
Section 1.0 Purpose and Need

1.1 Introduction

The Cuyahoga County Airport - Robert D. Shea Field (Airport or CGF) currently has a single runway, designated Runway 6/24, that is 5,102 feet long and 100 feet wide. The runway is not compliant with current Federal Administration Aviation (FAA) design standards and the pavement condition of the runway is reaching a critical point of disrepair due to age.

More than a dozen corporate hangars front the corporate aircraft parking apron in an alignment with the runway and parallel taxiway. Based aircraft are housed in T-hangars at two locations on the airfield. The fixed based operator (FBO) area is north of the Runway 6 end and provides fueling, aircraft maintenance and other services. The taxiway system includes a full parallel taxiway and several access taxiways that connect the T-hangars, corporate hangars and apron areas, and the FBO area with the runway. **Figure 1-1 Future Airport Layout Plan**, shows the current airport configuration as well as the improvements identified as the Preferred Alternative from the 2010 Airport Master Plan to bring the airport into compliance with FAA design standards.

After being identified through the planning process but prior to moving into the design and construction phase of a project, an Environmental Assessment (EA) is required by the National Environmental Policy Act (NEPA) of 1969. This EA will identify a Preferred Alternative that meets the project Purpose and Need and then evaluate and document the effects of the proposed project on the surrounding environment. The results of this EA, including input from other agencies, will guide the decision made by the FAA at its conclusion. At that time, the project will either be cleared to proceed or will be required to undergo additional environmental analysis.

1.2 Project Location and History

The Airport, owned by Cuyahoga County, is located approximately 11 miles east of downtown Cleveland, Ohio. It serves the aviation needs of eastern Cuyahoga County and western Lake and Geauga Counties in the northeastern region of Ohio.

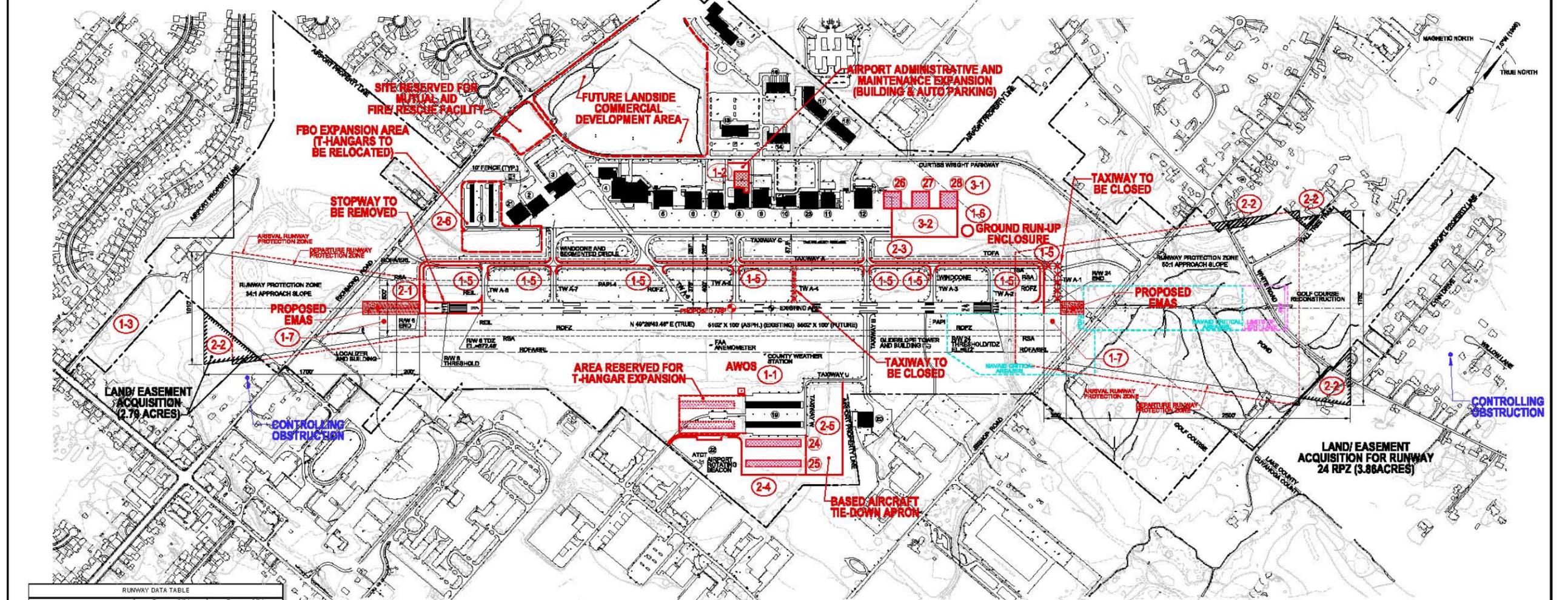
The land area of the Airport consists of approximately 660 acres that lie within the political boundaries of two counties, Cuyahoga and Lake, and three cities, Richmond Heights, Highland Heights, and Willoughby Hills. The Airport is principally located in Richmond Heights to the east of Richmond Road, north of Highland Road, and south of White Road. On the east side of the Airport is Bishop Road (with an Airport parcel extending east of the road that incorporates a golf course). The Airport is located approximately 10 minutes from Interstate 90, a major east-west highway, and

Interstate 271, a major north-south highway. **Figure 1-2 Location Map** shows the Airport and the surrounding vicinity.

Cuyahoga County undertook an Airport Master Plan update beginning in 2003. An important reason for undertaking the 2003 Airport Master Plan Update was to consider how best to address known runway safety area deficiencies. According to the standards established in FAA Order 5200.8(10)b, the existing Runway Safety Area (RSA) lengths are currently deficient at both runway ends. A draft final report was presented to the Cuyahoga County Commissioners in February 2009. It included the inventory and forecast phases of the study, the selection of a design aircraft, and thirty-five airfield development concepts and a No-Build Alternative.

The findings of the study justified a 6,000-foot runway length and recommended a 900-foot runway extension with the relocation of both Richmond and Bishop Roads. The public strongly opposed the recommendation and clearly demonstrated their opposition. As a result, the consulting team for the Master Plan was directed to reconsider solutions with fewer off-site impacts. Four additional airfield development alternatives were developed. Also, several alternatives were revisited that had been dismissed during the initial evaluation process because they did not meet the airport's user needs. In July 2010, the Master Plan was approved with an Ultimate Layout Plan (Alternative 38) reflecting the long term needs of the airport (6,000 feet of runway length) while Alternative 23 (5,502 feet of runway length) was identified as the Preferred Alternative for an interim development to address runway safety area improvements as well as improvements to the pavement conditions. The project objective and goals address these interim development needs.

Figure 1-1 Future Airport Layout Plan



RUNWAY DATA TABLE		
Runway Data	Runway 6/24 Existing	Runway 6/24 Proposed
Effective Gradient (%)	0.1%	0.1%
Wind Coverage (%)	86.93% (10.5 knots)	86.93% (10.5 knots)
Max. Elevation (MSL)	879'	879'
Runway Length	6,102'	6,502'
Runway Width	100'	100'
Surface Type	asphalt, grooved	asphalt, grooved
Pavement Strength		
Single Wheel	43,000 lbs.	n/a
Dual Wheel	55,000 lbs.	100,000 lbs.
Dual Tandem	100,000 lbs.	n/a
Approach Type	NP17 PIR	NP17 PIR
Approach Surface Slope	34:1 7.50:1	34:1 7.50:1
Approach Minimums	1-1/2 mile 7/2 mile	1-1/2 mile 7/2 mile
Visual Approach Aids	PAP14L, REL, PAPI4L, MALS R	PAP14L, REL, PAPI4L, MALS R
Instrument Approach Aids	LOC BC / ILS/DME, NDB or GPS	LOC BC / ILS/DME, NDB or GPS
Runway Lighting	HRL	HRL
Runway Marking	NP17 PIR	NP17 PIR
Airport Reference Code (ARC)	I, II	I, II
Critical Aircraft	Gulfstream IV	Gulfstream IV
Runway Object Free Area (ROFA)		
Length Beyond Runway	1,000'	600' (w/EMAS)
Width	800'	800'
Runway Safety Area (RSA)		
Length Beyond Runway	1,000'	600' (w/EMAS)
Width	500'	500'
Runway Obstacle Free Zone (ROFZ)		
Length Beyond Runway	200'	200'
Width	400'	400'
Precision Obstacle Free Zone (POFZ)		
Length Beyond Runway	200'	200'
Width	800'	800'
Runway Protection Zone Dimensions		
Runway 6	500' x 1,010' x 1,700'	500' x 1,010' x 1,700'
Runway 24	1,000' x 1,750' x 2,500'	1,000' x 1,750' x 2,500'
Runway End Coordinates (NAD 83)		
Latitude	6: 41° 33' 38.073" N	6: 41° 33' 32.294" N
Longitude	6: 81° 29' 38.392" W	6: 81° 29' 46.394" W
Displaced Threshold - Lat.	6: 01' 41" 33' 36.147" N	
Displaced Threshold - Long.	6: 01' 31" 29' 39.261" W	
Latitude	24: 41° 34' 10.818" N	24: 41° 34' 10.818" N
Longitude	24: 81° 28' 45.372" W	24: 81° 28' 45.372" W
Displaced Threshold - Lat.	24: 01' 41" 34' 08.894" N	
Displaced Threshold - Long.	24: 01' 31" 28' 46.368" W	
Runway End Elevations (MSL)	872.48' / 878.87'	871.7 / 878.87'
TDZ Elevation (MSL)	872.48' / 878.87'	872.48' / 878.87'

AIRPORT DESIGN STANDARDS COMPARISON		
Item	Design Standard ARC D-II	Existing Dimension
Runway Safety Area		
Width	600'	500'
Length (Beyond Runway End 24)	1,000'	105'
Length (Beyond Stopway End 6)	1,000'	510'
Runway Object Free Area		
Width	800'	800'
Length (Beyond Runway End 24)	1,000'	0'
Length (Beyond Stopway End 6)	1,000'	235'
Runway to Taxiway Centerline Separation	400'	375'

AIRPORT DATA TABLE		
Airport Data	Existing	Proposed
Airport Elevation (MSL)	879'	879'
Airport Reference Point (NAD 83)		
Latitude	41° 33' 54.440" N	41° 33' 52.200" N
Longitude	81° 29' 10.884" W	81° 29' 14.392" W
Mean Max Temperature of Hottest Month	81.4° F	81.4° F
Airport Terminal Area NAVAIDS	ATCT, lighted windsock, segmented circle, beacon	ATCT, lighted windsock, segmented circle, beacon, AWOS
Magnetic Variation	7.5° W	7.5° W
Date of Magnetic Variation	1995	1995
NPIAS Service Level	RL	RL
State Service Level	YC	YC
Wind Coverage Crosswind Component @ 10.5 knots @ 13 knots		
VFR	87.13%, 93.40%	87.13%, 93.40%
IFR	85.06%, 92.26%	85.06%, 92.26%
All Weather	86.93%, 93.29%	86.93%, 93.29%
Airport Reference Code	D, II	D, II
Aircraft Approach Category	I	I
Airplane Design Group	II	II
Design Aircraft	Gulfstream IV	Gulfstream IV
Taxiway Lighting	MFL	MFL
Taxiway Marking	Standard	Standard

NOTE: THERE ARE NO LINE OF SIGHT ISSUES WITH THE ATCT AND NONE ARE EXPECTED IN THE FUTURE.



NOTE: THE FAA'S APPROVAL OF THIS AIRPORT LAYOUT PLAN (ALP) REPRESENTS ACCEPTANCE OF THE GENERAL LOCATION OF FUTURE FACILITIES DEPICTED, DURING THE PRELIMINARY DESIGN PHASE. THE AIRPORT OWNER IS REQUIRED TO RE-submit FOR APPROVAL THE FINAL LOCATIONS, HEIGHTS, AND EXTERIOR FINISH OF STRUCTURES. FAA CONCERN IS OBSTRUCTION, IMPACT ON ELECTRONIC AIDS, OR ADVERSE EFFECT ON CONTROLLER VIEW OF AIRCRAFT APPROACHES AND GROUND MOVEMENT AREAS, WHICH COULD ADVERSELY AFFECT THE SAFETY, EFFICIENCY, OR UTILITY OF THE AIRPORT.

FACILITIES TABLE					
#	Existing Facility Name	Top Elevation	#	Proposed Facility Name	Top Elevation
1	T-Hangars	895' MSL	1	T-Hangars (to be relocated)	895' MSL*
2	Corporate Wings Hangar	895' MSL*	2	Corporate Wings Hangar	895' MSL*
3	Corporate Wings Hangar	895' MSL*	3	Corporate Wings Hangar	895' MSL*
4	Flight Options Hangar	890' MSL*	4	Flight Options Hangar	890' MSL*
5	Flight Options Hangar	895' MSL*	5	Flight Options Hangar	895' MSL*
6	Corporate Wings Hangar	895' MSL*	6	Corporate Wings Hangar	895' MSL*
7	Flight Options Hangar	900' MSL	7	Flight Options Hangar	900' MSL
8	County/Admin/Maintenance/ARFF Building	884' MSL	8	County/Admin/Maintenance/ARFF Building	884' MSL
9	Eaton Corporation Hangar	895' MSL*	9	Eaton Corporation Hangar	895' MSL*
10	Destination Building	900' MSL*	10	Destination Building	900' MSL*
11	National City Bank Hangar	895' MSL*	11	National City Bank Hangar	895' MSL*
12	Five Star Aviation Hangar	903' MSL*	12	Five Star Aviation Hangar	903' MSL*
13	Horizon Building	898' MSL*	13	Horizon Building	898' MSL*
14	Curtiss Wright Center - II	888' MSL*	14	Curtiss Wright Center - II	888' MSL*
15	Associates Estates	860' MSL*	15	Associates Estates	860' MSL*
16	Curtiss Wright Center - I	885' MSL*	16	Curtiss Wright Center - I	885' MSL*
17	Curtiss Wright Center - III	888' MSL*	17	Curtiss Wright Center - III	888' MSL*
18	Curtiss Wright Center - IV	872' MSL*	18	Curtiss Wright Center - IV	872' MSL*
19	Lamar T-Hangars	900' MSL*	19	Lamar T-Hangars	900' MSL*
20	Swagelok Hangar	920' MSL*	20	Swagelok Hangar	920' MSL*
21	Corporate Wings Hangar	895' MSL*	21	Corporate Wings Hangar	895' MSL*
22	Air Traffic Control Tower	968' MSL	22	Air Traffic Control Tower	968' MSL
23	Corporate Hangar	905' MSL*	23	Corporate Hangar	905' MSL*
24	T-Hangars	910' MSL*	24	T-Hangars	910' MSL*
25	T-Hangars	910' MSL*	25	T-Hangars	910' MSL*
26	Corporate Hangar	905' MSL*	26	Corporate Hangar	905' MSL*
27	Corporate Hangar	905' MSL*	27	Corporate Hangar	905' MSL*
28	Corporate Hangar	905' MSL*	28	Corporate Hangar	905' MSL*

* building top elevation estimated

DEVELOPMENT PROJECT PHASING	
Phase 1 (2006-2010)	1-1 Purchase and Install Automated Weather Observation System (AWOS) and Upgrade Runway Sensor System 1-2 Airport Administrative and Maintenance Expansion (Building and Auto Parking) 1-3 Airport Perimeter Fencing 1-4 Electrical Improvements (Transformer and Field Lighting Loop) 1-6 Rehabilitate Taxiways A, A1, A2, A3, A5, A6, A7 and A8 1-6 Aircraft Run-Up Enclosure Design and Construct 1-7 Runway Safety Area Improvements
Phase 2 (2011-2015)	2-1 Runway Rehabilitation and Extension of Runway and Parallel Taxiway to 5502' (Design and Construct) 2-2 Land/Easement Acquisition for Runway 6-24 Improvements 2-3 Relocate Taxiway A (Design and Construct) 2-4 Design and Construct Two 10-Bay T-Hangars 2-6 Design and Construct Based Aircraft Apron 2-6 Demolition of County T-Hangars
Phase 3 (2016-2025)	3-1 Design and Construct Corporate Hangars (3) 3-2 Design and Construct Corporate Apron Expansion

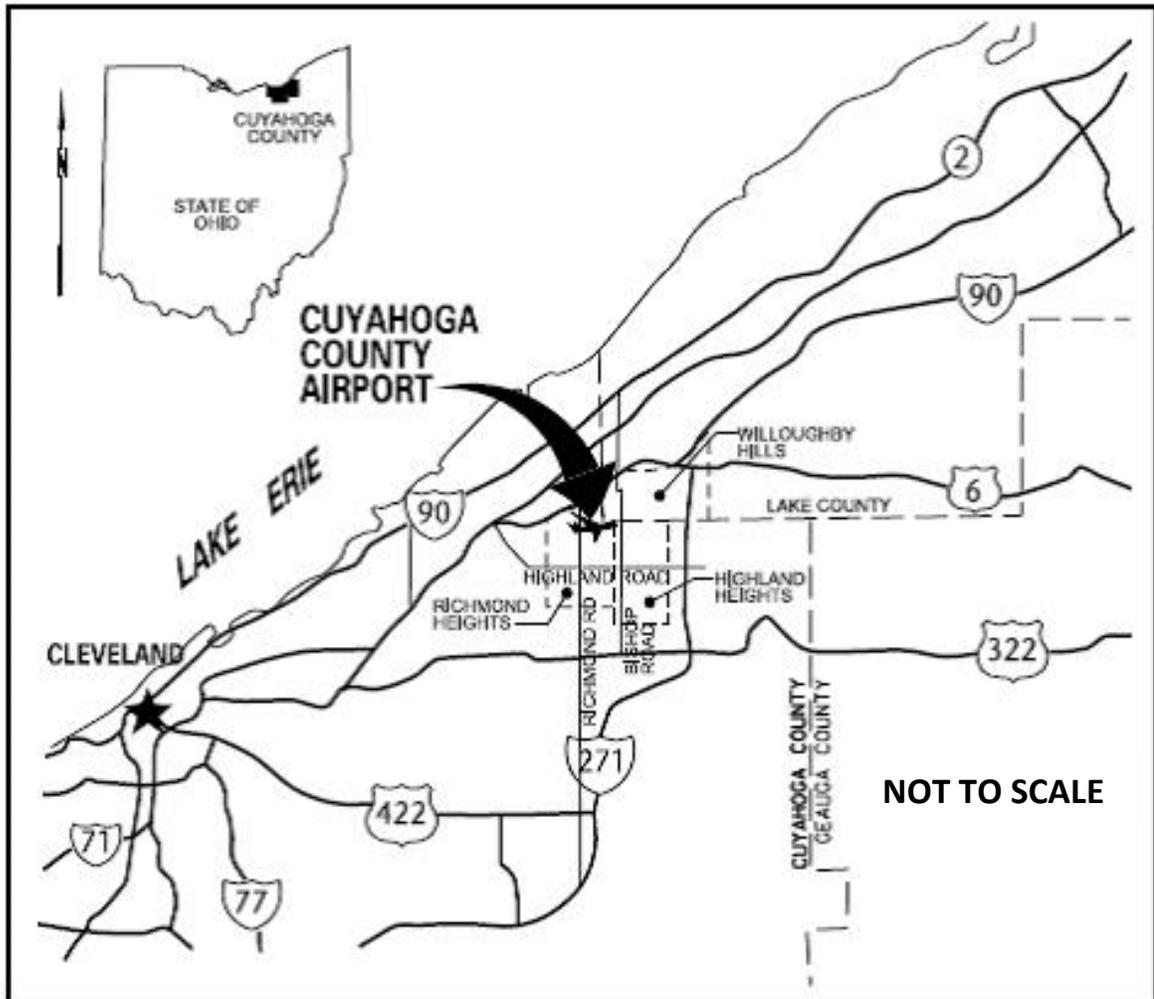
LEGEND		
Existing	Description	Proposed
---	Runway Centerline	---
---	Runway Safety Area (RSA)	---
---	Runway Object Free Area (ROFA)	---
---	Runway Obstacle Free Zone (ROFZ)	---
---	Runway Protection Zone (RPZ)	---
---	Taxiway Object Free Area (TOFA)	---
---	Taxiway Safety Area	---
---	Building Restriction Line (BRL)	---
---	Airport Pavement	---
---	Airport Reference Point	---
---	Other Buildings	---
---	Airport Property Line	---
---	Other Property Lines	---
---	Railroad	---
---	Fence	---
---	Roads	---
---	Tree Line	---
---	Wetlands	---
---	Ground Elevation Contours	---
---	Proposed Land Acquisition	---
---	Proposed EMAS	---

NOTE: TOPOGRAPHICAL CONTOURS ARE IN 5 FOOT INCREMENTS.

REVISIONS		
BY	DATE	CHANGE

CUYAHOGA COUNTY AIRPORT
 CUYAHOGA COUNTY STATE OF OHIO
FUTURE AIRPORT LAYOUT PLAN
 DESIGNED: JCT DRAWN: JCT
 CHECKED: KCR DATE: MAY 2010 SHEET 3 of 17
 PROJECT FILE NO.: A27.001.001 CADD FILE NO.: Cuyahoga Future ALP

Figure 1-2 Location Map



Source: CGF Airport Layout Plan

1.3 Project Purpose

The purpose of the project is to provide 5,500 feet of usable runway length for aircraft to takeoff in either direction and to establish compliant RSAs per FAA requirements. The project being evaluated in the EA is first and foremost a safety enhancement project to rehabilitate the runway and improve the runway safety areas to the extent practicable. A 400-foot runway extension will also be evaluated as a part of this project. This justification was established through the 2010 Airport Master Plan.

The Airport Master Plan was initially undertaken in 2003. The planning effort included a runway justification study which was part of the Master Plan's Appendix D (*Facility Requirements – Correspondence and Documentation*). It is included here as **Appendix M Runway Justification**. The recommended runway length exercise concluded that "...the recommended future runway length at Cuyahoga County Airport is at least 6,000 feet to meet the needs of the existing business jet operators both based at the Airport and using the Airport on a transient basis."

The Airport Master Plan was completed over a span of seven years. During this time, the initial recommendation for a 6,000 foot runway was revised as a result of public opposition to off-site impacts such as road relocations and community impacts. A change in the course of action was requested by the Airport and summarized in Chapter 5, Section 5.03-42: *Reevaluation of Airfield Alternatives*. It reads in part as follows:

...It was determined that Alternative 23 is the airfield development alternative that best meets the need of the Airport and users with little or no adverse impacts to the neighboring communities or the environment. This alternative will be developed as the Future Airport Layout Plan for the Airport and Alternative 38 will become the Ultimate Airport Layout Plan.

As part of the Master Plan, user needs for additional runway length are addressed “to the degree possible” with the development of a 5,502-foot runway as shown in Alternative 23. An extension to 5,502 feet will serve as an improvement for business jet users, however it may continue to constrain operations in inclement weather or in terms of trip length. The Master Plan language explains that the plan will add 400 feet of runway length by extending the Runway 6 end and will provide runway safety areas that meet FAA-required design standards using an engineered materials arresting system (EMAS) at each runway end. An important feature of this design plan is that no road realignments are required.

Although the Ultimate Airport Layout Plan, including a 900’ runway length, was kept as part of the long term Airport Layout Plan (ALP), the interim plan for development of the Airport focuses on a phased approach to first address the most immediate needs. As noted above, these include RSA improvements to meet current FAA required design standards and a 400’ runway extension to a length of 5,502’. The existing runway pavement will be replaced to address its deteriorated condition. The design will also include the use of EMAS at both ends of the runway.

EMAS uses crushable concrete placed at the end of a runway to stop an aircraft that overruns the runway. The tires of the aircraft sink into the lightweight concrete and the aircraft is decelerated as it rolls through the material. Although a longer runway length was justified in the Master Plan, the interim length is shorter largely due to the public opposition to off-site impacts expressed during the Master Plan’s development process.

During project definition, each airport design standard is evaluated to determine if it meets standards. If an airport design standard cannot be met to the extent practicable, the airport sponsor must request a modification to design standards from the FAA. A request for modification to design standards (MOS) are anticipated for the following during the design phase of the project:

Taxiway B Profile

The proposed work intends to correct non-standard RSA and Runway Object Free Area (ROFA) along the southeast edge of Runway 6/24, as well as remove existing ground obstructions from the FAR Part 77 Primary and 7:1 Transitional surfaces. However, the existing

ground near Taxiways B and U will remain within the ROFA, primary and 7:1 transitional surfaces following completion of this project. The longitudinal profile of Taxiway B within the RSA will be corrected to meet RSA grading criteria. It is not feasible to correct the remainder of Taxiway B without lowering Taxiways B and U, as well as the t-hangers along Taxiway W. Currently Taxiway B is a 4-foot penetration to the southern edge of the Primary Surface for Runway 6/24. As the profile of Taxiway B in this area is already at the steepest grade allowed (1.5%), there is no opportunity to lower the Taxiway at the edge of the Primary Surface without affecting the area to the south, including the existing hangars. Therefore a MOS will be requested to address this area that will remain non-standard with regards to ROFA and Part 77.

Temporary Non-Standard Conditions during Construction

Although the Airport wishes to complete the project over two construction seasons, the availability of FAA funding may dictate four to five years of construction. If the later scenario seems likely, subsequent construction phases will leave non-standard grade changes on the runway until they can be corrected with the next phase of the project. As funding availability becomes clearer, the construction phases will be adjusted to minimize these temporary conditions.

1.4 Project Need

The Airport does not currently meet the most current FAA design standards for the RSAs (FAA Advisory Circular 150/5300-13A Airport Design). RSAs are buffer areas around the runway that need to be kept clear for safety in case an aircraft goes off the runway at either end or on the side. As noted earlier, the FAA requires that RSAs be brought into compliance to the extent practicable as part of the runway improvement project according to FAA Order 5200.8(10)b.

At the same time, the runway and taxiway pavement at the Airport needs to be repaired. Preventive maintenance has been done for 30 years without any significant improvement project. Given the average lifespan of runway pavement is 20 years, reconstruction of the runway is overdue.



Photo of Current Runway Condition

The FAA made standard RSAs a priority with a directive in 1999 that requires all airports to correct RSA deficiencies. RSA compliance is “triggered” by a runway construction or rehabilitation project. The Airport’s Runway 6/24 is in need of pavement rehabilitation. Addressing the RSA deficiencies is a priority because FAA Airport Improvement Program (AIP) funding for runway construction or rehabilitation is contingent upon a design that meets all FAA standards to the extent practicable, including runway safety areas.

1.5 Proposed Improvements

Major development items, which will be covered as a part of this assessment include:

- Runway Safety Area (RSA) grading improvements to meet FAA design standards
- Remove stopway at Runway 6 approach end
- Extend Runway 6 approach end approximately 550 feet
- Install EMAS at Runway 6 approach end
- Displace threshold approximately 320 feet from new Runway 6 approach end
- Relocate Runway 24 approach end 150 feet in order to fit standard EMAS
- Install EMAS at Runway 24 approach end
- Displace Runway 24 threshold approximately 500 feet
- Closure of taxiways to accommodate Runway 6/24 relocation
- Construct new connector taxiways to accommodate runway 6/24 relocation
- Extension of Runway 6/24 runway and taxiway lighting facilities
- Relocation of navigational aids (NAVAIDS):
 - Runway 6 Runway End Identifier Lights (REILs)
 - Runway 6 Precision Approach Path Indicator (PAPIs)
 - Runway 24 Glide Slope (GS) Antenna
 - Runway 24 PAPIs
 - Runway 24 Medium-Intensity Approach Lighting System with Runway Alignment Indicator (MALSR)
- Development of new or revised approach and departure procedures, including flight check
- Property acquisition/easements
- Tree clearing in approach areas and transitional areas
- At this time, given the location of the proposed EMAS bed and the existing Runway 24 Localizer, it is not expected the localizer signal will be impacted. Any signal degradation modeling will be completed during final design.

1.6 Summary of Existing and Projected Operations

The airport recently completed an inventory in early 2013 that identified 206 based aircraft and total operations of 34,475. Of the 206 based aircraft, the following categories were reported to the FAA in the FAA 5010 report:

- 88 Single-engine aircraft
- 19 Multi-engine aircraft
- 98 Jet aircraft
- 1 Helicopter

The majority of the Airport's existing activity is generated by business aircraft both from based aircraft and itinerant operations. On-airport businesses include the Cleveland Jet Center, Flight Options LLC and commercial charter services. Companies including Progressive Insurance and

Swagelok have hangars at the airport to support business travel from nearby headquarters. The presence of personal aircraft and flying clubs at the airport drive General Aviation activity. There is no scheduled commercial service and no on-airport military activity at the Airport.

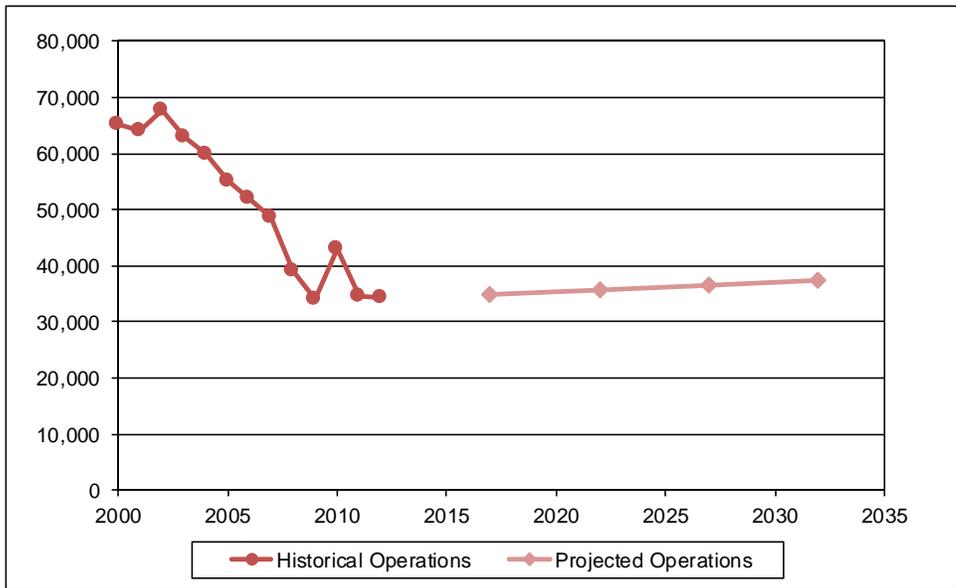
Projected Operations

The number and type of aircraft activity at the Airport has fluctuated in recent history. This is not uncommon in comparison to many US airports as economic uncertainty and increased travel costs have impacted travel behavior. Despite increases in fuel cost, and an economic downturn that has seen a slow recovery, the forecasts developed here suggest the number of based aircraft and total aircraft operations will grow modestly at the Airport over the next 20 years.

The stabilization and expected increase in general aviation activity at the Airport over the planning period mirrors the FAA's expectation that general aviation will experience modest growth at the national level. The FAA's national forecast is based on national economic and aviation trends including US Real Gross Domestic Product forecasts, the size of the national general aviation fleet, and the national general aviation hours flown. A summary of these projections is presented in **Table 1.0 Projections Summary**.

Table 1.0: Projections Summary

Year	Operations				Based Aircraft
	Air Taxi	General Aviation	Military	Total	
Historical					
2000	9,007	56,118	52	65,177	158
2001	11,325	52,657	101	64,083	186
2002	13,628	53,977	62	67,667	186
2003	11,903	50,973	67	62,943	206
2004	9,971	49,873	60	59,904	206
2005	7,870	47,154	51	55,075	301
2006	8,797	43,163	97	52,057	206
2007	9,115	39,524	95	48,734	206
2008	6,217	32,759	167	39,143	182
2009	4,021	30,132	35	34,188	182
2010	2,987	40,166	2	43,155	133
2011	2,980	31,648	14	34,642	133
2012	3,182	31,209	82	34,475	206
Projected					
2017	5,099	29,834	82	35,016	208
2022	5,213	30,502	82	35,797	212
2027	5,333	31,201	82	36,616	218
2032	5,458	31,936	82	37,476	227
CAGR (2012-2032)	2.73%	0.12%	0.00%	0.42%	0.50%



Note: Air Taxi activity at Cuyahoga County is generally small business jets with 4 to 10 seats, and propeller aircraft with 4 to 6 seats. This is not scheduled service.

Source: Historical Enplanements - FAA TAF
 Historical Operations - Air Traffic Activity Data System (ATADS)
 Historical Based Aircraft -FAA Terminal Area Forecast
 Projections - Mead & Hunt, Inc., August 2012

A summary of these forecasts is also presented in **Table 1.1 Forecast Levels and Growth Rates** and **Table 1.2 Airport Operations**. For additional details on approved operations and forecasts see the complete *Forecast of Operations Report* included in the **Appendix A Forecast of Operations**. This data was taken from the *Forecast of Operations Report* dated August 2013 which was approved by the FAA on September 27, 2013. The numbering used in this section was retained from the approved forecast report to create the following tables.

The projection of operations based on the Market Share Methodology is almost identical to the Terminal Area Forecasts (TAF), which are the FAA's projections for operations at the Airport. The numbers differ by a less than 1% in 2017 and by less than 3% in 2032. These ranges are certainly within the parameters of variation to be considered consistent with the TAF. The Operations per Based Aircraft numbers also resulted in projections that varied by less than 2% from the TAF and from the preferred methodology over the 20-year planning horizon. This consistency across methodologies offers support to the conclusion that operations will continue to increase at a modest rate through 2032.

Table 1.1 Forecast Levels and Growth Rates

	Specify base year: 2012					Average CAGR			
	2012	2017	2022	2027	2032	Base Yr. + 5yr.	Base Yr. + 10yrs.	Base Yr. + 15yrs.	Base Yr. + 20yrs.
	Base Yr. Level	Base Yr. + 5yr.	Base Yr. + 10yrs.	Base Yr. + 15yrs.	Base Yr. + 20yrs.				
Operations									
<u>Itinerant</u>									
Commuter/air taxi	3,182	5,099	5,213	5,333	5,458	9.9%	5.1%	3.5%	2.7%
Total Commercial Operations	3,184	5,099	5,213	5,333	5,459	9.9%	5.1%	3.5%	2.7%
General aviation	18,123	19,056	19,482	19,929	20,398	1.0%	0.7%	0.6%	0.6%
Military	82	69	69	69	69	-3.5%	-1.8%	-1.2%	-0.9%
<u>Local</u>									
General aviation	13,086	10,779	11,020	11,273	11,538	-3.8%	-1.7%	-1.0%	-0.6%
Military	0	13	13	13	13	NA	NA	NA	NA
TOTAL OPERATIONS	34,475	35,016	35,797	36,616	37,476	0.3%	0.4%	0.4%	0.4%
Instrument Operations	10,482	10,697	10,936	11,186	11,449	0.4%	0.4%	0.4%	0.4%
Peak Hour Operations	23	25	25	26	26	1.2%	0.8%	0.7%	0.6%
Based Aircraft									
Single Engine (Nonjet)	88	88	89	89	91	-0.1%	0.1%	0.1%	0.2%
Multi Engine (Nonjet)	19	19	21	22	23	-0.3%	1.1%	0.9%	0.9%
Jet Engine	98	100	102	105	111	0.4%	0.4%	0.4%	0.6%
Helicopter	1	1	1	2	2	7.9%	4.0%	5.3%	4.2%
Other	0	0	0	0	0	NA	NA	NA	NA
TOTAL	206	208	213	218	227	0.2%	0.4%	0.4%	0.5%
B. Operational Factors									
	Base Yr. Level	Base Yr. + 5yr.	Base Yr. + 10yrs.	Base Yr. + 15yrs.	Base Yr. + 20yrs.				
Average aircraft size (seats)									
Air carrier & Commuter	NA	NA	NA	NA	NA				
Average enplaning load factor									
Air carrier & Commuter	NA	NA	NA	NA	NA				
GA operations per based aircraft	152	144	143	143	140				

CAGR = Compound Annual Growth Rate

Source: Forecast of Operations Report for the Cuyahoga County Airport
FAA Approval: September 27, 2013

Table 1.2 Airport Operations

	<u>Year</u>	<u>Airport Forecast</u>	<u>TAF</u>	<u>AF/TAF</u> <u>(% Difference)</u>
Total Operations				
Base Yr. Level	2012	34,475	34,455	0.1%
Base Yr. + 5yr.	2017	35,016	35,026	0.0%
Base Yr. + 10yrs.	2022	35,797	36,147	-1.0%
Base Yr. + 15yrs.	2027	36,616	37,326	-1.9%
Base Yr. + 20yrs.	2032	37,476	38,566	-2.8%

NOTES: TAF = Terminal Area Forecast
AF = Airport Forecast
TAF data is on a U.S. Government fiscal year basis (October through September).
Airport Forecast is on a calendar year basis.

Source: Forecast of Operations Report for the Cuyahoga County Airport
FAA Approval: September 27, 2013

1.7 Required Environmental Review

The proposed Airport improvements require an EA be prepared under the direction of NEPA. NEPA requires any action that involves federal funding or federal permits to undergo an environmental analysis that evaluates and documents the effects of the proposed project on the surrounding natural, social, and economic environment.

This EA has been prepared in accordance with the requirements of NEPA, Title V of the Public Law 97-248 of the Airport and Airway Improvement Act of 1982, FAA Order 5050.4B, *NEPA Implementing Instructions for Airport Actions*, and FAA Order 1050.1E, *Environmental Impacts Policies and Procedures*.

1.8 Intent of Environmental Assessment

The intent of this EA is to provide the environmental documentation necessary to assist local, state, and federal agencies in evaluating the proposed development at the Airport. This EA will serve as a decision-making tool for local, state, and federal officials.

This EA is also developed to further determine whether any potential impacts associated with the proposed development are significant enough to necessitate a greater level of environmental analysis that would be achieved in an Environmental Impact Statement (EIS).

The proposed action will be evaluated, along with a range of alternatives including a No Build / Do Nothing Alternative, to identify a Preferred Alternative that meets the project's purpose and need. This analysis will also include measures to minimize and mitigate possible adverse environmental impacts associated with the Preferred Alternative.

1.9 Requested Federal Action

The following actions require approval prior to actual construction of the proposed project:

- This EA will be submitted to the FAA for evaluation. If the FAA concludes the proposed action will not cause a significant environmental impact, they may issue a Finding of No Significant Impact (FONSI) determination. If it is determined that a major or significant impact will result from the proposed action, the FAA may request that an EIS be completed.
- An EA is prepared when the proposed action includes mitigation measures to avoid, eliminate, or reduce impact to the environment. The FAA will carefully and thoroughly review the EA and make a determination if a FONSI can be issued. At the conclusion of the FAA's review of the EA, if it is determined the proposed actions impacts will meet or exceed the significance threshold, then the FAA will prepare an EIS.
- Unconditional approval of the ALP.
- Airport's ability to apply for federal funding.

1.10 Project Timeframe

The proposed project timeframe (pending approval of the EA and funding) is:

- Draft EA and Public Hearing: November 19, 2014
- Final EA and FONSI: Spring 2015
- Construction begins: No earlier than 2016

The construction timeframe is expected to be 2 to 5 years. Construction could be done in as few as two years if funding is available or could extend up to five construction seasons.