



Illinois Department of Transportation

Division of Aeronautics
1 Langhorne Bond Drive / Springfield, Illinois / 62707-8415

March 7, 2008

Mr. Jim Keefer, Manager
Federal Aviation Administration
Great Lakes Region
Chicago Airports District Office
2300 East Devon Avenue
Des Plaines, Illinois 60018

Re: South Suburban Airport
Chicago/Peotone, Illinois
Illinois Project Number SSA-1691
Airport Master Plan - ALP
Airspace Feasibility Study Request

Dear Mr. Keefer:

In 1984, the Federal Aviation Administration (FAA), as a mitigation item of O'Hare International Airport's Environmental Impact Statement-Record of Decision, charged the Illinois Department of Transportation (IDOT) with determining the need for additional commercial passenger service and access to the Chicago metropolitan area. Through subsequent airport feasibility studies, environmental reviews and analysis and numerous public meetings, IDOT has continued in following through on that original FAA direction.

IDOT has also continuously shared our planning efforts with aviation users, Federal, State and local elected officials, units of local government (Monee, Peotone, Beecher, Crete, University Park, Will County) Abraham Lincoln National Airport Commission and the general public. We have, where possible, adapted the plan to reflect their guidance and input.

Today, on behalf of the Illinois Department of Transportation, Division of Aeronautics, I am extremely delighted in presenting to you the IDOT's "**Preferred Inaugural Airport Configuration**". Through URS Corporation's Document Locator, IDOT is uploading the following documents for your agency's review and comment:

- Inaugural Airport Layout Plan Sheet – Alternative Number 2
- Inaugural Airport Layout Plan Data Sheet
- Ultimate Airport Layout Plan Sheet
- Ultimate Airport Layout Plan Data Sheet
- Selection of IDOT's Preferred Inaugural Airport Configuration (Narrative)
- FAA AGL PPM 5310.1 Airport Layout Plan Checklist (1 copy)

Mr. Jim Keefer, Manager
Federal Aviation Administration
South Suburban Airport
Airspace Feasibility Study Request
Page 2

By this letter, I request that your office conduct an Airspace Feasibility Study on the attached planning documents. I also request that the FAA identify the attached planning documents as a "plan on file".

As always my staff and I are available, at your request to discuss and review our submittal. If you have any questions please feel free to contact me at (217) 785-8515 or by facsimile at (217) 785-4533 or via e-mail at Susan.Shea@illinois.gov.

Sincerely,

A handwritten signature in cursive script that reads "Susan R. Shea".

Susan R. Shea, Ph.D.
Director

Master Plan For The
South Suburban Airport Project

SELECTION OF IDOT PREFERRED
INAUGURAL AIRPORT
CONFIGURATION



Prepared By:
Earth Tech Inc.

**Preliminary
Draft**

Prepared for the
Illinois Department of Transportation

MARCH 7, 2008

Table of Contents

<u>Topic</u>	<u>Page Number</u>
Table of Contents	i
List of Tables	iii
List of Exhibits	iv
Introduction	1
 Chapter 1 – Aeronautical Activity Forecast Review	
Original Aeronautical Activity Forecast.....	3
Updated on Forecast	4
 Chapter 2 – Demand/ Capacity Facility Requirements Review	
Original Facility Requirements.....	5
Updates on Facility Requirements.....	5
 Chapter 3 – Concept Alternatives Review	
3.1 Background.....	9
a) Original Concept Alternatives Submittal to the FAA.....	9
b) Updates on Current Concept Alternatives	11
3.2 Description of Current Alternatives	13
a) Alternative 1	15
b) Alternative 2.....	15
c) Alternative 3.....	15
d) Alternative 4.....	16
e) Alternative 5.....	16
3.3 Evaluation of Alternatives	28
a) Evaluation Criteria	28
b) Inaugural Airfield Concept Alternatives Evaluation Matrix.....	31
3.4 Selection of the Preferred Alternative	33
 Chapter 4 – Preferred Inaugural Airport Configuration	
a) Airfield.....	35
b) Passenger Terminal	35
c) Landside Access	35
d) Support/Ancillary Facilities	35
e) Nav aids.....	36
 Chapter 5 – Preliminary Airport Layout Plans	
5.1 Background.....	37
5.2 Description of revised Preliminary Airport Layout Plan Sheets	37
a) Inaugural Airport Layout Plan	37
b) Inaugural Airport Data Table.....	37
c) Future Airport Layout Plan	38
d) Ultimate Future Airport Data Tables	38

List of Tables

Table 1 Summary of IAP Forecast 4

Table 2 Summary of IAP Facility Requirements - DBO+5 6

Table 3 Summary of IAP Facility Requirements - DBO+20 7

Table 4 Summary of IAP–Ultimate Airport 8

Table 5 Land and Environmental Impacts Comparison 13

Table 6 Inaugural Airport Concept Alternatives Evaluation Criteria 27

Table 7 Inaugural Airport Concept Alternatives Evaluation Matrix Data 30

Table 8 Inaugural Airport Concept Alternatives Evaluation Matrix 31

Table 9 Summary of Recommended NAVAIDS and Visual Aids.....36

Exhibits

Exhibit 1 South Suburban Airport Location 2

Exhibit 2 Original Preferred Inaugural Airport Concept 10

Exhibit 2a Will County Site Tier 1 Property Map 14

Exhibit 3 Alternative 1 - Inaugural Airport Concept 17

Exhibit 4 Alternative 2 - Inaugural Airport Concept 18

Exhibit 5 Alternative 3 - Inaugural Airport Concept 19

Exhibit 6 Alternative 4 - Inaugural Airport Concept 20

Exhibit 7 Alternative 5 - Inaugural Airport Concept 21

Exhibit 8 Alternative 1 - Ultimate Airport Concept 22

Exhibit 9 Alternative 2 - Ultimate Airport Concept 23

Exhibit 10 Alternative 3 - Ultimate Airport Concept 24

Exhibit 11 Alternative 4 - Ultimate Airport Concept 25

Exhibit 12 Alternative 5 - Ultimate Airport Concept 26

Appendix

Environmental Impact Worksheets.....A-2

Preferred Alternative 2 Topographic Features.....A-47

Preferred Alternative 2 - Land Cover Map 2004.....A-48

DRAFT

Introduction

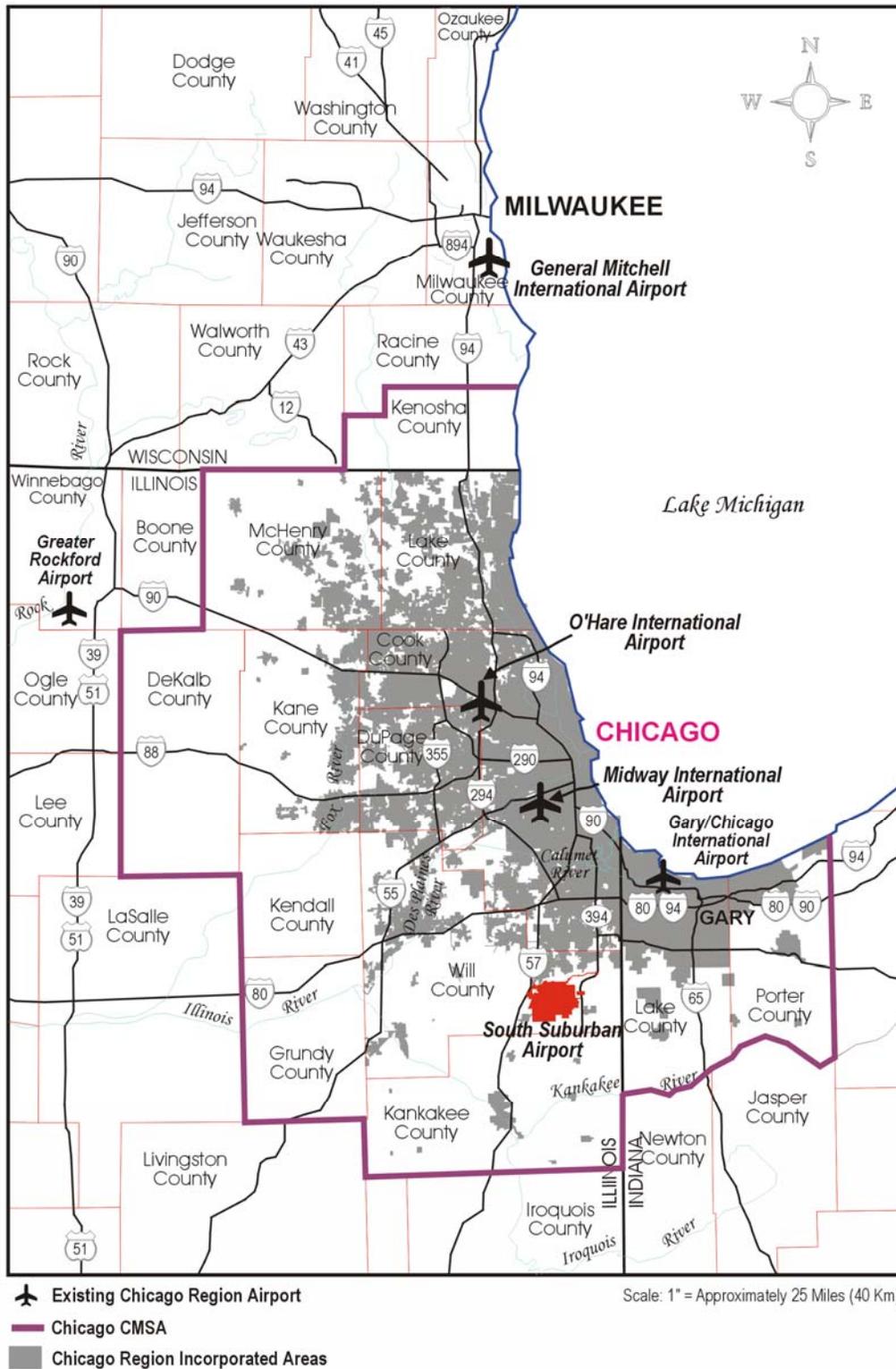
The South Suburban Airport (SSA) is a new "Greenfield" airport proposed by the Illinois Department of Transportation in Will County, Illinois. The eastern Will County site was approved as a feasible location by the Federal Aviation Administration (FAA) in their Record of Decision in the Tier 1 Environmental Impact Statement for South Suburban Airport, dated July 12, 2002.

The South Suburban Airport site is mostly located in unincorporated Will County, within the Greater Chicago region, which includes the northeast Illinois/northwest Indiana metropolitan area. Specifically, the Greater Chicago region includes seven counties located in northeastern Illinois, which are Cook, DuPage, Kane, Kankakee, Lake, McHenry and Will Counties; and two counties located in northwestern Indiana, which are Lake and Porter Counties. According to the U.S. Bureau of Census the Greater Chicago region is the third largest metropolitan area in the United States and approximately 8.8 million people resided in the nine-county project area in 2000.

The Ultimate Acquisition Area for the SSA comprises approximately 20,032 acres in eastern Will County, Illinois (**Exhibit 1**). The initial phase, referred hereafter as the Inaugural Airport is located on approximately 5,200 acres within the Ultimate Acquisition Area. The Village of Peotone lies to the southwest of the site, Monee to the northwest, University Park to the north, Crete to the northeast and Beecher to the southeast. The center of the site is approximately 35 miles south-southwest of the Chicago Central Business District, 42 miles south-southeast of O'Hare International Airport, and 29 miles south of Midway Airport. The site is located east of Interstate 57 and Illinois Route 50 and west of Illinois Routes 394 and 1. A small portion of the Ultimate Acquisition Area, (less than half of one percent), located in the northwest corner, is within the incorporated limits of Monee. The rest of the site is located in unincorporated Will County, mostly in the Townships of Will and Monee, with smaller portions located in Crete and Washington Townships. The majority of the development associated with the Inaugural Airport Program will occur within Will Township, with some related development impacting Monee and Washington Townships.

The purpose of this report is to document activities, since the initial concept alternatives submittal, contributing to the selection of a final preferred alternative and preliminary airport layout plan. The Inaugural Airport Program (IAP) is defined as the first year of operation (defined as Date of Beneficial Occupancy or DBO+1) through the fifth year of operation (DBO+5). While the Airport Master Plan will focus on the IAP, it will also identify potential airport facilities beyond the IAP.

Exhibit 1 South Suburban Airport Location



Chapter 1 – Forecast Review

In 2004, the Illinois Department of Transportation developed the forecast of aeronautical activity for the South Suburban Airport to be used in the development of the Airport Master Plan. The forecast focused on the IAP, but also considered long-range forecasts and a potential “ultimate configuration” for SSA. The forecast report was submitted for review to the FAA. On June 4, 2004, the FAA approved the forecast report stating that it believes the document projects passenger demand and aviation activity at reasonable levels.

Overview of Original IAP Forecast

The aviation forecasts developed in 2004 relied on an examination of the existing and projected socio-economic conditions of the area, available market surveys, and an analysis of the U.S. airline industry to determine the types of airlines and passenger markets that would potentially utilize SSA during its initial years of development. A financial/market analysis of the U.S. airline industry and the Chicago air passenger and air cargo markets were also undertaken by IDOT to identify the type(s) of airline and potential markets that would most likely occur at SSA during the IAP. Historical and projected activity at existing Chicago region airports has also been examined and incorporated in the original report as background information.

The Inaugural Airport Program (IAP) at the South Suburban Airport is being planned to serve at least three (3) separate facets of aeronautical activity including: air passenger, air cargo and general aviation/corporate. The level of activity from each of these types of aeronautical activity is dependent on a number of factors including airline service attracted to the airport, facilities provided at the airport, operating costs and supporting infrastructure. The potential for each category of aeronautical activity to develop at the airport and the likely market segments they will serve were identified and discussed in the original forecasts. Due to uncertainty, inherent when forecasting activity for a new airport, a range of forecasts for each type of aeronautical activity was produced. These forecasts, as driven by market forces, have been labeled low, base and high to reflect certain assumptions regarding the introduction of service at SSA. **Table 1** summarizes the low, base and high case forecasts for air passenger, air cargo, and general aviation/corporate aviation activity that will be used to develop the facility requirements for the IAP at SSA.

Because the regional socio-economic parameters have not changed significantly since the original forecast report was approved by the FAA, IDOT intends to retain the basic air passenger and air cargo forecasts originally developed and only modify the general aviation forecast to reflect recent developments at Bult Field. These forecasts have been used to analyze and establish the facility requirements in the Inaugural Airport Master Plan for SSA. The Master Plan focuses on the IAP, but also considers long-range projections and a potential “ultimate configuration” for SSA.

Table 1 Summary of IAP Forecasts						
Aeronautical Forecast Category	Low Case		Base Case		High Case	
	DBO+1	DBO+5	DBO+1	DBO+5	DBO+1	DBO+5
Air Carrier Operations						
Domestic (Includes Charters)	360	9,800	2,400	16,200	3,400	23,500
Domestic Connections	0	0	0	0	0	0
Total Domestic	360	9,800	2,400	16,200	3,400	23,500
International	0	0	0	0	0	0
Total Air Carrier	360	9,800	2,400	16,200	3,400	23,500
Air Carrier Instrument	180	9,800	1,200	16,200	1,700	23,500
Air Cargo Operations						
Domestic	0	1,262	1,118	2,520	1,700	3,783
International	0	0	0	931	902	1,760
Total Air Cargo	0	1,262	1,118	3,451	2,602	5,543
Air Cargo Instrument	0	631	559	1,726	1,301	2,772
General Aviation/Corporate Operations						
SEL/MEL/Rotary Wing	16,000	16,000	33,600	34,000	52,000	52,800
Turbine	400	800	1,200	2,000	2,000	2,800
Total GA/Corporate	16,400	16,800	34,800	36,000	54,000	55,600
GA/Corporate Instrument	8,500	8,800	18,100	18,900	28,100	29,200
Total Aircraft Operations	16,760	27,862	38,318	55,651	60,002	84,643
Total Instrument Operations	8,680	19,231	19,859	36,826	31,101	55,472
Air Carrier Enplanements						
Domestic O&D	19,600	471,000	126,000	709,000	169,400	968,000
Domestic Connections	0	0	0	0	0	0
Total Domestic	19,600	471,000	126,000	709,000	169,400	968,000
International	0	0	0	0	0	0
Total Air Carrier Enplanements	19,600	471,000	126,000	709,000	169,400	968,000
Air Cargo Tonnage						
Freight/Express	0	25,200	22,400	78,300	56,600	128,500
Mail	0	3,000	2,600	9,400	6,800	17,700
Belly Freight	0	4,500	3,900	15,900	11,600	48,600
Total Air Cargo Tonnage	0	32,700	28,900	103,600	75,000	194,800
Based General Aviation/Corporate Aircraft						
SEL/MEL/Rotary Wing	40	40	84	85	130	132
Turbine	1	2	3	5	5	7
Total Based Aircraft	41	42	87	90	135	139

Source: Earth Tech Inc., 2004.

Updates on Forecasts

IDOT anticipates that Bult Field will be acquired and incorporated into the Inaugural Airport. It is expected that existing facilities at Bult Field will serve the General Aviation (GA) needs at SSA. The airfield improvements that have been recently undertaken at Bult Field resulted in a significant increase in the number of based aircraft. As a result General Aviation/Corporate Aviation forecasts will be updated to reflect the changes that have occurred at Bult Field since October 2004. It is not anticipated that the updated forecast will significantly affect the selection of a preferred alternate configuration of the Inaugural Airport.

Chapter 2 - Demand/Capacity and Facility Requirements Review

Original Facility Requirements

The facility requirements for the IAP at SSA were derived from the draft Projections of Aeronautical Activity for the Inaugural Program issued in 2004.

Based on the forecasts contained in that report and the projected air cargo fleet, which includes Airplane Design Group (ADG)¹ IV aircraft, IDOT recommended that the airport be designed to Airport Reference Code² C-IV standards. The facility requirements originally developed for the IAP were based on the low, base and high case forecast scenarios. The FAA Advisory Circular 150/5070-6A - *Airport Master Plans* in conjunction with Advisory Circular 150/5300-13 *Airport Design* were used as guidelines for developing the IAP facilities. They include airfield facilities requirements, passenger facility requirements, support/ancillary facilities requirements and ground transportation facilities requirements and are summarized in **Table 2**.

The FAA recognizes that "Forecasts include a level of uncertainty and need to compensate for that uncertainty by developing flexible airport plans, allowing the decision makers to accelerate or defer projects as needed"³. In recognition of that, the IAP forecast activity was extrapolated to derive long-range projections of SSA activity through DBO+20 and beyond.⁴ These phases of the airport development were labeled Intermediate and Ultimate and facility requirements were also derived for these planning horizons. They are summarized in **Table 3** and **Table 4**.

Update on Facility Requirements

IDOT recommends that the original air passenger and air cargo activity projections for the IAP shall be retained. As a result, it is expected that facility requirements associated with these aeronautical projections will not be subject to significant changes.

Most of the assumptions used to develop the facility requirements will be used in reviewing the original estimates of the aeronautical facilities at IAP. The airfield improvements that occurred at Bult Field (a new 5,000-foot long paved runway and substantial aircraft parking and storage space) have made this airport a more than adequate General Aviation facility and contributed to attracting more based aircraft. In consequence the GA facility requirements for the Inaugural Airport Program Master Plan will be updated to reflect the improvements at Bult Field. However, these changes are not expected to affect the selection of a preferred Inaugural Airport configuration.

¹ As defined in FAA Advisory Circular 150/5300-13, "Airport Design" as, one of two components along with the Aircraft Approach Category, depicted by a Roman numeral relative to wing span, that define the Airport Reference Code.

² As defined in FAA Advisory Circular 150/5300-13, "Airport Design", is based on the ADG and AAC, and used to classify an airport and determine the FAA airport planning criteria to which the airport must comply.

³ FAA, "Forecasting and Capacity Requirements in an Uncertain Environment", 2002 FAA Commercial Aviation Conference

⁴ Draft "Projections of Aeronautical Activity for the Inaugural Airport Program ", May 2004.

Table 2
Summary of IAP Facility Requirements - DBO+5

Facility	Low Case	Base Case	High Case
Single Primary Runway ¹ (09-27) (ft)	9,000	9,500	9,500
Primary Runway Width (ft)	150	150	150
Primary Taxiway Width (ft)	75	75	75
Runway-Parallel Taxiway Centerline Separation (ft)	400	400	400
Crosswind Runway (05-23) (ft)	4,000	4,000	4,000
Crosswind Runway Width (ft)	75	75	75
Crosswind Taxiway Width (ft)	35	35	35
Crosswind Runway-Parallel Taxiway Centerline Separation (ft)	240	240	240
Airport Traffic Control Tower (ATCT)	Yes ²	Yes ²	Yes ²
Instrument Landing System (ILS)	CAT 1 ³	CAT 1 ³	CAT 1 ³
Passenger Aircraft Gates:			
<i>Regional Jet Gates</i>	1	2 – 4	4 – 6
<i>Narrow Body Jet Gates</i>	3 – 4	4 – 5	5 – 6
Passenger Terminal (sf)	85,400	127,100	167,700
Passenger Terminal Curb Front (feet)	380	470	540
Cargo Aircraft Positions	2	4	6
Air Cargo Area ⁴ (sf)	200,000	540,000	930,000
General Aviation/Corporate Aviation Aircraft Positions	34	74	113
General Aviation/Corporate Aviation Area ⁵ (sf)	43,000	96,000	132,000
Jet Fuel Storage (gallons)	353,000	795,000	1,100,000
100LL ⁶ Fuel Storage (gallons)	2,200	4,500	6,800
Airfield Maintenance Center Area ⁷ (sf)	130,000	180,000	225,000
Water Supply (gallons)	29,000	44,000	58,000
Sanitary Wastewater Treatment (gallons)	29,000	44,000	58,000
Interchange with I-57	Yes	Yes	Yes
Public Parking Spaces	940	1,400	1,900
Employee Parking Spaces	190	280	390
Rental Car Area (sf)	78,000	122,000	165,000

Source: Earth Tech Inc., 2004.

N/A = Not Applicable

¹Includes full parallel taxiway.²IDOT recommends an ATCT for SSA. Whether it is an FAA tower, a contract tower or a private facility has yet to be determined.³Initially on Runway 27, eventually on both ends of Runway 09/27.⁴Includes warehouse, airside apron, truck docks, and parking.⁵Includes aircraft parking areas, apron area, hangars, tie down areas and public parking.⁶100LL Avgas is a 100-octane fuel for GA aircraft.⁷Includes parking, building and storage areas.

Table 3 Summary of Facility Requirements – DBO+20		
Facility	Low Case	High Case
Existing Primary Runway ¹ (09L-27R) (ft)	9,800 (300-foot extension)	10,800 (1,300-foot extension)
Existing Primary Runway Width (ft) (no change)	150	150
Existing Taxiway Width (ft) (no change)	75	75
Existing Parallel Runway to Taxiway Centerline Separation (ft) (no change)	400	500
Second Runway ¹ Length (09R-27L) (ft)	N/A	10,800
Second Runway Width (ft)	N/A	150
Runway/Runway Centerline Separation (ft)	N/A	4,300
Second Runway-Parallel Taxiway Centerline Separation (ft)	N/A	500
Existing Crosswind Runway (05-23) (ft)	4,000	4,000
Existing Crosswind Runway Width (ft)	75	75
Existing Crosswind Taxiway Width (ft)	35	35
Airport Traffic Control Tower (ATCT)	Level II	Level III
Instrument Landing System (ILS) – Existing Primary Runway (09L-27R)	CAT I	CAT I
Instrument Landing System (ILS) – Second Runway (09R-27L)	N/A	CAT II (or CAT III)
Passenger Aircraft Gates: <i>Regional Jet Gates</i> <i>Narrow Body Gates</i>	3-4 9-11	8-10 22-27
Passenger Terminal (sf)	256,300	636,200
Passenger Terminal Curb Front (feet)	670	1,400
Passenger Terminal Aircraft Apron (sf)	522,000	1,700,000
Cargo Aircraft Positions	6	14
Air Cargo Area ² (acres)	27	74
General Aviation/Corporate Aviation Aircraft Positions	44	117
General Aviation/Corporate Aviation Area ³ (sf)	92,600	244,000
ARFF Index	D	E
Jet Fuel Storage (gallons)	948,000	2,350,000
100LL ⁴ Fuel Storage (gallons)	3,600	12,000
Airfield Maintenance Center Area ⁵ (acres)	7	10
Water Supply (gallons)	152,000	414,000
Sanitary Wastewater Treatment (gallons)	152,000	414,000
Public Parking Spaces	2,500	7,400
Employee Parking Spaces	900	1,670
Rental Car Area (acres)	4.7-8.8	14-26

Source: Earth Tech Inc, 2004.

N/A = Not Applicable

¹Includes full parallel taxiway.²Includes warehouse, airside apron, truck docks, and parking.³Includes aircraft parking areas, apron area, hangars, tie down areas and public parking.⁴100LL Avgas is a 100-octane fuel for GA aircraft.⁵Includes parking, building and storage areas.

Table 4 Summary of Facility Requirements – Ultimate Airport	
Facility	Unit
Number of Parallel Runways	6
First Runway (9-27) Length (ft)	9,500
Additional Runway Lengths (ft)	10,000 and 12,000
Runway Width (ft)	200
Taxiway Width (ft)	100
Runway-Parallel Taxiway Centerline Separation (ft)	600
Crosswind Runway Width (ft)	4,000
Crosswind Runway Width (ft)	75
Airport Traffic Control Tower (ATCT)	Yes
Instrument Landing System (ILS)	CAT III
Passenger Aircraft Gates:	
<i>Domestic Gates</i>	80
<i>International Gates</i>	40
Passenger Terminal (sf)	3,500,000
Passenger Terminal Curb Front (feet)	3,800
Air Cargo Area ¹ (sf)	Demand Driven
General Aviation/Corporate Aviation Area ² (sf)	Demand Driven
Public Parking Spaces	17,400
Employee Parking Spaces	11,000
Rental Car Parking Spaces	17,100

Source: Earth Tech Inc., 2004.

¹Includes warehouse, airside apron, truck docks, and parking.

²Includes aircraft parking areas, apron area, hangars, tie down areas and public parking.

Chapter 3 – Concept Alternatives Review

3.1 Background

The Concept Alternatives for the Inaugural South Suburban Airport have been developed based on input from various stakeholders. In addition to input IDOT has received through its public involvement process, two official entities had an influential role in the development of the alternatives: Abraham Lincoln National Airport Commission (ALNAC) and County of Will. Beside providing technical input both these entities have approached IDOT about being an airport co-sponsor. The County indicated that it will follow IDOT's lead through the Master Planning and environmental process but has not proposed any specific concepts for the Inaugural or Ultimate Airport. ALNAC, on the other hand, has developed an alternate for the Inaugural Airport and submitted it to IDOT for consideration. Their alternative was commercially based employing a public-private partnership to finance the construction of the airport with no reliance on federal Airport Improvement Program (AIP) funds.

a. Original Concept Alternatives

Based on the Chapter 2 facility requirements, concept alternatives were developed for each of the major aeronautical facilities; including, runways, passenger terminal, airport access, airport support and ancillary facilities. Specific criteria were developed to evaluate and rate each of these facilities. A level of priority was given to each airport facility with the highest primacy given to the commercial runway facility followed by the GA runway, landside access and passenger terminal. Air Cargo, General Aviation facilities and airport support facilities were added to the previously selected airfield concepts to create the preferred inaugural airport concept. The original preferred Concept Alternative included the best rated alternative for each of these facilities. A sensitivity analysis was then conducted to determine whether the preferred concept is truly the best overall Inaugural Airport Concept when compared to other logical overall concepts. The preferred IAP concept originally submitted to the FAA in September, 2005 for preliminary review is illustrated in **Exhibit 2** and is summarized below.

Airfield

A single 9,500-foot instrument runway in a 09-27 orientation located south of the terminal complex with a 75-foot parallel taxiway. The eastern end of the primary runway is the east end of the ultimate 12,000-foot runway. Instrument Landing System (ILS) is located off the 27 runway end. A 4,000-foot crosswind GA runway is located south of the Runway 27 end of the primary runway.

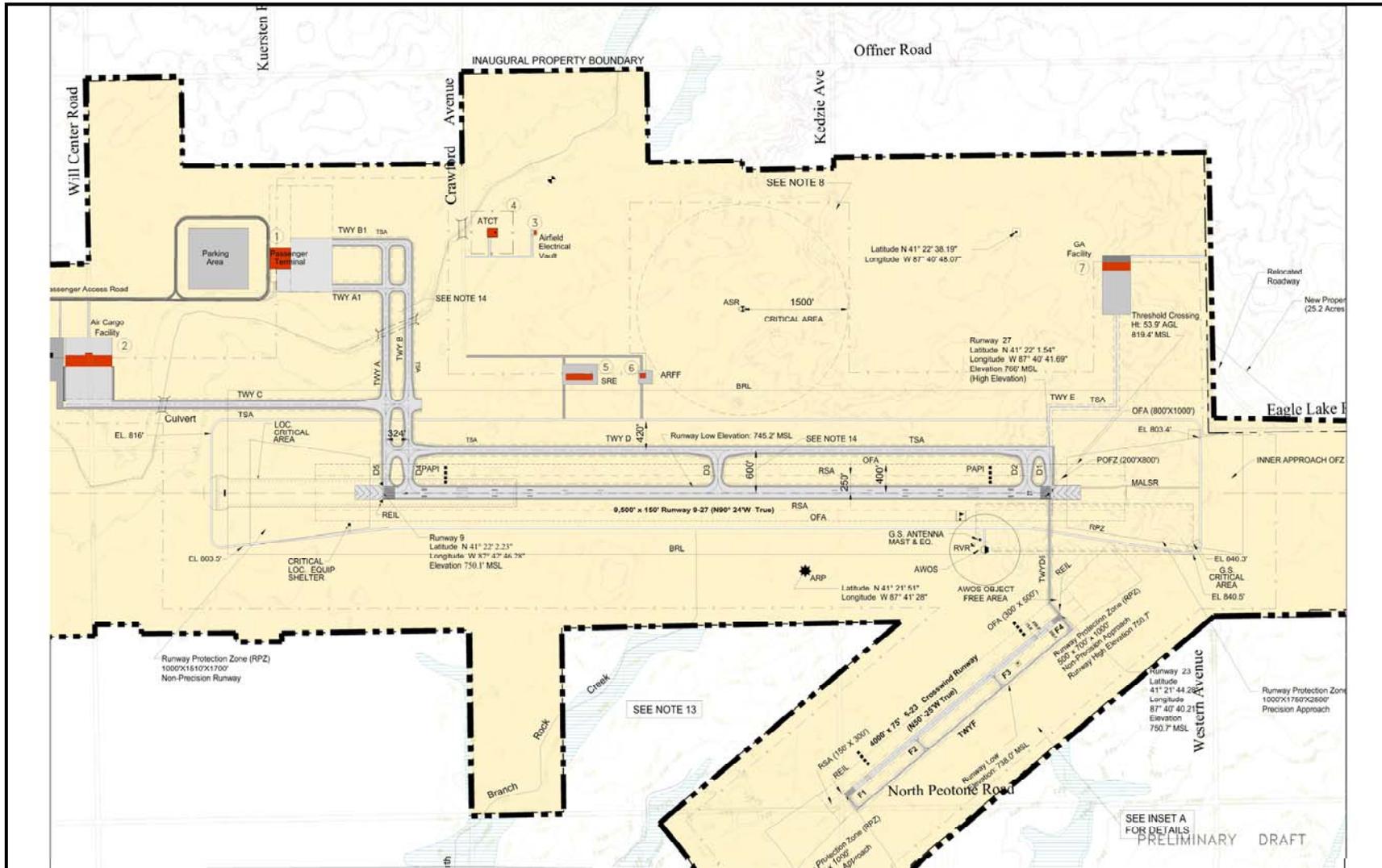
Terminal

The terminal is located off the west end of the inaugural runway and to the north, centered between the inaugural runway and the second runway anticipated in the next airport development phase. The terminal is located within a terminal zone sized to accommodate the landside roadway loop, terminal curbside, and parking facilities along with the airside aircraft parking apron.

Landside Access

Direct access to/from I-57 is provided by a new intersection and access road connecting the interstate to the terminal and western support facilities areas. The access road is grade separated over Illinois Route 50 and the Canadian National Railroad directly to the west. Secondary access is provided from local roads.

Exhibit 2 Original Preferred Inaugural Airport Concept



Support/Ancillary Facilities

Start-up cargo facilities are located in the west support facility zone of the airport with access from the main airport access road. As cargo demand and truck traffic increases it is planned to separate cargo functions from passenger functions but initially cargo will benefit from being located in the west with direct access off the interstate. General Aviation is initially located in the east support facility zone near the primary and crosswind runway.

b. Updates on Original Concept Alternatives

The original Preferred Inaugural Airport Concept was submitted to the FAA for preliminary review in September 2005. Subsequently IDOT revised this concept to address the objections raised by Federal agencies regarding the magnitude of the environmental impacts incurred by the original preferred concept on Black Walnut Creek. In December 2006, IDOT presented two revised airfield concepts to the general public for discussion and input: the IDOT Inaugural Airport Layout Plan and the ALNAC Inaugural Airport Layout Plan. Both of these plans incorporated airfield changes that would diminish the impacts on Black Walnut Creek and address the environmental concerns raised by the Federal agencies on the original IAP concept. These plans also reflect the airfield improvements undertaken at Bult Field since the release of the Preferred Inaugural Concept.

Significant changes in IDOT's revised Inaugural Concept Plan included:

Airfield

A 9,500-foot precision instrument runway in a 09-27 orientation. The primary runway location and its characteristics were identical to the originally proposed plan. This location was selected based on environmental analysis and comments received from Federal agencies. In addition this location is compatible with the FAA-approved Tier 1 Environmental Impact Statement. The existing 5,000-foot long, 75-foot wide visual runway recently constructed at Bult Field was incorporated in the revised ALP. This runway is in a 09-27 orientation as well and it is located 3,700 feet north of the future primary runway. This runway would serve the GA activity at IAP.

Terminal

To avoid major impacts on Black Walnut Creek the terminal complex was relocated approximately 3,000 feet east of the originally proposed location centered between the inaugural runway and the second runway. The terminal complex was located within a terminal zone sized to accommodate the landside roadway loop, terminal curbside, and parking facilities along with the airside aircraft parking apron.

Landside Access

Direct access to/from I-57 was provided by a new interchange and access road connecting the interstate to the terminal. The horizontal alignment of the proposed access road was modified to minimize crossing over Black Walnut Creek. The access road would be grade separated over Illinois Route 50 and the Canadian National Railroad directly to the west. Secondary access would be provided from local roads.

Support/Ancillary Facilities

Start-up cargo facilities were located off the east end of the primary runway and to the north with access from (relocated) Western Avenue.

The existing General Aviation facilities at Bult Field are located south of the 09 runway end. It is anticipated that these GA facilities will serve future GA activity at the Inaugural Airport. Access to the GA area would be from Crawford Avenue and/or Kedzie Avenue.

ALNAC’s revised Inaugural Airport Concept Plan included:

Airfield

A 9,500-foot instrument runway in a 09-27 orientation. The primary runway was moved 2,400 feet south of the location proposed in the original preferred IAP plan, between North Peotone/Church Road and Eagle Lake Road. This location was selected based on comments received from Federal agency environmental analysis and to ensure significant separation from the existing Bult Field for potential future terminal expansion needs. The existing 5,000-foot long, 75-foot wide visual runway at Bult Field was incorporated in ALNAC’s plan as well. This runway is in a 09-27 orientation and it is located 6,100 feet north of the future primary runway. This runway will serve the GA activity at IAP.

Terminal

The terminal complex location was shifted south 2,400 along with the primary runway. The terminal was within a terminal zone sized to accommodate the landside roadway loop, terminal curbside and parking facilities along with the airside aircraft parking apron.

Landside Access

Airport access is similar to that proposed in IDOT’s plan, from I-57 via a new interchange. The horizontal alignment of the proposed access road was parallel to and approximately 900 feet south of the existing Eagle Lake Road. This alignment minimized impacts on Black Walnut Creek. The access road would be grade separated over Illinois Route 50 and the Canadian National Railroad directly to the west. Secondary access would be provided from local roads.

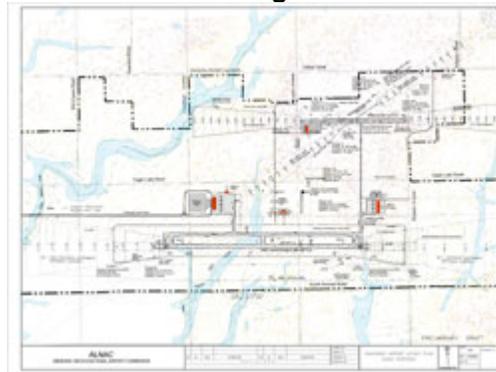
Support/Ancillary Facilities

The location of cargo facilities and GA facilities had been retained and was similar to the location shown in IDOT’s Inaugural Plan. The drawings below represent the two alternative airfields that were discussed in the public meeting.

IDOT Inaugural ALP



ALNAC Inaugural ALP



The Inaugural Airport Plan proposed by ALNAC required significantly more land acquisition compared to IDOT's plan. To contain the aeronautical facilities and noise contours within the airport property, the ALNAC plan expanded the footprint of the inaugural boundary to the south. The majority of comments provided by the general public both at the meeting and by mail indicated that the communities adjacent to the airport are less favorable of ALNAC alternative. The public perception is that the proposed 2,400-foot runway relocation to the south would directly and adversely impact the neighboring communities, Beecher and Peotone. A summary of land and environmental impacts incurred by these two plans is illustrated in **Table 5**.

Table 5 Land and Environmental Impacts Comparison		
Impacts	IDOT ALP	ALNAC ALP
Land Acquisition	<ul style="list-style-type: none"> • 5,225 Acres • 132 Parcels • 82 Residential Units 	<ul style="list-style-type: none"> • 7,885 Acres • 251 Parcels • 215 Residential Units
Environmental Impacts	<ul style="list-style-type: none"> • 31 Acres of floodplains • 38 Acres of Wetlands • 0.5 Miles of Streams 	<ul style="list-style-type: none"> • 58 Acres of Floodplains • 26 Acres of Wetlands • 1.1 Miles of Streams

In early 2007 both IDOT's Inaugural Plan and the ALNAC plan were submitted to FAA for review. The FAA declined reviewing two concepts for the Inaugural Airport and returned the plans to IDOT for further consideration and refinement recommending that only one preferred plan should be submitted for review. In the light of these developments IDOT re-examined all alternatives with the goal of refining and optimizing the airfield configuration in relation to the previously described concepts.

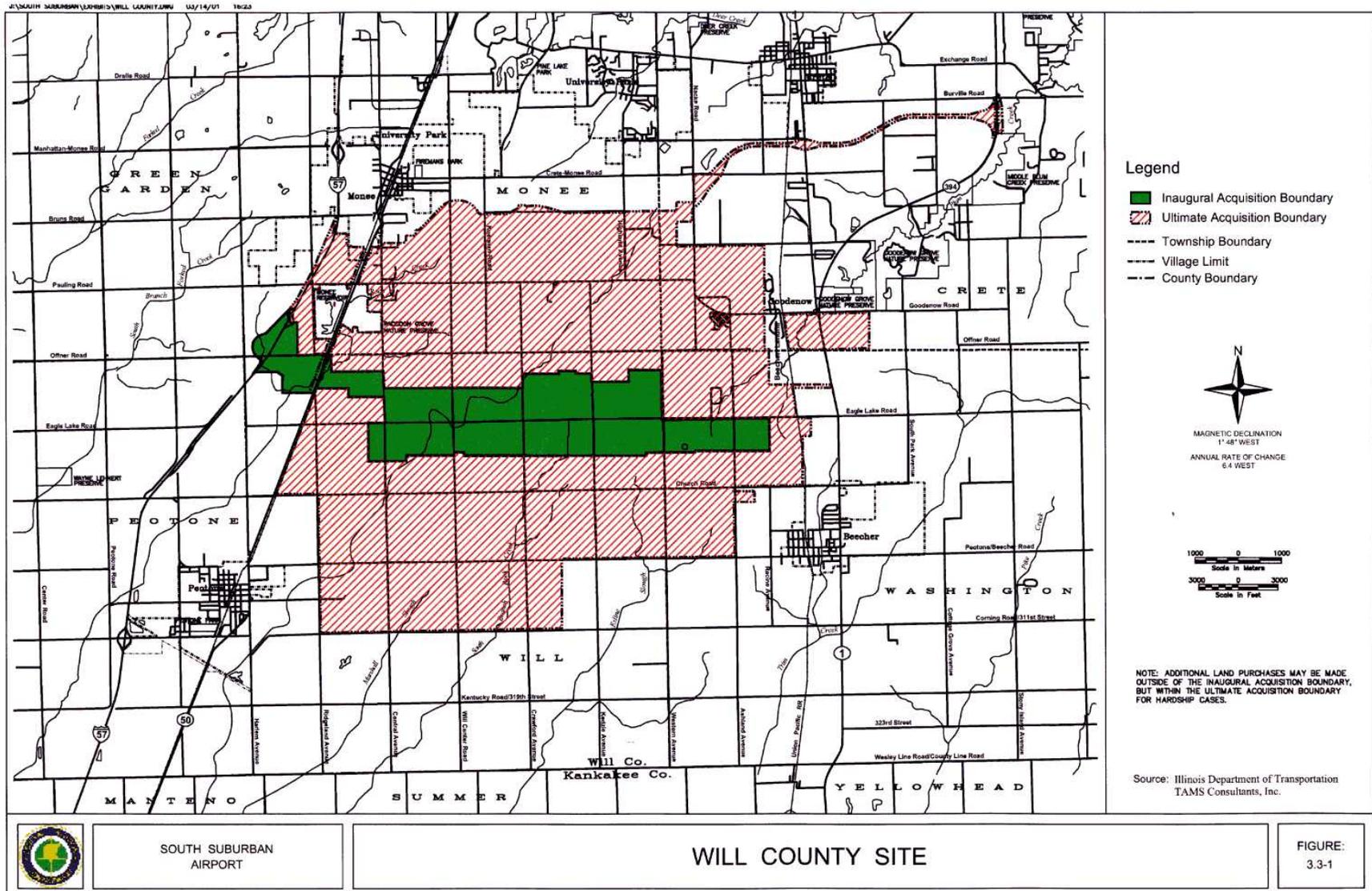
3.2 Description of Current Alternatives

In January 2008 IDOT undertook the evaluation of additional concept alternatives for the Inaugural Airport. The primary goal was to evaluate alternative locations for the Inaugural Runway and select a preferred alternative. The following site criteria were established to guide the selection of alternatives:

1. All alternatives must be generally located within the Inaugural Airport boundary as indicated in **Exhibit 2a** Property Map from the Tier 1 EIS;
2. All alternatives must provide the same airfield facilities and functional layouts;
3. All alternatives must be located such that anticipated 65 DNL aircraft noise levels are contained within the Inaugural Airport boundary; and,
4. All alternatives will incorporate Bult Field to serve General Aviation requirements.

By proposing the location of the Inaugural runway outside the established IAP boundary the ALNAC plan does not conform to site criteria number one. This plan however is included for further evaluation and comparison.

Exhibit 2a Will County Site Tier 1 Property Map



a. *Alternative 1*

IDOT's revised concept for the Inaugural Airport released in December 2005 was retained as Alternative 1. This alternative was described earlier in this chapter and is illustrated in **Exhibit 3**. The airfield includes a 9,500-foot long instrument runway in a 09-27 orientation. The existing GA runway at Bult Field is expected to serve the GA needs at SSA and it will be connected to the primary runway by a connecting taxiway. The horizontal separation between the Inaugural runway and the existing GA runway at Bult Field is approximately 3,700 feet. The thresholds of the runways are staggered approximately 2,000 feet.

The terminal complex is located to the north and approximately 2,100 feet east of the 09 end of the inaugural runway within a terminal zone sized to accommodate the landside roadway loop, terminal curbside, and parking facilities along with the airside aircraft parking apron. Direct access to/from I-57 is provided via a new interchange and access road connecting I-57 to the terminal. The horizontal alignment of the access road minimizes crossing over Black Walnut Creek. Secondary access will be provided from local roads. Cargo facilities are located off the east end of the primary runway and to the north with access from relocated Western Avenue. The existing General Aviation facility at Bult Field is assumed to serve future GA activity at the Inaugural Airport. Access will be provided from Crawford Avenue or from Kedzie Avenue both of which will be partially relocated. The land between the Inaugural Airport airside operation area (AOA) and Bult Field will be preserved as a "green zone". This land would continue to be utilized for agricultural use until is needed for aviation purposes.

b. *Alternative 2*

This alternative proposes relocation of the inaugural runway approximately 600 feet south of the originally runway location proposed in IDOT's plan. In this alternative the impacts on Black Walnut Creek, population and existing farm land would be significantly reduced. All airside aeronautical facilities (runway, taxiways, service roads) would be located south of Eagle Lake Road. All other support facilities (passenger terminal, cargo, air traffic control tower and ancillary facilities) would be located north of Eagle Lake Road. The land between the Inaugural Airport airside operation area (AOA) and Bult Field will be preserved as a "green zone". This land would continue to be utilized for agricultural use until is needed for aviation purposes. The existing GA runway at Bult Field would be connected to the primary runway by an approximately 4,300-foot long taxiway. Alternative 3 is illustrated in **Exhibit 4**.

c. *Alternative 3*

This Alternative is a "middle ground" concept between Alternate 4 ALNAC and Alternate 1 IDOT plans. It proposes an inaugural runway located approximately 1510 feet north of the runway location proposed on ALNAC plan and about 890 south of the original runway location proposed on IDOT plan. This is the southern most location the inaugural runway could be shifted such that all elements associated with the runway and the NAVAIDS' critical areas would be contained within the established Inaugural boundary. The existing GA runway at Bult Field would be connected to the primary runway by an approximately 4,600-foot long taxiway. All other aeronautical facilities and support facilities would also be relocated in relation to the runway location. The land between the Inaugural Airport airside operation area (AOA) and Bult Field will be preserved as a "green zone". This land would continue to be utilized for agricultural use until is needed

for aviation purposes. These facilities are similar to those described in Alternative 1 and are illustrated in **Exhibit 6**.

d. Alternative 4

This ALNAC alternative proposes relocation of the inaugural runway approximately 1,300 feet south of the originally runway location proposed in IDOT's plan. This alternative would require additional land acquisition to contain airport related noise within the airport boundary. In this alternative the impacts on floodplains, water resources prime farmland would increase comparing to previous alternatives. All aeronautical and support facilities (runway, taxiways, service roads, passenger terminal, cargo, air traffic control tower and ancillary facilities) would be located just north of North Peotone Road. The existing GA runway at Bult Field would be connected to the primary runway by an approximately 5,000-foot long taxiway. The land between the Inaugural Airport airside operation area (AOA) and Bult Field will be preserved as a "green zone". This land would continue to be utilized for agricultural use until is needed for aviation purposes. Alternative 4 is illustrated in **Exhibit 7**.

e. Alternative 5

This ALNAC alternative proposes relocation of the inaugural runway approximately 2,400 feet south of the originally runway location proposed in IDOT's plan. In this alternative the inaugural runway would be located outside the established inaugural boundary. This will require significant additional land acquisition to contain all aeronautical facilities within the inaugural airport boundary. Other aeronautical and support facilities (taxiways, service roads, passenger terminal, cargo, air traffic control tower and ancillary facilities) would be located within the originally established airport boundary. Similar to Alternative 4, this alternative also proposes that land between the Inaugural Airport airside operation area (AOA) and Bult Field would be preserved as a "green zone" and would continue to be utilized for agricultural use until is needed for aviation purposes. The existing GA runway at Bult Field would be connected to the primary runway by an approximately 6,100-foot long taxiway. In this alternative the impacts on Black Walnut Creek would be further reduced but impacts on the South Branch of Rock Creek and Exline Slough significantly increased. Alternative 5 is illustrated in **Exhibit 8**.

The Ultimate Airport Concepts for Alternatives 1, 2, 3, 4 and 5 are illustrated in **Exhibits 9, 10,11 and 12**.

Exhibit 4 Alternative 2 – Inaugural Airport Concept

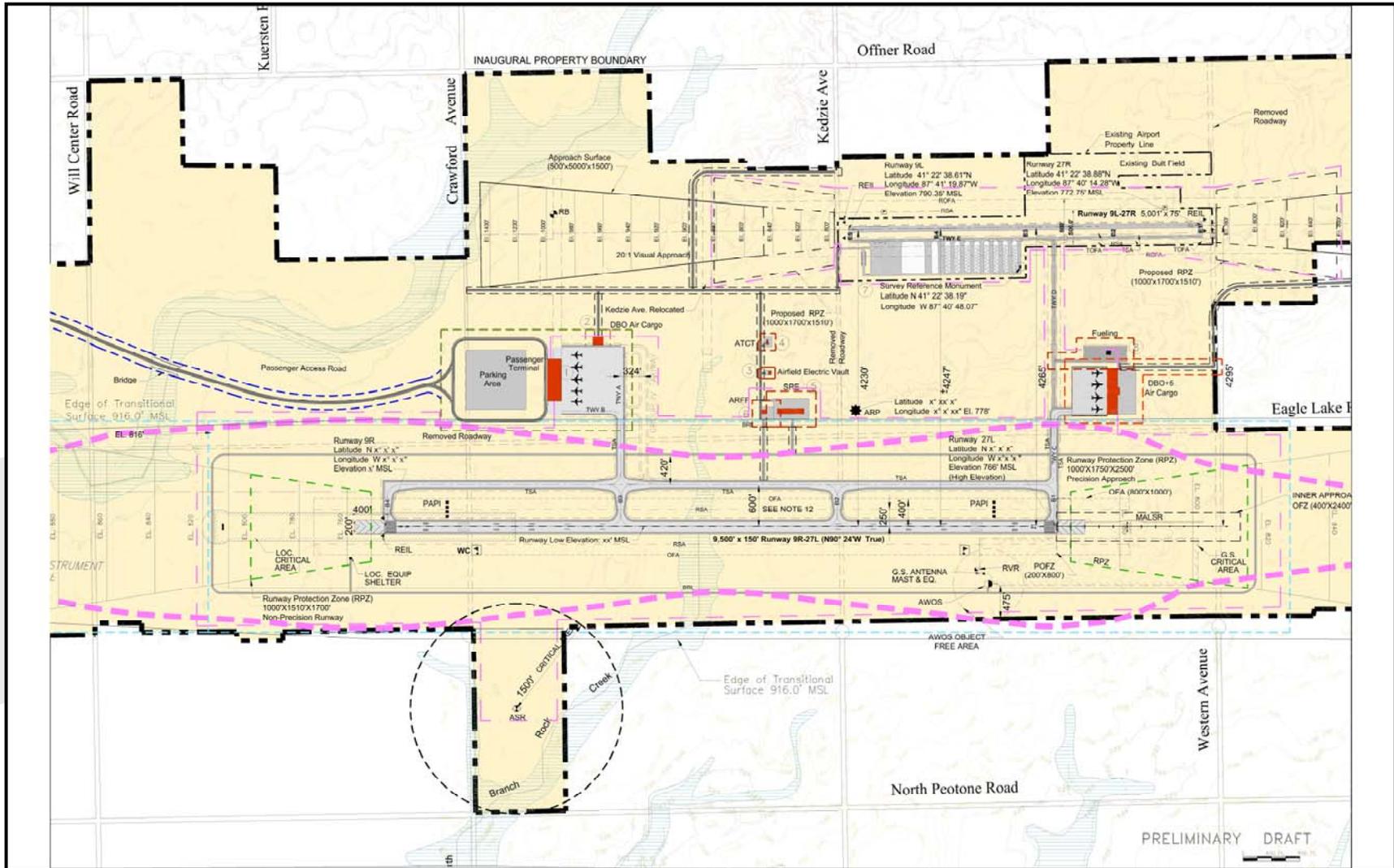


Exhibit 5 Alternative 3 – Inaugural Airport Concept

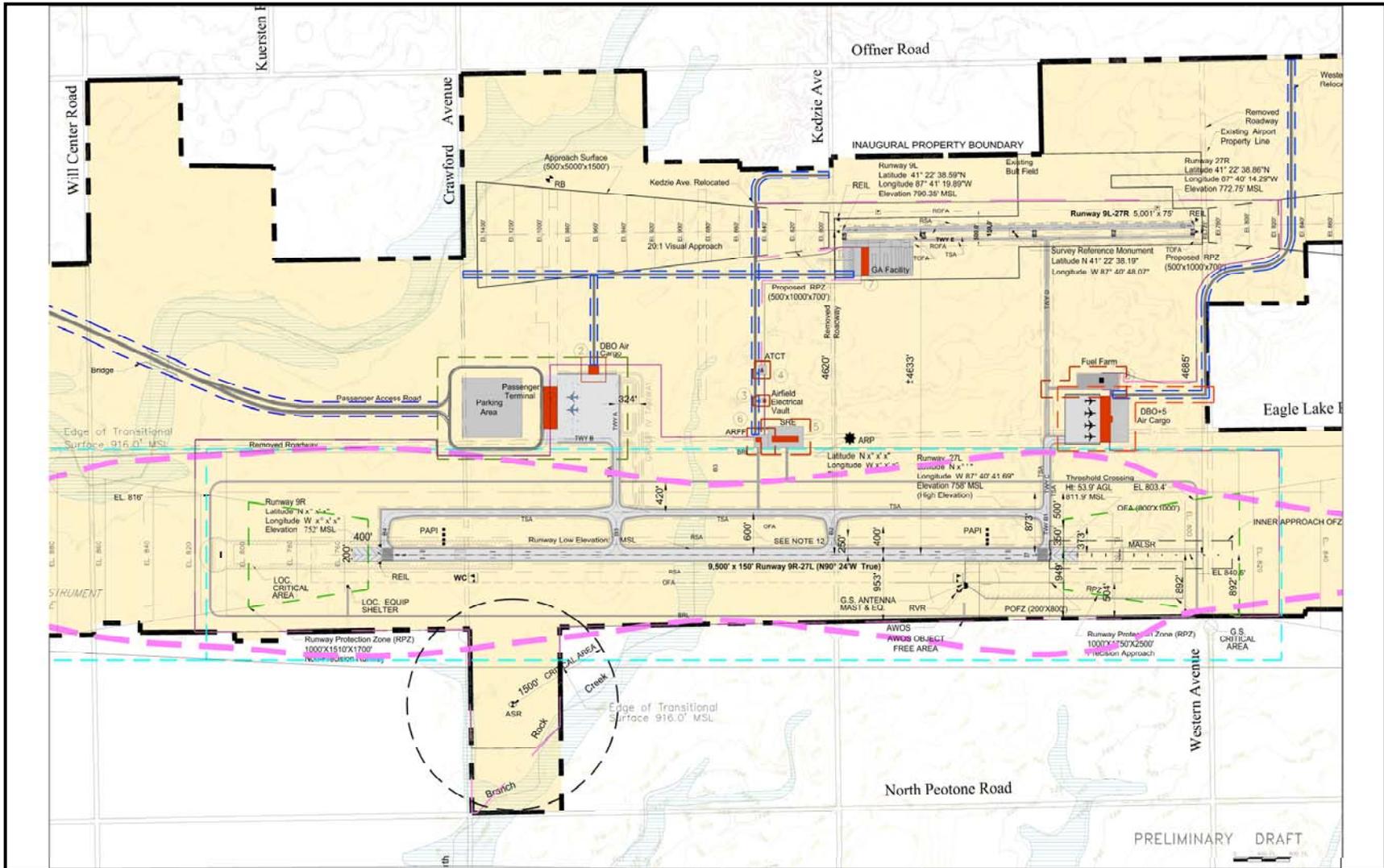


Exhibit 6 Alternative 4 –Inaugural Airport Concept

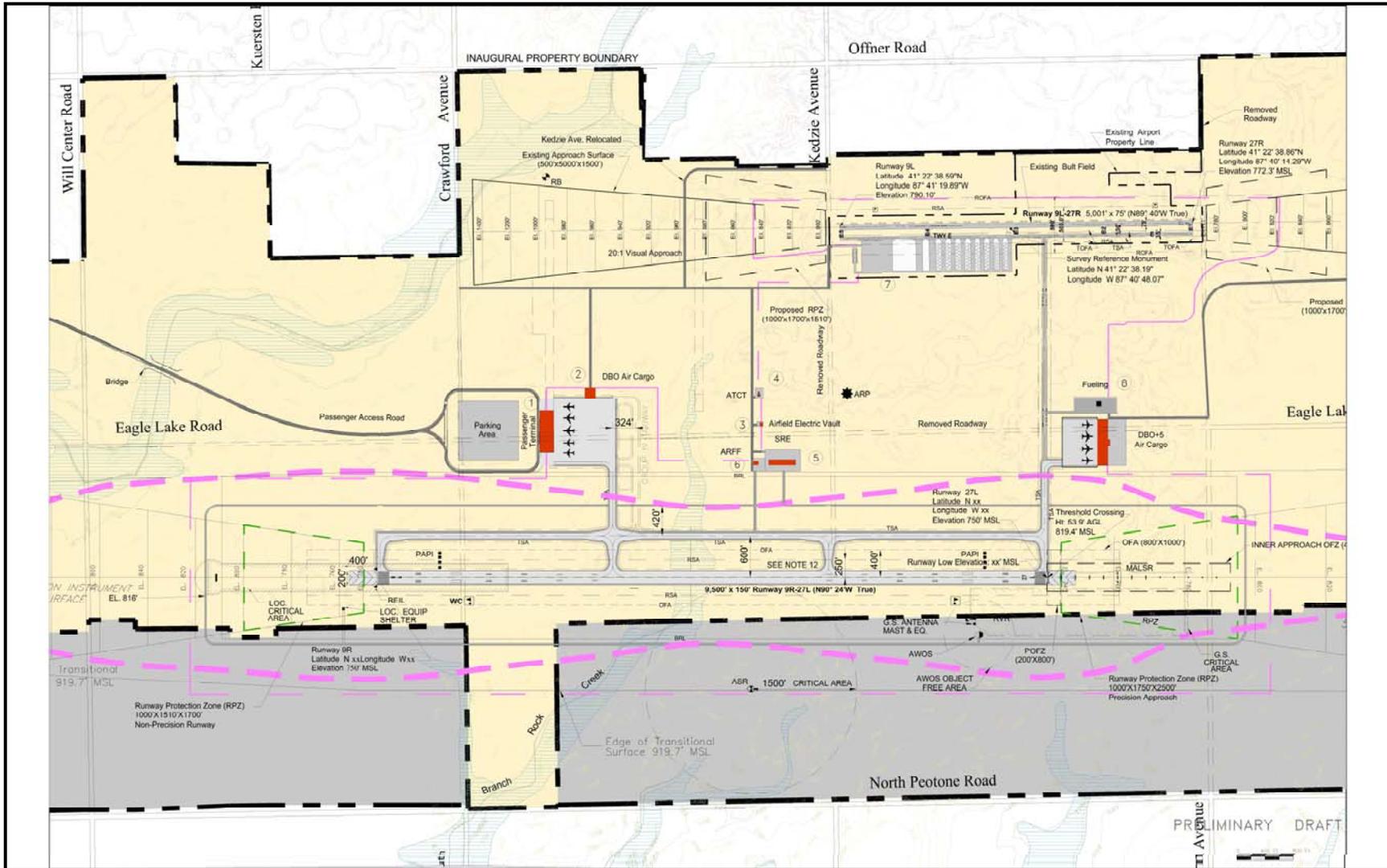


Exhibit 7 Alternative 5 –Inaugural Airport Concept

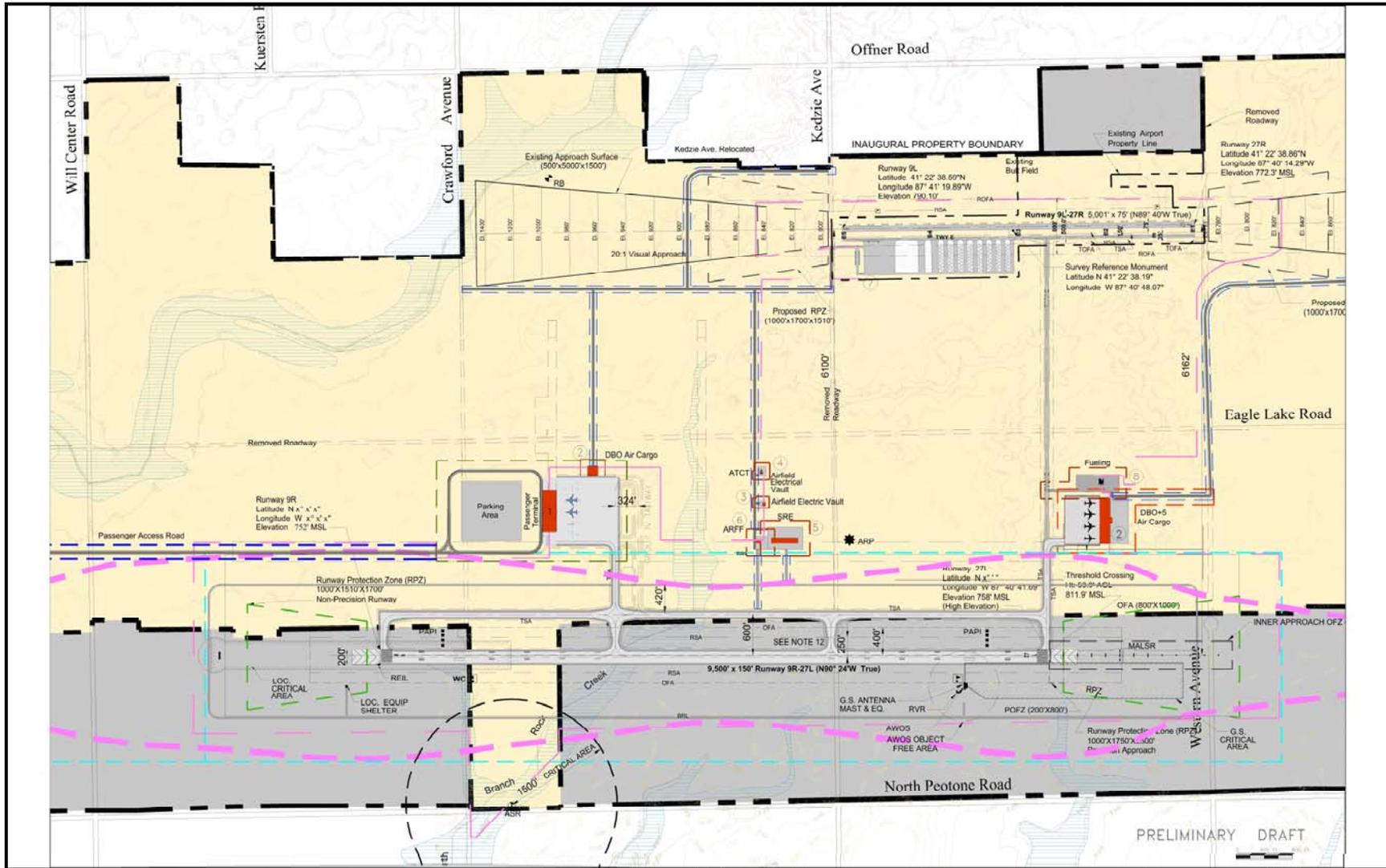


Exhibit 8 Alternative 1 – Ultimate Airport Concept

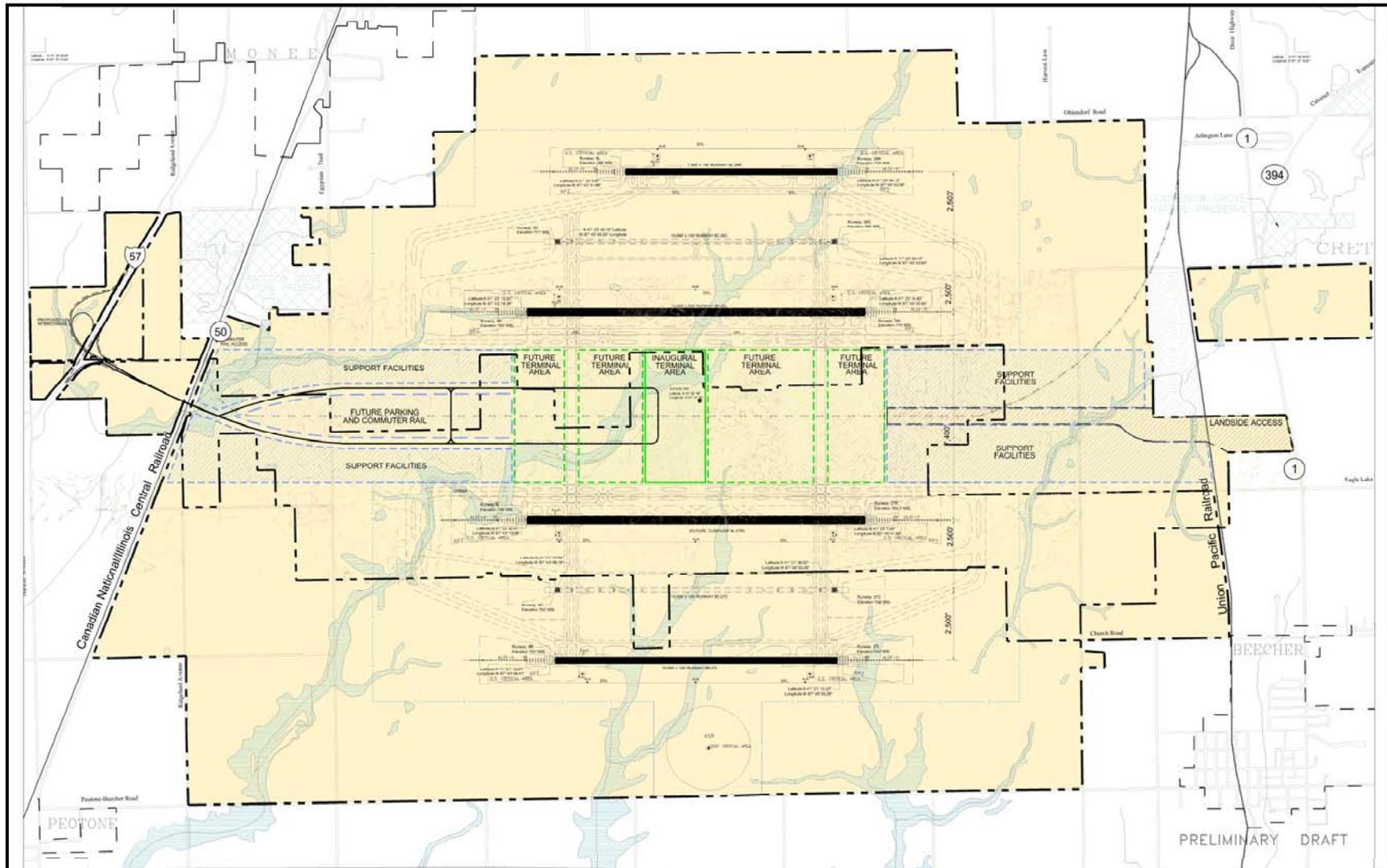


Exhibit 9 Alternative 2 – Ultimate Airport Concept

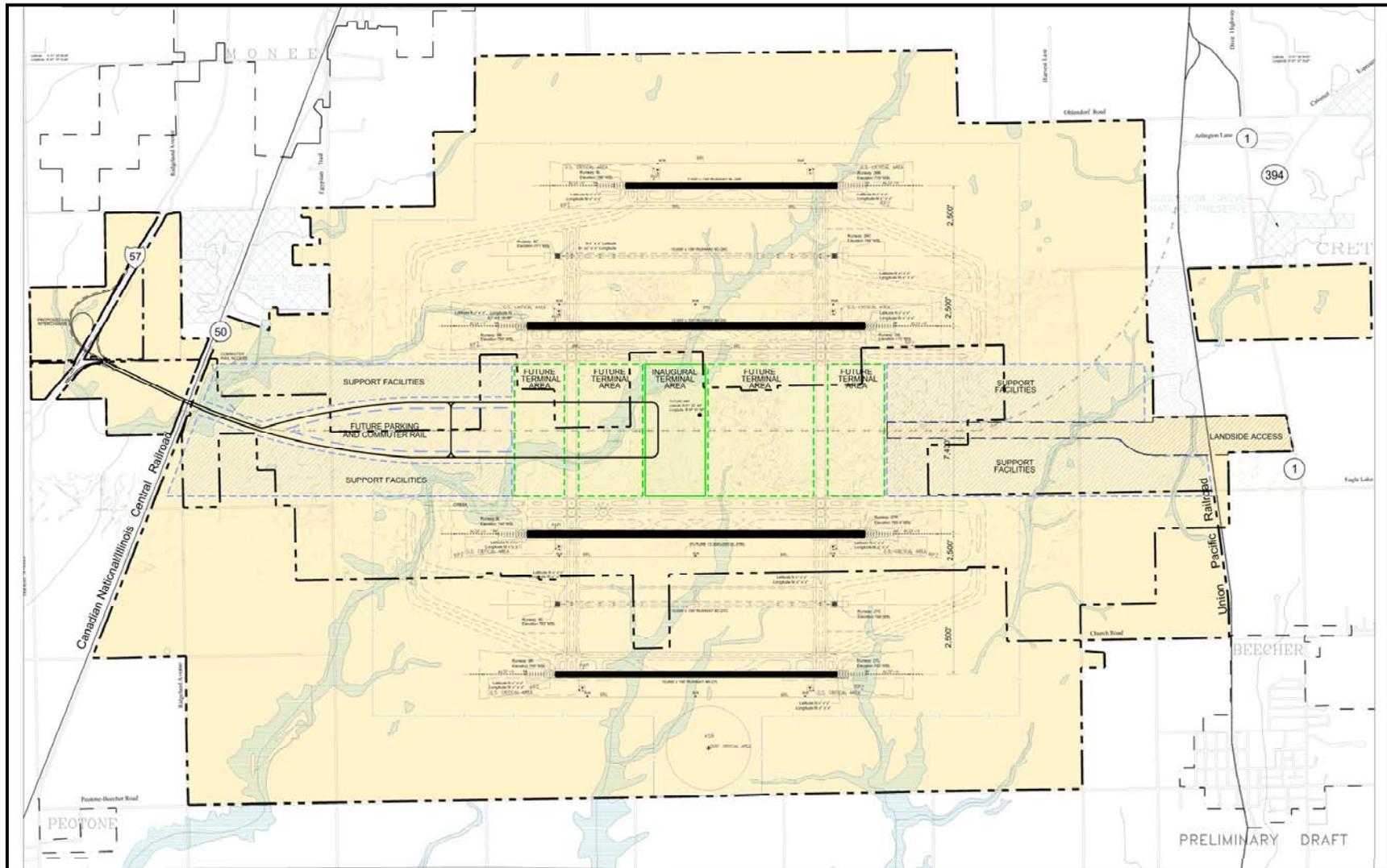


Exhibit 10
Alternative 3 – Ultimate Airport Concept

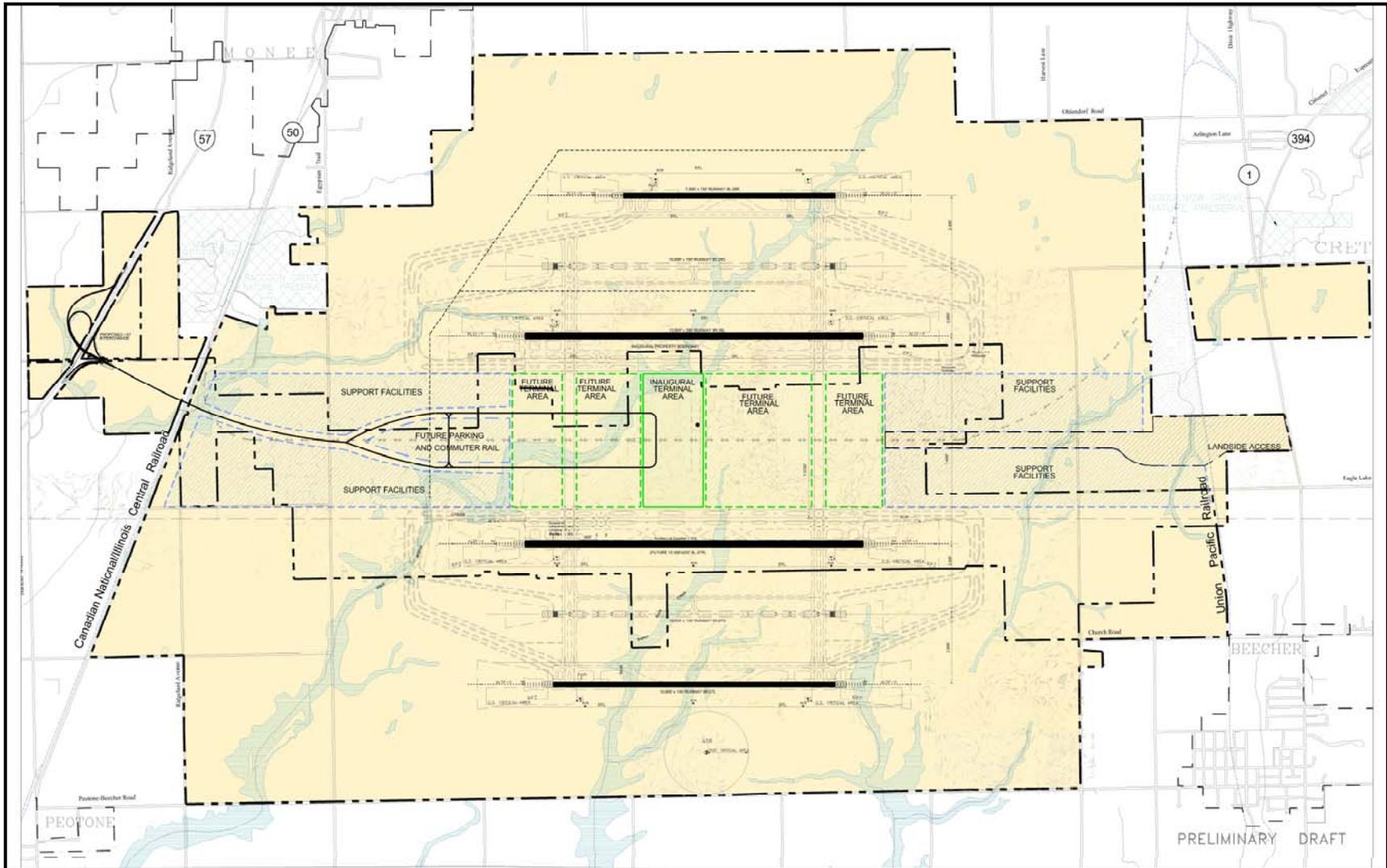


Exhibit 11
Alternative 4 – Ultimate Airport Concept

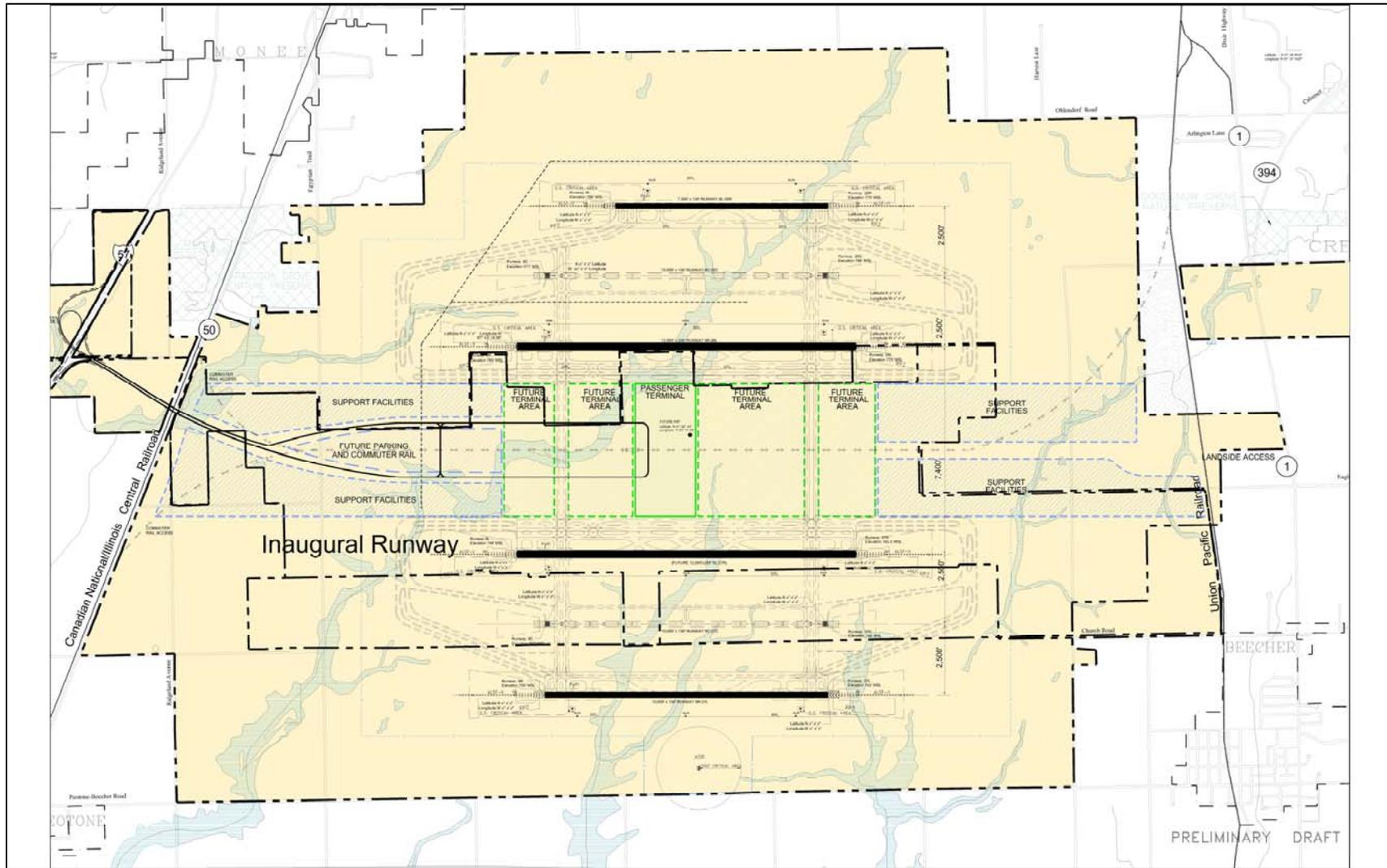
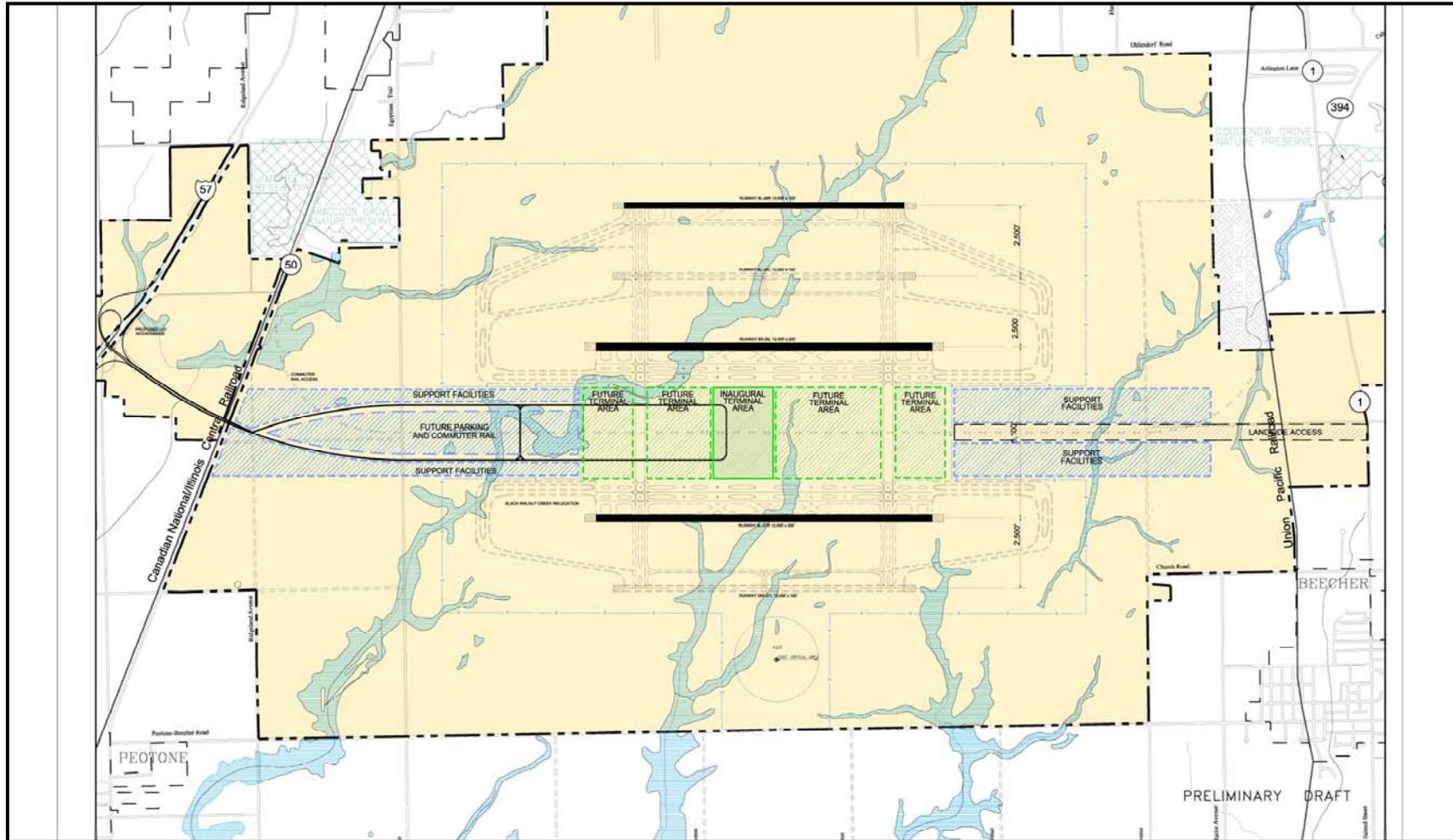


Exhibit 12 Alternative 5 – Ultimate Airport Concept



3.3 Evaluation of Alternatives

a. Inaugural Airfield Alternatives Evaluation Criteria

The inaugural airfield alternatives were examined and evaluated based on a set of criteria that were selected jointly with IDOT. These criteria are listed and defined in **Table 6**. A short description of how each evaluation criteria was used to evaluate the alternatives is provided below.

Table 6 Inaugural Airport Concept Alternatives Evaluation Criteria	
Criteria	Definition
1	Ability to maximize airfield operational efficiency – DBO+5 <ul style="list-style-type: none"> • Minimize aircraft taxiing distances • Provide adequate runway separation to allow unconstrained expansion of the terminal complex and landside facilities • Provide adequate runway separation to permit independent instrument approaches to both runways
2	Compatibility with the Ultimate Preferred Plan <ul style="list-style-type: none"> • The inaugural runway should be compatible with the preferred ultimate airfield concept <ul style="list-style-type: none"> ○ Accommodate four simultaneous independent precision approaches ○ Provide for perimeter taxiways to avoid/minimize incursions ○ Provide adequate separation between inner parallel runway to allow for all potential terminal complex expansion needs
3	Ability to meet airport security requirements <ul style="list-style-type: none"> • The inaugural airport should be able to meet security requirements efficiently (minimum airport perimeter length, minimum perimeter security zone)
4	Avoid and /or minimize adverse land use impacts <ul style="list-style-type: none"> • Develop an inaugural airfield concept that would minimize conflicts with the land use plans of the neighboring communities • Contain all significant aircraft-generated noise, as defined by FAA, on airport property or compatible land uses • Minimizes area of land needed for the airport's landside and airside operations • Minimum population displacement • Minimum disruption to local roads
5	Ability to avoid and/or minimize impacts on natural resources <ul style="list-style-type: none"> • Impacts to wetlands • Impacts to floodplains • Impacts to water resources • Impacts to prime farmland
6	Potential to minimize cost <ul style="list-style-type: none"> • Compare relative costs of each inaugural runway concept for earthworks and additional land acquisition cost

Criteria 1 – Ability to maximize airfield operational efficiency – DBO+5
 Each inaugural airfield alternative must be capable of accommodating the level of operations forecasted for DBO+5¹. In addition, an airfield concept that would

¹ Draft *Projections of Aeronautical Activity for the Inaugural Airport Program, South Suburban Airport*, prepared for the Illinois Department of Transportation, May 2004.

allow for adequate runway separation for at least dual independent instrument arrivals is rated higher than those which do not meet this criterion. Adequate area should be provided for the passenger terminal and cargo facilities to expand to serve the needs of a second commercial runway.

Criteria 2 – Compatibility with Preferred Ultimate Concept – This criterion examines whether an alternative is compatible with the selected preferred ultimate airfield concept. If it was compatible, it received the highest rating; if the alternative was not compatible, it received the lowest rating.

Criteria 3 – Airport Security Criteria – This criterion examined the perimeter of the Air Operations Area (AOA) to determine whether an alternative would have more or less area to secure. Those alternatives that were more compact were considered to be superior to those alternatives that required larger Aircraft Operation Area (AOA). In addition the ability of the configuration to provide a security buffer zone outside of the AOA fence was evaluated. Those alternatives that provided 1,200 foot depth from runway centerline to AOA fence and a 300' clear zone to be used for monitoring and interception of breeches of the airport property line fence were rated the highest. The 1,200' AOA depth from runway and parallel taxiway center lines was recommended by airport security consultants. The provision of a clear zone outside of the AOA fence is recommended by the TSA in "Recommended Security Guidelines for Airport Planning, Design and Construction", dated June 15, 2006. The 300' clear zone depth is based on the range of video surveillance equipment.

Criteria 4 – Ability to Avoid and/or Minimize Land Use Impacts

This criterion was divided into three sub-criteria to rate different impacts that are of concern to the landowners and communities surrounding the site. Each sub-criterion was rated separately and then averaged with ratings from the other sub-criteria for each alternative.

Sub-Criteria 4a – Conflicts with Local Land Use Plans – Each alternative was evaluated against the *Land Use Plan for the Eastern Will County Area* (August 1997) to determine if the alternative would conflict with the plan. Conflicts were defined as airport facilities being located outside of the previously defined airport boundary (shown on the land use map), 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 planned residential land uses.

Sub-Criteria 4b – Contain Aircraft Noise on Airport Property – Those alternatives that contain all significant aircraft-generated noise (as defined by FAA) on airport property were rated higher than those that did not contain all significant aircraft-generated noise on airport property. Those that would result in 65 DNL noise contours over compatible land uses (as defined by FAA FAR Part 150) were rated second highest. Other alternatives that result in 65 DNL noise contours over land outside the airport boundary and on other land uses were rated lower.

Sub-Criteria 4c – Optimal Land Area – Alternatives that would result in less land required for airport purposes were rated higher than those that would require more land.

Sub-Criteria 4d – Additional Land Acquisition – Alternatives that could be configured within the Inaugural site as determined in the Tier I EIS were

rated higher than those that required additional land beyond the Inaugural Site.

Sub-Criteria 4e – Population Displacement – Alternatives that minimize impacts to homes and residents were rated higher than those that had greater impacts.

Criteria 5 – Ability to Avoid and/or Minimize Natural Resource Impacts

This criterion was divided into five sub-criteria to rate different impacts that are of concern to the Federal and state natural resource agencies, special interest groups and the general public. Each sub-criterion was rated separately and then averaged with ratings from the other sub-criteria for each alternative.

Sub-Criteria 5a – Impacts on Wetlands – Alternatives that would result in fewer impacts to wetlands rated higher than alternatives with greater impacts.

Sub-Criteria 5b – Impacts on Floodplains – Alternatives that would result in fewer impacts to floodplains rated higher than alternatives with greater impacts.

Sub-Criteria 5c – Impacts on Water Resources – Alternatives that would result in fewer impacts to water resources (streams, lakes, etc.) rated higher than alternatives with greater impacts to water resources.

Sub-Criteria 5d – Impacts on Prime Farmland – Alternatives that would result in fewer impacts to prime farmland rated higher than alternatives with greater impacts to prime farmland.

Criteria 6 – Potential to Minimize Costs

Alternates that required additional land beyond the Inaugural site were rated lower than alternates that were configured within the Inaugural site. Alternatives were compared to determine the least amount of earthwork/grading required to construct the inaugural runway. Those alternatives that are relatively less expensive rated higher than those that are relatively more expensive. .

b. Inaugural Airfield Concept Alternatives Evaluation Matrix

Each of the concept alternatives for the Inaugural SSA was evaluated and ranked by each criteria identified in **Table 6**. A rating scale from 1 to 5 was assigned to each criterion to better distinguish differences between each of the alternatives. A score of 5 was considered the best score and a score of 1 was considered the worst.

Table 7 presents the results of the evaluation analysis in actual numbers/raw data. **Table 8** depicts the results of the analysis applying the rating scale to each of the airfield concepts.

Table 7 Inaugural Airport Concept Alternatives Evaluation Matrix Data						
No.	Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
1	Ability to maximize airfield operational efficiency (<i>Adequate area for terminal expansion; potential for parallel, simultaneous IFR ops.</i>)	3,700'	4,300'	4,590'	5,000'	6,100'
2	Compatibility with preferred ultimate plan. (<i>Areas of conflicts.</i>)	0	0	0	0	1 (only 3 r/w)
3	Ability to meet airport security requirements.					
a	<i>Airport perimeter. (miles)</i>	10.4	10.8	11.0	11.1	11.6
b	<i>Perimeter security zone (RW to PL depth in feet).</i>	1,500'	1,230	925'	550'	1,800 (note 1)
4	Ability to avoid and/or minimize adverse land use impacts and community disruption.					
a	<i>Additional Land Acquisition needed to ensure that all airport related uses are contained within the Inaugural Boundary (acres)</i>	0	0	0	1,600	2,600
b	<i>Compatibility with Regional Land Use Development Plans; (Areas of conflicts)</i>	0	0	0	0	1
c	<i>Contain all significant aircraft-generated noise, as defined by FAA (65 DNL), on airport property or compatible land uses</i>	Yes	Yes	No	No (note 1)	No (note 1)
d	<i>The Inaugural Airport boundary will encompass the optimal land area (fewest acres) needed for airport-related uses (AOA area in acres)</i>	1,500	1,600	1,640	1,690	1,840
e	<i>Population impact – number of people displaced.</i>	160	90	150	138	207
5	Ability to avoid and/or minimize impacts on natural resources.					
a	<i>Wetlands (acres impacted)</i>	37	29	32	28	15
b	<i>Floodplains (acres impacted)</i>	27	31	39	48	75
c	<i>Water Resources (miles of stream impacted)</i>	0.5	0.6	0.8	1.0	1.3
d	<i>Prime Farmland (acres impacted)</i>	795	890	926	966	1,160
6	Potential to minimize cost					
a	<i>Additional Land Acquisition Cost</i>	\$0	\$0	\$0	\$24M (note 2)	\$39M (note 2)
b	<i>Relative Earthwork Cost (CY Excavation)</i>	3.6M	3.6M	3.6M	3.6M	3.6M

Notes:1. Alternative 5 runway is located outside of the Tier 1 Inaugural Boundary and meets the criteria only by acquiring additional land to the south, east and west.

2. The land acquisition cost is currently under review by IDOT. Land acquisition costs shown in this table were derived based on 2,600 acres @ \$ 15,000/acre. (Source: Hanson Professional Services Inc.

Table 8 Inaugural Airport – Comparison of Concept Alternatives Evaluation Matrix						
No.	Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
1	Ability to maximize airfield operational efficiency					
	<i>Adequate area for terminal expansion; Runway separations – operational flexibility.</i>	1	5	5	5	5
2	Compatibility with preferred Ultimate Airport Plan	5	5	5	5	1
3	Ability to meet airport security requirements					
a	<i>Airport perimeter security. (AOA fence length in feet.)</i>	5	4	3	3	1
b	<i>Perimeter security zone. (RW to PL depth in feet.)</i>	4	3	2	1	5 (note1)
4	Ability to avoid and/or minimize adverse land use impacts and community disruption					
a	<i>Additional Land Acquisition.</i>	5	5	5	3	1
b	<i>Compatibility with Regional Land Use Development Plans.</i>	5	5	5	1	1
c	<i>Contain aircraft noise on airport property</i>	5	5	1	1	1
d	<i>Optimal Development Footprint</i>	5	3	1	1	1
e	<i>Population displacement</i>	3	5	3	3	1
5	Ability to avoid and/or minimize impacts on natural resources					
a	<i>Wetlands (acres impacted)</i>	1	2	2	3	5
b	<i>Floodplains (acres Impacted)</i>	5	5	4	3	1
c	<i>Water Resources (miles of stream impacted)</i>	5	5	4	2	1
d	<i>Prime farmland (acres impacted)</i>	5	4	4	3	1
6	Potential to minimize cost					
a	<i>Additional Land Acquisition Cost</i>	5	5	5	1	1
b	<i>Relative Earthworks Cost</i>	5	5	5	5	5
	Total Score	64	66	54	40	31
	Average Score	4.3	4.4	3.6	2.7	2.1
	Rank	2	1	3	4	5

Note: 1. Property line has been relocated to North Peotone road because the proposed inaugural runway is located outside the Inaugural Airport property line. This requires significant land acquisition.

3.4 Selection of the Preferred Alternative

The results in **Tables 7 & 8** show that **Alternative 2** is the Preferred Inaugural Airport Configuration Alternative. The results are summarized as follows.

Alternative 1 – Rank 2

- 3,700' runway separation less than 4,300' min. for independent, parallel IFR approaches. Special FAA approval required.
- Compatible with Ultimate Plan – no conflicts.
- Shortest airport perimeter.
- Meets perimeter security zone depth requirement of 1,500' min.
- No apparent conflict with Regional Land Use Plans.
- All aircraft noise to 65 DNL is contained on airport land.
- Smallest AOA area.
- No additional land acquisition and cost is required.
- Second largest population displacement.
- Largest area of wetlands impact.
- Least stream and floodplain impact.
- Least area of prime farmland impact.
- Earthwork balance – surplus of excavated soil.

Alternative 2 – Rank 1

- 4300' runway separation meets FAA min. for independent, parallel, IFR operations.
- No apparent conflicts with Ultimate Plan.
- Second shortest AOA perimeter.
- 1,230' depth of south security perimeter less than 1,500' criteria. – Additional security provisions may be required.
- No apparent conflicts with Regional Land Use Plans.
- All airport noise (65 DNL) is contained on airport property.
- Second smallest AOA area.
- No additional land acquisition.
- Smallest population displacement.
- Second smallest area of wetland impact.
- Second smallest area of stream and floodplain impact.
- Second smallest area of prime farmland impact.
- No additional land acquisition and cost.

Alternative 3 – Rank 3

- 4,590' runway separation exceeds 4,300' min.
- Compatible with Ultimate Plan – no conflicts.
- Second longest airport perimeter.
- 925' depth of security zone along south property line does not meet 1,500' min.
- Possible conflict with Beecher Land Use Plan.
- Second largest AOA area.
- 65 DNL contour falls outside airport property on east.
- Additional land acquisition required to contain airport related noise on airport property.
- Third largest population displacement.

- Second largest area of wetland impact.
- Second largest stream and floodplain impact.
- Second largest prime farmland impact.
- Earthwork balance – modest shortage of fill.

Alternative 4 – Rank 4

- 5,000' runway separation meets FAA recommendation of 5,000',
- Due to south shift, only 3 independent runways – significant reduction to Ultimate Capacity.
- Additional land acquisition required to contain all airport noise on airport property.
- Second largest AOA area.
- 550' depth of south security perimeter is less than the 1,500' criteria. Additional security provisions may be required.
- 1,600 acres of additional land acquisition required.
- Greater stream and floodplain impact compared to Alternatives 1, 2, & 3
- \$24 million additional land acquisition cost.

Alternative 5 – Rank 5

- 6,100' runway separation significantly exceeds FAA recommendation of 5,000', minimum of 4,300'
- Due to south shift, only 3 independent runways – significant reduction to Ultimate Capacity.
- Longest airport perimeter.
- Greatest depth of perimeter security zone if south property line is relocated to North Peotone Road.
- Significant conflict with proposed Beecher Intermodal Center.
- Additional land acquisition required to contain all airport noise on airport property.
- Largest AOA area.
- 2,600 acres of additional land acquisition required.
- Largest population displacement.
- Smallest area of wetland impact.
- Greatest stream and floodplain impact.
- Greatest prime farmland impact.
- Earthwork balance – modest shortage of fill.
- \$39 million additional land acquisition cost.

Summary of Preferred Alternative 2

Alternative 2 provides flexibility of operations by maintaining 4,300 feet between runways (General Aviation and Commercial). This will allow for independent instrument landings and takeoffs (should they be required) when runways are appropriately equipped and an ATCT is manned by FAA. While Alternatives 3, 4 and 5 also provide the required 4,300 feet they exceed this separation and would increase the airport footprint without providing any additional functionality.

Alternative 2 provides (through the 4,300-foot runway separation) an improved landside area for preservation of natural landscape and promotion of carbon neutral and green airport features in the Inaugural Phase of development. As shown in A -38 in the Appendix this area features most of the woodlands and

young tree farms on the Inaugural site. Sustainable features will be featured in this area to counteract the customary negative impacts of airports such as noise and air pollution as well as impacts on wetlands and streams. Landside facilities also will reflect sustainability goals that will be developed to guide the initial design and expansion of the airport.

Alternative 2 strikes a good balance between compactness of combined airfields and the associated operational and environmental benefits of a smaller footprint and shorter distances for aircraft and service vehicles, vs. the flexibility to expand terminals and parking within the inaugural footprint up to the time when a second commercial runway is needed.

DRAFT

Chapter 4 – Preferred Inaugural Airport Configuration

Description of Preferred Inaugural Concept

a. Airfield

The Preferred Inaugural Alternative proposes a single 9,500-foot long precision instrument runway in a 9-27 orientation with a full 75-foot wide, parallel taxiway. The inaugural runway is located approximately 1,200 feet south of Eagle Lake Road. The runway is founded at the east end of the ultimate 12,000-foot runway. The proposed runway /taxiway separation is 600 feet. Instrument Landing System (ILS) is to be located off the end of Runway 27L. Runway 9R is initially a non-precision runway.

The existing GA runway (9L-27R) at Bult Field is 5,000-foot long, 75-foot wide and has a full 35-foot wide, parallel taxiway. The runway/taxiway separation is 100 feet. Runway 9L-27R is visual only and is located approximately 4,300 feet north of the inaugural runway. The 27R threshold is staggered approximately 2,000 feet east of the SSA Inaugural runway. The existing 9L-27R runway at Bult Field is connected to the Inaugural Runway by an approximately 4,300-foot long taxiway. The Airside Operation Area (AOA) fence will segregate and secure the airside operations from landside operations.

b. Passenger Terminal

The passenger terminal is located approximately 2,300 feet east and 1,800 feet north of 9R Inaugural runway. The terminal building is located within a terminal zone sized to accommodate the landside roadway loop, terminal curbfront, and parking facilities along with the airside aircraft parking apron.

c. Landside Access

Direct access to/from I-57 is provided by a new interchange and access road connecting the interstate to the terminal. The horizontal alignment of the proposed access road is designed to minimize impacts on Black Walnut Creek. The road is grade separated over Route 50 and the Illinois Central Railroad directly to the west. Cargo access is provided via Route 1/ Eagle Lake Road.

d. Support/Ancillary Facilities

Start-up cargo facilities are located off the east end of the primary runway and to the north with direct access from Eagle Lake Road. The existing General Aviation facilities at Bult Field are located south of the east end of runway 09L-27R. It is anticipated that these GA facilities will serve future GA activity needs at the Inaugural South Suburban Airport. Access to GA area is via Offner Road and Crawford Avenue.

IDOT recommends that an ATCT should be in operation at the Inaugural Airport. The ATCT is located within a secured area, relatively central from runway ends, approximately 2,600 feet north of runway 9R-27L centerline. Access is provided from Crawford Avenue via a new access road. However, the decision on when and where the ATC will be constructed at SSA will be in accordance with FAA guidance and it is expected that the FAA will conduct its own study to determine the location and final elevation of the ATCT.

Other support facilities such as the Aircraft Rescue and Fire Fighting Facility (ARFF) and the Snow Removal Equipment (SRE) Complex, are also located fairly central relative to runway 9R-27L ends and approximately 1,600 feet north of runway centerline. The fuel storage facility is located within a secure area at the east side of the airfield to the north of cargo facilities.

e. Nav aids

The required Nav aids were listed in Chapter 3. Runway 27L is expected to be equipped with CAT I Instrument Landing System with a touchdown RVR and Precision Approach Indicator Path (PAPI). Non-precision approach systems (GPS, VOR) might be installed on runway 9R.

The ASR is located on the south airfield, approximately 2,300 feet east of runway 9R and 2,300 feet south of runway 9R-27L centerline. The Automated Weather Observation Station will be collocated the glide slope antenna. The Airport Rotating Beacon will be located in an area located 5,400 feet north and 2,400 feet east of runway

It is expected that in the near future the existing runway 9L -27R at Bult Field will be equipped with non-precision approach navigational instrumentation.

Table 9 presents a preliminary list of navigational and visual aids anticipated for the Runway 27L at SSA.

Table 9 Summary of Recommended Nav aids and Visual Aids	
Instrument Landing System CAT I	<ul style="list-style-type: none"> Glide Slope Localizer Outer Marker Required for CAT I
Precision Approach Indicator Path (PAPI)	
Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights (MASLR)	
High Intensity Runway Edge Lights (HIRL)	
Medium Intensity Taxiway Edge Lights (MITL)	

Chapter 5 – Preliminary Airport Layout Plans

5.1 Background

A Preliminary Airport Layout Plan drawing set was submitted to FAA in September 2005 consisting of five sheets (Title Sheet, Inaugural Plan Sheet, Data Sheet, Ultimate Plan Sheet, and Data Sheet). The following four Preliminary ALP drawings are being re-submitted reflecting the consideration of additional alternatives contained in this report and the selection of IDOT's Preferred Inaugural Concept.

5.2 Description of Revised Preliminary Airport Layout Plans

a. Inaugural Airport Layout Plan

This sheet depicts a plan view showing the following aeronautical facilities:

- The commercial aviation inaugural runway (9R-27L) including all runway associated elements: full parallel taxiway, shoulders, blast pads, Runway Safety Areas (RSA), Runway Protection Zones (RPZ), Object Free Areas (OFA), Obstacle Free Zone and inner portions of the approach surfaces.
- The existing general aviation runway (9L-27R) at Bult Field and all runway associated elements: full parallel taxiway, shoulders, blast pads, Runway Safety Areas (RSA), Runway Protection Zones (RPZ), Object Free Areas (OFA) and inner portions of the approach surfaces. The existing aircraft apron and aircraft storage facilities are also depicted.
- Taxiways details (taxiway width, safety area, object free area, taxiway separation from runway centerline)
- Inaugural passenger terminal complex area including apron, aircraft positions, connecting taxiway and the airport access road.
- Inaugural ATCT, cargo and ancillary facilities (ARFF, SRE, fuel storage area) and proposed access to these facilities including service roads.
- NAVAIDS (approach lighting, ILS landing system and associated critical areas, Airport Surveillance Radar, Airport Rotating Beacon).
- Inaugural airport boundary and the Airport Operating Area limits.

b. Inaugural Airport Data Sheet

This sheet depicts all relevant airport and runway technical data

- Airport Data Table includes information pertaining to the inaugural Airport Reference Code (ARC), Airport Reference Point (ARF) expressed in latitude and longitude, airport elevation, Mean Max Temperature, Weather and Navigational Aids on airport.
- All Weather and IFR Wind Rose depicts the wind coverage information at 10.5, 13, 16 and 20 knots for the Inaugural and GA runway at SSA including the source of wind information and time period for wind data.
- Runway Data Table includes all pertinent technical information for both Runway 9R-27L and 9L-27R such as:
 - runway dimensions, gradient, bearing,
 - runway end, high/low point and Touch Down Zone (TDZ) elevations,
 - runway lighting and marking information
 - runway NAVAIDS
 - Dimensions of RSA, RPZ, OFA, OFZ, approach surfaces and threshold sitting criteria

- Taxiway data table including taxiway names , design category and dimension (width)

c. Future Airport Layout Plan

This sheet depicts a plan view showing the following aeronautical facilities anticipated to be implemented at the SSA at DBO+20 and beyond. The DBO+20 airport development includes:

- Extension of the inaugural runway 9R-27L, 2,500 feet to the west, to a full length of 12,000 feet.
- New 12,000-foot long Cat III, commercial runway (8R-26L) with full parallel taxiway located 7,400 feet north of runway 9R-27L.
- Airport support and ancillary facilities

The following airport plan was conceptualized for SSA beyond DBO+20:

- Six parallel east west runway capable of accommodating four simultaneous approaches
- Dual parallel taxiways for runway 8R-26L and 9R-27L and perimeter taxiways connecting the outermost north and south runways
- Future terminal complex is anticipated to evolve and expand within the area bordered by the two innermost runways
- Support facilities areas can develop both on the west side of the airport along the access road and on the east side along Eagle Lake Road.
- NAVAIDS (approach lighting, ILS landing system and associated critical areas, Airport Surveillance Radar, Airport Rotating Beacon.

d. Future Airport Data Sheet

This sheet depicts all relevant airport and runway technical data for the future airport

- Airport Data Table includes information pertaining to the future Airport Reference Code, Airport Reference Point (latitude and longitude), ultimate airport elevation, Mean Max Temperature, Weather and Navigational Aids on airport.
- Runway Data Table includes all pertinent technical information for both Runway 9R-27L and 9L-27R such as:
 - runway dimensions, gradient, bearing,
 - runway end, high/low point and Touch Down Zone (TDZ) elevations,
 - runway lighting and marking information
 - runway NAVAIDS
 - Dimensions of RSA, RPZ, OFA, OFZ, approach surfaces and threshold sitting criteria
- Taxiway data table including taxiway names , design category and dimension (width)

The following drawings are reductions of the Preliminary ALP plan set to be submitted to the FAA for airspace review separately. To view these drawings at a higher quality, please left-click on each the pages.

