3.12 Wetlands

This section describes wetlands within the corridors, presents impacts of the working alignments within the corridors, and discusses potential mitigation strategies for the project.

Section 404 of the CWA defines wetlands as, "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

Wetlands in the corridors were preliminarily identified through the use of the National Wetland Inventory (NWI) database. The digital format NWI maps were developed by the USFWS in collaboration with the USGS, Water Resource Division using data from 1987. The maps were prepared primarily by stereoscopic analysis of high altitude aerial photographs. All wetlands are identified based on vegetation, visible hydrology, and geography in accordance with the Cowardin System (Cowardin, et al 1979). The Cowardin System is a comprehensive classification system of wetlands and deepwater habitats developed for the USFWS.

3.12.1 Existing Conditions

3.12.1.1 Wetland Characteristics

General characteristics of the corridor wetlands were completed using the NWI/Cowardin System (Cowardin, et al 1979), available aerial imagery, and a general site visit.

Generally, wetlands are associated with streams or localized depressional areas. Within the corridors, the relief is level/flat within the Illinois portion of the Study Area and gently rolling in the Indiana portion. Most of the corridors are agricultural interspersed with forested, riparian, and urbanized areas.

Ponds and rivers within the corridors are discussed in detail in Section 3.9. Pond and river acreages under this section may differ from the numbers presented in Section 3.9 because pond and river acreages in this section were calculated using NWI/Cowardin System (Cowardin, et al. 1979). Figure 3-35 depicts the location of NWI wetlands within the corridors.

Corridor B3 and Corridor B4 are wholly within the Kankakee River watershed. The majority of Corridor A3S2 is within the Kankakee River watershed. A portion of Corridor A3S2 in Illinois is located within the Des Plaines River Watershed and the Chicago/Calumet River Watershed.

3.12.1.2 Wetland Plant Communities

Illinois

In Illinois, the Study Area is crossed by small to medium streams and ditches that are tributaries to the Kankakee River and the Little Calumet River. Table 3-69 summarizes the wetland type by NWI classification within the corridors in Illinois. Corridor A3S2 passes through 99 identified wetlands comprising over 3,500 acres; however, many of these wetlands extend beyond Corridor A3S2. Approximately 239 acres of wetlands are contained within Corridor A3S2. The majority of these wetlands are located within the riparian area of the Des Plaines River and Prairie Creek and within agricultural fields. Individual wetlands range in size from 0.03 acres to 3,163 acres; however, as previously mentioned, many of these wetlands extend well beyond the boundaries of Corridor A3S2. The largest identified wetland complex is the lacustrine, limnetic, unconsolidated bottom, permanently flooded, diked/impounded (L1UBHh) wetland associated with the Des Plaines River (approximately 3,163 acres).

Based on the NWI classification, five general wetland types were identified in the corridor: L1UBHh, palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forested (PFO), and palustrine unconsolidated bottom (PUB). In number, PEM wetlands comprise the majority of wetlands within Corridor A3S2.

In Illinois, the majority of wetlands affected by Corridor B3 are common to Corridor B4. Corridor B3 and Corridor B4 pass through 52 and 54 identified wetlands, respectively, comprising over 2,400 acres each. Many of these wetlands extend beyond Corridor B3 and Corridor B4. Approximately 83 and 85 acres of wetlands are contained within Corridor B3 and Corridor B4, respectively. The majority of these wetlands are located within the riparian areas of the Kankakee River, Plum Creek, Forked Creek, Prairie Creek, and Jackson Creek. Individual wetlands range in size from 0.04 acres to 2,190 acres; however, as previously mentioned, many of these wetlands extend well beyond the boundaries of Corridor B3 and Corridor B4. The largest identified wetland complex is the riverine, lower perennial, unconsolidated bottom, permanently flooded (R2UBH) wetland associated with the Kankakee River (approximately 2,190 acres).

Based on the NWI classification, four general wetland types were identified in Corridor B3 and Corridor B4: PEM, R2UBH, PFO, and PUB. In number, PEM wetlands comprise the majority of wetlands within Corridor B3 and Corridor B4.

Figure 3-35. Wetland and Waters of the US Location Map

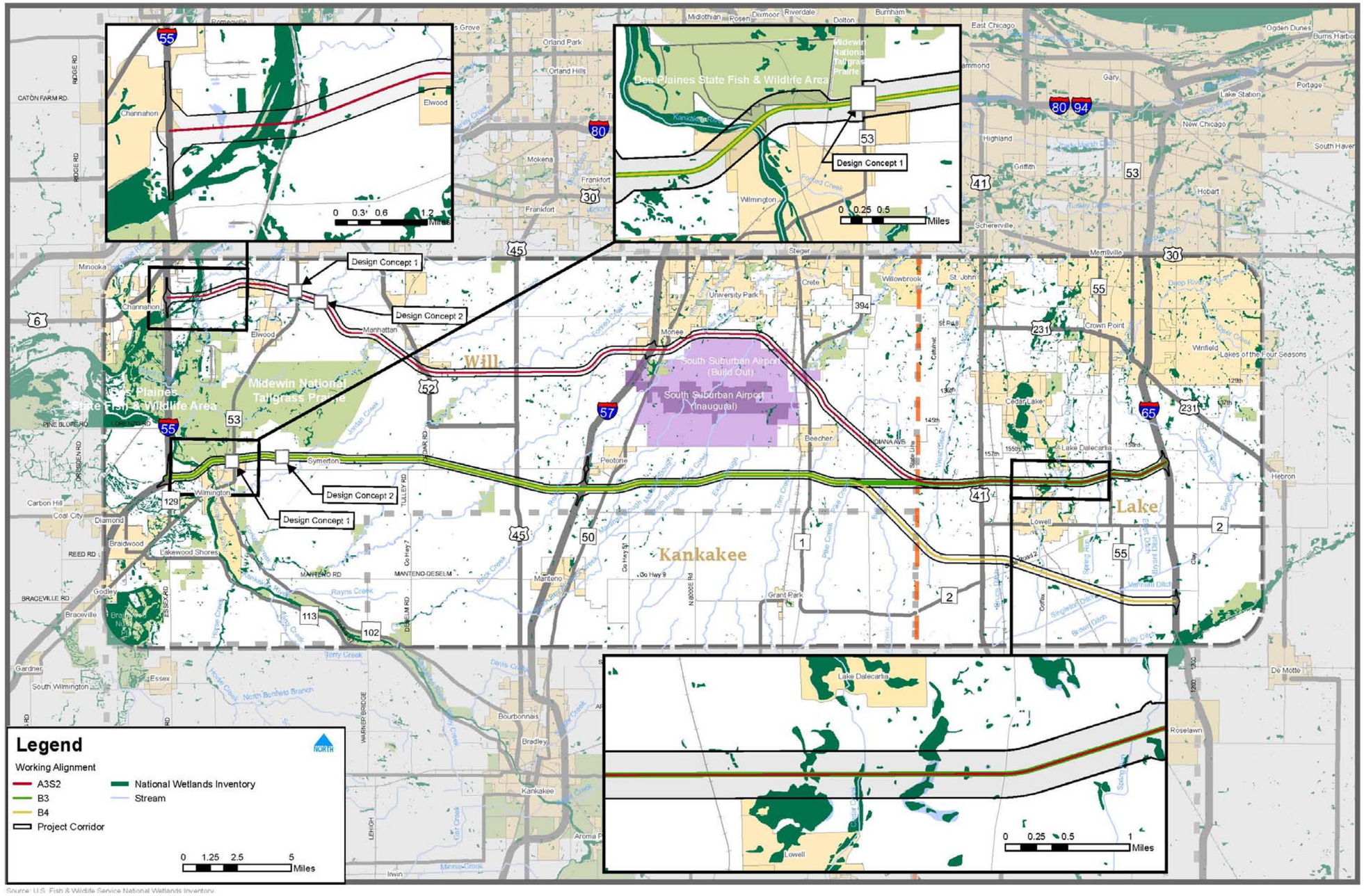

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Table 3-69. Wetland Type by NWI Classification within the Corridors in Illinois

Wetland Type[1]	Wetland Type Description	Number of Wetlands in Corridor (Total Acreage within Corridor)		
		A3S2	B3	B4
L1UBHh	Lacustrine, limnetic, unconsolidated bottom, permanently flooded, diked/impounded	2	0	0
		(58.5)	(0)	(0)
PEMA	Palustrine, emergent, temporary flooded	4	1	2
		(2.4)	(0.8)	(1.6)
PEMAdf	Palustrine, emergent, temporary flooded, partially drained/ditched, farmed	1	1	1
		(0.1)	(0.3)	(0.3)
PEMAf	Palustrine, emergent, temporary flooded, farmed	26	21	21
		(27.2)	(31.6)	(31.6)
PEMC	Palustrine, emergent, seasonally flooded	22	8	8
		(24.4)	(11.4)	(11.4)
PEMCd	Palustrine, emergent, seasonally flooded, partially drained/ditched	7	0	0
		(32.3)	(0)	(0)
PEMCf	Palustrine, emergent, seasonally flooded, farmed	1	6	7
		(0.2)	(4.3)	(5.6)
PEMF	Palustrine, emergent, semi-permanently flooded	2	3	3
		(0.7)	(5.7)	(5.7)
PEMFh	Palustrine, emergent, semi-permanently flooded, diked/impounded	1	0	0
		(20.3)	(0)	(0)
PEMFx	Palustrine, emergent, semi-permanently flooded, excavated	0	1	1
		(0)	(0.6)	(0.6)
PFO1A	Palustrine, forested, broad-leaved deciduous, temporary flooded	1	1	1
		(0.1)	(3.0)	(3.0)
PFO1Ah	Palustrine, forested, broad-leaved deciduous, temporary flooded, diked/impounded	1	0	0
		(14.5)	(0)	(0)
PFO1C	Palustrine, forested, broad-leaved deciduous, seasonally flooded	5	4	4
		(21.7)	(0.8)	(0.8)
PFO1Ch	Palustrine, forested, broad-leaved deciduous, seasonally flooded, diked/impounded	1	0	0
		(0.6)	(0)	(0)
PSS1/ EMB	Palustrine, scrub-shrub, broad-leaved deciduous/Palustrine, emergent, saturated	1	0	0
		(4)	(0)	(0)

Table 3-69. Wetland Type by NWI Classification within the Corridors in Illinois (continued)

Wetland Type[1]	Wetland Type Description	Number of Wetlands in Corridor (Total Acreage within Corridor)		
		A3S2	B3	B4
PSS1A	Palustrine, scrub-shrub, broad-leaved deciduous, temporary flooded	4	0	0
		(11)	(0)	(0)
PSS1C	Palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded	1	0	0
		(0.5)	(0)	(0)
PSS1Ch	Palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded, diked/impounded	1	0	0
		(1)	(0)	(0)
PUBF	Palustrine, unconsolidated bottom, semi-permanently flooded	1	1	2
		(0.5)	(0.05)	(0.3)
PUBFh	Palustrine, unconsolidated bottom, semi-permanently flooded, diked/impounded	1	0	0
		(0.8)	(0)	(0)
PUBFx	Palustrine, unconsolidated bottom, semi-permanently flooded, excavated	1	2	2
		(0.3)	(0.1)	(0.1)
PUBG	Palustrine, unconsolidated bottom, intermittently exposed	1	0	0
		(4.1)	(0)	(0)
PUBGh	Palustrine, unconsolidated bottom, intermittently exposed, diked/impounded	2	0	0
		(2.3)	(0)	(0)
PUBGx	Palustrine, unconsolidated bottom, intermittently exposed, excavated	7	1	0
		(7.8)	(0.3)	(0)
PUBHh	Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	2	1	1
		(2.9)	(2.3)	(2.3)
PUBHx	Palustrine, unconsolidated bottom, permanently flooded, diked/impounded	3	0	0
		(1.3)	(0)	(0)
R2UBH	Riverine, lower perennial, unconsolidated bottom, permanently flooded	0	1	1
		(0)	(22.2)	(22.2)
Total		99	52	54
		(239.6)	(83.5)	(85.5)

[1] Wetland nomenclature based on the Cowardin System (Cowardin, et al., 1979).
Source: USFWS, 2012.

Indiana

In Indiana, the Study Area is crossed by small to medium streams and ditches that are tributaries to two major rivers, the Little Calumet and Kankakee rivers. The Chicago/Calumet River Watershed makes up the northern third of the Study Area and contains approximately 2,880 acres of wetlands. The Kankakee River Watershed comprises the southern two-thirds of the Study Area and contains approximately 5,990 acres of wetlands. Sub-watersheds within the Study Area are West Creek, Bruce/Bailey Ditches, Cedar Creek, Spring Run, Greisel Ditch, Bryant Ditch, and Stony Run. Table 3-70 summarizes the wetland type by NWI classification within the project corridors in Indiana.

Table 3-70. Wetland Type by NWI Classification within the Corridors in Indiana

Wetland Type[1]	Wetland Type Description	Number of Wetlands in Corridor (Total Acreage within Corridor)		
		A3S2	B3	B4
L1UBH	Lacustrine, limnetic, unconsolidated bottom, permanently flooded	1	1	0
		(7)	(7)	(0)
PEM1/UBF	Palustrine, emergent, persistent/unconsolidated bottom semi-permanently flooded	1	1	0
		(0.6)	(0.6)	(0)
PEM1A	Palustrine, emergent, persistent, temporarily flooded	3	3	0
		(4.4)	(4.4)	(0)
PEM1Ad	Palustrine, emergent, persistent, temporarily flooded, partially drained/ditched	1	1	1
		(6.5)	(6.5)	(2.3)
PEM1C	Palustrine, emergent, persistent, seasonally flooded	13	13	3
		(20.6)	(20.1)	(5.6)
PEM1Cd	Palustrine, emergent, persistent, seasonally flooded, partially drained/ditched wetland	5	5	0
		(19.9)	(19.9)	(0)
PEM1F	Palustrine, emergent, persistent, semi-permanently flooded	3	3	0
		(27.1)	(27.1)	(0)
PFO1Ad	Palustrine, forested, broad-leaved deciduous, temporarily flooded, partially drained/ditched	1	1	0
		(8.7)	(8.7)	(0)
PFO1C	Palustrine, forested, broad-leaved deciduous, seasonally flooded	1	1	0
		(1.7)	(1.7)	(0)
PSS1/EM1C	Palustrine, scrub-shrub, broad-leaved deciduous/emergent, persistent, seasonally flooded	1	1	1
		(3.2)	(3.2)	(2)

Table 3-70. Wetland Type by NWI Classification within the Corridors in Indiana (continued)

Wetland Type[1]	Wetland Type Description	Number of Wetlands in Corridor (Total Acreage within Corridor)		
		A3S2	B3	B4
PSS1C	Palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded	1	1	1
		(1.7)	(1.7)	(1.9)
PUBFx	Palustrine, unconsolidated bottom, semi-permanently flooded, excavated	1	1	0
		(0.5)	(0.5)	(0)
PUBG	Palustrine, unconsolidated bottom, intermittently exposed	3	3	0
		(1.8)	(1.8)	(0)
PUBGh	Palustrine, unconsolidated bottom, intermittently exposed diked/impounded	3	3	0
		(1.3)	(1.3)	(0)
PUBGx	Palustrine, unconsolidated bottom, intermittently exposed, excavated	12	12	3
		(9.4)	(9.4)	(3.6)
TOTAL:		50	50	9
		(114.4)	(113.9)	(15.4)

[1] Wetland nomenclature based on the Cowardin System (Cowardin, et al., 1979).
Source: USFWS, 2012.

Based on the NWI database, the majority of wetlands within Corridor A3S2 and Corridor B3 are located within the riparian areas of West Creek and Cedar Creek. Corridor A3S2 and Corridor B3 pass through 50 identified wetlands, totaling 250 acres in their entirety. Of those wetland systems, approximately 114.4 acres and 113.9 acres are contained within Corridor A3S2 and Corridor B3, respectively. Individual wetlands range in size from 0.1 acres to 71 acres. Based on acreage, two-thirds of the wetlands are located in the riparian area of Cedar Creek and its tributaries, and are part of a larger wetland complex.

Corridor B4 passes through nine identified wetlands comprising a total of 25 acres. Individual wetlands range in size from 0.3 acres to 13 acres. Approximately 15 acres are contained within Corridor B4. Within Corridor B4, half of the wetlands occur within the Cedar Creek sub-watershed. The remaining wetlands, listed in decreasing quantity, are present in the Bryant Ditch, West Creek, and Brown Ditch sub-watersheds. Many of the wetlands are located within the riparian area of a creek; three wetlands are by an unnamed tributary to West Creek, one is by Cedar Creek, and one is by an unnamed tributary of Singleton Ditch.

Based on the NWI, five general wetland types were identified in the project corridors: L1UBH, PEM, PFO, PSS, and PUB. In number and size, PEM wetlands comprise the majority of wetlands for the project corridors.

3.12.1.3 Farmed Wetlands

Farmed Wetlands were first defined as a result of the "Swampbuster" provision of the Food Security Act of 1985 (Title 16 U.S.C. Sections 3801-3862). This act regulates the activities of farmers in regards to wetlands. Wetlands altered or manipulated before 1985 are termed "Prior Converted Wetlands" and are exempt from the Swampbuster provision. The Swampbuster provisions are intended to discourage the conversion of wetlands to agricultural production. The NRCS has authority over farmed wetlands and the determination of these areas. Since 2005, the NRCS no longer conducts farmed wetland determinations for land that will be converted from agriculture to other uses. Based on an historic aerial review, 13 farmed wetlands are anticipated to be within Corridor A3S2, eight farmed wetlands within Corridor B3, and 11 farmed wetlands within Corridor B4. The area of the farmed wetlands are not calculated from the aerial review as farmed wetland determinations were not conducted as part of the Tier One DEIS analysis.

3.12.1.4 Wetland Functions

Each of the wetland types identified within the project corridors serves different functions within the landscape. Riparian zones along the major creeks and rivers provide the majority of natural cover and habitat in this landscape, which is highly fragmented by agriculture, roads, and development. Numerous wildlife species make use of forested areas (both wetland and non-wetland) for both nesting and foraging habitat. These areas also provide a corridor for use in migration, and for more local travel. Forested wetlands are important year-round breeding habitat for amphibians. Marshes provide cover, nesting habitat, and foraging habitat for birds such as rails and bitterns. Wet meadows and sedge meadows also can provide cover, nesting habitat, and foraging habitat for birds and mammals. Habitat from farmed wetlands is minimal because these areas are generally tilled in drier years and the vegetation communities are completely disturbed.

In addition to habitat for wildlife, wetlands serve as storm water attenuation features and can serve as sediment/toxicant traps. Furthermore, these wetlands can serve as groundwater recharge areas. Wetlands adjacent to streams also serve to attenuate flood flows from the channel during high water periods.

3.12.2 Methodology for Assessing Wetland Impacts

This section describes wetland resources potentially impacted by the working alignments. Wetland impacts associated with the proposed project could include vegetation removal, discharge of clean fill material, and changes to hydrology. Impacts can be either direct or indirect. Direct wetland impacts would result from construction and the placement of fill material to construct the roadways, ramps, and grading for drainage/stormwater management facilities. Indirect impacts could result from changes in hydrologic regime, quality of stormwater runoff, or habitat continuity.

The impacts developed for the Tier One DEIS are based on approximate wetland boundaries that were identified through review of available GIS using data from NWI mapping. Potential direct wetland impacts were determined by calculating the

approximate wetland acreage located within the footprint of the working alignments using GIS. Wetlands not directly impacted by the working alignments footprint are not counted as impacted. In addition to the potential direct loss of wetland acreage associated with the working alignments, wetland functions and values may also be impacted.

Impacts to wetlands will be assessed for the working alignments to determine overall project impacts. In addition, impacts will be tallied separately for each state due to the different state regulations for Illinois and Indiana.

3.12.2.1 Criteria for Jurisdictional Determinations

On January 9, 2001 the US Supreme Court issued a decision, Solid Waste Agency of Northern Cook County (SWANCC) v. USACE (No. 99-1178). The decision reduces the regulation of isolated wetlands under Section 404 of the CWA, which assigns the USACE authority to issue permits for the discharge of dredge or fill material into waters of the US. The Supreme Court decision interpreted that the USACE jurisdiction is restricted to navigable waters, their tributaries, and wetlands that are adjacent to these navigable waterways and tributaries. The decision leaves the majority of "isolated" wetlands unregulated by the USACE.

On June 19, 2006, the US Supreme Court issued decisions in regards to John A. Rapanos v. United States (No. 04-1034) and June Carabell v. United States (04-1384), et al. The plurality decision created two 'tests' for determining CWA jurisdiction: the permanent flow of water test (set out by Justice Scalia) and the "significant nexus" test (set out by Justice Kennedy). On June 5, 2007 the USACE and USEPA issued joint guidance on how to interpret and apply the Court's ruling. The USACE will assert jurisdiction over traditionally navigable waters, adjacent wetlands, and non-navigable tributaries of traditionally navigable waters that have "relatively permanent" flow, and wetlands that border these waters, so long as such waters are not separated by roads, berms, and similar barriers. In addition, the USACE will use a case-by-case "significant nexus" analysis to determine whether temporary or intermittent waters and their adjacent wetlands are jurisdictional. A "significant nexus" can be found where these waters, including adjacent wetlands, alter the physical, biological, or chemical integrity of the traditionally navigable water based on consideration of several factors.

The jurisdictional status of wetlands is determined through field observations in combination with a review of mapped resources. Since formal delineations will not be completed until the Tier Two NEPA studies, a jurisdictional determination will not be completed in this analysis.

3.12.3 Impacts

3.12.3.1 Illinois

The working alignment within Corridor B3 and the working alignment within Corridor B4 would impact between 41.2 and 41 acres of wetlands less than the working alignment within Corridor A3S2. The working alignment within Corridor A3S2 impacts 35 wetlands totaling 55.7 acres of impact, while the working alignments within Corridor B3

and the working alignment within Corridor B4 impact 18 wetlands totaling between 14.3 and 14.5 acres and between 14.5 and 14.7 acres, respectively. Table 3-71 summarizes the properties of the wetlands impacted by the working alignments in Illinois.

Table 3-71. Wetlands Impacted by the Working Alignments within Corridors in Illinois

Wetland Type[1]	Total Acreage of Wetland	Total Acreage of Impact for Working Alignment within Corridors			Wetland Description
		A3S2	B3	B4	
L1UBHh	3,163.3	13.6[2]	--	--	Des Plaines River
PEMA	1.0	0.9	--	--	Riparian Corridor (Jackson Creek)
PEMAdf	3.8	--	0.3	0.3	Farmed Wetland (I-57 Interchange)
PEMAf	0.2	0.2	--	--	Farmed wetland
PEMAf	0.8	0.6	--	--	Open Area[3]
PEMAf	0.1	0.1	--	--	Open Area[3]
PEMAf	2.1	1.2	--	--	Farmed Wetland
PEMAf	0.4	0.4	--	--	Farmed Wetland
PEMAf	0.03	0.03	--	--	Open Area[3]
PEMAf	2.2	1.6	--	--	Farmed Wetland
PEMAf	13	--	0.01	0.01	Farmed Wetland (I-57 Interchange)
PEMAf	1.5	--	1.3	1.3	Farmed Wetland (I-57 Interchange)
PEMAf	1.2	--	1.2	1.2	Farmed Wetland (I-57 Interchange)
PEMAf	0.4	--	0.4	0.4	Farmed Wetland (I-57 Interchange)
PEMAf	0.5	--	0.5	0.5	Farmed Wetland (I-57 Interchange)
PEMAf	1.6	--	1.6	1.6	Farmed Wetland (I-57 Interchange)
PEMAf	1.3	--	1.3	1.3	Farmed Wetland (I-57 Interchange)
PEMAf	0.5	--	0.4	0.4	Farmed Wetland
PEMAf	0.2	--	0.2	0.2	Farmed Wetland
PEMAf	0.9	--	0.9-0.7[4]	0.9-0.7[4]	Farmed Wetland (headwaters of unnamed tributary to Kankakee River)
PEMC	3.2		0.3	0.3	Farmed Wetland
PEMC	0.7		0.1	0.1	Farmed Wetland
PEMC	4	--	1.8	2	Riparian Corridor (unnamed tributary to Pike Creek)
PEMC	0.6	0.6	--	--	Riparian Corridor (unnamed tributary to Monee Reservoir)

Table 3-71. Wetlands Impacted by the Working Alignments within Corridors in Illinois (continued)

Wetland Type[1]	Total Acreage of Wetland	Total Acreage of Impact for Working Alignment within Corridors			Wetland Description
		A3S2	B3	B4	
PEMC	0.3	0.1	--	--	Forested Wetland
PEMC	0.3	0.06	--	--	Riparian area within an unnamed tributary to Deer Creek
PEMC	17	0.5	--	--	Open Water Pond
PEMC	2.4	1.7	--	--	Riparian Corridor (Plum Creek)
PEMC	0.9	0.1	--	--	Forested Wetland
PEMC	2.4	0.4	--	--	Riparian Corridor (unnamed tributary to Monee Reservoir)
PEMC	1.4	0.2	--	--	Forested wetland
PEMC	1.2	0.3	--	--	Riparian Corridor (Forked Creek)
PEMCd	6.9	5.2	--	--	Riparian area of Black Walnut Creek
PEMCd	9.8	2.6	--	--	Riparian area within an unnamed tributary to Rock Creek
PEMCd	5.8	3.1	--	--	Riparian area of Black Walnut Creek
PSS1A	2.2	1.8	--	--	Wetland complex within Riparian Corridor (unnamed tributary to Monee Reservoir)
PEMC	0.9	0.02	--	--	
PEMCf	0.4	--	0.4	0.4	Farmed Wetland
PEMCf	0.3	--	0.2	0.2	Farmed Wetland
PEMF	4.3	--	0.6	0.6	Forested Area between I-55 and Kankakee River
PEMFh	24.4	4.3	--	--	Treat Island (Des Plaines River)
PSS1A	7.1	3.8	--	--	Wetland Complex within Riparian Corridor (Prairie Creek)
PFO1C	3.6	1.2	--	--	
PUBFh	0.8	0.5	--	--	Open water pond
PUBFx	0.3	0.1	--	--	Open Area[5]
PUBG	14.3	4.1	--	--	Forested area adjacent to the Des Plaines River
PUBGx	0.6	0.3	--	--	Riparian are of Pike Creek

Table 3-71. Wetlands Impacted by the Working Alignments within Corridors in Illinois (continued)

Wetland Type[1]	Total Acreage of Wetland	Total Acreage of Impact for Working Alignment within Corridors			Wetland Description
		A3S2	B3	B4	
PUBGx	0.04	0.04	--	--	Open water pond
PUBHh	2.4	1.9	--	--	Open water pond
PUBHx	0.9	0.01	--	--	Open water pond
PFO1C	5.2	3.3	--	--	Forested Wetland Complex[6]
PSS1A	1.6	0.8	--	--	
R2UBH	2,188.6	--	3	3	Kankakee River
Total		**55.7**	**14.3-14.5[4]**	**14.5-14.7[4]**	

-- Wetland not impacted by working alignment.
[1] Wetland nomenclature based on the Cowardin System (Cowardin, et al 1979).
[2] This wetland is impacted at three locations: I-55 Interchange, 3.4 acres; Des Plaines River east of Treat Island, 6.6 acres; and Des Plaines River west of Treat Island, 3.6 acres
[3] From aerial review this wetland may no long exist, converted to residential land.
[4] Design Concept 1 has the largest impact.[5] From aerial review this wetland may no long exist, converted to industrial land.
[6] From an aerial review it appears this wetland complex has been bisected twice by railroad tracks leading to an industrial facility.
Source: USFWS, 2012.

Of the 90 wetlands identified within the Corridor A3S2, 35 wetlands would be impacted by the working alignment within Corridor A3S2. No wetlands would be impacted by the working alignment within Corridor A3S2 design concepts. Individual wetlands impacted range in size from approximately 0.1 acre to 24.4 acres. Approximately 13.6 acres of the Des Plaines River complex would be impacted by the Illiana Corridor; however this complex extends beyond the working alignment within Corridor A3S2. Of the 13.6 acres impacted, 3.4 acres are associated with the I-55 interchange and 10.2 acres are associated with the crossing of the Des Plaines River by the working alignment within Corridor A3S2. An additional three wetlands impacted are within the riparian corridor of the Des Plaines River.

Wetlands impacted by the working alignment within Corridor A3S2 are generally riparian corridors adjacent to the Des Plaines River, Jackson Creek, Plum Creek, unnamed tributary to the Monee Reservoir, Forked Creek, Prairie Creek, Black Walnut Creek, and Pike Creek. The remaining wetlands impacted are farmed wetlands, open water ponds, and forested wetlands. A total of four wetlands impacted by the working alignment within Corridor A3S2 may have been impacted in the past based on an aerial review.

Of the 52 and 54 wetlands identified within Corridor B3 and Corridor B4, respectively, 18 wetlands would be impacted. No additional wetlands would be impacted by the design concepts; however, impacts to one wetland that is headwaters to an unnamed tributary to the Kankakee River would result in 0.2 acres less impact for Design Concept 2 and Design Concept 3. Design Concept 1 impacts this wetland in its entirety. Individual wetlands impacted range in size from approximately 0.1 acres to 13 acres in size. Approximately 3 acres of the Kankakee River complex would be impacted by the Illiana Corridor; however this complex extends beyond the working alignment within corridor B3 and the working alignment within Corridor B4.

Generally, wetlands impacted by the working alignment within Corridor B3 and the working alignment within Corridor B4 would be located within agricultural land. A total of 13 wetlands would be located within agricultural land, of which eight are associated with the proposed interchange with I-57. One impacted wetland appears to be forested and may be hydrologically connected to the Kankakee River. Two wetlands impacted by the working alignment within Corridor B3 and the working alignment within Corridor B4 would be associated with streams, the Kankakee River, and an unnamed tributary to Pike Creek. The impact to the unnamed tributary to Pike Creek represents the only difference in wetland impact for the working alignments within Corridors B3 and B4. The working alignment within Corridor B4 impacts 0.2 acre more of the unnamed tributary to Pike Creek than the working alignment within Corridor B3. The difference in wetland impact is due to the divergence of the working alignments within Corridors B3 and B4 at this location.

3.12.3.2 Indiana

The working alignments within Corridors A3S2 and B3 would impact 19.4 acres of wetlands more than the working alignment within Corridor B4. The working alignment within Corridor B4 would only impact one wetland totaling 0.7 acres, while the working alignments within Corridors A3S2 and B3 would impact 11 wetlands totaling 20.1 acres of impact. The impacts per each working alignment are detailed below. Table 3-72 summarizes the properties of the wetlands impacted by the working alignments in Indiana

Of the 50 wetlands identified within the Corridor A3S2 and Corridor B3, 11 wetlands totaling approximately 20.1 acres would be impacted by the working alignments within Corridors A3S2 and B3. Individual wetlands range in size between approximately 0.2 acres to 16.7 acres. The majority of wetlands impacted are located within the riparian corridor of Cedar Creek and its associated tributaries or associated with the proposed interchange at Grant Street.

A total of five wetlands impacted by the working alignments within Corridors A3S2 and B3 are located within the riparian corridor of Cedar Creek and its tributaries, four of which are associated with tributaries to Cedar Creek. One wetland is located along a railroad right-of-way, east of US 41 (Wicker Boulevard). From an aerial review, this wetland appears to be hydrologically connected to Bruce Ditch. One wetland is located within an open field adjacent to a forested area. Four wetlands would be located within the proposed interchange with Grant Street near the eastern project terminus. From an aerial review, these wetlands are one wetland complex, three of which appear to be open water ponds.

Table 3-72. Wetlands Impacted by the Working Alignments in Indiana

Wetland Type[1]	Total Acreage of Wetland	Total Acreage of Impact for Working Alignment within Corridors			Wetland Description
		A3S2	B3	B4	
PEM1/UBF	0.6	0.4	0.4	--	Open field east of White Oak
PEM1Ad	6.7	5.8	5.8	--	Emergent area associated with proposed Grant Street interchange
PEM1C	11.7	1.5	1.5	--	Emergent Riparian Corridor (unnamed tributary to Cedar Creek)
PEM1C	2.7	1.3	1.3	--	Along railroad east of U.S Route 41 (Wicker Boulevard) and unnamed tributary to Bruce Ditch
PEM1C	2.5	1.9	1.9	--	Emergent area west of Holtz Road, likely headwaters to an unnamed tributary to Cedar Creek
PEM1C	3.6	--	--	0.7	Scrub Shrub Riparian Corridor (Cedar Creek)
PEM1Cd	16.7	2.2	2.2	--	Emergent Riparian Corridor (unnamed tributary to Cedar Creek)
PEM1Cd	1.1	1.1	1.1	--	Open water area associated with proposed Grant Street interchange
PEM1Cd	0.2	0.2	0.2	--	Open water area associated with proposed Grant Street interchange
PEM1Cd	0.4	0.4	0.4	--	Open water area associated with proposed Grant Street interchange
PEM1F	3.5	2.8	2.8	--	Emergent Riparian Corridor (unnamed tributary to Cedar Creek)
PFO1Ad	9.3	2.5	2.5	--	Forested Riparian Corridor (Cedar Creek)
Total		**20.1**	**20.1**	**0.7**	

-- Wetland not impacted by working alignment
[1] Wetland nomenclature based on the Cowardin System (Cowardin, et al 1979).
Source: USFWS, 2012.

Of the nine wetlands identified within Corridor B4, one wetland totaling approximately 3.6 acres would be impacted by the working alignment within Corridor B4. The working alignment within Corridor B4 would impact 0.7 acre of the 3.6 acre scrub shrub riparian corridor adjacent to Cedar Creek.

3.12.4 Mitigation

3.12.4.1 Illinois Regulations

Interagency Wetland Protection Act of 1989 (IWPA)

The Interagency Wetland Protection Act (IWPA) is intended to ensure that there is no overall net loss of wetlands or their functional values resulting from state supported activities. Under the IWPA, state supported actions that impact wetlands require mitigation of all wetland impacts, regardless of size. Additionally, the IWPA recognizes all wetlands and is not subject to the limitations on isolated wetlands that is the current policy of the USACE. On-site mitigation through the IWPA is recognized as being within 1 mile of the project site. If on-site mitigation is not feasible, mitigation can be conducted off-site or through mitigation banks, but at a higher mitigation ratio. Table 3-73 details the wetland mitigation ratios under the IWPA.

Table 3-73. IWPA Mitigation Ratios

Degree of Adverse Impact	Location of the Replacement Wetland		
	On-Site	Off-Site	Out-of-Basin
Minimal Alteration	1.0:1 1.5:1	1.5:1	2.0:1
Significant Alteration	1.5:1	2.0:1	3.0:1
Destruction	2.5:1	4.0:1	5.5:1

Mitigation for wetland impacts will be required to follow the IDOT's Wetland Action Plan as approved by the Illinois DNR. State mitigation ratios are determined by the size of the impact (over or under 0.5 acres) and the location of the mitigation site (on-site, off-site, out-of-basin). Since the proposed project would be on a new alignment with potentially significant wetland impacts, it would be processed as a standard action that requires a wetland compensation plan and coordination with the Illinois DNR.

3.12.4.2 Indiana Regulations

Indiana State Wetland Permit Program

IC 13-18-22 provides the authority to regulate activities in wetlands that do not otherwise fall under the CWA. Typically these are isolated wetlands, but not always. The permit program defines three classes of wetlands depending upon their quality or whether they represent rare and ecologically important types. The program also defines compensatory mitigation ratios for impacts to isolated wetlands. Wetland delineation reports must be submitted to the USACE to determine whether the wetlands meet the criteria of waters of the US under the CWA before the correct permit process can be determined. If the USACE determines wetlands are present but not federally regulated, then the state permit program must be followed if impacts to state regulated wetlands are proposed. A permit application must be sent to IDEM, including an initial assessment of the class of the wetland(s) as outlined in IC 13-18-22. Compensatory

mitigation is required for activities in state-regulated wetlands. The approved mitigation ratios are outlined in 327 IAC 17-1-5 Sec. 5(a-f).

Indiana State Wetlands Memorandum of Understanding (MOU)

On January 28, 1991 the INDOT, Indiana DNR, and the USFWS signed an MOU for the purpose of improving the regulatory program process (INDOT, 2008). The MOU details the cooperation of INDOT, Indiana DNR, and USFWS regarding the determination of type and level of wetland mitigation required. Table 3-74 details wetland mitigation ratios agreed to by the three agencies.

Table 3-74. Indiana MOU Mitigation Ratios

Wetland Type	Mitigation Ratio
Farmed	1 to 1
Scrub-shrub and palustrine/lacustrine emergent	2-3 to 1 depending upon quality
Bottomland hardwood forest	3-4 to 1 depending upon quality
Exceptional, unique, critical (i.e., cypress swamp)	4 and above to 1 depending upon quality

Source: INDOT, 2008. Procedural Manual for Preparing Environmental Documents. Appendix EE. Wetlands MOU (1991).

3.12.4.3 Wetland Impact Avoidance and Minimization

The sequence of addressing wetland impacts is avoidance and minimization and then, for those areas that cannot be avoided or further minimized, mitigation of wetland impacts.

Recognizing the conceptual engineering detail of the working alignments, further efforts would be made in future phases of work for the working alignments to avoid and minimize wetland impacts beyond the efforts in this Tier One DEIS. Avoidance and minimization could be accomplished in the following ways:

- Alignment shifts of roadways; or
- Narrower roadway cross-section with the use of:
  - narrower center median,
  - narrower shoulder,
  - retaining walls,
  - steeper roadway embankments,
  - enclosed drainage systems, and
  - bridging critical wetland resources.

3.12.4.4 Compensatory Wetland Mitigation

Measures to mitigate wetland impacts are conceptually defined here and will be detailed in the Tier Two NEPA studies. As required by USACE and state regulations, final

design of the working alignments will incorporate wetland avoidance and minimization objectives prior to the development of the project mitigation plan. Compensatory wetland mitigation will be required for unavoidable wetland impacts. The compensatory wetland mitigation strategy will establish and implement wetland compensation objectives, apply established ratios for compensation commensurate with required impacted wetlands, identify locations for wetland compensation sites, and include development of plans for long term monitoring and maintenance of the mitigation wetlands.

Impacts to waters of the US may be mitigated through the purchase of waters of the US mitigation bank credits. Most wetland banks do not offer or develop waters of the US credits.

The objectives for mitigation will be established in consultation with regulatory and resource agencies on the following major issues:

- Potential purchase of mitigation credits from a commercial wetland bank;
- Type of compensatory wetland mitigation;
- In-kind replacement;
- Functional replacement;
- Ratio of wetland mitigation replacement; and
- Location of wetland mitigation replacement.

Illinois

Compensatory wetland mitigation ratios have been established by the State of Illinois in the IWPA for all state-funded projects. These established ratios are generally more stringent than those established by the USACE. The highest mitigation ratio of 5.5:1 will apply for wetland impacts in the following cases:

- Alteration of wetlands that contain state- or federal-listed threatened or endangered species;
- Wetlands that contain essential habitat for state- or federal-listed species;
- Presence of an INAI site;
- A mean C-value of 4.0 or more (Swink and Wilhelm, 1994); or
- Individual wetlands with a Floristic Quality Index (Swink and Wilhelm, 1994) of 20 or more.

The compensation ratios shown in Table 3-73 represent the current compensation guidelines required for wetland impacts in Illinois by the IWPA. Compensation ratios for impacts to High Quality Aquatic Resources will be developed with the regulatory agencies on a case-by-case basis during the Tier Two NEPA studies.

Preferences for mitigation are as follows:

- Wetland mitigation banking within a USACE approved bank;
- Onsite—within the same Hydrologic Unit and less than 1 mile from the project site;
- Offsite, within basin—the same Hydrologic Unit but more than 1 mile from the project site; or
- Offsite, out of basin—compensation not provided within the watershed of affected wetlands.

The following compensatory wetland mitigation strategies may be used with the above preferences:

- One overall compensation site;
- Preference for larger sites to facilitate long term management and replace desired wetland functions, values, and biodiversity;
- Preference for sites with no impediments to immediate design, permitting, and construction;
- Preference for sites that provide a high plant ground cover and diversity, contain minimal invasive species, provide wetland functions, and improve the quality of the resource;
- Preference for sites providing in-kind replacement of impacted wetlands and streambank ecosystems;
- Preference for sites supporting a diverse ecosystem with hydrologic connections to other ecosystems and associated riparian areas;
- Preference for sites that have a high likelihood of success;
- Restoration and enhancement of existing wetlands;
- Participation in wetland creation programs; and
- Acquisition/land protection.

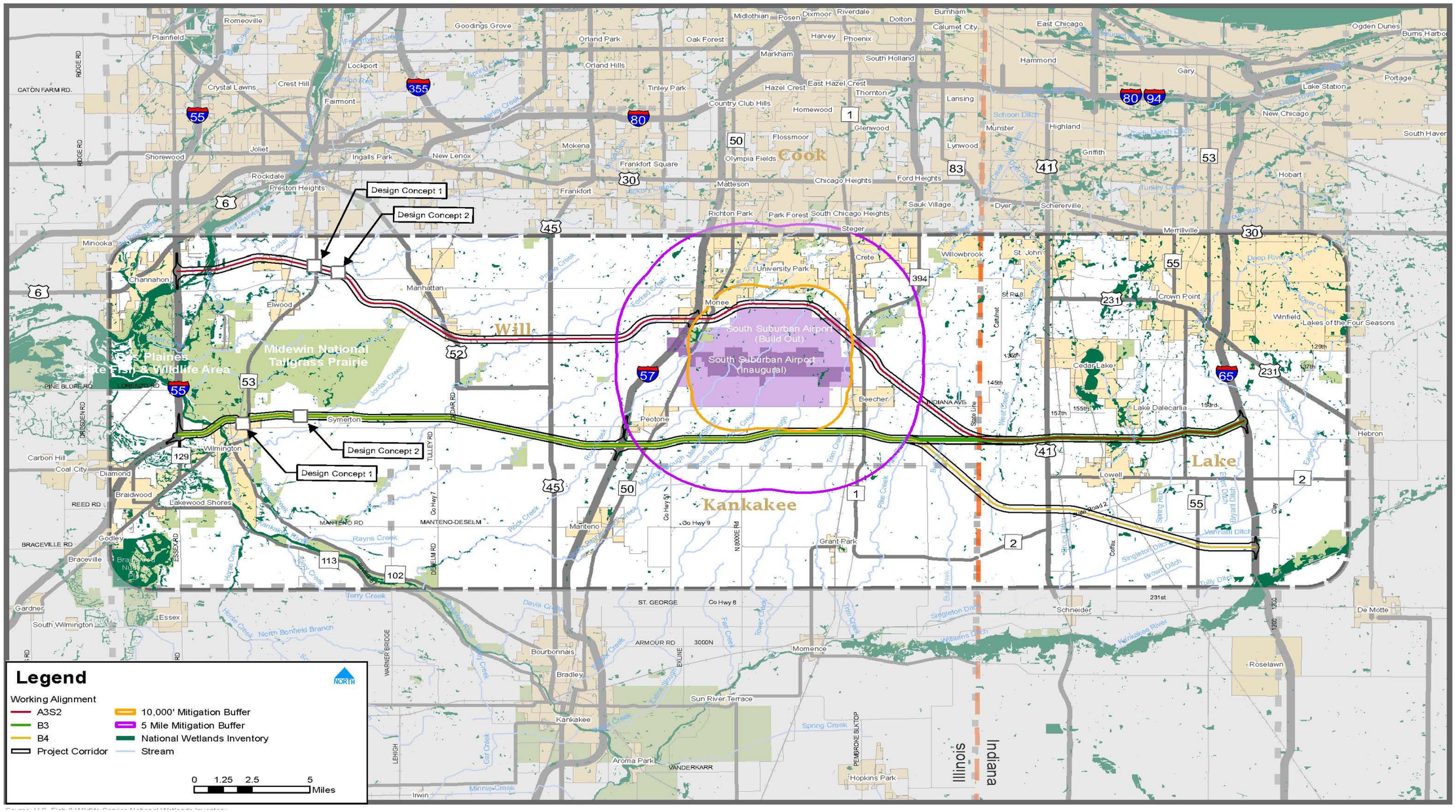
The conceptual mitigation plan will be negotiated with the regulatory agencies and will be determined during the Tier Two NEPA studies. Because the project extends across the Illinois and Indiana border, different state mitigation policies are in place. As a result, it is anticipated that mitigation for wetland impacts will be conducted at different sites for each state separately. Compensatory wetland and waters of the US mitigation will be provided for wetland and waters of the US impacts that cannot be avoided. Wetland and waters of the US impacts that occur in Illinois will be mitigated within the State of Illinois. Currently within Will County there are four wetland banks within the Des Plaines River Watershed. There is one wetland bank in the Chicago/Calumet River watershed and there are no wetland banks in the Kankakee River Watershed. Wetland and waters of the US mitigation options will be coordinated with the appropriate regulatory agencies and will be discussed further during the Tier Two NEPA studies.

The selection of mitigation may be constrained in Illinois by the future development of the SSA. For aviation safety, the Federal Aviation Administration (FAA) discourages developments around airports that may be attractants to wildlife. Figure 3-36 depicts the FAA mitigation buffers around the SSA. Two different sized buffers are shown on the figure. FAA Advisory Circular, *Hazardous Wildlife Attractants On or Near Airports*, (Advisory Circular No: 150/5200-33B) recommends that wetland mitigation projects that may attract hazardous wildlife be sited at least 10,000 feet from the air operations area of an airport serving turbine-powered aircraft and five statute miles if the attractant may cause hazardous wildlife movement into or across the approach or departure airspace. Coordination with the FAA will be initiated prior to final development of the mitigation plan.

Indiana

Compensatory wetland and waters of the US mitigation will be provided for wetland and waters of the US impacts that cannot be avoided or minimized. Wetland and waters of the US impacts that occur in Indiana will be mitigated within the State of Indiana. Currently in Indiana, no wetland banks exist in or near the project area or the Kankakee River Watershed. Lake County Parks and Indiana DNR lead wetland restoration efforts near Shelby and other locations in the Kankakee River Watershed. On-site mitigation is preferred, but wetland and waters of the US mitigation for the proposed project would likely include wetland restoration within Cedar Creek or the greater Kankakee River Watershed in collaboration with local groups. Wetland mitigation options will be coordinated with the appropriate regulatory agencies and will be discussed further in the Tier Two NEPA studies.

Figure 3-36. FAA Mitigation Buffer around the South Suburban Airport



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