

# Lincoln Airport

## Airport Master Plan



Executive Summary



## AIRPORT MASTER PLAN STUDY

The Lincoln Airport Master Plan was undertaken by the Lincoln Airport Authority to outline a long-range plan for the development of the airport that will yield a safe, efficient, economical, and environmentally acceptable air transportation facility.

This Master Plan is a timely reassessment of the vision for the airport as many changes have occurred in the aviation industry and in the local economic condition since the development of the previous master plan in 1999.

The events of September 11, 2001 and the ensuing national economic recession affected all segments of aviation. Commercial aviation realized significant drops in passenger levels and operations. General aviation also declined in the number of operations but business use of general aviation experienced substantial increases.

While the commercial industry has rebounded for most indicators, the mainline carriers are transitioning through capacity adjustments and several are emerging from bankruptcy. The smaller regional carriers are posting significant growth trends as both partners with mainline carriers and, more recently, by providing their own point-to-point service. Low cost carriers continue to grow significantly and have had a direct impact on many smaller commercial service airports.

## MASTER PLAN PROCESS

The Airport Master Plan was coordinated with a planning advisory committee (PAC) which included the airport administration, federal and state aviation officials, military officials, airline representatives, and several airport businesses.

The role of the PAC was to review the plan as it developed and to offer comments and suggestions. The process included presentation of three phase reports to the PAC as the study progressed. The final Master Plan was approved by the Lincoln Airport Authority Board of Directors on July 26, 2007.

The Airport Master Plan identifies current conditions and provides a forecast of aviation activity and facility needs over the course of the next 20 years.

## AIRPORT FEATURES

- Over 200,000 enplanements (passenger boardings) in 2006.
- Primary commercial Runway 18-36 measuring 12,901 feet long by 200 feet wide.
- Crosswind commercial Runway 14-32 measuring 8,649 feet long by 150 feet wide.
- Parallel Runway 17-35 designed to serve general aviation aircraft up to and including the largest business jets.
- CAT I instrument approaches to both ends of Runway 18-36. Other instrument approaches to Runways 14 and 17.
- Two general aviation fixed base operators (FBOs) including one of the largest aircraft maintenance businesses in the country employing over 800 people.
- A two-story passenger terminal building with four gates served by jetways.
- Regularly scheduled commercial service to five non-stop destinations.
- Expansive apron areas on both the east and west sides of the airport.
- Capability to accommodate air cargo operations.

## DEMAND-BASED PLANNING

The proper planning of an aviation facility must consider the demand that may occur in the future. For Lincoln Airport, this involved updating aviation forecasts to identify potential future aviation demand. Because of the cyclical nature of the economy, it is virtually impossible to predict with certainty year-to-year fluctuations in activity when looking five, ten, and twenty years into the future.

Recognizing this reality, the Airport Master Plan is keyed to potential planning "horizon" levels. The short, intermediate, and long term planning horizon levels roughly equate to the next five years, the following five years, and the last 10 years, respectively. These planning "horizons" were established as specific levels of aviation activity that would correspond to consideration of specific projects in the Airport Master Plan program. By developing the airport to meet aviation demand levels instead of specific points in time, the airport will continue to serve as a safe and efficient facility which will meet the operational demand of users while being developed in a cost-efficient manner.

While the short term planning horizon projects are divided by specific years, it should be noted that these projects should also be undertaken as demand is realized. This program allows the Lincoln Airport Authority to adjust specific development projects in response to unanticipated needs or demand. The forecast planning horizons are summarized below.

## MASTER PLAN CONCEPT

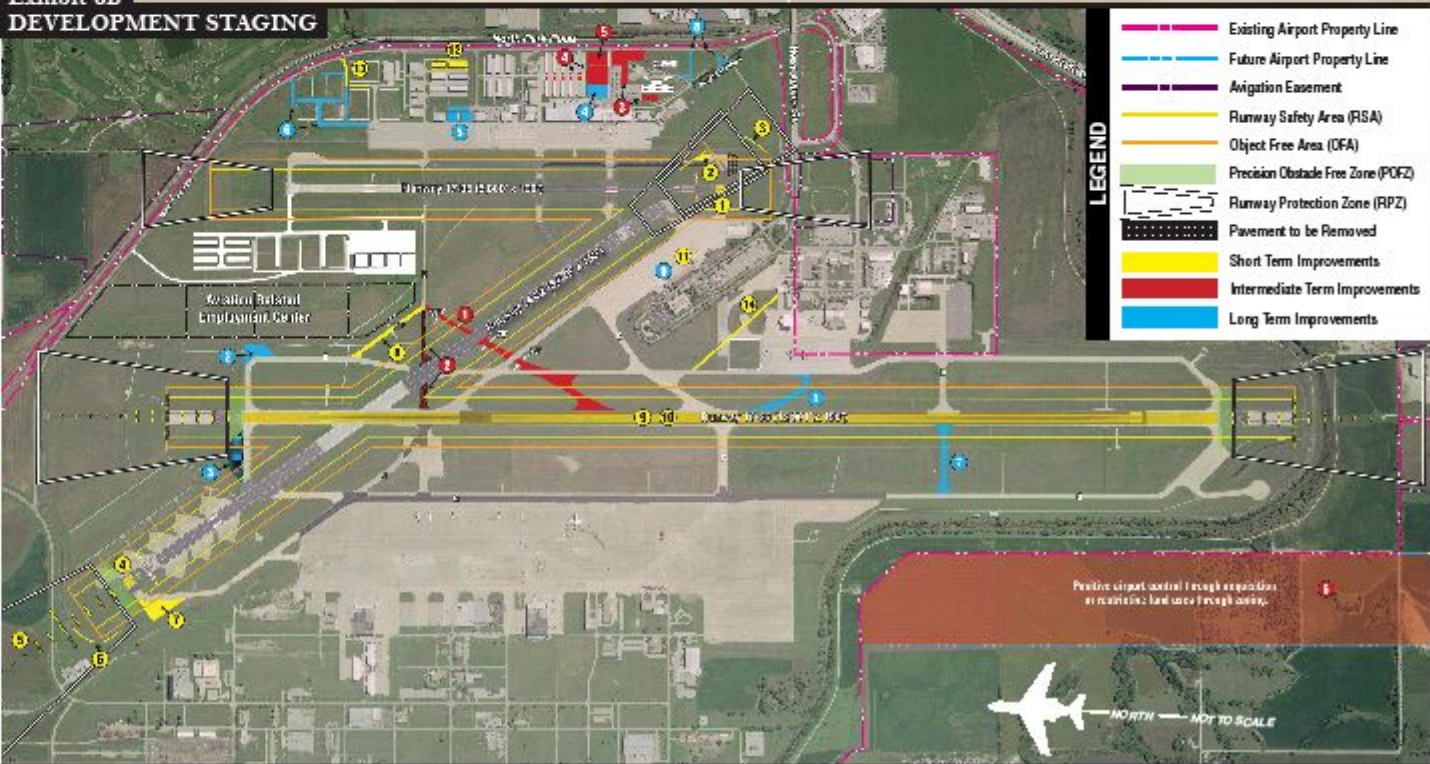
Several development alternatives were analyzed with a final Airport Master Plan concept combining elements from each. The largest and most important project of note is the short term need to reconstruct/rehabilitate Runway 18-36. This runway exceeds the length needed for safe and efficient commercial operations on the runway. Since the majority of the funds for the reconstruction/rehabilitation project will be requested from the FAA, extensive analysis on the runway length and width needs were made.

The short term reconstruction/rehabilitation project would narrow the runway to 150 feet while maintaining the existing length of 12,901 feet. Although this length still exceeds the necessary length for the airport, it was shown that reducing the runway length would be more expensive than simply maintaining the existing length. A width of 150 feet still meets FAA design standards.

Prior to the Runway 18-36 project, several improvements to Runway 14-32 are planned in order for this runway to accommodate a greater percentage of commercial aircraft that will not be able to utilize Runway 18-36 during rehabilitation. These improvements include the establishment of a Category I (CAT I) approach to Runway 14 and construction of a hold apron. The CAT I approach will allow the runway to serve aircraft during poor visibility conditions.

Short Term Improvements	
1	Relocate Runway 35 Landing Threshold to Pavement End
2	Add/Remove Taxiway A Hold Apron
3	Service Road Relocation
4	Relocate Runway 14 Landing Threshold to Pavement End
5	Install MALSR on Runway 14 End
6	Service Road Relocation (Runway 14 End)
7	Construct Taxiway J Hold Apron
8	Construct Connector Taxiway Between E and D
9	Reconstruct and Narrow Runway 18-36 (Option C)
10	Crack Repair Inner 100-foot Section of Runway 18-36
11	Terminal Building/TSA Improvements
12	Construct T-Hangars (6 units) and Box Hangars (4 units)
13	Construct Box Hangar Taxi-lanes - Phase 1
14	Construct ARFF Access Road
Intermediate Term Improvements	
15	Construct Taxiway from Runway 18-36 to Taxiway E
16	Remove Portions of Taxiway E
17	Expand GA Employment Center Parking
18	Construct GA Apron and Taxi-lane
19	Construct GA Conventional Hangar - Phase 1
20	Acquire 256 Acres Southwest of Airport
21	Pavement Maintenance (see Exhibit 6C)
Long Term Improvements	
22	Construct Spiral Taxiway Exit from Runway 18-36
23	Construct Taxiway D Hold Apron
24	Remove Taxiway B Hold Apron
25	Construct GA Conventional Hangar - Phase 2
26	Construct GA Conventional Hangars (2) - Phase 3
27	Construct Box Hangar Taxi-lanes - Phase 2
28	Construct Taxiway H
29	Reconfigure General Aviation Access Road
30	Terminal Building Hold Room Expansion
31	West Side Cargo Facility Construction (not pictured)
32	Pavement Maintenance (see Exhibit 6C)

Exhibit 6B  
DEVELOPMENT STAGING



SUMMARY OF AVIATION ACTIVITY FORECASTS	Forecasts			
	Actual 2005	2010	2015	2025
<b>ANNUAL OPERATIONS</b>				
<b>General Aviation</b>				
Itinerant	31,097	36,000	44,000	59,000
Local	8,481	13,000	22,000	46,000
<b>Military</b>				
Itinerant	13,331	15,000	15,000	15,000
Local	5,494	7,500	7,500	7,500
Air Taxi	5,629	7,190	8,231	10,505
Air Carrier	12,645	13,534	14,055	15,918
<b>Total Local</b>	<b>13,975</b>	<b>20,500</b>	<b>29,500</b>	<b>53,500</b>
<b>Total Itinerant</b>	<b>50,057</b>	<b>71,724</b>	<b>81,316</b>	<b>100,423</b>
<b>TOTAL OPERATIONS</b>	<b>76,677</b>	<b>98,824</b>	<b>110,816</b>	<b>153,923</b>
<b>AIRLINE ENPLANEMENTS</b>	<b>202,917</b>	<b>252,000</b>	<b>281,000</b>	<b>351,000</b>
<b>AIR CARGO (TONS)</b>	<b>50</b>	<b>2,500</b>	<b>4,200</b>	<b>8,000</b>
<b>BASED AIRCRAFT</b>				
Single Engine	124	137	148	167
Multi-engine	39	42	43	44
Business Jet	14	17	19	23
Helicopter	4	4	5	6
<b>TOTAL BASED AIRCRAFT</b>	<b>181</b>	<b>200</b>	<b>215</b>	<b>240</b>

An additional high priority short term item is the construction of a connector taxiway from Taxiway E to Taxiway D. This connector taxiway will reduce the need for aircraft to enter the runway environment when taxiing thereby improving operational efficiency and safety.

Parallel Runway 17-35 is also planned for improvements in the short term. Recent FAA design standard changes allow the airport to relocate the Runway 35 landing threshold to the existing pavement end. Currently, the landing threshold is preceded by a 400-foot taxiway. Relocation of this threshold will effectively provide an additional 400 feet of runway length for operations to the north.

The final project identified for the short term planning period is the construction of a direct road from the aircraft rescue and firefighting (ARFF) station to Taxiway D. This is necessary to meet FAA's three minute emergency response standards.

The intermediate term program primarily addresses airport efficiency and capacity issues. A new taxiway is planned to extend from Runway 18-36 to Taxiway E. This taxiway would reduce the need for aircraft to enter the Runway 14-32 environment while taxiing to the east side of the airport. Long term projects build on increasing efficiency and capacity of the airfield. Taxiway exits from Runway 18-36 and a hold apron for Runway 18 are planned, while excess pavement would be removed.

Landside projects (hangars and other facilities) are typically needed only when an actual demand exists. The Airport Master Plan identifies the location and type of hangars that should be considered. Terminal building improvements are also identified, especially the increased needs for security screening activities. One other long term item of note is a reconfiguration of Aviation Road leading to the general aviation complex. This is recommended to improve safety.



## CAPITAL IMPROVEMENT PROGRAM

The Master Plan has identified approximately \$85 million in capital and hangar development needs over the planning period. Nearly \$50 million of the total is eligible for grant funding from the FAA. Approximately \$35 million of the total cost would be the responsibility of the Lincoln Airport Authority. It should be noted that some of the Authority's total is for the construction of hangars and for infrastructure improvements that are not grant eligible. Hangar costs can often be recovered over time through lease revenue or through third-party construction.

The Airport Master Plan is evidence that the Lincoln Airport Authority, on behalf of the City of Lincoln and Lancaster County, is committed to continuing to provide high quality air transportation services to the region. The Airport Authority recognizes the importance of the Lincoln Airport to the community and the region, as well as the associated challenges inherent with providing for future aviation needs. By maintaining a sound, flexible Master Plan, and periodically updating that plan, the airport will continue to be a major asset to the area.

Capital Improvement Program	Project Cost	FAA Eligible	Local Investment
Total Short Term	\$22,425,000	\$18,392,000	\$4,033,000
Total Intermediate Term	\$27,600,000	\$14,425,750	\$13,174,250
Total Long Term	\$35,483,500	\$17,122,325	\$18,361,175
<b>TOTAL PROGRAM COSTS</b>	<b>\$85,508,500</b>	<b>\$49,940,075</b>	<b>\$35,568,425</b>

For more information, please contact:

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