Airport Master Plan For The
South Suburban Airport Project

CONCEPT ALTERNATIVES ANALYSIS FOR THE INAUGURAL AIRPORT PROGRAM SOUTH SUBURBAN AIRPORT

Chapter 4
Appendix A

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Prepared for the
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Introduction

This appendix provides detailed information on the methodology and data used to evaluate the concept alternatives. For each evaluation matrix contained in the main body of the report, supplementary information is provided including the methodology employed for each criterion, sources of information, the raw data for each criterion by concept alternative, and the scoring assignments for each criterion (scoring values assigned to the raw data). This information is provided for each of the six evaluation matrices presented in Sections 3 through 8 of the report, namely:

- Table 3-2 – Ultimate Airfield Concept Alternatives Evaluation Matrix (see page 31)
- Table 4-2 – Ultimate Airport Landside Access Alternatives Evaluation Matrix (see page 47)
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The definition of each criterion is not repeated in this appendix, but can be found in the appropriate section of the report.

1998 Phase 1 Engineering Study

The Illinois Department of Transportation (IDOT) sponsored the Phase 1 Engineering Study from 1994 through 1998. It resulted in a series of reports and an Environmental Assessment (EA) on the proposed South Suburban Airport (SSA). The material presented in Section 2 of the Concept Alternatives Analysis summarizes the findings of the report entitled *Selection of the Recommended Runway Configuration*, which documents the rationale for an east-west runway configuration at SSA, as well as identifying various alternatives to that configuration examined by IDOT. The information from the Phase 1 Engineering Study was re-examined and included in this report to affirm that the recommended runway configuration from the Phase 1 Engineering Study is still valid.

Ultimate Airfield Concept Alternatives Evaluation Matrix

Table A-1 describes the analysis methodology used for each criterion in the evaluation of the ultimate airfield concept alternatives. **Table A-2** presents the results of the evaluation analysis in actual numbers/raw data. **Table A-3** shows how the scoring numbers were assigned to those criteria with gradations of data (i.e., area calculations, population, traffic volumes, time, etc.). For the ultimate airfield concept alternatives, scoring was distributed proportionately between the high and low values for criteria 5, 6, and 7c through 8e. Table 3-3 in Section 3 details the scoring assignments for criteria 1 through 4, 7a and 7b. Scoring calculations for criterion 9 are shown in **Table A-4**. Taxiing time calculations are shown in **Table A-5**.

Table A-1
Ultimate Airfield Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
1	Ability to accommodate potential long-term future aviation demand (beyond DBO+20)	Each concept alternative was evaluated to determine if it could accommodate at least 1.3 million annual operations. Airfield capacity was estimated based on information contained in FAA Advisory Circular 150/5060-5, Change 2, *Airport Capacity and Delay.* This criterion was used as a screening criterion – if a concept alternative had an estimated capacity of at least 1.3 million annual operations, it received a "Yes" and was retained for further evaluation; if the estimated capacity was less than 1.3 million annual operations, the concept alternative received a "No" and was eliminated from further consideration.
2	Preserve the option to provide an airfield capable of accommodating up to four simultaneous independent approaches under all-weather conditions	Each concept alternative was evaluated to determine if it had the ability to accommodate four simultaneous independent approach procedures (SIAP), based on criteria published in FAA Advisory Circular 150/5060-5, Change 2, *Airport Capacity and Delay*. This criterion was also used as a screening criterion – if a concept alternative could accommodate four SIAP, then it received a "Yes" and was retained for further evaluation; if a concept alternative could not accommodate four SIAP, then it received a "No" and was eliminated from further consideration.
3	Ability to avoid runway incursions	Each concept alternative was evaluated to determine if a perimeter taxiway system could be established. A perimeter taxiway system would eliminate the potential for runway incursions, since aircraft could avoid crossing active runways. In order for a perimeter taxiway system to be established, sufficient room has to be available off the ends of the proposed runways to place the taxiways outside of the Runway Protection Zones and ensure that the tails of taxiing planes would be below the approach surface. To be conservative, the tail height of an Airbus 380 aircraft was used to establish the minimum distance required for a perimeter taxiway system. Each concept alternative was first examined to determine if space exists off the ends of the proposed runways for construction of a perimeter taxiway system. If sufficient space existed, then the number of places where a taxiing plane could not avoid crossing a runway was assumed to be "0". If space did not exist due to conflicts with existing features (e.g., Beecher Landfill), then the number of places where a taxiing plane could not avoid crossing a runway was counted.
4	Ability to provide for future landside and terminal expansion in balance with the airfield	This criterion examined the separation distance between the two inner parallel runways to determine the potential space available for terminal facilities. Measurements were taken from the centerline of each of the two inner parallel runways to determine distance. Dimensions are indicated on Exhibits 3-1 through 3-9.

Table A-1
Ultimate Airfield Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
5	Ability to provide for flexible and balanced airfield operations	Each concept alternative was evaluated to determine the longest taxiing time for departing aircraft under either a west or east flow configuration. Assumptions were made concerning taxi speed (15 miles per hour) and wait times at runway and taxiway crossings. Distances were calculated from each runway end, and then times were calculated based on distance and the number of crossings. The shortest taxi distance from each runway end to the same center point of the airfield was used to calculate distance. **Table A-5** provides the calculations and assumptions.
6	Ability to meet security criteria	Concept alternatives that were more compact were assumed to be easier to secure. Thus, this criterion measured the airfield perimeter (area to be encompassed by a security fence) to determine concept alternatives that may meet security criteria better than others.
7	Ability to avoid and/or minimize adverse land use impacts and community disruption	
a	*Conflicts with the comprehensive land-use plans of the neighboring communities.*	*The Northeastern Illinois Planning Commission (NIPC) released the "Land Use Plan for the Eastern Will County Area" in August 1997, the most recently published land use plan for the area that specifically accounts for the airport. This document was used as the baseline to determine if conflicts with local plans would result from a concept alternative. Conflicts were defined as airport facilities being located outside of the previously defined airport boundary (as depicted on the land use map within the NIPC report), on land planned for other uses by the communities within the airport boundary, or if air carrier runways with an 09-27 orientation would be located directly east or west of existing or planned residential land uses, as indicated in the NIPC report.*
b	*Contain all significant aircraft-generated noise, as defined by FAA, on airport property or compatible land uses.*	*Generic noise contours, based on the noise contours for the Ultimate Airport contained in the Tier 1 EIS[1], were placed on each concept alternative to determine if significant aircraft-generated noise (as defined by Federal Aviation Regulation Part 150, Airport Noise Compatibility Planning) would fall outside of the ultimate boundary identified in the Tier 1 EIS (see **Exhibits A-1** through **A-3**). If significant aircraft-generated noise would be expected to fall outside of the ultimate boundary identified in the Tier 1 EIS, the existing land use was examined to determine if it would fall on a compatible land use (as defined by Federal Aviation Regulation Part 150). Existing land use was determined by examining an updated land use map based on Exhibit 4.3-3 from the Tier 1 FEIS. Land uses shown on Exhibit 4.3-3 were verified and modified from aerial photography of the site obtained by IDOT in 2002 and a windshield survey performed by TAMS in spring of 2004.*

[1] *Final Environmental Impact Statement, Tier 1: FAA Site Approval and Land Acquisition by the State of Illinois, Proposed South Suburban Airport*, FAA, April 2002.

Table A-1
Ultimate Airfield Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
c	*Define optimal land area needed for airport-related uses (aeronautical and operational), but requires no more land than is necessary and minimizes impacts to surrounding land uses*	*This criterion examined the land area required for airfield facilities, which was calculated by determining an Air Operations Area (AOA) for each concept alternative. It was assumed that the AOA would contain all runways, taxiways, the airside terminal areas, runway protection zones, Part 77 and TERPS surfaces. The AOA for each concept alternative included a 1,500-foot offset from runway centerlines and a 600-foot offset from the edge of the Runway Protection Zone. The assumed AOA for each concept alternative is shown on Exhibits 3-1 through 3-9.*
d	*Population displacement*	*The number of residences that would be impacted by each concept alternative was determined through use of GIS. The GIS database established during the Phase 1 Engineering Study and updated for the Tier 1 EIS was used as a baseline. The number of existing residences was verified and modified from aerial photography of the site obtained by IDOT in 2002 and a windshield survey performed by TAMS in spring of 2004. Based on U.S. Census results from the 2000 Census, each house or farmhouse was assumed to contain 2.7 people; each mobile home was assumed to contain 2.0 people. All residences within the AOA for each concept alternative were counted, and then the appropriate ratio of people per residence was applied to determine potential population displacement.*
e	*Local traffic disruption and permanent closure of existing local roads, emergency vehicle and school bus routes*	*The local roads that would require closure or abandonment due to each concept alternative were identified. Roads were considered impacted if they crossed the AOA. Existing Average Daily Traffic (ADT) volumes for each road segment were identified from the IDOT web site (gis.dot.il.gov) and totaled for each concept alternative.*
8	Ability to avoid and/or minimize impacts on natural resources	
a	*Wetlands*	*Potential wetland impacts were calculated based on a GIS analysis of a wetlands database for the site created during the Phase 1 Engineering Study. A wetland delineation of the site was conducted in 1996 (see "Wetland Delineation Report", TAMS Consultants, Inc., January 1996). A review of the wetland delineation was conducted in 2004 to determine potential changes to wetland boundaries that have occurred since the delineation. The GIS database has been updated to include those changes, which are being documented in a revised Wetland Delineation Report (in progress). It was assumed that any wetland or portion of wetland located within the AOA of each concept alternative would be potentially impacted. Updated wetland boundaries within the airport site are depicted on Exhibit A-4 (see Inaugural Airport Primary Runway (09-27) Concept Alternatives section).*

Table A-1
Ultimate Airfield Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
b	*Floodplains*	*Potential floodplain impacts were calculated based on a GIS analysis of Q3 digital flood data purchased from FEMA for Will County. It was assumed that any 100-year floodplain or portion of 100-year floodplain located within the AOA for each concept alternative would be potentially impacted. Existing floodplain boundaries within the airport site are depicted on Exhibit A-4 (see Inaugural Airport Primary Runway (09-27) Concept Alternatives section).*
c	*Section 303(c) Lands*	*Potential impacts to Section 303(c) Lands were calculated based on determining whether the AOA for each concept alternative would extend into existing Section 303(c) property or whether the generic 65 DNL or higher noise contour would fall on existing Section 303(c) property. If Section 303(c) property would be impacted by either of the AOA or noise contour, the area to be potentially impacted was calculated (see **Exhibits A-1** through **A-3**).*
d	*Water Resources*	*Potential impacts to water resources were calculated by determining the linear extent of existing stream channel that would be contained within the AOA for each concept alternative. Stream channels were identified from the GIS database established for this project, and are shown on Exhibits 3-1 through 3-9.*
e	*Prime Farmland*	*Potential impacts to prime farmland were calculated by determining the amount of prime farmland soils contained within the AOA of each concept alternative. A soil map of the entire site was digitized from the Will County Soil Survey and input into the project GIS. Prime and important farmland designation for each soil type was obtained from the U.S. Department of Agriculture. Figure 5.15-3 from the Tier 1 FEIS[2] depicts the prime and important farmland soils database used for this analysis.*
9	Relative Cost Comparison	Relative costs were estimated based on the airfield area size (roughly corresponding to the amount of earthworks/grading required) and the amount of airfield paving required for each concept alternative. Ratings for the amount of airfield area and airfield paving were established separately, and then averaged together to obtain an overall rating for this criterion (see **Table A-4**).

Source: TAMS, an Earth Tech Company, 2005.

[2] *Final Environmental Impact Statement, Tier 1: FAA Site Approval and Land Acquisition by the State of Illinois, Proposed South Suburban Airport*, FAA, April 2002.

Table A-2
Ultimate Airfield Concept Alternatives
Evaluation Matrix Data

No.	Criteria	Alternative 6.0 (Base Case)	Alternative 6.1	Alternative 6.2	Alternative 6.3	Alternative 6.4	Alternative 6.5	Alternative 6.6	Alternative 6.7	Alternative 6.8
1	**Ability to accommodate potential long-term future aviation demand** (beyond DBO+20)	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes
2	**Preserve the option to provide an airfield capable of accommodating up to four simultaneous independent approaches under all-weather conditions**	Yes	Yes	No	Yes	Yes	Yes	Yes	No	Yes
3	**Ability to avoid runway incursions** (number of runway/taxiway crossings assuming perimeter taxiways)	0	0		0	2	0	0		0
4	**Ability to provide for future landside and terminal expansion in balance with the airfield** (distance in feet between center parallel runway centerlines)	7,400 ft.	5,000 ft.		7,400 ft.	7,400 ft.	7,400 ft.	7,400 ft.		5,000 ft.
5	**Ability to provide for flexible and balanced airfield operations** (taxiing times in minutes)	19.8	17.2		19.8	23.9	22.1	19.8		23.4
6	**Ability to meet security criteria** (length of perimeter AOA fence)	99,000 ft.	87,000 ft.		92,000 ft.	95,000 ft.	98,000 ft.	92,000 ft.		92,000 ft.
7	**Ability to avoid and/or minimize adverse land use impacts and community disruption**									
a	*Conflicts with the comprehensive land-use plans of the neighboring communities*	*1 conflict*	*1 conflict*		*3 conflicts*	*2 conflicts*	*1 conflict*	*1 conflict*		*1 conflict*
b	*Contain all significant aircraft-generated noise, as defined by FAA, on airport property or compatible land uses (acres outside boundary impacted by significant aircraft-generated noise)*	*369 acres*	*169 acres*		*163 acres*	*300 acres*	*208 acres*	*256 acres*		*344 acres*
c	*Optimal land area (fewest acres) needed for airport-related uses (aeronautical and operational), but requires no more land than is necessary and minimizing impacts to surrounding land uses*	*8,709 acres*	*7,203 acres*		*7,833 acres*	*7,833 acres*	*7,682 acres*	*7,682 acres*		*6,634 acres*
d	*Population displacement (population impacted)*	*1,964 people*	*2,043 people*		*1,971 people*	*1,893 people*	*1,470 people*	*1,643 people*		*2,157 people*
e	*Local traffic disruption and permanent closure of existing local roads, emergency vehicle and school bus routes (average daily traffic volumes)*	*9,025*	*6,500*		*3,075*	*6,325*	*6,125*	*6,125*		*11,375*
8	**Ability to avoid and/or minimize impacts on natural resources**									
a	*Wetlands (acres impacted)*	*96*	*81*		*88*	*95*	*88*	*86*		*91*
b	*Floodplains (acres impacted)*	*609*	*438*		*526*	*458*	*464*	*470*		*469*
c	*Section 303(c) Lands (acres impacted)*	*99.3*	*17.7*		*11.6*	*28.7*	*98.5*	*99.3*		*155.4*
d	*Water Resources (miles of stream impacted)*	*9.2*	*6.5*		*7.7*	*6.9*	*7.1*	*7.3*		*7.0*
e	*Prime Farmland (acres impacted)*	*5,963.8*	*4,742.4*		*5,519.2*	*5,298.4*	*5,105.0*	*5,101.3*		*4025.1*
9	**Relative Cost Comparison** *(accounts for relative size of site preparation in acres and total linear feet of runway pavement)*	8,709 acres + 64,000 ft.	7,203 acres+ 64,000 ft.		7,833 acres+ 64,000 ft.	7,833 acres+ 64,000 ft.	7,682 acres+ 61,500 ft.	7,682 acres+ 61,500 ft.		6,634 acres+ 64,000 ft.

Source: TAMS, an Earth Tech Company, 2005.

Table A-3
Ultimate Airfield Concept Alternatives
Evaluation Matrix Scoring Assignments

Alternative	Criteria 5 *Taxiing Time* *(minutes)*	Criteria 6 *Security Perimeter* *(linear feet)*	Criteria 7c *Land Area* *(acres)*	Criteria 7d *Population* *(people)*	Criteria 7e *Traffic Volumes* *(ADT)*	Criteria 8a *Wetlands* *(acres)*	Criteria 8b *Floodplains* *(acres)*	Criteria 8c *Section 303(c) Land* *(acres)*	Criteria 8d *Water Resources* *(miles)*	Criteria 8e *Prime Farmland* *(acres)*
6.0	19.8	99000	8709	1964	9025	96	609	99.3	9.2	5963.8
6.1	17.2	87000	7203	2043	6500	81	438	17.7	6.5	4742.4
6.3	19.8	92000	7833	1971	3075	88	526	11.6	7.7	5519.2
6.4	23.9	95000	7833	1893	6325	95	458	28.7	6.9	5298.4
6.5	22.1	98000	7682	1470	6125	88	464	98.5	7.1	5105
6.6	19.8	92000	7682	1643	6125	86	470	99.3	7.3	5101.3
6.8	23.4	92000	6634	2157	11375	91	469	155.4	7	4025.1
Max Value	23.9	99000	8709	2157	11375	96	609	155.4	9.2	5963.8
Min Value	17.2	87000	6634	1470	3075	81	438	11.6	6.5	4025.1
Range of Values	6.7	12000	2075	687	8300	15	171	143.8	2.7	1938.7
20% of Range	1.34	2400	415	137.4	1660	3	34.2	28.76	0.54	387.74

SCORE	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High
1	22.7	23.9	96600.1	99000.0	8294.1	8709.0	2019.7	2157.0	9715.1	11375.0	93.1	96.0	574.9	609.0	126.7	155.4	8.8	9.2	5576.2	5963.8
2	21.3	22.6	94200.1	96600.0	7879.1	8294.0	1882.3	2019.6	8055.1	9715.0	90.1	93.0	540.7	574.8	98.0	126.6	8.2	8.7	5188.4	5576.1
3	20.0	21.2	91800.1	94200.0	7464.1	7879.0	1744.9	1882.2	6395.1	8055.0	87.1	90.0	506.5	540.6	69.2	97.9	7.7	8.1	4800.7	5188.3
4	18.6	19.9	89400.1	91800.0	7049.1	7464.0	1607.5	1744.8	4735.1	6395.0	84.1	87.0	472.3	506.4	40.5	69.1	7.1	7.6	4412.9	4800.6
5	17.2	18.5	87000.0	89400.0	6634.0	7049.0	1470.0	1607.4	3075.0	4735.0	81.0	84.0	438.0	472.2	11.6	40.4	6.5	7.0	4025.1	4412.8

Source: TAMS, an Earth Tech Company, 2005.

Table A-4
Ultimate Airfield Concept Alternatives
Criterion 9 - Relative Cost Comparison Scoring Assignments

Alternative	Airfield Area *(acres)*	Score	Airfield Paving *(linear feet)*	Score	Averaged Score
6.0	8,709	1	64,000	1	1.0
6.1	7,203	4	64,000	1	2.5
6.3	7,833	3	64,000	1	2.0
6.4	7,833	3	64,000	1	2.0
6.5	7,682	3	61,500	5	4.0
6.6	7,682	3	61,500	5	4.0
6.8	6,634	5	64,000	1	3.0
Max Value	8,709		64,000		
Min Value	6,634		61,500		
Range of Values	2,075		2,500		
20% of Range	415		500		
	Scoring Range		**Scoring Range**		
Score	**Low**	**High**	**Low**	**High**	
1	8,294.1	8,709.0	63,500.1	64,000.0	
2	7,879.1	8,294.0	63,000.1	63,500.0	
3	7,464.1	7,879.0	62,500.1	63,000.0	
4	7,049.1	7,464.0	62,000.1	62,500.1	
5	6,634.0	7,049.0	61,500.0	62,000.0	

Source: TAMS, an Earth Tech Company, 2005.

Table A-5
Ultimate Airfield Concept Alternatives
Criterion 5 - Taxi Time Analysis

Total Taxi Time		Alternative 6.0		Alternative 6.1		Alternative 6.3		Alternative 6.4		Alternative 6.5		Alternative 6.6		Alternative 6.8	
		West Flow		West Flow		West Flow		West Flow		West Flow		West Flow		West Flow	
	R/W	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)
North Airfield	Outer	19.80	14.59	17.18	11.98	19.80	14.59	23.96	18.76	22.07	18.76	19.80	16.49	23.36	18.15
	Center	14.90	11.15	12.29	8.53	14.90	11.15	19.07	15.31	14.90	11.15	14.90	11.15	18.46	14.71
	Inner	10.77	7.66	8.15	5.05	10.77	7.66	14.93	11.83	10.77	7.66	10.77	7.66	12.06	8.95
South Airfield	Outer	19.80	14.59	17.18	11.98	19.80	14.59	19.80	14.59	19.80	14.59	19.80	14.59	16.62	15.96
	Center	14.90	11.15	12.29	8.53	14.90	11.15	14.90	11.15	14.90	11.15	14.90	11.15	11.72	12.51
	Inner	10.77	7.66	8.15	5.05	10.77	7.66	10.77	7.66	10.77	7.66	10.77	7.66	9.86	6.75
		East Flow		East Flow		East Flow		East Flow		East Flow		East Flow		East Flow	
	R/W	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)	Depart (min)	Arrive (min)
North Airfield	Outer	12.88	24.56	10.27	21.95	12.88	24.56	17.05	28.73	17.05	26.83	14.78	24.56	16.44	28.12
	Center	7.99	20.07	5.38	17.45	7.99	20.07	12.16	24.23	7.99	20.07	7.99	20.07	11.55	23.63
	Inner	3.85	11.77	1.24	9.15	3.85	11.77	8.02	15.93	3.85	11.77	3.85	11.77	5.14	13.06
South Airfield	Outer	12.88	24.56	10.27	21.95	12.88	24.56	12.88	24.56	12.88	24.56	12.88	24.56	14.25	21.38
	Center	7.99	20.07	5.38	17.45	7.99	20.07	7.99	20.07	7.99	20.07	7.99	20.07	9.35	16.88
	Inner	3.85	11.77	1.24	9.15	3.85	11.77	3.85	11.77	3.85	11.77	3.85	11.77	2.94	10.86

Table A-5 (continued)
Ultimate Airfield Concept Alternatives
Taxi Time Analysis

Total Taxi Path Length		Alternative 6.0		Alternative 6.1		Alternative 6.3		Alternative 6.4		Alternative 6.5		Alternative 6.6		Alternative 6.8	
		West Flow		West Flow		West Flow		West Flow		West Flow		West Flow		West Flow	
	R/W	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)
North Airfield	Outer	18213	11342	14763	7892	18213	11342	23713	16842	21213	16842	16413	11542	22913	16042
	Center	15707	10753	12257	7303	15707	10753	21207	16253	15707	10753	0	0	20407	15453
	Inner	14213	10115	10763	6665	14213	10115	19713	15615	14213	10115	14913	12815	15913	11815
South Airfield	Outer	18213	11342	14763	7892	18213	11342	18213	11342	18213	11342	12513	7642	14013	13142
	Center	15707	10753	12257	7303	15707	10753	15707	10753	15707	10753	0	0	11507	12553
	Inner	14213	10115	10763	6665	14213	10115	14213	10115	14213	10115	11013	8915	13013	8915
		East Flow		East Flow		East Flow		East Flow		East Flow		East Flow		East Flow	
	R/W	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)	Depart (feet)	Arrive (feet)
North Airfield	Outer	9087	20542	5637	17092	9087	20542	14587	26042	14587	23542	9287	18742	13787	25242
	Center	6587	19888	3137	16438	6587	19888	12087	25388	6587	19888	0	0	11287	24588
	Inner	5087	14213	1637	10763	5087	14213	10587	19713	5087	14213	7787	14913	6787	15913
South Airfield	Outer	9087	20542	5637	17092	9087	20542	9087	20542	9087	20542	5387	14842	10887	16342
	Center	6587	19888	3137	16438	6587	19888	6587	19888	6587	19888	0	0	8387	15688
	Inner	5087	14213	1637	10763	5087	14213	5087	14213	5087	14213	3887	11013	3887	13013

Table A-5 (continued)
Ultimate Airfield Concept Alternatives
Taxi Time Analysis

Runway/Taxiway Crossings	R/W	Alternative 6.0 West Flow		Alternative 6.1 West Flow		Alternative 6.3 West Flow		Alternative 6.4 West Flow		Alternative 6.5 West Flow		Alternative 6.6 West Flow		Alternative 6.8 West Flow	
		Depart (crossings)	Arrive (crossings)	Depart (crossings)	Arrive (crossings)	Depart (crossings)	Arrive (crossings)	Depart (crossings)	Arrive (crossings)	Depart (crossings)	Arrive (crossings)	Depart (crossings)	Arrive (crossings)	Depart (crossings)	Arrive (crossings)
North Airfield	Outer	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Center	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Inner	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Airfield	Outer	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Center	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Inner	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R/W	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)
North Airfield	Outer	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Center	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Inner	0	0	0	0	0	0	0	0	0	0	0	0	0	0
South Airfield	Outer	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	Center	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	Inner	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-5 (continued)
Ultimate Airfield Concept Alternatives
Taxi Time Analysis

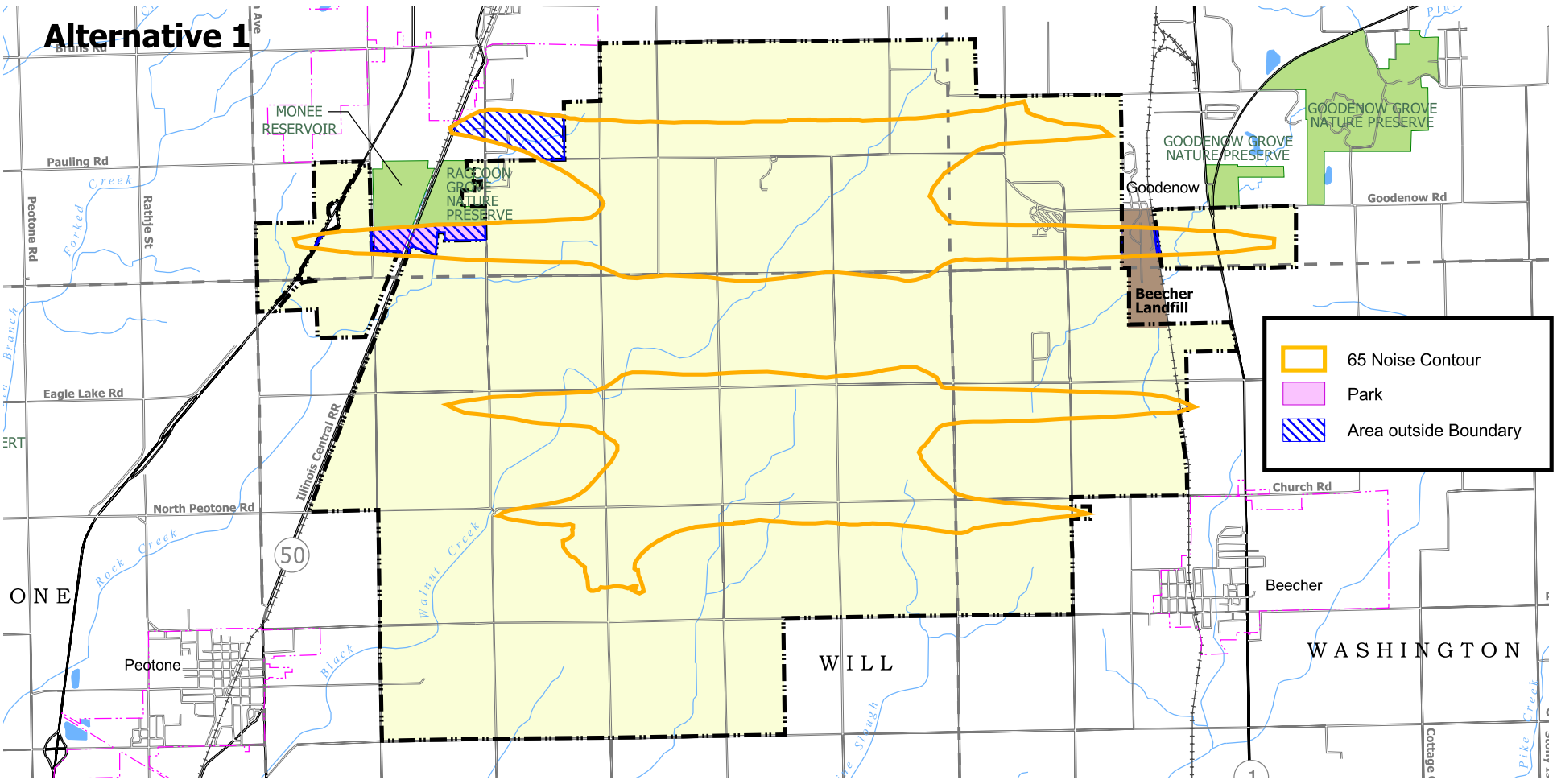
Taxiway/Taxiway Crossings	R/W	Alternative 6.0 West Flow Depart (crossings)	Alternative 6.0 West Flow Arrive (crossings)	Alternative 6.1 West Flow Depart (crossings)	Alternative 6.1 West Flow Arrive (crossings)	Alternative 6.3 West Flow Depart (crossings)	Alternative 6.3 West Flow Arrive (crossings)	Alternative 6.4 West Flow Depart (crossings)	Alternative 6.4 West Flow Arrive (crossings)	Alternative 6.5 West Flow Depart (crossings)	Alternative 6.5 West Flow Arrive (crossings)	Alternative 6.6 West Flow Depart (crossings)	Alternative 6.6 West Flow Arrive (crossings)	Alternative 6.8 West Flow Depart (crossings)	Alternative 6.8 West Flow Arrive (crossings)
North Airfield	Outer	0	3	0	3	0	3	0	3	0	3	0	3	0	3
	Center	0	2	0	2	0	2	0	2	0	2	0	2	0	2
	Inner	0	1	0	1	0	1	0	1	0	1	0	1	0	1
South Airfield	Outer	0	3	0	3	0	3	0	3	0	3	0	3	0	3
	Center	0	2	0	2	0	2	0	2	0	2	0	2	0	2
	Inner	0	1	0	1	0	1	0	1	0	1	0	1	0	1
	R/W	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)	East Flow Depart (crossings)	East Flow Arrive (crossings)
North Airfield	Outer	0	3	0	3	0	3	0	3	0	3	0	3	0	3
	Center	0	2	0	2	0	2	0	2	0	2	0	2	0	2
	Inner	0	1	0	1	0	1	0	1	0	1	0	1	0	1
South Airfield	Outer	0	3	0	3	0	3	0	3	0	3	0	3	0	3
	Center	0	2	0	2	0	2	0	2	0	2	0	2	0	2
	Inner	0	1	0	1	0	1	0	1	0	1	0	1	0	1

Source: TAMS, an Earth Tech Company, 2005.

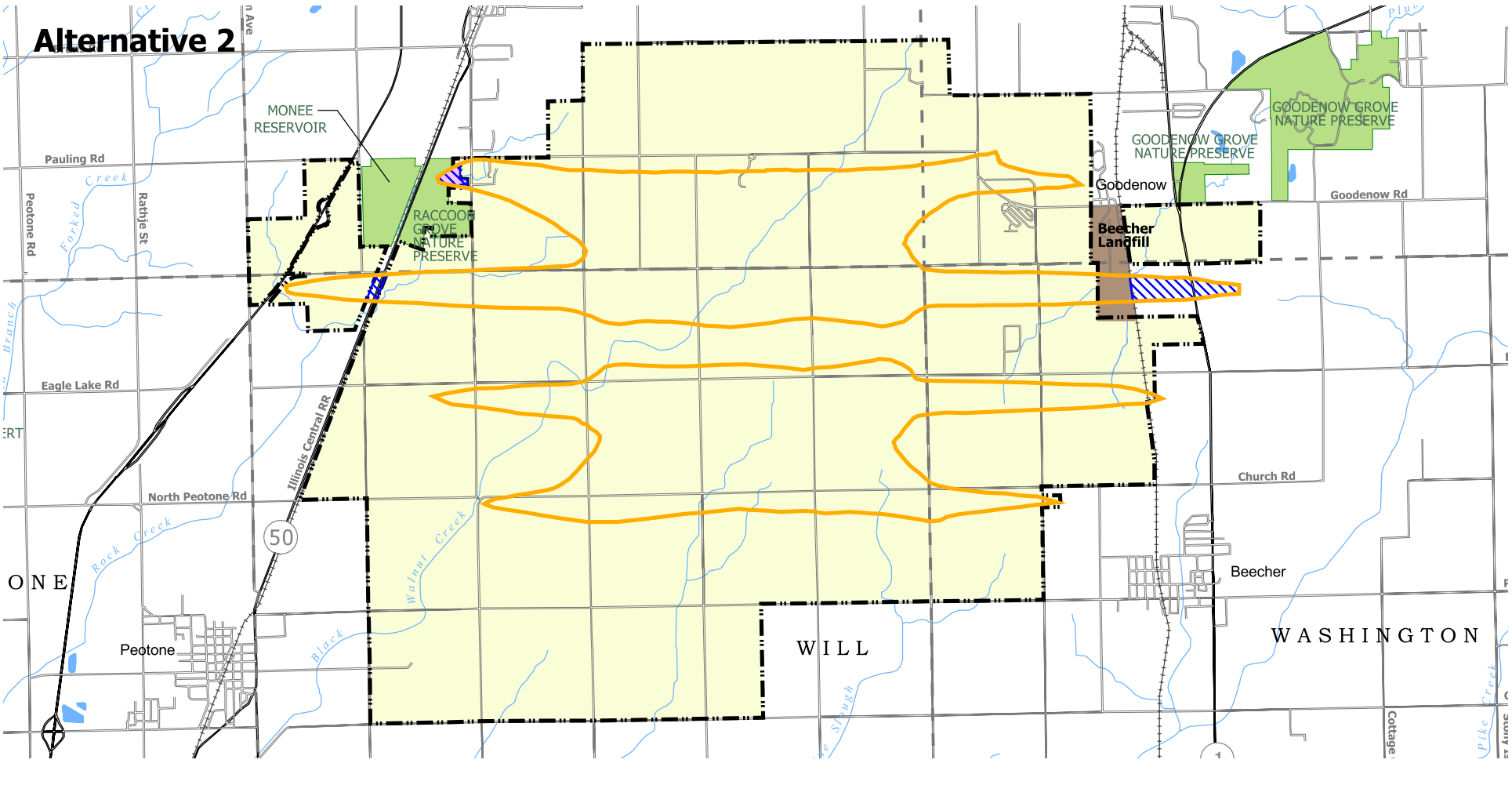
Assumptions:

1. All taxiing paths originate or end at the mid-point of the apron of a west terminal building.
2. Taxi Speed: 15 miles per hour or 1,320 feet per minute.
3. Waiting Time: Runway/Taxiway Crossing = 3 minutes; Taxiway/Taxiway Crossing = 1 minute.

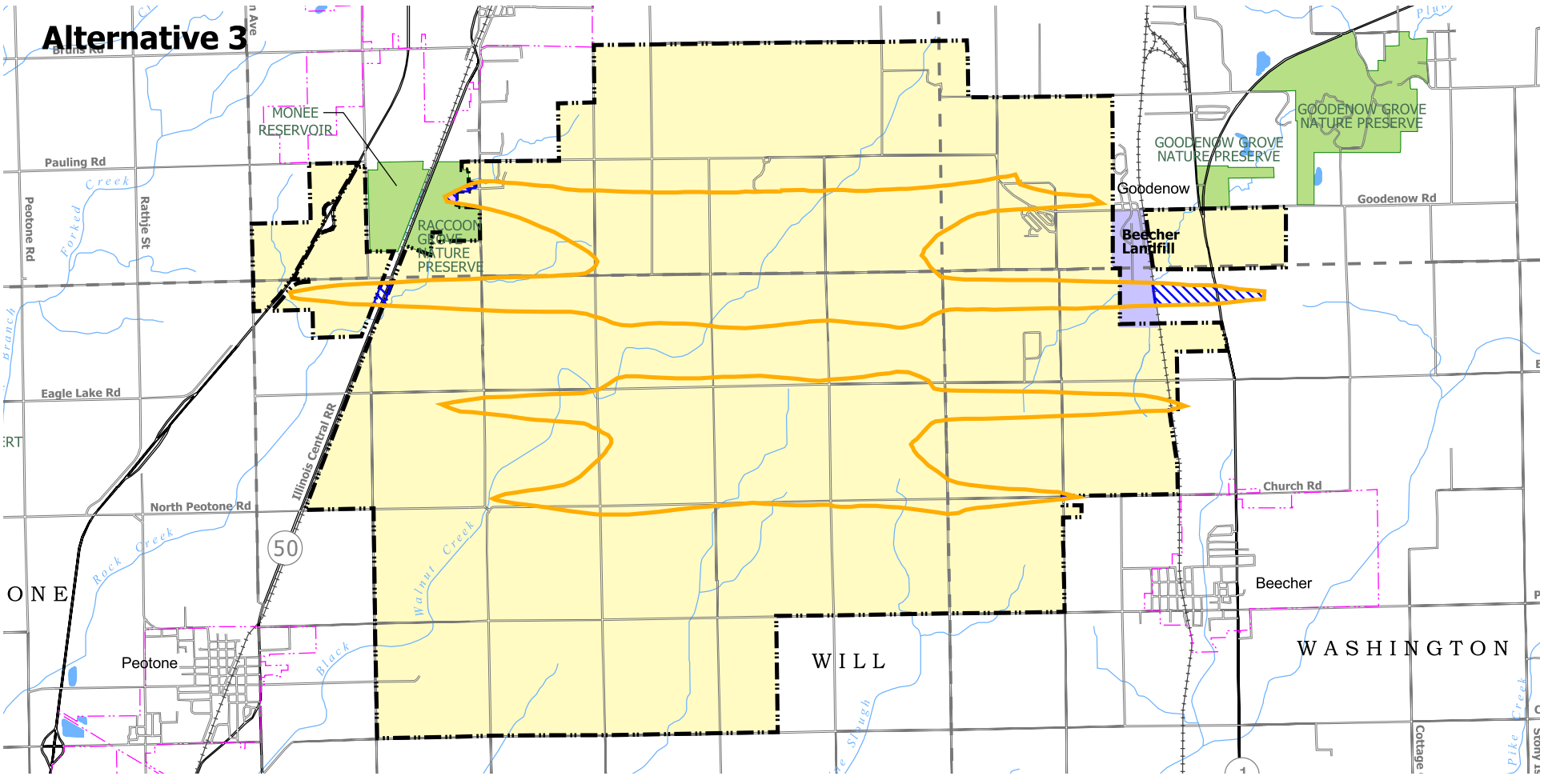
Alternative 1



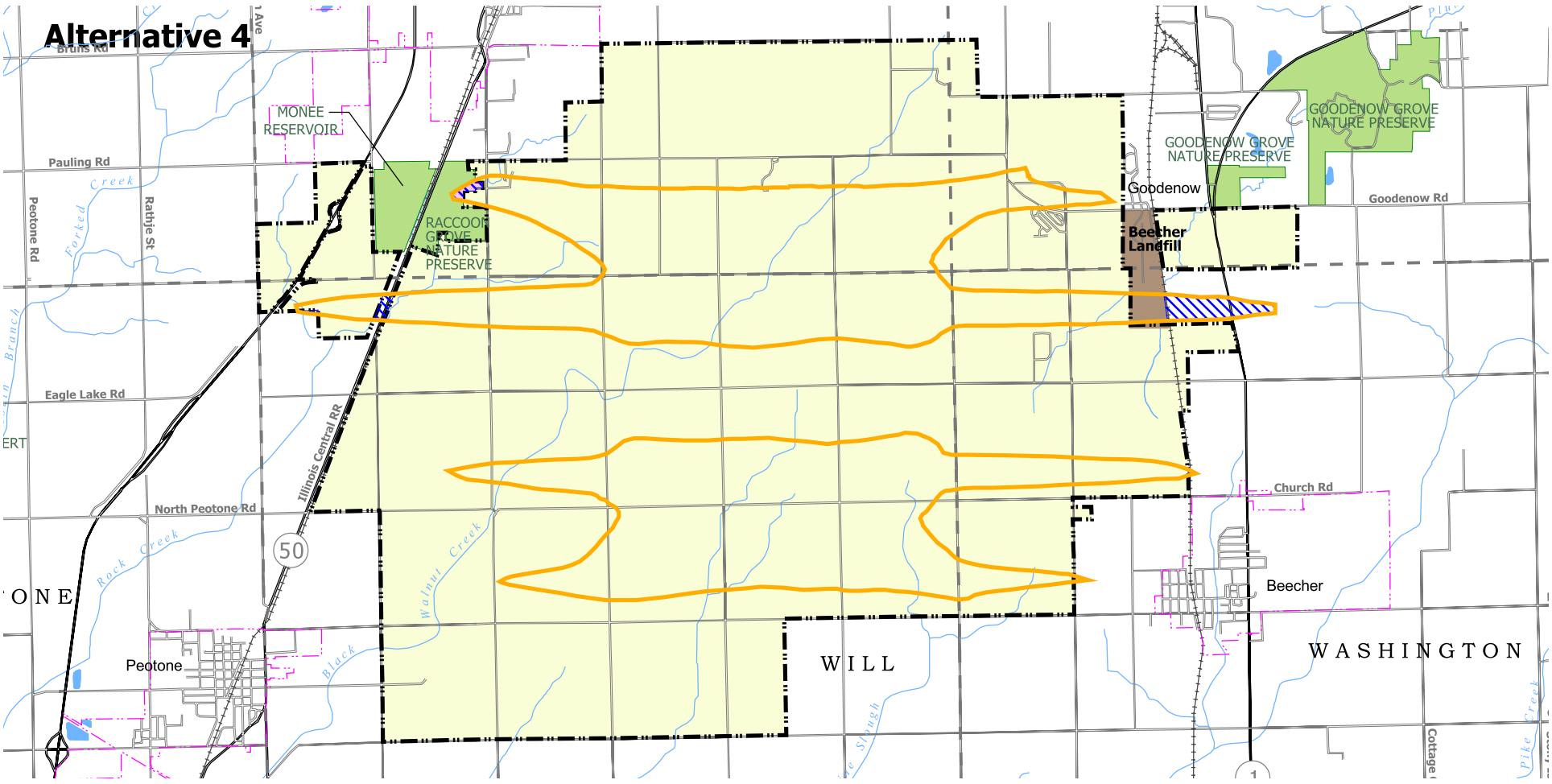
Alternative 2



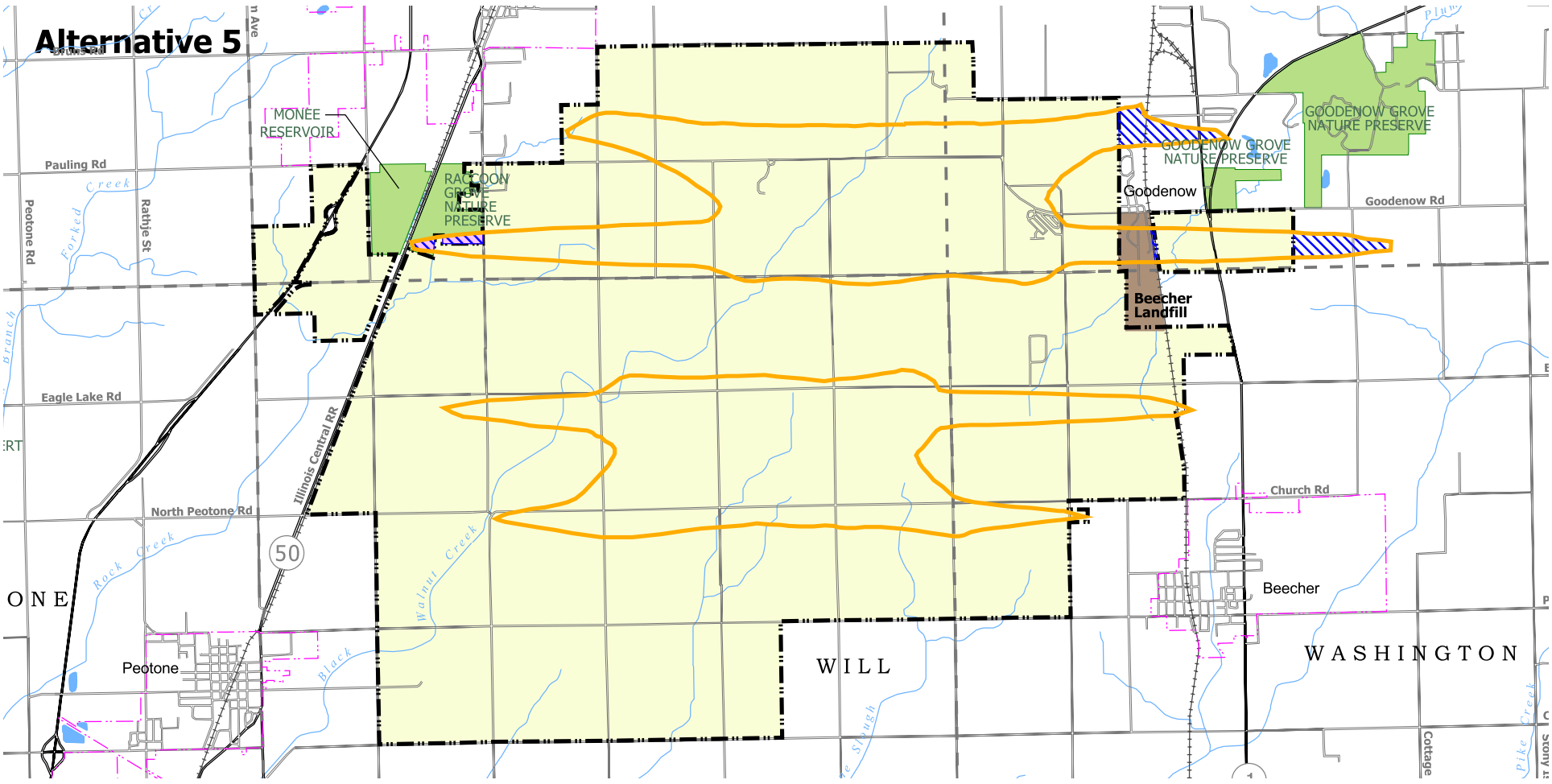
Alternative 3



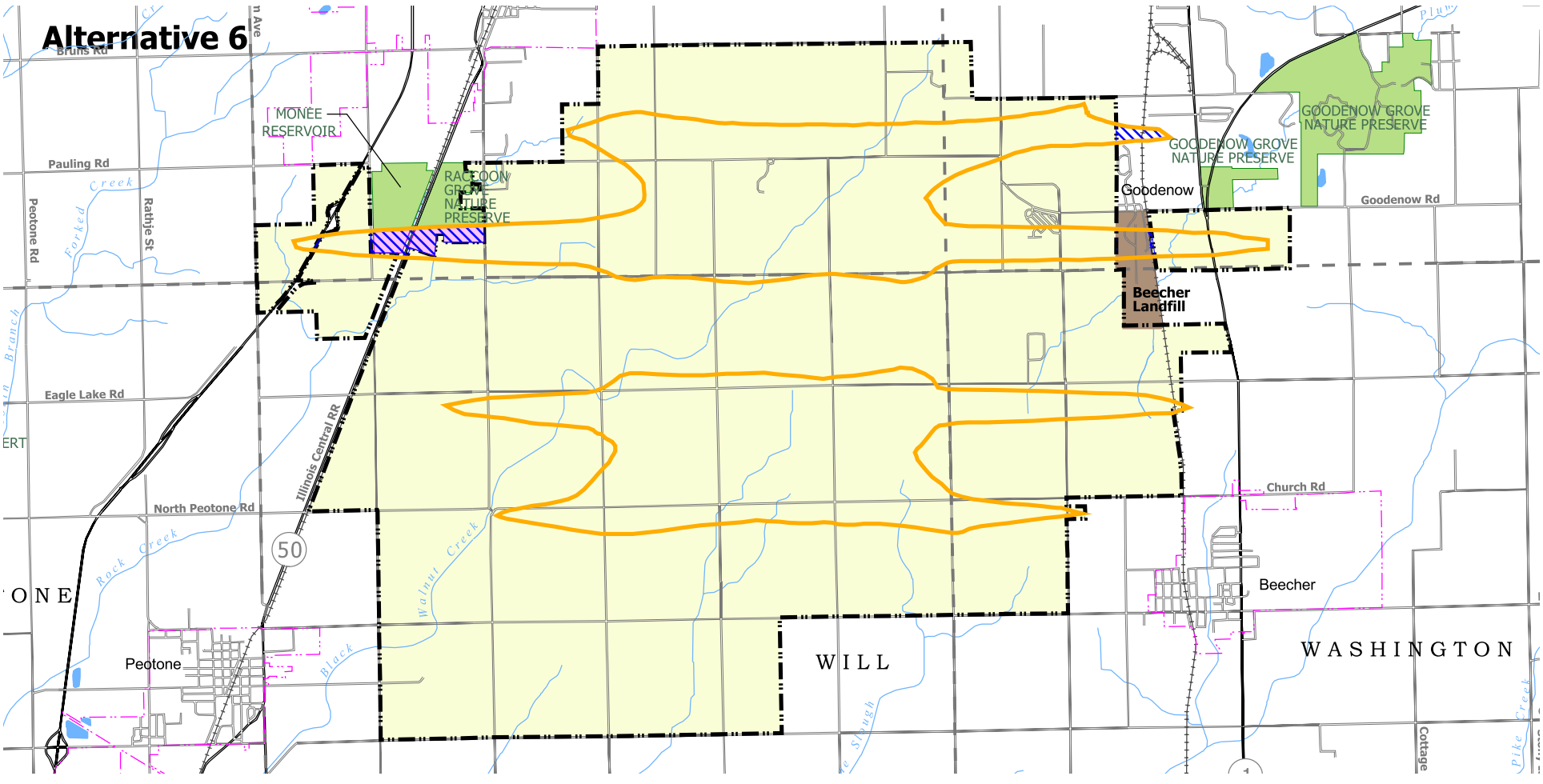
Alternative 4



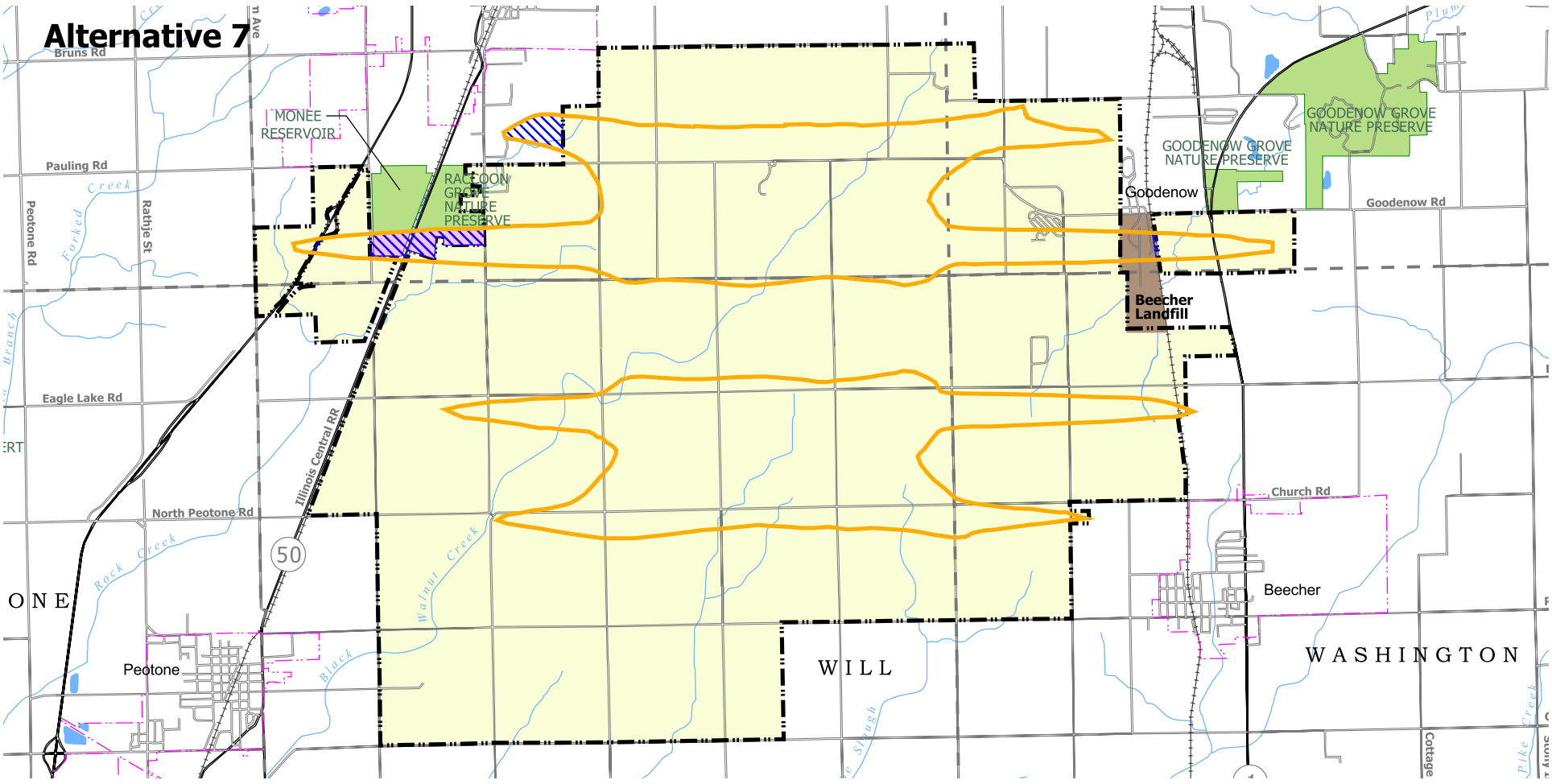
Alternative 5



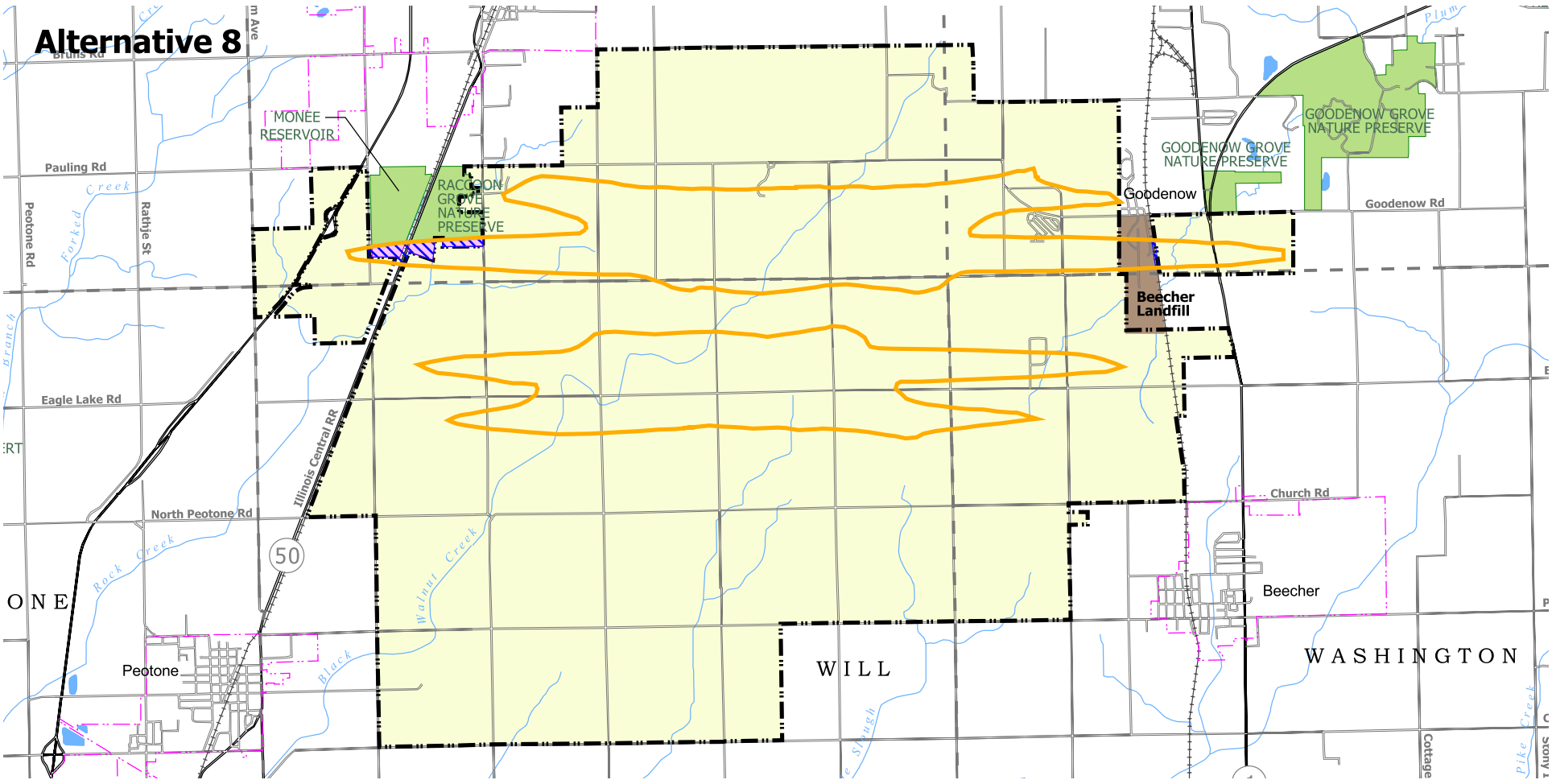
Alternative 6



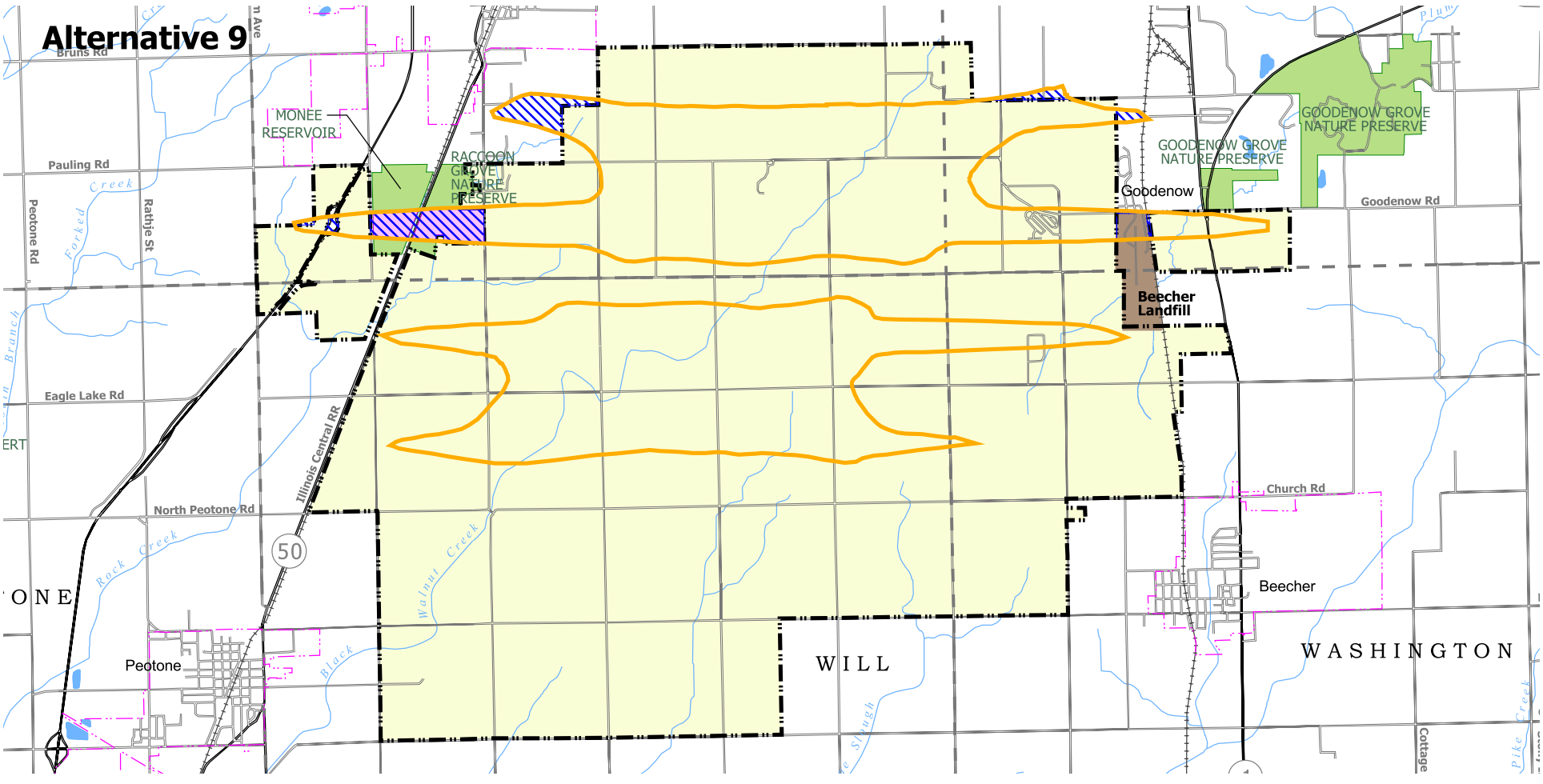
Alternative 7



Alternative 8



Alternative 9



Ultimate Airport Landside Access Concept Alternatives Evaluation Matrix

Table A-6 describes the analysis methodology used for each criterion in the evaluation of the Ultimate Airport landside access concept alternatives. **Table A-7** presents the results of the evaluation analysis in actual numbers/raw data. For the Ultimate Airport landside access concept alternatives, potential impacts to population and natural resources was equal, since all alternatives that passed the screening criterion (Criterion 1a), would essentially have the same impacts on the east and west sides of the site. Thus, for criteria 5a and 6a through 6d, the alternatives had the same potential impacts and were all given the score of 1. Table 4-3 in Section 4 details the scoring assignments for criteria 1 through 4, and 5b.

Table A-6
Ultimate Airport Landside Access Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
1	Landside Access and Capacity	
a	*Ability of access system to accommodate traffic demand beyond DBO+20*	*Average Daily Traffic (ADT) volumes for the airport access road system beyond DBO+20 were estimated based on the traffic analysis performed by CATS during the Phase 1 Engineering Study. These traffic volumes were published in the Environmental Assessment[3] and in CATS report[4]. The ADT assumed a six-runway airport and annual aircraft operations of approximately 775,000. This data was extrapolated to the theoretical capacity of the airfield, approximately 1,500,000 annual operations to determine potential ADTs under different concept alternatives. This criterion was used as a screening criteria – if an access concept alternative would not be able to accommodate a potential ultimate traffic demand, it was eliminated from further consideration.*
b	*Balanced access to airport*	*Each concept alternative was evaluated to determine if it had the ability to provide balanced access to the airport (from both east and west).*
c	*Terminal area frontage*	*This criterion measured the potential terminal frontage length, based on how the access road interfaced with the terminal area.*
2	Screened/Controlled Vehicular Access (Security)	This criterion examined whether vehicles would have direct access to the terminal area or could be prevented from having direct access to the terminal area during times of high security alerts without totally disrupting airport operations.
3	Relative Cost Comparison	Relative costs were estimated based on the length of access road to be constructed and number of interchanges required.
4	Access to Airport Development Areas	The length of the access road between either I-57 or IL-1 and the terminal area facilities was measured to determine how much land would be potentially accessible for airport-related development, an important consideration for the airport operator and users.

[3] *South Suburban Airport Environmental Assessment*, Illinois Department of Transportation, February 1998.
[4] *South Suburban Airport – Technical Report*, Chicago Area Transportation Study, November 28, 1995.

Table A-6 Ultimate Airport Landside Access Concept Alternatives Evaluation Methodology		
No.	**Criteria**	**Methodology**
5	Ability to avoid and/or minimize adverse land use impacts and community disruption	
a	*Population displacement*	*The number of residences that would be impacted by each concept alternative was determined through use of GIS. The GIS database established during the Phase 1 Engineering Study and updated for the Tier 1 EIS was used as a baseline. The number of existing residences was verified and modified from aerial photography of the site obtained by IDOT in 2002 and a windshield survey performed by TAMS in spring of 2004. Based on U.S. Census results from the 2000 Census, each house or farmhouse was assumed to contain 2.7 people; each mobile home was assumed to contain 2.0 people. All residences within the access road corridor for each concept alternative were counted, and then the appropriate ratio of people per residence was applied to determine potential population displacement.*
b	*Conflicts with the comprehensive land-use plans of the neighboring communities.*	*released the "Land Use Plan for the Eastern Will County Area" in August 1997, the most recently published land use plan for the area that specifically accounts for the airport. This document was used as the baseline to determine if conflicts with local plans would result from a concept alternative. Conflicts were defined as access roads being located outside of the previously defined airport boundary (as depicted on the land use map within the NIPC report) or on land planned for other uses by the communities within the airport boundary, as indicated in the NIPC report.*
6	Ability to avoid and/or minimize impacts on natural resources	
a	*Wetlands*	*Potential wetland impacts were calculated based on a GIS analysis of a wetlands database for the site created during the Phase 1 Engineering Study. A wetland delineation of the site was conducted in 1996 (see "Wetland Delineation Report", TAMS Consultants, Inc., January 1996). A review of the wetland delineation was conducted in 2004 to determine potential changes to wetland boundaries that have occurred since the delineation. The GIS database has been updated to include those changes, which are being documented in a revised Wetland Delineation Report (in progress). It was assumed that any wetland or portion of wetland located within the access road corridor of each concept alternative would be potentially impacted. Updated wetland boundaries within the airport site are depicted on Exhibit A-4 (see Inaugural Airport Primary Runway (09-27) Concept Alternatives section).*

Table A-6
Ultimate Airport Landside Access Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
b	*Floodplains*	*Potential floodplain impacts were calculated based on a GIS analysis of Q3 digital flood data purchased from FEMA for Will County. It was assumed that any 100-year floodplain or portion of 100-year floodplain located within the access road corridor for each concept alternative would be potentially impacted. Existing floodplain boundaries within the airport site are depicted on Exhibit A-4 (see Inaugural Airport Primary Runway (09-27) Concept Alternatives section).*
c	*Water Resources*	*Potential impacts to water resources were calculated by determining the linear extent of existing stream channel that would be contained within the access road corridor for each concept alternative. Stream channels were identified from the GIS database established for this project, and are shown on Exhibits 4-1 through 4-7.*
d	*Prime Farmland*	*Potential impacts to prime farmland were calculated by determining the amount of prime farmland soils contained within the access road corridor of each concept alternative. A soil map of the entire site was digitized from the Will County Soil Survey and input into the project GIS. Prime and important farmland designation for each soil type was obtained from the U.S. Department of Agriculture. Figure 5.15-3 from the Tier 1 FEIS[5] depicts the prime and important farmland soils database used for this analysis.*

Source: TAMS, an Earth Tech Company, 2005.

[5] *Final Environmental Impact Statement, Tier 1: FAA Site Approval and Land Acquisition by the State of Illinois, Proposed South Suburban Airport*, FAA, April 2002.

Table A-7
Ultimate Airport Landside Access Concept Alternatives
Evaluation Matrix Data

No.	Criteria	Alternative W-1 West Airport Access Only	Alternative E-1 East Airport Access Only	Alternatives EW-1 & EW-2 West and East Airport Access (no secondary vehicular connection)	Alternative EW-3 West and East Airport Access (with secondary vehicular connection)	Alternatives C-1 & C-2 Continuous Airport Access
1	**Landside Access and Capacity**					
a	*Traffic Demand on access road beyond DBO+20 (average daily traffic volumes)*	*58,000*	*58,000*	*28,000*	*28,000*	*28,000*
b	*Balanced access to airport*			*Yes*	*Yes*	*Yes*
c	*Terminal area frontage (length in feet)*			*6,720 ft.*	*6,720 ft.*	*12,000 ft.*
2	**Screened/Controlled Vehicular Access (Security)**			No access to airside, vehicles could be diverted from terminal frontage.	Vehicle access through terminal area; could provide for vehicle screening plaza.	Vehicle access through terminal area; could provide for vehicle screening plaza.
3	**Relative Cost Comparison**			6.2 miles of road + 2 interchanges	6.2 miles of road + 2 interchanges	>7 miles of road + 2 interchanges
4	**Airport-related Land Use Development Potential** (miles of frontage on access road)			6.2 miles	6.2 miles	>6.2 miles
5	**Avoid and/or minimize Land Use Impacts and Community Disruption**					
	Population displacement (population impacted)			*93 people*	*93 people*	*93 people*
b	*Conflicts with local land use plans of the neighboring communities*			*1 conflict*	*1 conflict*	*1 conflict*
6	**Avoid and/or Minimize Natural Resource Impacts**					
	Wetlands (acres impacted)			*19.9*	*19.9*	*19.9*
b	*Floodplains (acres impacted)*			*67.6*	*67.6*	*67.6*
c	*Water Resources (miles of stream impacted)*			*1.1*	*1.1*	*1.1*
d	*Prime Farmland (acres impacted)*			*513.7*	*513.7*	*513.7*

Source: TAMS, an Earth Tech Company, 2005.

Inaugural Airport Airfield Primary Runway (09-27) Concept Alternatives Evaluation Matrix

Table A-8 describes the analysis methodology used for each criterion in the evaluation of the Inaugural Airport airfield primary runway (09-27) concept alternatives. **Table A-9** presents the results of the evaluation analysis in actual numbers/raw data. **Table A-10** shows how the scoring numbers were assigned to those criteria with gradations of data (i.e., area calculations, population, traffic volumes, etc.). For the Inaugural Airport airfield primary runway (09-27) concept alternatives, scoring was distributed proportionately between the high and low values for criteria 4c through 5e. Table 6-3 in Section 6 details the scoring assignments for criteria 1 through 4b. Since the airfield perimeter for the primary runway (09-27) concept alternatives was essentially the same, all concept alternatives were given the same score for this criterion (Criterion 3). Scoring calculations for criterion 6 are shown in **Table A-11**.

Table A-8
Inaugural Airport Airfield Primary Runway (09-27) Concept Alternatives Evaluation Methodology

No.	Criteria	Methodology
1	Ability to meet aviation forecast demand and accommodate projected fleet mix (DBO+5)	Each concept alternative was evaluated to determine if it could accommodate at least 85,000 annual operations. Airfield capacity was estimated based on information contained in FAA Advisory Circular 150/5060-5, Change 2, *Airport Capacity and Delay.* This criterion was used as a screening criterion – if a concept alternative had an estimated capacity of at least 85,000 annual operations, it received a "Yes" and was retained for further evaluation; if the estimated capacity was less than 85,000 annual operations, the concept alternative received a "No" and was eliminated from further consideration.
2	Compatibility with preferred ultimate concept	Each concept alternative was evaluated to determine if it would be compatible with the preferred ultimate concept identified in Section 5. To determine compatibility, each concept alternative was overlaid on top of the preferred ultimate concept. If the primary runway would impact the ability of the ultimate airfield concept to accommodate four SIAP runways, it was considered incompatible with the preferred ultimate concept and given the lowest score for this criterion. Those concept alternatives whose primary runway would be consistent with the ultimate airfield concept and could result in a runway system capable of accommodating four SIAP (without demolishing runways), were considered compatible with the ultimate airfield concept and given the highest score for this criterion.
3	Ability to meet security criteria	Concept alternatives that were more compact were assumed to be easier to secure. Thus, this criterion measured the airfield perimeter (area to be encompassed by a security fence) to determine concept alternatives that may meet security criteria better than others.

Table A-8 Inaugural Airport Airfield Primary Runway (09-27) Concept Alternatives Evaluation Methodology		
No.	**Criteria**	**Methodology**
4	Ability to avoid and/or minimize adverse land use impacts and community disruption	
a	*Conflicts with the comprehensive land-use plans of the neighboring communities.*	*The Northeastern Illinois Planning Commission (NIPC) released the "Land Use Plan for the Eastern Will County Area" in August 1997, the most recently published land use plan for the area that specifically accounts for the airport. This document was used as the baseline to determine if conflicts with local plans would result from a concept alternative. Conflicts were defined as airport facilities being located outside of the previously defined airport boundary (as depicted on the land use map within the NIPC report), on land planned for other uses by the communities within the airport boundary, or if the inaugural runway would be located directly east or west of existing or planned residential land uses, as indicated in the NIPC report.*
b	*Contain all significant aircraft-generated noise, as defined by FAA, on airport property or compatible land uses.*	*Generic noise contours, based on the noise contours for the Inaugural Airport contained in the Tier 1 EIS[6], were placed on each concept alternative to determine if significant aircraft-generated noise (as defined by Federal Aviation Regulation Part 150, Airport Noise Compatibility Planning) would fall outside of the inaugural boundary identified in the Tier 1 EIS. If significant aircraft-generated noise would be expected to fall outside of the inaugural boundary identified in the Tier 1 EIS, the existing land use was examined to determine if it would fall on a compatible land use (as defined by Federal Aviation Regulation Part 150). Existing land use was determined by examining an updated land use map based on Exhibit 4.3-3 from the Tier 1 FEIS. Land uses shown on Exhibit 4.3-3 were verified and modified from aerial photography of the site obtained by IDOT in 2002 and a windshield survey performed by TAMS in spring of 2004.*
c	*Define optimal land area needed for airport-related uses (aeronautical and operational), but requires no more land than is necessary and minimizes impacts to surrounding land uses*	*This criterion examined the land area required for airfield facilities, which was calculated by determining an Air Operations Area (AOA) for each concept alternative. It was assumed that the AOA would contain all runways, taxiways, the airside terminal areas, runway protection zones, Part 77 and TERPS surfaces. The AOA for each concept alternative included a 1,500-foot offset from runway centerlines and a 600-foot offset from the edge of the Runway Protection Zone. The assumed AOA for each concept alternative is shown on Exhibits 6-1 through 6-11.*

[6] *Final Environmental Impact Statement, Tier 1: FAA Site Approval and Land Acquisition by the State of Illinois, Proposed South Suburban Airport*, FAA, April 2002.

Table A-8 Inaugural Airport Airfield Primary Runway (09-27) Concept Alternatives Evaluation Methodology		
No.	**Criteria**	**Methodology**
d	*Population displacement*	*The number of residences that would be impacted by each concept alternative was determined through use of GIS. The GIS database established during the Phase 1 Engineering Study and updated for the Tier 1 EIS was used as a baseline. The number of existing residences was verified and modified from aerial photography of the site obtained by IDOT in 2002 and a windshield survey performed by TAMS in spring of 2004. Based on U.S. Census results from the 2000 Census, each house or farmhouse was assumed to contain 2.7 people; each mobile home was assumed to contain 2.0 people. All residences within the AOA for each concept alternative were counted, and then the appropriate ratio of people per residence was applied to determine potential population displacement.*
e	*Local traffic disruption and permanent closure of existing local roads, emergency vehicle and school bus routes*	*The local roads that would require closure or abandonment due to each concept alternative were identified. Roads were considered impacted if they crossed the AOA. Existing Average Daily Traffic (ADT) volumes for each road segment were identified from the IDOT web site (gis.dot.il.gov) and totaled for each concept alternative.*
5	Ability to avoid and/or minimize impacts on natural resources	
a	*Wetlands*	*Potential wetland impacts were calculated based on a GIS analysis of a wetlands database for the site created during the Phase 1 Engineering Study. A wetland delineation of the site was conducted in 1996 (see "Wetland Delineation Report", TAMS Consultants, Inc., January 1996). A review of the wetland delineation was conducted in 2004 to determine potential changes to wetland boundaries that have occurred since the delineation. The GIS database has been updated to include those changes, which are being documented in a revised Wetland Delineation Report (in progress). It was assumed that any wetland or portion of wetland located within the AOA of each concept alternative would be potentially impacted.* ***Exhibits A-4*** *through* ***A-9*** *show were the AOA's potentially impact wetland areas for the concept alternatives.*
b	*Floodplains*	*Potential floodplain impacts were calculated based on a GIS analysis of Q3 digital flood data purchased from FEMA for Will County. It was assumed that any 100-year floodplain or portion of 100-year floodplain located within the AOA for each concept alternative would be potentially impacted.* ***Exhibits A-4*** *through* ***A-9*** *show were the AOA's potentially impact floodplain areas for the concept alternatives.*
c	*Section 303(c) Lands*	*Potential impacts to Section 303(c) Lands were calculated based on determining whether the AOA for each concept alternative would extend into existing Section 303(c) property or whether the generic 65 DNL or higher noise contour would fall on existing Section 303(c) property. If Section 303(c) property would be impacted by either of the AOA or noise contour, the area to be potentially impacted was calculated.*

Table A-8
Inaugural Airport Airfield Primary Runway (09-27) Concept Alternatives Evaluation Methodology

No.	Criteria	Methodology
d	*Water Resources*	*Potential impacts to water resources were calculated by determining the linear extent of existing stream channel that would be contained within the AOA for each concept alternative. Stream channels were identified from the GIS database established for this project.* ***Exhibits A-4*** *through* ***A-9*** *show were the AOA's potentially impact water resources for the concept alternatives.*
e	*Prime Farmland*	*Potential impacts to prime farmland were calculated by determining the amount of prime farmland soils contained within the AOA of each concept alternative. A soil map of the entire site was digitized from the Will County Soil Survey and input into the project GIS. Prime and important farmland designation for each soil type was obtained from the U.S. Department of Agriculture. Figure 5.15-3 from the Tier 1 FEIS[7] depicts the prime and important farmland soils database used for this analysis.*
6	Relative Cost Comparison	Relative costs were based on the estimated cut and fill (roughly corresponding to the amount of earthworks/grading required) and the amount of natural resource mitigation required. Ratings for the amount of earthworks estimated and the natural resource mitigation were established separately, and then averaged together to obtain an overall rating for this criterion (see **Table A-11**).

Source: TAMS, an Earth Tech Company, 2005.

[7] *Final Environmental Impact Statement, Tier 1: FAA Site Approval and Land Acquisition by the State of Illinois, Proposed South Suburban Airport*, FAA, April 2002.

Table A-9
Inaugural Airport Airfield Primary Runway (09-27) Concept Alternatives
Evaluation Matrix Data

No.	Criteria	Alternative A (Base)		Alternative B (North Runway)		Alternative C (Beecher Proposal)		Alternative D (Crete Proposal)		Alternative E (Shift Airfield South)		Alternative F (ALNAC Proposal)
		West	East	West	East	West	East	West	East	West	East	
1	**Ability to meet aviation forecast demand and accommodate projected fleet mix** (DBO+5)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	**Compatibility with preferred ultimate plan**	Yes	Yes	Yes	Yes	No	No	No	No	No	No	Yes
3	**Ability to meet airport security criteria** (length in feet)	41,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000	41,000	42,000
4	**Ability to Avoid and/or minimize land use impacts and community disruption**											
a	*Conflicts with the comprehensive land use plans of neighboring communities (# of conflicts)*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
b	*Contain all significant aircraft-generated noise, as defined by FAA, on airport property or compatible land uses*	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
c	*The Inaugural Airport boundary will encompass the optimal land area (fewest acres) needed for airport-related uses*	*4,700 acres*	*4,700 acres*	*4,870 acres*	*4,870 acres*	*4,351 acres*	*4,351 acres*	*4,556 acres*	*4,556 acres*	*5,262 acres*	*5,262 acres*	*4,750 acres*
d	*Population displacement (population impacted)*	*83 people*	*88 people*	*63 people*	*70 people*	*69 people*	*69 people*	*154 people*	*158 people*	*89 people*	*71 people*	*83 people*
e	*Local traffic disruption and permanent closure of existing local roads, emergency vehicles and school bus routes (average daily traffic volumes)*	*3,275 ADT*	*3,275 ADT*	*3,525 ADT*	*3,525 ADT*	*2,525 ADT*	*2,525 ADT*	*2,525 ADT*	*2,525 ADT*	*3,725 ADT*	*3,275 ADT*	*3,275 ADT*
5	**Ability to avoid and/or minimize impacts on natural resources**											
a	*Wetlands (acres impacted)*	*31.1*	*26.1*	*30.4*	*42.2*	*46.4*	*46.0*	*14.9*	*13.3*	*13.4*	*13.0*	*31.2*
b	*Floodplains (acres impacted)*	*62.4*	*30.0*	*80.6*	*80.4*	*109.0*	*108.0*	*55.0*	*42.8*	*54.9*	*58.0*	*62.4*
c	*Section 303(c) Lands (acres impacted)*	*0*	*0*	*10*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
d	*Water Resources (miles of stream impacted)*	*1.1*	*0.5*	*1.3*	*1.3*	*1.6*	*1.6*	*1.0*	*0.7*	*0.7*	*0.7*	*1.1*
e	*Prime Farmland (acres impacted)*	*623.5*	*572.6*	*515.5*	*520.9*	*585.3*	*583.8*	*565.9*	*584.7*	*783.0*	*788.2*	*634.5*
6	**Relative cost comparison** *(relative cost comparison was made based on gross estimates of earthwork plus environmental impacts – see **Table A-11**)*	5.6 million cubic yards	4.8 million cubic yards	9.2 million cubic yards	8.4 million cubic yards	6.7 million cubic yards	8.7 million cubic yards	11.1 million cubic yards	11.2 million cubic yards	3.3 million cubic yards	6.3 million cubic yards	6.4 million cubic yards

Source: TAMS, an Earth Tech Company, 2005.

Table A-10
Inaugural Airport Airfield Primary Runway (09-27) Concept Alternatives
Evaluation Matrix Scoring Assignments

Alternative	Criteria 4c *Optimal Land Area* (acres)	Criteria 4d *Population* (people)	Criteria 4e *Traffic Volumes* (ADT)	Criteria 5a *Wetlands* (acres)	Criteria 5b *Floodplains* (acres)	Criteria 5c *Section 303(c) Land* (acres)	Criteria 5d *Water Resources* (miles)	Criteria 5e *Prime Farmland* (acres)
A West	4700	82	3275	31.1	62.4	0	1.1	623.5
A East	4700	88	3275	26.1	30	0	0.5	572.6
B West	4870	63	3525	30.4	80.6	0	1.3	515.5
B East	4870	70	3525	42.2	80.4	0	1.3	520.9
C West	4351	69	2525	46.4	109	0	1.6	585.3
C East	4351	69	2525	46	108	0	1.6	583.8
D West	4556	153	2525	14.9	55	0	1	565.9
D East	4556	158	2525	13.3	42.8	0	0.7	584.7
E West	5262	89	3725	13.4	54.9	0	0.7	783
E East	5262	70	3725	13	58	0	0.7	788.2
F	4740	82	3275	31.1	62.4	0	1.1	634.5
Max Value	5262	158	3725	46.4	109	0	1.6	788.2
Min Value	4351	63	2525	13	30	0	0.5	515.5
Range of Values	911	95	1200	33.4	79	0	1.1	272.7
20% of Range	182.2	19	240	6.68	15.8	0	0.22	54.54

	Scoring Range		Scoring Range		Scoring Range		Scoring Range		Scoring Range		Scoring Range		Scoring Range		Scoring Range	
SCORE	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**
1	5079.9	5262.0	139.1	158.0	3485.1	3725.0	39.8	46.4	93.3	109.0			1.5	1.6	733.8	788.2
2	4897.7	5079.8	120.1	139.0	3245.1	3485.0	33.1	39.7	77.5	93.2			1.3	1.4	679.2	733.7
3	4715.5	4897.6	101.1	120.0	3005.1	3245.0	26.5	33.0	61.7	77.4			1.0	1.2	624.7	679.1
4	4533.3	4715.4	82.1	101.0	2765.1	3005.0	19.8	26.4	45.9	61.6			0.8	0.9	570.1	624.6
5	4351.0	4533.2	63.0	82.0	2525.0	2765.0	13.0	19.7	30.0	45.8	0	0	0.5	0.7	515.5	570.0

Source: TAMS, an Earth Tech Company, 2005.

Table A-11
Inaugural Airport Airfield Primary Runway (09-27) Concept Alternatives
Criterion 6 - Relative Cost Comparison Scoring Assignments

Alternative	Gross Estimates for Earthworks		Natural Resource Impact Score[1]	Averaged Score
	(cubic yards)	Score		
A-West	5,616,000	4	3.6	3.8
A-East	4,813,000	5	4.6	4.8
B-West	9,226,000	2	2.6	2.3
B-East	8,423,000	2	3.0	2.5
C-West	6,685,000	3	2.4	2.7
C-East	8,691,000	2	2.4	2.2
D-West	11,097,000	1	4.4	2.7
D-East	11,231,000	1	4.8	2.9
E-West	3,343,000	5	4.0	4.5
E-East	6,284,000	4	4.0	4.0
F	6,400,000	4	3.4	3.7
Max Value	11,231,000			
Min Value	3,343,000			
Range of Values	7,888,000			
20% of Range	1,577,600			

Score	Scoring Range	
	Low	**High**
1	9,653,400.1	11,231,000
2	8,075,800.1	9,653,400
3	6,498,200.1	8,075,000
4	4,920,600.1	6,498,200
5	3,343,000	4,920,600

Source: TAMS, an Earth Tech Company, 2005.
[1]From Table A-9.

SOUTH SUBURBAN AIRPORT

Inaugural Runway Alternative A

Legend

- Ultimate Acquisition Boundary
- Power Line
- Water Feature
- Forest Preserve District of Will County Property
- Landfill
- Alternative A AOA West
- Alternative A AOA East
- 100-year Floodplain
- Wetland

N

2000 0 2000 4000 Feet

500 0 500 1000 Meters

Source: TAMS Consultants, Inc., 2002.

Figure ?

Monee
Crete-Monee Rd
S. Harlem Ave
Pauling Rd
Highland Ave
Goodenow
Beecher Landfill
Illinois Central RR
Church Rd
Peotone
Beecher
WILL
W A
Black
Marshall Slough
Exline Slough
Trim Creek
1
50

SOUTH SUBURBAN AIRPORT

Inaugural Runway Alternative D

Legend

- Ultimate Acquisition Boundary
- Power Line
- Water Feature
- Forest Preserve District of Will County Property
- Landfill
- Alternative D AOA West
- Alternative D AOA East
- 100-year Floodplain
- Wetland

N

2000 0 2000 4000 Feet

500 0 500 1000 Meters

Source: TAMS Consultants, Inc., 2002.

Figure ?

Monee
Crete-Monee Rd
S. Harlem Ave
Pauling Rd
Highland Ave
Goodenow
Beecher Landfill
Illinois Central RR
North Peotone Rd
Church Rd
Peotone
Beecher
WILL
W A
Black
Exline Slough
Kennedy Rd
1
50

SOUTH SUBURBAN AIRPORT

Inaugural Runway Alternative B

Legend

- Ultimate Acquisition Boundary
- Power Line
- Water Feature
- Forest Preserve District of Will County Property
- Landfill
- Alternative B AOA West
- Alternative B AOA East
- 100-year Floodplain
- Wetland

N

2000 0 2000 4000 Feet

500 0 500 1000 Meters

Source: TAMS Consultants, Inc., 2002.

Figure ?

Monee
Crete-Monee Rd
S. Harlem Ave
Highland Ave
Pauling Rd
Goodenow
Beecher Landfill
Illinois Central RR
North Peotone Rd
Church Rd
Beecher
WILL
W A
Black
Exline Slough
Kennedy Rd
1
50

SOUTH SUBURBAN AIRPORT

Inaugural Runway Alternative C

Legend

- Ultimate Acquisition Boundary
- Power Line
- Water Feature
- Forest Preserve District of Will County Property
- Landfill
- Alternative C AOA West
- Alternative C AOA East
- 100-year Floodplain
- Wetland

N

2000 0 2000 4000 Feet

500 0 500 1000 Meters

Source: TAMS Consultants, Inc., 2002.

Figure ?

SOUTH SUBURBAN AIRPORT

Inaugural Runway Alternative E

Legend

- Ultimate Acquisition Boundary
- Power Line
- Water Feature
- Forest Preserve District of Will County Property
- Landfill
- Alternative E AOA West
- Alternative E AOA East
- 100-year Floodplain
- Wetland

N

2000 0 2000 4000 Feet

500 0 500 1000 Meters

Source: TAMS Consultants, Inc., 2002.

Figure ?

SOUTH SUBURBAN AIRPORT

Inaugural Runway Alternative ALNAC

Legend

- Ultimate Acquisition Boundary
- Power Line
- Water Feature
- Forest Preserve District of Will County Property
- Landfill
- Alternative A AOA West
- Alternative A AOA East
- 100-year Floodplain
- Wetland

N

2000 0 2000 4000 Feet

500 0 500 1000 Meters

Source: TAMS Consultants, Inc., 2002.

Figure ?

Inaugural Airport Airfield Crosswind Runway (05-23) Concept Alternatives Evaluation Matrix

Table A-12 describes the analysis methodology used for each criterion in the evaluation of the Inaugural Airport airfield crosswind runway (05-23) concept alternatives. **Table A-13** presents the results of the evaluation analysis in actual numbers/raw data. **Table A-14** shows how the scoring numbers were assigned to those criteria with gradations of data (i.e., area calculations, population, etc.). For the Inaugural Airport airfield crosswind runway (05-23) concept alternatives, scoring was distributed proportionately between the high and low values for criteria 4b, and 5a through 6. Table 6-6 in Section 6 details the scoring assignments for criteria 1 through 4a and 4c.

Table A-12
Inaugural Airport Airfield Crosswind Runway (05-23) Concept Alternatives Evaluation Methodology

No.	Criteria	Methodology
1	Ability to meet operational requirements	Each concept alternative was evaluated to determine if it could meet the design requirements of Airplane Design Group (ADG) B-II aircraft and the FAA's 95 percent wind coverage requirement (in combination with the primary runway 09-27).[8] ADG B-II aircraft require a minimum 4,000-foot long runway, 75 feet in width. In order to meet 95 percent wind coverage for ADG B-II aircraft at SSA, a runway in a 05-23 orientation will be required.[9] This criterion was used as a screening criterion – if a concept alternative met ADG B-II design requirements and was in a 5-23 orientation, it received a "Yes" and was retained for further evaluation; if the concept alternative did not meet ADG B-II design requirements or was not in a 5-23 orientation, the concept alternative received a "No" and was eliminated from further consideration.

[8] Advisory Circular 150/5300-13, *Airport Design* up to Change 8, FAA, September 2004.
[9] Draft *Demand/Capacity Analysis & Facility Requirements for the Inaugural Airport Program, South Suburban Airport,* prepared for the Illinois Department of Transportation, March 2005.

Table A-12 Inaugural Airport Airfield Crosswind Runway (05-23) Concept Alternatives Evaluation Methodology		
No.	**Criteria**	**Methodology**
2	Capacity & Configuration	Each concept alternative's airfield capacity was evaluated based on the configuration of the crosswind runway with the preferred inaugural primary runway (09-27). The highest capacity gain would result from a parallel runway located at least 4,300 feet apart. However, since this configuration would not comply with the screening criterion (Criterion 1 – runway in 05-23 orientation), no concept alternative in this configuration was evaluated; thus, a score of 5 for any concept alternative was unachievable. A score of 4 was assigned to configurations with an open "V", where the runway thresholds of the primary and crosswind runways did not intersect. A score of 3 was assigned to configurations where the runway thresholds intersected and a score of 2 was assigned to configurations that either physically intersected or where all operations would cease on the primary runway in order for operations to occur on the crosswind runway.
3	Compatibility with preferred ultimate airfield concept	Each concept alternative was evaluated to determine if it would be compatible with the preferred ultimate airfield concept identified in Section 5. To determine compatibility, each concept alternative was overlaid on top of the preferred ultimate concept. If a concept alternative would not impact the construction and operation of a second parallel primary runway, it was considered compatible in the short-term and received the highest score. If it would conflict with future planned facilities, the number of conflicts with the ultimate airfield concept was counted and a score assigned. It was assumed that the crosswind runway would not be required if SSA develops beyond two parallel primary runways.
4	Ability to avoid and/or minimize adverse land use impacts and community disruption	
a	*Conflicts with the comprehensive land-use plans of the neighboring communities.*	*The Northeastern Illinois Planning Commission (NIPC) released the "Land Use Plan for the Eastern Will County Area" in August 1997, the most recently published land use plan for the area that specifically accounts for the airport. This document was used as the baseline to determine if conflicts with local plans would result from a concept alternative. Conflicts were defined as airport facilities being located outside of the previously defined airport boundary (as depicted on the land use map within the NIPC report), on land planned for other uses by the communities within the airport boundary, or if the crosswind runway would be located directly east or west of existing or planned residential land uses, as indicated in the NIPC report.*

Table A-12 Inaugural Airport Airfield Crosswind Runway (05-23) Concept Alternatives Evaluation Methodology		
No.	**Criteria**	**Methodology**
b	*Population displacement*	*The number of residences that would be impacted by each concept alternative was determined through use of GIS. The GIS database established during the Phase 1 Engineering Study and updated for the Tier 1 EIS was used as a baseline. The number of existing residences was verified and modified from aerial photography of the site obtained by IDOT in 2002 and a windshield survey performed by TAMS in spring of 2004. Based on U.S. Census results from the 2000 Census, each house or farmhouse was assumed to contain 2.7 people; each mobile home was assumed to contain 2.0 people. All residences within the additional AOA required for each concept alternative (see **Exhibit A-10**) were counted, and then the appropriate ratio of people per residence was applied to determine potential population displacement.*
c	*Local traffic disruption and permanent closure of existing local roads, emergency vehicle and school bus routes*	*The local roads that would require closure or abandonment due to each concept alternative were identified. Roads were considered impacted if they crossed the AOA (see **Exhibit A-10**). The length of roads requiring closure were calculated and used to determine scoring.*
5	Ability to avoid and/or minimize impacts on natural resources	
a	*Wetlands*	*Potential wetland impacts were calculated based on a GIS analysis of a wetlands database for the site created during the Phase 1 Engineering Study. A wetland delineation of the site was conducted in 1996 (see "Wetland Delineation Report", TAMS Consultants, Inc., January 1996). A review of the wetland delineation was conducted in 2004 to determine potential changes to wetland boundaries that have occurred since the delineation. The GIS database has been updated to include those changes, which are being documented in a revised Wetland Delineation Report (in progress). It was assumed that any wetland or portion of wetland located within the additional AOA required for each concept alternative would be potentially impacted (see **Exhibit A-10**).*
b	*Floodplains*	*Potential floodplain impacts were calculated based on a GIS analysis of Q3 digital flood data purchased from FEMA for Will County. It was assumed that any 100-year floodplain or portion of 100-year floodplain located within the additional AOA required for each concept alternative would be potentially impacted (see **Exhibit A-10**).*
c	*Water Resources*	*Potential impacts to water resources were calculated by determining the linear extent of existing stream channel that would be contained within the additional AOA required for each concept alternative. Stream channels were identified from the GIS database established for this project (see **Exhibit A-10**).*

Table A-12
Inaugural Airport Airfield Crosswind Runway (05-23) Concept Alternatives Evaluation Methodology

No.	Criteria	Methodology
d	*Prime Farmland*	*Potential impacts to prime farmland were calculated by determining the amount of prime farmland soils contained within the additional AOA required for each concept alternative. A soil map of the entire site was digitized from the Will County Soil Survey and input into the project GIS. Prime and important farmland designation for each soil type was obtained from the U.S. Department of Agriculture. Figure 5.15-3 from the Tier 1 FEIS[10] depicts the prime and important farmland soils database used for this analysis.*
6	Relative Cost Comparison	Relative costs were based on the estimated increase in AOA area requirements for each concept alternative, as shown on **Exhibit A-10**.

Source: TAMS, an Earth Tech Company, 2005.

[10] *Final Environmental Impact Statement, Tier 1: FAA Site Approval and Land Acquisition by the State of Illinois, Proposed South Suburban Airport*, FAA, April 2002.

Table A-13
Inaugural Airport Airfield Crosswind Runway (05-23) Alternatives
Evaluation Matrix Data

No.	Criteria	Alternative 1	Alternative 1a	Alternative 2	Alternative 2a	Alternative 3	Alternative 4	Alternative 5	Alternative 5a
1	**Ability to meet operational requirements**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
2	**Ability to provide maximum airfield capacity**	Open 'V' configuration		Open 'V' configuration	Open 'V' configuration	Impairs activity on primary runway	Open 'V' configuration	Open 'V' configuration	Open 'V' configuration
3	**Compatibility with the preferred ultimate airfield concept**	Conflicts with future second runway and terminals		Conflicts with future second runway and terminals	Conflicts with future second runway and terminals	Conflicts with future second runway and terminals	Conflicts with future ultimate runways	Conflicts with future ultimate runways	Conflicts with future ultimate runways
4	**Ability to avoid and/or minimize adverse land use impacts & community disruption**								
	Conflicts with the land use plans of the neighboring communities	*0 conflicts*		*0 conflicts*	*0 conflicts*	*0 conflicts*	*0 conflicts*	*0 conflicts*	*0 conflicts*
b	*Population displacement*	*35 people*		*35 people*	*66 people*	*36 people*	*80 people*	*31 people*	*11 people*
c	*Local traffic disruption and permanent closure of existing local roads, emergency vehicle & schools bus routes*	*Less than 0.5 miles of roads impacted*		*Less than 0.5 miles of roads impacted*	*Less than 0.5 miles of roads impacted*	*Between 0.5 and 0.75 miles road impacted*	*Greater than 0.75 miles road impacted*	*Greater than 0.75 miles road impacted*	*Greater than 0.75 miles road impacted*
5	**Avoid and/or Minimize impacts on natural resources**								
	Wetlands (acres impacted)	*7.0*		*8.1*	*10.6*	*16.2*	*6.7*	*6.4*	*4.6*
b	*Floodplains (acres impacted)*	*0*		*0*	*0*	*22.7*	*0.1*	*25.1*	*5.9*
c	*Water Resources (miles of stream impacted)*	*0*		*0*	*0*	*0*	*0*	*0.4*	*0*
d	*Prime Farmland (acres impacted)*	*157.8*		*162.5*	*151.4*	*254.9*	*242.0*	*275.8*	*239.7*
6	**Relative Cost Comparison** (additional area of AOA)	253 acres		238 acres	269 acres	691 acres	428 acres	320 acres	319 acres

Source: TAMS, an Earth Tech Company, 2005.

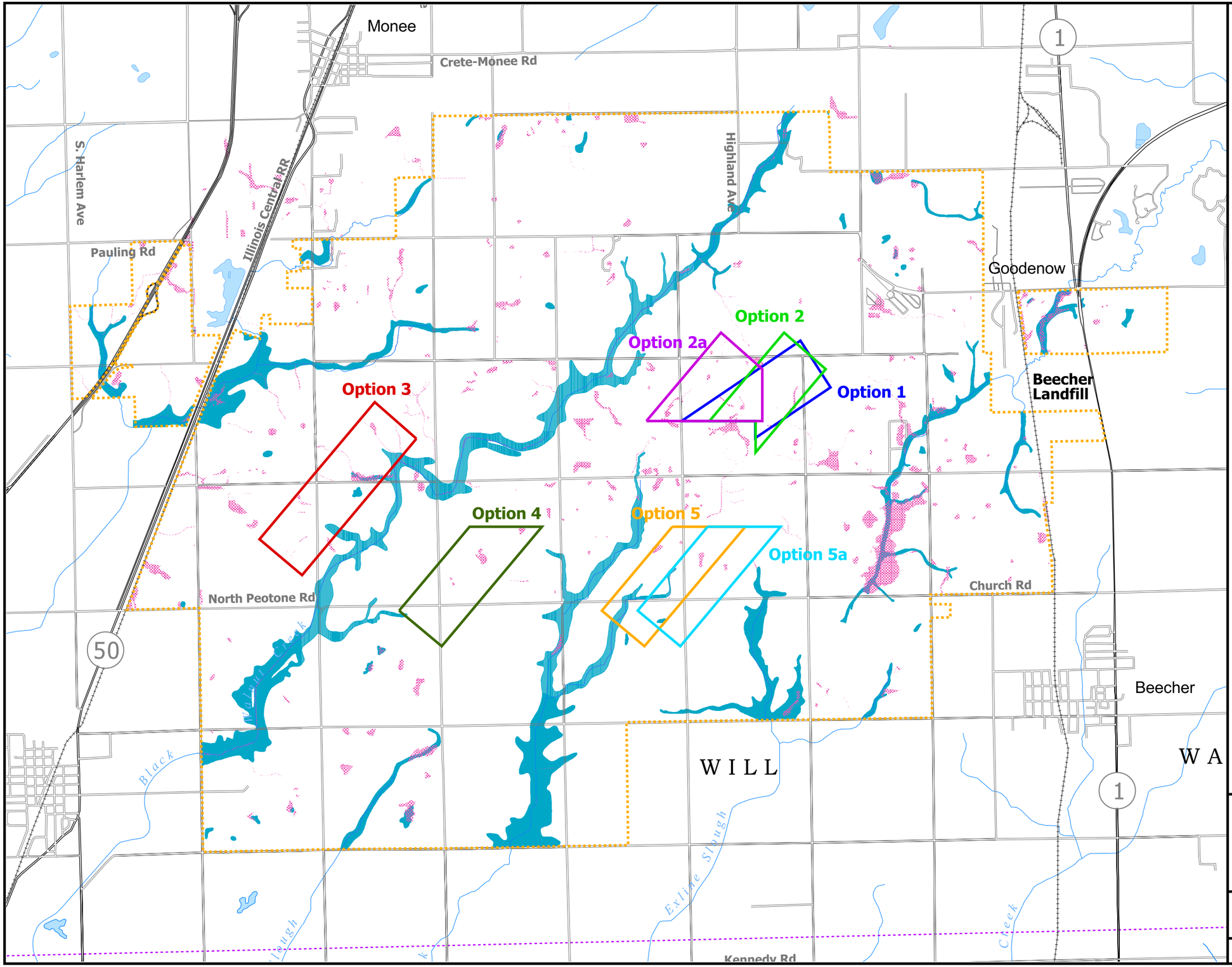
Table A-14
Inaugural Airport Airfield Crosswind Runway (05-23) Concept Alternatives
Evaluation Matrix Scoring Assignments

Alternative	Criteria 4b *Population* *(people)*		Criteria 5a *Wetlands* *(acres)*		Criteria 5b *Floodplains* *(acres)*		Criteria 5c *Water Resources* *(miles)*		Criteria 5d *Prime Farmland* *(acres)*		Criteria 6 *AOA Requirement* *(acres)*	
1	35		7		0		0		157.8		253	
2	35		8.1		0		0		162.5		238	
2a	66		10.6		0		0		151.4		269	
3	36		16.2		22.7		0		254.9		691	
4	80		6.7		0.1		0		242		428	
5	31		6.4		25.1		0.4		275.8		320	
5a	11		4.6		5.9		0		239.7		319	
Max Value	80		16.2		25.1		0.4		275.8		691	
Min Value	11		4.6		0		0		151.4		238	
Range of Values	69		11.6		25.1		0.4		124.4		453	
20% of Range	13.8		2.32		5.02		0.08		24.88		90.6	
	Scoring Range		**Scoring Range**		**Scoring Range**		**Scoring Range**		**Scoring Range**		**Scoring Range**	
Score	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**
1	66.3	80.0	14.0	16.2	20.2	25.1	0.4	0.4	251.0	275.8	600.5	691.0
2	52.5	66.2	11.7	13.9	15.2	20.1	0.3	0.3	226.1	250.9	509.9	600.4
3	38.7	52.4	9.3	11.6	10.1	15.1	0.3	0.2	201.3	226.0	419.3	509.8
4	24.9	38.6	7.0	9.2	5.1	10.0	0.2	0.2	176.4	201.2	328.7	419.2
5	11.0	24.8	4.6	6.9	0.0	5.0	0.0	0.1	151.4	176.3	238.0	328.6

Source: TAMS, an Earth Tech Company, 2005.

SOUTH SUBURBAN AIRPORT

Crosswind Runway Options



Legend

- Ultimate Acquisition Boundary
- Power Line
- Water Feature
- Forest Preserve District of Will County Property
- Landfill
- Option 1
- Option 2
- Option 2a
- Option 3
- Option 4
- Option 5
- Option 5a
- 100-year Floodplain
- Wetland Delineated

N

3000 0 3000 Feet

1000 0 1000 Meters

Source: TAMS Consultants, Inc., 2002.

Figure ?

Inaugural Airport Landside Access Concept Alternatives Evaluation Matrix

Table A-15 describes the analysis methodology used for each criterion in the evaluation of the Inaugural Airport landside access concept alternatives. **Table A-16** presents the results of the evaluation analysis in actual numbers/raw data. **Table A-17** shows how the scoring numbers were assigned to those criteria with gradations of data (i.e., area calculations, population, etc.). For the Inaugural Airport landside access concept alternatives, scoring was distributed proportionately between the high and low values for criteria 9, 10b, and 11a through 11d. Table 7-3 in Section 7 details the scoring assignments for criteria 1 through 8, 10a and 10c.

Table A-15
Inaugural Airport Landside Access Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
1	Ability to provide adequate capacity to meet projected traffic demand (through DBO+5)	This criterion evaluated each concept alternative's ability to accommodate the projected daily traffic in DBO+5. Daily traffic volumes were estimated based on CATS 2030 traffic volumes for SSA, as detailed in the Draft *Demand/Capacity Analysis & Facility Requirements for the Inaugural Airport Program* (IDOT, March 2005). IDOT estimated that a total of 5,600 vehicles (4,800 to/from the north and 800 to/from the south) would be entering and exiting the airport on an average day in DBO+5. Ten percent of these volumes were assumed during the peak hour (480 to/from the north and 80 to/from the south); these peak hour volumes were used to estimate Level-of-Service (LOS) of the main airport access intersection(s) for each concept alternative.
2	Compatibility with regional roadway system	This criterion examined the existing major roads surrounding the airport site (I-57, IL-394 and IL-1) to determine if the traffic generated on those roads by a concept alternative would necessitate improvements through DBO+5. Existing and future traffic volumes for these roads were obtained from CATS and IDOT. Airport traffic volumes, estimated for DBO+5 as explained above under Criterion 1, were then added to the future traffic volumes for affected roads. Capacity of the existing roads was estimated based on the existing roadway configuration.
3	Ability to provide convenient access	
a	*Way Finding*	*Each concept alternative was examined to determine the degree of difficulty for passengers driving to the airport. It was assumed that all passengers would travel to the airport via I-57 for concept alternatives with west access or IL-1 for concept alternatives with east access. The number of decision points, or points where a driver needed to take an exit or turn, where tallied for each concept alternative, until they arrived at a generic terminal area. If a concept alternative would provide a free-flow interchange from a major road (I-57 or IL-1) and a dedicated access road to the terminal area, this was assumed to be the least difficult access system for passengers, with 1 decision point.*

Table A-15 Inaugural Airport Landside Access Concept Alternatives Evaluation Methodology		
No.	**Criteria**	**Methodology**
b	*Travel Time (minutes)*	*Travel time from either I-57 or IL-1 was estimated for each concept alternative. For the west access concept alternative, the distance from the proposed interchange with I-57 to the terminal area was measured and an average speed of 50 miles per hour used to calculate time. For the east access concept alternative, the distance from the proposed interchange with IL-1 to the terminal area was measured; an average speed of 50 miles per hour was also used to calculate travel time. For the continuous access concept alternative, travel times for the east and west access concept alternatives were averaged together. For the local roads access alternative, distance was measured for a vehicle traveling from the I-57 interchange at Monee-Manhattan Road east to IL-50, south to Offner Road, east to approximately Central Avenue, then south into a terminal area. An average speed of 30 miles per hour was used for this alternative.*
4	Compatibility with preferred ultimate concept	This criterion examined whether each concept alternative was compatible with the preferred ultimate access concept. If it was compatible, meaning it did not interfere with the development of the preferred ultimate concept, it received the highest score. If a concept alternative was not compatible it received the lowest score.
5	Ability to meet security criteria	The ability of each concept alternative to provide security to the airport was evaluated in terms of vehicle access and provisions for screening. If a concept alternative had no direct vehicle access to the passenger terminal (i.e., ground transportation center), it was considered the best. If a concept alternative could provide a security plaza for vehicle screening prior to approaching the passenger terminal area, it was considered second best.
6	Relative Cost Comparison	Relative costs were estimated based on the length of access road to be constructed, the amount of local roads that would require resurfacing and/or widening, and the number of highway type interchanges required.
7	Ability for future expansion (through DBO+20)	Concept alternatives that could accommodate the projected DBO+20 traffic volumes or be easily expanded to handle the projected DBO+20 traffic volumes were rated the highest under this criterion. The DBO+20 traffic volumes were prepared by CATS and presented in the Draft *Demand Capacity & Facility Requirements for the Inaugural Airport Program* report (IDOT, March 2005). In addition, the flexibility of an alternative to transition into different landside access concepts (continuous access, ground transportation centers, adding access from another direction, etc.) was considered. Concept alternatives that could not be expanded or interfered with potential expansion of airfield facilities were rated lower.
8	Delivery Schedule	A relative delivery or implementation schedule was developed for each concept alternative. The concept alternative that would take the least amount of time to implement was rated highest under this criterion; implementation/construction time for the other concept alternatives were rated based on the estimated additional time required to implement that concept alternative.

Table A-15 Inaugural Airport Landside Access Concept Alternatives Evaluation Methodology		
No.	**Criteria**	**Methodology**
9	Access to Airport Development Areas	The length of the access road between either I-57 or IL-1 and the terminal area facilities was measured to determine how much land would be potentially accessible for airport-related development, an important consideration for the airport operator and users.
10	Ability to avoid and/or minimize adverse land use impacts and community disruption	
a	*Community Disruption*	*This criterion examined potential disruption to the communities surrounding the airport site due to increased traffic volumes. Concept alternatives were evaluated based on the extent of increased traffic on local roads (all roads except I-57 and IL-1).*
b	*Population displacement*	*The number of residences that would be impacted by each concept alternative was determined through use of GIS. The GIS database established during the Phase 1 Engineering Study and updated for the Tier 1 EIS was used as a baseline. The number of existing residences was verified and modified from aerial photography of the site obtained by IDOT in 2002 and a windshield survey performed by TAMS in spring of 2004. Based on U.S. Census results from the 2000 Census, each house or farmhouse was assumed to contain 2.7 people; each mobile home was assumed to contain 2.0 people. All residences within the access road corridor for each concept alternative were counted, and then the appropriate ratio of people per residence was applied to determine potential population displacement. It was assumed that resurfacing/widening of existing roads would not impact any residences.*
c	*Conflicts with the comprehensive land-use plans of the neighboring communities.*	*The Northeastern Illinois Planning Commission (NIPC) released the "Land Use Plan for the Eastern Will County Area" in August 1997, the most recently published land use plan for the area that specifically accounts for the airport. This document was used as the baseline to determine if conflicts with local plans would result from a concept alternative. Conflicts were defined as access roads being located outside of the previously defined airport boundary (as depicted on the land use map within the NIPC report) or on land planned for other uses by the communities within the airport boundary, as indicated in the NIPC report.*
11	Ability to avoid and/or minimize impacts on natural resources	

Table A-15
Inaugural Airport Landside Access Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
a	*Wetlands*	*Potential wetland impacts were calculated based on a GIS analysis of a wetlands database for the site created during the Phase 1 Engineering Study. A wetland delineation of the site was conducted in 1996 (see "Wetland Delineation Report", TAMS Consultants, Inc., January 1996). A review of the wetland delineation was conducted in 2004 to determine potential changes to wetland boundaries that have occurred since the delineation. The GIS database has been updated to include those changes, which are being documented in a revised Wetland Delineation Report (in progress). It was assumed that any wetland or portion of wetland located within the access road corridor of each concept alternative would be potentially impacted. It was also assumed that resurfacing/widening of existing roads would have no direct impact on existing wetlands. Updated wetland boundaries within the airport site are depicted on Exhibit A-10 (see Inaugural Airport Crosswind Runway (05-23) Concept Alternatives section).*
b	*Floodplains*	*Potential floodplain impacts were calculated based on a GIS analysis of Q3 digital flood data purchased from FEMA for Will County. It was assumed that any 100-year floodplain or portion of 100-year floodplain located within the access road corridor for each concept alternative would be potentially impacted. It was also assumed that resurfacing/widening of existing roads would have no direct impact on existing floodplains. Existing floodplains within the airport site are depicted on Exhibit A-10 (see Inaugural Airport Crosswind Runway (05-23) Concept Alternatives section).*
c	*Water Resources*	*Potential impacts to water resources were calculated by determining the linear extent of existing stream channel that would be contained within the access road corridor for each concept alternative. Stream channels were identified from the GIS database established for this project, and are shown on Exhibits 7-1 through 7-4. It was assumed that resurfacing/widening of existing roads would have no direct impact on existing water resources.*
d	*Prime Farmland*	*Potential impacts to prime farmland were calculated by determining the amount of prime farmland soils contained within the access road corridor of each concept alternative. A soil map of the entire site was digitized from the Will County Soil Survey and input into the project GIS. Prime and important farmland designation for each soil type was obtained from the U.S. Department of Agriculture. It was assumed that resurfacing/widening of existing roads would have no direct impact on prime farmland. Figure 5.15-3 from the Tier 1 FEIS[11] depicts the prime and important farmland soils database used for this analysis.*

Source: TAMS, an Earth Tech Company, 2005.

[11] *Final Environmental Impact Statement, Tier 1: FAA Site Approval and Land Acquisition by the State of Illinois, Proposed South Suburban Airport*, FAA, April 2002.

Table A-16
Inaugural Airport Landside Access Concept Alternatives
Evaluation Matrix Data

No.	Criteria	Alternative 1 Direct West Airport Access	Alternative 2 Direct East Only Access	Alternative 3 Continuous Airport Access	Alternative 4 Local Roads Access
1	**Capacity to meet DBO+5 projected traffic demand** (Level of Service)	LOS A	LOS A	LOS A	LOS E
2	**Compatibility with the regional roadway system** (percent of traffic able to be accommodated on existing roads)	80-100% traffic accommodated on existing roads to access road	20-40% traffic accommodated on existing roads to access road	60-80% traffic accommodated on existing roads to access roads	20-40% traffic accommodated on existing roads to access road
3	**Convenient Access**				
a	*Way Finding (Number of decision points)*	*1*	*1*	*1*	*>4*
b	*Travel Time (minutes)*	*4.2 min*	*4.8 min*	*4.5 min*	*13.4 min*
4	**Compatibility with preferred ultimate access plan**	Yes	Yes	Yes	No
5	**Screened/Controlled Vehicular Access**	Provision for a vehicle screening plaza	Provision for a vehicle screening plaza	Provision for a vehicle screening plaza	Provision for a vehicle screening plaza
6	**Relative Cost Comparison**	Build 3.5 miles of road plus 1 interchange	Build 4.0 miles of road plus 1interchange	Build 7.5 miles of road plus 2 interchanges	Resurface over 9 miles of local roads, plus build ½ -mile entrance road
7	**Expansion Potential** (through DBO+20)	100% potential to evolve into different landside access concepts; can accommodate DBO+20 traffic demand	100% potential to evolve into different landside access concepts; can accommodate DBO+20 traffic demand	80% potential to evolve into different landside access concepts; can accommodate DBO+20 traffic demand; may interfere with future passenger terminal expansion	20% potential to evolve into different landside access concepts; could not accommodate DBO+20 demand; would interfere with future airport expansion

Table A-16
Inaugural Airport Landside Access Concept Alternatives
Evaluation Matrix Data

No.	Criteria	Alternative 1 Direct West Airport Access	Alternative 2 Direct East Only Access	Alternative 3 Continuous Airport Access	Alternative 4 Local Roads Access
8	**Delivery Schedule**	Requires an estimated 40-60% longer construction time than Alternative 4 (3.5 mile of new road + 1 interchange)	Requires an estimated 40-60% longer construction time than Alternative 4 (4.0 mile of new road + 1 interchange)	Requires the longest construction time (7.5 mile of new road + 2 interchanges)	Shortest delivery time
9	**Airport-related Land Use Development Potential** (miles of frontage on access road)	3.5 miles	4.0 miles	7.5 miles	>9 miles
10	**Avoid and/or Minimize adverse land use impacts and community disruption**				
a	*Community Disruption*	*All traffic uses a direct airport access road*	*0-25% of traffic uses local roads*	*0-25% of traffic uses local roads*	*100% of traffic uses local roads*
b	*Population displacement (population impacted)*	*29*	*64*	*93*	*0*
c	*Compatibility with land use plans of the neighboring communities*	*No conflicts*	*2 conflicts*	*1 conflict*	*3 conflicts*
11	**Avoid and/or Minimize adverse impacts on natural resources**				
a	*Wetlands (acres impacted)*	*6.3*	*10.6*	*19.9*	*0*
b	*Floodplains (acres impacted)*	*53.9*	*13.7*	*67.6*	*0*
c	*Water Resources (miles of stream impacted)*	*0.7*	*0.4*	*1.1*	*0*
d	*Prime Farmland (acres impacted)*	*234.5*	*279.2*	*513.7*	*0*

Source: TAMS, an Earth Tech Company, 2005.

Table A-17
Inaugural Airport Landside Access Concept Alternatives
Evaluation Matrix Scoring Assignments

Alternative	Criteria 9 *Airport-related Land Use Development Potential* *(miles)*	Criteria 10b *Population* *(people)*	Criteria 11a *Wetlands* *(acres)*	Criteria 11b *Floodplains* *(acres)*	Criteria 11c *Water Resources* *(miles)*	Criteria 11d *Prime Farmland* *(acres)*
1	3.4	29	6.3	53.9	0.7	234.5
2	3	64	10.6	13.7	0.4	279.2
3	7.5	93	19.9	67.6	1.1	513.7
4	9	0	0	0	0	0
Max Value	9	93	19.9	67.6	1.1	513.7
Min Value	3	0	0	0	0	0
Range of Values	6	93	19.9	67.6	1.1	513.7
20% of Range	1.2	18.6	3.98	13.52	0.22	102.74

Score	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High	Scoring Range Low	Scoring Range High
1	7.9	9.0	74.5	93.0	16.0	19.9	54.2	67.6	1.0	1.1	411.1	513.7
2	6.7	7.8	55.9	74.4	12.0	15.9	40.7	54.1	0.8	0.9	308.3	411.0
3	5.5	6.6	37.3	55.8	8.1	11.9	27.1	40.6	0.5	0.7	205.6	308.2
4	4.3	5.4	18.7	37.2	4.1	8.0	13.6	27.0	0.3	0.4	102.8	205.5
5	3.0	4.2	0.0	18.6	0.0	4.0	0.0	13.5	0.0	0.2	0.0	102.7

Source: TAMS, an Earth Tech Company, 2005.

Inaugural Airport Passenger Terminal Concept Alternatives Evaluation Matrix

Table A-18 describes the analysis methodology used for each criterion in the evaluation of the Inaugural Airport passenger terminal concept alternatives. **Table A-19** presents the results of the evaluation analysis in actual numbers/raw data. **Table A-20** shows how the scoring numbers were assigned to those criteria with gradations of data (i.e., area calculations, population, etc.). For the Inaugural Airport passenger terminal concept alternatives, scoring was distributed proportionately between the high and low values for criteria 1, 2, 4a, and 5 through 7. Table 8-3 in Section 8 details the scoring assignments for criteria 3 and 4b. **Table A-21** presents the detailed calculations for criteria 1 and 4a. Scoring calculations for criterion 8 are shown in **Table A-22**.

Table A-18
Inaugural Airport Passenger Terminal Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
1	Operational Efficiency	The ability of a terminal location to minimize average taxiing distance and aircraft circulation conflicts
a	*Taxiing Distance/Time*	*This criterion estimated taxiing times based on the taxiing distances, runway crossings and taxiway crossings. Plan diagrams were prepared showing the taxiing route of the aircraft. Taxiing distances were calculated from the center of the GA apron to both runway 09 and 27. Taxiing times were calculated for both east and west air traffic flow, assuming a taxiing speed of 15 mph, 3 minutes waiting time at runway crossings and 1 minutes waiting time at taxiway crossings. The scores were weighted according to the estimated traffic flow configurations: 33% for the east and 67% for the west. (see "Facilities Requirement 3.1.6). These ratings were then combined into a final rating for each alternative. Alternatives with shorter taxiing time rated higher than those with longer taxiing time.*
	Aircraft circulation conflicts	*This criterion examined aircraft taxiing movement to and from the terminal and identified potential conflicts that would cause delays in taxiing. Aircraft taxi flow diagrams were prepared in AutoCAD for east and west aircraft traffic flow. Points of potential conflict were identified. The number of potential conflictswere identified and the total for departure and arrival was calculated. The delay time was calculated and used as the basis for evaluation*
2	Future Gate Capacity	Each inaugural passenger terminal concept alternative was expanded to determine a potential ultimate passenger terminal configuration, within the passenger terminal area zone identified on Exhibit 5-1 in Section 5 of the report. These ultimate passenger terminal configurations were then used to calculate a maximum number of air carrier gates (narrow body equivalent) that could be developed, if future demand necessitated them. **Exhibits A-11** through **A-15** depict potential ultimate terminal configurations for Alternatives A1, C1, C2, D1 and D2. Aircraft gates for Alternative A2 were estimated based on plans submitted by ALNAC through DBO+20, since no ultimate layout for this concept alternative was submitted to IDOT.

Table A-18 Inaugural Airport Passenger Terminal Concept Alternatives Evaluation Methodology		
No.	**Criteria**	**Methodology**
3	Compatibility with Preliminary Ultimate Airport Concept	Each concept alternative was evaluated to determine if it would be compatible with the preliminary ultimate airport concept identified in Section 5. To determine compatibility, each concept alternative was overlaid on top of the ultimate concept. If the inaugural passenger terminal concept would impact expansion of the ultimate terminal area, it was considered incompatible and received the lowest score. Since none of the inaugural passenger terminal concept alternatives were deemed incompatible, future expansion of the passenger terminal facility was examined to determine efficiency. Terminal concept alternatives that were located in the middle of the airfield were determined to be less efficient for expansion since access roads and support facilities potentially hamper development.
4	DBO+20 Expansion Potential	
a	*Taxiing Distance (DBO+20)*	*This criterion estimated average departure taxiing distances from the terminal gates. It was assumed that a second parallel air carrier runway would be constructed on the north side of the terminal area, with a 7,400-foot separation from the inaugural primary runway. Taxiing distances were calculated from the passenger terminal to the farthest east and west runway ends (09 and 27). The distances were weighted based on the expected yearly percentage of east versus west air traffic flow configurations, and combined to determine an average taxiing distance for departing aircraft. For example, if the departure taxi distance to Runway 27 is 8,000 feet and the departure taxi distance to Runway 09 is 5,000 feet, the average departure taxiing distance would be calculated by 8,000 x 0.637 + 5,000 x 0.377[13]. **Table A-21** presents the taxi distance calculations in detail and **Exhibits A-16** through **A-20** show potential DBO+20 terminal configurations.*
b	*Expansion Capability*	*This criterion examined the ability of each inaugural passenger terminal to expand into a terminal capable of accommodating passenger demand in DBO+20. For this exercise, forecast passenger demand for the DBO+20 High Case was used (6.7 million annual enplanements).[14] **Exhibits A-16** through **A-20** show potential expansion of terminals for Alternatives A1, C1, C2, D1 and D2.*
5	Proximity to I-57	This criterion measured the distance from the landside portion of the passenger terminal concept alternative to I-57. Since passenger access will be mainly from I-57, passenger convenience in terms of distance was used to evaluate the concept alternatives.
6	Ability to avoid and/or minimize impacts on natural resources	

[13] West air traffic flow configurations are estimated to occur 63.7 percent of the year at SSA, while east air traffic flow configurations are estimated to occur 37.7 percent of the year at SSA.
[14] Draft *Projections of Aeronautical Activity for the Inaugural Airport Program, South Suburban Airport*, prepared for the Illinois Department of Transportation, May 2004.

Table A-18 Inaugural Airport Passenger Terminal Concept Alternatives Evaluation Methodology		
No.	**Criteria**	**Methodology**
a	*Wetlands*	*Potential wetland impacts were calculated based on a GIS analysis of a wetlands database for the site created during the Phase 1 Engineering Study. A wetland delineation of the site was conducted in 1996 (see "Wetland Delineation Report", TAMS Consultants, Inc., January 1996). A review of the wetland delineation was conducted in 2004 to determine potential changes to wetland boundaries that have occurred since the delineation. The GIS database has been updated to include those changes, which are being documented in a revised Wetland Delineation Report (in progress). It was assumed that any wetland or portion of wetland located within the passenger terminal zone of each concept alternative would be potentially impacted. Updated wetland boundaries within the airport site are depicted on Exhibit A-10 (see Inaugural Airport Crosswind Runway (05-23) Concept Alternatives section).*
b	*Floodplains*	*Potential floodplain impacts were calculated based on a GIS analysis of Q3 digital flood data purchased from FEMA for Will County. It was assumed that any 100-year floodplain or portion of 100-year floodplain located within the passenger terminal zone for each concept alternative would be potentially impacted. Existing floodplain boundaries within the airport site are depicted on Exhibit A-10 (see Inaugural Airport Crosswind Runway (05-23) Concept Alternatives section).*
c	*Water Resources*	*Potential impacts to water resources were calculated by determining the linear extent of existing stream channel that would be contained within the passenger terminal zone for each concept alternative. Stream channels were identified from the GIS database established for this project and are shown on Exhibits 8-1 through 8-6.*
d	*Prime Farmland*	*Potential impacts to prime farmland were calculated by determining the amount of prime farmland soils contained within the passenger terminal zone of each concept alternative. A soil map of the entire site was digitized from the Will County Soil Survey and input into the project GIS. Prime and important farmland designation for each soil type was obtained from the U.S. Department of Agriculture. Figure 5.15-3 from the Tier 1 FEIS[15] depicts the prime and important farmland soils database used for this analysis.*

[15] *Final Environmental Impact Statement, Tier 1: FAA Site Approval and Land Acquisition by the State of Illinois, Proposed South Suburban Airport*, FAA, April 2002.

Table A-18
Inaugural Airport Passenger Terminal Concept Alternatives
Evaluation Methodology

No.	Criteria	Methodology
7	Avoid and/or Minimize Population Displacement	The number of residences that would be impacted by each concept alternative was determined through use of GIS. The GIS database established during the Phase 1 Engineering Study and updated for the Tier 1 EIS was used as a baseline. The number of existing residences was verified and modified from aerial photography of the site obtained by IDOT in 2002 and a windshield survey performed by TAMS in spring of 2004. Based on U.S. Census results from the 2000 Census, each house or farmhouse was assumed to contain 2.7 people; each mobile home was assumed to contain 2.0 people. All residences within the passenger terminal zone for each concept alternative were counted, and then the appropriate ratio of people per residence was applied to determine potential population displacement.
8	Relative Cost Comparison	Relative costs were based on the estimated cut and fill (roughly corresponding to the amount of earthworks/grading required), site area, length of access road, number of stream crossings and the amount of natural resource mitigation required. Ratings for each element (earthworks, site area, etc.) were established separately, and then averaged together to obtain an overall rating for this criterion (see **Table A-22**).

Source: TAMS, an Earth Tech Company, 2005.

Table A-19
Inaugural Airport Passenger Terminal Concept Alternatives
Evaluation Matrix Data

No.	Criteria	Alternative A1	Alternative A2	Alternative C1	Alternative C2	Alternative D1	Alternative D2
1	**Operational Efficiency**						
a	*Aircraft Taxiing Time (min.t)*	15.18	15.58	15.14	11.35	11.35	11.80
b	*Aircraft circulation conflicts*	*1 @ 3.6 min.*	*1 @ 3.6 min.*	*1 @ 1.3 min.*	*1 @ 1 min.*	*1 @ 1 min.*	*1 @ 1.1 min.*
2	**Future Gate Capacity**[1] (number of potential aircraft gates)	317	324	298	332	252	262
3	**Compatibility with preliminary ultimate concept**	Terminal location is within ultimate terminal area and would provide maximum operational efficiency	Terminal location is within ultimate terminal area and would provide maximum operational efficiency	Terminal location is within ultimate terminal area and would provide average operational efficiency	Terminal location is within ultimate terminal area and would provide average operational efficiency	Terminal location is within ultimate terminal area and would provide average operational efficiency	Terminal location is within ultimate terminal area and would provide average operational efficiency
4	**DBO+20 Expansion Potential**						
a	*DBO+20 Taxiing distance (feet)*	*10,586*	*11,417*	*8,436*	*12,500*	*12,060*	*12,744*
b	*Expansion capability*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
5	**Proximity to I-57 Interchange** (distance to I-57)	4.4 miles	4.5 miles	5.8 miles	5.5 miles	6.0 miles	6.4 miles
6	**Avoid and/or Minimize Adverse Impacts on Natural Resources**						
a	*Wetlands (acres impacted)*	*2.8*	*0.9*	*7.3*	*3.4*	*0.7*	*8.3*
b	*Floodplains (acres impacted)*	*39.7*	*12.8*	*0*	*0*	*0*	*0*
c	*Water Resources (miles of stream impacted)*	*0.6*	*0.2*	*0*	*0*	*0*	*0*
d	*Prime farmland (acres impacted)*	*72.8*	*70.1*	*78.1*	*72.0*	*67.7*	*65.2*
7	**Avoid and/or Minimize Population Displacement** (population impacted)	0	0	20	3	3	57
8	**Relative Cost Comparison**	See Table A-22	See Table A-22	See Table A-22	See Table A-22	See Table A-22	See Table A-22

Source: TAMS, an Earth Tech Company, 200.
[1]Narrow Body Equivalent Gate (B-737-700 with 150 passenger seating capacity configuration).

Table A-20
Inaugural Airport Passenger Terminal Concept Alternatives
Evaluation Matrix Scoring Assignments

Alternative	Criteria 1a *Taxiing Time* (minutes)	Criteria 1b *Taxiing Conflicts/Delay* (#)	(dist-ft.)	(time-min)	Criteria 2 *Future Gate Capacity* (aircraft gates)	Criteria 4a *Taxiing Distance* (DBO+20 - feet)	Criteria 5 *Proximity to I-57* (miles)	Criteria 6a *Wetlands* (acres)	Criteria 6b *Floodplains* (acres)	Criteria 6c *Water Resources* (miles)	Criteria 6d *Prime Farmland* (acres)	Criteria 7 *Population* (people)
A1	15.18	1	4710	3.6	317	10586	4.4	2.8	39.7	0.6	72.8	0
A2	15.58	1	4710	3.6	324	11417	4.5	0.9	12.8	0.2	70.1	0
C1	15.14	1	1750	1.8	298	8436	5.8	7.3	0	0	78.1	20
C2	11.35	1	1250	1	332	12500	5.5	3.4	0	0	72	3
D1	11.35	1	1250	1	252	12060	6	0.7	0	0	67.7	3
D2	11.80	1	1440	1.1	262	12744	6.4	8.3	0	0	65.2	57
Max Value	15.58		3.6		332	12744	6.4	8.3	39.7	0.6	78.1	57
Min Value	11.35		0		252	8436	4.4	0.7	0	0	65.2	0
Range of Values	4.23		3.6		80	4308	2	7.6	39.7	0.6	12.9	57
20% of Range	0.85		.72		16	861.6	0.4	1.52	7.94	0.12	2.58	11.4

Score	Scoring Range Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
1	14.73	15.58	2.88	3.6	316.1	332.0	11882.5	12744.0	6.1	6.4	6.9	8.3	31.9	39.7	0.48	0.60	75.6	78.1	45.7	57.0
2	13.89	14.72	2.16	2.84	300.1	316.0	11020.9	11882.4	5.7	6.0	5.4	6.8	23.9	31.8	0.36	0.47	73.0	75.5	34.3	45.6
3	13.04	13.88	1.44	2.12	284.1	300.0	10159.3	11020.8	5.3	5.6	3.8	5.3	16.0	23.8	0.24	0.35	70.5	72.9	22.9	34.2
4	12.19	13.03	.72	1.4	268.1	284.0	9297.7	10159.2	4.9	5.2	2.3	3.7	8.0	15.9	0.12	0.23	67.9	70.4	11.5	22.8
5	11.35	12.18	0	.68	252.0	268.0	8436.0	9297.6	4.4	4.8	0.7	2.2	0.0	7.9	0.0	0.11	65.2	67.8	0.0	11.4

Source: TAMS, an Earth Tech Company, 2005.

Table A-21
Inaugural Airport – Passenger Terminal Facility Concept Alternatives
Criterion 1a – Taxiing Time and Distance Calculations

	A1		A2		C1		C2		D1		D2	
Taxiing Times	**West Flow**		**West Flow**		**West Flow**		**West Flow**		**West Flow**		**West Flow**	
	Depart (min)	**Arrive (min)**	**Depart (min)**	**Arrive (min)**	**Depart (min)**	**Arrive (min)**	**Depart (min)**	**Arrive (min)**	**Depart (min)**	**Arrive (min)**	**Depart (min)**	**Arrive (min)**
	12.01	3.17	12.05	3.52	6.09	9.05	7.12	4.23	7.12	4.23	4.30	7.49
	East Flow		**East Flow**		**East Flow**		**East Flow**		**East Flow**		**East Flow**	
	Depart (min)	**Arrive (min)**	**Depart (min)**	**Arrive (min)**	**Depart (min)**	**Depart (min)**	**Arrive (min)**	**Arrive (min)**	**Depart (min)**	**Arrive (min)**	**Depart (min)**	**Arrive (min)**
	3.17	12.01	3.52	12.05	9.05	6.09	4.23	7.12	4.23	7.12	7.49	4.30
	Total Weighted Taxiing Time											
	15.18		**15.58**		**15.14**				**11.35**		**11.80**	
Taxiing Distances	**West Flow**		**West Flow**		**West Flow**		**West Flow**		**West Flow**		**West Flow**	
	Arrive (feet)	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**
	14,530		14,590	4,650		10,620	8,080		8,080	5,580		8,570
	Total Taxi Path Length West Flow											
	18,720		**19,240**		**18,660**				**13,660**		**14,250**	
	East Flow		**East Flow**		**East Flow**		**East Flow**		**East Flow**		**East Flow**	
	Arrive (feet)	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**	**Arrive (feet)**	**Depart (feet)**
	4,190	14,530	4,650		10,620	8,040		8,080	5,580		8,570	5,680
	Total Taxi Path Length East Flow											
	18,720		**19,240**		**18,660**		**13,660**		**13,660**		**14,250**	

Source: TAMS, an Earth Tech Company, 2005.

Assumptions:
1. All taxiing paths originate or end at the mid-point of the apron of the passenger terminal building.
2. Taxi Speed: 15 miles per hour or 1,320 feet per minute.
3. Waiting Time: Runway/Taxiway Crossing = 3 minutes; Taxiway/Taxiway Crossing = 1 minute.
4. Based on the wind analysis, West flow configuration assumed to occur 67% of the time; East flow configuration assumed to occur 33% of the time

Calculation Methodology
Departure and arrival times were summed for West and East Flow. Total taxi time was calculated by multiplying West flow total time by .67 and East Flow total time by .33 and adding weighted West total plus weighted East total. Scoring assignments for Criterion 1a are shown on Table A-20.

Table A-22
Inaugural Airport Passenger Terminal Concept Alternatives
Criterion 8 - Relative Cost Comparison Scoring Assignments

Alternative	Earthwork *(cubic yards)*	Score	Construction Site Area *(square feet)*	Score	Access Road Length *(feet)*	Score	Estimated Cost – Creek Crossings *(dollars)*	Score	Wetlands *(acres)*	Score	Floodplains *(acres)*	Score	Streams *(miles)*	Score	Combined Score	Averaged Score
A1	1,300,000	1	4,264,703	4	15,638	5	$4,500,000	1	2.8	4	39.7	1	0.6	1	17	2.4
A2	1,182,000	2	5,377,784	2	15,638	5	$4,500,000	1	0.9	5	12.8	4	0.2	4	23	3.3
C1	797,300	5	4,397,206	4	21,238	2	$1,000,000	5	7.3	1	0	5	0	5	27	3.9
C2	797,300	5	3,967,153	4	21,238	2	$1,000,000	5	3.4	4	0	5	0	5	30	4.3
D1	797,300	5	3,352,219	5	21,238	2	$1,000,000	5	0.7	5	0	5	0	5	32	4.6
D2	797,300	5	5,974,694	1	23,500	1	$1,000,000	5	8.3	1	0	5	0	5	23	3.3
Max Value	1,300,000		5,974,694		23,500		4,500,000		8.3		39.7		0.6			
Min Value	797,300		3,352,219		15,638		1,000,000		0.7		0		0			
Range of Values	502,700		2,622,475		7,862		3,500,000		7.6		39.7		0.6			
20% of Range	100,540		524,495		1,572		700,000		1.52		7.94		0.12			
Score	**Scoring Range**		**Scoring Range**		**Scoring Range**		**Scoring Range**		**Scoring Range**		**Scoring Range**		**Scoring Range**			
	Low	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**	**Low**	**High**		
1	1,199,460	1,300,000	5,450,199	5,974,694	21,928	23,500	3,800,000	4,500,000	6.9	8.3	31.9	39.7	0.6	0.6		
2	1,098,920	1,199,460	4,925,704	5,450,199	20,355	21,928	3,100,000	3,800,000	5.4	6.8	23.9	31.8	0.5	0.5		
3	998,380	1,098,920	4,401,209	4,925,704	18,783	20,355	2,400,000	3,100,000	3.8	5.3	16.0	23.8	0.3	0.4		
4	897,840	998,380	3,876,714	4,401,209	17,211	18,783	1,700,000	2,400,000	2.3	3.7	8.0	15.9	0.2	0.2		
5	797,300	897,840	3,352,219	3,876,714	15,638	17,210	1,000,000	1,700,000	0.7	2.2	0.0	7.9	0.0	0.1		

Source: TAMS, an Earth Tech Company, 2005.