studies for each of the remaining alternatives, and conduct detailed analysis of environmental impacts. Once the alternative analysis is completed, another NEPA merger meeting will be called to discuss the second concurrence point, the Alternatives to be Carried Forward.

Will County Highway Department / TranSystems Corporation / Jarrod Cebulski

MEETING MINUTES

Current Date: December 22, 2004
Date of Meeting: December 14, 2004
Time of Meeting: 1:00 p.m.
Meeting Location: U.S. Fish and Wildlife Service Office
Barrington, Ill.

Regarding: Caton-Farm Bruce Road
Section 00-00074-22-ES, and
Interstate 55 at Arsenal Road Interchange
Section 00-00117-11-GS
Will County, Illinois
T&E Consultation

Participant:	Representing	E-mail Address
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Mike Redmer	US-FWS	mike.redmer@fws.gov

Handouts And Attachments:

- Agenda for Meeting
- Aerial Photos showing alignment alternates for Caton-Farm Bruce Road
- PDF of PowerPoint presentation (e-mailed later)

Meeting Minutes

Meeting Date: December 14, 2004

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Introduction

This meeting was the initiation of the threatened and endangered species consultation process for the Caton-Farm Bruce Road (CFB) project, in light of the found presence in the corridor of federally listed Hines emerald dragonfly, and potential habitat for the Indiana bat and the leafy prairie clover.

The meeting also included updates of the I-55 at Arsenal Road Interchange and Arsenal Road Widening (EDA Grant Project) and a review of alternatives.

Shawn Cirton will be the primary US-FWS contact person for the three Will County projects

This meeting is similar to one previously conducted for the ISTHA as part of the extension of I-355. Since the ISTHA initial consultations in 1995 and 2001, more has been learned about the three species under consideration due to on-going work resulting from research and the I-355 Extension consultation. ISTHA has also contracted to conduct additional studies. In the name of expedience, Will County would like to become a party to these studies as applies to those areas of concern in the CFB corridor.

Informational Presentation

Jeff Mengler presented a PowerPoint presentation providing information on: the three species listed above; the consultation process; information needs and the information gathering process; schedules; and the status and implication of critical habitat designation. These minutes will not reproduce all that information since it is available in the PowerPoint presentation. After the presentation, there was a question and answer session. Highlights of the information presented follows.

Hine's Emerald Dragonfly (HED)

The additional information obtained to date includes road kill mortality studies, life cycle length and durations of each stage of development, and locations of habitat within crawfish burrows.

Since the mid-1980's HED populations have significantly decreased. It is possible that the reduction in HED numbers may be attributed to water quality changes, alteration of groundwater recharge rates, water temperature changes, and destruction of rivulet habitat, as well as other threats.

The period of observations and sampling is April through October for the aquatic larvae, and July and early August for the adult dragonfly.

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Indiana Bat

The Indiana bat can be found in urban and developed areas. The Indiana bat has shown that it can live in altered landscapes when seeking viable habitat. Presently, Indiana bat summer roosting habitat can be found under exfoliating tree bark. The species of the trees used as maternity roosts does not appear to influence whether Indiana bats will use them; however, loose bark must be present.

Because of this, for linear projects, the survey area should ideally be 2.5 miles to either side of the project centerline due to typical foraging distances from roost trees.

Mist-netting survey work for Indiana bats should be conducted between May 15th and August 15th. However, habitat assessments can be conducted in the winter.

Leafy Prairie Clover

The leafy prairie clover has been found within the Midewin National Tallgrass Prairie (MNTP) and amongst the dolomite prairie remnants (along the Lower Des Plaines River valley) which are present within both the Interstate 55/Arsenal Road and Caton-Farm/Bruce Road project study limits.

The period of observations and sampling is best from mid-July thru August, when the plant is in bloom.

Consultation

The purpose of the consultation is to gather data, provide information, develop strategies to avoid and minimize impacts, establish mitigation measures, and provide legal documentation of the findings and recommendations.

A formal consultation initiation package should be submitted to the USFWS for review and processing. Ideally, the package should be submitted after the species habitat, species identification and sighting, impacts, and mitigation have been ascertained. One package can be submitted for multiple species. After submittal the USFWS has 90 days to respond.

Consultation Process

Since the federal action agency authorizing and/or funding the project is the FHWA, they will be responsible for officially submitting the consultation initiation package. The information in this package - description of action; description of affected areas and species; description of how the project may affect listed species and habitat; and relevant reports - is the same information found in the environmental documentation (EA or EIS) for a major highway project. There is no point in submitting for formal consultation before the studies are completed since the above required information cannot be provided before hand. The submittal should apply to all relevant species and be in one package for the project. An early draft of the project environmental documentation (EA

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or EIS) containing the above information would be acceptable as such a package. Once the package is submitted, US-FWS has deadlines on how long until they submit a Biological Opinion.

Until US-FWS renders an opinion, the federal action agency cannot make any irreversible or irretrievable commitment of resources. Also, the FONSI cannot be signed until consultation is completed.

The FHWA indicated that the submittal of information is a dynamic on-going process and coordination and exchange of information will be provided through project and NEPA meetings.

The FHWA offered that the formal submittal process within Illinois would be as follows:

EA Approval → Submit Formal Consultation Package → 90-day Consultation → Public Hearing → Errata → FONSI.

The USFWS concurred with the proposed process steps. Opportunity for comments and revisions (resulting from the consultation) can be incorporated within the preparation of the Errata.

Interstate 55/Arsenal Road

After the discussions, TranSystems provided an update on the development of alternatives for the I-55 at Arsenal Road Interchange project. This presentation foreshadowed the presentation to be given at the NEPA 404/Concurrent Point meeting to be scheduled for January or February 2005.

TranSystems indicated that the project Purpose and Need was approved at the first NEPA meeting held February 5, 2004. The project environmental resource map has been updated to include the findings of completed environmental resource reviews to date.

Originally, six alternatives were developed and presented at the first NEPA meeting. However, IDOT requested a seventh alternative be developed for a Single Point Interchange (SPUD). The seven alternatives were then briefly reviewed. The seven alternatives were also presented at the July 14, 2004 FHWA/IDOT meeting. At that meeting concurrence was provided by the FHWA and IDOT that Alternative 4 can be presented at the January 2005 NEPA meeting as the proposed Preferred Improvement Plan (PIP). TranSystems indicated that at the second NEPA meeting in January, Alternate 4 will be presented as the proposed PIP. Those present made no objections to the planned presentation.

Additional Field Observations and Reviews Regarding I-55/Arsenal Road

USFWS indicated a review for Indiana Bat habitat will need to be conducted for the study area and footprint of Alternative 4. The limits of the study area will be provided by USFWS (Shawn Cirton) to BDE (Sue Dees). The 2.5-mile corridor width may not be required.

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USFWS indicated a review for HED habitat will not be required.

Side note: During the meeting break period, discussions with Sue Dees about the Franklin's ground squirrel ensued. The IDNR would also like surveys for the newly state-listed Franklin's ground squirrel. There are recent records for nearby Midwin and Des Plaines Conservation Area, according to the INHS. It was decided that the study area and footprint of Alternative 4 will also be reviewed for Franklin's ground squirrel habitat and presence. The field observations can be concurrent with those of the Indiana bat.

Alternative 4 will be presented at the NEPA/Concurrent Point Meeting as the PIP with the understanding that updated information will be provided and revisions will be made at the third Concurrent Point meeting based upon the findings of surveys for the Indiana bat and Franklin's ground squirrel. Those present made no objections and agreed to the approach presented.

Caton-Farm Bruce Road

Following the I-55 presentation, Bob Andres provided an update on the CFB project. He noted that we intend to present Purpose and Need at the Concurrent Point Meeting to be held in January or February. He used aerial exhibits to show the alignments under consideration for the CFB corridor. He also presented the alignments from the 1988 study, indicating that they have not been officially eliminated from further consideration. Jeff Mengler noted that they have data regarding the presence of T&E species in some of the 1988 alignments. Upon receipt of an official request from Will County, he will provide a letter on T&E species in the alternate corridors.

The State conducted a presence survey and found Hines emerald dragonfly larva and adult in the CFB corridor; this study is not adequate to fully assess the species abundance or to assess probable impacts. They did not find any state listed turtles or other state listed species, other than the Hines emerald dragonfly. One strategy, among many possibilities, for mitigation if some impact is unavoidable is to locate a nearby area of degraded habitat and then restore it to fully functional habitat.

Action Items:

I-55/Arsenal Road Interchange

- IDOT/BDE will schedule the field surveys for habitat assessments for the Indiana Bat and Franklin's ground squirrel for the I-55/Arsenal Road project.
- US-FWS will inform IDOT/BDE of what the survey limits should be for the I-55/Arsenal Road project.

Caton-Farm Bruce Road Improvements

- Will County will officially request from US-FWS information on T&E species in the 1988 river crossing alternates.

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- IDOT will pursue Indiana bat surveys for the CFB project, excepting the Route 6 alternate for now.
- Will County will pursue with ISTHA sharing the studies for the Hines emerald dragonfly and the Indiana bat.
- Will County will keep IDNR involved in T&E issues, including copying them on reports, and in the consultation process.
- Civiltech will provide the most recent copy of the Purpose and Need to the FHWA for their review. The FHWA will distribute the acceptable P&N to those agencies participating in the concurrent point meeting, yet to be scheduled.

Closure:

The above constitutes our understanding of the issues discussed and the conclusions reached. If there are any misunderstandings or omissions, please contact the undersigned as soon as possible.

Respectfully submitted,

M. Michael Okrent, P.E.
Alfred Benesch & Co.

Grace L. Dysico, P.E.
TranSystems Corporation

cc (via e-mail): All participants

AGENDA ITEM #2
NEPA/404 Merger Meeting
Minutes of Meeting

Interstate 55 at Arsenal Road Interchange
Section No. 00-00117-11-GS
Will County

March 1, 2005

Time: 9:30 a.m.
Place: IDOT - LL Conference Room A
Attendance: See attached Attendance Sheet

This was the second NEPA/404 meeting with the Environmental Resource Agencies for the Interstate 55 at Arsenal Road Interchange project. The purpose of the meeting was to obtain concurrence of the second concurrence point - alternatives to be carried forward, to present the range of alternatives - including the No-Action Alternative and the Build Alternatives currently under evaluation, and to present and obtain concurrence of the third and final concurrence point - the Preferred Alternative.

Introduction/History

The project was previously presented at the first NEPA/404 Merger meeting on February 5, 2004. Concurrence on the project Purpose and Need was received at this initial meeting.

The project is located in unincorporated western Will County, Illinois. The study limits are Blodgett Road to the south and the Des Plaines River to the north. Arsenal Road provides interstate access to the Village of Elwood, the ExxonMobil Refinery in the southeast quadrant, and the BASF and Dow Chemical plants in the southwest quadrant. Also served by Arsenal Road is the CenterPoint Intermodal Center (CIC) at Deer Run located within the former Joliet Arsenal Site.

Description of Environmental Involvement

Environmental areas located within the vicinity of the project include the Des Plaines Conservation Area near the project's western boundary, the Midewin National Tallgrass Prairie near the project's eastern limits, and the Grant Creek Prairie Nature Preserve located just south of Blodgett Road. The Lincoln National Cemetery, as well as, sections of Dolomite Prairie are also located within the project study limits. Major waterways include the Des Plaines River at the northern project limit, and Jackson and Grant Creeks located to the east of the corridor.

The Threatened and Endangered Species, Insects, Birds, Plants and Wetland Reviews have been completed. During the December 14, 2004, U.S. Fish and Wildlife (USFW) coordination meeting it was determined that a review for Indiana Bat habitat would need to be conducted for the study area. The Illinois Department of Natural Resources (IDNR) also wanted to survey the area for the newly state-listed Franklin's ground squirrel. The field observations for the Indiana Bat and Franklin's ground squirrel were conducted in early February of 2005 but the findings have not yet been reported.

It was noted that the Special Waste investigation and PESA have not been done in the ExxonMobil property at the center portion of the project. ExxonMobil is unwilling to provide access for the entire ESRF limits and prefers to wait until a Preferred Alternate is selected so that the limits of study can be more specific and less expansive.

Multiple threatened and endangered species are known to be located within the project limits. Threatened birds located within the study limits include the Red-shouldered Hawk, Bell's Vireo, the Sora, and a Loggerhead Shrike nest. Threatened plants include False Mallow, Butler's quillwort, and Slender sandwort. The Red-tailed Prairie Leaf Hopper was also identified within the project limits.

The U.S. Environmental Protection Agency (USEPA) noted that the Leafy Prairie Clover and Eastern Prairie Fringed Orchid are known to exist in the area. U.S. Fish and Wildlife indicated that the Orchid is known to exist within the eastern portion of Midewin National Tallgrass Prairie (Midewin NTP) outside the limits of the interchange study. It was noted that the Leafy Prairie Clover has been identified within the study limits and is identified on the Environmental Resource Map.

Purpose and Need of the Project

The purpose of the proposed action is to address capacity, operational, and safety deficiencies of the interchange at Interstate 55 and Arsenal Road by providing an improved interchange.

Capacity Deficiencies

At the January 14, 2004 coordination meeting the Federal Highway Administration (FHWA) requested that the analysis should be revisited using 2030 projected volumes. TranSystems has revised the original 2020 traffic projections to 2030 traffic projections based on natural background regional growth and the Island City Industrial Park traffic impact analysis provided to Will County by the Joliet Arsenal Development Authority. The Island City Development is located at the southern end of the Arsenal property along River Road, approximately 4.4 miles south. The site-generated traffic is not expected to affect volumes along Arsenal Road, but will add significant traffic to Interstate 55 south of the Arsenal Road Interchange. The 2030 projected volumes along Interstate 55 vary from 77,200 vehicles per day (vpd) south of Arsenal Road to 102,000 vpd north of Arsenal Road.

The base growth for the Interstate 55 and Arsenal Road Interchange is due to the CenterPoint Rail Yard just east of the ExxonMobil. The Rail Yard has been in operation for approximately two years. A Traffic Impact Study showed that 27% Heavy Trucks were using the Arsenal Road Interchange and that traffic back ups on Interstate 55 resulted from the insufficient 30 mph loop ramps.

Operational Deficiencies

The general operational deficiencies along Interstate 55 included inadequate entrance and exit terminal lengths and tight loop ramps requiring substantial speed reductions. In particular both loops ramps do not meet current interstate truck design standards. The substandard geometry of the loop ramps causes abrupt speed reductions for the SB exit ramp and not enough length to accelerate and merge with mainline traffic for the NB entrance ramp. These conditions cause back-ups on the mainline through lanes.

Safety Deficiencies

A review of the crash history within the project limits for the study period of 1999 to 2001 indicated that a total of 165 crashes occurred. The majority of the crashes occurred at the ramp terminal areas along Interstate 55. The accident experience for both the mainline and the interchange areas exhibits a need for improvement to the existing facility. The predominant crash types of rear ends and sideswipes are consistent with substandard geometrics for this facility. This supports the need for improvement of merge conditions and geometric improvements at the interchange ramps.

Alternatives

A discussion on the alternates under consideration was then presented.

No-Action Alternative

The No-Action Alternative would include rehabilitating the existing interchange pavement structure and other short-term improvements including signalizing the Arsenal Road intersections at the ramp terminals and the frontage roads. The No-Action Alternative does not address the safety and operational deficiencies nor accommodate the projected growth in traffic volumes due to regional development. It does not satisfy the purpose and need for the improvement.

Build Alternatives

Several different alternatives for reconfiguring the existing roadway and interchange were evaluated with the goal of correcting the safety, operational, and capacity deficiencies, while minimizing impacts to the natural environment.

Alternative 1 – Split Interchange

Development of this alternative attempts to improve the existing interchange to current standards at its current site of Arsenal Road. However, because of the proximity and constraint of the existing truss bridges over the Des Plaines River, maintaining the northbound entrance and exit ramps at this location was not possible. This alternative provides a Split Interchange to provide the standard truck acceleration length for the northbound entrance ramp. This required the northbound half of the interchange be located (“split”) approximately one mile south of Arsenal Road to avoid ExxonMobil’s main facilities. This alternative maintains the southbound exit and entrance ramps at their current location at Arsenal Road. A review of Highway Capacity Manual adjusted for 27% trucks reveals that 30 mph loop ramps can only be expected to have a maximum capacity of 1,500/vehicles per hour (vph). The projected volume for the southbound exit ramp is in excess of 1,700/vph. Additionally, Will County has expressed reservations regarding the potential for truck rollover accidents associated with loop ramps. This alternate requires approximately 49 acres of right-of-way acquisition, and impacts 7.8 acres of floodplain and 0.5 acres of wetland.

Alternative 2 – Modified Parclo Interchange

This alternative is a modification of the existing interchange type of a Partial Cloverleaf (Parclo) but located one mile south of Arsenal Road to avoid impacts to the ExxonMobil Refinery and the high quality wetland/dolomite prairie located just south of the refinery. Similar to Alternative 1, this design’s 30 mph loop ramps are not able to handle projected traffic volumes and is not as desirable as compared to the other alternatives. Additionally, the potential for rollover accidents along the loop ramps is still present. This alternate requires approximately 76 acres of right-of-way acquisition, impacts 8.1 acres of floodplain and 2.1 acres of wetland.

Alternative 3 – Full Southern Interchange

The full southern interchange located 1.1 miles south of Arsenal Road is a variation of a conventional diamond interchange, but provides a 50 mph, two-lane flyover ramp for the southbound exit ramp. This alternative is better able to handle the high percentage of truck traffic compared to the loop ramp design of Alternatives 1 and 2. This alternative also extends Arsenal Road approximately one mile south along the east side of Interstate 55 to the relocated interchange and provides the option of removing both Arsenal Road and Blodgett Road bridges.

This alternative is able to accommodate projected traffic volumes and traffic conditions, but connections to the frontage roads and unconventional traffic movements are less than desirable. Also, this Alternative has a large footprint that results in additional Environmental impacts. This alternate requires approximately 133 acres of right-of-way acquisition, impacts 10.0 acres of floodplain and 4.7 acres of wetland.

Alternative 4 – Southern Flyover

This alternative is similar to Alternative 1 for northbound entering and exiting traffic and is also similar to Alternative 3 for southbound exiting traffic by providing a 50 mph, two-lane flyover ramp. The northbound entrance and exit ramps, as well as the southbound exit ramp would be relocated approximately one mile south to accommodate truck acceleration lanes. Alternative 4 simplifies the traffic movements and connections to the frontage roads as compared to Alternative 3. The Arsenal Road bridge over Interstate 55 would be retained to provide access to the West Frontage Road and southbound entrance ramp. The two-lane exit and entrance ramps flow naturally into the four-lane Arsenal Road extension.

Given the constraints, this alternate offers a clean and simple design. It meets the purpose and need for improvements in the Interstate 55/Arsenal Road Interchange project area by addressing the capacity, operational, and safety deficiencies associated with the existing facility. This alternate requires approximately 92 acres of right-of-way acquisition, impacts 8.4 acres of floodplain and 1.2 acres of wetland.

It was stated that this alternative represents the Preferred Alternate for this project. In addition, geometric review comments have been received from BDE. The comments have been addressed and have reduced the project foot print even more.

Alternative 5 – South Exxon Mobil By-Pass (Options A, B, & C)

In response to "Homeland Security Concerns" expressed by ExxonMobil, Alternative 5 was developed to provide alignments that did not pass along the west and north frontage of their property along Arsenal Road and the east frontage road, respectively. Three potential options to relocate Arsenal Road on new alignment south of the ExxonMobil Refinery were developed:

Option A realigns Arsenal Road along the western edge of the BNSF Railroad to a point north of Midewin National Tallgrass Prairie and then passes over the BNSF mainline track, CIC industrial lead tracks and Jackson Creek, intersecting the existing Arsenal Road alignment approximately $\frac{3}{4}$ of a mile west of Baseline Road. ExxonMobil rejected this option because it violates the clear zone for the refinery Flare System. This alternate requires approximately 181 acres of right-of-way acquisition, impacts 29.5 acres of floodplain and 28.1 acres of wetland.

Option B realigns Arsenal Road to the northeast across the BNSF mainline track, through Midewin National Tallgrass Prairie, over the CIC industrial lead tracks and Jackson Creek intersecting the existing Arsenal Road alignment approximately $\frac{3}{4}$ of a mile west of Baseline Road. This alternative has major environmental impacts to the Midewin National Tallgrass Prairie. This alternative directly impacts a primary portion of the Dolomite prairie, considered to be a special micro-ecosystem. Threatened and endangered species, including the Leafy Prairie Clover (Federal Endangered), are also known to exist in this section of Midewin. This alternate requires approximately 180 acres of right-of-way acquisition, impacts 29.4 acres of floodplain, 29.3 acres of wetland, and 12.0 acres of Midewin NTP.

Option C realigns Arsenal Road east across the BNSF mainline track and then through Midewin National Tallgrass Prairie along the north edge of the ComEd easement. The alignment then crosses over the CIC industrial lead tracks and Jackson Creek intersecting the existing Arsenal Road alignment approximately $\frac{3}{4}$ of a mile west of Baseline Road. This alternative also has major environmental impacts to the Midewin National Tallgrass Prairie. This alternative impacts the southern tip of the Dolomite prairie. Threatened and endangered species are known to exist in this section of Midewin. This alternate requires approximately 187 acres of right-of-way acquisition, impacts 16.2 acres of floodplain, 13.3 acres of wetland, 23.0 acres of Midewin NTP, as well as 3.0 acres of Army property slated to be turned over to Midewin NTP.

It was noted that Options B & C would require building a new roadway through the Midewin National Tallgrass Prairie. The prairie is protected by the stipulations of the 1996 Illinois Land Conservation Act that prohibits new construction of any highway through or across any portion of the Midewin National Tallgrass Prairie. In addition, these options were not well received during the Public Meeting on November 3, 2003.

Alternative 6 – Blodgett Road (Option A & B)

Similar to Alternative 5, this alternative was developed based on preliminary comments from ExxonMobil to reduce traffic along their north frontage on Arsenal Road. This alternative would locate the interchange three miles south to Blodgett Road. This would require constructing a new roadway through the Midewin NTP by extending Blodgett Road to the east. Placing the interchange at this location will impact the Midewin National Tallgrass Prairie and the Des Plaines Conservation Area. Two potential options were developed:

Option A would require the construction of approximately 3.0 miles of new roadway through Midewin, along the Blodgett Road corridor between Interstate 55 and Illinois Route 53. In the vicinity of Baseline Road, the proposed alignment would shift to the south to avoid Lincoln National Veterans Cemetery. This alternate requires approximately 138 acres of right-of-way acquisition, impacts 56.0 acres of floodplain, 30.4 acres of wetland, 34.0 acres of Midewin NTP, as well as 24.0 acres of Army property slated to be turned over to Midewin NTP. This alternative also impacts 48.0 acres of the Des Plaines Conservation Area.

Option B would require the construction of approximately 2.0 miles of new roadway through Midewin, along the Blodgett Road corridor between Interstate 55 and Baseline Road. Traffic would then utilize Baseline Road from Blodgett Road to East Access Road, and East Access Road from Baseline Road to Illinois Route 53. These recently reconstructed roadways (2002) would need to be widened and reconstructed to accommodate the traffic volume and increased percentage of multi-unit trucks. This alternate requires approximately 183 acres of right-of-way acquisition, impacts 57.1 acres of floodplain, 30.4 acres of wetland, 14.0 acres of Midewin NTP, as well as 26.0 acres of Army property slated to be turned over to Midewin NTP. This alternative also impacts 48.0 acres of the Des Plaines Conservation Area.

As with Alternative 5, it was noted that Options A & B would require building a new roadway through the Midwin National Tallgrass Prairie, which is protected by the stipulations of the 1996 Illinois Land Conservation Act. Similarly, these options did not receive great support during the November 3, 2003 Public Meeting.

Request for Comments on Alternatives currently under consideration

The Alternatives were discussed. The USEPA inquired if there was consideration for processing the project as an EIS. The FHWA noted that the project is currently being processed as an Environmental Assessment. Given the impacts associated with Alternative 4, the Preferred Alternative, this status is unlikely to change. The discussion then centered on the field survey for the Indiana Bat and Franklin's Ground Squirrel. USFWS noted that the area affected by Alternative 4 is unlikely to impact the identified habitat of the Indiana Bat. The agency representatives indicated the following with respect to carrying alternatives forward for further study:

<u>Representative</u>	<u>Agency</u>	<u>Alternative 4</u>	<u>Alternatives 1,2,3,5A,5B,5C,6A,6B, & 7</u>
Ken Westlake	USEPA	Carry forward	No further study
Steve Hamer	IDNR	Carry forward	No further study
Kathy Chernich	USACE	Carry forward	No further study
Terry Savko	IL D of Ag	Carry forward	No further study
Shawn Cirton	USFWS	Carry forward	No further study

Pending determination of potential impacts to the Franklin's Ground Squirrel the attendees stated their conditional concurrence carrying Alternative 4 forward for further study, while removing the other nine alternatives from further study.

Request for Concurrence on Preferred Alternative

Based on the above, Mr. Stevenson (FHWA) asked for concurrence on Alternative 4 as the Preferred Alternative for this project. Pending determination of potential impacts to the Franklin's Ground Squirrel, conditional concurrence to proceed with Alternative 4 as the Preferred Alternative was received from:

<u>Representative</u>	<u>Agency</u>	<u>Preferred Alternative 4</u>
Ken Westlake	USEPA	Concur
Steve Hamer	IDNR	Concur
Kathy Chernich	USACE	Concur
Terry Savko	IL D of Ag.	Concur
Shawn Cirton	USFWS	Concur

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Next steps in the NEPA/404 Merger Process

The results of the field surveys for the Indiana Bat and Franklin's ground squirrel will be reported to the resource agencies. The consultant will complete the preliminary design studies for Alternative 4 and conduct detailed analysis of environmental impacts.

Will County Highway Department / TranSystems Corporation

Alternative Comparison Matrix
Capacity and Operations

Interstate 55 at Arsenal Road Interchange
Section No. 05-00117-11-GS
Will County



Alternative Design Elements	Capacity and Operations Ramp Operational Factors	Capacity Analysis (LOS) (See Note 2)	Design Span(s)	Emergency Response Time	Structural No. of New Bridges	Right-of-Way Area of New ROW (50' Grading Unit) (acres)	Advantages	Disadvantages
Alternative 1 Modified Parclo Interchange Split Interchange	<ul style="list-style-type: none"> 30 mph NB ent. loop ramp 30 mph SB ent. loop ramp 30 mph SB ent. flyover ramp 	LOS D+ or better for Signalized Intersection	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	No change	2 Arsenal Rd over I-55 SB Ent over I-55	49	<ul style="list-style-type: none"> No adverse travel for SB ramps Eliminate Blodgett Rd bridge over I-55 Underpass grants at Arsenal Rd bridges Undetectable SB ent. auxiliary lane length 	<ul style="list-style-type: none"> Impacts to I-55 on-ramp and parking Adverse travel for NB entrance ramp Ramps near Two Rivers River bridge Undetectable SB ent. auxiliary lane length
Alternative 2 Modified Parclo Interchange	<ul style="list-style-type: none"> 30 mph NB ent. loop ramp 30 mph SB ent. loop ramp 30 mph SB ent. flyover ramp 	LOS D+ or better for Signalized Intersection	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	Additional 4.5 min **	1 Overpass over I-55	76	<ul style="list-style-type: none"> Freelbow NB entrance ramp Freelbow SB ent. ramp Eliminate Blodgett Rd and Arsenal Rd bridges over I-55 	<ul style="list-style-type: none"> Adverse travel for NB & SB ramps, emergency response Low Speed, 30 mph NB entrance loop ramp Low Speed, 30 mph SB ent. loop ramp Complicated alignment (driver confusion) Did not work operationally with projected traffic volumes
Alternative 3 Full Southern Interchange	<ul style="list-style-type: none"> 35 mph NB ent. loop ramp 2-Lane, 30 mph SB ent. flyover ramp 	LOS D+ or better for Signalized Intersection	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	Additional 4.5 min **	4 SB Ent over I-55 SB Ent over I-55 Overpass over I-55	133	<ul style="list-style-type: none"> Freelbow NB entrance ramp Freelbow SB ent. ramp Eliminate Blodgett Rd and Arsenal Rd bridges over I-55 	<ul style="list-style-type: none"> 3 Intersections along I-55 cross road, 2 signalized Adverse travel for NB & SB ramps, emergency response Complicated alignment (driver confusion) Unconventional Geometric Configuration Two subsequent NB entrance ramp spacing substantial
Alternative 4 Southern Flyover	<ul style="list-style-type: none"> 40 mph NB ent. loop ramp 2-Lane, 30 mph SB ent. flyover ramp 	LOS D+ or better for Signalized Intersection	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	Additional 4.5 min **	2 SB Ent over I-55 Arsenal Rd over I-55	90	<ul style="list-style-type: none"> Freelbow NB entrance ramp Freelbow SB ent. ramp Small footprint Simple Design Eliminate Blodgett Rd bridge over I-55 	<ul style="list-style-type: none"> ES required per FHWA Adverse travel for NB & SB ramps, emergency response Conflict with East Access Rd (Safety clearances) New roadway construction (2.5 miles)
Alternative 5A South Exon Mobb Bypass Option A	<ul style="list-style-type: none"> 35 mph NB ent. loop ramp 50 mph SB ent. flyover ramp 	LOS D+ or better for Signalized Intersection	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	Additional 4.5 min **	7 SB Ent over I-55 SB Ent over I-55 As Rd over I-55 As Rd over I-55 As Rd over I-55 As Rd over I-55	181	<ul style="list-style-type: none"> Freelbow NB entrance ramp Freelbow SB ent. ramp Eliminate Blodgett Rd and Arsenal Rd bridges over I-55 	<ul style="list-style-type: none"> ES required per FHWA Adverse travel for NB & SB ramps, emergency response Conflict with East Access Rd (Safety clearances) New roadway construction (2.5 miles)
Alternative 5B South Exon Mobb Bypass Option B	<ul style="list-style-type: none"> 35 mph NB ent. loop ramp 50 mph SB ent. flyover ramp 	LOS D+ or better for Signalized Intersection	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	Additional 4.5 min **	7 (Same as 5A)	180	<ul style="list-style-type: none"> Freelbow NB entrance ramp Freelbow SB ent. ramp Eliminate Blodgett Rd and Arsenal Rd bridges over I-55 	<ul style="list-style-type: none"> ES required per FHWA Adverse travel for NB & SB ramps, emergency response Not allowed per IL Land Conservation Act Encroaches on Midway NTP New roadway construction (2.5 miles)
Alternative 5C South Exon Mobb Bypass Option C	<ul style="list-style-type: none"> 35 mph NB ent. loop ramp 50 mph SB ent. flyover ramp 	LOS D+ or better for Signalized Intersection	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	Additional 4.5 min **	7 (Same as 5A)	187	<ul style="list-style-type: none"> Freelbow NB entrance ramp Freelbow SB ent. ramp Eliminate Blodgett Rd and Arsenal Rd bridges over I-55 	<ul style="list-style-type: none"> ES required per FHWA Adverse travel for NB & SB ramps, emergency response Not allowed per IL Land Conservation Act Encroaches on Midway NTP New roadway construction (2.5 miles)
Alternative 6A Blodgett Road Option A (Construct Blodgett Road to I-55)	<ul style="list-style-type: none"> 35 mph NB ent. loop ramp 50 mph SB ent. flyover ramp 	LOS D+ or better for Signalized Intersection	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	Additional 8.5 min **	8 SB Ent over I-55 SB Ent over I-55 Overpass over I-55 Blodgett over Grant CK(2)	138	<ul style="list-style-type: none"> Freelbow NB entrance ramp Freelbow SB ent. ramp Eliminate Blodgett Rd and Arsenal Rd bridges over I-55 	<ul style="list-style-type: none"> ES required per FHWA Adverse travel for NB & SB ramps, emergency response Not allowed per IL Land Conservation Act New roadway construction (3 miles) Blodgett Midway NTP Aligns remote crossing @ I-55/SB
Alternative 6B Blodgett Road Option B (To Blodgett Road into Baseline Road)	<ul style="list-style-type: none"> 35 mph NB ent. loop ramp 50 mph SB ent. flyover ramp 	LOS D+ or better for Signalized Intersection	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	Additional 8.5 min **	7 SB Ent over I-55 SB Ent over I-55 Overpass over I-55 Blodgett over Grant CK(2)	133	<ul style="list-style-type: none"> Freelbow NB entrance ramp Freelbow SB ent. ramp Eliminate Blodgett Rd and Arsenal Rd bridges over I-55 	<ul style="list-style-type: none"> ES required per FHWA Adverse travel for NB & SB ramps, emergency response Not allowed per IL Land Conservation Act New roadway construction (3 miles) Blodgett Midway NTP Reconstruct Baseline Rd and East Access Rd (See Note 3)
Alternative 7 Single Point Urban Diamond Interchange	<ul style="list-style-type: none"> All ramps: 50 mph (ent. flyover) 	LOS D+ or better with Intersecting LOS E+ or better VAS 2/1.0-3.8	<ul style="list-style-type: none"> As Rd to NB ent. ramp-2.2 SB ent. ramp to I-55 SB ent. ramp to I-55 	Additional 4.5 min **	1 SPUD Intersection structure	102	<ul style="list-style-type: none"> Adverse travel for NB & SB ramps, emergency response Did not work operationally with projected traffic volumes Expensive due to wider and longer structure, retaining walls along ramps None of the ramps are free flow 	<ul style="list-style-type: none"> Adverse travel for NB & SB ramps, emergency response Did not work operationally with projected traffic volumes Expensive due to wider and longer structure, retaining walls along ramps None of the ramps are free flow

Notes:
 1. ** at 40 mph.
 2. LOS D+ is the minimum acceptable level-of-service (BDOT BDE Figure 44-5C). The level-of-service has been reviewed for signalized intersections, freeway segments and ramp junctions.
 3. Baseline Road and East Access Road were previously reconstructed in 2002. Those roadways were not designed to accommodate the large amount of heavy trucks that would utilize the roadways under this alternative.

Alternative Comparison Matrix
Environmental Impacts

Interstate 85 at Arsenal Road Interchange
Section No. 00-00117-11-GS
Willi County



Alternative Design Elements	Right-of-Way Acquisition (Acres)	Economic Impacts (# parking spaces)	Public Facilities (response time)	T & E	Environmental Impacts			Special Waste, CERCLIS LIST, LUST	COST ESTIMATE
					Floodplains (acres)	Wetlands (acres)	4(f) Lands (acres)		
Alternative 1 Split Interchange	49	80 (NEOS)	No change	False Mallo	7.8	0.5	0.0	Special Waste - CERCLIS UST, LUST BASF Corporation - LUST Exxon Mobil - CERCLIS	\$21.5 M
Alternative 2 Modified Paralel Interchange	76	None	Additional 4.5 min ***	False Mallo	8.1	2.1	0.0	Exxon Mobil - CERCLIS	\$20.1 M
Alternative 3 Full Southern Interchange	133	None	Additional 4.5 min ***	False Mallo	10.0	4.7	0.0	Dow Chemical - UST, Dredged Mat Exxon Mobil - CERCLIS	\$33.6 M
Alternative 4 Southern Flyover	90	None	Additional 4.5 min ***	False Mallo	8.3	1.2	0.0	Dow Chemical - UST Exxon Mobil - CERCLIS	**\$27.4 M
Alternative 5A South, Exxon Mobil Bypass Option A	181	None	Additional 4.5 min ***	False Mallo Red Tail Prairie Leathopper	28.5	28.1	0.0	Dow Chemical - UST Exxon Mobil - CERCLIS US Army - CERCLIS	\$52.9 M
Alternative 5B South, Exxon Mobil Bypass Option B	180	None	Additional 4.5 min ***	False Mallo Slender Sandwort Butlers Quilwort Lealy Prairie Clover Sora Red Tail Prairie Leathopper	29.4	29.3	Midewin NTP (12 ac)	Dow Chemical - UST Exxon Mobil - CERCLIS US Army - CERCLIS	\$53.6 M
Alternative 5C South, Exxon Mobil Bypass Option C	187	None	Additional 4.5 min ***	False Mallo Red-shoulder Hawk	16.2	13.3	Midewin NTP (23 ac) U.S. Army (3 ac)	Dow Chemical - UST Exxon Mobil - CERCLIS US Army - CERCLIS	\$56.3 M
Alternative 6A Blodgett Road Option A (Construct Blodgett Road to IL Route 63)	138	None	Additional 6.5 min ***	False Mallo Slender Sandwort Butlers Quilwort	55.0	30.4	Midewin NTP (34 ac) U.S. Army (24 ac) Des Plaines F&WA (48 ac)	US Army - CERCLIS	\$44.9 M
Alternative 6B Blodgett Road Option B (The Blodgett Road into Baseline Road)	183	None	Additional 6.5 min ***	False Mallo Slender Sandwort Butlers Quilwort	57.1	30.4	Midewin NTP (14 ac) U.S. Army (26 ac) Des Plaines F&WA (48 ac)	US Army-CERCLIS	\$54.3 M
Alternative 7 Single Point Urban Diamond Interchange	102	None	Additional 4.5 min ***	False Mallo	9.6	2.7		Dow Chemical - UST Exxon Mobil - CERCLIS	\$30.0 M

NOTES
1. * Costs are based on 2003 Unit Prices
2. ** This cost for Alternative 4 was done before the detailed design and therefore does not match the current estimated cost of the project.
3. *** at 40 mph.



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AGENDA ITEM #2
NEPA/404 Merger Meeting
Minutes of Meeting

Interstate 55 at Arsenal Road interchange
Section No. 00-00117-11-GS
Will County Department of Highways

November 14, 2006

Time: 2:10 p.m.
Place: IDOT – LL Training Room B
Attendance: See Attachment A – Attendance Roster

This was the third NEPA/404 meeting presentation to the Environmental Resource Agencies for the Interstate 55 at Arsenal Road Interchange project. The purpose of the meeting was to provide a project update to the resource agencies, to gain concurrence that an Incidental Take (IT) can be prepared for the impacts to the Blanding's Turtle habitat, and to obtain feedback from the U.S. Fish and Wildlife Service regarding the Eastern Prairie Fringed Orchid and the Leafy Prairie Clover.

Since the last meeting, there have been some changes to the consultant team and Will County Department of Highways project staff. The project team from TranSystems and Will County was introduced: Grace Dysico is the Environmental Lead, Kathy Meyerkord is the Senior Project Engineer (replacing Paul Schneider), Chris Comin is the Design Engineer, and George Catalano is the County's Project Manager (replacing Mark Bagherpour).

Project Background

The project was previously presented at the NEPA/404 Merger meeting on March 1, 2005. The project is being sponsored by the Will County Department of Highways. The project is located in unincorporated western Will County, Illinois. The study limits are Blodgett Road to the south and the Des Plaines River to the north. Arsenal Road provides interstate access to the Village of Elwood, the ExxonMobil Refinery in the southeast quadrant of the existing interchange, and the INEOS (formerly BASF) and Dow Chemical plants in the southwest quadrant. Also served by Arsenal Road is the CenterPoint Intermodal Center (CIC) at Deer Run located within the former Joliet Arsenal Site.

The preferred alternative removes the existing parcel interchange and relocates it approximately one mile south as a flyover interchange to address the Purpose and Need of the project. The Purpose and Need of the project is to address capacity, operational, and safety deficiencies of the existing interchange.

NEPA/404 Concurrence Status

The project received approval of Concurrence Point #1 (Purpose and Need) and Concurrence Point #2 (Alternatives Carried Forward) at the February 5, 2004 meeting. Concurrence Point #3 (Preferred Alternative-Alternative 4) was approved at the March 1, 2006 meeting. However, the approval was



conditional until completion of the studies for the Franklin's Ground Squirrel and the Indiana Bat. Since then the studies have been completed and the project has been cleared for both the Franklin's Ground Squirrel and the Indiana Bat. This was found acceptable to the attendees and Concurrence Point #3 is concluded.

Project Submittals

Since the March 1, 2005 NEPA/404 meeting the geometry has been revised and improved to reduce the footprint of the interchange and minimize impacts to the identified resources. The current geometry was displayed during the meeting and was provided in the pre-meeting information packets.

Using the current geometry, the following project submittals have been made: 1) The final AJR, revised per FHWA comments, was submitted to Springfield/FHWA on September 28, 2006, 2) The Draft EA was submitted to the District on September 8, 2006 and comments were received from the District on October 27, 2006, and 3) The Draft EA and Disposition of District 1 Comments were provided to BDE and FHWA at today's meeting.

Project Update

Indiana Bat

The Indiana Bat Survey was completed (INHS Memo, September 2, 2005). Mist nettings were conducted as part of the surveys and no Indiana Bats were netted in the project study area. It concluded that the project would not impact any Indiana Bats or bat habitat. The project was cleared for the Indiana Bat. All present concurred.

Franklin's Ground Squirrel

The Franklin's Ground Squirrel Survey was completed (INHS Memo, September 2, 2005). The survey found that the project study area does not contain suitable habitat for the Franklin's ground squirrel. The project area does not provide adequate vegetative cover, while wetlands, poorly drained soils, and shallow soils would be unsuitable for burrowing. The project was cleared for the Franklin's Ground Squirrel. All present concurred.

Blanding's Turtle

The Blanding's turtle survey was completed (INHS Memo, October 13, 2005). The surveys were conducted in the summer of 2005 during an unusually dry season. The survey found one Blanding's turtle approximately 1.25 miles west of the project. Suitable habitat was found at three locations within the study area. Wetland INHS-42 was considered to be a potentially suitable habitat, Wetland B-13 was considered to be a marginally suitable habitat, and Wetland B-7 associated with the North Fork tributary to Grant Creek was considered to be marginally suitable habitat for the Blanding's turtle. Based on the current geometry, the project will impact Wetland INHS-42 and Wetland B-13 but will avoid Wetland B-7. Because the surveys were conducted during an unusually dry season, the IDNR has concerns about the accuracy of the survey results. The IDNR has requested that additional turtle surveys be conducted in Spring 2007. In order to keep the project moving forward IDOT recommended preparing an Incidental Take (IT) document for the Blanding's turtle to document the steps taken to minimize habitat impacts and proposed mitigation measures. IDNR concurred with proceeding with the IT. TranSystems stated that the draft IT should be completed by the end of the month. It was noted that the IT should be submitted first to District 1 and then District 1 will provide it to BDE for their review and comment. After BDE comments have been addressed, the IT will be sent to IDNR for internal circulation and review. IDNR stated that the internal reviews and comments typically take about 4 to 6 months to complete.



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Eastern Prairie Fringed Orchid and the Leafy Prairie Clover

A letter dated September 11, 2006 was sent by the USFWS to IDOT requesting additional plant surveys for the federally listed eastern prairie fringed orchid and the leafy prairie clover. The letter stated that 27 wetlands have potential to provide habitat for the eastern prairie fringed orchid. TranSystems noted that most of those wetlands are between 500 feet and 2 miles outside the project area and therefore would not be impacted. There are only six wetlands and a maximum of five botanical prairie sites which could potentially be impacted by the project. These 11 sites could be resurveyed if deemed necessary by BDE. To comply with USFWS recommendations, the eastern prairie fringed orchid would need to be surveyed between June 28 and July 11 and for the leafy prairie clover between late July and August. BDE is drafting a response to the USFWS letter. Options to allow the project to proceed prior to completion of the additional requested surveys were solicited. USFWS indicated that they will await the response from BDE before providing any comments.

Discussion

IDNR stated that the submittal and processing of the IT would be acceptable to them for the Blanding's turtle and therefore the Public Hearing could proceed without the additional turtle surveys.

Preliminary Schedule & Timeframe

- The Draft EA was provided to BDE/FHWA on November 14, 2006 (at this meeting)
- The Public Hearing is – tentatively targeted for May, 2007
- The Draft Errata & FONSI are scheduled to be submitted to BDE/FHWA in early June, 2007
- FONSI Approval/Design Approval is scheduled for September, 2007

Next Steps

- Draft Incidental Take (IT) submitted to District 1 on November 30, 2006 (TranSystems)
- Response to September 11, 2006 USFWS letter submitted to USFWS (BDE)
- Comments on response letter (above) (USFWS)

Will County Highway Department / TranSystems Corporation

ATTACHMENT A

1-55 AT ARLSON ROAD
NEEA 1404 MERGE MEETING

11/14/02

NAME	ORGANIZATION	PHONE
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Vanessa Ruiz	IDOT D-1 ENV.	847-705-4629
WILLIAM BARBEL	IDOT #1 ENV/CTE	847-705-4122
SAM MEAD	IDOT/D-1/ENV	847-705-4101
JP. VARMA	FHWA, IL.	(217) 492-4623
WIKROY LUTT	FHWA	217-492-4643
Pam Heinisness	FHWA	217-492-4626
George Catalano	WCHD	815-727-8476
MIC MUSTAFA	IDOT, R-1	847-705-4477
Kathy Meyerford	TranSystems	847-605-9600
Chris Conin	TranSystems	847-605-9600
Grae Dysico	TranSystems	847-605-9600
MAI + FULLER	FHWA	217-492-4625
Terry Savko	IL Dept of Agriculture	217-785-4458
Chuck Crim	CBERS	217-782-0675
Shawn Ciston	USEWS	847-381-2253
Newton, Ellen	USEPA	312-353-5562
Patricia Feltus	IDOT - DI	847 705-4180
Walt Zyzanski	IDOT - DOE	217-785-4181
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FINAL

MINUTES OF MEETING

Environmental Resource Agencies Coordination Meeting

Interstate 55 at Arsenal Road Interchange
Section No. 00-00117-11-GS
Will County Department of Highways

May 22, 2008
(Revised 7/01/08)

Time: 1:30 p.m.

Place: IDNR Office on Boathouse Road, Will County

Attendance: See attached Attendance Roster

Purpose

- The purpose of the meeting was to discuss with the Natural Resource Agencies the IDOT plan to compensate for impacts to orchid and wetland habitats resulting from construction of improvements to I-55 at Arsenal Road, and to seek their concurrence on some aspects of the plan.

Introductions

- Each person introduced themselves and who they were affiliated with or represented. See the attached Attendance Roster for the meeting attendees.

Project Overview

A brief Project Overview was given as follows:

- The existing I-55 at Arsenal Road Interchange is a partial cloverleaf type interchange. The existing interchange is substandard and will not be able to accommodate future 2030 traffic, including the high percentage of truck volumes.
- The approved Purpose and Need indicates that the existing interchange has substandard geometry, insufficient capacity, and safety concerns. The purpose of the project will address the capacity needs, correct the deficient geometric design and operations, and address the predominant accident types.
- The proposed interchange will be relocated approximately 1 mile south of the existing location and is a directional flyover loop type interchange configuration. It meets the project Purpose and Need and has been approved as the Preferred Improvement Alternative. The Purpose and Need, Alternatives to be Considered, and the Preferred Improvement Alternative were coordinated through the IDOT/NEPA 404 Merger Coordination meetings. The necessary concurrence points were presented and approved at several IDOT/NEPA 404 Merger Coordination meetings.
- The Preferred Improvement Alternative was selected and approved because of its ability to meet the Purpose and Need while minimizing the environmental impacts.



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- The proposed geometry of the interchange was explained, detailing the southbound exit, southbound entrance, northbound exit, and northbound entrance ramp movements. Arsenal Road will be extended south along the east side of I-55 to the proposed interchange location.
- A retaining wall is proposed along the east side of the Arsenal Road extension where it will be adjacent to the high quality INHS-42 wetland (FQI=31.3). The retaining wall is proposed to minimize impacts to this wetland. The interchange configuration has been tightened as much as possible to reduce the footprint and thus minimize the environmental impacts.
- TranSystems is the Phase I consultant who is preparing the EA. The Will County Department of Highways is leading the Phase I project.
- The IDOT Phase II design consultant is McDonough Engineering and they have been authorized to begin design engineering.
- IDOT has begun the land acquisition process. Some appraisals have been started.
- IDOT is also getting permission to begin the PSI borings for special/hazardous waste surveys. The PSI is being done as part of Phase II.
- IDOT is targeting a June 2010 letting.

Wetlands/T&E Species

- Ms. Chernich, U.S. Army Corps of Engineers (USACE) asked when the wetland studies were completed and who did the studies. The studies were completed by Christopher B. Burke in 2002 and supplemented by INHS in 2003.
- It was noted that wetland mitigation measures were never discussed at the IDOT/NEPA 404 Merger Coordination meetings.
- IDOT/TranSystems stated that wetland impacts are approximately 3 acres and that under the Interagency Wetland Policy Act of 1989, wetland compensation acreage would total approximately 14 acres. USACE asked whether the wetland impact quantities took into account any indirect impacts. IDOT/TranSystems stated that the impact quantities are only from direct roadway and ditch construction impacts and did not take into account any indirect impacts.
- USACE asked about the Best Management Practices (BMP) and drainage patterns. TranSystems stated that there will be a combination of storm sewer systems, open ditch, and detention ponds. The storm sewer systems are required where there is not sufficient room to install a ditch. TranSystems has recently completed the Preliminary Proposed Drainage Plan (PDP) which has only been reviewed by the IDOT District 1 Hydraulics Unit. The Environmental Agencies have not been provided the Preliminary PDP. Detailed grading plans and BMP's will be completed during Phase II and will be provided to the Environmental Agencies as part of the 404 Permit process.
- IDOT proposes to compensate for impacts to orchid and wetland habitats at Midewin National Tallgrass Prairie. USACE, U.S. Fish and Wildlife Service (USFWS) and U.S. Forest Service (USFS) concur with this proposal. (The IDNR Interagency Wetlands Policy Act Administrator – Mr. Pat Malone – was not present at the meeting, but gave verbal concurrence to Mr. Brooks on this proposal on an earlier date.)
- IDOT proposes that since suitable habitat for the orchid within the project area is primarily emergent wetlands, all required wetland replacement for the project be emergent wetlands and be suitable for the Eastern Prairie Fringed Orchid (EPFO). Mitigation for impacts to wetland and orchid habitats will be combined and will occur at the same location. The USFWS and USACE concur with this proposal. (The IDNR Interagency Wetlands Policy

Act administrator – Pat Malone – was not present at the meeting, but did concur with Mr. Brooks on this proposal on an earlier date.)

- The type of wetland mitigation was discussed and Ms. Kramer (USFWS) stated that the mitigation should be emergent wetlands suitable for the EPFO. Ms. Pollack (USFWS) noted that emergent meant seasonal saturation and not year-round saturation of the ground.
- USACE was accepting of providing the wetland mitigation at Midewin. However, IDOT will need to obtain a letter of agreement from the USFS Midewin Tallgrass Prairie indicating that they are accepting of providing the mitigation on USFS lands. Mr. Brooks (IDOT) will work with Mr. Ulaszek (USFS) to coordinate the letter from Ms. Logan Lee, the Tallgrass Prairie Supervisor. The letter could be prepared within the next couple of weeks. The agreement letter will be attached to these minutes once they are finalized. Mr. Ulaszek stated that the USFS is interested and will consider the Wetland Mitigation Project at Midewin.
- IDOT proposes to fund the habitat conservation plan and to have CorLands implement it. The level of funding would depend on the degree to which IDOT is able to transfer responsibility for assuring success of the habitat compensation plan to CorLands. Full funding would be available provided that IDOT is able to transfer all responsibility for success to CorLands. USACE stated that it would be possible to transfer responsibility; CorLands understood and would accept this arrangement. The USACE and USFWS concurred with the proposal that IDOT transfer responsibility to CorLands for implementation and success of the habitat compensation plan. (The IDNR Interagency Wetlands Policy Act Administrator – Mr. Pat Malone – was not present at the meeting, but did concur with Mr. Brooks on this proposal on an earlier date.)

Post-Meeting Note: The project will need to be a single and complete project that satisfies the mitigation requirements. The amount would be determined once the scope of work to be performed has been identified. There has been a change in the requirement as to who will be the administrator of the mitigation plan. The success of the mitigation shall be the responsibility of the USFS, not CorLands.

- Mr. Roth (CorLands) understood the concepts of what IDOT is proposing to do, which is to obtain the services of a consultant like CorLands for the Wetland Mitigation Project. This would include transfer of responsibility of success of the effort and that there would be no remediation funded by IDOT if something doesn't work. Project details (or "the full package") will need to be presented by Mr. Roth to the CorLands Board before it can be formally considered. Any and all details of any proposal would be subject to review and approval by the CorLands Board of Directors. Mr. Roth stressed that the wetland-orchid habitat compensation would be project-driven—meaning that the funds provided by IDOT to CorLands could be tracked to a specific effort on the ground. The information needed for the CorLands Board presentation include the level of funding from IDOT, what the Wetland Mitigation Project would entail, is USFS/Midewin in agreement with the mitigation being constructed on their property, what the benefits are to the USFS/Midewin, what are the performance standards to be used, and an up-to-date graphic of the interchange project. The USFS indicated they could provide oversight in the field of the Wetland Mitigation Project.

The information package required by Mr. Roth will be prepared by the Phase 2 Design Consultant as part of the 404 Permit work tasks. Details of the content of the information package will be determined after the Phase 1 EA is completed. This will be coordinated by Mr. Brooks (IDOT BDE) and Mr. Roth (CorLands).

Post-Meeting Note: The up-to-date graphics from the meeting were sent to CorLands by TranSystems via mail on 5/23/08.

- Mr. Brooks asked Ms. Chernich how the Section 404 Permit would be written; who would be the permittee? Ms. Chernich said that CorLands and the USFS would be co-sponsors or co-signatories to the permit.
- USACE inquired what the State wetland regulations required for mitigation. Mr. Brooks (IDOT) stated that if the FQI > 20 or there are listed species, then the replacement ratio is 5.5:1. USACE requires that they are

jurisdictional wetlands. The higher mitigation ratio (IDOT vs. USACE) needs to be followed for the wetland mitigation. Typically, IDOT's requirements have been higher than USACE.

- Ms. Kramer (USFWS) stated that there is less credit given for enhancement of existing wetlands. More credits are given for restoration of new wetlands. This is why the total acreage of mitigation is important. The USFWS will send USACE the performance standards so that the location within Midewin can be selected and reviewed.
- The 404 Permit will be completed in Phase II.
- It was asked whether more property could be acquired from ExxonMobil to provide on-site mitigation adjacent to the existing wetlands. Mr. Mead (IDOT) stated that ExxonMobil would not allow more property to be acquired for wetland mitigation.
- The proposed right-of-way shown on the project exhibit is what is needed to construct the roadway and drainage improvements.
- Mr. Roth stated that there was a Dolomite Prairie called "Durkee Road Dolomite Prairie" located just south of Durkee Road on the west side of the West Frontage Road. He asked whether it was on the INAI listing. The botanical reports were reviewed and it was found that this botanical site (Botanical Site 3) was not an INAI site and is poor quality and degraded. It was noted that Hoffman Transport, who owns the property, intends to develop this entire parcel. Mr. Catalano (Will County) indicated that the Department of Highways was not aware of any permits for redevelopment from Hoffman Transport.
- It was noted that there was a sign on the Dow Property regarding a Pheasant Restoration Project. There was a question about whether any state funds were involved with this project. Mr. Brooks (IDOT) did not believe that any state funds were used in this project; however they were not sure and Mr. Mead would check with the IDOT District 1 contact at the Dow Chemical Company.

Next Steps

- Mr. Brooks (IDOT) will coordinate with Mr. Ulaszek (USFS/Midewin) to get the acceptance letter for constructing the mitigation at Midewin.
- TranSystems will distribute the Draft Meeting Minutes to all attendees for review and comment.
- Ms. Pollack (USFWS) will send Ms. Chemich (USACE) the wetland mitigation criteria and performance standards.
- USFS/Midewin agreement letter will be attached with the Final Minutes.
- TranSystems will add a commitment to the EA that coordination with the Resource Agencies about the Wetland Mitigation Project and the 404 Permit will continue in Phase II.

The meeting adjourned at 3:15 P.M.

By: TranSystems

