

Bolton Field Airport Master Plan Update

EXECUTIVE SUMMARY

November 2002



**COLUMBUS
AIRPORT AUTHORITY**

PORT COLUMBUS INTERNATIONAL AIRPORT
BOLTON FIELD

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EXISTING FACILITIES



Bolton Field Airport consists of 1,500 acres of land divided into two distinct facility areas. Airside facilities include the runway, taxiway and navigational aids. Landside facilities consist of the administrative facilities, aircraft parking apron area, hangars, auto parking and ground access.

Airport Site

Located off of I-270 within the corporate limits of the City of Columbus, Bolton Field Airport is approximately nine miles southwest of downtown Columbus.

The airport is well-maintained and most structures are in good condition. The

T-hangars are fully occupied and most of their office areas leased. Most on-airport services and facilities are designed to meet the needs of based tenants. Under an agricultural lease, 833 acres of the airport land are currently farmed.

Master Plan Update Objectives

The last master plan for the airport was completed in 1991. Since that time there have been many changes at the airport and significant growth has occurred in the surrounding area. Recognizing these changes, along with the need to assess Bolton Field's role in the local aviation system, the Columbus Airport Authority has initiated a master plan update. This update provides an opportunity to take a fresh look at goals and expectations for the airport by:

- Examining the current physical and operational conditions of the airport, and reassessing the direction for the facility's development.
- Understanding the Columbus area airport system, the needs of business aviation users within that system, and the role that Bolton Field Airport currently plays.
- Analyzing the development of surrounding environs to determine the most compatible way in which airport development can occur.
- Identifying the revenue potential of the airport and setting strategic goals for future development that allow Bolton Field Airport to achieve full potential.



Bolton Field Airport plays a significant role in the Columbus area aviation system as one of three reliever airports for Port Columbus International Airport.

Setting the Expectations

The overall objective of a master plan is to identify the need and timing for the phased development of facilities at an airport. This is accomplished by reviewing current facilities, analyzing the aviation activity expected to occur over the long-term planning period, and identifying the physical facilities to meet the anticipated demand.

In the case of Bolton Field, before identifying the need for physical facilities it was first important to ask the question, “What are the expectations for this facility?” A number of exercises were conducted during the early stages of the master plan in order to assess, in concert with the airport users and the community, the expectations for Bolton Field Airport.

Surveying current airport users

Drawing accurate conclusions regarding the future development of Bolton Field Airport required an understanding of the current users’ perceptions of the physical facilities, the services offered at the airport, and their future expectations for the facility. To learn more about the current users of Bolton Field and their expectations for the airport, a user survey was conducted. Responses indicated that the majority of current tenants base their aircraft at Bolton Field Airport due to proximity, and that 90% use their aircraft for pleasure. While current users like the ease of using Bolton Field Airport because of lower activity levels and indicate that the facilities are meeting their needs, many desire improvements and additions to fixed base operator (FBO) services.

Benchmarking area airports

Identifying regional trends, competitive aspects of various facilities, and opportunities within a defined aeronautical market are key aspects of considering the future development potential. Benchmarking was conducted on both state and local (within 50 nautical miles) levels. Two airports, Ohio State University Airport and Rickenbacker International Airport, emerged as being directly competitive for the same airport users as Bolton Field Airport.

Visioning with local community leaders and airport officials

Community leaders and key Bolton Field Airport users discussed the economic potential of the surrounding area and the role Bolton Field Airport might play; the current and future role of Bolton Field Airport in the Columbus area’s aviation system; and the stakeholders’ vision for the future of Bolton Field Airport. The group also identified a lack of services to support a business-class market or to attract more transient users to the facility.

Assessing the role of Bolton Field Airport within the local aviation system

Community leaders also identified that the “roles” of the three reliever airports within the Columbus metropolitan area are not well-defined. It was suggested that the enhancement of services, particularly for transient users of Bolton Field Airport, could allow it to play a more significant role as a reliever to Port Columbus International Airport and in the local aviation system.

Reviewing local land use

Bolton Field Airport has always been in a very accessible location. Current residential and commercial growth near the airport now make it convenient to a greater number of users. While residential growth could prohibit additional development of the airport and compromise additional economic development opportunities, a positive correlation between a growing population with disposable income and the demand for airport facilities could create an additional market. Commercial development may also create new markets for just-in-time movement of small parts and other cargo to support operations, or for corporate business travel.

Assessing actions to achieve Bolton Field Airport's full revenue potential

Currently Bolton Field Airport does not generate enough revenue to sustain the operating cost required by the facility. Actions that could improve the fiscal performance of the airport have been examined in a Sustainability Analysis. These actions include developing non-aeronautical compatible land uses and additional hangar facilities, and re-evaluating fuel flowage fees and the Rates and Charges Policy.



Enhancement of services could allow Bolton Field Airport to attract more business users and play a more significant role as a reliever airport.

Expectations define vision

- “The Columbus Airport Authority is committed to developing Bolton Field as the area’s most customer-oriented general aviation facility in order to:
- Attract general aviation/business activity and protect capacity at Port Columbus International Airport;
- Operate in cooperation with the surrounding communities; and,
- Serve as a catalyst for economic development and as an asset to business.”

This vision has been used to identify strategic actions, and the physical and operational improvements required to accomplish the vision.

FORECAST SUMMARY

	2005			2010			2015			2020		
	Low	Baseline	High	Low	Baseline	High	Low	Baseline	High	Low	Baseline	High
Based General Aviation Aircraft												
Total Based Aircraft	122	127	131	125	134	145	128	142	160	131	148	177
Annual Aircraft Operations												
Total Airport Operations	74,298	77,343	79,779	76,125	81,606	88,305	77,952	86,478	97,440	79,779	90,132	107,793
Peaking Characteristics												
Peak Month	8,173	8,508	8,776	8,374	8,977	9,714	8,575	9,513	10,718	8,776	9,915	11,857
Busy Day	317	329	340	324	348	376	332	368	415	340	384	458
Design Day	264	274	283	270	290	313	277	307	346	283	320	382
Design Hour	53	55	57	54	58	63	55	61	69	57	64	76
Instrument Approaches												
	5,127	5,337	5,505	5,253	5,631	6,093	5,379	5,967	6,723	5,505	6,219	7,438

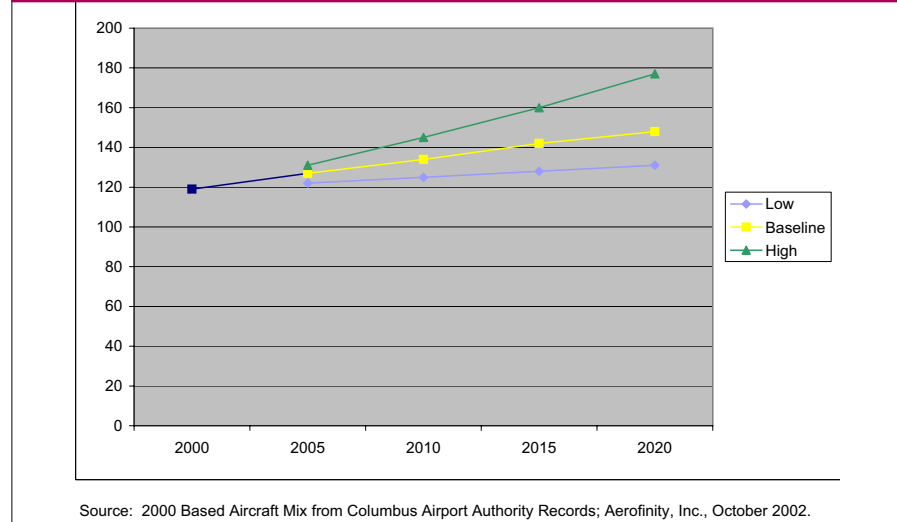
Source: Aerofinity, Inc., October 2001.

Aviation Demand Forecasts

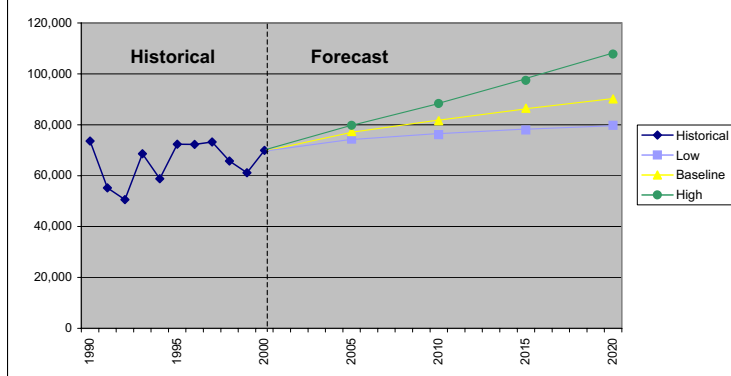
Aviation forecasts are prepared to project what aviation activity is likely to occur at Bolton Field Airport over the next 5-, 10-, 15- and 20-year periods. Forecasts are used in determining the facility requirements and appropriate expansion necessary to accommodate future airport operations.

Low, baseline and high forecasts were prepared. The low forecast took into account unforeseen economic and other factors that would decrease the activity at the airport. The baseline forecast assumed that conditions at Bolton Field Airport would remain the same throughout the planning period and

BASED AIRCRAFT FORECAST



OPERATIONS FORECAST



Source: 1998-2000 Operations from Airport Traffic Records for Bolton Field during tower operations, FAA Form 7230-1, audited by Airport Authority Staff April 2002; 1998-2000 Based Aircraft from Columbus Airport Authority Records; Aerofinity, Inc., October 2001.

that growth would be incremental. The high forecast assumed that the vision for Bolton Field Airport would be realized and that its full potential would be reached.

Forecasts were prepared for based aircraft, annual operations, peak hour operations and the type of aircraft anticipated to use the airport over time.

Based aircraft

Based aircraft are normally parked or hangared at an airport when not in use. Typically, as the population in an area grows, the number of pilots and/or based aircraft also tend to grow. Information provided by the Mid-Ohio Regional Planning Commission (MORPC) indicates that Bolton Field Airport is located in one of the fastest growing areas of the City of Columbus. Population was used to forecast the likely trends in based aircraft for the airport.

If the full vision for Bolton Field Airport is achieved and the high forecast for the airport is realized, by the year 2020 the number of based aircraft could reach 170.

The range of aircraft currently using Bolton Field Airport is generally weighted toward smaller general aviation aircraft. The mix of based aircraft at Bolton Field Airport in 2000

was reviewed and it was determined that a similar aircraft mix could be anticipated in the future for the low and baseline growth. If the high growth forecast for Bolton Field Airport is successfully implemented, business class multi-engine and jet aircraft would comprise a greater percentage of the based aircraft fleet.

Annual Operations

Annual operations are the total landings and takeoffs over a given year at a particular airport. The number of aircraft based at a general aviation airport usually has a direct relationship to the volume of operations at the airport. If the high growth forecast for Bolton Field Airport is achieved, annual operations could reach nearly 108,000 by the year 2020.

Peak Hour Operations

Airports are similar to other facilities with fixed capacities, such as highways or parking facilities. An airport may be able to accommodate the overall annual operation demand, but may not be able to handle the peak hour traffic. Therefore, forecasts for peak demand were also identified.

Facility Requirements/Airport Alternatives

Enhancements to the present facilities and services that will be needed in order to retain and attract business class users, and to continue to provide services to accommodate the smaller general aviation aircraft, were identified. Recognizing that Bolton Field already has the core facilities and services to meet these uses, the facility requirements analysis identified incremental improvements to the existing facilities that will increase the overall utility of the airport.

The review of physical facilities requirements considered both airside and landside development.

Airside

At 5,500 feet long with a straight-in approach to Runway 4, Runway 4-22 accommodates the existing and forecast users at Bolton Field Airport well. Since the majority of operations at Bolton Field Airport are by smaller aircraft that are most sensitive to crosswind conditions, need for the development of a crosswind runway was identified. The development of this runway would

increase the utility of the airport for the smallest aircraft, particularly during the daytime hours when the crosswinds are generally strongest.

Providing taxiway access the full length of a runway avoids the need for aircraft to backtaxi on the runway. Taxiway A is short only 300 feet of serving the full length of Runway 4-22. Therefore, extending Taxiway A the full length of the runway has been identified as a facility requirement to better serve current and future users. Taxiway development is also associated with the crosswind runway development.

Landside

Landside needs include the construction of additional T-hangars and associated apron areas that are required to accommodate long-term need. New vehicle parking facilities proposed in the T-hangar area to better support the T-hangar users also reduce area congestion, and increase security at the airport. A separate area for corporate hangar development has also been recommended.

Development Recommendations

Runways

Runway 4-22 • Two improvements are recommended for Runway 4-22 to further enhance its capability for current and future users. No land acquisition is required to accommodate either of these runway enhancements.

- Establish a straight-in precision approach to Runway 22
- Upgrade the lighting system from Medium Intensity Runway Lights (MIRLs) to High Intensity Runway Lights (HIRLs).

Runway 9-27 • Based on wind analysis conducted during the master plan update, the development of a crosswind Runway 9-27 has been recommended. All elements associated with the runway would need to be constructed.

Taxiways

It is recommended that Taxiway A be extended the full length of Runway 4-22. When Taxiway A is extended to the end of Runway 22, it should be constructed with the FAA required separation of 400 feet, to the extent feasible, between the runway and taxiway.



Aircraft Aprons

Two types of aircraft parking aprons are needed at Bolton Field Airport to support the operations: based aircraft tie-downs and transient aircraft parking. The facility requirements did not demonstrate the need for additional transient aircraft parking. However, an analysis of the line-of-sight from the Air Traffic Control Tower showed that transient aircraft parking for the largest

aircraft will be needed farther from the runway when Taxiway A is relocated to provide the FAA required separations.

Hangars

T-Hangars • The need for at least 34 additional T-hangar units was identified. It is recommended that four additional units be added to three existing T-hangars and that two additional 14-unit T-hangars be con-

structed which allows the development of 40 T-hangers as demand warrants.

Corporate Hangars • Presently, the only large corporate/community style hangars at Bolton Field Airport are used by the FBOs for their operations. Provisions for the development of additional corporate hangar space are needed to support additional large aircraft. An area just south of the existing Terminal Building has been identified for the development of additional corporate hangars. This area is also large enough for the development of other aviation-related support businesses such as an avionics shop or maintenance facility.

Hangar Area Security • Measures to increase security within the hangar area have been identified. Ultimately, it may be desirable to fence the entire airfield area. Controlled access to the hangar area should be installed where there are access points to the hangars. It is also recommended that tenant and FBO parking be provided outside the fence, but in close proximity to, the hangar area.

Terminal Building

The Terminal Building at Bolton Field Airport is the first facility that most transient pilots experience. The facility requirements identified that by the end of the planning

period, up to 2,250 square feet of public space is needed for the Terminal Building. Presently 1,028 square feet of public space is available. Enhancing pilot services, such as those offered in a Terminal Building, would be desirable to attract additional transient users to Bolton Field Airport. A number of enhancements could occur in the present Terminal Building before any additional space is constructed. A general facelift is envisioned, potentially through redecorating and reorganizing the present floor plan to add additional amenities that corporate pilots experience at other business-class airports.

Before any enhancements to the present Terminal Building are planned, a brainstorming session with corporate pilots should be conducted to identify amenities considered most important to these potential customers.

Pavement Rehabilitation

The Airport Authority conducts a Pavement Management Program for Bolton Field Airport. This program is updated regularly and identifies the pavement rehabilitation needs for the next 10 years. Recommendations in the Pavement Management Program have been incorporated into the overall development timeline and cost estimates for improvements at Bolton Field Airport.

On-Airport Land Use

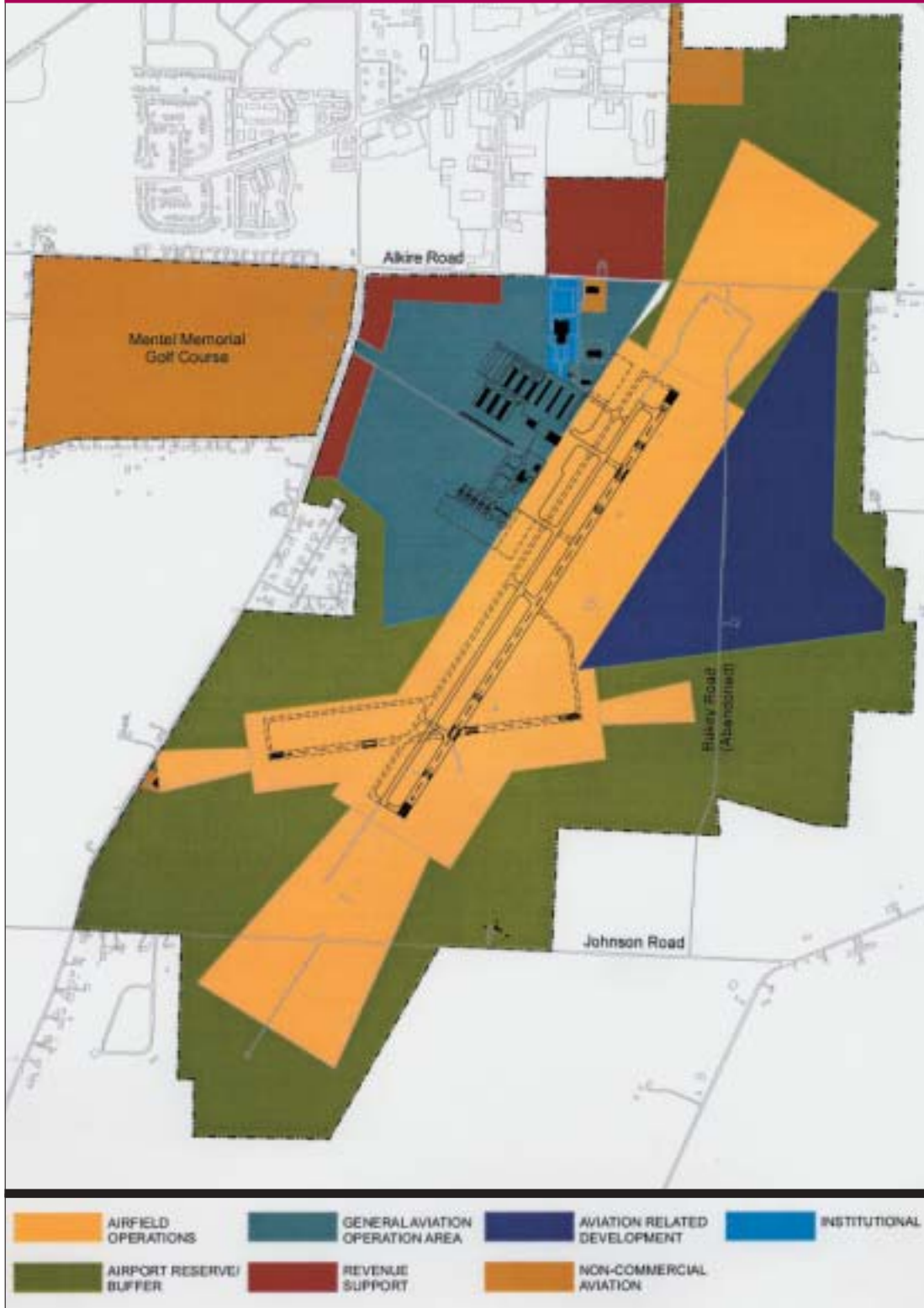
Perhaps one of the greatest assets of Bolton Field Airport is its ample land. Through sound land use planning and thoughtful investment in physical improvements to the facilities, Bolton Field Airport will be positioned to meet its long-term potential. No additional land acquisition is required for the recommendations identified in this master plan update; instead, preservation of the existing land for the best uses has been considered.

Concurrent to the master plan process, the official Noise Exposure Maps (NEMs) for Bolton Field Airport were updated. NEMs show the noise contours for the airport reflecting existing conditions (2001) and for two future conditions, including five years (2006) and twenty years (2020). The NEMs were updated according

to Federal Aviation Regulations Part 150 guidelines in regard to methodology, noise metrics, identification of incompatible land uses and public outreach.

Analysis of the operating conditions at Bolton Field Airport showed that the noise contours would increase over the next five years, if the projected increase in the number of aircraft using the airport is realized. Likewise, the noise contours predicted for 2020 would be larger than the contours for both the 2001 and 2006 conditions. However, no non-compatible land uses (homes, schools, churches, nursing homes, libraries) would fall within the 65 Day-Night Level of any of the conditions modeled in this study. In fact, the 2020 65 DNL doesn't extend past the airport property boundaries.

On-Airport Land Use



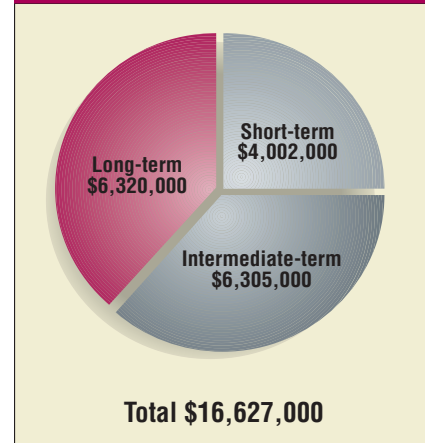
Development Timeline/Project Costs

Capital improvement recommendations have been grouped according to the anticipated time of their development. Major elements of the development recommendations anticipated to take place within the first five years include pavement rehabilitation and terminal building enhancements. Planning and design for the recommended crosswind runway are also anticipated to occur within the first five years with actual construction in the intermediate-term. Long-term projects include the development of new transient aircraft parking and the relocation of Taxiway A. In order to meet anticipated demand, hangar development will take place throughout the 20-year period.

DEVELOPMENT TIMETABLE/COSTS

Short-term (0-5 yr)	Cost Estimate
Establish straight-in approach to Runway 22	25,000
Upgrade communications/Tower equipment	45,000
Extend Taxiway A 300 feet	470,000
Environmental reevaluation and design of Runway 9-27	400,000
Extend existing T-hangars (12 units total)	435,000
Fence terminal area and construct 60 space auto parking	495,000
Rehabilitate apron and hangar area pavements	245,000
Enhance terminal building/enhance airport signage	200,000
Develop additional transient apron	1,405,000
Open corporate hangar development site	282,000
	4,002,000
Intermediate-term (6-10 years)	
Construct Runway 9-27 and associated taxiways	4,540,000
Install airfield fencing	420,000
Upgrade Runway 4-22 lights to HIRLS	185,000
Rehabilitate Runway 4-22	635,000
Construct 14-unit T-hangar	425,000
Rehabilitate north tie-down apron	100,000
	6,305,000
Long-term (11-20 years)	
Install MALSR on Runway 22	500,000
Construct 14 unit T-hangar	635,000
Construct taxiway and extend based aircraft tie-down apron	665,000
Expand terminal building 750 square feet	150,000
Relocate Taxiway for 400 foot separation	4,370,000
	6,320,000
Total	16,627,000

DEVELOPMENT COSTS

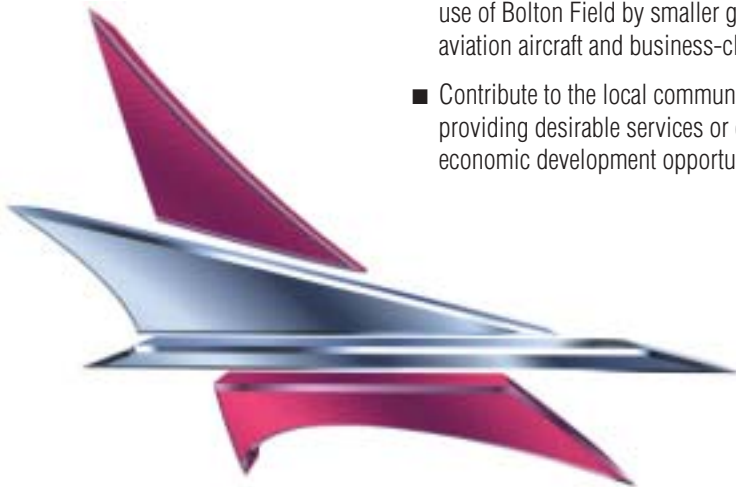


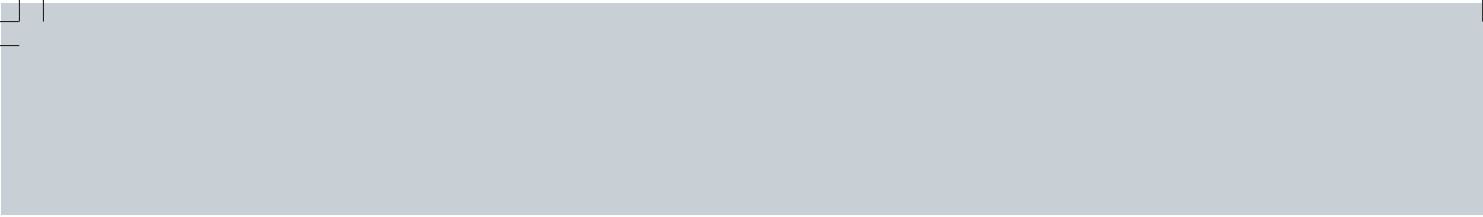
Estimated costs of the capital improvements for Bolton Field Airport total just more than \$16.6 million. Of these improvements, approximately \$14 million will be eligible for funding through the Federal Aviation Administration Airport Improvement Program (AIP). AIP grants provide 90% of the costs of eligible projects at general aviation airports. For the most part, remaining projects will generate revenues that can offset the development costs and therefore are not AIP eligible. AIP eligible projects for general aviation airports are funded through a very competitive process where projects are ranked based upon a priority system administered by the FAA. Therefore, the actual timing for development of the projects identified in the master plan may be driven in part by the availability of AIP funding.

Attaining the Vision

Many follow-on actions will be necessary to attain the vision for Bolton Field Airport. While the master plan update provides a plan for developing the required physical facilities, the Airport Authority has also identified the following actions to work toward the goal of developing Bolton Field Airport as the area's most customer-oriented general aviation facility.

- Develop an image that reflects the Airport Authority's renewed commitment to Bolton Field and communicates the Airport's role in the local airport system by offering facilities and services that are:
 - safe and efficient, and
 - compatible with the surrounding community, while meeting current user needs and attracting additional airport users.
- Protect the capacity and efficiency of the Central Ohio airport system by:
 - providing well-maintained facilities, and
 - promoting the expeditious flow of aircraft traffic.
- Regularly monitor the environmental impacts of airport operations on the surrounding community and implement appropriate actions to minimize these impacts.
- Position Bolton Field to become financially self-sufficient by:
 - pursuing the development of non-aeronautical land uses that are compatible with airport operations, enhancing revenues and controlling costs, and
 - instituting incentives that encourage the use of Bolton Field by smaller general aviation aircraft and business-class users.
- Contribute to the local community by providing desirable services or enhancing economic development opportunities.





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