
MEMORANDUM

TO: MS. MOLLY LAMROUEX
FROM: MARK PERRY, CHAIR, ANN ARBOR MUNICIPAL AIRPORT ADVISORY COMMITTEE
SUBJECT: ENVIRONMENTAL ASSESSMENT STUDY COMMENTS
DATE: 4/19/2010
CC: MATT KULHANEK

Upon review of the draft EA study posted at the City of Ann Arbor's airport website, in my capacity as Chair of the Ann Arbor Municipal Airport Advisory Committee (AAC), I want to express my personal support of the EA study as written other than as noted therein, and agree the proposed 150' shift in the runway to the southwest and 800' runway safety margin extension will have no negative environmental impact on the community.

Furthermore, the 150' runway shift will permit the Washtenaw County Road Commission and Pittsfield Township to widen the current right-of-way permitting the extension of the current 4 lane State Street (Road) boulevard from Ellsworth Road south to Michigan Avenue through the runway protection zone (RPZ) and obstacle clearance surface (OCS) area beneath the approach end of Runway 24 without creating any material safety issues, and will inherently eliminate the control tower line of site obstruction. And, finally, according to FAA airport design standards set forth in FAA AC 150/5300-13, the 800' runway safety margin extension should mitigate approximately 85% of the risk of future runway overruns while preserving the airport B-II standard design classification.

I, as well as other members of the AAC understand an EA study is a mandatory next step after an Airport Layout Plan (ALP) has been adopted and before any runway/taxiway improvement construction proposals can be presented to City Council for approval. We understand that an EA study is an engineering 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, floodplains, water quality; 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; and, construction impacts. The EA study must be conducted subject to FAA Order 5050.4B and FAA Order 1050.1E. As noted above, the AAC is of the

understanding that ARB's draft EA study has been made available to the public on or before March 31, 2010, for review and public comment ending April 19, 2010.

AAC also understands an Airport Layout Plan (ALP) is simply a master plan illustrating location of any planned improvements on the airport. An approved ALP by City Council, MDOT and FAA does not authorize the City to construct any improvements appearing on the master plan document. An approved ALP is a requisite document if a local public airport seeks Federal and State grant funding (up to 97.5%). Once ARB management obtains formal approval from City Council to make the improvements, then it can apply for grant funding assistance. AAC believes that without 97.5% Federal and State granting funding approval, it is not likely any airport improvements will materialize including the 150' runway shift away from State Road and the 800' runway safety margin extension.

As mention above, I support the EA study as written other than the other matters noted in the opening paragraph. The following FlyGREEN section includes a discussion of several environmental initiatives airport management and the AAC have developed over recent years that have been omitted from the draft EA study report. I believe the study should be amended to acknowledge these GREEN initiatives. The AAC believes these initiatives have contributed to the study concluding no existing environmental impact on the airport and no measurable impact in the future can be concluded attributable to the proposed 150' runway shift and 800' runway safety margin extension. Consequently, I agree with the report's conclusion that an anticipated "Finding of No Significant Impact" (FONSI) order should be promulgated by the FAA.

Airport FlyGREEN Program

Appendix A contains the Airport's department Green Sheet setting forth the Airport's FlyGREEN program. The Airport has developed a continuous improvement FlyGREEN program enhancing the principals and practices of environmental stewardship at the airport. This proactive approach will enable the airport to maintain a positive environmental position while meeting the requirements of a very highly regulated industry. The purpose of this program is to understand how airport operations effect the environment and how these impacts can be reduced or eliminated. The airport is committed to protecting our natural resources, improving energy efficiency, and promoting a sustainable community. Airport management has developed the FlyGREEN program consistent with the City of Ann Arbor's environmental policies because airport management and the AAC believe it is the right thing for the airport to do as a public steward of the land.

FlyGREEN initiatives in place at the airport include:

1. Developed an energy savings program by installing energy-efficient lighting in the hangars and began a pilot project by installing 40 new light emitting diode (LED) taxiway lights in place of conventional incandescent bulbs. Should the runway project be approved, grant funding to replace all remaining taxiway incandescent bulbs will be sought at the time of preparing the runway improvement grant application.
2. Install radio controlled timed on/off runway lighting switching gear to improve reduced energy usage.
3. Implemented a voluntary noise abatement procedure to be flown by pilots. The airport has published a departure and flight pattern procedure brochure to help pilots operate their aircraft in the quietest manner possible, while remaining consistent with safety. It is also designed to help the airport be a good neighbor to the surrounding residential communities. The Ann Arbor Airport Noise Abatement Procedures focuses on pilot education and cooperation. Compliance with noise abatement procedures is requested unless deviations are made necessary by weather, ATC instructions or clearances, an in-flight emergency or other safety considerations. See **Appendix B** for Noise Abatement Procedures brochure distributed to airport users and posted on the airport's website.

The airport partnering with UMFlyers and the FAA control tower has taken steps to make it easier for community residence to identify low flying airplanes by putting in place the hardware necessary to stream on the internet both tower and ground control frequencies aiding in identifying low flying airplanes. Additionally, the airport has distributed the FAA's community friendly brochure, [Help FAA Identify Unauthorized LOW-FLYING AIRCRAFT](#) to assist the non-pilot resident with identifying low-flying airplanes. See **Appendix C**.

4. Protecting water resources is a high priority at the airport, especially since four of the city's drinking water wells are located on the airport's 750-acre property. The airport follows stormwater management practices through the Michigan Department of Environmental Quality. Since the majority of the airport property is undeveloped grassland, it provides a large surface area for water infiltration, an important component in stormwater management.
5. Airport management and staff continuously educate airport businesses and tenants the importance of being stewards of the environment. There are two fixed-base operators at the airport that provide services to the 170 private planes housed on the airport and thousands more itinerate airplane owners, pilots and passengers. The airport makes sure that these businesses avoid

spills and contamination during fueling and airplane maintenance. The airport works with them, along with airport tenants, on the proper disposal of used motor oil, batteries, and hydraulic fluids, all potential environmental contaminants. Similarly, the airport prohibits underground storage tanks and the use of ethylene glycol as a deicing agent on any airport grounds.

6. The airport through its community outreach program provides green spaces for soccer fields and other recreational activities, gardening, and agriculture. Project Grow, an Ann Arbor non-profit that promotes community through gardening and gardening education, has a community garden with 17 plots at the municipal airport.
7. Grasslands are home to a wide variety of wildlife, including some of our rarest birds. With some minor modifications in management, the airport provides some excellent habitat for these ground-nesting birds. For the last three years, the airport has partnered with the City's Natural Area Preservation unit and Washtenaw Audubon Society to protect grassland birds by delaying springtime mowing in non-critical areas on the airport grounds. Most species of grassland birds are in decline across the U.S., but the species of particular concern in our area are Bobolinks (a male Bobolink is pictured above), Henslow's Sparrows, and Grasshopper Sparrows, all of which now or have nested at the airport through the habitat management program developed between these 3 agencies.

Each spring, members of the Natural Area Preservation staff survey the airport grounds to determine where birds are nesting, so that airport staff can delay mowing in those areas as long as safety issues are not compromised. Most species have had the opportunity to nest and raise their young by the second week in July, when the normal mowing schedule is resumed. While the appearance of inconsistent mowing at the airport generates questions for some, most people are pleased to know that the airport is working to provide much-needed nesting habitat for grassland birds. The airport has found a successful balance between environmental stewardship and maintaining airport safety, which is always the number one priority.

In a related matter, members of the grass-land habitat management team have found by creating a habitat more accepting to low-flying grassland birds has conversely created a habitat less desirable for large migratory birds such as Canada geese. Large birds are more likely to land on short grassy plains and open wetlands than open fields with tall vegetation. As a beneficial consequence to developing a grass-land habitat management program, large

migratory birds like the Canada geese are not commonly observed on the airport grounds during spring migration and nesting season.

What is the Difference between the AAC Recommendation based on Safety versus the EA Study Criteria of Purpose and Need?

City Council has heard considerable testimony from critics over recent months that the AAC has flip-flopped on its reason supporting its original recommendation attributable to safety, to shifting toward a study based on “purpose and need.” During the first EA study Citizen Advisory Committee meeting the consulting engineers explained that pursuant to FAA Advisory Circular 150/5325-4B the EA study would principally research the purpose of the proposed improvements is to provide facilities that more effectively and efficiently accommodate the critical aircraft that presently use the airport as well as to enhance the operational safety of the airport. Specifically, the regulatory language serving as a guiding principal of the study determining purpose and need is, “the design objective for the main primary runway is to provide a runway length for all airplanes that will regularly use it (airport) without causing operational weight restrictions.”

Based on the documentation contained in the 1994 Part 150 study, Ann Arbor has long been a B-II small aircraft airport and the user survey contained as part of the EA study confirmed the critical aircraft using the airport as being B-II and lower. Critical aircraft is defined by the FAA as the most demanding aircraft-type that performs a minimum of 500 annual operations at a particular airport.

The confusion between the AAC’s recommendation and the FAA study guidelines is the AAC was asked by City Council at the time it adopted the 2007 ALP if the ALP contained all of the components of security and safety in this post 9/11 environment. The response given was no and that the separation between the Rwy 24 and State Road should be greater, obstructed line-of-site and unusually high incidents of runway overruns. The difference between the AAC’s original recommendation to cure observed safety issues and the FAA guidelines used to assess purpose and need are 2 different measurables.

The AAC’s original recommendation of the 150’ runway shift to the southwest and 800’ runway safety margin extensions are proposed solutions to remedy observed safety concerns while the FAA criteria are standards by which it determines if there is a need to extend the runway based on the critical aircraft using the airport. While the AAC’s goal is to mitigate risk of accidents and/or incidents of safety based on its observations is different than the rigid engineering design standard criteria used by the FAA to justify the improvement, however, they both lead to the same conclusion. In

closing, the AAC is only concerned with mitigating the risk of identified safety concerns which hopefully will propel the airport and runway environment into a safer base of operations for all its users.

The balance of this memorandum will be dedicated to other observations made throughout the course of the EA study I would like to have incorporated into the EA study record, but may fall outside of the normal course of study guidelines.

General Background

At Ann Arbor City Council's meeting on January 6, 2007, airport management first presented an ALP to Council Members for their consideration and approval. Prior to approving the 2007 ALP at Council's January 22, 2007 meeting, Council Members asked now retired airport manager, Mr. Jim Hawley, if the proposed ALP addressed all necessary security and safety improvements in today's post 9/11 environment. The response given was the proposed ALP did not and while the ALP addressed the safety concerns created by the close proximity of State Road beneath the approach end of Runway 24 relative to the recommendation to widen State Road to a 4 lane boulevard, the ALP did not address the line of site obstruction between the control tower and run-up/hold-short areas at Rwy 24 and the unusual high number of runway overruns. Consequently, City Council did approve the 2007 ALP as presented and asked the new airport manager, Matt Kulhanek, return with a recommendation supported by the AAC which did address all 3 identified safety concerns while maintaining the current airport B-II classification so as to not permit operations of larger airplanes that do not already operate from ARB.

Over the course of the following year and a half, the airport manager worked with the City's consulting engineers (URS), MDOT, FAA, Pittsfield Township, and the Washtenaw County Road Commission discussing a recommendation that would address all 3 identified safety concerns while maintaining an airport B-II classification. While there was not unanimous consensus on all aspects of the proposed improvements driven by safety, the proposed amendment put forth by airport management to the AAC did address all 3 safety concerns in the most cost effective manner while maintaining an airport B-II classification. At its regular September 2008 meeting, City Council approved amending the ALP to include:

- 1) Shift Rwy 06-24, 150' away from State Road to the southwest providing adequate spacing between the expanded road right-of-way and approach end of Rwy 24. This action will increase unobstructed clear height above the road surface, increase Rwy 06 departure end paved runway protection zone runoff distance by 150', and naturally eliminate the line of site obstruction between the control tower and run-up/hold-short areas of Rwy 24; and,

2) 800' runway safety margin extension increasing total runway length from 3,500' to 4,300'. Between 1998 and 2008, ARB experienced 11 known overruns attributable to weather, mechanical malfunction, and pilot error. The airplanes involved in all 11 overruns came to a complete stop within 500' of the runway so the additional 800' could have caused these airplanes to remain on the paved runway reducing risk of injury and physical damage to the airplanes. Based on FAA runway design standards, an additional 800' should mitigate approximately 85% of the risk of future overruns by airplanes not exceeding the B-II classification.

Shift Runway 150' to the Southwest

Currently, the end of Rwy 06/24 is less than 500' west of the airport's easterly fence line paralleling State Road and about another 75' from the fence to the centerline of the road. State Road right-of-way is 66' wide. **Appendix D** is an enlarged diagram of page 4 of 10 from the 2007 ALP showing the proximity of the runway to State Road (top) and a cross section (bottom) showing the current height (13.4') above the top of the road surface to the bottom of the "obstacle clearance surface" (OCS).

The OCS is an imaginary inclined obstacle evaluation surface associated with a glidepath. The separation between the OCS and the glidepath angle defines the minimum required obstruction clearance point. The protected glidepath begins 50' above the OCS and is usually on a 3 degree angle. For non-precision instrument approaches like installed at Ann Arbor airport, FAA design standard specifies the OCS imaginary incline angle to be 34 to 1.

FAA design standards set forth in AC 150/530-13 Sec. 77.23(b)(3) requires the height of passing mobile objects beneath the OCS to be no lower than 15' for public roadways other than interstate freeways which is 17'. Due to the existing penetration (at 13.4') into the OCS, the imaginary OCS incline angle is 20 to 1.

Should State Road right-of-way be widened to a 4 lane boulevard without shifting the runway 150' further southwest away from the existing roadway, there will be an even greater breach into the OCS than exists today at 13.4'. In order to preserve a safe separation between vehicles passing underneath arriving airplanes on a non-precision approach, installing a displaced threshold preserving at least a 20 to 1 OCS would be an option which would effectively shorten the remaining runway landing distance.

As an alternative to shifting the runway 150' to the southwest, the airport manager also looked at relocating State Road east of its current location on land currently owned by the airport. This option was discarded because of existing wetlands and a peat bog throughout the southeast region of the airport. Additionally, there is a single triangular parcel that is privately owned that would require emanate domain proceedings. For

these reasons it was thought that shifting the runway 150' was the most cost effective solution.

Appendix E is an enlarged diagram of page 4 of 10 from the 2008 ALP showing proximity of the runway to State Road (top) after shifting the runway 150' southwest and a cross section (bottom) showing the future height (17.7') above the top of the road surface to the bottom of the "obstacle clearance surface" (OCS).

Obstructed Line of Site between the Control Tower & Rwy 24 Run-Up/Hold Short Line

The obstructed line of site between the control tower and run-up/hold short line for Rwy 24 has been long standing safety concern for airport management cited the 1970's and 1990's master plan reviews, but never addressed. So long as controllers in the tower remain in constant communication with pilots after disappearing behind the Northeast T-hangars while in the taxiway non-movement areas, there should not be an emanate safety hazard. For years, all pilots are advised in the Airport Facilities Directory (A/FD) "*Runup area to Rwy 24 and first 200' of parallel taxiway from the runup area of Rwy 24 is not visible and uncontrolled by tower.*" See **Appendix F** for photographs of the obstructed taxiway area and A/FD remarks to airmen.



Appendix G and H are enlarged diagrams of page 4 of 10 from the 2007 ALP and 2008 ALP show the obstructed view before and after shifting the runway 150' southwest. In addition to reasons of cost effectiveness cited by shifting the runway southwest rather than rerouting State Road to the east, the 150' shift inherently cures obstructed line of site problem at the cost of rerouting taxiways which is more cost effective than rerouting State Road through wetlands.

800' Runway Safety Margin Extension

Ann Arbor Municipal Airport has experienced an unusual high incidence of runway runoffs or overruns, 11 known overruns during the 10 year study period ending 2008. See **Appendix I** for documented overruns.

During the same 10 year study period, an examination of all FAA accident and incident reports throughout the State of Michigan revealed only 1 other runway overrun by a Western Michigan University student pilot occurring at Battle Creek's airport. The report stated the airplane had too much speed for the hot summer temperature conditions and ended up landing long and running off from a 5,000' runway.

A runway is an inanimate object. In the case of Ann Arbor, the grooved concrete runway is 3,500' x 75' and it does not change. It is the responsibility of every pilot departing and arriving at any airport to know and understand the runway environment and weather conditions at both the departure and arrival airports prior to flying.

Procedurally, a pilot will get a weather briefing before departure and prior to entering the airspace of the arrival airport. The elements of weather that can make a narrow and short runway seem even shorter are rain, sleet, snow, ice, heat, wind-shear, and cross winds. Additionally, what can also make a runway seem shorter is mechanical failure and pilot error. At ARB, most pilots have experienced one of these elements making our inanimate runway seem animate.

Why are runway run-offs or overruns a safety issue? This is a difficult question for non-pilots to comprehend if the individual has not experienced trying to maintain control over an airplane on the runway whether the procedural mishap was caused by mechanical failure, pilot error or weather related. Piloting an airplane to a full stop once having lost partial or full control of any airplane system is a difficult task.

Good aviation luck is when practice and the following of good safety procedures meet opportunity. If the 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 general aviation private pilots that the airport is trying to reduce by strongly recommending the 800' runway safety margin extension.

Between the period of 1998 and 2008, there were 11 known incidents/accidents at Ann Arbor involving overruns and run-offs. In all cases aviation luck was with the pilot and passengers as there were no reported injuries or fatalities. With a few exceptions, there was minor to no damage to the airplanes. By all accounts, the incidents/accidents were a result of mechanical failure, pilot error, and mother-nature. Of the 11 overruns, nine (82%) involved single engine small airplanes (2 to 6 seats). The other two (18%)

were also small planes, an 8 passenger multi-engine turboprop and a small jet used for medical flight transport services. Overrunning on the departure end of Rwy 06 is a significant concern to the AAC 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.

If a malfunction occurs during take-off, pilots of small aircraft are taught that the proper procedure for aborting that takeoff is to land on the remaining runway and gently apply brakes but be prepared to overrun the end of the runway if necessary. Alternatively, if a pilot experiences mechanical failure once airborne and without sufficient runway to land, the pilot should look 45 degrees to the left and right and pick a spot to land between the two points. The 800' runway extension was recommended by the airport manager and AAC so that pilots are given greater decision making time and distance to keep the airplane on the runway and bring the airplane to a complete stop on the pavement as opposed to forcing a decision to continue going airborne during mechanical failure.

Most of the overruns at Ann Arbor have been on landing. There has been a fair mix of mechanical failures, wet runways, excessive aircraft speed, and other pilot errors.

In recent months since the EA study commenced there has been frequent critical testimony before City Council that airplane accidents and incidents caused by pilot error should not be considered a risk worth mitigating in the same fashion as runway overruns if caused by mechanical error or weather. AAC finds this testimony relative to discounting the 11 reported incidents as not being runway overruns because they in part were caused by pilot error, but were in fact runway overruns a bit disingenuous. Based on that logic, one could then surmise the Colgan Air crash near Buffalo isn't really a crash because it was also caused by pilot error!

Of course the good news in the Ann Arbor overruns is that limited property damage and no injuries occurred, which goes farther to address the reason so many of these were not reported to the FAA than mere embarrassment on the part of the pilots involved. The sad fact is most aviation accidents are caused by human error, and are therefore preventable through better training/proficiency and risk management by the pilots involved. That of course doesn't mean we shouldn't also consider other methods of controlling the risk of human errors such as infrastructure changes.

Ann Arbor's airport by all accounts in relative terms of annual operations and runway length might be considered the single busiest small general aviation airport in the State of Michigan. Of the 15 largest and busiest airports with manned control towers and runway lengths between 5,090' and 12,370' versus Ann Arbor's 3,500' runway, during 2008 Ann Arbor was the 8 busiest airport in the State surpassing Detroit City (5,090'), Kalamazoo (6,500'), Muskegon (6,501'), Jackson (5,344'), Lansing (8,000'), Saginaw (8,002'), and Marquette (12,370').

While AAC has not performed a statistical analysis measuring the probability of risk of overrunning a runway at any of Michigan's 15 busiest airports with runways ranging in length from 5,090' and 12,370', it can only be assumed the probability of overrunning a high volume 3,500' runway airport (with a similar airplane fleet makeup) is greater. It can also only be assumed the probability is greater when adding the ingredient of a large population of student pilot operations. Again, we can only assume the unusually high number of runway overruns can be reduced by installing the recommended 800' runway extension to 4,300'.

Airplanes able to Operate at Ann Arbor with the 800'

There has been considerable testimony given to City Council that the 800' runway extension will make it permissible for "more, bigger jets" to operate from Ann Arbor. Appendix F contains a comprehensive list of business class jet airplanes with takeoff and landing performance specifications for each make and model. See **Appendix J** coversheet for explanation of each data column.

According to the research of the business jet airplanes fleet, there may be 3 additional business jet airplane makes and models that might be able to operate from Ann Arbor with a 4,300' runway than existing airplanes already operating from Ann Arbor's 3,500' runway. They are a Raytheon 390 Premier, Embraer Phenom 300, and Beechjet 400A/T/Hawker 400.

The AAC understands there is opposition to extending the runway by 800' from 3,500' x 75' to 4,300' x 75' for fear an extended runway will now accommodate "more, bigger jet" than exists today. The airport manager and AAC have committed to City Council to maintain the current FAA B-II runway design characteristics with maximum length of 4,300' rather than increasing the runway to a "C" design category or 5,000' as was debated previously during the early 1970's and 1990's.

There are principally 2 ingredients required driving increased airport operations by business class airplanes: 1) runway environment; and, 2) is there a business purpose to travel to a particular destination airport.

Runway environment includes presence of precision approach navigational aids on arrival during instrument meteorological conditions, runway length and width, runway

and taxiway weight bearing capacity, ground support services, and prevailing weather conditions just to name a few. The proposed improvement plan will preserve the current non-precision approach navigational aids, only increase the runway length by 800', maintain the current taxiway and ramp 20,000 lb. weight bearing capacity, and no ground support services will be added. All of these factors as a whole are important, but of particular importance is runway length and prevailing weather conditions on the day of operations.

Taken within the context of performance characteristics of business class airplanes; during hot spring, summer, and fall months when air density deteriorates lift performance of a wing, weight and balance calculation is extremely important before each operation into Ann Arbor because of runway length required for landing and departure. Given FAA regulations, it is not likely extending the runway from 3,500' to 4,300' will change the attractiveness or convenience of proximity to business travelers to customers or the medical centers will change the need to continue operating from Willow Run Airport by the larger business class airplanes that do not already operate from Ann Arbor.

FAA regulations require airplanes certified under Part 25 of the Federal Aviation Rules (FAR) to be able to come to a full stop landing within 60% of the given runway length if operating under Part 135 rules and 80% of the given runway if operating under Part 91. Given these rules and assuming an 800' runway extension from 3,500' to 4,300', airplanes operating under Part 135 would only gain about 480' of landing distance and airplanes operating under Part 91 would gain about 640' landing distance. Additionally, if the crosswind component during landing is high the full stop landing distance must be increased by 15%, reducing net runway gain to 408' and 544' respectively.

Given the relatively small net gain in (regulatory) full stop runway length, a total runway length of 4,300' will continue to limit the types of airplanes operating from Ann Arbor. Furthermore, if the runway length was increased to 5,000', at 5,000' Ann Arbor could potentially experience larger business class airplanes as 5,000' is typically the length better suited for performance requirements of larger business class airplanes. In fact, it is not uncommon for corporate flight departments maintain runway length minimums of 5,000'. With Willow Run Airport having 4 runways ranging in length from 5,995' to 7,526', precision instrument approach navigational aids, and ground support; it is unlikely Ann Arbor will experience a greater volume of bigger airplanes. It will, however, gain a greater level of safety for those small general aviation and business class airplanes already using Ann Arbor.

The second ingredient of increasing any airport operations is - is there a heightened business purpose in the community that did not exist in the past. Increased economic business purpose is the #1 driver of increased operations into any community airport by

business class airplanes. The only way to gain greater operations by business class airplanes of the size and performance capabilities that already operate at Ann Arbor is increase attractiveness of doing business in a community with an airport. Whether the runway is 3,500', 4,300', or 7,500'; it will not make a material difference in generating more operations of business class airplanes, there needs to be a heightened business purpose to land at Ann Arbor that did not exist in the past.

What does “More” Traffic Mean?

City Council has heard considerable testimony over recent months that an 800' runway extension will create “more, bigger jet traffic.” Well, what does “more” really mean?

Webster’s Collegiate Dictionary defines the word “more” as being greater, as in greater quantity, amount, or number. **Appendix K** contains a listing of Ann Arbor’s 2008 airport Operation by Type as a % of Total Operations obtained from FAA’s Air Traffic Activity System (ATADS). The table below summarizes the amount of operations at Ann Arbor on an actual annualized basis and averages between the study period of 1990 and 2008.

	Highest Annual Operations - 1999	Lowest Annual Operations - 2008	Average Annual Operations (1990-2008)	Average Annual Operations (post 9/11, 2001-2008)
Annual Operations	134,554	64,910	96,741	76,724
Average Monthly Operations	11,213	5,409	8,062	6,394
Average Daily Operations (365 days/year)	368.6	177.8	265.0	210.2
Average Hourly Operations (12 hrs/day, tower open)	30.7	14.8	22.1	17.5
Average Hourly Operations (24 hrs/day)	15.4	7.4	11.0	8.8

The table notes that the greatest number of operations during the study period ending 2008, calendar year 1999 had the greatest number of operations at 134,554 per year during hours of operation of the tower or slightly less than 31 operations per day. Conversely, 2008 experienced the least number of operations of 64,910 or about 15 per day. On average during the study period of 1990 through 2008, the average number of operations was 96,741 or 22.1 per day. During the post-9/11 years, the average number of daily operations is about 17.

So assuming for a moment that small general aviation and bigger jets will merely fly to Ann Arbor because the runway is 800' longer rather than flying here because there is a greater business purpose, in order to return to the 1999 operational high, “more”

would require the nearly a 200% increase in operations. In order to return to post-9/11 average, “more” would require a nearly 175% increase in operations. The point being, runway length is not the determining factor driving airport usage, it is the economy and is there a business purpose to bring more small general aviation airplanes and bigger jets to Ann Arbor. **Appendix L** contains several tables containing airport and runway lengths and annual operations. Without going into any statistical analysis, the reader will see runway length and not be correlated into whether an airport will experience more usage or less. When viewing the tables, notes where Ann Arbor runway length and annual operations ranks with other Class D airports and higher. There may be a correlation between the unusually high number of overruns relative to operations volume and runway length.

Relationship between Real Estate Values and Runway Operations

During the March 2009 AAC regular meeting and again during the CAC meetings, testimony was received suggesting operations at the airport may negatively impact real estate values of property surrounding the airport. **Appendix M** is a graph plotting annual operations between 1990 and 2008. The graph also plots the raw average residential sale price of home in the 3rd and 4th Wards within the City of Ann Arbor; within Pittsfield Township west of Lohr Road, east of Maple Road, south of Ellsworth Road, north of Textile Road; and Lodi Township west of Maple Road, east of Ann Arbor-Saline Road, south of Ellsworth Road and north of Textile Road.

The sales data was obtained from the Washtenaw County Equalization Department. Sales data occurred between 1997 and 2008, prior to 1997 was only available in manual spreadsheet format so this data was not included in the analysis. Operations between 1990 through 1996 were included so as to illustrate the annual operational pattern trend.

Generally speaking, the average real estate sales price lines for Pittsfield and Lodi Townships showed a trended increase between 1997 and 1999 average prices rising from about \$300,000 to about \$375,000. During the period of 1996 through 1999, annual operations also grew from about 100,000 to about 134,000. Between 2000 and 2005, average real estate values continued to increase from up to about \$475,000, while annual operations began its slide downward caused by 2 key factors. Beginning in 2000, the airport was closed for several months due to a major runway resurfacing and after reopening a short year later, 9/11 happen causing the airspace to be closed for over a month. After reopening of the airspace, general aviation never really regain its former status. Between 1999 and 2005 operations declined from 134,000 to about 68,000. Between 2005 and 2008 average sale prices began its downward slope from about \$475,000 to \$375,000, while operation experienced a slight recovery between 2005 and 2007 of 68,000 to about 73,000, before sliding downward again in 2008 to about 65,000.

Ann Arbor City's 3rd and 4th Wards showed a similar trend as the 2 townships with average sales prices rising between 1997 and 1999 from about \$100,000 to \$150,000 as operations also increased. During the years of 2000 and 2005 as operation slide, average sales prices continued rising from about \$150,000 to slightly greater than \$200,000. After 2005 as operations showed signs of a slight recovery, average sales prices began its fall from about \$150,000 to \$160,000.

While it is interesting to note the dynamics between average real estate sales prices of properties surrounding the airport relative to airport operations, there is not enough evidence showing a definite correlation between more or less operations at the airport causing real estate value to be either negatively or positively impacted by the airport. I recommend a more in-depth analysis and professional real estate appraisal firm and or consult the local jurisdiction assessing officer to determine if the airport has any negative impact on real estate values surrounding the airport.

See **Appendix N** for a copy of State of Michigan's Seller Disclosure Act, Act 92, of 1993, mandating a seller provide a buyer with a written disclosure of the property being sold proximity to an airport.

Contractual Commitment to Operate Airport to 20 Years after Accepting Federal and State Airport Improvement Grant Funding

Appendix O contains a spreadsheet showing MDOT-Aeronautics Commission grant contracts approved by City Council over the last 15 years or so, as well as the relevant grant commitment language to continuously operate the airport for 20 years thereafter. The spreadsheet doesn't include every single grant contract over that time period, but covers the bulk of them.

Each grant contract includes language similar to what is shown, requiring the City to keep the Airport open for 20 years. So as illustrated in the spreadsheet, the City currently has an obligation to the State and FAA to operate the airport until February 1, 2029. Approval of a grant for the 150' runway shift and 800' runway safety margin enhancement, say in 2010 or 2011, would add only 1 to 2 years (2030 or 2031) over the City's current commitment.

Additionally, should the City decide to abandon, close, or sell the airport or any portion thereof, the city agrees to also provide to the State with a first right to purchase at fair market value the airport and all facilities thereon.

In closing, I want to thank the City of Ann Arbor and State of Michigan for this opportunity to support the EA study currently in draft form and speaking out on behalf of general aviation safety in the State of Michigan.