

**Frequently Asked Questions (Condensed)
Environment Assessment Study
And
800' Runway Safety Margin Extension**

PREAMBLE

These frequently asked questions (FAQ) were written based on questions and concerns expressed by citizens of the greater Ann Arbor community. All questions and answers have been researched and verified by area certified flight instructors, FAASTeam safety officers, commercial pilots, aviation experts, ARB Airport Advisory Committee, and the airport manager. If you discover any inaccuracy in the supplied answers, you are requested to immediately contact Ann Arbor Municipal Airport Manager, Matt Kulhanek via email at mjkulhanek@a2gov.org.

These FAQs have been arranged into to 6 broad categories for ease of searching subject content. These categories are:

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SAFETY

SAF 1: What are the identified safety related issues at the airport?

There are three primary safety issues that have been identified:

- 1) the approach end of Rwy 24 is too close to State Road and causes an obstruction to the nonprecision 34 to 1 instrument approach slope;
- 2) the run-up area to Rwy 24, hold short line to Rwy 24, and first 200' of parallel taxiway from the run-up area of Rwy 24 are not visible and not controlled by the FAA tower; and,
- 3) unusually high number of runway overrun incidents.

Proximity to State Road - High traffic volume and pedestrian/motorist safety along State Road has been an issue for commuters and Township residents for several years. Pittsfield Township and the Washtenaw County Road Commission released a study in 2006 that recommends the

widening of State Road to a four-lane boulevard from Ellsworth Road south to Textile Road. The airport currently has a nonprecision 20 to 1 instrument approach slope on Rwy 24 that is already non-compliant with current FAA standards. The widening of State Road would require additional right-of-way from the Airport bringing vehicular traffic closer to the runway and make the current non-compliant approach even a greater hazard to air navigation.

After a meeting with Washtenaw County Road Commission and Pittsfield Township leadership during the summer of 2007, it was agreed to shift the runway 150' to the SW. Upon review by the State Aeronautics Commission and FAA, their preference was also to shift the runway. The 2008 ALP reflects the 150' shift to the SW and allows for the eventual widening of State Road and a nonprecision 34 to 1 instrument approach slope that conforms to FAA design standards.

FAA Tower Line of Sight Issues - The 150' runway shift will minimize the blind spot from the control tower to the hold short line of Rwy 24 and the parallel taxiway. This allows air traffic controllers to maximize the safety and coordination of taxiing aircraft.

Runway Overrun Incidents - During the period of 1998 through 2008, there were 7 reported and 4 unreported overrun incidents at Ann Arbor Airport. No injuries and minor damage to the planes was reported.

ARB's FAA control tower opens at 8:00 a.m. and closes 8:00 p.m. During non-towered hours there is no official FAA record of any overrun other than what pilots learn while talking with other pilots. There are oral and eye witness accounts of 4 known unreported overruns. These unreported overruns include a Cessna Citation Jet 500 (CJ), Beechcraft King Air 90, Piper 140, and Cirrus. These have all occurred between 2000 and 2008.

In addition to the 11 overruns, there were 2 incidents and 1 accident caused by pilots being concerned of overrunning the runway. In one incident the pilot struck a tree on final approach. The second incident occurred when a pilot had braking failure so he decided to roll-off the side of the runway rather than the runway end. The accident involved a decision to go around because there was insufficient runway remaining to land the plane. Due to a mechanical malfunction, this go around failed and the accident resulted in no injuries, but the plane was total loss.

SAF 2: Why are runway run-offs or overruns a safety issue?

The three primary causes for overruns include mechanical failure, pilot error or weather. If a pilot routinely practices take-offs and landings while complying with appropriate techniques and procedures, the pilot can often avoid or prevent most runway environment accidents and incidents. It is the unexpected and uncontrollable overrun incidents encountered by students and low-time private pilots that the Airport is trying to reduce, thereby lowering the risk of accidents and injuries. 9 of the 11 known overruns were single engine small planes. The other 2 were also small planes, an 8 passenger turboprop and a small jet used for medical flight services.

Overrunning on the departure end of Rwy 6 is a significant concern as State Road is within a few hundred feet from the end of the concrete runway. The risks involved while skidding from concrete onto grass and gravel surfaces are many. Braking action between dissimilar surfaces is considerably different. This difference can cause the nose wheel to shear off and the resultant propeller strike can cause sudden engine stoppage and possible fire and/or injury to the occupants of the aircraft.

SAF 3: How many runway run-offs or overruns have there been at the Airport?

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SAF 4: What is the difference between a runway roll-off, run-off, and overrun?

A runway “roll-off” is when an airplane rolls off from the side edge of the runway. A “run-off” and “overrun” mean the same thing, when the airplane runs off from the end of the runway.

SAF 5: Why doesn't the Airport widen the runway reducing the risk of roll-offs?

Widening the runway from its current 75' to 100' in width would likely change the airport's reference code classification from B-II to B-III which may permit larger planes to operate at ARB. The Airport Advisory Committee is committed to resolving the right-of-way Part 77 and overrun issues without changing the airport's reference class; the proposed runway lengthening would not change the airport's reference code classification from the current B-II.

SAF 6: What is an aircraft “accident” and “incident”?

The FAA defines aircraft accident and incidents in 49 CFR Part 830 as:

"aircraft accident" means an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or serious injury, or in which the aircraft receives substantial damage.

"incident" means an occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect the safety of operations.

SAF 7: Where can I find information about aviation related accidents and incidents?

There are 3 different locations that can be accessed to research aircraft accidents and incidents.

“The Aviation Safety Reporting System (ASRS) receives, processes, and analyzes reports of unsafe occurrences and hazardous situations that are voluntarily submitted by pilots, air traffic controllers, and others. Information collected by the ASRS is used to identify hazards and safety discrepancies in the National Airspace System. It is also used to formulate policy and to strengthen the foundation of aviation human factors safety research.”

http://www.asias.faa.gov/portal/page?_pageid=56,398034,56_398054:56_398058:56_398062&_dad=portal&_schema=PORTAL

“The Accident/Incident Data System (AIDS) database contains data records for general aviation and commercial air carrier incidents since 1978. The ASIAs database for AIDS contains incidents only because ASIAs uses the National Transportation Safety Board (NTSB) accident database as the primary source for accident information. The information contained in AIDS is gathered from several sources including incident reports on FAA Form 8020-5.”

http://www.asias.faa.gov/portal/page?_pageid=56,398034,56_398054:56_398058:56_398068&_dad=portal&_schema=PORTAL

“The National Transportation Safety Board (NTSB) Aviation Accident and Incident Data System contain information collected during an NTSB investigation of an accident or incident involving civil aircraft within the United States, its territories and possessions, and in international waters. The NTSB Board is an independent Federal agency that investigates every civil aviation accident in the United States and significant accidents in the other modes of transportation, conduct special investigations and safety studies, and issues safety recommendations to prevent future accidents.”

http://www.asias.faa.gov/portal/page?_pageid=56,398034,56_398054:56_398058:56_398074&_dad=portal&_schema=PORTAL

SAF 8: What are the standard operating procedures (SOP) taught student pilots at ARB if there is a mechanical failure on take-off?

There are two common general aviation emergency SOPs on departure depending when the emergency event occurs on take-off. If emergency SOPs are necessary during the departure roll

to within about 25' to 50' above ground level (AGL), the safest SOP with the lowest level of probable personal injury and damage to the aircraft is to put the plane down on the runway, gently apply braking action so as to not initiating skidding action (risking popping main-gear tires), and overrun the runway if necessary bringing the plane to a safe stop.

The second general aviation emergency departure SOP is if the plane experiences a sudden mechanical failure and the plane is too high above the runway to safely return to the runway and overrun coming to a safe stop, pilots are trained to land anywhere between 45 degrees left or right of runway center-line. Pilots are reminded that usually landing straight ahead in the runway protection zone (RPZ) is the safest place for passengers and surrounding airport environs to land.

The 800' runway safety margin extension would increase the decision making distance by about 20% (800'/3,500') during departures and arrivals, reducing the probability of pilot error if SOPs must be exercised.

SAF 9: What are the standard operating procedures (SOP) taught student pilots at ARB if the pilot encounters mechanical failure after touchdown during rollout or runway conditions would pose a safety risk under poor braking conditions?

Before entering controlled airport airspace, pilots must seek a weather report and obtain any notices to airmen (NOTAM) for the arrival airport. Additionally, the SOP includes mentally envisioning a "go-around" scenario and if on short final or on the ground what action will be taken if encountering mechanical failure, braking action is less than reported, stronger than reported crosswinds and wind gusts, or other forces of Mother Nature working against the pilot and plane.

On short final approach the pilot is instructed by the controller or if he/she notices an unsafe activity in or around the runway environment, the pilot should initiate a go-around SOP. On the other hand, notwithstanding controller instructions to the contrary or if beyond the go-around decision point it is better to land the plane. Pilots are trained to sparingly apply brakes and run-off the end of runway if necessary to bring the plane to a stop. The 800' runway safety margin extension would increase decision making distance by about 20% (800'/3,500') during arrivals and departures reducing the probability of pilot error if SOPs must be exercised.

SAF 10: What is a weight and balance calculation and why is it important pilots perform this calculation at ARB?

Excerpts from Pilot's Handbook of Aeronautical Knowledge.

"Weight and balance (W/B) computations should be a part of every preflight briefing. Never assume three passengers are always of equal weight. Instead, do a full computation of all items to be loaded on the aircraft, including baggage, as well as the pilot and passengers. It is recommended that all bags be weighed to make a precise computation of how the aircraft CG (center of gravity) is positioned." Unequal load distribution causes accidents.

“W/B are critical components in the utilization of an aircraft to its fullest potential. The pilot must know how much fuel can be loaded on the aircraft without violating CG limits, as well as weight limits to conduct long or short flights with or without a full complement of allowable passengers.”

The takeoff/climb and landing performance of an aircraft are determined on the basis of its maximum allowable takeoff and landing weights. A heavier gross weight results in a longer takeoff run and shallower climb, and faster touchdown speed and longer landing roll.

“In some aircraft, it is not possible to fill all seats, baggage compartments, and fuel tanks, and still remain within approved W/B limits. For example, in several popular four-place aircraft, the fuel tanks may not be filled to capacity when four occupants and their baggage are carried. In a certain two-place aircraft, no baggage may be carried in the compartment aft of the seats when spins are to be practiced. It is important to a pilot to be aware of the W/B limitations of the aircraft being flown and the reasons for these limitations.”

SAF 11: What is maximum take-off and landing weight?

As defined in the Pilots’ Handbook of Aeronautical Knowledge, Glossary, page G19.

Maximum landing weight. The greatest weight that an airplane normally is allowed to have at landing.

Maximum takeoff weight. The maximum allowable weight for takeoff.

Maximum weight. The maximum authorized weight of the aircraft and all of its equipment as specified in the Type Certificate Data Sheets (TCDS) for the aircraft.

SAF 12: What is take-off performance?

The minimum takeoff distance is of primary interest in the operation of any aircraft because it defines the runway requirements. The minimum takeoff distance is obtained by taking off at some minimum safe speed that allows sufficient margin above stall and provides satisfactory control and initial rate of climb. Many other variables (weight, pressure altitude, ambient temperature, and wind) affect the takeoff performance of an aircraft. Any item that alters the takeoff speed or acceleration rate during the takeoff roll will affect the takeoff distance.

If the gross weight increases, a greater speed is necessary to produce the greater lift necessary to get the aircraft airborne. With standard weather conditions, increasing the takeoff weight of the average Cessna 182 by 11%, from 2,400 pounds to 2,700 pounds (i.e., passengers, baggage, fuel), results in a 23% increase in takeoff distance.

The most critical conditions of takeoff performance are the result of some combination of gross weight, altitude, temperature, and unfavorable wind. In all cases, the pilot must make an accurate prediction of takeoff distance from the performance data of the AFM/POH, regardless of the runway available, and strive to a polished, professional takeoff procedure.

SAF 13: What is landing performance?

In many cases, the landing distance of an aircraft will define the runway requirements for flight operation. The minimum landing distance is obtained by landing at some minimum safe speed, which allows sufficient margin above stall and provides satisfactory control and capability for a go-around.

A distinction should be made between the procedures for minimum landing distance and an ordinary landing roll with considerable excess runway available. Minimum landing distance will be obtained by extensive use of the brakes for maximum deceleration. On the other hand, an ordinary landing roll with considerable excess runway may allow coasting to a stop to minimize wear and tear on the tires and brakes.

The effect of pressure altitude and ambient temperature (density altitude) impacts landing performance. An increase in either increases the landing speed of an aircraft but does nothing to help slow it down. The effect of proper landing speed is important when runway lengths and landing distances are critical. The landing speeds specified in the AFM/POH are generally the minimum safe speeds at which the aircraft can be landed. Any attempt to land at below the specified speed may mean that the aircraft may stall, be difficult to control, or develop high rates of descent. On the other hand, an excessive speed at landing may improve the controllability slightly (especially in crosswinds), but causes an undesirable increase on landing distance.

SAF 14: What is the relationship between weight and balance, ambient temperature in the summer months, and take-off and landing distance at ARB?

When designing a runway and determining length and width, engineers take into account many factors (see AC 150/5300-13, Airport Design) including performance of highest critical aircraft in the general aviation (GA) fleet using the airport, instrument approaches, mean maximum temperature, and prevailing winds to mention only a few.

Even though maintaining a runway environment consistent with high design standards for the highest critical plane using the airport (less than 1% of the time at ARB) is necessary, in the spirit of safety the ARB GA pilot community strives to assure users operate their aircraft within the operating performance specifications of their aircraft because weight and balance and prevailing weather, plays such a dominant role in effective take-off and landing distances.

During summer months at ARB, an individual airplane's take-off or landing distance can fluctuate as much as 10% to 25% because of weight and density altitude. On any given day an

aircraft may be able to takeoff from ARB but not be able to return and land; or an aircraft may be able to land at ARB but may not be able to take off.

SAF 15: What levels of training and experience do pilots have flying out of ARB?

There are three basic pilot constituency groups on the airport: 1) student pilots training to become private pilots; 2) private pilots and private pilots with commercial and instrument ratings; and 3) airline transport pilots (ATP) that use the airport for recreational purposes. All three pilot constituency groups possess a wide range of aviation related educational training and piloting skill sets.

Located on the airport there are three commercially operated flight schools and two nonprofit flying clubs offering flight school training to members. ARB has a high concentration of student pilots.

Once having obtained a private pilot license, a private pilot may continue advanced flight training attaining higher ratings such as commercial and instrument ratings. Private, commercial, and instrument rated pilots at the airport fly as often as practical in order to remain current (generally between 25 and 200 hours/year).

ATPs generally fly several hundred hours/year so they may possess the highest level of airman knowledge and practical skill sets.

SAF 16: Does the FAA promulgate airport safety “Best Practices”?

Yes. See the FAA’s website for airport safety “best practices.”

http://www.faa.gov/airports_airtraffic/airports/runway_safety/bestpractices.cfm

OPERATIONS

OPS 1: What is a FAR Part?

FAR is an acronym more fully described as Federal Aviation Regulation. FARs are part of the United States Government’s Code of Federal Regulations, a portion of which govern the airworthiness, maintenance, and operation of aircraft. Parts 91, 135 and 121 all concern the operation of various segments of aviation.

OPS 2: What is the difference between Part 91, Part 135 and Part 121 flight operations?

Part 91 This FAR refers to a segment of aircraft operations known as general aviation. General aviation refers to all aviation other than commercial (scheduled and non-scheduled) airline operations and military aviation. For example, flights for recreation and training are carried out

under Part 91. Although general aviation usually involves small aircraft, the definition depends on the nature of the operation not the size of the aircraft. During 2008, 98.1% of all operations at ARB were conducted under Part 91 general aviation rules.

Scheduled Part 135 This FAR refers to operations that apply to airplanes used for commercial purposes carrying 9 or fewer passengers on regularly scheduled routes. During 2008, there were no Part 135 operations at ARB carrying 9 or fewer passengers on a regularly scheduled route.

Non-scheduled Part 135 applies to smaller aircraft conducting on-demand operations as defined in 14 CFR 119.3 with schedules that are arranged between passengers and the operator (also known as “air taxi”) and scheduled passenger-carrying operations conducted on a limited basis. Also includes cargo planes with payload capacities of 7,500 pounds or less. During 2008, 1.8% of all operations at ARB were conducted under non-scheduled Part 135 rules.

Part 121 This FAR refers to operations that apply to major airlines and cargo carriers that fly larger transport-category aircraft. Air carriers are generally defined as operators that fly aircraft in revenue service. In March 1997, the definition of Part 121 operations changed. Prior to the change, scheduled aircraft with 30 or more seats were operated under Part 121 and those with less than 30 seats were operated under Part 135. After 1997, scheduled aircraft with 10 or more seats were classified as Part 121 operations; therefore, since 1997, most carriers that once were popularly known as “commuters” now operate under FAR Part 121. During 2008, there were no Part 121 operations at ARB.

OPS 3: Does the Airport have any Part 135 and Part 121 operations at the Airport?

There are no Part 121 airlines and cargo carriers based on the airport nor do any operate to and from the airport. To support a Part 121 operation, FAA airport design specifications mandate the airport possess: 1) a precision navigation landing system; 2) wider/longer runway; 3) greater distance separation between the runway and taxiway; and 4) the runway, taxiway and ramp must have a greatly enhanced “weight bearing capacity” than exists at the airport. Additionally, emergency and fire fighting access roads must be installed.

During the past three or four decades, at one time or another, there have been five or more non-scheduled Part 135 “air taxi” operators based on the airport. All have stopped operations for business reasons. The latest start up “air taxi” service began operations at ARB in January 2009. For January and February, FAA’s Air Traffic Activity System (ATADS) – showed ARB had total of 61 air taxi operations. This total includes the ARB based “air taxi” service as well as any other “air taxi” operation, based at another airport, that lands or takes off at Ann Arbor.

OPS 4: What is a Part 25 certificated airplane?

Part 25 certificated airplanes refers to Part 25 — Airworthiness Standards: Transport Category Airplanes. Part 25 airworthiness standards are the design standards by which all reciprocating

engine powered airplanes, two-engine and three-engine turbopropeller airplanes, and turbojet powered airplanes must be certificated in order for the airplane to operate within the transport category.

If the airplane is not designed and manufactured to Part 25 design standards the airplane cannot be put into service as a Part 135 and 121 transport category airplane. With very few exceptions, two-engine and three-engine turbopropeller and turbojet business class airplanes are constructed to this higher standard. This allows the current owners to maintain a high resale value on the aircraft so that the future owners of these airplanes have the option of using these airplanes in Part 91, 135, or 121 operations.

OPS 5: How does an aircraft's published take-off length correlate to the actual runway length?

This correlation is difficult and varies from airplane to airplane. Actual runway length is reduced to usable runway length based on safety factors, aviation regulations and aircraft performance calculations. Typically, published landing and take-off distances for aircraft are based on maximum take-off weight operations at sea level and 59 degree Fahrenheit temperature. ARB is 829' above sea level and has a mean 83 degree Fahrenheit temperature in July. Both of these factors have a significant impact on aircraft performance and require significantly longer actual runway lengths than published. An airplane with a 3,500' published take-off length will not likely be able to take-off from ARB's 3,500' runway. Reducing take-off weight can improve performance, but creates other operational issues. These factors are calculated by pilots prior to each flight based on the aircraft being flown, creating adjustments to take-off and landing distances.

Additionally, each aircraft and pilot has personal minimums that are used to calculate how much usable runway they have for take-offs and landings. These also vary by aircraft type, pilot comfort and many other factors calculated prior to each flight. These personal minimums also significantly reduce the amount of usable runway length.

For charters/air taxi operations which operate under Part 135, there are additional restrictions on landing length. In general, aircraft operating under Part 135 must be able to make a landing within 60% of the available runway length. Currently at ARB, this would require them to land within 2,100'. With the proposed 800' runway improvement, they must land within 2,580'. This restriction on usable runway length will continue to limit the types of aircraft landing at ARB.

OPS 6: Will there be additional airplanes operating from ARB as a result of adding the 800'?

While the airport reference classification (B-II) will not change because of the runway improvement, it is unknown if additional planes will actually operate at ARB as a result of the 800'. It is expected that the runway improvement will allow a small additional subset of multi-engine propeller or turbojet business class aircraft to be able to operate at ARB. These

additional aircraft could become actual operations only if the pilots or owners of those aircraft have a reason to come to Ann Arbor. Those potential operations are very difficult to predictable and would expect to be a minimal increase, if any. An analysis of aircraft types that can currently land versus those that may be able to land after the improvement is being completed. This analysis will be made available once completed. Runway length does not determine operational usage, need or purpose to land in Ann Arbor determines operational usage.

OPS 7: What does airport reference code B-II mean?

Airport reference code (ARC) refers to the FAA Airport Design standards (see AC 150/5300-13) the airport is designed for safe operation of the “critical aircraft” using the airport. The “B” represents the “aircraft approach category” and the Roman numeral “II” represents the “airplane design group.” A “critical aircraft” is the largest documented airplane class projected to have greater than 500 operations from an airport during a calendar year.

The ARC is a coding system used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport. Generally, runway standards are related to aircraft approach speed, airplane wingspan, and designated or planned approach visibility minimums. Taxiway and taxi lane standards are related to airplane design group.

OPS 8: What is an “operation?”

An “operation” is either a landing or take-off.

OPS 9: What drives Ann Arbor Airport usage or the number of operations?

Airport usage is determined by a pilot or aircraft owner’s need to fly to Ann Arbor. Like a seaport, an airport is a place of destination so the pilot usually needs a purpose or business reason for coming to Ann Arbor. While there is no way to substantiate why itinerant traffic stops at ARB, it is assumed they visit ARB for business reasons and area attractions.

Based on historical usage, ARB has principally been a general aviation flight training airport. While it is not exactly known what drives student pilot enrollment up or down, it is generally assumed economic forces play a large role. As the demand for commercial pilots increase, it is assumed increased enrollment follows and as demand falls off, enrollment falls.

Other factors influencing operations include economic, aging pilot population, and competition from other discretionary hobbies. Specifically addressing aging pilot population, in past years military demand for pilots during WWII, Korean War, and Viet Nam War generated a large population of pilots and supporting infrastructure. This generation has largely stopped flying because of difficulty maintaining their FAA medical certificate.

According to FAA airport operations data available at Air Traffic Activity System (ATADS), Airport Operations, website, <http://aspm.faa.gov/opsnet/sys/Airport.asp>, 2008 total operations at ARB were:

2008 Actual Total Operations

Total Air Carrier (Part 121):	0
Total Air Taxi (Part 135):	1,198 (1.9%)
Total General Aviation (Part 91):	63,668 (98.1%)
Military Operations:	44 (<0.001%)
2008 Total Operations:	64,910

OPS 10: What year between 1990 and 2008 had the greatest number of control tower operations and how many operations was it?

It was 1999, total operations was 134,554.

1999 Actual Total Operations

Total Air Carrier (Part 121):	4 (<0.002%)
Total Air Taxi (Part 135):	2,476 (1.8%)
Total General Aviation (Part 91):	132,059 (98.2%)
Military Operations:	15 (<0.01%)
1999 Total Operations:	134,554

OPS 11: What level of increased or decreased flight operations at the airport would be as a result of extending the runway by 800'?

The length of ARB's general aviation runway has no fact based correlation with the number of annual operations. Operations at Ann Arbor have been as high as 134,554 (1999) and as low as 64,910 (2008), all utilizing the existing 3,500' runway. Pilots and their passengers arrive at ARB because there is purpose or business reason to come to the greater Ann Arbor area. Unless there is a newly created demand for community based activities, attractions, products and services consumed by pilots and airplane owners that do not already patronize existing area businesses, one can only assume there will be a minimal increase, if any, in flight operations as a result of an 800' extension.

OPS 12: Does ARB have a noise abatement procedure pilots are requested to follow when operating from the airport?

Yes, ARB is currently rolling out a new community friendly noise abatement procedure pilots are being asked to comply with when departing and arriving at the airport. Printed pilot kneeboard procedures are being distributed and informational signage will be posted. Airport management has declared all quadrants surrounding the airport as noise sensitive areas.

OPS 13: What runways exist at the airport and are there any plans to create any new runways?

ARB has (1) paved runway and (1) grass/turf runway. Runway 06-24 is a grooved-concrete 3,500' x 75' runway. Runway 12-30 is a 2,750' x 110' turf runway. There are no plans to add a third runway. All airport improvements are required to be shown on the ALP and approved by City Council.

OPS 14: Does the City have control over traffic using the airport?

During the hours from 8:00 a.m. to 8:00 p.m. local time, Ann Arbor's airspace reaches out 4.4 statute miles in a radius surrounding the airport up to 3,300' MSL and is controlled by local FAA control tower personnel. In addition to managing the airspace over Ann Arbor during tower hours, controllers also manage all positive ground movement on taxiways and runways. These controllers are federal employees and not employees of the City of Ann Arbor.

During the hours that the tower is not in operation, pilots using the airport are required to announce their intentions on what is known as the Common Traffic Advisory Frequency or CTAF. Each airport has a distinct radio frequency. Pilots arriving at ARB are required to monitor this frequency. This allows them to maintain a listening watch and to contact other arriving and departing traffic to coordinate a landing sequence if necessary. After landing a call is made when clear of the runway, and while taxiing to the final destination on the airport. Aircraft taxiing for departure and takeoff also monitor the CTAF and announce their intentions in a similar manner. This procedure is used at all airports without control towers.

As a recipient of federal aviation funding, the City agrees to operate and maintain the airport for a period of 20 years. The City also agrees to make the airport available for public use and without discrimination to all types, kinds and classes of aeronautical activities.

OPS 15: Does the City have any plans to attract air traffic from Willow Run Airport?

No. The City of Ann Arbor has not nor will it ever have plans of attracting any air traffic from Willow Run Airport. Willow Run Airport offers many advantages to larger aircraft that ARB cannot offer such as: customs, de-icing services, long runways and precision ILS approaches.

The City of Ann Arbor understands and agrees Willow Run Airport is an excellent nearby facility and encourages large airplanes to use that facility. The City has determined Willow Run possesses the ideal runway lengths and airport environment better suited for its many large plane users. ARB does not have the infrastructure to accommodate large planes already served by Willow Run Airport and has no plans to create this infrastructure.

OPS 16: What caused the number of banner towing flight operations to decrease?

The reduction in banner towing operations was mostly the result of FAA rule making known as “temporary flight restrictions” (TFR) now in effect as a result of the terrorist attacks of 9/11. One hour before the start and one hour after the end of events, aircraft must remain outside of a 3-mile radius and be at least 3,000’ above the ground. This applies to NCAA stadiums that have a seating capacity greater than 30,000, NASCAR events, major league baseball games, and NFL football games.

OPS 17: What has caused the number of football Saturday airport operations to decline?

A specific reason for the decline in football Saturday airport traffic is not known, but aviation experts believe the decline may be due to economic conditions as well as a change in corporate policies relative to personal use and entertainment related use of corporate owned airplanes. Other regulatory mandates affecting personal use and entertainment related use are IRS SIFL and disallowance regulations.

IRS rules now consider individuals using corporate airplanes for personal use as taxable income. The value of the flight, or a portion thereof, must be included in the employee’s income. In basic terms, whenever an employee or guest (including family members of the employee) uses a company airplane for non-business/personal use, the flight is taxable to the employee.

More commonly known as disallowance, the American Jobs Creation Act of 2004, limits a taxpayer’s ability to deduct aircraft depreciation and operating expenses when the aircraft is used to provide transportation to certain “specified Individuals” for entertainment, amusement, or recreational purposes. The law is believed to have changed personal use policies of corporate owned aircraft because of the risk of disallowance, or of losing the deductibility of depreciation and operating expenses associated with the airplane. Many corporations now prohibit personal use and entertainment of these corporate aircraft.

OPS 18: What military airplanes or old warbirds can currently fly into the airport?

The Yankee Air Museum located at Willow Run Airport (YIP) has flown its B-17, C-47, and B-25 into ARB in years past, but only under ideal weather conditions. Flights now are limited to low approaches to the airport and flights over the city at 1,000’ above the highest obstacle (high-rise buildings, radio towers, etc.) within a 2,000’ radius.

OPS 19: Why do the companies owning airships (blimps) use the airport for base of operations during special events held in SE Michigan?

The airport’s proximity to local major events such as UM football, golf events in Oakland County, and other events such as NASCAR races at the Michigan International Speedway is a significant draw. The airport’s control tower, security fence and open space are convenient for

the blimp operations. Also, ARB is located outside of the crowded airspace of the Detroit Metro area.

ENVIRONMENTAL

ENV 1: What is an Airport Layout Plan (ALP)?

An Airport Layout Plan (ALP) is a scaled drawing of existing and proposed land and facilities necessary for the operation and long term development of the airport. Simply, the ALP is a visual depiction of an airport's master plan. The document, and revisions as needed, must be approved by the State Bureau of Aeronautics, the FAA and the City Council. Approval of an ALP by these agencies is only an approval of the airport master plan. Any specific improvement on the ALP must be separately approved by City Council prior to commencement of the project.

ENV 2: Why did the Ann Arbor City Council amend the Airport Layout Plan (ALP) in 2007?

In addition to general periodic updating of the ALP, the July 2006 State Road Corridor Study recommendations were finalized. The airport manager was required under FAA CFR Part 77 to report the final recommendation because the report contained an obstruction causing a potential "Hazard to Air Navigation." The recommendation to potentially widen the State Road right-of-way to 160' or 180' will cause a "Hazard to Air Navigation" within the extended protected runway safety zone. To address this potential hazard to aircraft, the 2007 ALP shows a curve in State Road away from the end of the runway restoring the clear height above the minimum 15' and 34:1 slope.

After a meeting with the Washtenaw County Road Commission and Pittsfield Township leadership during the summer of 2007, it was agreed to remove the curve in State Road and shift the runway 150' to the SW. Upon review by the State Bureau of Aeronautics and the FAA, their preference was to also remove the curve and replace it with the shift. The 2008 ALP reflects this modification.

ENV 3: Why did the Ann Arbor City Council amend the Airport Layout Plan (ALP) in 2008?

City Council, at their January 22, 2007 regular meeting, directed staff to update the ALP to address the safety concerns raised during Council's January 6 and January 22, 2007 meetings. The ALP was amended in 2008 to address the three primary safety related concerns which are:

- 1) the approach end of Rwy 24 is too close to State Road and causes an obstruction to the nonprecision 34 to 1 instrument approach slope; and
- 2) the run-up area to Rwy 24, hold short line to Rwy 24, and first 200' of parallel taxiway from the run-up area of Rwy 24 are not visible and not controlled by the FAA tower; and,

3) unusually high number of runway overrun incidents.

ENV 4: What is an Environmental Assessment Study (EA)?

An EA study is an engineering and scientific study evaluating the impact of proposed improvements at an airport within the community. Categories to be evaluated include:

- Noise
- Compatible Land Use
- Socioeconomic, Environmental Justice
- Wetlands, Jurisdictional or Non-Jurisdictional
- Floodplains
- Water Quality
- Section 4(f) and 6(f) Properties
- Historic, Architectural, Archaeological, and Cultural Resources
- Fish, Wildlife and Plants
- Air Quality
- Coastal Resources
- Wild and Scenic Rivers
- Farmlands
- Natural Resources and Energy Supply
- Light Emissions and Visual Effects
- Hazardous Materials
- Construction Impacts

The EA will be conducted subject to FAA Order 5050.4B and FAA Order 1050.1E.

http://www.faa.gov/airports_airtraffic/airports/resources/publications/orders/environmental/5050_4/

http://www.faa.gov/regulations_policies/orders_notices/media/ALL1050-1E.pdf

ENV 5: What is the environment assessment study process?

The FAA defines an environmental assessment to include “Federal grant assistance in, or ALP approval of, new airport construction or major expansion normally requires an assessment of potential environmental impacts in accordance with FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects, and the National Environmental Policy Act of 1969.”

ENV 6: What is the noise contour level surrounding the Airport?

A noise contour level map based on FAA standards is not known at this time. The environmental assessment study will generate a noise contour map depicting the sound footprint of airplane traffic on and surrounding airport environs. The noise study will include

the impact of the airport's "critical aircraft," which is the largest aircraft making 500 operations at the airport per year. The last known time a noise study was completed was back in the early 1990's. This study does not reflect the noise level changes due to the increased development and vehicular traffic surrounding the airport over the last 15+ years.

ENV 7: Will residents be given an opportunity to make public comment?

Yes. The environmental assessment (EA) process requires a public hearing when a draft of the study is available. These public comments will be made part of the official record of the EA when submitted for review to the appropriate state and federal agencies. Additionally, the environmental consultant is targeting specific constituencies for involvement in a citizen advisory committee (CAC). These CAC members will be tasked with soliciting comments and concerns from their constituency to share with the consultant and with disseminating the consultant's progress, observations and findings to their groups.

ENV 8: What will be the new altitude of airplanes arriving and departing on Rwy 06 and Rwy 24?

This calculation will be a part of the aviation research during the environment assessment process. This information will be made available as it is completed.

ENV 9: Will the quality of life decline as a result of the 800' runway safety margin extension?

The impact categories listed in ENV 4 will address quality of life issues.

ENV 10: Does the size of an airport and its runway have a declining effect on communities and surrounding environs?

The EA study will research and address this question. At this time there is no empirical evidence that the size of ARB and its runways have a negative effect on the community and surrounding environs. Property values surrounding the airport have continued to appreciate until impacted by the current economic conditions in the State of Michigan, which are unrelated to the airport. This would suggest that the airport has little negative effect on demand or desirability of the area.

ENV 11: Does the FAA have a residential noise abatement insulation program?

Yes. See the FAA's website for program details and qualifications.

http://www.faa.gov/airports_airtraffic/airports/environmental/

ENV 12: Can the runway be extended to the northeast instead of the southwest?

Extension of the runway to the northeast would be difficult because of the impact on State Road traffic and the location of known wetlands. The option would also fail to address the line of sight issues from the FAA tower. The FAA no longer allows roadways to cross underneath runways due to post 9/11 safety concerns. State Road would have to be completely relocated which causes significant traffic impacts to both State and Ellsworth Roads. The State Road relocation work and the runway improvement work would both impact known wetland areas.

ENV 13: What are the two shaded areas on the ALP labeled “future non-aviation revenue area”?

These two areas labeled “future non-aviation revenue area” are land that can be used, with appropriate approvals, for non-aviation use. For non-aviation related activities, this would likely require Pittsfield Township zoning and site plan approvals.

The non-aviation revenue area along Lohr Road was added in the 2007 ALP to accommodate a request by the previous Pittsfield Township administration for the possible location of public use soccer fields and other recreational activities. The area along Ellsworth was designated non-aviation because of the commercial frontage potential. There are no plans to use either of these areas for anything other than their current use.

ENV 14: Will the City construct a tall chain-link fence along the perimeter of the airport and more specifically along Ellsworth or Lohr Roads?

The current ALP, as well as previous ones, show a future fence along the entire perimeter of airport owned property. The City has no plans to relocate the current fencing out to the airport’s perimeter boundary. The preliminary runway layout plan being done as part of the EA process will dictate any changes to the fence at the end of Rwy 6, though no changes are anticipated.

ENV 15: Will the Airport need to acquire additional property to extend the runway 800’?

The Airport currently owns the property all the way to Lohr Road on the west and Ellsworth Road to the north. The frontage along Lohr Road is leased to a local farmer and there are no plans to change that. There is no property acquisition planned or anticipated with the proposed runway improvements.

ENV 16: Why extend the runway 800’ instead of a shorter distance?

An 800’ improvement puts Rwy 06-24 at 4,300’ and should eliminate approximately 85% of the runway overruns. An improvement less than 800’ addresses less of the overruns. Extending the runway longer than 4,300’ would require significant upgrades to the entire runway and taxiways which would likely change the airport’s classification and may allow larger planes. The

Airport Advisory Committee is committed to resolving the right-of-way Part 77 and overrun issues without changing the airport's reference class and opposes any attempt to lengthen the runway beyond 4,300'.

ENV 17: Does the Airport permit the use of ethylene glycol or other deicing fluids on airport grounds?

No, the airport does not permit de-icing on airport grounds using any propylene glycol or other ethylene glycol based de-icing fluids nor does it have a de-icing spray facility. The lack of de-icing capabilities aids in limiting Part 135 and 121 operations.

ENV 18: Are there any underground storage tanks located on the airport?

No, the airport does not permit underground storage tanks on airport ground. All fuel storage tanks are above ground and regularly monitored for leakage and spillage.

ECONOMICS

ECON 1: What is the source of revenue used to pay for airport improvements?

The environmental assessment study and eligible airport improvements are 97.5% funded from federal and state sources. The City's remaining 2.5% funding comes from the airport's operating budget which is an enterprise fund comprised solely of revenue generated by airport operations. Depending on the amount needed to make airport improvements and subject to City Council approval, the airport may also borrow capital funds and repay borrowed funds from future airport operating budgets.

As an example, if a capital improvement is estimated to cost \$1.0 million, federal and state sources would supply \$975,000, the airport's portion would be about \$25,000.

Federal funding, which comes from the Airport and Airway Trust Fund (AATF), is derived from aviation sources including passenger ticket taxes, cargo taxes, and aviation fuel taxes. The State Aeronautics Fund (SAF) is the primary repository for state aviation revenue and is used to fund eligible airport improvement projects. The SAF receives revenue from aviation license, permit, and registration fees; aviation excise fuel taxes; and a portion of sales tax from aviation fuel and other aircraft related purchases.

ECON 2: What types of projects are eligible for federal airport improvement program (AIP) funding?

Eligible projects include those improvements related to enhancing airport safety, capacity, security, and environmental concerns. In general, sponsors can use AIP funds on most airfield capital improvements or repairs except those for terminals, hangars, and non-aviation development. Projects related to airport operations and revenue-generating improvements are

typically not eligible for funding. Operational costs — such as salaries, maintenance services, equipment, and supplies — are also not eligible for AIP grants.

ECON 3: How much will the environmental assessment study cost?

The total cost of the environmental assessment study is \$309,000. This includes work approved by the City for the two consultants on the project in the amount of \$298,500 and State Bureau of Aeronautics administrative costs in the amount of \$10,500.

ECON 4: How will the environmental assessment study be paid for?

97.5% of the cost of the environmental assessment study will be funded by Airport Improvement Program grants paid from state and federal aviation revenues. The 2.5% local share (about \$7,700) will be paid from the airport budget.

ECON 5: Can identified funds used to improve the airport be diverted to maintain other City or Township public infrastructure projects?

No. State and federal aviation grant funds can only be used on eligible airport improvement projects. Federal funding agreements require that revenue generated on the airport must be used to fund airport operations and other airport capital improvements.

ECON 6: Will local property tax dollars paid by City of Ann Arbor property owners be used to pay for airport improvements?

No. The environmental assessment (EA) study and any airport capital improvements will not be funded by City property tax dollars. 97.5% of the funding source comes from state and federal aviation revenues through the Airport Improvement Program. Depending on the amount needed to make the improvements and subject to City Council approval, the City's remaining 2.5% will come from the airport's operating budget or borrowed capital funds that will be repaid from future airport budgets. The airport budget is funded by revenues generated by airport operations and receives no subsidy or tax dollars from the City.

ECON 7: Will local property tax dollars paid by Pittsfield Township property owners be used to pay for airport improvements?

No. The airport is a City owned enterprise and not under the governance of Pittsfield Township. The City is solely responsible and liable for the airport's operation and improvements.

ECON 8: Does the City of Ann Arbor levy and collect any property tax dollars on the airport?

No. By law, all taxable tangible personal property and real property is taxable by the governmental unit in which the property is located. That governmental unit is Pittsfield Township.

ECON 9: Does Pittsfield Township levy and collect any property tax dollars on the airport?

Yes. Pittsfield Township assesses and taxes all privately owned buildings constructed on airport grounds and tangible personal property of businesses located on the airport. A request has been made to Pittsfield Township for total real and tangible personal property taxable value and property taxes collected during 2008. Once available, this FAQ will be amended to include this information.

ECON 10: Does the City of Ann Arbor pay property taxes on airport owned land to Pittsfield Township?

No. By law, property owned and used by a municipality is exempt from property taxation. An airport, like any other exempt property (churches, schools, etc.) providing a public benefit is exempt from taxation. An airport is part of the nation's transportation infrastructure system just like roads/highways and sea ports. Local roads/highway infrastructure system (owned by MDOT & WCRC) are created and maintained for a public benefit so they are tax exempt for the same reason as the airport.

Unlike other exempt properties, ARB generates tax revenues for Pittsfield Township from businesses located on the airport and from non-aviation use (agricultural) of airport land. ARB is also a customer of Township utility services paying full rate as would any other business or individual.

ECON 11: How does the airport serve our local community?

ARB serves the local community in many ways. The first is job creation.

- 1) There are two "fixed-wing" fixed base operators (FBO), a "helicopter" FBO, two national rental car agencies, two flying clubs, four flight schools and pilot training centers, City airport staff, FAA air traffic control tower, air taxi, aircraft sales, aviation insurance and aviation fueling businesses that operate from the airport and employ staff supporting 24/7 operations of the airport.
- 2) ARB serves the Ann Arbor medical and biomedical industries with daily professional air ambulance services transporting patients, organs, radio isotopes, and other biomedical products and services.
- 3) provide recreational facilities to community based nonprofit organizations and educational opportunities to community schools by opening up the facilities for youth tours.

- 4) community pilots and aircraft owners are members of nonprofit organizations providing "no charge" charitable gifts of flight time to citizens of need. Nonprofit volunteer pilots and aircraft owners' organization serving our community are:
- a. Wings of Mercy – nationwide network of community based pilots donate their time and aircraft to fly people of need to and from area and regional hospitals.
<http://www.wingseastmi.org/>
 - b. Angel Flight - nationwide network of community based pilots donate their time and aircraft to fly people of need to and from area and regional hospitals.
<http://www.angelflightmidatlantic.org/index.php>
 - c. Dreams and Wings – pilot community based non-profit organization that offers motivational, inspirational, and life-changing experiences to special needs children and youth through aviation.
<http://www.dreamsandwings.us/index.html>
 - d. Great Commission Air – Ann Arbor based nonprofit organization flying missionary flights in South America.
<http://www.greatcommissionair.org/about.php>
 - e. Women In Aviation (99's) – national and local nonprofit organization organized to provide female aviators a network in support of their pursuit of aviation as a profession or recreational outlet.
<http://www.mich99s.org>
 - f. Experimental Aircraft Association, Chapter #333 – a local nonprofit organization affiliated with the international EAA providing support to community residents relative to aviation engineering, science, design and construction of aircraft.
<http://www.eaa.org/chapters/>
 - g. Civil Air Patrol – national nonprofit organization formed in alliance with U.S. Air Force supporting local and state law enforcement agencies with search and rescue, emergency relief, and Homeland Security volunteer support services.
<http://www.gocivilairpatrol.com/html/index.htm>

ECON 12: Was there ever an economic benefit/impact study conducted on ARB?

Yes, students in the Aviation Management Program of Eastern Michigan University, under the direction of the Michigan Department of Transportation, conducted an economic benefit study back in the early 1990's. As of this writing, a copy of the study was not available, but a request for a copy has been made. Study results will be made available once a copy has been obtained. The State Bureau of Aeronautics will be preparing an economic benefit/impact study this year.

ECON 13: What is the economic benefit the airport contributes to the greater Ann Arbor community and Washtenaw County?

The airport's contributing economic benefit to the greater Ann Arbor community and Washtenaw County has not been researched and documented. Community based economic development agencies should assist the City and Pittsfield Township in pursuit of such study. Serving as an example of a recent airport economic impact study, see a similar 2007 economic impact study conducted by University of Michigan-Dearborn of Willow Run Airport (YIP) owned by Wayne County Airport Authority.

<http://www.metroairport.com/pdf/WillowRunEconomicImpact07.pdf>

ECON 14: Is the proposed 800' runway safety margin extension needed to enhance airport revenue?

No. The airport generates 83% of its revenue from hangar rental fees paid by aircraft owners based at ARB. The hangar occupancy rate is currently 98% and leaves little room for additional aircraft or additional hangar revenue. The airport also rents space to concessionaires and levies an aviation fuel flowage fee of 9¢/gallon. The aviation fuel fee would be the revenue most likely to see an impact if additional air traffic was generated by the runway extension. The fuel fee currently generates about \$28,000 (about 310,000 gal.) or about 3% of the airport revenues. Even a significant increase in fuel fees would have only a minimal impact on airport revenue.

ARB is a general aviation airport which does not levy or collect a landing fee like most commercial airports. No landing fees are being considered at ARB and would require approval by the City Council if considered.

ECON 15: Will there be more commercial business activity on the airport and new jobs created as a result of the 800' runway safety margin extension?

Commercial business activity is driven by the local economy and not dependent on whether the 800' runway safety margin extension is constructed or not. Any new jobs created will be incidental to the construction of the proposed changes.

ECON 16: Will real estate market values decline as a result of the 800' runway safety margin extension?

Professional real estate appraisers measure the actions and reactions of buyers and sellers in the marketplace as of a certain date in the present based on historical population demographic and real estate sales data. Predicting future real estate value trends is very difficult with any degree of certainty because of the large number of unknown variables inherent with predicting the future. These variables might include airport operations, high volume road traffic on Ellsworth and Lohr Roads, surrounding land use, the local economy, etc.

Historical data would suggest that real estate values were continuing to appreciate in 1999 when the airport operations were twice their 2008 levels. Those same real estate values are now declining even though airport operations are at their lowest level in two decades. While the airport itself may have an impact on real estate values, the length of the runway and the potential increase in operations related to such runway improvements, don't appear to correlate to market value.

ECON 17: What is an aerotropolis?

Excerpt from the Detroit Regional Aerotropolis website - An Aerotropolis is an emerging type of urban form comprised of aviation-intensive businesses and those businesses that need to be readily connected to their customers. These businesses, and related enterprises, extend outward from a major airport. Aerotropolis have emerged across the globe in the 21st century as air transportation has become a vital component of business operations.

<http://www.detroitregionaerotropolis.com/>

ECON 18: Is the City of Ann Arbor and/or Ann Arbor Municipal Airport a partner or affiliated with Detroit Regional Aerotropolis?

No. The City of Ann Arbor and its airport are not partners nor affiliated with the Detroit Regional Aerotropolis. According to the Detroit Regional Aerotropolis website, its partners are:

Local Communities

City of Belleville
City of Romulus
City of Taylor
City of Ypsilanti
Huron Charter Township
Van Buren Charter Township
Ypsilanti Charter Township
Washtenaw County
Wayne County

Airports

Detroit Metropolitan Airport
Willow Run Airport

Private & Non-Profit Partners

Detroit Renaissance
Southeast Michigan Council of Government
Detroit Regional Chamber
Next Energy
UPS
DTE Energy
Walbridge

ECON 19: Will ARB compete with YIP for aerotropolis air freight operations?

No. The type of aircraft used in aerotropolis related commercial business activities will be operated under FAA Part 135 and 121 rules. ARB runways, taxiways and all other infrastructure are physically inadequate to support these types of commercial activities. More importantly, it would be a violation of FAA rules to operate large airplanes of the magnitude and scope supporting aerotropolis (Part 135 and 121) operations from ARB.

ECON 20: Are there any special interest group(s) the runway is being extended to accommodate?

No. There are no special interest groups that have requested and/or have been involved in the Airport Advisory Committee's (AAC) recommendation to City Council to consider the 800' runway safety margin extension. At no time before that City Council meeting or after the meeting did the airport manager or AAC have any conversations with any special interest groups to extend the runway for their special benefit or to accommodate any special need. Any claims that the 800' runway safety margin extension recommendation was advanced to serve a special interest group is patently false and distracting from the real issue of human safety.

ECON 21: Has the University of Michigan requested that the City of Ann Arbor extend the runway to aid the University in selling luxury boxes at the Stadium?

No. At no time has the University of Michigan requested the City extend the runway to aid in selling luxury boxes or tickets at the Stadium.

ECON 22: Is it required by law for sellers of residential property to disclose to potential buyers the existence or proximity of an airport near the property for sale?

Yes, SELLER DISCLOSURE ACT, Act 92 of 1993, mandates in Sections 565.954 and 565.957, that any potential buyer be supplied with a written statement of any "farm or farm operation in the vicinity; or proximity to a landfill, airport, shooting range, etc."

BACKGROUND

BGD 1: When was the airport built?

The actual date of when local aviators begin using a grass strip on farm land located several miles south of the City of Ann Arbor is uncertain. The Ann Arbor Airport was formally dedicated on October 9, 1928, though local aviators may have been using a grass strip on farm land prior to that. Discoverable local, state and federal documentation suggests the first terminal building was constructed in the early 1930's.

DEFINITIONS

Miscellaneous FAA DEFINITIONS not otherwise referenced in a FAQ, but commonly used in airport design discussions. As used in Part 77, the following terms mean:

Airport Elevation. The highest point on an airport's usable runway expressed in feet above mean sea level (MSL).

Airport Layout Plan (ALP). The plan of an airport showing the layout of existing and proposed airport facilities.

Clear Zone. See Runway Protection Zone.

Hazard to Air Navigation. An object which, as a result of an aeronautical study, the FAA determines will have a substantial adverse effect upon the safe and efficient use of navigable airspace by aircraft, operation of air navigation facilities, or existing or potential airport capacity.

Large Airplane. An airplane of more than 12,500 pounds (5 700 kg) maximum certificated takeoff weight.

Object. Includes, but is not limited to above ground structures, NAVAIDs, people, equipment, vehicles, natural growth, terrain, and parked aircraft.

Object Free Area (OFA). An area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

Obstruction to Air Navigation. An object of greater height than any of the heights or surfaces presented in Subpart C of Code of Federal Regulation (14 CFR), Part 77. (Obstructions to air navigation are presumed to be hazards to air navigation until an FAA study has determined otherwise.)

Runway Protection Zone (RPZ). An area off the runway end to enhance the protection of people and property on the ground.

Small Airplane. An airplane of 12,500 pounds (5,700 kg) or less maximum certificated takeoff weight.

Taxilane (TL). The portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

Taxiway (TW). A defined path established for the taxiing of aircraft from one part of an airport to another.