

**BEFORE THE SECRETARY OF TRANSPORTATION  
WASHINGTON, D.C.**

**IN RE: PROPOSED MAJOR RUNWAY )  
EXTENSION PROJECT AT ANN ARBOR )  
MUNICIPAL AIRPORT. )  
)  
PITTSFIELD CHARTER TOWNSHIP )  
MICHIGAN, and COMMITTEE FOR )  
PRESERVING COMMUNITY QUALITY, INC.)  
)  
)  
Petitioners. )  
\_\_\_\_\_ )**

**PETITION TO DENY APPROVAL AND FUNDING FOR THE MAJOR RUNWAY  
EXTENSION PROJECT AT ANN ARBOR MUNICIPAL AIRPORT (ARB) LOCATED IN  
PITTSFIELD CHARTER TOWNSHIP, MICHIGAN**

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**January 28, 2013**

**Notice of Petition to:**

Honorable Ray LaHood, Secretary  
Department of Transportation  
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Washington, D.C. 20590

Honorable Michael Huerta, Administrator  
Federal Aviation Administration  
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Washington, D.C. 20591

Ms. Christa Fornarotto  
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Federal Aviation Administration  
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## **I. STATEMENT OF FACTS**

### **A. The Airport.**

Ann Arbor Municipal Airport (ARB) is a general aviation airport located entirely within the boundaries of Pittsfield Charter Township, Michigan (“Pittsfield”). According to AirNav.com, ARB has two runways, a concrete runway 3,505 feet long and 75 feet wide, and a turf runway 2,750 feet long and 110 feet wide. Exhibit 1. AirNav also notes that ARB is the base for 166 aircraft, consisting of 137 single engine airplanes, 16 multi-engine airplanes, 1 jet airplane, 11 helicopters and 1 ultralight. *Id.* ARB averages 161 operations per day, 64% of those operations are local general aviation, and 36% are transient general aviation operations.<sup>1</sup> *Id.* Although located outside the city limits of Ann Arbor, the City of Ann Arbor (the “City”) owns and operates the airport.<sup>2</sup> Despite the fact that ARB is located entirely within the boundaries of Pittsfield, the township has no voting representation on any committee, council or board tasked with the management or the operation of ARB.<sup>3</sup>

### **B. The Petitioners.**

#### **1. Pittsfield Charter Township.**

Pittsfield is a “charter township.” Under Michigan law, a “charter township” is a municipal corporation that has been granted a charter, allowing it certain rights and responsibilities of home rule that are generally intermediary in scope between those of a city and a village. A charter township has greater protections against annexation of a township’s land by

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<sup>1</sup> These figures are for the 12-month period ending December, 2011.

<sup>2</sup> Official FAA records actually list “Roger W. Fraser” as the owner of ARB without noting that Roger W. Fraser was the City Administrator for the City until 2011. Exhibit 2. The fact that the Airport is actually owned by the City, however, is noted on ARB’s website: <http://www.a2gov.org/government/publicservices/fleetandfacility/Airport/Pages/default.aspx>.

<sup>3</sup> Both Pittsfield and Lodi Township have a non-voting *ex officio* member on the “Ann Arbor Municipal Airport Advisory Committee.” See Exhibit 3. However, “the purpose of the [Ann Arbor Municipal Airport Advisory Committee] is to make recommendations to the Ann Arbor City Council regarding the construction and operation of the Airport.” *Id.*

cities and villages. As a charter township, Pittsfield has established a variety of municipal services, such as a police force, fire department, assessors and is governed by a comprehensive zoning ordinance. Since ARB is within Pittsfield's corporate jurisdiction, the township provides services to ARB, as well as being subject to the township's ordinances limited only by the agreements between Pittsfield and the City.

The City, in the past, expressed an interest in annexing the property on which ARB sits. This resulted in the 1978 agreement between the City and Pittsfield Township regarding the airport. Exhibit 4. This agreement was modified in 2010. Exhibit 5.

## **2. Committee for Preserving Community Quality, Inc.**

The Committee for Preserving Community Quality, Inc. (CPCQ) is a not-for-profit corporation consisting of approximately 400 residents of the Pittsfield and Lodi Townships and the cities of Ann Arbor and Saline. CPCQ was incorporated in April, 2010, as a community action group for residents of the communities surrounding ARB who feel the airport expansion is "both dangerous and unjustified."

### **C. The Proposed Project.**

According to the draft Environmental Assessment<sup>4</sup> ARB has several issues that impact aviation safety. First, there is a "line of sight" issue whereby aircraft waiting to take off in the holding area for Runway 24 may pass out of sight of the control tower. In addition, because the northeast end of Runway 24 is a few hundred feet from State Road, a busy Township road, aircraft have to approach at slope of 20:1 instead of a more optimal 34:1. Moreover, according to the draft EA, State Road will only get bigger and wider, thereby exacerbating the problem.<sup>5</sup> Thus, according to ARB and MDOT, one goal of the proposed project is to move Runway 24

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<sup>4</sup> The City of Ann Arbor issued a draft Environmental Assessment in March, 2010. Exhibit 26.

<sup>5</sup> The FAA, in its comments to MDOT, noted that the draft EA does not seem to substantiate the need for "a clear 34:1 approach surface to the east end of the runway." Exhibit 18, pp.4-5.

150 feet to southwest, resolving both the line-of-sight issue and the slope issue. The current 150 feet of runway at the northeast end of Runway 24 would remain as a displaced threshold.

If the project had ended there, Pittsfield and CPCQ (collectively, “Petitioners”) may not have objected to it since it has a vested interest in the safe operation of the airport. However, the City also wanted to tack on an additional 800 feet at the southwest end of Runway 24 to make the runway 4,300 feet long. This runway extension, ARB and MDOT have argued, is necessary to “[e]nhance interstate commerce by providing sufficient runway length to allow the majority of critical aircraft to operate without weight restrictions.” Thus, all told 950 feet of runway would be added to the southwest end of Runway 24 and 150 feet of the current runway would remain as a displaced threshold. However, there is no aviation safety issue connected to the extension of the runway.<sup>6</sup>

This extension of the Runway 24 qualifies as a “major runway extension” as that term has been defined by the FAA and the courts. The runway extension will permit the accommodation of aircraft that would result in an increase in noise of three decibels. *See Suburban O’Hare Commission*, 787 F.2d at 199-200; and *Town of Stratford v. FAA*, 285 F.3d 84, (D.C. Cir. 2002).

#### **D. Petitioners’ Opposition to the Proposed Project.**

Petitioners’ opposition to the proposed project dates back to the first time Ann Arbor proposed to extend the runway to allow bigger and noisier aircraft into ARB. On January 22, 2007, the Ann Arbor City Council unanimously approved Resolution R-31-1-07, formally adopting the airport’s previous Airport Layout Plan (ALP) and called for “staff to bring back a

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<sup>6</sup> The draft EA attempts to attach a safety concern to the extension, mentioning that aircraft had a tendency to overrun the runway at ARB. Ultimately, though, each of the runway overruns was found to be unrelated to the length of the runway and due to pilot error, a fact that ARB and MDOT admit in their response to FAA’s comments. Exhibit 19, pp.14-15.

separate proposal regarding extending the runway within the next 60 days and that notification of the proposal be sent out to citizens in the surrounding area.” Exhibit 6; *see also* Exhibit 31.

Unfortunately, not only did the City’s staff not return to a public council meeting within 60 days with an expanded runway plan, the City’s staff also failed to inform “citizens in the surrounding community” of its actions for twenty months. Instead, on February 28, 2007, just 37 days after its initial City Council Resolution order, the City Staff, citing that Resolution as a basis, submitted a proposal for an 800-foot extension of primary Runway 6/24 at ARB to the Michigan Department of Transportation – Aeronautics Division (MDOT). Exhibit 7. No corresponding notice was given to Pittsfield or to the “citizens in the surrounding area.”

On September 12, 2007, the proposed ALP was amended at the request of MDOT to allow for the 150-foot southwesterly movement of the entire primary runway,<sup>7</sup> to provide for the widening of State Street-State Road, which MDOT conceded could not be funded for decades.<sup>8</sup> Neither Pittsfield nor the “citizens in the surrounding community” had yet been informed by the applicant or MDOT about the proposed ALP, which calls for an extension of Runway 6/24 on land within Pittsfield’s jurisdiction. The ALP finally was approved by MDOT on April 23, 2008, and presented to the Federal Aviation Administration for approval on June 4, 2008.

In a June 23, 2008, letter from David L. Baker, Manager, AIP Programs of MDOT’s Airports Division of the Bureau of Aeronautics and Freight Services, MDOT indicated to the City that the FAA concurred with the approval of the ALP. Yet neither MDOT nor FAA informed Pittsfield or the citizens of the surrounding communities of either MDOT’s or the FAA’s approval of the ALP. In fact, it was not until August 22, 2008, that the City first

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<sup>7</sup> In the end, then, the Project consisted of adding 950 feet of runway to the southwestern end of existing Runway 6/24: 150 feet to move the runway away from State Road and 800 for extending the runway to 4,300 feet. The existing 150 feet of runway at the northeastern end of the runway would remain as a displaced threshold.

<sup>8</sup> At this point in time, it is unclear whether the road will be widened at all or, if so, to the west or to the east.



officially provided Pittsfield with the plans and notification of the proposed ARB expansion and detailed proposed changes in the ALP. These documents were required to be provided to Pittsfield more than 18 months earlier under both the January, 2007, Ann Arbor City Council Resolution and under a separate 1979 Policy Statement.<sup>9</sup> See Exhibit 6 and 4, respectively. This is also contrary to the grant assurances that the City agreed to, which indicate that prior to receiving any federal funds for the Airport Layout Plan, it must give “fair consideration to the interest of communities in or near where the project may be located” (Grant Assurance 7). See also Grant Assurance 6. It is noteworthy, that this first notification from Ann Arbor to Pittsfield is dated 59 days after the FAA approved the revised Ann Arbor Airport ALP. Under 49 U.S.C. § 46110, routine appeals of final agency “orders” are barred after 60 days. Thus, Pittsfield was effectively barred from legally objecting to the Ann Arbor ALP before even being notified by Ann Arbor about its revised ALP.

Unable to file a legal action to stop the City from moving forward with its illegal ALP, Pittsfield responded to Ann Arbor’s August notice, objecting to the proposed expansion, citing the (1) increased noise that would be generated, (2) larger aircraft that would be attracted, and (3) and greater use by heavier aircraft that could result.<sup>10</sup> Despite Pittsfield’s opposition to the proposed expansion of ARB, the Ann Arbor City Council approved the revised Ann Arbor ALP on September 22, 2008, without considering Pittsfield’s objections, or those of Lodi Township, another township close to ARB.

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<sup>9</sup> The 1979 policy states, *inter alia*, that “[p]lans for municipal construction on Airport lands must be submitted to the Township for review and comment.” Exhibit 4, p.3. The 1979 Policy was amended after the modification of the ALP. Exhibit 5. The amendment makes clear what Pittsfield already thought was plainly obvious under the 1979 policy - that the City must notify Pittsfield prior to modifying the ALP. See Exhibit 5, p.2, ¶ 4.

<sup>10</sup> It should also be noted that the new ALP raises the weight limit of aircraft at ARB to 45,000 (single axle) and 70,000 (double axle). Exhibit 31. This change was never discussed by the Ann Arbor City Council, who still believes that the weight limit at ARB is 20,000 pounds.

On March 24, 2009, Pittsfield unanimously approved a Resolution Opposing Proposed Expansion of the Ann Arbor Municipal Airport Runway. Exhibit 8. That Resolution cites several reasons why the runway at ARB should not be expanded. Primary among those reasons is the fact that ARB is “immediately adjacent to a residential area” and that the existing “width and length” of the runway “has not posed any substantial safety concerns in the past.” *Id.* In addition, the Resolution states that:

- The proposed changes would shift the runway dangerously close to a busy township road (Lohr Road) and closer to dense residential subdivisions;
- The runway expansion will significantly increase air traffic volumes and noise pollution experienced by residential subdivisions in the vicinity of ARB, thereby resulting in a decline of residential home property values and impacting Pittsfield’s tax base;
- The City has not fully demonstrated the economic and safety justifications for undertaking the proposed runway expansion;
- The City has not taken into consideration the negative safety implications such a runway expansion may impose on surrounding residential subdivisions by expanding a runway closer to residential subdivisions.

*Id.* Lodi Township, which is adjacent to Pittsfield on the west side and also impacted by ARB, passed a similar resolution on May 12, 2009. Exhibit 9. Ann Arbor, MDOT and the FAA did not respond to either Pittsfield or Lodi Township’s resolution, despite repeated requests to consider the communities’ input into the proposed revision of the ALP and the proposed expansion of ARB.

On June 17, 2009, the FAA issued a Notice of Intent to Prepare an Environmental Assessment and Conduct Citizen Advisory Meetings. Exhibit 10. Although the Notice of Intent stated that “[d]uring development of the draft EA, *a series of meetings* to provide for public input will be held to identify potentially significant issues or impacts related to the proposed action that should be analyzed in the EA” (*id.* (emphasis added)) the only real opportunity for any

public discussion -- with elected public officials present -- about the proposed expansion plan was before the Ann Arbor City Council, where speakers must call-in to register in advance. Only the first ten callers on the day of Council meetings are permitted to speak. Speakers are limited to three minutes. Such a process typically has a stifling effect on open and candid discussions for subjects as complex as an airport ALP and runway expansion proposal.

Prior to the FAA's issuance of the Notice of Intent, in the Spring of 2009, a "Citizens Advisory Committee" (CAC) was appointed to advise the preparers of the Environmental Assessment. The CAC was initially comprised of:

- The Ann Arbor Airport manager;
- The chairman of Ann Arbor's Airport Advisory Committee;
- An Ann Arbor 4th Ward resident, who is also a member of the Airport Advisory Committee;
- An Ann Arbor 3rd Ward resident, who is also a flight instructor at the airport;
- Another pilot based at the airport, who is also chief pilot of Avfuel, which stands to be the single greatest beneficiary from the runway extension;
- Another airport flight instructor, who is also a member of the airport-based FAA Safety Team;
- A citizen member from Ann Arbor's 5th Ward;
- A representative from Ann Arbor's 2nd Ward, who is also a member of the Ann Arbor City Council;
- A representative of the Washtenaw Audubon Society, which conducted a previous study that found no Canada geese among 38 other species on the airport;
- Lodi Township Supervisor Jan Godek; and,
- Pittsfield Township Deputy Supervisor Barbara Fuller.

Only after extensive political pressure was applied were two additional outside members added to the CAC:

- Shlomo Castell, a commercial passenger airline pilot from the Stonebridge Community Association in Pittsfield Township, and
- Kristin Judge, Washtenaw County Commissioner from District 7, which includes Pittsfield.

For an airport located in Pittsfield Township that most dramatically impacts Pittsfield and Lodi Townships and Ward 4 of Ann Arbor, the CAC was dominated by the City and airport members who stood to benefit from the expansion. It was apparent that ARB intended the CAC to under-represent those immediately outside the airport perimeter whose safety could be placed at greater risk by any expansion. Ultimately, however, the CAC was a powerless committee intended only to provide the façade of public participation in an essentially authoritarian decision-making process. The CAC only met three times, with no opportunity for public participation. According to records available to Petitioners, CAC first met on May 4, 2009, to receive information about the proposed project. Exhibit 11. The second meeting was held on July 20, 2009, at which some of the initial findings were presented by ARB’s consultants. Exhibit 12. No members of the public were allowed to attend or ask questions. *Id.* Instead, members of the CAC were expected to interact with their “constituencies” and express to the committee their comments and concerns outside of the CAC. *Id.* The final meeting was held on February 22, 2010, when the executive summary of the draft EA was presented to the CAC. Exhibit 13.

This was not the “series of meetings to provide for public input ... held to identify potentially significant issues or impacts related to the proposed action that should be analyzed in the EA” that MDOT and the FAA promised. The public was not invited to participate at the CAC meetings. Instead, the members of the CAC received information from ARB’s consultants and

were expected to relay it back to their “constituencies.” When the CAC had suggestions or recommendations, they were often ignored by ARB staff and consultants. For example, Shlomo Castell, a Delta 747-400 pilot and the only commercial pilot who was a member of the CAC, asked that the consultants request bird strike information from the FAA and study it prior to submitting the draft Environmental Assessment, since he himself had experienced a bird strike and since there is a substantial Canada goose population at and around ARB. However, ARB’s consultants ignored that request. In the end, the CAC did not come up with any recommendations or findings to be presented to ARB’s consultants. Instead, it operated solely as a method for ARB’s consultants to disseminate propaganda about the importance of the expansion, while giving the FAA, MDOT, and the City the cover they needed to state that they were providing “public participation.”<sup>11</sup>

The other avenue for the public to influence ARB’s and MDOT’s decision was through the AAC. But the AAC is also heavily weighted in favor of ARB’s interests. Although both Pittsfield and Lodi Township have “*ex officio*” members on the AAC, they have no voting power, and the Mayor of Ann Arbor appoints the remaining members. Even if Pittsfield and/or Lodi Township did have voting powers, the AAC has no decision-making authority, and can only recommend actions be taken. During the period in between the FAA’s Initial Notice and the publication of the draft EA, the AAC met five times. However, the AAC also limits the time that the public can speak to only three minutes. Thus, it was impossible for the AAC to receive all of the information it needed to make well-reasoned decisions and recommendations with respect to the extension of Runway 6/24 at ARB.

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<sup>11</sup> In fact, public access to the CAC was so limited and tightly controlled that Mr. Castell was falsely accused of using his laptop to record the CAC meeting and broadcast it over Skype, which the rules of the CAC prohibited.

On March 19, 2010, the FAA issued its Notice of Availability of Draft Environmental Assessment concerning the expansion at ARB. Exhibit 14. The FAA's Notice of Availability indicated that written comments would be received by MDOT until 5:00 p.m. EST April 12, 2010. In addition, the FAA's Notice of Availability indicated that there would be a "public hearing to provide information on the draft EA and accept comments from the public" on March 31, 2010. However, the "public hearing" actually was a three-hour "open house" held during the dinner hour period between 4-7 pm, during which individuals could assemble and provide public comments in response to the Environmental Assessment. Local media announcements of the event (AnnArbor.com) encouraged citizens to send comment letters directly to the Airport Manager, rather than MDOT, until Petitioners intervened and requested that MDOT correct the process to restore a semblance of fairness. At the session itself, there was no dais of public officials impaneled to answer the public's numerous questions. There were no open, public statements with the media present. All testimony was given in private rooms to court reporters, to be forwarded to MDOT for later evaluation and, presumably, incorporation into the final EA.

That citizens, not public officials, needed to police the process was the ultimate insult to ensure any semblance of fairness and equity. Because this public hearing process was so restrictive, members of the public were effectively deprived of their due process rights under the 14th Amendment of the U.S. Constitution. Pittsfield and its citizens have not had an opportunity to speak in an open and fair forum for a reasonable amount of time in opposition to the extension of Runway 6/24 at ARB before a public body on an issue that directly impacted their physical and economic well-being. That is because, if the extension proposal goes forward, the Ann Arbor City Council generally restricts all outside speakers to three minutes, which is hardly an adequate time to offer an organized and coherent argument against such a complex proposition as an

airport expansion. At the same time, city officials and their surrogates are afforded unlimited time to speak to the City Council to advocate in favor of the runway extension, in clear violation of due process protections. Thus, by closing off the fairness and balance intended by holding this only federally-mandated forum, ARB and MDOT were able to stifle the only open public commentary and dissent regarding the airport in violation of the law.

Both Pittsfield and CPCQ submitted comments to the draft EA on April 19, 2010,<sup>12</sup> outlining in great detail the inadequacy of the draft EA and the need for a proper Environmental Impact Statement instead of an Environmental Assessment. *See* Exhibits 15 and 16. The Washtenaw County Water Commissioner also submitted comments to the draft EA, expressing serious concerns regarding inaccurate statements and the failure of the draft EA to address critical water resources issues with respect to the proposed project. Exhibit 17.

The Washtenaw County Water Commissioner was not alone in having reservations about the Project. On May 13, 2010, the Federal Aviation Administration also submitted comprehensive comments on the draft EA, raising a whole host of serious issues that the draft EA left unaddressed. *See* Exhibit 18. In particular, the FAA expresses its doubts of the Project's qualifying as a "safety" project, when the draft EA does not present any evidence for the need for the safety improvements detailed in the draft EA. These relate to the shifting of the runway 150 feet to the southwest so that sight lines between the Air Traffic Control Tower and the aircraft on the taxiway could be improved as well as allowing for the implementation of 34:1 approach instead of the current 20:1 approach. In its November 15, 2010, response, MDOT seems to abandon all of the safety improvements to the airport as being part of the "purpose and need,"

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<sup>12</sup> MDOT and FAA extended the comment period from April 12, 2010, until April 19, 2010.

while still maintaining that 950 feet of impervious surface needs to be added to the southwest end of the Runway 6/24. *See* Exhibit 19.

The issue of lighting at ARB also raised FAA's concern. Since the FAA owns and controls the lighting at ARB, the relocation or replacement of the current approach lighting system as well as the development for future approach procedures for the new runway end locations is solely a federal action not within the scope of MDOT's block grant authority. Yet, the FAA points out, the draft EA fails to cover the environmental impact of the relocation and/or replacement of the approach lighting would have. Exhibit 18, p.1. Because of this fact, an additional environmental assessment has been ordered, but has yet to be completed.

Finally, the FAA requested that additional information be submitted regarding the number of critical aircraft using ARB and how ARB arrived at its conclusion that there were over 500 itinerant operations of the critical aircraft at ARB to justify the extension of the runway.

The FAA concluded its comments by stating:

Since there are several updates/clarifications requested by the FAA contained in this letter and the sponsor's responses may be substantial, it would be prudent to afford the public an additional opportunity to review and comment on the changes that are anticipated to be made for the final draft publication. Most specifically, the document will need to clearly outline the requested local, state and federal actions. Since this was not clearly presented in the initial draft EA, the FAA may consider these changes and clarifications as a material change to the document that should result in solicitation of additional public comment.

Exhibit 18, p.9.

But the story does not end there. There is a growing lack of support by the Ann Arbor City Council for the extension of the runway. The Ann Arbor City Council has removed ARB's expansion project from its Capital Improvement Project list for both 2011 and 2012. In addition, despite the fact that the City's portion of additional consulting work to be performed amounts to the relatively small sum of \$1,125, the resolutions approving these expenditures were met with



considerable skepticism and opposition by the City Council on the utility of the expansion. One City councilman remarked that he would “vote no on everything. It’s taxpayer dollars, whether it’s local or federal.” Exhibit 20. He continued, stating that his constituents do not want the runway extension and he would vote no on that, too. *Id.* Another Council member allowed that the city’s portion of the bill was very small but “what the council would be doing is spending money on something that won’t move forward” reiterating the fact that the City Council had removed the project from the CIP, which, the Council member said, “translated into a decision that the council wouldn’t move forward [with the extension of the runway].” *Id.*

## II. LEGAL BASIS FOR PETITION

### A. Statutory Basis for Pittsfield Petitioning the Secretary of Transportation.

Federal law gives communities<sup>13</sup> the right to petition the Secretary of Transportation about proposed airport development projects in their communities. 49 U.S.C. § 47106(c)(1)(A)(ii), states in pertinent part, that:

(1) The Secretary [of Transportation] may approve an application under this subchapter [49 U.S.C. §§ 47101 *et seq.*] for an airport development project involving the location of an airport or runway or a major runway extension –

(A) only if the sponsor certifies to the Secretary that –

. . . .

(ii) the airport management board has voting representation from the communities in which the project is located *or* has advised the communities that they have the right to petition the Secretary *about* a proposed project<sup>14</sup> . . . .

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<sup>13</sup> Federal law does not define the term “communities.” Thus, for purposes of this petition, Petitioners consider both Pittsfield and CPCQ to have standing to petition the Secretary of Transportation under federal law since they are both community organizations.

<sup>14</sup> This does not mean that the right to petition the Secretary does not exist for “communities” that have voting representation on the airport management board, only that the sponsor is not required to certify that it advised such communities that they have a right to petition the Secretary.

49 U.S.C. § 47106(c) (emphasis added). Congress, as part of the Airport and Airway Safety, Capacity, Noise Improvement, and Intermodal Transportation Act of 1992 (Pub. L. 102-581), added subsection (A)(ii) stating “the sponsor of the project certifies to the Secretary that the airport management board either has voting representation from the communities where the project is located or has advised the communities that they have the right to petition the Secretary concerning a proposed project.”

The provision, however, is somewhat of an anomaly, since the provision itself does not give the communities the right to “petition the secretary,” it states instead that prior to receiving approval of a grant for an “airport or runway or a major runway expansion,” the sponsor must advise the communities of their right to petition the secretary “about a proposed project.” This provision implies that the statutory “right to petition the secretary” exists beyond the scope of the paragraph, although it is the legal duty of the airport sponsor to inform “the communities” of their statutory right to petition the Secretary regarding the project *prior* to the sponsor receiving funding for the project. That is, this paragraph does not give the communities the right to petition the Secretary, but instead only requires that the sponsor certify that it has informed the communities of that pre-existing right. Thus, the communities’ right to petition the Secretary of Transportation is separate from the sponsor’s duty to inform the communities of that right.

Moreover, the paragraph also implies that the content of the petition need not solely concern environmental matters. Although the paragraph is entitled “Environmental Requirements,” as explained above, the *right* to petition the Secretary exists separate and apart from the sponsor’s duty to inform “the communities” of that right as part of the “Environmental Requirements.” Indeed, one of the few cases to pass judgment on this statutory provision came to a similar conclusion. In *Communities Against Runway Expansion, Inc. et al. v. Federal Aviation*

*Administration*, 355 F.3d 678, 689 (D.C. Cir. 2004), the U.S. Circuit Court of Appeals for the District of Columbia held that 49 U.S.C. § 47106(c)(1)(A)(ii) was part of the grant application procedure, not the environmental procedure. On that basis the court rejected petitioners' claim that the Environmental Impact Statement was inadequate because the EIS failed to inform the communities of their right to petition the Secretary of Transportation. Thus, the scope of the petition to the Secretary goes beyond mere environmental analysis and extends to all reasons and issues why a proposed project should or should not be undertaken.

In addition, implicit in the language of the paragraph is the scope of the projects about which "communities" have a right to petition the Secretary. Although the statute states that the sponsor need only certify to the Secretary that "the communities" have been informed of their right to petition the Secretary for airport development projects that involve "the location of an airport or runway or a major extension," the paragraph states that the communities' right to petition extends to "a proposed project." The preceding clause in the paragraph states the certification is not necessary if the "airport management board has voting representation from the communities in which *the* project is located ..." 49 U.S.C. § 47106(c)(1)(A)(ii)(emphasis added) *compare* "... has advised the communities that they have the right to petition the Secretary about *a* proposed project" (emphasis added). Had Congress intended that the right to petition the Secretary only extend to projects "involving the location of an airport or runway or a major runway extension," it would have used the definite pronoun "the" to indicate the project that is the "location of an airport or runway or a major extension." Instead, Congress uses the indefinite pronoun "a" coupled with the further distinction "proposed" to indicate a wider category of airport development projects. Thus, Congress must have meant to make a distinction between

“in which the project is located” and “about a proposed project.” And that distinction can only be that the right to petition the Secretary goes beyond limiting factors expressed in (c)(1).

**B. Constitutional and Administrative Procedure Act Bases for Petition.**

In addition to the provisions of the Airport and Airway Safety, Capacity, Noise Improvement, and Intermodal Transportation Act of 1992, the United States Constitution and the Administrative Procedures Act also give Petitioners a basis for petitioning the Secretary. The First Amendment of the U.S. Constitution states that “Congress shall make no law . . . abridging . . . the right of the people . . . to petition Government for a redress of grievances.” U.S. Const., amend. 1. This right has been upheld numerous times by the courts. The right to petition for redress of grievances is among the most precious of the liberties safeguarded by the Bill of Rights. *United Mine Workers of America, Dist. 12 v. Illinois State Bar Association*, 389 U.S. 217, 222 (1967). It shares the “preferred place” accorded in our system of government to the First Amendment freedoms, and has “a sanctity and a sanction not permitting dubious intrusions.” *Thomas v. Collins*, 323 U.S. 516, 530 (1945). “Any attempt to restrict those First Amendment liberties must be justified by clear public interest, threatened not doubtful or remotely, but by clear and present danger.” *Id.* The Supreme Court has recognized that the right to petition is logically implicit in, and fundamental to, the very idea of a republican form of government. *United States v. Cruikshank*, 92 U.S. (2 Otto) 542, 552 (1875).

The purposes of the Administrative Procedure Act (5 U.S.C. § 551 *et seq.*) have been generally described as (1) to require agencies to keep the public informed of their organization, procedures and rules; (2) to provide for public participation in the rulemaking process; (3) to establish uniform standards for the conduct of formal rulemaking and adjudication; and (4) to define the scope of judicial review. Since this petition falls within the definition of “rule

making” (5 U.S.C. § 551), the Administrative Procedure Act applies to the extent that Airport and Airway Safety, Capacity, Noise Improvement, and Intermodal Transportation Act of 1992 lacks clear direction.

**III. NEITHER MDOT NOR THE FAA HAS GIVEN THE COMMUNITIES’ INTEREST “FAIR CONSIDERATION” AS REQUIRED UNDER FEDERAL LAW.**

The aviation statutes of the United States make it incumbent on the Federal Aviation Administration to ensure that communities are given the opportunity to express their frustration with a process that has explicitly disenfranchised them. *See* 49 U.S.C. § 47106(b)(2). That statute requires that before any federal funding of an airport development project takes place, the “Secretary must be satisfied that ...the interests of the community in or near which the project may be located have been given fair consideration.” 49 U.S.C. § 47106(b)(2). Thus, Petitioners ask federal intervention to preserve their due process rights, since local government has been afforded no voice in the ultimate decision as to whether the Project proceeds within Pittsfield’s jurisdiction.

**A. The Expansion at Ann Arbor Municipal Airport Does Not Comply With Planning in the Surrounding Communities.**

The FAA has a duty under the law to ensure that federal funds are used properly for airport development projects that are required to fulfill the FAA’s mission. Because of the substantial authority given to the Secretary of Transportation by Congress with respect to the development of airports, it is absolutely imperative that the concerns and issues of the surrounding communities are taken into account *prior* to approval of a project. This policy is reflected not only in the statutes that the FAA is bound to uphold, but in its regulations and guidance documents that it has issued. One place this policy is shown is in the assurances that

airport sponsors, owners and operators are bound to follow upon accepting federal funds for airport development. In particular, grant assurances 6 and 7 state:

6. Consistency with Local Plans. The project is reasonably consistent with plans (existing at the time of submission of this application) of public agencies that are authorized by the State in which the project is located to plan for the development of the area surrounding the airport.
7. Consideration of Local Interest. It has given fair consideration to the interest of communities in or near where the project may be located.

*FAA Airport Sponsor Grant Assurances*, Exhibit 21. Thus, approval of this project without the approval by Petitioners would be a violation of ARB's grant assurances.

**B. The City's Goals Are Not the Same as Petitioners' Goals.**

While Petitioners recognize the safety concerns presented in the draft EA, they are less sympathetic with growth inducing aspects of the project which would subject both the government of Pittsfield and the people of Pittsfield to untold potential future damage. This damage would come in the form of both safety risks and in economic loss because of repeated flights of low flying, heavy jet aircraft. Pittsfield and its residents would have no choice but to seek recovery in the event of a tragic accident or inverse condemnation class action proceedings, from the City potentially leaving Pittsfield victims without an effective remedy at law.

**1. The Project would increase safety concerns of low-flying aircraft near surrounding densely populated communities.**

Petitioners would be subjected to a perfect storm of potential risks from low-flying aircraft in heavily populated neighborhoods that are also occupied by wildlife, including many Canada geese, during much of the year. *See* Exhibit 22 for map of ponds surrounding the airport that support Canada Geese. This is confirmed by a study conducted by MDOT and Ann Arbor's own airport architects (URS Corporation), which was excluded from the draft EA, and visualized

on a projection of what the approach to an expanded Runway 6 would look like relative to the close proximity to area homes, which was corrected for accuracy. Exhibit 23.

The safety of having an airport so close to a densely populated area is not an unfounded fear. In June, 2009, a small single-engine plane attempting to land at ARB instead made an emergency landing 1,200 yards short of Runway 6/24 on a Stonebridge Golf Club fairway in Pittsfield after its engine died at low altitude on final approach. Exhibit 24. The pilot said if there had been people on the fairway at the time, he would have “crashed into the trees,” which would have probably been fatal for him and his grandson, whom he was instructing at the time. *Id.* Moreover, it is not insignificant that between 1973 and 2001 nine people died from accidents flying in the Ann Arbor Airport traffic pattern within three miles of the airport. Exhibit 25. With Runway 6/24 extended 950 feet farther to the southwest and even closer to hundreds of homes, as proposed, and planes still lower on approach – and planes heavier, larger, carrying greater payloads, and more people – this poses a risk too grave to bring to a heavily populated community as well as to the users of ARB.

**2. As a result of the Project ARB will attract more and heavier aircraft, which will increase the safety risk to the surrounding community as well lower their property values.**

Extending Runway 6/24 by 950 feet will attract more and heavier jets (as well as larger multi-engine aircraft) while bringing them closer to heavily populated residential areas. ARB estimates that jets would be within 600 yards at altitudes of 93 feet above rooftops of homes, or lower, on a regular basis. Aircraft landing on Runway 6 would pass Lohr Road below 90 feet, which is the site of a new, planned non-motorized bike path, designated the Lohr-Textile Greenway Project, for which the Washtenaw County Parks and Recreation Commission has

awarded Pittsfield a \$300,000 Connecting Communities grant. Thus, low-flying, heavy jets would be landing just feet over people traversing a new non-motorized trail.

This is especially dangerous with heavier aircraft because, in the event of any common multi-engine aircraft mishaps – such as an engine failure on takeoff, a bird strike on takeoff, climb out, or approach, or similar incident – with aircraft in very close proximity to homes, the risk could be grave – a perfect storm of environmental or human risk. For example, a twin-engine jet losing one of its engines would lose 80 percent of its climb performance. At low altitudes that could be tragic. Likewise, the loss of an engine in a light twin-engine aircraft would be catastrophic, since the aircraft would not be able to continue to climb on one engine in takeoff configuration. Neither could it turn back toward the airport at low altitude in takeoff configuration.

Such impacts and safety implications on political jurisdictions where airports are located and where the airport decision-making bodies are devoid of local citizens and local governments must be investigated carefully and thoroughly by the governmental entities empowered to protect the safety of all concerned. The Department of Transportation and the FAA must protect the health and well-being of the people on the ground as well as those in the air from the inherent risks of aviation.

#### **IV. THERE IS NO AVIATION SAFETY NEED TO EXTEND RUNWAY 6/24 AT ANN ARBOR MUNICIPAL AIRPORT BY 950 FEET.**

The draft EA and the initial statements by ARB and MDOT tend to indicate that the primary purpose of the Project is to increase the safety at ARB. While parts of the Project may, in fact, contribute to an increase in aviation safety at ARB, the extension of Runway 6/24 will not provide any more safety either to those using the airport or to those on the ground.



**A. Not All Alternatives That Would Meet the Stated Objectives for the Airport, Yet Still Meet the Stated Objectives and Goals, Were Considered.**

As part of the National Environmental Policy Act (“NEPA”) (42 U.S.C. §§ 4321 et seq.) process, federal agencies are required to examine all reasonable alternatives in preparing environmental documents. 42 U.S.C. § 4332(c)(iii). An agency preparing an EA should develop a range of alternatives that could reasonably achieve the need that the proposed action is intended to address. The Council on Environmental Quality (“CEQ”) Regulations (“NEPA Regulations”), which implement NEPA, require that Federal agencies “[u]se the NEPA process to identify and assess the reasonable alternatives to the proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment” 40 C.F.R. § 1500.2(e), and that “agencies shall . . . (a) Rigorously explore and objectively evaluate all reasonable alternatives . . .” 40 C.F.R. § 1502.14(a). The Project, as presented by ARB, has failed to explore all reasonable alternatives to the Preferred Alternative selected.

**1. The draft EA utterly fails to give proper consideration to all reasonable alternatives.**

The draft EA on p. 2-5 lists five objectives of the proposed project:

- Enhance interstate commerce by providing sufficient runway length to allow the majority of critical aircraft to operate without weight restrictions.
- Enhance operational safety by improving the FAA ATCT line-of-sight issues.
- Enhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24, over State Road.
- Reduce the occurrence of runway overrun incidents by small category A-I aircraft (local objective).
- Relocate and potentially upgrade the Runway 24 Approach Light System.

Exhibit 26, p. 2-5. To that end, ARB and MDOT dismissed out of hand the alternatives of “use other airports,” “construct new airport,” and “extend runway to the east.” While Petitioners may agree that constructing a new airport and extending the runway to the east may not be feasible either economically or practically, the alternative “use other airports” should have been given more consideration. In particular, Willow Run Airport (YIP), as the draft EA notes “is capable of accommodating any of the aircraft that currently fly into ARB” and that it is located a mere 12 miles from ARB, or 20 minutes by surface transportation. But because some corporate magnates want to be able to fly in on their corporate jets to be 12 miles closer to their offices, federal taxpayers will have to expend millions of dollars on extending the runway at ARB. Moreover, ARB and MDOT imply that interstate commerce will be “enhanced” by the extension of the runway, when, in fact, it will take business away from Willow Run Airport – which already has the infrastructure and excess capacity in place to accept the larger aircraft that ARB so desperately desires.

The FAA reached the conclusion that some of the alternatives mentioned in the draft EA were not given a complete treatment. For example, the FAA stated that: “[b]ased on the information presented in the draft EA, the FAA has not reached the same conclusion that alternatives 1 and 2 do not meet the stated needs for the project.”<sup>15</sup> Exhibit 18, p.7. If that is the case, then the draft EA must examine the environmental impacts of alternatives 1 and 2. Moreover, the FAA pointed out “[a]dditional alternatives that may be considered for evaluation to address the need statements could include a combination of items such as: alternative modes of transportation to address enhancing interstate commerce, removal or relocation of obstructions

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<sup>15</sup> See also “... table [3-1] appears to incorrectly dismiss alternative 1 because it does not meet purpose and need. The discussion in 3.3.2 does not support that conclusion.” Exhibit 18, p.7.

that limit ATCT line of sight issues, and raising or constructing a new ATCT to address the line of sight issues.” *Id.*

**2. Even after ARB and MDOT changed the need for the Project after the draft EA was published, they have failed to consider all reasonable alternatives.**

However, in response to the FAA’s comments, ARB and MDOT jettison their concern for the line-of-sight issue and the need for a 34:1 approach on the east end. MDOT and ARB, in their response to the FAA, specifically state that “[t]here is currently not a ‘need’ for the 34:1 approach.” Exhibit 19, p.10. Indeed, ARB and MDOT restate the need in the November 15, 2010, letter as being “based on the objective of providing a primary runway of suitable length to safely accommodate critical category aircraft without operational weight restrictions.” *Id.*, p.8. If that is the case – then Build Alternative 2, extending the existing runway 800 feet to the west (instead of 950 feet), should have been more fully examined in the environmental assessment. According to the draft EA Build Alternative 2 was rejected for further consideration because “[k]eeping the east runway end in its current location would not address the tower line of sight issue or the need for a 34:1 approach on the east end.” Exhibit 26, p.3-9. The draft EA is not sufficient if the need purposed is simply providing “a primary runway of suitable length,” since it failed to assess properly the environmental impacts of Build Alternative 2. In addition, if the need is simply to provide “a primary runway of suitable length,” ARB and MDOT have not yet shown that the need cannot be met by using Willow Run Airport instead of ARB.

On the other hand, if the tower line of sight issue or the need for a 34:1 approach on the east end are, indeed, issues that should be addressed, then ARB and MDOT have failed to take into account yet another alternative. The “need” to address the tower line of sight issue and the “need” for a 34:1 approach on the east end could be met by simply shifting Runway 6/24 150

feet to the southwest, *i.e.*, removing 150 feet from the approach end of Runway 24 and adding 150 feet to the departure end of Runway 24. Runway length would remain 3,505 feet.

Section 2.2.1 of the draft EA states that a 150-foot shift of the Runway 24 threshold to the west would (1) enhance the safety of ground operations by taxiing aircraft; (2) enhance operational safety, and possibly prevent runway incursions, by expanding the view of the hold area and parallel taxiway to ATCT personnel; (3) allow for a clear 34:1 approach surface to the east end of the runway, providing an added margin of safety between approaching aircraft and ground-based obstacles, which is particularly beneficial when aircraft are operating in low-visibility conditions; and (4) include relocation and replacement of the existing runway approach light system with newer Medium Intensity Approach Lighting System with Sequenced Flashers (MALSF). Exhibit 26. Shifting Runway 6/24 150 feet to the Southwest without lengthening the runway would also accommodate future widening of State Road. Nevertheless, this “reasonable alternative” was not considered in the draft EA. An Environmental Assessment “shall include brief discussions of . . . alternatives . . .” 40 C.F.R. § 1508.9(b).1. Absent an analysis of an alternative based on a 150-foot southwesterly shift of the runway, without lengthening the runway, the EA is inadequate and the Project should not be approved.

**B. Resolving ARB and MDOT’s “Need” Through the Extension of Runway 6/24 Is Unsupported by the Evidence.**

An Environmental Assessment must include a discussion of the purpose and need for the proposed action that must “specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” 40 C.F.R. § 1502.13. In addressing the “purpose and need” section of an EA, FAA Order 1050.1E provides that: “[t]his discussion identifies the problem facing the proponent (that is, the need for an action), the purpose of the action (that is, the proposed solution to the problem), and the proposed timeframe

for implementing the action.” FAA Order 1050.1E, ¶ 405c. The draft EA accomplishes none of these goals and ARB and MDOT have not discussed or examined what exactly the need for the Project is. Although the draft EA never specifies the need for the Project, it does identify the purpose along with various “objectives.” *See supra* pp.25 – 26.

**1. The Project is not supported by any reasonable and independent evidence and does not solve the problem it purports to solve.**

First, the draft EA defines the purpose of the Project as “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.” Exhibit 26. After being taken to task by the FAA for its lack of a clear definition of a “need” in the draft EA, ARB and MDOT responded that the need (although nowhere to be found in the draft EA) “for the project is based on the objective of providing a primary runway of suitable length to safely accommodate critical category aircraft without operational weight restrictions.”<sup>16</sup> Exhibit 19, p.8. The draft EA defines “critical aircraft” as “the most demanding aircraft-type that performs a minimum of 500 annual operations at a particular airport,” and claims that a 2009 MDOT Airport User Survey “has confirmed that the critical aircraft classification for ARB is ‘B-II Small Aircraft.’” Exhibit 26, p.2-4. To effectuate the stated purpose, the draft EA purports to support the construction of a runway extension from 3,505 feet to 4,300 feet. However, the evidence is clear that no “B-II Small Aircraft” require a 4,300 foot long runway. All B-II Small Aircraft are capable of operating on the existing 3,505 feet long runway without weight restriction. In fact, the representative B-II Small Aircraft cited by ARB as justification for the Project, the Beechcraft King Air 200, requires only 2,579 feet of runway to take-off fully loaded, and 2,845 feet to land.

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<sup>16</sup> As defined by the FAA in FAA Order 1050.1E, ¶ 405c, this is not a “need” but simply a restatement of the purpose. ARB and MDOT have yet to identify and discuss in any reasonable manner “the problem facing the proponent.”

See, [http://www.hawkerbeechcraft.com/beechnraft/king\\_airb200gt/specifications.aspx](http://www.hawkerbeechcraft.com/beechnraft/king_airb200gt/specifications.aspx). Thus, the statement that “[d]evelopment of the primary runway at ARB to the recommended length of 4,300-feet would allow the majority of B-II Small Aircraft to operate at their optimum capabilities (without weight restrictions),” although true, is misleading. Exhibit 26.

There is no need to extend Runway 6/24 to allow B-II aircraft to operate at ARB. They can operate on a 3,505 foot runway without weight restrictions. Therefore, the statement that interstate commerce would be negatively impacted by B-II weight restrictions does not state a valid need, and the purported purpose of “provid[ing] facilities that more effectively and efficiently accommodate the critical aircraft that presently use the airport” is an unnecessary solution to a nonexistent problem.

**2. ARB’s justification for the Project incorrectly relies on total annual operations to support extending Runway 6/24.**

The draft EA states, “[t]he critical aircraft, or grouping of aircraft are generally the largest, most demanding types that conduct at least 500 operations per year at the airport,” and concludes that the proper Airport Reference Code (“ARC”) for ARB is B-II, based on a total of “750 actual annual operations by B-II category critical aircraft from survey data year 2007.” Exhibit 26. However, the draft EA’s use of “annual operations” differs markedly from the FAA criteria for selecting runway lengths and widths set forth in FAA Order 5090.3C:

**3-4. AIRPORT DIMENSIONAL STANDARDS**

Airport dimensional standards (such as runway length and width, separation standards, surface gradients, etc.) should be selected which are appropriate for the critical aircraft that will make substantial use of the airport in the planning period. Substantial use means either 500 or more *annual itinerant operations*, or scheduled commercial service.

FAA Order 5090.3C, p. 21 (emphasis added). It should be pointed out that FAA Order 5090.3C does not state that critical aircraft must be the “largest.” The FAA divides General Aviation

operations into two categories, “local” and “itinerant.” Itinerant operations are defined as “an operation performed by an aircraft, either IFR, SVFR, or VFR, that lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area.” U.S. DOT JO 7210.695, p.5. Local operations are defined as “those operations performed by aircraft that remain in the local traffic pattern, execute simulated instrument approaches or low passes at the airport, and the operations to or from the airport and a designated practice area within a 20-mile radius of the tower.” *Id.*

The draft EA, without reference to this distinction, relies on “annual operations” and “total annual operations” not “itinerant operations.” *See* Exhibit 26, Table 2-1, p. 2-10. Separating itinerant and local operations at ARB would result in a dramatic reduction in the number of annual critical aircraft operations at the airport. For example, data from the website City-Data.com shows that there were 25,064 itinerant operations and 44,174 local operations at ARB in 2008. *See*, <http://www.city-data.com/airports/Ann-Arbor-Michigan.html>. In that itinerant operations account for approximately 36% of the total operations at ARB, itinerant B-II operations for 2007 would be in the neighborhood of 300 operations per year (40% of 750 total operations), substantially below the FAA’s threshold of 500 annual operations to constitute “substantial use.” Moreover, the Airport User Survey shows only 293 annual B-II operations at ARB in 2007. Thus, the FAA Order 5090.3C airport dimensional standards for B-II small aircraft do not apply.

Even if, for argument’s sake, we were to accept the critical aircraft data reported in the Airport User Survey, a detailed analysis shows that a weighted average of 78 percent of those B-II aircraft operations took place within a 450-mile radius of ARB, according to MDOT’s own data analysis. Exhibit 27. These represent areas that are within the flight range of ARB’s current

based fleet, according to the User Survey data, from the current-length runway. Thus, by another means of calculus, itinerant operations beyond the range of need are fewer than 200 and the Purpose and Need fails.

Further, MDOT's choice of 2007 as a year of certification for critical aircraft was based on an arbitrary and capricious decision. The year 2007 represents the greatest number of ARB operations in the 5-year period 2004-2009 and was selected, according to the MDOT analyst involved, because "our thoughts were that the current recession could possibly have affected the 2008 operational levels in such a way that 2008 year records would not be a true indicator of a post-recession return to normal operations at the airport. . . ." Exhibit 26. Even the FAA suggests ARB will not return to such high operating levels as 2007 for the next 20 years. Thus, MDOT was showing bias and affording Ann Arbor a huge advantage in not even evaluating operational data from any other year, particularly one that is more recent than 2007. Objectively, since its standard is the independent FlightAware data base, MDOT should analyze critical aircraft operational data for the five years 2007-2012 and base its decision on an average of those years' operational data. However, such aircraft operational data should be (1) independent, (2) verifiable, and (3) operationally detailed.

At the FAA's request, ARB examined the aircraft operational data for 2009. However, despite ARB and MDOT's claim that "there were still over 500 annual itinerant operations conducted by category B-II at ARB in 2009" (Exhibit 19, p.13), the data provided by ARB and MDOT could only support 346 critical aircraft (not necessarily itinerant) flights. These were the only flights that were (1) independent, (2) verifiable, and (3) operationally detailed, since they were derived from the FlightAware database. Since this is a critical issue, only operational data meeting these criteria should be used. MDOT's analyst, however, allowed purported additional



critical aircraft flights (again, not necessarily itinerant flights) based on a corporate pilot's one-line letter certification. These flights were unsupported by the FlightAware data or other independent criteria. Because these flights are not verifiable, independent or operational detailed they must be excluded from the determination of the critical aircraft category at ARB.

**3. Shifting Runway 6/24 150 Feet to the Southwest Will Not Achieve an Additional Margin of Safety.**

The draft EA states that part of the Project's purpose is to "[e]nhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24, over State Road." Exhibit 26. Operational safety in low visibility conditions will not be enhanced by providing a clear 34:1 approach surface to Runway 24. The draft EA is correct in stating that shifting the Runway 24 threshold 150 feet west would enhance safety by effectively removing the current obstruction to line-of-site vision (hangar) of the parallel taxiway for ATCT personnel. Exhibit 26. However, in the next paragraph the draft EA states, "The proposed shift of the Runway 24 threshold would also allow for a clear 34:1 approach surface to the east end of the runway (the current approach surface is the steeper 20:1). By keeping obstructions below the flatter 34:1 approach surface, an additional margin of safety is provided between approaching aircraft and any ground-based obstacles." Exhibit 26. This statement lacks support in either the Instrument Approach Procedure (IAP) design or Terminal Instrument Procedures ("TERPS") Obstruction Standards. Both the 20:1 and the 34:1 surfaces exist simultaneously for every published IAP, and are defined as "Obstacle Identification Surfaces," which do not establish obstacle clearance safety margins, but rather only define instrument approach visibility minimums. The FAA does not require either of these two surfaces to be free of penetration by obstacles, and thus "providing an additional margin of safety" as stated in the draft EA does not apply in the case of these two surfaces. Other TERPS surfaces (Obstacle Clearance Surfaces) are

established which do ensure clearance from obstructions, and the FAA requires that these Obstacle Clearance Surfaces be clear of structures and terrain. The current IAPs to Runway 24 were designed by the FAA to accommodate all existing obstructions. Thus, shifting the runway 150 feet to the west would not enhance safety. Even if one were to assume that the draft EA is correct in the assertion that shifting the Runway 24 threshold would eliminate obstruction penetrations to the existing 34:1 Obstacle Identification Surface, the effect would not be a safety improvement, but would result only in a reduction in the required approach visibility minimums. In its response to the FAA's comments, ARB and MDOT drop the shifting of Runway 6/24 as a "need."

**4. ARB and MDOT falsely conveyed the impression that ARB is located in a rural setting instead of in a densely populated area.**

The draft EA intends to deceive readers as to the cosmopolitan location of the airport, utilizing Figure 2.1, for instance, which depicts unpaved Lohr and Textile Roads and vacant land and rock pits and gravel pits where developed communities of Pittsfield (Brian Hill, Lake Forest, Lake Forest Highlands, Lohr Lakes Village, St. James Woods, Silo Ridge, Stonebridge, and Waterways) and Lodi (Travis Pointe) Townships exist today, with more than 2,000 homes – making the area appear far more rural and not susceptible to the safety risks from added airport development that are actually posed.

**V. THE EXTENSION OF THE RUNWAY WILL CAUSE SIGNIFICANT ENVIRONMENTAL IMPACTS ON THE SURROUNDING COMMUNITIES.**

United States federal law states at 49 U.S.C. § 47101(a)(6) that it is "the policy of the United States - - that airport development under this subchapter provide for the protection and enhancement of natural resources and the quality of the environment of the United States." The Project will have a significant impact on the environment not only on the airport, but throughout

the surrounding community. Since it is Pittsfield's duty and responsibility to protect the environment within its boundaries and protect its citizens from significant environmental impacts, it has serious concerns about the environmental impact the Project will have on the community.

**A. The Data Used to Justify the Project Is Not Current.**

Even when the draft EA first came out almost three years ago, Petitioners had issues about the timeliness of the data presented. The data that the Airport relied upon was almost three years old when it was used in the draft EA.

Moreover, it is the FAA's policy to use timely data instead of data that is stale, like the data used to justify the Project. In particular, ¶ 402a of FAA Order 1050.1E states that

A draft EA may be assumed valid for a period of three years. If the approving official has not issued an EA/FONSI within three years of receipt of the final draft EA, a written reevaluation of the draft (see paragraph 410) must be prepared by the responsible FAA official to determine whether the consideration of alternatives, impacts, existing environment, and mitigation measures set forth in the EA remain applicable, accurate, and valid. If there have been changes in these factors that would be significant in the consideration of the proposal, a supplement to the EA or a new EA must be prepared in accordance with the procedures of this chapter.

FAA Order 1050.1E. Although it has not yet been three years since MDOT issued the draft EA, at the very least a written re-evaluation must be issued, particularly since the data used in the draft EA was stale when the draft EA was first issued.

**B. The Project Does Not Take into Account the Noise Impact of the Project on the Surrounding Community.**

It has long been "the policy of the United States - - that aviation facilities be constructed and operated to minimize current and projected noise impact on nearby communities." 49 U.S.C. § 47101(a)(2). Part of the FAA's mission is to ensure that the communities surrounding airports are not adversely impacted by noise from aircraft at airports. This mission is expressed

in 49 U.S.C. § 47101(c), which states that “[i]t is in the public interest to recognize the effects of airport capacity expansion projects on aircraft noise. Efforts to increase capacity through any means can have an impact on surrounding communities. Noncompatible land uses around airports must be reduced and efforts to mitigate noise must be given a high priority.” Thus, to the extent that noncompatible land uses around airports cannot be reduced, then the capacity of nearby airports should not be increased or else the FAA and the airport sponsor would be in violation of federal law. ARB and MDOT seem to be aware of the fact that increases in capacity at the airport will affect the noise levels in Pittsfield, because they studiously avoid the topic.

**1. ARB and MDOT incorrectly assume that extending the runway will not increase the number of air operations, the fleet mix or other growth-inducing effects of the Project.**

When considering an airport project for federal funding, the FAA is required to evaluate not merely the direct impacts of a project, but also its indirect impacts, including those “caused by the action and later in time but still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). Indirect impacts include a project’s growth-inducing effects, such as changes in patterns of land use and population distribution associated with the project (40 C.F.R. § 1508.8(b)) as well as increased population, increased traffic, and increased demand for services. *City of Davis v. Coleman*, 521 F.2d 661, 675 (9th Cir. 1975). The “growth-inducing effects of [an] airport project appear to be its *raison d’etre*.” *California v. U.S. D.O.T.*, 260 F.Supp.2d at 978, citing *City of Davis, supra*, 521 F.2d at 675. Even though the Project is virtually defined by its growth-inducing impacts, ARB and MDOT have ignored this requirement completely – not only in the draft EA, but in the public participation aspects of the Project as well. Although ARB and MDOT claim that the “percent of night and jet operations would remain constant between the existing condition and

the future years,” there is substantial evidence to indicate that the Project will cause a large increase in both types of operations. Exhibit 26, p.4-2.

As indicated above, there are no weight restrictions that must be lifted to allow ARB’s “critical aircraft” to operate at the airport without weight restrictions. For example, the “load restrictions” referenced on page 2-12 of the draft EA refer not to category B-II aircraft, but to the fact that higher category aircraft (jets in the C-I and C-II categories) must currently operate at reduced weights in order to use the current 3,505 foot runway. Operationally, weight is reduced by carrying fewer passengers, less baggage and/or less fuel, all of which discourage these aircraft from conducting operations at ARB. A Cessna Citation II (Category B-II), for example, requires 2,990 feet for takeoff at maximum certificated gross weight on a standard day, and can operate at unrestricted weight from the existing 3,505 foot runway. A Lear 35 (Category C-I), on the other hand, requires 5,000 feet for takeoff at maximum certificated gross weight on a standard day. While extending the runway to 4,300 feet would not facilitate unrestricted operations by the Lear 35, the required weight reduction would be less than is currently required. Therefore, the runway extension to 4,300 feet would operationally benefit the Category C-I Lear 35, but would provide no operational benefit to the Category B-II Citation jet, which the EA states is a “critical aircraft.”

The primary reason why ARB and MDOT are so keen on extending the runway is to facilitate the loading of additional passengers and baggage on high performance jet aircraft outside of what ARB considers to be its “critical aircraft.” Also, the ability to carry additional fuel may mean that, in certain cases, costly and time consuming intermediate fuel stops will become unnecessary. If the runway is lengthened to 4,300 feet, it is reasonably foreseeable that ARB will become much more attractive to operators of higher performance jet aircraft, such as

the Lear 25 (Category C-I), Cessna Citation III (Category C-II) and Cessna Citation Sovereign (Category C-II), who could then operate at ARB instead of driving to and from Willow Run Airport, a mere 12.3 mile car trip, where there are ample facilities for large aircraft.

**2. The fact that night and jet operations will increase as a result of the Project has not been analyzed by either ARB or MDOT.**

Contrary to ARB and MDOT's unsupported assertions in the draft EA (*see e.g.* Exhibit 26, p. 4-2; Appendix B-1, p. B-4), it is reasonably foreseeable that the fleet mix at ARB will change in favor of a higher percentage of jet operations as compared to the current level of light single and multi-engine propeller driven aircraft operations. The smaller Category A-I/II and B-I aircraft account for a high percentage of ARB operations. B-II aircraft account for a low percentage of ARB operations. Because of the availability of a longer runway, it is therefore reasonably foreseeable that the number of night operations will increase as the number of arrivals of longer haul business jets often occur in the evening hours due to the longer time duration of their trips. Since one of the stated purposes of the Project is to increase interstate commerce, this is not merely an indirect, but also a direct effect, that the Project will have on the surrounding community. This will also affect the fleet mix of night operations to reflect a higher percentage of jet operations than exist under current conditions.

Thus, the evidence is clear that the Project will cause an increase in both jet and night operations. It is also reasonably foreseeable that these added high-performance jet aircraft operations and night operations will be accompanied by significant noise and air quality impacts. Nevertheless, ARB and MDOT have failed to acknowledge, let alone analyze, these reasonably foreseeable impacts caused by expansion of airport physical facilities and operational profile and, thus, the Project should not be approved for federal funding.

**3. Increased jet aircraft and nighttime operations were not included in the noise modeling used by ARB and MDOT.**

The sole presentation of the noise modeling performed by ARB and MDOT is presented in the draft EA. On its face it is insufficient to meet FAA standards. The FAA's Integrated Noise Model (INM) was used to model annual operations for the 2009 existing condition in the draft EA, *i.e.*, April 2008 through March 2009 and develop 65, 70 and 75 DNL noise contours for the Project. Exhibit 26, Appendix B-1, p.4, p. 4-3. The EA states that "[t]he existing 65 DNL contour does not extend beyond airport property." Exhibit 26, p. 4-3. However, during the time modeled, jet operations accounted for approximately 2 percent of total operations at ARB, and nighttime operations accounted for 4.2 percent of total operations. Exhibit 26, p. 4-2. The draft EA states: (1) "[t]he percent of night and jet operations would remain constant between the existing condition and the future years;" (2) "fleet mix between the 2009 Existing Condition and the 2014 Future Alternatives would remain static"; and (3) "[t]he ARB 2014 proposed project alternative DNL 65 dBA noise contour does not extend beyond airport property." Exhibit 26, p. 4-2; Appendix B-1, p. B-4; p. B-6.

None of these assertions are based on facts or the reality of the situation that exists at ARB. As shown above, because of the increase in the length of the runway the Project will likely facilitate an increased number of night operations, and a change in fleet mix that will include higher performance jet aircraft. DNL calculations depend on, among other things, forecast numbers of operations, operational fleet mix and times of operation (day versus night). Exhibit 26, Appendix B-2, p. B-16. However, ARB and MDOT have failed to model or assess future increased night operations and fleet mix changes resulting from the Project.

The FAA requires the use of INM to produce, among other things: (1) noise contours at the DNL 75 dB, DNL 70 dB and DNL 65 dB levels; (2) analysis within the proposed alternative

DNL 65 dB contour to identify noise sensitive areas where noise will increase by DNL 1.5 dB ; and (3) analysis within the DNL 60-65 dB contours to identify noise sensitive areas where noise will increase by DNL 3dB, if DNL 1.5 dB increases as documented within the DNL 65 dB contour. FAA Order 1050.1E, Appendix A, p. A-62, & 14.4d. As the noise modeling failed to take into account the foreseeable increases in nighttime and jet aircraft operations at ARB, the questions of whether the future DNL 65 dB contour will be increased, and to what extent, and whether increased noise levels within the DNL 65 dB contour would necessitate designation of a DNL 60 dB contour remain unanswered.

**4. Noise from aircraft, particularly high performance jets, remains a very real concern for communities that surround ARB.**

The FAA last reviewed the technical bases for its noise policies in 1992. For example, 65 DNL as the “threshold of significant impact” under NEPA and the level below which land uses are deemed compatible has been used by the FAA without substantial change since 1978 (it was “re-affirmed” by FICAN in 1992). It is safe to say that the FAA’s policy no longer reflects the best scientific evidence of the effects of aircraft noise exposure. This failure on the part of the FAA to update its policy undermines the trust that the public places in the FAA in their pursuit to understand noise exposure and its effects.

This is particularly true since substantial research done on the measurement and effect of aircraft noise on the communities surrounding airports has come from sources outside the United States. For example, the Hypertension & Exposure to Noise Near Airports (HYENA) study evaluated the effects of aircraft noise on 4,861 persons residing near 7 European airports between 2002 and 2006. The 2002 RANCH study from London studied the effect of aircraft and road traffic noise on 2,844 children’s cognition and health. Both of these studies came out with rather startling results concerning the effect aircraft noise has on the quality of human life.



Finally, WHO Europe issued “Night Noise Guidelines,” which were based on research done by the European Union. This type of study has largely been absent in the United States.

The emerging research suggests that current standards used by the FAA are outdated and underestimate the significant health risks posed by aircraft noise. The current understanding of the health effects of aircraft noise goes beyond mere annoyance and sleep disturbance, which the current DNL protocols were meant to address. The new research shows a strong correlation between aircraft noise and significant, serious health outcomes, such as hypertension and heart disease. Four studies from Europe have shown this connection:

1. Haralabidis AS, Dimakopoulou K, Velonaki V, Barbaglia G, Mussin M, Giampaolo M, Selander J, Pershagen G, Dudley ML, Babisch W, Swart W, Katsouyanni K, Järup L; for the HYENA Consortium. Can exposure to noise affect the 24 h blood pressure profile? Results from the HYENA study. *J Epidemiol Community Health*. 2010 Jun 27.
2. Haralabidis AS, Dimakopoulou K, Vigna-Taglianti F, Giampaolo M, Borgini A, Dudley ML, Pershagen G, Bluhm G, Houthuijs D, Babisch W, Velonakis M, Katsouyanni K, Jarup L; for the HYENA Consortium. Acute effects of night-time noise exposure on blood pressure in populations living near airports. *Eur Heart J*. 2008 Feb 12
3. Jarup L, Babisch W, Houthuijs D, Pershagen G, Katsouyanni K, Cadum E, Dudley M-L, Savigny P, Seiffert I, Swart W, Breugelmans O, Bluhm G, Selander J, Haralabidis A, Dimakopoulou K, Sourtzi P, Velonakis M, VignaTaglianti F, on behalf of the HYENA study team. Hypertension and Exposure to Noise near Airports - the HYENA study. *Environ Health Perspect* 2008; 116:329-33
4. Jarup L, Dudley ML, Babisch W, Houthuijs D, Swart W, Pershagen G, Bluhm G, Katsouyanni K, Velonakis M, Cadum E, Vigna-Taglianti F for the HYENA Consortium. Hypertension and exposure to noise near airports (HYENA) - Study design and noise exposure assessment. *Environ Health Perspect* 2005; 113:1473-8.

This is not to say that there has not been any research done in the United States on this issue. In March 2007, for example, Lisa Goines and Louis Hagler published their article entitled “Noise

Pollution: A Modern Plague” in the *Southern Medical Journal*. While it did not concentrate solely on aircraft noise, the article concluded that

[n]oise produces direct and cumulative adverse effects that impair health and that degrade residential, social, working, and learning environments with corresponding real (economic) and intangible (well-being) losses. It interferes with sleep, concentration, communication, and recreation. The aim of enlightened governmental controls should be to protect citizens from the adverse effects of airborne pollution, including those produced by noise. People have the right to choose the nature of their acoustical environment; it should not be imposed by others.

ARB and MDOT are imposing the nature of their “acoustical environment” on Pittsfield and its citizens, rather than having the citizens choosing for themselves.

In addition several “findings” have been issued by governmental or quasi-governmental sources. The Federal Interagency Committee on Aviation Noise (FICAN) has issued two findings: *FICAN Recommendation for use of ANSI Standard to Predict Awakenings from Aircraft Noise* (2008) and *Findings of the FICAN Pilot Study on the Relationship between Aircraft Noise Reduction and Changes in Standardized Test Scores* (2007). Partnership for Air Transportation Noise and Emissions Reduction (PARTNER), a collaboration among the FAA, NASA and TransportCanada, issued in July 2010, its *Review of the Literature Related to Potential Health Effects of Aircraft Noise*, (prepared by Hales Swift). That review concluded that “[p]otentially serious health outcomes have been identified in studies involving transportation noise exposure in a population. These include heart disease and hypertension and the observed effects seem to be related especially to nighttime noise exposure although similar daytime exposure effects have also been identified.” PARTNER 2010, p.62. PARTNER has also issued several other reports:

- Sonic Boom and Subsonic Aircraft Noise Outdoor Simulation Design Study. Victor W. Sparrow, Steven L. Garrett. A PARTNER Project 24 report. May 2010. Report No. PARTNER-COE-2010-002.
- Passive Sound Insulation: PARTNER Project 1.5 Report. Daniel H. Robinson, Robert J. Bernhard, Luc G. Mongeau. January 2008. Report No. PARTNER-COE-2008-003.
- Vibration and Rattle Mitigation: PARTNER Project 1.6 Report. Daniel H. Robinson, Robert J. Bernhard, Luc G. Mongeau. January 2008. Report No. PARTNER-COE-2008-004.
- Low Frequency Noise Study. Kathleen Hodgdon, Anthony Atchley, Robert Bernhard. April 2007. (Report No. PARTNER-COE-2007-001) PARTNER Project 1, Low Frequency Noise Study, final report.
- Land Use Management and Airport Controls: A further study of trends and indicators of incompatible land use. Kai Ming Li, Gary Eiff. September 2008. Report No. PARTNER-COE-2008-006
- En Route Traffic Optimization to Reduce Environmental Impact: PARTNER Project 5 Report. John-Paul Clarke, Marcus Lowther, Liling Ren, William Singhose, Senay Solak, Adan Vela, Lawrence Wong. July 2008. Report no. PARTNER-COE-2008-005
- Land Use Management and Airport Controls: Trends and indicators of incompatible land use. Kai Ming Li, Gary Eiff, John Laffitte, Dwayne McDaniel. December 2007. (Report No. PARTNER-COE-2008-001) PARTNER Project 6 final report.

Thus, there is no shortage of relevant, topical information for ARB, MDOT and the FAA to use in assessing the health risks and impacts of noise on the communities surrounding ARB. It is readily apparent that the current system does not fully account for the increased health risks communities surrounding airports are subject to due to the increased noise levels. FAA needs to re-evaluate its noise modeling and insist that health risks to the surrounding communities be assessed prior to ARB receiving federal funds for any expansion that will result in an increase in aviation operations.

**C. ARB and MDOT Have Failed to Take Into Account the Effects the Project Will Have on Air Pollution in the Surrounding Community.**

Section 7506 of the Federal Clean Air Act (42 U.S.C. § 7401 et seq.) mandates that “[n]o department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity which does not conform to [a State Implementation Plan] after it has been approved or promulgated under [42 U.S.C. §7410].” The Environmental Protection Agency (EPA) has promulgated regulations implementing § 7506 (the “Conformity Provision”) in 40 C.F.R. § 93.150 *et seq.* (“General Conformity Rule”). The General Conformity Rule requires, in part, that federal agencies first determine if a project is either exempt from conformity analysis or presumed to conform. If it is neither, the agency must conduct a conformity applicability analysis to determine if a full conformity determination is required. *See Air Quality Procedures for Civilian Airports and Air Force Bases*, p. 13.

The project area, *i.e.*, Washtenaw County, is in attainment for five of the seven criteria pollutants, and marginal nonattainment for Ozone. Exhibit 28. Washtenaw County is designated as in nonattainment for PM<sub>2.5</sub>. *Id.* Therefore, one of the following applies:(1) the project is exempt from conformity; (2) the project is presumed to conform; or (3) the agency must conduct a conformity applicability analysis to determine if a conformity determination for PM<sub>2.5</sub> is required. Neither ARB nor MDOT has indicated that any of the required actions was performed.

The draft EA does not provide any guidance as to whether the Project is exempt or presumed to conform. At page C-4, the draft EA states unequivocally that “[f]or this analysis it will be assumed that the project is *neither* exempt nor presumed to conform.” (Emphasis added). However, on the next page, the draft EA states that “. . . a conformity determination is not required and the proposed project *is presumed to conform* to the state implementation plan.”

Exhibit 26, p.C-5, (emphasis added). Under either scenario, however, ARB and MDOT have failed to meet the “public disclosure” requirement under NEPA.

**1. ARB and MDOT have failed to establish that the Project is exempt.**

There are two options in determining that a project is exempt from conformity analysis: (1) if the project is included in the list of exempt actions listed in § 93.153(c)(2); or (2) if the project’s total of direct and indirect emissions are below the emissions levels specified in § 95.153(b) of the Conformity Regulations (“*de minimis*”), § 93.153(c)(1).

The first option does not apply here because none of the actions to be undertaken as part of the Project are included as “exempt actions” § 93.153(c)(2). Exhibit 26, p. 2-1. Nor does the Project qualify as exempt because of *de minimis* emissions under 40 C.F.R. § 93.153(c)(1). The closest ARB and MDOT come to any type of air quality analysis can be found on pp. 4-17 and 4-18 of the draft EA. ARB and MDOT, instead of performing a site-relevant analysis, rely on an outdated study, 1996 MDOT Bureau of Aeronautics Air Quality Study of seven general aviation airports (which notably do not include ARB), to conclude that “typical GA airports generate a low level of pollutants.” Exhibit 26, p. 4-17. From there, ARB and MDOT extrapolate that because ARB is comparable in size and activity to the seven airports studied, it can be assumed that emissions resulting from the Project will not exceed the conformity threshold levels, and, on that basis, concludes that a conformity analysis is not required.

This assumption, however, does not comply with federal law for at least two reasons. First, neither ARB nor MDOT has quantified PM<sub>2.5</sub> emissions from flight operations at ARB. Even the superannuated 1996 Study makes no mention of ARB. Second, because ARB and MDOT have failed to quantify the emissions, there can be no comparison with the *de minimis* thresholds established in 40 C.F.R. § 93.153(c)(1). While the original version of 40 C.F.R. §

93.153(c)(1) did not establish explicit thresholds for PM<sub>2.5</sub>, as distinguished from PM<sub>10</sub>, the newly implemented revised General Conformity Rule does establish that distinction, and now serves as the template for the air quality analysis required in the EA. Moreover, FAA Order 1050.1E, Appendix A, p. A3, § 2.16 includes both PM<sub>10</sub> and PM<sub>2.5</sub> in “particulate matter.”

**2. ARB and MDOT have failed to establish that the project is “presumed to conform.”**

The second option, the presumption of conformity, does not apply here either. In order for a federal action to be “presumed to conform,” the Project has to fall within a category of actions predetermined by the responsible federal agency to carry a presumption of conformity. See 40 C.F.R. § 93.154(f) – (h). In July, 2007, the FAA published its *Federal Presumed to Conform Actions Under General Conformity Final Notice*, 72 Fed.Reg. 41,565-580 (July 2007), in which the FAA listed fifteen Airport Project categories that the FAA presumes to conform to applicable SIPs. None of the actions to be undertaken by the Project fall within any of those presumed to conform categories. ARB and MDOT cannot unilaterally presume that the Project is in conformity and therefore the draft EA’s statement is in error.

**3. ARB and MDOT have failed to establish the Project’s conformity status under the Clean Air Act.**

Finally, the antiquated study of General Aviation airports in Michigan other than ARB is an inadequate substitute for the required analysis. 40 C.F.R. § 93.159 requires that analyses under the General Conformity Rule be based on, among other things: (1) “the latest planning assumptions” (§ 93.159(a)); and (2) “the latest and most accurate emissions estimation techniques available” (§ 93.159(b)). The 1996, 17-year old, study patently fails to fall within either, let alone both, of these parameters. In summary, the EA fails to establish the existence of any of the necessary components of the required finding of conformity for a project that can be

supported by federal funds, and, thus, is inadequate under federal aviation statutes, NEPA and the Clean Air Act.

**D. ARB and MDOT Have Failed to Take Into Account the Effect the Project Will Have on Water Resources in the Surrounding Communities.**

Throughout this process ARB and MDOT have consistently understated the significance of water resources. The principal use of the grounds where the airport is located is for the collection and pumping of water for the City. However, water quality is something that must be taken much more seriously than ARB or MDOT has taken it. As FAA Order 1050.1E points out “[i]f there is the potential for contamination of an aquifer designated by the [EPA] as a sole or principal drinking water resource for the area, the responsible FAA official needs to consult with the EPA regional office, as required by section 1424(e) of the Safe Drinking Water Act, as amended.” FAA Order 1050.1E, pp. A-74, 75, ¶ 17.1c. Likewise, “[w]hen the thresholds indicate that the potential exists for significant water quality impacts, additional analysis in consultation with State or Federal agencies responsible for protecting water quality will be necessary. *Id.*, pp. A-75, A-76, ¶ 17.4a. Finally, in situations such as this, “[i]f the EA and early consultation [with the EPA] show that there is a potential for exceeding water quality standards [or] identify water quality problems that cannot be avoided or mitigated . . . an EIS may be required. *Id.*, pp. A-75, ¶ 17.3.

The Airport is the location of a porous sand/gravel formation that yields a large amount of water for pumping. Historically, the land where the airport is located was originally acquired by the City of Ann Arbor for water rights in 1929. Until recently, 15% of Ann Arbor's water supply came from the three wells located on Airport property. Exhibit 29, Water Quality Report, 2008, City of Ann Arbor, p. 2. The paving that the Project will require increases not only the

impervious area on top of the aquifer, but also increases the risk of contamination. This in turn reduces the infiltration of water that feeds the aquifer/City water supply. Adding 950 feet to the end of the runway adds another 71,250 square feet of impervious area over an aquifer that is vital to the City. However, ARB and MDOT have given this issue only passing mention: “[b]ased on coordination with the City of Ann Arbor, the proposed runway extension would not impact the water supply wells or the new water supply line (Bahl, 2009).” Exhibit 26, p. 4-20. Notably absent from their coordination efforts is the EPA or its Regional Office with respect to water resource issues.

ARB and MDOT’s nonchalance with respect to a principal source of Ann Arbor’s water supply raised serious issues with the Washtenaw County Water Resources Commissioner – another entity with whom ARB and MDOT should have been consulting from the very beginning. In response to the draft EA, the Washtenaw County Water Resources Commissioner pointed out:

It is noted in the [draft EA] that: “The amount of impervious surface on site would increase slightly due to the extension of the runway and taxiway from the existing 7 percent of the 837 acres to 7.4 percent.” This slight increase noted equates to an additional 3.348 acres or 145,839 square feet. This increase in impervious surface is considered by this office to be significant and not slight particularly knowing that the additional runoff from this area will discharge to the Wood Outlet Drain.

Exhibit 17, p.2. This, coupled with the fact that the City owns and operates four water wells on ARB’s property, causes deep concern with the County.

This issue has become even more important since the draft EA was published back in 2010. In May, 2012, it was reported that the water table in the Ann Arbor area, has risen substantially. As pointed out in the Ann Arbor Chronicle, “[t]he only hard data that the city has collected on the water table is at the municipal airport, and there the water table measures



between 2-7 feet below the surface now, compared to 15 feet below the surface 50 years ago.” Exhibit 30.<sup>17</sup> This is not an insubstantial problem. With the water table at the airport now being 2-7 feet below the ground surface instead of 15 feet, when the drinking water wells were first dug, the groundwater is even more vulnerable to contamination because there is much less soil for any surface pollution to filter through or attach to soil particles before it reaches the water table. This dramatic change in the water table may also alter ground water data from the past. That is, the rise in the water table may have altered the direction of groundwater flow, or there may now be some barrier blocking the traditional pathway for the water to flow, which would cause Ann Arbor’s principal drinking water supply to be contaminated.

The Washtenaw County Water Resources Commissioner raised additional significant concerns that have yet to be addressed by either ARB or MDOT.

3. It is indicated that the preferred alternative does not impact the stream that is existing on the site. [Draft EA, p.4-18]. Using GIS measurements it appears that the stream is less than 1,000 linear feet from the existing runway. The runway extension would bring this infrastructure within 50 linear feet or less of the stream. In addition to this the grading limits shown in Appendix D-7 clearly extend into and beyond the location of the stream. Based on this information *it is not understood how it has been concluded that there are no impacts to the stream.*
4. It is indicated that the preferred alternative does not impact the floodplain for the stream that is existing on the site. It is indicated that proposed grading for the expansion would not occur within the designated floodplain boundary. [Draft EA, p.4-24]. Based on the floodplain boundary shown on FEMA Community-Panel Number: 260623 0010 C these statements are incorrect. Not only do the grading limits indicated for the preferred alternative extend into the floodplain boundary but the runway extension itself will extend into this floodplain boundary. Based on this information *it is not understood how it has been concluded that there are no impacts to the floodplain.*

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<sup>17</sup> By contrast, the draft EA relies on data at least 15 years old. Since there is more current data, that should be used instead of outdated data. See Exhibit 26, p.4-20.

6. It is noted in the report that: “Implementation of appropriate best management practices (BMPs) would continue to control the rate of stormwater runoff and maintain water quality standards.” [Draft EA, p.4-18]. It is unknown by this office as to what the control rate of stormwater is currently being implemented or whether this rate meets county standards. *The additional volume created by this increase in imperviousness is not spoken to at all by the report. The type or locations of the appropriate BMPs indicated are not identified.*

Exhibit 17, pp.1-2 (emphasis added). Petitioners have the same concerns about how water resources will be managed by ARB and MDOT should this Project move forward. These issues have not been sufficiently addressed by either ARB or MDOT in the draft EA or at any of the public hearings.

## **VI. REDRESS**

By this Petition, and for the reasons stated above, Pittsfield Charter Township and the Committee for Preserving Community Quality, Inc. respectfully request that the Secretary of Transportation take the following actions with respect to Ann Arbor Municipal Airport, which is located solely in Pittsfield Charter Township:

1. Halt any further FAA action regarding MDOT and ARB’s proposal to extend the primary runway at Ann Arbor Municipal Airport pending the resolution of this petition.
2. Vacate the current Airport Layout Plan as being improvidently approved by MDOT and reinstate the prior Airport Layout Plan.
3. Inform MDOT that federal funds may not be used for the extension of the primary runway at Ann Arbor Municipal Airport due to the fact that MDOT and ARB have failed to state a legitimate purpose and need for the extension.
4. Inform MDOT and ARB that should the primary runway be extended without the agreement or acquiescence of Pittsfield, it will be in violation of its federal grant assurances.
5. If the Secretary of Transportation fails to take the actions described in ¶¶ 3 and 4 above, Pittsfield Charter Township requests that he order that an Environmental Impact

Statement be conducted that assesses the impact the extension of the runway will have on the surrounding communities and that addresses the significant environmental impacts detailed in this Petition.

6. If the Secretary of Transportation declines to order that an Environmental Impact Statement be conducted, Petitioners request that the Secretary of Transportation direct MDOT to make federal block grant funds available to Pittsfield to conduct its own Environmental Assessment and/or Environmental Impact Statement. In addition, Petitioners request that the Secretary of Transportation inform MDOT and ARB that federal funds will not be available for the implementation of the extension of the runway until such time as Pittsfield completes its Environmental Impact Statement.

7. If the Secretary of Transportation declines to take any of the actions described in the above paragraphs, Petitioners request that the Secretary direct MDOT to conduct a written re-evaluation of the Project and publish a new draft Environmental Assessment, which would then be subject to public participation in the form of substantive public hearings and comments.

8. Inform MDOT and ARB that in order to use federal funds for any future airport actions that will affect the surrounding community in general and Pittsfield in particular, they must consult and receive approval from Pittsfield prior to commencing any such action.

## **VII. CONCLUSION**

Federal law requires the Secretary of Transportation to give this petition prompt consideration. Additionally, under the Administrative Procedure Act “agency action” is defined to include “the whole or part of an agency rule, order, license, sanction, relief, or the equivalent denial there of *or failure to act.*” Therefore, Petitioners are requesting a substantive response to

this petition within one hundred eighty (180) calendar days.<sup>18</sup> In the absence of an affirmative response, Petitioners will be compelled to consider litigation in order to achieve the agency actions requested.

Dated: January 28, 2013

Respectfully submitted,

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<sup>18</sup> Petitioners note that a response period of 180 days is reasonable under the APA. See 42 U.S.C. § 7604(a) requiring notice of 180 days prior to commencement of an action for unreasonable delay.

## EXHIBIT LIST

No.	Title	Page
01	Airport Information for Ann Arbor Municipal Airport (KARB) as Reported on AirNav.com	5
02	Airport Master Record for Ann Arbor Municipal Airport (FAA Form 5010-1)	5
03	Bylaws of Ann Arbor Municipal Airport Advisory Committee	5
04	Resolution R-280-7-78 of the Ann Arbor City Council Approving Agreement between the City of Ann Arbor and Pittsfield Charter Township. July 6, 1978.	6, 9
05	Agreement Supplementing 1979 Policy Statement Relative to Airport Layout Plans, Aeronautical Facilities and Non-Aeronautical Facilities at the Ann Arbor Airport. October 1, 2009.	6,9
06	Resolution R-31-1-07 of the Ann Arbor City Council to Approve the URS Corporation Airport Layout Plan Update for the Ann Arbor Municipal Airport which Illustrates Existing and Proposed Facilities to meet the Future Demands of Airport Tenants and Users. January 22, 2007.	8,9
07	February 28, 2007, Request by the Ann Arbor City Council to MDOT to approve the Revised Airport Layout Plan.	8
08	March 24, 2009, Res #09-23 of Pittsfield Charter Township Opposing Proposed Expansion of the Ann Arbor Municipal Airport Runway.	10
09	May 12, 2009, Resolution # 2009-009 of Lodi Township Opposing Proposed Runway Expansion of the Ann Arbor Municipal Airport.	10
10	FAA Notice of Intent to Prepare an Environmental Assessment; Ann Arbor Municipal Airport, Ann Arbor, MI. 74 Fed.Reg. 28768 (June 17, 2009).	11
11	Meeting Minutes from the May 4, 2009, meeting of the Ann Arbor Municipal Airport Citizens Advisory Committee.	12
12	Meeting Minutes of the July 20, 2009, meeting of the Ann Arbor Municipal Airport Citizens Advisory Committee.	12
13	Meeting packet for the February 22, 2010, meeting of the Ann Arbor Municipal Airport Citizens Advisory Committee.	13
14	Notice of Availability of Draft Environmental Assessment; Ann Arbor Municipal Airport, Ann Arbor, MI. 75 Fed.Reg. 13334 (March 19, 2010).	14

<b>No.</b>	<b>Title</b>	<b>Page</b>
15	April 19, 2010, Comments on the Draft Environmental Assessment submitted by Pittsfield Charter Township.	15
16	April 19, 2010, Comments on the Draft Environmental Assessment submitted by Committee for Preserving Community Quality.	15
17	April 19, 2010, Comments on the Draft Environmental Assessment submitted by Janis A. Bobrin, Washtenaw County, Michigan Water Resources Commissioner.	15, 48 – 50
18	May 13, 2010, Comments on the Draft Environmental Assessment by the Federal Aviation Administration.	7, 15, 16, 26
19	November 15, 2010, Response of Michigan Department of Transportation to FAA’s Comments on the Draft Environmental Assessment.	7, 16, 27, 29, 32
20	April 27, 2012, Ann Arbor Chronicle Article regarding Airport Request for Additional Funding.	17
21	FAA Grant Assurances Airport Sponsors (4/2012).	22
22	Map of Lakes and Ponds that Support Hazardous Wildlife in Vicinity of Ann Arbor Municipal Airport.	23
23	URS Study Excluded from Draft Environmental Assessment and Airport Layout Plan.	23
24	Images of Aircraft Emergency Landing: Stonebridge Golf Course – June, 2009.	23
25	National Safety Transportation Board Reports regarding fatal accidents in the vicinity of Ann Arbor Municipal Airport.	23
26	March, 2010, Draft Ann Arbor Municipal Airport Environmental Assessment.	6, 27 – 33, 37, 39, 40, 45, 48, 49
27	Supplement Report Airport User Survey, December, 2009.	32
28	Nonattainment Status for Each County by Year for Michigan.	44
29	2008 Drinking Water Quality Report, Ann Arbor Public Services.	48
30	The Ann Arbor Chronicle Article from April 27, 2012 indicating rise in water table at Ann Arbor Municipal Airport.	49
31	2007 and 2008 Airport Layout Plans for Ann Arbor Municipal Airport.	8, 9

# **Exhibit 1**



[Airports](#)
[Nav aids](#)
[Airspace Fixes](#)
[Aviation Fuel](#)

[iPhone App](#)
1692 users online [LOGIN](#)

## KARB Ann Arbor Municipal Airport

Ann Arbor, Michigan, USA


**GOING TO ANN ARBOR?**
 Reserve a  
Hotel Room

 Rent a  
Car

   
[Reserve Online](#) [Reserve Online](#)

### FAA INFORMATION EFFECTIVE 10 JANUARY 2013

[Loc](#) | [Ops](#) | [Rwvs](#) | [IFR](#) | [FBO](#) | [Links](#)  
[Com](#) | [Nav](#) | [Svcs](#) | [Stats](#) | [Notes](#)

### Location

FAA Identifier: ARB

Lat/Long: 42-13-22.7410N / 083-44-44.1860W

42-13.379017N / 083-44.736433W

42.2229836 / -83.7456072

(estimated)

Elevation: 839 ft. / 256 m (estimated)

Variation: 05W (1985)

From city: 3 miles S of ANN ARBOR, MI

Time zone: UTC -5 (UTC -4 during Daylight Saving Time)

Zip code: 48108



### Airport Operations

Airport use: Open to the public

Activation date: 04/1940

 Sectional chart: [DETROIT](#)

Control tower: yes

ARTCC: CLEVELAND CENTER

FSS: LANSING FLIGHT SERVICE STATION

NOTAMS facility: ARB (NOTAM-D service available)

Attendance: APR-OCT 0800-1800, NOV-MAR 0800-2000

TERMINAL OPEN 0700-DUSK.

Pattern altitude: 1839 ft. MSL

Wind indicator: lighted

Segmented circle: yes

Lights: WHEN ATCT CLSD ACTVT ODALS RY 24 - CTAF.

Beacon: white-green (lighted land airport)

Operates sunset to sunrise.


 Road maps at: [MapQuest](#) [MapPoint](#) [Yahoo! Maps](#) [Google](#) [Rand McNally](#)

 Satellite photo at: [TerraServer](#) [Virtual Earth](#)

### Airport Communications

CTAF: 120.3

UNICOM: 123.0

ATIS: 134.55

### Aerial photo

WARNING: Photo may not be current or correct



WX ASOS: PHONE 313-668-7173

ANN ARBOR GROUND: 121.6 [0800-2000]

ANN ARBOR TOWER: 120.3 [0800-2000]

DETROIT APPROACH: 118.95

DETROIT DEPARTURE: 118.95

CLEARANCE DELIVERY: 121.6

EMERG: 121.5

WX ASOS at YIP (10 nm E): 132.35 (734-485-9056)

WX ASOS at DTW (17 nm E): PHONE 734-941-7848



Photo by Andrew Thompson.  
Photo taken 27-Jun-2009

**Nearby radio navigation aids**

VOR radial/distance	VOR name	Freq	Var
<a href="#">SVM</a> r214/13.0	SALEM VORTAC	114.30	03W
<a href="#">CRL</a> r312/16.6	CARLETON VORTAC	115.70	03W
<a href="#">DXO</a> r278/16.8	DETROIT VOR/DME	113.40	06W
<a href="#">PSI</a> r201/30.2	PONTIAC VORTAC	111.00	03W
<a href="#">JXN</a> r099/31.7	JACKSON VOR/DME	109.60	05W

NDB name	Hdg/Dist	Freq	Var	ID
<a href="#">TECUMSEH</a>	035/13.0	239	06W	TCU - - . - . - . -
<a href="#">ADRIAN</a>	041/25.8	278	06W	ADG . - . - . - . -
<a href="#">HOWELL</a>	162/26.8	243	05W	OZW - - - - . - . - . -
<a href="#">GROSSE ILE</a>	293/27.4	419	07W	RYS . - . - . - . - . -

**Airport Services**

Fuel available: 100LL JET-A

Parking: hangars and tie-downs

Airframe service: MAJOR

Powerplant service: MAJOR

Bottled oxygen: HIGH/LOW

Bulk oxygen: HIGH/LOW

**Runway Information**

**Runway 6/24**

Dimensions: 3505 x 75 ft. / 1068 x 23 m

Surface: concrete/grooved, in fair condition

Weight bearing capacity: Single wheel: 45.0

Double wheel: 70.0

Runway edge lights: medium intensity

**RUNWAY 6**

Latitude: 42-13.214628N

Longitude: 083-45.006382W

Elevation: 831.3 ft.

Gradient: 0.1%

Traffic pattern: left

Runway heading: 060 magnetic, 055 true

Markings: nonprecision, in fair condition

**RUNWAY 24**

42-13.549472N

083-44.374113W

826.0 ft.

0.1%

left

240 magnetic, 235 true

nonprecision, in fair condition

**Sectional chart**



**Airport diagram**

CAUTION: Diagram may not be current



[Download PDF](#)  
of official airport diagram from the FAA

**Airport distance calculator**

Flying to Ann Arbor Municipal Airport?  
Find the distance to fly.

Visual slope indicator: 4-light PAPI on left (3.00 degrees glide path) 2-box VASI on left (3.00 degrees glide path)  
 RY 06, PAPI UNUSABLE 7  
 DEGS LEFT & RIGHT OF COURSE.

From  to KARB

CALCULATE DISTANCE

Approach lights:

ODALS:  
 omnidirectional approach lighting system

**Sunrise and sunset**

Times for 24-Jan-2013

	Local (UTC-5)	Zulu (UTC)
Morning civil twilight	07:26	12:26
Sunrise	07:57	12:57
Sunset	17:38	22:38
Evening civil twilight	18:08	23:08

Runway end identifier lights: yes

Touchdown point: yes, no lights

Obstructions: 33 ft. trees, 924 ft. from runway, 370 ft. left of centerline, 21:1 slope to clear

yes, no lights  
 59 ft. trees, 1500 ft. from runway, 22:1 slope to clear

**Current date and time**

Zulu (UTC) 24-Jan-2013 22:19:29  
 Local (UTC-5) 24-Jan-2013 17:19:29

**Runway 12/30**

Dimensions: 2750 x 110 ft. / 838 x 34 m

Surface: turf, in fair condition

Runway edge markings: 12/30 MKD WITH YELLOW CONES.

**RUNWAY 12**

**RUNWAY 30**

Latitude: 42-13.495667N

42-13.254500N

Longitude: 083-45.050167W

083-44.534500W

Elevation: 839.0 ft.

822.0 ft.

Gradient: 0.6%

0.6%

Traffic pattern: left

left

Runway heading: 127 magnetic, 122 true

307 magnetic, 302 true

Runway end identifier lights: no

no

Obstructions: 42 ft. trees, 990 ft. from runway, 23:1 slope to clear  
 60 ft. trees, 768 ft. from runway, 115 ft. left of centerline, 12:1 slope to clear

**METAR**

**KARB** 734-668-7173  
 242153Z 32005KT 10SM CLR  
 M09/M20 A3053 RMK AO2 SLP357  
 T10891200 \$

**KYIP** 242153Z AUTO 30005KT 10SM  
 9nm E CLR M08/M18 A3055 RMK AO2  
 SLP357 T10831183 TSNO

**KDTW** 242153Z 27004KT 10SM BKN220  
 18nm E M08/M19 A3056 RMK AO2 SLP359  
 T10781194

**TAF**

**KYIP** 241726Z 2418/2518 34009KT  
 9nm E P6SM FEW060 FM250100  
 VRB02KT P6SM BKN100 OVC220  
 FM250900 15005KT 5SM -SN  
 BKN050 OVC100 FM251300  
 16005KT 3SM -SN BR BKN010  
 OVC020 FM251700 16005KT 1SM  
 -SN BR OVC020

**KDTW** 241726Z 2418/2524 33009KT  
 18nm E P6SM FEW025 SCT100 FM250100  
 VRB02KT P6SM BKN100 OVC220  
 FM251000 15005KT 5SM -SN  
 BKN050 OVC100 FM251300  
 16005KT 3SM -SN BR BKN010  
 OVC020 FM251700 16005KT 1SM  
 -SN BR OVC020 FM252100  
 18006KT 5SM -SN BR OVC030

**Airport Ownership and Management from official FAA records**

Ownership: Publicly-owned

Owner: ROGER W. FRASER

100 N, FIFTH AVE

ANN ARBOR, MI 48104

Phone 734-994-2650

Manager: MATTHEW KULHANEK

100 N, FIFTH AVE, P.O. BOX 8647

ANN ARBOR, MI 48107-8647

Phone 734-994-9124

**NOTAMs**

Click for the latest NOTAMs

NOTAMs are issued by the DoD/FAA and will open in a separate window not controlled by AirNav.

**Airport Operational Statistics**

Aircraft based on the field: 165 Aircraft operations: avg 161/day \*  
 Single engine airplanes: 137 64% local general aviation  
 Multi engine airplanes: 16 36% transient general aviation  
 Jet airplanes: 1 \* for 12-month period ending 31 December 2011  
 Helicopters: 10  
 Ultralights: 1

**Additional Remarks**

- BIRDS ON & INVOF ARPT.
- WHEN ATCT CLSD CONFIRM SNOW REMOVAL OPNS & WINTER CONDS - CTAF.
- RY 24 RUNUP AREA, FIRST 200 FT OF TWY A, & TWY AI BTN TWY A & RY 24 HOL LINE NOT VSB FM TWR.
- NO SNOW REMOVAL FOR RY 12/30.
- 24 HR RESTROOMS LCTD IN Q-ROW NW HANGARS, COMBINATION 13455.

## Instrument Procedures

NOTE: All procedures below are presented as PDF files. If you need a reader for these files, you should [download](#) the free Adobe Reader.

**NOT FOR NAVIGATION.** Please procure official charts for flight.

FAA instrument procedures published for use between 10 January 2013 at 0901Z and 7 March 2013 at 0900Z.

### STARs - Standard Terminal Arrivals

CRUXX FOUR	2 pages: [ <a href="#">1</a> ] [ <a href="#">2</a> ] (253KB)
GOHMA TWO	<a href="#">download</a> (143KB)
LLEEO TWO	<a href="#">download</a> (319KB)
SPRTN THREE	<a href="#">download</a> (155KB)

### IAPs - Instrument Approach Procedures

RNAV (GPS) RWY 06	<a href="#">download</a> (221KB)
RNAV (GPS) RWY 24	<a href="#">download</a> (256KB)
VOR RWY 06	<a href="#">download</a> (201KB)
VOR RWY 24	<a href="#">download</a> (206KB)
NOTE: Special Alternate Minimums apply	<a href="#">download</a> (26KB)

### Departure Procedures

AKRON THREE	2 pages: [ <a href="#">1</a> ] [ <a href="#">2</a> ] (272KB)
ERRTH THREE	2 pages: [ <a href="#">1</a> ] [ <a href="#">2</a> ] (372KB)
FORT WAYNE FOUR	2 pages: [ <a href="#">1</a> ] [ <a href="#">2</a> ] (249KB)
MOONN THREE	2 pages: [ <a href="#">1</a> ] [ <a href="#">2</a> ] (362KB)
PALACE SIX <b>**NEW**</b>	2 pages: [ <a href="#">1</a> ] [ <a href="#">2</a> ] (450KB)
RICHMOND FIVE	2 pages: [ <a href="#">1</a> ] [ <a href="#">2</a> ] (266KB)
ROSEWOOD THREE	2 pages: [ <a href="#">1</a> ] [ <a href="#">2</a> ] (259KB)
ST. CLAIR FIVE <b>**NEW**</b>	<a href="#">download</a> (306KB)

Other nearby airports with instrument procedures:

[KYIP](#) - Willow Run Airport (10 nm E)

[3TE](#) - Meyers-Diver's Airport (15 nm SW)

[1D2](#) - Canton-Plymouth-Mettetal Airport (15 nm NE)

[KDTW](#) - Detroit Metropolitan Wayne County Airport (17 nm E)

[Y47](#) - Oakland Southwest Airport (18 nm N)

## FBO, Fuel Providers, and Aircraft Ground Support

**Business Name**

**Contact**

**Services / Description**

**Fuel Prices**

**Comments**

Aviation fuel, Oxygen service, Aircraft parking





(ramp or tiedown), Flight training, Aircraft rental, Aerial tours / aerial sightseeing, Aircraft maintenance, ...  
**UNICOM 123.00**  
 734-662-6806  
 734-662-0559  
[\[web site\]](#)  
[\[email\]](#)



Excellence in Aviation. From beginning student pilots through ATP, Aircraft Sales, Full Service Maintenance facility and professional staff, Solo Aviation is conveniently located at the main terminal.

**UNICOM 123.00**  
 734-994-6651  
 734-994-6671  
[\[web site\]](#)  
[\[email\]](#)



100LL Jet A  
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**MEMBERS ONLY**  
**Discounts**



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100LL Jet A  
 FS \$5.75 \$4.98  
**GUARANTEED**  
**MEMBERS ONLY**  
**Discounts**

not yet rated

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FS=[Full service](#)

[UPDATE PRICES](#)



## Where to Stay: Hotels, Motels, Resorts, B&Bs, Campgrounds

In this space we feature lodging establishments that are convenient to the Ann Arbor Municipal Airport. If your hotel/inn/B&B/resort is near the Ann Arbor Municipal Airport, provides convenient transportation, or is otherwise attractive to pilots, flight crews, and airport users, consider listing it here.

[FEATURE A LODGING ESTABLISHMENT](#)

### AirNav users who flew into KARB have stayed at...

	Miles	Price (\$)
<a href="#">COURTYARD BY MARRIOTT ANN ARBOR</a>	1.3	159-169
<a href="#">SHERATON ANN ARBOR HOTEL</a>	1.3	149-169
<a href="#">CLARION HOTEL AND CONFERENCE CENTER</a>	4.7	75-120
<a href="#">RED ROOF INN ANN ARBOR - UNIVERSITY OF MICHIGAN SOUTH</a>	1.2	70-71
<a href="#">HOLIDAY INN EXPRESS &amp; SUITES ANN ARBOR</a>	1.2	133-209
<a href="#">CANDLEWOOD SUITES DETROIT ANN ARBOR</a>	1.5	103-139
<a href="#">SLEEP INN &amp; SUITES</a>	9.4	80-120

### Hotels in other cities near Ann Arbor Municipal Airport

27 in <a href="#">Ann Arbor</a>	2 in <a href="#">Chelsea</a>
	3 in <a href="#">Plymouth</a>
1 in <a href="#">Ypsilanti</a>	27 in <a href="#">Romulus</a>
1 in <a href="#">Milan</a>	4 in <a href="#">Dundee</a>
4 in <a href="#">Belleville</a>	2 in <a href="#">Northville</a>
9 in <a href="#">Canton</a>	

### Other hotels near Ann Arbor Municipal Airport

	Miles	Price (\$)
<a href="#">EXTENDED STAY AMERICA DETROIT - ANN ARBOR</a>	1.1	80-90
<a href="#">THE KENSINGTON COURT</a>	1.2	148-168
<a href="#">COMFORT INN &amp; SUITES ANN ARBOR</a>	1.2	110-111
<a href="#">HAMPTON INN ANN ARBOR-SOUTH</a>	1.2	144-145
<a href="#">RESIDENCE ANN ARBOR BY MARRIOTT</a>	1.2	169-179
<a href="#">FAIRFIELD INN BY MARRIOTT ANN ARBOR</a>	1.3	89-99
<a href="#">EXTENDED STAY DELUXE DETROIT - ANN ARBOR</a>	1.3	83-98
<a href="#">HOLIDAY INN &amp; SUITES ANN ARBOR UNIV MICHIGAN AREA</a>	1.4	137-176
<a href="#">LAMP POST INN</a>	3.0	54-73
<a href="#">A VICTORY INN &amp; SUITES - ANN ARBOR</a>	3.7	50-80
<a href="#">ANN ARBOR REGENT HOTEL &amp; SUITES</a>	3.9	114-144

[DAYS INN OF ANN ARBOR](#)

3.9 59-85

[BELL TOWER HOTEL](#)

3.9 199-304

[COMFORT INN AND SUITES ANN ARBOR](#)

3.9 80-90

Distances are approximate, and may vary depending on the actual route traveled and the location of the travel start on the airport.

### Would you like to see your business listed on this page?

If your business provides an interesting product or service to pilots, flight crews, aircraft, or users of the Ann Arbor Municipal Airport, you should consider listing it here. To start the listing process, click on the button below

[ADD YOUR BUSINESS OR SERVICE](#)

### Other Pages about Ann Arbor Municipal Airport

[www.ci.ann-arbor.mi.us/...](#)

[www.umich.edu/...](#)

[Page from the Michigan Airport Directory \(PDF\)](#)

[UPDATE, REMOVE OR ADD A LINK](#)

# Exhibit 2



> 1 ASSOC CITY: ANN ARBOR 4 STATE: MI LOC ID: ARB FAA SITE NR: 09524.\*A  
> 2 AIRPORT NAME: ANN ARBOR MUNI 5 COUNTY: WASHTENAW MI  
3 CBD TO AIRPORT (NM): 03 S 6 REGION/ADO: AGL/DET 7 SECT AERO CHT: DETROIT

<u>GENERAL</u>		<u>SERVICES</u>		<u>BASED AIRCRAFT</u>	
10 OWNERSHIP:	PU	> 70 FUEL:	100LL A	90 SINGLE ENG:	137
> 11 OWNER:	ROGER W. FRASER	> 71 AIRFRAME RPRS:	MAJOR	91 MULTI ENG:	16
> 12 ADDRESS:	100 N, FIFTH AVE ANN ARBOR, MI 48104	> 72 PWR PLANT RPRS:	MAJOR	92 JET:	1
> 13 PHONE NR:	734-994-2650	> 73 BOTTLE OXYGEN:	HIGH/LOW	TOTAL:	154
> 14 MANAGER:	MATTHEW KULHANEK	> 74 BULK OXYGEN:	HIGH/LOW	93 HELICOPTERS:	10
> 15 ADDRESS:	100 N, FIFTH AVE, P.O. BOX 8647 ANN ARBOR, MI 48107-8647	75 TSNT STORAGE:	HGR, TIE	94 GLIDERS:	0
> 16 PHONE NR:	734-994-9124	76 OTHER SERVICES:	AVNCS, CHTR, INSTR, RNTL, TOW	95 MILITARY:	0
> 17 ATTENDANCE SCHEDULE:				96 ULTRA-LIGHT:	1
APR-OCT ALL	0800-1800	<u>FACILITIES</u>		<u>OPERATIONS</u>	
NOV-MAR ALL	0800-2000	> 80 ARPT BCN:	CG	100 AIR CARRIER:	0
		> 81 ARPT LGT SKED:	SEE RMK	102 AIR TAXI:	0
		> 82 UNICOM:	123.000	103 G A LOCAL:	37,511
		> 83 WIND INDICATOR:	YES-L	104 G A ITNRNT:	21,174
18 AIRPORT USE:	PUBLIC	84 SEGMENTED CIRCLE:	YES	105 MILITARY:	0
19 ARPT LAT:	42-13-22.7410N ESTIMATED	85 CONTROL TWR:	YES	TOTAL:	58,685
20 ARPT LONG:	083-44-44.1860W	86 FSS:	LANSING	OPERATIONS FOR 12	
21 ARPT ELEV:	839.0 ESTIMATED	87 FSS ON ARPT:	NO	MONTHS ENDING	12/31/2011
22 ACREAGE:	837	88 FSS PHONE NR:			
> 23 RIGHT TRAFFIC:		89 TOLL FREE NR:	1-800-WX-BRIEF		
> 24 NON-COMM LANDING:					
25 NPIAS/FED AGREEMENTS:NGY					
> 26 FAR 139 INDEX:					

<u>RUNWAY DATA</u>					
> 30 RUNWAY IDENT:		06/24	12/30		
> 31 LENGTH:		3,505	2,750		
> 32 WIDTH:		75	110		
> 33 SURF TYPE-COND:		CONC-F	TURF-F		
> 34 SURF TREATMENT:		GRVD			
35 GROSS WT:	SW	45.0			
36 (IN THSDS)	DW	70.0			
37	DTW				
38	DDTW				
> 39 PCN:					
<u>LIGHTING/APCH AIDS</u>					
> 40 EDGE INTENSITY:		MED			
> 42 RWY MARK TYPE-COND:		NPI - F / NPI - F	- / -	- / -	- / -
> 43 VGSI:		P4L / V2L	/	/	/
44 THR CROSSING HGT:		20 / 20	/	/	/
45 VISUAL GLIDE ANGLE:		3.00 / 3.00	/	/	/
> 46 CNTRLN-TDZ:		N - N / N - N	N - N / N - N	- / -	- / -
> 47 RVR-RVV:		- N / - N	- N / - N	- / -	- / -
> 48 REIL:		Y /	N / N	/	/
> 49 APCH LIGHTS:		/ ODALS	/	/	/
<u>OBSTRUCTION DATA</u>					
50 FAR 77 CATEGORY:		A(NP) / A(NP)	A(V) / A(V)	/	/
> 51 DISPLACED THR:		/	/	/	/
> 52 CTLG OBSTN:		TREES / TREES	TREES / TREES	/	/
> 53 OBSTN MARKED/LGTD:		/	/	/	/
> 54 HGT ABOVE RWY END:		33 / 59	42 / 60	/	/
> 55 DIST FROM RWY END:		924 / 1,500	990 / 768	/	/
> 56 CNTRLN OFFSET:		370L / 0B	0B / 115L	/	/
57 OBSTN CLNC SLOPE:		21:1 / 22:1	23:1 / 12:1	/	/
58 CLOSE-IN OBSTN:		N / N	N / N	/	/
<u>DECLARED DISTANCES</u>					
> 60 TAKE OFF RUN AVBL (TORA):		/	/	/	/
> 61 TAKE OFF DIST AVBL (TODA):		/	/	/	/
> 62 ACLT STOP DIST AVBL (ASDA):		/	/	/	/
> 63 LNDG DIST AVBL (LDA):		/	/	/	/

(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:

A 017 TERMINAL OPEN 0700-DUSK.  
A 042 RWY 12 12/30 MKD WITH YELLOW CONES.  
A 043 RWY 06 RY 06, PAPI UNUSABLE 7 DEGS LEFT & RIGHT OF COURSE.  
A 081 RWY APT WHEN ATCT CLSD ACTVT ODALS RY 24 - CTAF.  
A 110 THIS AIRPORT HAS BEEN SURVEYED BY THE NATIONAL GEODETIC SURVEY.  
A 110-1 BIRDS ON & INVOF ARPT.  
A 110-2 WHEN ATCT CLSD CONFIRM SNOW REMOVAL OPNS & WINTER CONDS - CTAF.

111 INSPECTOR: ( S ) 112 LAST INSP: 07/11/2012 113 LAST INFO REQ:



> 1 ASSOC CITY: \*\*\*\*\*CONTINUED\*\*\*\*\* 4 STATE: MI LOC ID: ARB FAA SITE NR: 09524.\*A  
> 2 AIRPORT NAME: 5 COUNTY:  
3 CBD TO AIRPORT (NM): 6 REGION/ADO: AGL/DET 7 SECT AERO CHT:

<p><u>GENERAL</u></p> <p>10 OWNERSHIP: &gt; 11 OWNER: &gt; 12 ADDRESS:  &gt; 13 PHONE NR: &gt; 14 MANAGER: &gt; 15 ADDRESS:  &gt; 16 PHONE NR: &gt; 17 ATTENDANCE SCHEDULE:  18 AIRPORT USE: 19 ARPT LAT: 20 ARPT LONG: 21 ARPT ELEV: 22 ACREAGE: &gt; 23 RIGHT TRAFFIC: &gt; 24 NON-COMM LANDING: 25 NPIAS/FED AGREEMENTS: &gt; 26 FAR 139 INDEX:</p>	<p><u>SERVICES</u></p> <p>&gt; 70 FUEL:  &gt; 71 AIRFRAME RPRS: &gt; 72 PWR PLANT RPRS: &gt; 73 BOTTLE OXYGEN: &gt; 74 BULK OXYGEN: 75 TSNT STORAGE: 76 OTHER SERVICES:  <u>FACILITIES</u>  &gt; 80 ARPT BCN: &gt; 81 ARPT LGT SKED: &gt; 82 UNICOM: &gt; 83 WIND INDICATOR: 84 SEGMENTED CIRCLE: 85 CONTROL TWR: 86 FSS: 87 FSS ON ARPT: 88 FSS PHONE NR: 89 TOLL FREE NR:</p>	<p><u>BASED AIRCRAFT</u></p> <p>90 SINGLE ENG: 91 MULTI ENG: 92 JET:  TOTAL:  93 HELICOPTERS: 94 GLIDERS: 95 MILITARY: 96 ULTRA-LIGHT:  <u>OPERATIONS</u> 100 AIR CARRIER: 102 AIR TAXI: 103 G A LOCAL: 104 G A ITNRNT: 105 MILITARY: TOTAL:  OPERATIONS FOR 12 MONTHS ENDING</p>
--	---	---

RUNWAY DATA

> 30 RUNWAY IDENT:  
> 31 LENGTH:  
> 32 WIDTH:  
> 33 SURF TYPE-COND:  
> 34 SURF TREATMENT:  
35 GROSS WT: SW  
36 (IN THSDS) DW  
37 DTW  
38 DDTW  
> 39 PCN:  
LIGHTING/APCH AIDS  
> 40 EDGE INTENSITY:  
> 42 RWY MARK TYPE-COND:  
> 43 VGSI:  
44 THR CROSSING HGT:  
45 VISUAL GLIDE ANGLE:  
> 46 CNTRLN-TDZ:  
> 47 RVR-RVV:  
> 48 REIL:  
> 49 APCH LIGHTS:  
OBSTRUCTION DATA  
50 FAR 77 CATEGORY:  
> 51 DISPLACED THR:  
> 52 CTLG OBSTN:  
> 53 OBSTN MARKED/LGTD:  
> 54 HGT ABOVE RWY END:  
> 55 DIST FROM RWY END:  
> 56 CNTRLN OFFSET:  
57 OBSTN CLNC SLOPE:  
58 CLOSE-IN OBSTN:  
DECLARED DISTANCES  
> 60 TAKE OFF RUN AVBL (TORA):  
> 61 TAKE OFF DIST AVBL (TODA):  
> 62 ACLT STOP DIST AVBL (ASDA):  
> 63 LNDG DIST AVBL (LDA):

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(>) ARPT MGR PLEASE ADVISE FSS IN ITEM 86 WHEN CHANGES OCCUR TO ITEMS PRECEDED BY >

> 110 REMARKS:  
A 110-3 RY 24 RUNUP AREA, FIRST 200 FT OF TWY A, & TWY AI BTN TWY A & RY 24 HOL LINE NOT VSB FM TWR.  
A 110-4 NO SNOW REMOVAL FOR RY 12/30.  
A 110-5 24 HR RESTROOMS LCTD IN Q-ROW NW HANGARS, COMBINATION 13455.

111 INSPECTOR: ( S ) 112 LAST INSP: 07/11/2012 113 LAST INFO REQ:



# Exhibit 3

**BY LAWS OF THE  
ANN ARBOR MUNICIPAL AIRPORT ADVISORY COMMITTEE**

*As adopted November 15, 1995  
Revised and Approved at the January 25, 2006 Meeting*

WHEREAS, the Ann Arbor City Council has created the Airport Advisory Committee for the purpose of making recommendations to the Council regarding the construction and operation of the Airport, and

WHEREAS, the Committee size is established at seven (7) members, and

WHEREAS, the Committee finds it desirable to adopt By Laws so that it may more efficiently fulfill its obligations to the City and Council; and

WHEREAS, the Airport Advisory Committee is playing an increasingly important part in policy matters regarding the airport; and

WHEREAS, the need of diligence and continuity of effort has increased; and

WHEREAS, the members of the committee have expressed a desire to amend the By Laws which govern them;

THEREFORE, the Airport Advisory Committee has approved the following By Laws effective January 18, 1995, as amended April 17, 1996, May 15, 1996, July 17, 1996, June 18, 1997, April 15, 1998, November 18, 1998, June 20, 2001, February 19, 2003 and January 25, 2006.

I

OFFICE

1. The principal office of the Committee shall be at the Ann Arbor Municipal Airport Administration Building.

2. The Committee may also have offices in such other places as the Committee may from time to time designate.

II

MEMBERS AND OFFICERS

1. The voting members of the Committee shall be seven (7) individuals duly designated by the Mayor and approved by City Council. Each new member shall serve for a term of three (3) years, and may serve no more than two (2) terms. A member whose term has expired may serve until a successor is appointed, or sixty days after the expiration of the term, whichever occurs first.

2. The Airport Manager shall be an ex-officio member without vote. Pittsfield and Lodi Townships may each name an ex-officio non-voting member to the committee.

3. Members are expected to attend all regularly scheduled and convened meetings of the Committee. Should a member miss two (2) meetings in succession or two (2) of four (4) meetings, the Chair may inquire of the absent member concerning their intention to continue serving on the Committee. Should a member miss three (3) meetings in succession or three (3) of five (5) meetings, the Chair may refer the name of the absent member to the Mayor of the City with the suggestion to dismiss the member and appoint another person to fill the unexpired term.

4. The officers of the Committee shall be a Chair, and Vice Chair. The Airport Manager shall serve as secretary.

5. The Committee at its November meeting shall choose the Chair and Vice Chair for one-year terms, effective at its next regularly scheduled meeting.

6. The Chair and Vice Chair shall hold office until their successors are chosen and qualify in their stead. If the office of Chair becomes vacant the Vice Chair shall succeed to that office for the unexpired term of that office. If the office of Vice Chair becomes vacant the Committee shall elect a successor from its membership at the next regular meeting, and such election shall be for the unexpired term of that office.

### III

#### MEETINGS

1. Place. All meetings of the Committee shall be held at its offices at the Ann Arbor Municipal Airport Administration Building or at such other place as the Committee may from time to time designate.

2. Regular Meetings. Regular meetings of the Committee shall be held without notice on the third Wednesday of every other month (January, March, May, July, September, and November) at the offices of the Committee or such other time and place as may be designated in accordance with these By Laws.

3. Special Meetings. The Chair of the Committee may, when deemed by the Chair to be expedient, and shall, upon the request of at least one member of the Committee, call a special meeting of the Committee for the purpose of transacting any business designated in the call. The call for a special meeting may be issued to each member of the Committee no later than two (2) days prior to the date of such special meeting. At such special meeting, no business shall be considered other than as designated in the call, but if all of the voting members of the Committee are present at a special meeting any and all business may be transacted at such special meeting.

4. Quorum. At all meetings of the Committee, a majority of the appointed voting members of the Committee shall constitute a quorum for the purpose of transacting business. Ex-officio members of the Committee shall not be counted in determining a quorum.

5. Order of Business. At the regular meeting of the Committee the following shall be the order of business:

1. Roll Call
2. Approval of Agenda
3. Reading and approval of minutes of previous meeting
4. Audience participation
5. Reports of Airport Manager
6. Reports of Townships/FAA Tower Manager/Committees
7. Unfinished business
8. New Business
9. Items for Next Agenda
10. Notice of Next Scheduled Meeting
11. Adjournment

The order of business may be changed with the consent of a majority of members present.

6. Audience Participation. Audience participation in Committee meetings shall appear near the beginning of the agenda, for the purpose of addressing any item on the agenda. Speakers shall be limited to three minutes. However, the sole representative of a group may speak five minutes. Audience participation may also be permitted later, regarding items not on the agenda.

7. Rules of Parliamentary Procedure. The rules of parliamentary practice comprised in Roberts Rules of Order shall govern the Committee in all cases to which they are applicable, provided they are not in conflict with these By-Laws.

8. Minutes of Proceedings. It shall be the responsibility of the secretary to prepare the minutes of the proceedings of each regular and special meeting of the Committee. At the option of the secretary, audio or video recordings may be utilized to assist in the production of written minutes.

#### IV

### ANNUAL REPORT

The Committee shall present to the Ann Arbor City Council in the month of February of each year, a report on the activities of the Committee and the Airport for the past calendar year. The report may contain recommendations to the Council.

#### V

### AMENDMENT TO THE BY LAWS

The By Laws of the Committee may be amended, added to, or repealed, or new By Laws may be adopted in lieu hereof by the affirmative vote of a majority of the Committee, provided that notice thereof shall be in the call of the meeting.

# Exhibit 4

Council unanimously agreed with Councilmember Morris to amend Paragraph A of Section I (Annexation - General) of the policy agreement as follows:

- A. All land areas in The Township lying west of U.S. 23 Expressway and north of the centerline SOUTH LINE of Ellsworth Road from U.S. 23 to the west line of Platt STATE Road, thence ~~southerly~~ to the Railroad right-of-way adjacent to the City Landfill; thence ~~westerly along the landfill line extended to Stone School Road, thence northerly along the east line of Stone School Road to the south line of Ellsworth Road, thence westerly to the west line of State Street, thence northerly to the south line of I-94,...~~

The question being the Resolution with the amended Policy Agreement.

On a voice vote, Chair declared the motion carried unanimously.

The Resolution as adopted reads as follows:

R-280-7-78

**RESOLUTION TO APPROVE CITY OF ANN ARBOR AND PITTSFIELD TOWNSHIP AGREEMENT**

WHEREAS, the City of Ann Arbor officials and Pittsfield Township officials have spent many months negotiating an agreement of understanding; and,

WHEREAS, both governments agree to the principle of cooperation and not confrontation; and,

WHEREAS, the agreement is deemed in the best interests of the citizens of both units of government;

NOW, THEREFORE, BE IT RESOLVED that the following agreement of understanding be approved.

**CITY OF ANN ARBOR—CHARTER TOWNSHIP OF PITTSFIELD POSITION PAPER ON PROMULGATION OF POLICIES**

Promulgation of Policies

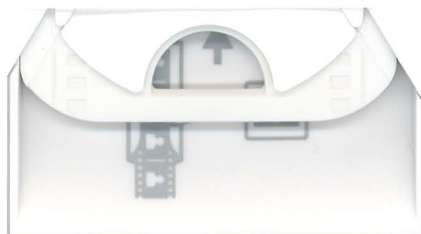
The CITY OF ANN ARBOR "The City", and the CHARTER TOWNSHIP OF PITTSFIELD, "The Township", by their respective governing bodies, for the purpose of furthering their common welfare, do hereby promulgate certain policies, and declare their intentions to abide the same in their exercise of governmental authority so far as practical and not in conflict with law.

I—ANNEXATION—GENERAL

- A. All land area in The Township lying west of U.S. 23 Expressway and north of the south line of Ellsworth Road from U.S. 23 to the west line of State Road, thence

northerly to the south line of I-94, thence westerly to the western boundary of The Township, shall be designated as "The Territory" and shall be eventually annexed to the City in an orderly manner.

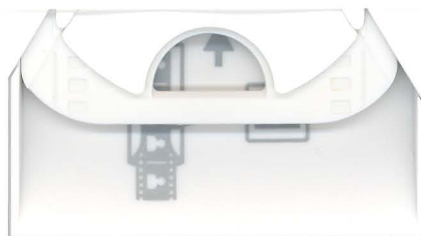
- B. It shall be understood that this aforementioned line is the unofficial boundary line until such times it can be so officially designated.
- C. Inasmuch as the Township and the City have an existing contract for sewer service for portions of the Township, the Township shall not make plans to provide municipal sewer and/or water service to any properties within said Territory, however the Township shall maintain all other legal authority and responsibility for Township lands and residents in the Territory until such time as they do become annexed to the City.
- D. Notwithstanding previous policies, decisions and procedures, the City and Township hereby agree that individual properties in the designated area may be annexed to the City even where such annexation may create new islands. Neither the City nor the Township shall interpose in any judicial or other proceeding pertaining to the annexation of any portion of the said Territory an objection to such annexation by reason that the same would create an enclave of Township land within the City.
- E. Neither the City nor the Township shall seek to require annexation to the City of any such enclave of Township land lying within the Territory, solely because of its constituting an enclave, whether now existing or hereafter created through the annexation of a portion of the Territory. Nevertheless, upon request to the City by the owner of a property within any said enclave for City water and/or sewer service to such property, the City may require such property to become annexed to the City as a condition of granting such service.
- F. The Township agrees that rather than furthering litigation in the case of the Pittsfield Islands, it will agree to the Boundary Commission decision of 1973 (File No. 8322) if the individual review procedure as set forth in paragraph I-H is applied.
- G. Through joint resolutions of the City and Township governing bodies any portion of the Territory within the designated area may be annexed to the City upon the petition therefor signed by the petitioners as provided by MCLA 117.9(8) in the case of such alternate method of annexation.
- H. Upon annexation to the City of properties within said Territory the City "deferred charges" thereon, for benefits conferred by capital improvements made prior to the annexation shall be payable at the property owners option, either in full, or in not



less than six (6) equal annual installments, provided that the same shall be payable in up to twelve (12) equal annual installments in cases of a property being, and continuing to be, the homestead of an owner occupant who has special hardship problems or is otherwise adjudged in need of special consideration. Hardship and special considerations may be conferred upon the single owner occupant at time of annexation. A transition appeals committee shall be established for the purpose of determining such need. It shall be authorized to make recommendations to City Council for special consideration and shall be comprised of two (2) members appointed from the City and one (1) member appointed from the Township.

## II—MUNICIPAL AIRPORT

- A. The City agrees that the pending appeal of the decision of the Washtenaw Circuit Court in the suit of the Township vs. the City (Docket No. 77-12619) respecting the City's proceedings to annex Territories in and about the Municipal Airport and a portion of Eisenhower Boulevard shall be dismissed.
- B. The Township agrees to cooperate with the City in the establishment of an Airport Land Use Plan which recognizes the compatibility of light industrial, warehousing, gravel mining and other uses on airport lands. The Township will review and comment on the plan before City adoption. It is further understood that any private construction on Airport lands will require approval under Township zoning and site plan requirements, as well as Township Building and Safety Department permit requirements. Plans for municipal construction on Airport lands must be submitted to the Township for review and comment.
- C. The Township agrees to establish a land use plan for the environs of the Airport which recognizes only land uses which are compatible to airport operations from a safety and environmental point of view. The City will review and comment on the plan before adoption by the Township.
- D. It is further agreed that gravel mining may take place only for use on City of Ann Arbor roads and public works projects and for use on Pittsfield Township roads, and public works projects. In addition, that a gravel processing plan, a restoration plan and a soil erosion plan be filed and reviewed by the Township.
- E. Excepting as exempt by law, the Township shall assess for taxes the real and personal properties of and upon the airport lands.
- F. The Township agrees to provide right-of-way for City sanitary sewage mains to the Airport to serve Airport properties uses only.





III—LANDFILL

- A. The City desires to expand its Landfill operations to the west on property known as the Derck, Nielsen, and McCalla parcels.
- B. The Township agrees to actively support and assist in acquisition negotiations such expansion on the conditions that:
  - 1. A land use and restoration plan be developed for long range use of the landfill area.
  - 2. That a reasonable strip of land immediately east of Stone School Road, as well as along Ellsworth Road, as well as along the northern edge of what is known as the Morgan properties is excluded for environmental purposes.
- C. A Landfill Expansion Advisory Committee composed of four (4) persons appointed by the City and three (3) persons appointed by the Township shall be created to advise the City on environmental and operational plans.
- D. The Township desires that it be given preferred customer consideration by the City in the use of the Landfill or offered an opportunity for proportionate investment equity if the Landfill is to be expanded in this location.
- E. The Township shall not adopt any ordinance, rule or regulation which regulates or attempts to regulate the City's use of the landfill property so long as that property is used for disposal of refuse materials or for park purposes.

IV—SEWER/WATER SERVICEES

- A. Upon acceptance and execution of this position paper, the City agrees to immediately approve the Township's request for sewer service limited to the Township Hall and the State Road frontage of a proposed commercial development at Ellsworth and State Roads in accordance with procedures established in Paragraph I-A of the Ann Arbor Pittsfield Sewer Service Agreement dated September 30, 1975. It is understood State Department of Natural Resources approval will be sought eagerly by the City.
- B. The sewer service will be provided at 103% of City rates in accordance with the aforementioned agreement.
- C. The City will agree to consider additional requests for service prior to the completion of the new "area wide treatment plant" on a case by case basis.

COMMUNICATIONS FROM THE MAYOR

Mayor Louis D. Belcher informed Councilmembers that he will be communicating with Mr. Robert Lillie, Pittsfield Township Supervisor, to advise him of the changes made tonight in the Pittsfield Township Agreement.

\*\*\*\*\*

Mayor Belcher alerted Council that there are several major Planning matters coming up for consideration, such as the eighty acres of land to be developed in the Briarwood area and a proposal for downtown housing.

\*\*\*\*\*

Mayor Belcher recommended the appointment of Hugh M. Wanty, 2061 Pauline Boulevard, to the Housing Board of Appeals to replace James J. O'Kane for an indefinite term.

Moved by Councilmember Trowbridge that Council concur in the recommendation of the Mayor.

On roll call the vote was as follows: Yeas, Councilmembers Latta, Greenberg, Morris, Senunas, Sheldon, Trowbridge, Cmejrek, Mayor Belcher, 8

Nays, 0

Councilmember Bell was absent from the Council Chamber at the time the vote was taken.

Chair declared the motion carried.

\*\*\*\*\*

Mayor Belcher recommended the appointment of Roberta Lea Shrope, 321 South Revena Boulevard, to the Planning Commission, effective July 1, 1978 for a three year term ending June 30, 1981.

Moved by Councilmember Cmejrek that Council concur in the recommendation of the Mayor.

On roll call the vote was as follows: Yeas, Councilmembers Senunas, Sheldon, Trowbridge, Cmejrek, Bell, Mayor Belcher, 6

Nays, Councilmembers Latta, Greenberg, Morris, 3

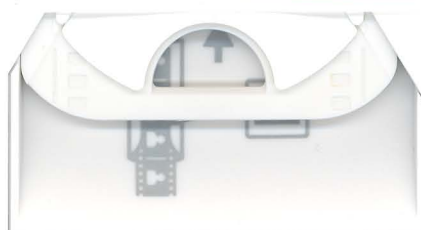
Chair declared the motion carried.

\*\*\*\*\*

Mayor Belcher laid the nomination on the table of Charles T. Wagner, 3425 Brentwood Court, to the Planning Commission to be confirmed at the next session of Council.

COMMUNICATIONS FROM COUNCIL COMMITTEES

None.



# Exhibit 5

**AGREEMENT SUPPLEMENTING 1979 POLICY STATEMENT  
RELATIVE TO AIRPORT LAYOUT PLANS, AERONAUTICAL FACILITIES  
AND NON-AERONAUTICAL FACILITIES AT THE ANN ARBOR AIRPORT**

This agreement (“Agreement”) is between the City of Ann Arbor (“Ann Arbor”), a Michigan Municipal Corporation and Pittsfield Charter Township (“Pittsfield”), a Michigan Municipal Corporation.

**RECITALS:**

Ann Arbor owns and operates the Ann Arbor Airport (“Airport”), which is located in Pittsfield Charter Township.

In 1979 Pittsfield and Ann Arbor entered into an agreement entitled “Policy Statement,” a portion of which has addressed certain aspects of the operation of the Ann Arbor Airport.

This Agreement is not intended to replace the Policy Statement. However, in the event of any conflict with the Policy Statement, this agreement shall apply.

Under the Michigan Aeronautics Code, MCL 259.1 et seq., Ann Arbor has jurisdictional control for the management, governance and use of the Airport, including application of its police powers, rules, regulations and ordinances, and including the zoning and planning of aeronautical facilities on the Airport property.

The City of Ann Arbor has adopted its construction code, including the building code, electrical code and mechanical code components thereof, in accordance with the Stille-DeRossett-Hale Single State Construction Code Act (MCL 125.1501 et seq.) (“construction code”). The City and the Township do not agree as to the authority granted to the City by the Michigan Aeronautics Code to extend and enforce its construction code at the Airport relative to aeronautical facilities. However, without deciding the extent of the City’s authority under the Michigan Aeronautics Code, the City and the Township agree that to the extent it may be necessary, this agreement is an agreement between two public agencies that constitutes an interlocal agreement for purposes of Sections 4 and 5 of the Urban Cooperation Act (MCL 124.504 and 124.505) and Subsection 8b(2) of the Stille-DeRossett-Hale Single State Construction Code Act (MCL 125.1508b(2)) by which the City and the Township agree that the City shall extend and enforce its construction code to all aeronautical facilities constructed on Airport property, including issuing permits, inspections and enforcement of violations.

The Airport is serviced in whole by Pittsfield sanitary sewer service and is serviced in part by Pittsfield water service.

Unless and until Ann Arbor or the Airport qualifies as an authorized public agency for the Airport under Section 9110 of Part 91, Soil Erosion and Sedimentation Control, of

the Natural Resources and Environmental Protection Act, MCL 324.9110, Pittsfield has jurisdiction over the Airport for soil erosion and sedimentation control.

Wherefore, the parties agree as follows:

1. "Aeronautical facilities" means Airport buildings, landing fields and other facilities that are used for and serve aeronautical or aeronautically related operations and purposes. Aeronautical facilities include both facilities constructed by Ann Arbor and facilities that are privately constructed.
2. "Non-aeronautical facilities" means facilities whose use is unrelated to aeronautical operations or purposes.
3. A modification of the Airport Layout Plan is a land use plan as used in Section II.B. of the Policy Statement.
4. If a modification of the Airport Layout Plan is proposed, Ann Arbor will give notice to Pittsfield's Building Official or such other person as Pittsfield designates in writing, of the intent to modify the Airport layout plan at least 30 days before authorizing a professional services agreement for the modification. At least 30 days before submitting a modification of the Airport Layout Plan for approval by the Michigan Aeronautics Commission or the Federal Aviation Administration, Ann Arbor will provide Pittsfield's Building Official with copies of the documents to be submitted to those bodies. After approval of a modified Airport Layout Plan by the Michigan Aeronautics Commission or the Federal Aviation Administration, Ann Arbor will provide Pittsfield's Building Official with a copy of the proposed modification at least 30 days before the Ann Arbor City Council meeting at which it is to be submitted for approval.
5. Annually Ann Arbor will provide Pittsfield's Building Official, or such other person as Pittsfield designates in writing, with a copy of the five year Airport Improvement Plan for the Airport.
6. If Ann Arbor applies for grant funds for new or expanded facilities shown or listed on the Airport Layout Plan or Airport Improvement Plan it will notify Pittsfield's Building Official, or such other person as Pittsfield designates in writing, of the application.
7. Aeronautical facilities being constructed at the Ann Arbor Airport are not required to go through the Pittsfield site plan review and approval process. However, when civil construction drawings for a project have been completed, but prior to bid for construction of the facilities, Ann Arbor will submit copies of the civil construction drawings to Pittsfield's Building Official, or such other person as Pittsfield designates in writing, for review and comment. The plans submitted to Pittsfield shall consist of four (4) sets of full sized drawings and a description of

the type of project, the general scope and the time frame. All proposed utilities associated with civil construction drawings for a project shall meet all current Township Land Development Standards.

8. Typical administrative fees will not be charged for the review of the plans submitted pursuant to paragraph 7, but the City will be responsible for establishing an Airport Plan (AP) escrow account for costs, which Pittsfield agrees shall be limited to its actual costs for plan review and comment.
9. Pittsfield will provide a written evaluation of the plans specified in paragraph 7 based on the Pittsfield Zoning Ordinance and Land Development Standards to Ann Arbor's Fleet & Facilities Manager, or such other person as Ann Arbor designates in writing, within two (2) weeks of the submittal in order to permit Ann Arbor staff to consider its comments.
10. Ann Arbor will consider and endeavor to incorporate reasonable recommendations provided by Pittsfield.
11. Ann Arbor will obtain soil erosion and sedimentation control permits for the Airport from Pittsfield until such time as Ann Arbor or the Airport qualifies as an authorized public agency for the Airport under Section 9110 of Part 91, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act, MCL 324.9110.
12. Ann Arbor will obtain Pittsfield utility permits as required by Pittsfield ordinance for connections to Pittsfield sanitary sewer or water lines.
13. Ann Arbor shall extend and enforce its construction code, including the building code, electrical code and mechanical code components thereof, to all aeronautical facilities constructed on Airport property and provide Pittsfield's Building Official, or such other person as Pittsfield designates in writing, with copies of all construction permit documents including the application, the permit, inspection reports and any certificate of occupancy within thirty days of being issued or received.
14. Non-aeronautical facilities at the Airport will be required to comply with Pittsfield planning and zoning requirements and the Pittsfield construction code ordinance.
15. Nothing contained in this agreement shall be construed as limiting Pittsfield's authority to enforce the State Construction Code regarding any violations of that code for non-aeronautical facilities.
16. Nothing contained in this agreement shall exempt aeronautical facilities from being in compliance with the State Construction Code unless said facilities are under the jurisdiction of the Federal Aviation Administration.

17. Ann Arbor shall extend and enforce its fire prevention code to all aeronautical facilities located on Airport property and provide Pittsfield's Building Official, or such other person as Pittsfield designates in writing, with copies of all fire inspection documents including fire alarm and detection systems and fire extinguishing system certification and test reports, and all required operational permits within thirty days of being issued or received.
18. This agreement shall be approved by the concurrent resolutions of the Ann Arbor City Council and Pittsfield Charter Township Board of Trustees.
19. This agreement shall take effect October 1, 2009 or after a copy has been filed with both the Washtenaw County Clerk and the Michigan Secretary of State, whichever is later.
20. This agreement shall have a term of 5 years beginning on October 1, 2009. It shall automatically renew for successive 5 year periods unless either party provides the other with written notice of non-renewal at least 60 days before the end of a term.

Dated: \_\_\_\_\_  
City of Ann Arbor

Dated: \_\_\_\_\_  
Pittsfield Charter Township

By \_\_\_\_\_  
John Hieftje, Mayor

By \_\_\_\_\_  
Mandy Grewal, Township Supervisor

By \_\_\_\_\_  
Jacqueline Beaudry, City Clerk

By \_\_\_\_\_  
Allen Israel, Township Clerk

Approved as to form:

Approved as to form:

\_\_\_\_\_  
Stephen K. Postema, City Attorney

\_\_\_\_\_  
R. Bruce Laidlaw, Township Attorney

Council unanimously agreed with Councilmember Morris to amend Paragraph A of Section I (Annexation - General) of the policy agreement as follows:

- A. All land areas in The Township lying west of U.S. 23 Expressway and north of the centerline SOUTH LINE of Ellsworth Road from U.S. 23 to the west line of Platt STATE Road, thence ~~southerly~~ to the Railroad right-of-way adjacent to the City Landfill; thence ~~westerly along the landfill line extended to Stone School Road, thence northerly along the east line of Stone School Road to the south line of Ellsworth Road, thence westerly to the west line of State Street, thence northerly to the south line of I-94,...~~

The question being the Resolution with the amended Policy Agreement.

On a voice vote, Chair declared the motion carried unanimously.

The Resolution as adopted reads as follows:

R-280-7-78

**RESOLUTION TO APPROVE CITY OF ANN ARBOR AND PITTSFIELD TOWNSHIP AGREEMENT**

WHEREAS, the City of Ann Arbor officials and Pittsfield Township officials have spent many months negotiating an agreement of understanding; and,

WHEREAS, both governments agree to the principle of cooperation and not confrontation; and,

WHEREAS, the agreement is deemed in the best interests of the citizens of both units of government;

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**CITY OF ANN ARBOR—CHARTER TOWNSHIP OF PITTSFIELD POSITION PAPER ON PROMULGATION OF POLICIES**

Promulgation of Policies

The CITY OF ANN ARBOR "The City", and the CHARTER TOWNSHIP OF PITTSFIELD, "The Township", by their respective governing bodies, for the purpose of furthering their common welfare, do hereby promulgate certain policies, and declare their intentions to abide the same in their exercise of governmental authority so far as practical and not in conflict with law.

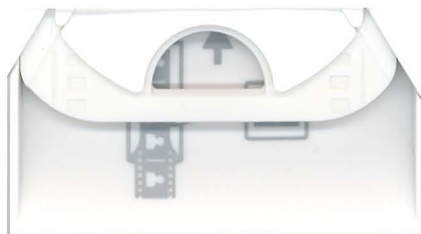
I—ANNEXATION—GENERAL

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northerly to the south line of I-94, thence westerly to the western boundary of The Township, shall be designated as "The Territory" and shall be eventually annexed to the City in an orderly manner.

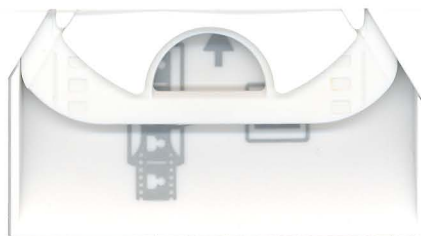
- B. It shall be understood that this aforementioned line is the unofficial boundary line until such times it can be so officially designated.
- C. Inasmuch as the Township and the City have an existing contract for sewer service for portions of the Township, the Township shall not make plans to provide municipal sewer and/or water service to any properties within said Territory, however the Township shall maintain all other legal authority and responsibility for Township lands and residents in the Territory until such time as they do become annexed to the City.
- D. Notwithstanding previous policies, decisions and procedures, the City and Township hereby agree that individual properties in the designated area may be annexed to the City even where such annexation may create new islands. Neither the City nor the Township shall interpose in any judicial or other proceeding pertaining to the annexation of any portion of the said Territory an objection to such annexation by reason that the same would create an enclave of Township land within the City.
- E. Neither the City nor the Township shall seek to require annexation to the City of any such enclave of Township land lying within the Territory, solely because of its constituting an enclave, whether now existing or hereafter created through the annexation of a portion of the Territory. Nevertheless, upon request to the City by the owner of a property within any said enclave for City water and/or sewer service to such property, the City may require such property to become annexed to the City as a condition of granting such service.
- F. The Township agrees that rather than furthering litigation in the case of the Pittsfield Islands, it will agree to the Boundary Commission decision of 1973 (File No. 8322) if the individual review procedure as set forth in paragraph I-H is applied.
- G. Through joint resolutions of the City and Township governing bodies any portion of the Territory within the designated area may be annexed to the City upon the petition therefor signed by the petitioners as provided by MCLA 117.9(8) in the case of such alternate method of annexation.
- H. Upon annexation to the City of properties within said Territory the City "deferred charges" thereon, for benefits conferred by capital improvements made prior to the annexation shall be payable at the property owners option, either in full, or in not



less than six (6) equal annual installments, provided that the same shall be payable in up to twelve (12) equal annual installments in cases of a property being, and continuing to be, the homestead of an owner occupant who has special hardship problems or is otherwise adjudged in need of special consideration. Hardship and special considerations may be conferred upon the single owner occupant at time of annexation. A transition appeals committee shall be established for the purpose of determining such need. It shall be authorized to make recommendations to City Council for special consideration and shall be comprised of two (2) members appointed from the City and one (1) member appointed from the Township.

## II—MUNICIPAL AIRPORT

- A. The City agrees that the pending appeal of the decision of the Washtenaw Circuit Court in the suit of the Township vs. the City (Docket No. 77-12619) respecting the City's proceedings to annex Territories in and about the Municipal Airport and a portion of Eisenhower Boulevard shall be dismissed.
- B. The Township agrees to cooperate with the City in the establishment of an Airport Land Use Plan which recognizes the compatibility of light industrial, warehousing, gravel mining and other uses on airport lands. The Township will review and comment on the plan before City adoption. It is further understood that any private construction on Airport lands will require approval under Township zoning and site plan requirements, as well as Township Building and Safety Department permit requirements. Plans for municipal construction on Airport lands must be submitted to the Township for review and comment.
- C. The Township agrees to establish a land use plan for the environs of the Airport which recognizes only land uses which are compatible to airport operations from a safety and environmental point of view. The City will review and comment on the plan before adoption by the Township.
- D. It is further agreed that gravel mining may take place only for use on City of Ann Arbor roads and public works projects and for use on Pittsfield Township roads, and public works projects. In addition, that a gravel processing plan, a restoration plan and a soil erosion plan be filed and reviewed by the Township.
- E. Excepting as exempt by law, the Township shall assess for taxes the real and personal properties of and upon the airport lands.
- F. The Township agrees to provide right-of-way for City sanitary sewage mains to the Airport to serve Airport properties uses only.



III—LANDFILL

- A. The City desires to expand its Landfill operations to the west on property known as the Derck, Nielsen, and McCalla parcels.
- B. The Township agrees to actively support and assist in acquisition negotiations such expansion on the conditions that:
  - 1. A land use and restoration plan be developed for long range use of the landfill area.
  - 2. That a reasonable strip of land immediately east of Stone School Road, as well as along Ellsworth Road, as well as along the northern edge of what is known as the Morgan properties is excluded for environmental purposes.
- C. A Landfill Expansion Advisory Committee composed of four (4) persons appointed by the City and three (3) persons appointed by the Township shall be created to advise the City on environmental and operational plans.
- D. The Township desires that it be given preferred customer consideration by the City in the use of the Landfill or offered an opportunity for proportionate investment equity if the Landfill is to be expanded in this location.
- E. The Township shall not adopt any ordinance, rule or regulation which regulates or attempts to regulate the City's use of the landfill property so long as that property is used for disposal of refuse materials or for park purposes.

IV—SEWER/WATER SERVICEES

- A. Upon acceptance and execution of this position paper, the City agrees to immediately approve the Township's request for sewer service limited to the Township Hall and the State Road frontage of a proposed commercial development at Ellsworth and State Roads in accordance with procedures established in Paragraph I-A of the Ann Arbor Pittsfield Sewer Service Agreement dated September 30, 1975. It is understood State Department of Natural Resources approval will be sought eagerly by the City.
- B. The sewer service will be provided at 103% of City rates in accordance with the aforementioned agreement.
- C. The City will agree to consider additional requests for service prior to the completion of the new "area wide treatment plant" on a case by case basis.

COMMUNICATIONS FROM THE MAYOR

Mayor Louis D. Belcher informed Councilmembers that he will be communicating with Mr. Robert Lillie, Pittsfield Township Supervisor, to advise him of the changes made tonight in the Pittsfield Township Agreement.

\*\*\*\*\*

Mayor Belcher alerted Council that there are several major Planning matters coming up for consideration, such as the eighty acres of land to be developed in the Briarwood area and a proposal for downtown housing.

\*\*\*\*\*

Mayor Belcher recommended the appointment of Hugh M. Wanty, 2061 Pauline Boulevard, to the Housing Board of Appeals to replace James J. O'Kane for an indefinite term.

Moved by Councilmember Trowbridge that Council concur in the recommendation of the Mayor.

On roll call the vote was as follows: Yeas, Councilmembers Latta, Greenberg, Morris, Senunas, Sheldon, Trowbridge, Cmejrek, Mayor Belcher, 8

Nays, 0

Councilmember Bell was absent from the Council Chamber at the time the vote was taken.

Chair declared the motion carried.

\*\*\*\*\*

Mayor Belcher recommended the appointment of Roberta Lea Shrope, 321 South Revena Boulevard, to the Planning Commission, effective July 1, 1978 for a three year term ending June 30, 1981.

Moved by Councilmember Cmejrek that Council concur in the recommendation of the Mayor.

On roll call the vote was as follows: Yeas, Councilmembers Senunas, Sheldon, Trowbridge, Cmejrek, Bell, Mayor Belcher, 6

Nays, Councilmembers Latta, Greenberg, Morris, 3

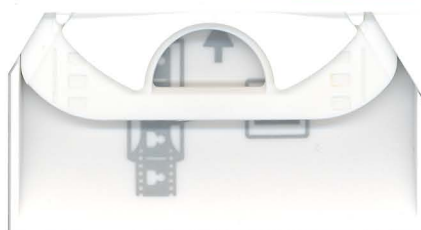
Chair declared the motion carried.

\*\*\*\*\*

Mayor Belcher laid the nomination on the table of Charles T. Wagner, 3425 Brentwood Court, to the Planning Commission to be confirmed at the next session of Council.

COMMUNICATIONS FROM COUNCIL COMMITTEES

None.



# Exhibit 6

Councilmember Johnson moved, seconded by Councilmember Teall, that the resolution be adopted.

On a voice vote, the Mayor declared the motion carried.

\*\*\*\*\*

R-31-1-07 APPROVED

RESOLUTION TO APPROVE THE URS CORPORATION AIRPORT LAYOUT PLAN UPDATE FOR THE ANN ARBOR MUNICIPAL AIRPORT, WHICH ILLUSTRATES EXISTING AND PROPOSED FACILITIES TO MEET THE FUTURE DEMANDS OF AIRPORT TENANTS AND USERS

Whereas, An approved Airport Layout Plan (ALP) is required by the FAA and the Michigan Department of Transportation (MDOT)-Bureau of Aeronautics for the Ann Arbor Municipal Airport to participate in the federal and state airport improvement program;

Whereas, The airport's ALP is no longer current and does not depict all airport facilities as required by the FAA and MDOT-Bureau of Aeronautics;

Whereas, The MDOT-Bureau of Aeronautics and FAA, funded the ALP Update at a cost split of 90% Federal, 5% State, and 5% City and URS Corporation a Michigan Planning and Consulting firm was selected to develop the plan;

Whereas, The recommended ALP document depicts existing and future airport facilities and was completed using FAA and MDOT design and planning standards, which included the requirement for participation by users, tenants and the general public; and

Whereas, On July 19, 2006, the Airport Advisory Committee voted unanimously to recommend City Council approval of the ALP Update for the Ann Arbor Municipal Airport;

RESOLVED, That Council approve the ALP Update for the Ann Arbor Municipal Airport;

RESOLVED, That the Mayor and City's Airport Manager be hereby authorized and directed to execute said ALP Document after approval as to form by the City Attorney and approval as to substance by the City Administrator; and

RESOLVED, That the City Administrator be authorized to take the necessary administrative actions to implement this resolution.

~~Councilmember Higgins moved, seconded by Councilmember Teall, that the~~

- Staff to bring back a separate proposal regarding extending the runway within the next 60 days and that notification of the proposal be sent out to citizens in the surrounding area.

On a voice vote, the Mayor declared the motion carried.

\*\*\*\*\*

R-32-1-07 APPROVED

RESOLUTION ACCEPTING UTILITY EASEMENT FROM  
PLYMOUTH GREEN CROSSINGS, L.L.C.

Whereas, Plymouth Green Crossings, L.L.C., a Michigan limited liability company, is the fee simple owner of property located in the City of Ann Arbor, Washtenaw County, Michigan as described in the Washtenaw County Records at Liber 4539, Page 688, recorded February 21, 2006;

Whereas, The First Amended and Restated Operating Agreement of Plymouth Green Crossings, L.L.C., dated August 30, 2006, authorizes the delivery of a perpetual easement to the City for public utilities; and

Whereas, Plymouth Green Crossings, L.L.C., has delivered an easement to the City for the construction and maintenance of municipally operated public services comprising the public utilities system to run with the land and burden the respective property perpetually, being more particularly described as follows:

Description of Variable Width Water Main:

Commencing at the center of Section 14, Town 2 S, Range 6 E, City of Ann Arbor, Washtenaw County, Michigan; thence S 00°05'25" W 667.92 feet along the N and S 1/4 line of said Section 14; thence N 89°54'35" W 40.00 feet to a point on the Westerly right-of-way line of Green Road; thence along the said right-of-way line in the following courses: Southerly 46.90 feet along the arc of a 490.00 foot radius circular curve to the left through a central angle of 05°29'00" having a chord which bears S 02°39'05" E 46.88 feet, S 05°23'35" E 353.86 feet, Southerly 271.22 feet along the arc of a 630.00 foot radius circular curve to the right through a central angle of 24°40'00" having a chord which bears S 06°56'25" W 269.13 feet and S 19°16'25" W 71.37 feet; thence N 90°00'00" W 213.38 feet to the POINT OF BEGINNING;

- thence S 56°41'39" W 101.15 feet;
- thence N 89°54'35" W 139.18 feet;
- thence S 45°05'25" W 24.77 feet;
- thence S 00°05'25" W 34.72 feet;

# Exhibit 7





## CITY OF ANN ARBOR, MICHIGAN

100 North Fifth Avenue, P.O. Box 8647  
Ann Arbor, Michigan 48107-88647  
Phone (734) 994-2841 • Fax (734) 997-1133  
<http://www.ci.ann-arbor.mi.us>

Municipal Airport  
Public Services Area

February 28, 2007

John Pierce, Transportation Planner  
Michigan Department of Transportation  
Bureau of Aeronautics  
2700 East Airport Service Dr.  
Lansing, MI 48906-2160

Subject: Ann Arbor Municipal Airport Layout Plan (revision)

Dear Mr. Pierce:

The Ann Arbor City Council, at their January 22, 2007 meeting, approved an action directing staff to revise the Airport Layout Plan (ALP) to reflect a 4,300 foot runway and return that Plan to Council for consideration within 60 days. Council has been informed that the process for revising the ALP is underway but cannot be completed within 60 days.

Please accept this letter as our request to revise the ALP to show the runway improvement. My understanding is that this process begins with resubmitted drawings and an airspace review by the FAA. The Airport's consultant, URS Corporation, has completed the revisions to the drawings showing the 800 feet runway improvement and will be submitting those to you under separate cover. If you have any questions or need additional information, please contact me at (734) 972-9112.

Sincerely,

Matthew J. Kulhanek  
Airport Manager



**Municipal Airport  
Public Services Area**

## **CITY OF ANN ARBOR, MICHIGAN**

100 North Fifth Avenue, P.O. Box 8647  
Ann Arbor, Michigan 48107-88647  
Phone (734) 994-2841 • Fax (734) 997-1133  
<http://www.ci.ann-arbor.mi.us>

February 13, 2007

John Pierce, Transportation Planner  
Michigan Department of Transportation  
Bureau of Aeronautics  
2700 East Airport Service Dr.  
Lansing, MI 48906-2160

Subject: Ann Arbor Municipal Airport Layout Plan

Dear Mr. Pierce:

Enclosed please find one complete set of drawings and three signed cover sheets for the approved Airport Layout Plan of the Ann Arbor Municipal Airport. The documents were approved by the City Council at their meeting on January 22, 2007. If you have any questions or need additional information, please contact me at (734) 972-9112.

Sincerely,

Matthew J. Kulhanek  
Airport Manager

Enc.

# Exhibit 8

**PITTSFIELD CHARTER TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN  
RES #09-23  
RESOLUTION OPPOSING PROPOSED EXPANSION OF THE ANN ARBOR  
MUNICIPAL AIRPORT RUNWAY**

**MARCH 24, 2009**

Minutes of a Regular Meeting of the Township Board of Pittsfield Charter Township, Washtenaw County, Michigan, held at the Township Administration Building located at 6201 W. Michigan Avenue, in said Township, on the 24<sup>th</sup> day of March, at 6:30 p.m.

Members Present: Grewal, Israel, Scribner, Ferguson, Hunt, Krone, Yi.

Members Absent: None.

The following preamble and resolution were offered by Member Scribner and supported by Member Ferguson.

**WHEREAS**, the Ann Arbor airport is under the jurisdiction of the City of Ann Arbor and operated by an independent Authority and the land is located within Pittsfield Charter Township immediately adjacent to a residential area; and

**WHEREAS**, the existing width and length has not posed any substantial safety concerns in the past with only five incidents of landing mishaps out of a total of 600,000 landings in the past eight years; and

**WHEREAS**, the proposed changes and expansion would shift the runway dangerously close to a busy township roadway (Lohr Road) and closer to dense residential subdivisions; and

**WHEREAS**, such a runway expansion will significantly increase air traffic volumes and noise pollution experienced by residential subdivisions in the vicinity of the Ann Arbor airport, thereby resulting in a decline of residential home property values; and

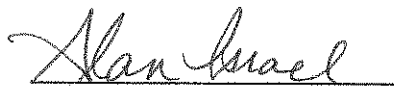
**WHEREAS**, the City of Ann Arbor has not fully demonstrated the economic and safety justifications for undertaking the proposed runway expansion; and

**WHEREAS**, the City of Ann Arbor appears to have not taken into consideration the negative safety implications such a runway expansion may impose on the surrounding residential subdivisions by expanding a runway closer to residential subdivisions

**NOW THEREFORE BE IT RESOLVED**, the Pittsfield Charter Township Board of Trustees urges the City of Ann Arbor to reconsider the merits of expanding the Ann Arbor Airport runway in light of the negative implications such an expansion would impose on the residents of Pittsfield Charter Township.

**AYES:** Grewal, Israel, Scribner, Ferguson, Hunt, Krone, Yi.  
**NAYS:** None.  
**ABSENT:** None.  
**ABSTAIN:** None.

**RESOLUTION DECLARED ADOPTED.**

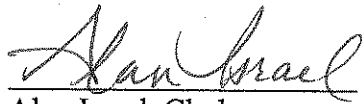


Alan Israel, Clerk  
Pittsfield Charter Township

DATED: March 24, 2009.

# *CERTIFICATE*

I, Alan Israel hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Township Board of Pittsfield Charter Township, County of Washtenaw, State of Michigan, at a Regular Meeting held on March 24, 2009, and that said meeting was conducted and public notice of said meeting was given pursuant to and in full compliance with the Open Meetings Act, being Act 267, Public Acts of Michigan, 1976, and that the minutes of said meeting were kept and will be or have been made available as required by said Act.



Alan Israel, Clerk  
Pittsfield Charter Township

DATED: March 24, 2009.

# Exhibit 9

**LODI TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN  
RESOLUTION # 2009-009  
A RESOLUTION OPPOSING PROPOSED RUNWAY EXPANSION OF THE ANN ARBOR  
MUNICIPAL AIRPORT**

**WHEREAS**, the Ann Arbor airport is under the jurisdiction of the City of Ann Arbor and operated by an independent Authority and the land is located within Pittsfield Charter Township immediately adjacent to residential areas, including Lodi Township;

**WHEREAS**, the existing width and length of Runway 6-24 has not be posed any substantial safety concerns in the past with only five incidents of landing mishaps out of a total of 600,000 landings in the past eight years; and

**WHEREAS**, the proposed changes and expansion would shift the runway so that it ends a mere 700 yards from a busy roadway (Lohr Road) and closer to dense residential subdivisions; and

**WHEREAS**, such a runway will significantly accommodate larger and heavier aircraft, increase air traffic volumes, and increase noise pollution experienced by residential subdivisions in the vicinity of the Ann Arbor airport, thereby resulting in a decline in residential home property values; and

**WHEREAS**, the City of Ann Arbor has not fully demonstrated the economic and safety justifications for undertaking the proposed runway expansion; and

**WHEREAS**, the City of Ann Arbor appears to have not taken into consideration the negative safety implications such a runway expansion may impose on the surrounding residential subdivisions by expanding a runway closer to residential subdivisions;

**NOW, THEREFORE BE IT RESOLVED**, the Lodi Township Board of Trustees urge the City of Ann Arbor to reconsider the merits of expanding the Ann Arbor Airport runway in light of the negative implications such an expansion would impose on the residents of Lodi Township.

**ROLL CALL VOTE:**

Ayes: Masters, Staebler, Lindemann, Canham, Foley, and Godek.

Nays: Rentschler.

Absent: None.

Abstain: None.

RESOLUTION DECLARED ADOPTED

---

Elaine Masters, Clerk, Lodi Township

DATED: May 12, 2009



# **Exhibit 10**

car owners relative to identification marks on railroad equipment. FRA, railroads, and the public refer to the stenciling to identify freight cars.

*Annual Estimated Burden Hours:* 18,750 hours.

*Title:* Rear-End Marking Devices.

*OMB Control Number:* 2130-0523.

*Type of Request:* Extension of a currently approved collection.

*Affected Public:* Railroads.

*Abstract:* The collection of information is set forth under 49 CFR Part 221 which requires railroads to furnish a detailed description of the type of marking device to be used for the trailing end of rear cars in order to ensure rear cars meet minimum standards for visibility and display. Railroads are required to furnish a certification that the device has been tested in accordance with current "Guidelines For Testing of Rear End Marking Devices." Additionally, railroads are required to furnish detailed test records which include the testing organizations, description of tests, number of samples tested, and the test results in order to demonstrate compliance with the performance standard.

*Annual Estimated Burden Hours:* 89 hours.

*Title:* Locomotive Certification (Noise Compliance Regulations).

*OMB Control Number:* 2130-0527.

*Type of Request:* Extension of a currently approved collection.

*Affected Public:* Railroads.

*Abstract:* Part 210 of title 49 of the United States Code of Federal Regulations (CFR) pertains to FRA's noise enforcement procedures which encompass rail yard noise source standards published by the Environmental Protection Agency (EPA). EPA has the authority to set these standards under the Noise Control Act of 1972. The information collected by FRA under Part 210 is necessary to ensure compliance with EPA noise standards for new locomotives.

*Annual Estimated Burden Hours:* 2,767 hours.

**ADDRESSES:** Send comments regarding these information collections to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 Seventeenth Street, NW., Washington, DC, 20503, *Attention:* FRA Desk Officer. Alternatively, comments may be sent via e-mail to the Office of Information and Regulatory Affairs (OIRA), Office of Management and Budget, at the following address: [oira\\_submissions@omb.eop.gov](mailto:oira_submissions@omb.eop.gov).

*Comments are invited on the following:* Whether the proposed

collections of information are necessary for the proper performance of the functions of the Department, including whether the information will have practical utility; the accuracy of the Department's estimates of the burden of the proposed information collections; ways to enhance the quality, utility, and clarity of the information to be collected; and ways to minimize the burden of the collections of information on respondents, including the use of automated collection techniques or other forms of information technology.

A comment to OMB is best assured of having its full effect if OMB receives it within 30 days of publication of this notice in the **Federal Register**.

**Authority:** 44 U.S.C. 3501-3520.

Issued in Washington, DC, on June 11, 2009.

**Donna M. Alwine,**

*Acting Director, Office of Financial Management, Federal Railroad Administration.*

[FR Doc. E9-14254 Filed 6-16-09; 8:45 am]

BILLING CODE 4910-06-P

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### FAA Notice of Intent to Prepare an Environmental Assessment; Ann Arbor Municipal Airport, Ann Arbor, MI

**AGENCY:** The Federal Aviation Administration, Department of Transportation.

**ACTION:** Notice of Intent to prepare an Environmental Assessment (EA) and conduct Citizen Advisory Meetings.

**SUMMARY:** The FAA has delegated selected responsibilities for compliance with the National Environmental Policy Act to the MDOT as part of the State Block Grant Program authorized under Title 49 U.S.C., Section 47128. This notice is to advise the public pursuant to the National Environmental Policy Act of 1969, as amended, (NEPA) 42 U.S.C. 4332(2)(c) that MDOT intends to prepare an EA for the proposed extension of runway 6/24 at the Ann Arbor Municipal Airport. While not required for an EA, the FAA and MDOT are issuing this Notice of Intent to facilitate public involvement. This EA will assess the potential environmental impacts resulting from the proposed extension of runway 6/24 from 3,500 feet to 4,300 feet. All reasonable alternatives will be considered including a no action alternative.

**FOR FURTHER INFORMATION CONTACT:** Ms. Molly Lamrouex, Environmental Specialist, Bureau of Aeronautics and

Freight Services, MDOT, 2700 Port Lansing Road, Lansing, Michigan (517) 335-9866.

**SUPPLEMENTARY INFORMATION:** The EA will include analysis which will be used to evaluate the potential environmental impacts in the study area. During scoping, and upon publication of a draft EA and a final EA, MDOT will be coordinating with federal, state and local agencies, as well as the public, to obtain comments and suggestions regarding the EA for the proposed project. The EA will assess potential impacts and reasonable alternatives including a no action alternative pursuant to NEPA; FAA Order 1050.1E, Policies and Procedures for Considering Environmental Impacts; FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions; and the President's Council on Environmental Quality (CEQ) Regulations implementing the provisions of NEPA, and other appropriate Agency guidance.

**Public Input Process:** During development of the draft EA, a series of meetings to provide for public input will be held to identify potentially significant issues or impacts related to the proposed action that should be analyzed in the EA. For more information regarding the meetings for public input contact Molly Lamrouex, MDOT Bureau of Aeronautics and Freight Services, (517) 335-9866.

Issued in Romulus, Michigan, June 4, 2009.

**Matthew J. Thys,**

*Manager, Detroit Airports District Office, Great Lakes Region.*

[FR Doc. E9-14167 Filed 6-16-09; 8:45 am]

BILLING CODE 4910-13-P

## DEPARTMENT OF TRANSPORTATION

### National Highway Traffic Safety Administration

#### Petition for Exemption From the Vehicle Theft Prevention Standard; Nissan

**AGENCY:** National Highway Traffic Safety Administration (NHTSA) Department of Transportation (DOT).

**ACTION:** Grant of petition for exemption.

**SUMMARY:** This document grants in full the Nissan North America, Inc.'s (Nissan) petition for an exemption of the Murano vehicle line in accordance with 49 CFR Part 543, *Exemption from the Theft Prevention Standard*. This petition is granted because the agency has determined that the antitheft device to be placed on the line as standard equipment is likely to be as effective in

# **Exhibit 11**

<u>Ann Arbor Municipal Airport</u>	<u>50178.000</u>	<u>May 4, 2009</u>	<u>May 26, 2009</u>
PROJECT	PROJECT NO.	MEETING DATE	ISSUE DATE
<u>Ann Arbor Municipal Airport</u>		<u>Citizens Advisory Committee Meeting</u>	
MEETING LOCATION		MEETING PURPOSE	
<u>Amy Eckland</u>			
ISSUED BY		SIGNATURE	
<u>See attached list.</u>			
PARTICIPANT		COMPANY	

DISCUSSION

The first Citizens Advisory Committee (CAC) meeting was held to discuss: 1) the purpose and mission of the CAC, 2) study history and purpose and need, 3) airport improvements, 4) the Environmental Assessment process, 5) study status and next steps, and 6) questions and answers.

**Purpose and Mission of CAC**

The CAC was established to provide a means to communicate with those interested in the activities occurring at the Ann Arbor Airport. The people that participate in the CAC are intended to represent a wide variety of potentially interested stakeholder groups. The CAC does not have formal decision-making powers and is acting only in an advisory role. The CAC will help guide the study process and will help communicate the results of the study back to their respective stakeholder groups.

If there are people that are interested in the CAC activities, they are encouraged to contact members of the CAC to express their concerns or questions. These individuals can also submit comments independently to the City and/or JJR. These individuals are encouraged to attend the public hearing in the fall and to provide comments during the public comment period.

**Study History and Purpose and Need**

In 2007, an Airport Layout Plan (ALP) was approved that depicted a bump out in State Road to provide adequate distance between the end of Runway 6/24 and State Road. In 2008, after discussing the State Road Corridor Study recommendations with local road commission and township officials, a revised ALP was approved that eliminated the bump out of State Road and resolved the distance conflict by proposing a shift of Runway 6/24. The new ALP includes a 150 foot shift of the primary runway, a 950 foot extension (a net increase of 800 feet), and an adjustment of the taxiway and holding bay. The 2008 ALP was approved by MDOT and FAA. It was then approved by City Council in September 2008.

The improvements at the Airport are being proposed to:

1. Provide the recommended runway length to accommodate the B-II category Critical Aircraft that are presently using the airport.
2. Minimize the FAA tower line of sight issues.

3. Address the need for a future 34:1 approach slope on Runway 24.
4. Minimize the occurrence of runway overrun incidents.

### **Airport Improvements**

The proposed improvements at the airport include:

1. Shifting Runway 6/24 150 feet to the southwest.
2. Extending Runway 6/24 by 800 feet, from 3,500 feet to 4,300 feet in total overall length.
3. Moving the holding bay so it is parallel with Runway 6/24 instead of being perpendicular to the runway.
4. The parallel taxiway will be extended to meet the new Runway 6/24 end.

All existing runway and taxiway widths will be maintained. The offset between the runway and taxiway will also be maintained. Any changes to surface drainage will be retained within Airport property. Other alternatives were evaluated that included rotation of the runway, however, none showed merit.

There will be no changes to the fencing at the Airport.

### **Environmental Assessment Process**

The preparation of an Environmental Assessment (EA) is governed by the National Environmental Policy Act (NEPA), 1969, under guidance from the FAA. An EA is intended to be a concise public document that analyzes the environmental impacts of a proposed action. An EA will document, 1) the need for the proposed improvements, 2) alternatives considered, 3) proposed improvements, 4) potential environmental impacts, 5) mitigation measures, and 6) agency coordination and public participation

Following preparation of the EA, the document is then distributed to the public and is available for review and comment during the public comment period. During the 30 day comment period, the document is distributed to resource and regulatory agencies for review and it is available to the public for review. Copies of the document will be made available at public locations: libraries, airport, local municipalities, etc. During those 30 days, comments will be accepted from those interested in the proposed project. At the end of the 30 days, a public hearing will be held.

The EA is a tool to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). If the EA concludes that the proposed improvements will not have potential "significant" impacts, a FONSI is prepared. A FONSI is a public document that explains the federal agency's (FAA) conclusion as to why a proposed action would not have a significant effect on the natural and human environment. The FONSI will also outline proposed measures to mitigate impacts as agreed to in the EA. The FONSI will be jointly signed by both MDOT and FAA.

If it is determined that the project would have significant impact, additional studies may be needed and/or an EIS may be prepared.



### **Study Status and Next Steps**

The overall study will be completed by January 2010. Currently, the study team is still completing the environmental investigations. This will be followed by the preparation of a draft EA. Following a review of the EA by MDOT and the City, the EA will be distributed and the 30 day public comment period will begin. A public hearing will be held at the end of the comment period, which is anticipated to occur in late fall. Following the public hearing, the document will receive State and Federal clearance, and, if appropriate, a FONSI will be prepared. The final EA will be distributed by MDOT.

There will be two more CAC meetings. The second CAC meeting will likely be in July and the third meeting will in October.

### **Questions and Answers**

Throughout the meeting, CAC members asked questions regarding the information presented. The questions are summarized below.

Q. Has the tower blind spot been there since it was built? If so, why is this now a safety concern?

A. Although not considered "unsafe", the blind spot has been a safety concern for several years. Now that there is a proposed project to reconfigure the runway, it is a logical time to incorporate any safety recommendations that will enhance the operational safety of the airport.

Q. How close can the planes be to the adjacent homes during takeoff and landing?

A. The existing traffic pattern altitude for aircraft in the vicinity of Ann Arbor Municipal Airport is 1,000' above ground level. However, during the approach and departure phases of flight, aircraft do descend below this altitude. Actual flight profiles of various models of departing aircraft, including heights above Lohr Road, will be determined and provided at the next CAC meeting.

Q. Why does the airport need to allow for a 34:1 approach slope?

A. The runway approach slope over State Street has been 20:1 for quite some time. Since the current critical aircraft has been determined to be a B-II category jet, FAA Part 77 regulations specify the flatter 34:1 slope as the appropriate approach surface. The proposed 34:1 approach slope will provide approaching aircraft with greater vertical clearance over obstructions, and as a result, a greater margin of safety when operating in low-visibility conditions.

Throughout the meeting, several questions were raised that required additional follow-up information. These are the questions and a response.

Q. What makes the number of overruns “unusually high”? Can the data for the seven reported overruns be provided?

A. The data is still being compiled and will be made available on the Airport website in the upcoming weeks.

Q. How high will planes be over Lohr Road and the adjacent homes?

A. This analysis is ongoing. Results will be provided when they are available.

Q. Why is the 34:1 approach on State Street needed, particularly if State Street will not be widened in the immediate future?

A. The runway approach slope over State Street has been 20:1 for quite some time. Since the current critical aircraft has been determined to be a B-II category jet, FAA Part 77 regulations specify the flatter 34:1 slope as the appropriate approach surface. The proposed 34:1 approach slope will provide approaching aircraft with greater vertical clearance over obstructions, and as a result, a greater margin of safety when operating in low-visibility conditions.

Q. Has the justification for the improvements been fully examined?

A. The justification has been fully examined. The impetus for the improvements is to provide the recommended runway length for the Critical Aircraft that are currently using the airport, as well as the appropriate clear approach surfaces to Runway 6/24. The airport has documented well over 500 annual operations by type B-II aircraft, making this the current Critical Aircraft category. As documented in the Michigan Aviation System Plan (MASP 2008), and supported by FAA Advisory Circular 150/5325-4B, a runway length of 4,300 feet is recommended for category B-II aircraft, based on safety considerations.

Q. It was requested that a copy of the Michigan Airport System Plan (MASP) be provided.

A. A copy of the MASP can be obtained at:

[www.michigan.gov/documents/aero/Cover\\_thru\\_MASP\\_study\\_team\\_MI\\_airport\\_system\\_plan\\_MASP\\_256781\\_7.pdf](http://www.michigan.gov/documents/aero/Cover_thru_MASP_study_team_MI_airport_system_plan_MASP_256781_7.pdf)

Q. It was requested that documentation be provided that demonstrated the 500 operations by B-II aircraft.

A. MDOT is finalizing the User Survey Report. Once the report is completed, it will be posted on the Airport’s website.



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## MEETING MINUTES

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Q. It was also requested that a copy of the FAA Advisory Circular regarding runway length be provided.

A. The FAA AC 150/5325-4B, Runway Length Requirements for Airport Design can be found at: [www.faa.gov/airports\\_airtraffic/airports/resources/advisory\\_circulars/media/150-5325-4B/150\\_5325\\_4b.doc](http://www.faa.gov/airports_airtraffic/airports/resources/advisory_circulars/media/150-5325-4B/150_5325_4b.doc).

Q. Does the logic/process that justifies the runway extension imply that there will be a continual "creep" in the length of the runway?

A. The decision to extend a runway always rests with the Airport Sponsor (in this case, the City of Ann Arbor). So even if there is a future change in Critical Aircraft category, and enough operations to justify further extension of the runway, neither the State nor the FAA would actually mandate that the extension take place. Since a future runway extension (beyond the proposed 4,300') would result in the shifting (and possibly enlarging) of the Runway Safety Areas and Runway Protection Zones beyond the existing airport boundaries, it is extremely unlikely that the City of Ann Arbor would pursue additional extension of Runway 6/24.

If this report does not agree with your records or understanding of this meeting, or if there are any questions, please advise the writer immediately in writing; otherwise, we will assume the comments to be correct.



# **Exhibit 12**

<u>Ann Arbor Municipal Airport</u>	<u>50178.000</u>	<u>July 20, 2009</u>	<u>September 8, 2009</u>
PROJECT	PROJECT NO.	MEETING DATE	ISSUE DATE
<u>Ann Arbor Municipal Airport</u>		<u>Citizens Advisory Committee Meeting</u>	
MEETING LOCATION		MEETING PURPOSE	
<u>Amy Eckland</u>			
ISSUED BY		SIGNATURE	
<u>See attached list.</u>			
PARTICIPANT		COMPANY	

DISCUSSION

This meeting summary provides an overview of the major topics and discussion items from the second Ann Arbor Municipal Airport Citizens Advisory Committee (CAC) meeting. This meeting summary is not intended to be a transcript of the meeting.

The second CAC meeting was held to discuss: 1) the environmental studies update (noise, historic resources, and botanical and wetland survey), 2) study justification and purpose and need, 3) study status and next steps, and 4) questions and answers.

**Environmental Studies Update**

**Noise**

The results of the noise analysis were presented by Mr. Dan Botto, URS. Mr. Botto provided a handout packet and three drawings illustrating noise contours (see attached). The noise analysis uses the Integrated Noise Model (INM), a methodology developed and approved by the Federal Aviation Administration (FAA). The INM is designed to estimate long-term average effects using average annual inputs, not the noise level of a single event.

The data used in the INM included aircraft operations, flight operations by aircraft type and time of day, runways and runway utilization, and flight tracks and flight track utilization. The data used in the model reflected 61,969 aircraft operations for 2009 and 69,717 aircraft operations for the future year 2014. It should be noted that the air taxi/commuter day/night split provided was incorrect. The actual and modeled day/night split for this category of flight operations is 100 percent of arrivals occur during the noise day period, while departures are 96 percent daytime and four percent nighttime. A list of aircraft operations was provided that was generated from Flight Explorer data and the MDOT User Survey.

The INM generated results for three scenarios: Base Year (2009), No Action (2014), and the proposed project (2014). Impacts are determined by comparing the future proposed project to the No Action. The analysis shows that noise impacts for the proposed project do not extend off of airport property; therefore, no impacts would occur to the adjacent properties. Refer to the attached handout and drawings for more detail.

**Historic Resources**

A review of historic resources was conducted by Commonwealth Cultural Resources Group (CCRG). CCRG completed a site file and literature search and a preliminary field survey. They looked at archaeological (below ground) and above-ground resources. The results of their review concluded there are no existing significant above-ground resources associated

with the airport property. The analysis of the data for the below ground resources is pending. The results will be presented at the next CAC meeting.

**Botanical and Wetland Survey**

A botanical survey was completed by JJR in June of this year. During the site visit, an investigation was conducted for threatened or endangered species and general plant communities. The areas immediately surrounding the runway and the airport facilities are predominately either open field / lawn or agricultural fields. Currently over 160 acres of land owned by the airport are being farmed. Along the southern portion of the property, the area is forested, with some portions being a forested wetland. A drainage ditch passes through the airport. The vegetation along the ditch is mostly shrubs with some larger trees. We will be coordinating with the Washtenaw County Drain Commission to confirm county drain jurisdiction.

The wetland analysis is pending. MDEQ will be conducting a site visit and will make the final determination as to the presence of wetlands at the airport. The results will be presented at the next CAC meeting.

**Study Justification / Purpose and Need**

Mr. Mark Noel, MDOT, presented the results of the User Survey Report. He provided a handout (see attached). The Critical Aircraft as defined by FAA is the most demanding aircraft-type that performs a minimum of 500 annual operations at a particular airport. Based on the results of the user survey, the critical aircraft for the airport is a B-II, small aircraft.

According to FAA Advisory Circular 150/5325-4B, the recommended runway length for category B-II Small Aircraft is 4,200 feet. MDOT recommends 4,300 feet, based on the recommendations of the Michigan Airport System Plan (MASP 2008). The recommended runway lengths will allow most B-II Small classification aircraft to operate at their optimum capabilities without weight restrictions.

It was noted that the Airport Advisory Committee's purpose for the project incorporates safety improvements: runway extension to minimize overruns and a runway shift to address State Road approach and FAA tower line of sight. This purpose differs from FAA and MDOT justification for runway extension, which is based on providing the recommended runway length for the current critical aircraft of the airport. A formal purpose and need statement for the project is being developed in accordance with National Environmental Policy Act (NEPA) guidelines.

**Study Status and Next Steps**

The study team is currently working to prepare a first draft of the Environmental Assessment. The next CAC meeting will be in the fall and will focus on an environmental studies update for the remaining resource categories.

**Overrun Data**

A summary of the overrun data was provided to the group. Each CAC member in attendance was provided a copy of a summary table followed by a report for each overrun, if the report was available. The overrun data was compiled based on reported incidents in the FAA databases and other unreported incidents. There have been five reported overruns, four unreported overruns, and two that are unknown (undetermined whether aircraft went off the end of the runway or off the side of the runway).

### **Member Update**

Each CAC member was asked to provide an update on what they have been hearing from their constituency. The following is a summary of what the members expressed as concerns or comments from their constituency:

- The editorials and op eds are not stating the truth.
- There is a mix of supporters and non-supporters. The non-supporters are concerned because of the impact on their quality of life.
- Is it possible to raise the tower to eliminate the line of sight issues?
- There have been questions about the funding source for the project.
- Some are concerned about the project and its potential impacts, but there have been more comments on the Argo Dam at this time.
- There is an organized group very strongly opposed to the project.
- Safety is primary concern. Fear that planes will crash into nearby homes.
- Concerned about the use of tax dollars to pay for the project.
- Concern that Pittsfield Township provides safety response and that Pittsfield tax dollars are being used for that.

### **Other Items Discussed**

Throughout the meeting, CAC members asked questions regarding the information presented. A summary of the items is provided below.

- Four sources were used for the User Survey Report: (1) Flight Aware data, data from the two FBOs: (2) Solo Aviation and (3) Ann Arbor Aviation Center, and (4) based aircraft records.
- The noise analysis is computer generated based on aircraft types. Field measurements for noise were not conducted.
- The noise analysis models flight paths for both existing and future conditions, compensating for the proposed change in runway length.
- There are no trees being cut in St. James Woods.
- A negative economic effect that might occur if the runway is not extended is aircraft that use the airport with weight restrictions may need to land and refuel, or be required to operate with reduced cargo or reduced passengers.
- MDOT has been involved with this project since early 2007, when the City of Ann Arbor started the process to modify the ALP.
- The Itinerant (visiting) Aircraft operational information was collected by the two FBOs located on the airport. Sources were the pilot sign-in registration logs (Airport Registers) from each FBO.

One item discussed was the date of the last user survey and the previous critical aircraft. The consultant team was not able to provide a definite answer at the meeting. Based on a file review by MDOT, the following information was obtained.

In June 2008 MDOT approved an ALP dated April 2008 that indicates a Beech King Air (approach category B-II) is the design group. The previous ALP, dated 1994, was approved by MDOT in 1995 and indicated the design aircraft was approach category B-II. Prior to 1994, the ALP's MDOT has on file do not definitively identify the critical aircraft, except the 1957 ALP. This ALP identifies effective lengths for aircraft of current conditions (3,500 feet) and future conditions (4,300 feet).



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If this report does not agree with your records or understanding of this meeting, or if there are any questions, please advise the writer immediately in writing; otherwise, we will assume the comments to be correct.

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DISTRIBUTION

**Ann Arbor Municipal Airport**

**Runway Extension EA**

**Aircraft Noise Analysis**

**July 20, 2009**

# FAA Policy and Guidance for NEPA Compliance

## FAA Order 1050.1E

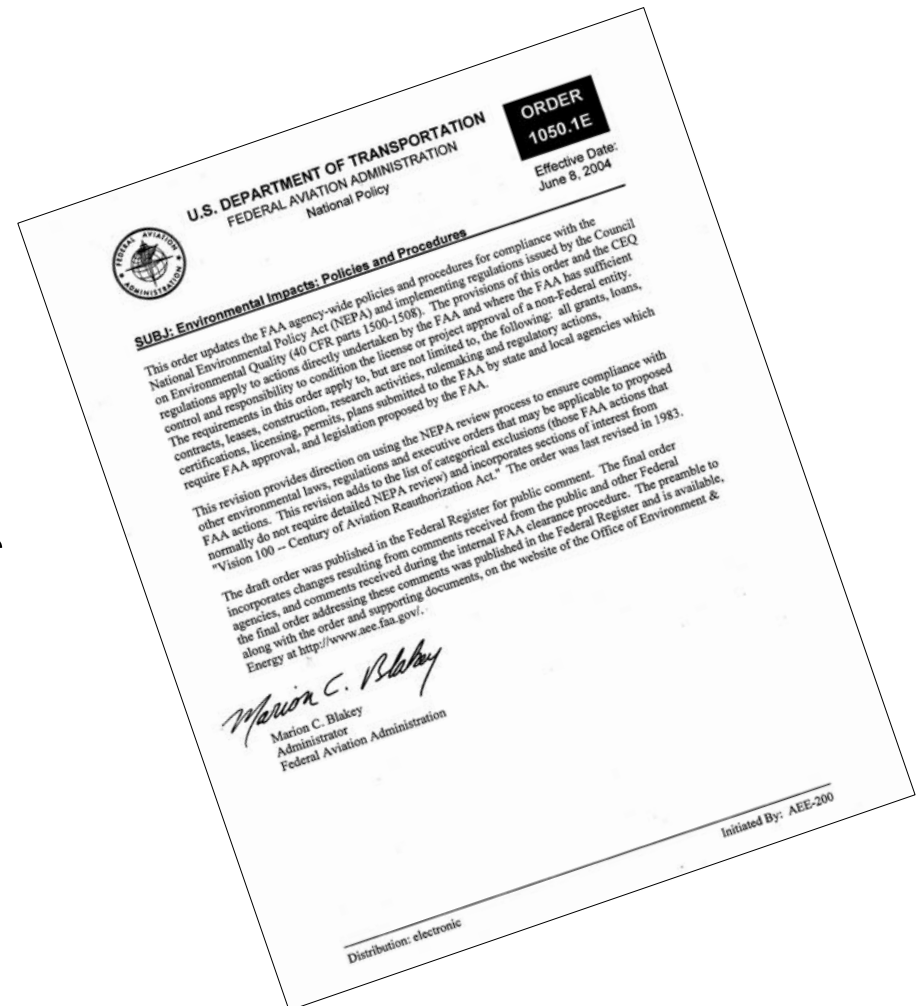
*Environmental Impacts: Policies  
and Procedures*

## FAA Order 5050.4B

*NEPA Implementing Instructions  
for Airport Actions*

## Title 14 CFR Part 150

*Airport Noise Compatibility  
Planning*



# Assessment of Aircraft Related Noise

## FAA Integrated Noise Model (INM) version 7.0a

- Has been distributed for use by the FAA since 1978
- Continual enhancements to stay consistent with evolving aircraft, technology, and best practices
- Required tool for FAR Part 150 Noise Compatibility Planning; Part 161 Approval of Airport Noise Restrictions; and FAA Order 1050 EA's and EIS's
- INM is an average value model designed to estimate long-term effects



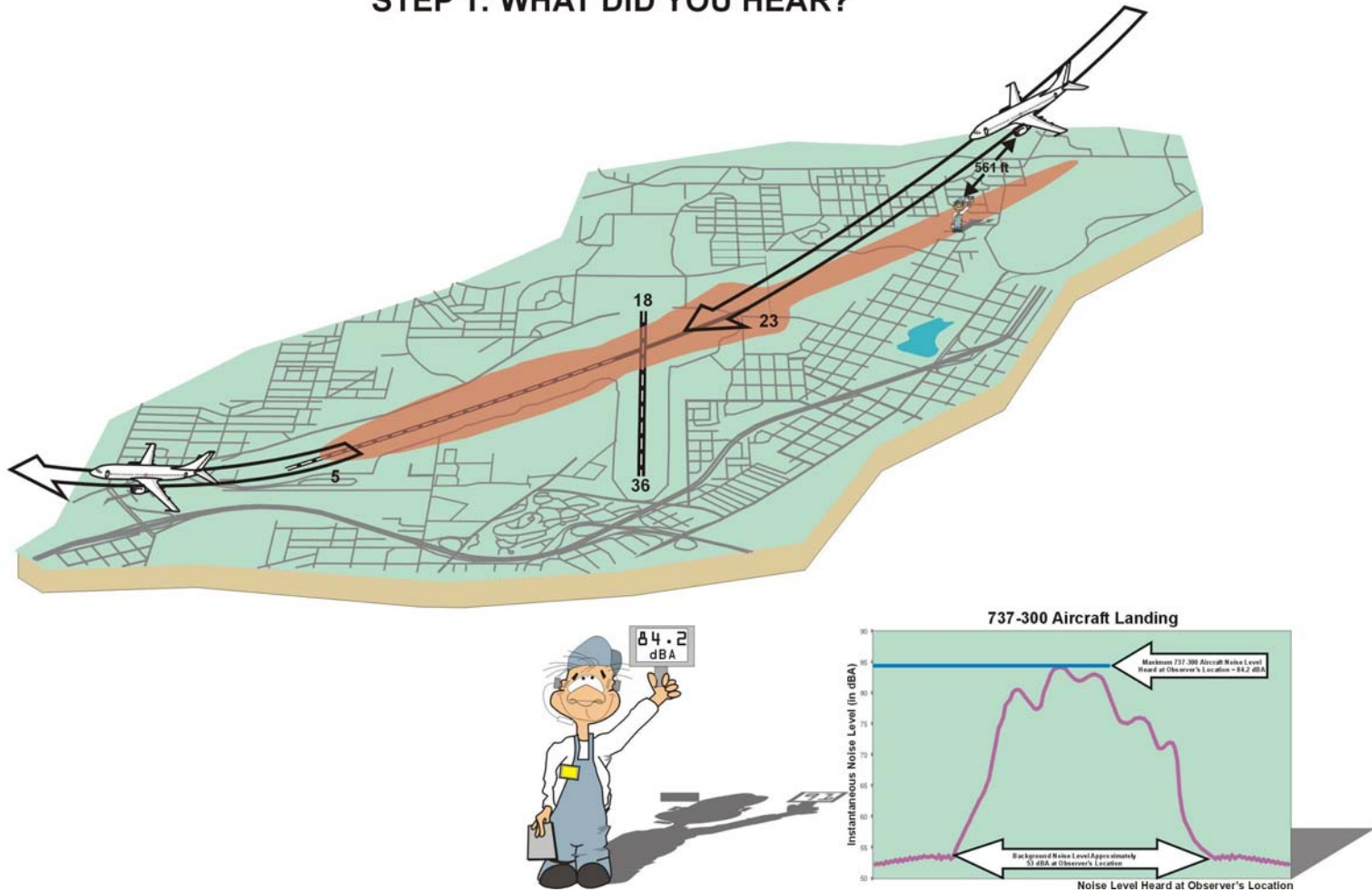
# Assessment of Aircraft Related Noise

- EA determines noise impacts on INM DNL contours
- Analysis will include:
  - Base year - 2009
  - Future year - 2014
    - With and without proposed project
  - Standard DNL Metric

# Aircraft Noise: How Do We Measure and Assess Impacts

## AIRCRAFT NOISE: HOW WE MEASURE IT AND ASSESS ITS IMPACT

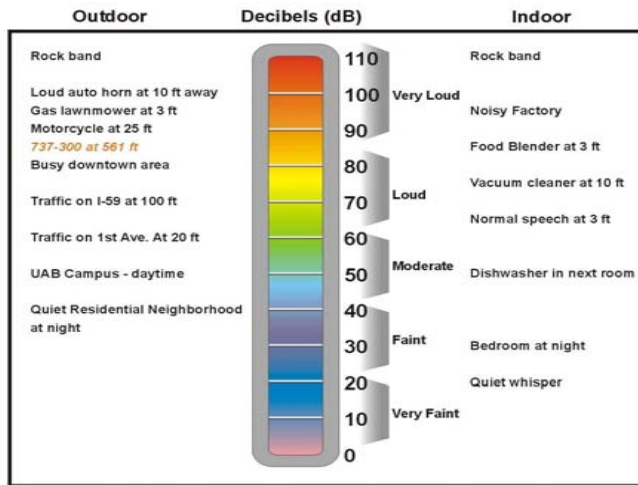
### STEP 1: WHAT DID YOU HEAR?



# Aircraft Noise: How Do We Measure and Assess Impacts

## AIRCRAFT NOISE: HOW WE MEASURE IT AND ASSESS ITS IMPACT

### STEP 2: HOW LOUD IS THAT?



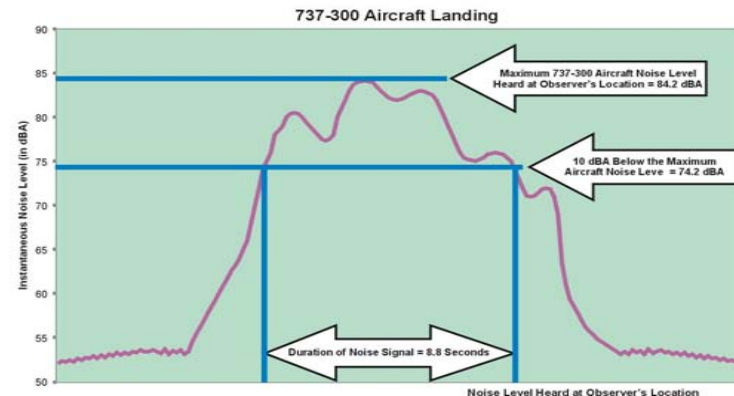
### STEP 3: HOW LONG DID IT LAST?

The duration of an aircraft noise event is defined as the number of seconds between the first and last values of the instantaneous noise level which are a minimum of 10 dBA below the maximum aircraft noise level ( $L_{max}$ ).

The Sound Exposure Level (SEL) describes with a single number the sound energy during an aircraft noise event. SEL takes into account both the duration and the magnitude of the aircraft noise event. The duration correction increases the magnitude in an attempt to account for the increased noisiness of sounds of long duration versus sounds of short duration. Because the duration of aircraft noise events are greater than one second, the numerical value of the SEL for an aircraft noise event is always greater than the numerical value of the maximum level,  $L_{max}$ .

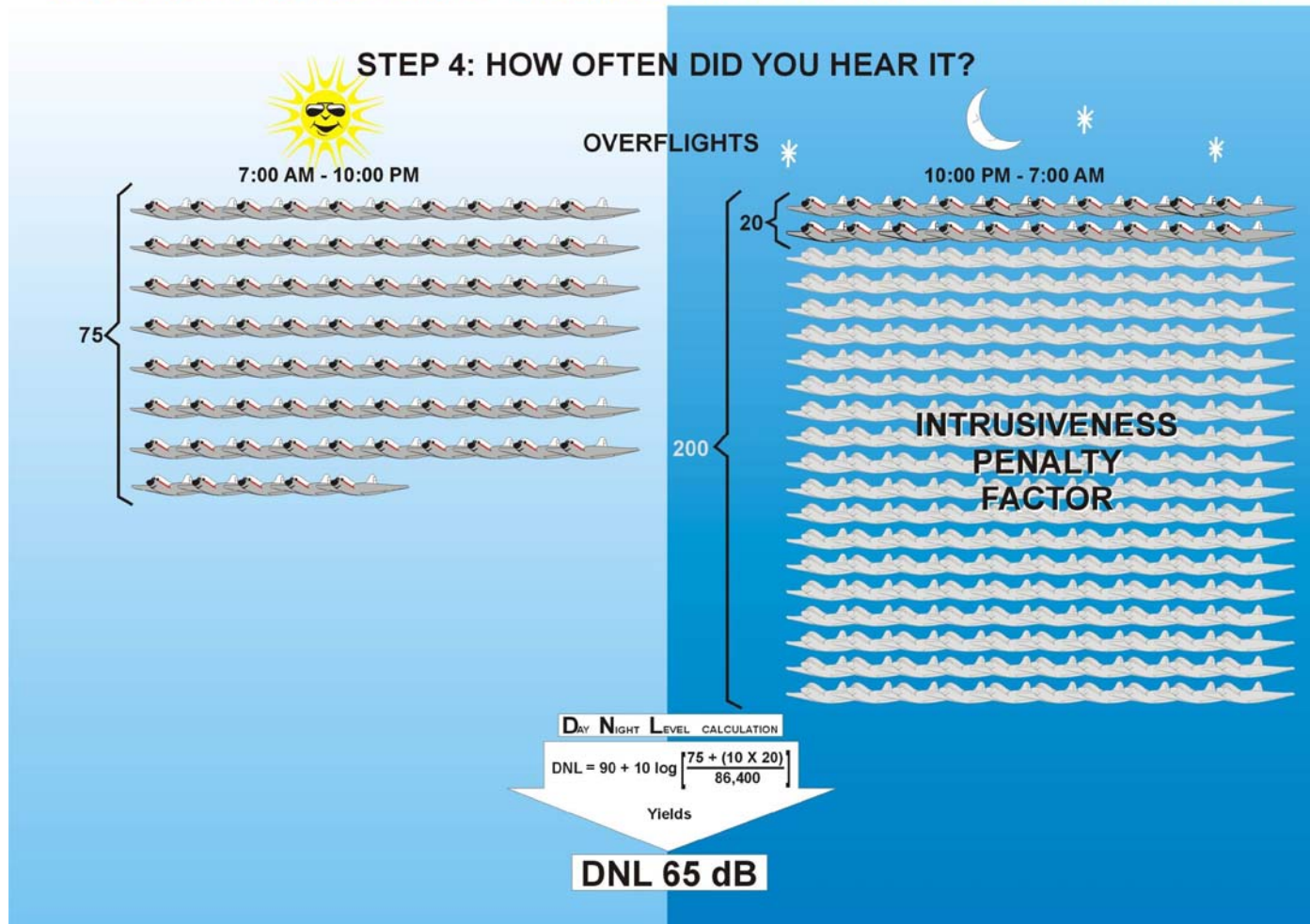
For Example:

$L_{max} = 84.2$  dBA    Duration = 8.8 seconds    SEL = 90 dBA



# Aircraft Noise: How Do We Measure and Assess Impacts

## AIRCRAFT NOISE: HOW WE MEASURE IT AND ASSESS ITS IMPACT



# Noise Metric

- **Day-Night Average Sound Level (DNL):**

DNL logarithmically averages aircraft sound levels at a location over a complete 24-hour period, with a 10-decibel adjustment added to those noise events occurring between 10:00 p.m. and 7:00 a.m. (local time) the following morning. Primary metric for airport noise impacts.

# Noise Modeling Methodology

## INM Input Data:

- Aircraft Operations
  - 2009 Base Year: FAA ATADS Data from April 08 through March 09
  - Forecast for Future Year 2014: FAA 2009 ARB TAF
- Flight Operations by Aircraft Type and Time of Day
  - From MDOT User's Survey and Flight Explorer® data
- Runways and Runway Utilization
  - From discussion with Air Traffic Control
- Flight Tracks and Flight Track Utilization
  - From discussion with Air Traffic Control and published flight procedures

# Noise Modeling Methodology

## INM Input Data:

- Aircraft Operations
  - 2009 Base Year: 61,969
  - Future Year 2014: 69,717
- Day / Night Split (Day 7:00 am to 9:59 pm, Night 10:00 pm to 6:59 am)
  - Air Taxi/Commuter: Arrivals 100% Day, Departures 96/4%
  - GA: Arrivals 95/5%, Departures 96/4%
- Flight Tracks:
  - Arrivals and departures are all straight in and straight out
  - Runways 06 and 12 have right turn patterns, Runways 24 and 30 have left turn patterns

# Runway Utilization

Aircraft Type	Runway 06	Runway 24	Runway 12	Runway 30
Jet	30 %	70 %		
Turbo prop	30 %	70 %		
Multi-engine Piston	30 %	70 %		
Single Engine Piston	27.5 %	67.5 %	2.5 %	2.5 %



# Aircraft Operations – Air Taxi/Commuter

Aircraft Category	INM Aircraft	Aircraft Name	Aircraft Type	Fleet Mix Percentage (%)		Annual			
				Itinerant	Local	Itinerant		Local	
						2009	2014	2009	2014
Air Taxi / Commuter	BEC58P	Beech 58 Baron	MEP	48.6	---	439	745	---	---
	CNA172	Cessna 172 Skyhawk	SEP	3.4	---	31	52	---	---
	CNA206	Cessna 206 Super Skywagon/Stationair	SEP	1.4	---	12	21	---	---
	CNA441	Cessna 441 Conquest II	TP	14.4	---	130	220	---	---
	CNA500	Cessna 500 / Citation II	Jet	1.4	---	12	21	---	---
	DC910	Douglas DC 9-10	Jet	0.7	---	6	10	---	---
	DHC6	de Havilland Dash 6	TP	8.2	---	74	126	---	---
	GASEPF	Composite - Single Engine Fixed Pitch Prop	SEP	0.7	---	6	10	---	---
	GASEPV	Composite - Single Engine Variable Pitch Prop	SEP	4.1	---	37	63	---	---
	LEAR35	Lear 35	Jet	2.7	---	25	42	---	---
	MU3001	Mitsubishi 300-10 Diamond	Jet	2.7	---	25	42	---	---
	PA28	Piper 28 Cherokee	SEP	7.5	---	68	115	---	---
	PA31	Piper 31 Navajo	MEP	4.1	---	37	63	---	---
<b>Total</b>				<b>100</b>	<b>---</b>	<b>902</b>	<b>1,532</b>	<b>---</b>	<b>---</b>

Source: Flight Explorer®, 2009  
Michigan DOT ARB User's Survey, 2009,  
URS Corporation 2009.

Note: Numbers may not add due to rounding  
SEP – Single Engine Piston  
MEP – Multi Engine Piston  
Jet – Turbofan/Turbo Jet  
TP – Turbo Prop

# Aircraft Operations

Aircraft Category	INM Aircraft	Aircraft Name	Aircraft Type	Fleet Mix Percentage (%)		Annual			
				Itinerant	Local	Itinerant		Local	
						2009	2014	2009	2014
General Aviation	B206L	Bell 206L LongRanger	Helo	13.5	---	3,039	3,255	---	---
	BEC58P	Beech 58 Baron	MEP	5.6	6.8	1,269	1,360	2,585	2,954
	CIT3	Cessna Citation III	Jet	0.01	---	2	2	---	---
	CNA172	Cessna 172 Skyhawk	SEP	32.6	42.0	7,326	7,848	16,219	18,536
	CNA206	Cessna 206 Super Skywagon/Stationair	SEP	3.8	4.5	863	925	1,732	1,980
	CNA441	Cessna 441 Conquest II	Tp	0.6	0.3	126	135	113	129
	CNA500	Cessna 500 / Citation II	Jet	0.05	---	12	12	---	---
	CNA510	Cessna 510 Mustang	Jet	0.01	---	2	2	---	---
	DHC6	de Havilland Dash 6	Tp	0.2	---	40	42	---	---
	GASEPF	Composite - Single Engine Fixed Pitch Prop	SEP	3.9	4.8	887	950	1,845	2,109
	GASEPV	Composite - Single Engine Variable Pitch Prop	SEP	10.3	11.9	2,315	2,480	4,613	5,272
	H500D	Hughes 500D	Helo	4.4	---	990	1,060	---	---
	IA1125	IAI Astra	Jet	0.01	---	2	2	---	---
	LEAR25	Lear 25	Jet	0.01	---	2	2	---	---
	LEAR35	Lear 35	Jet	0.01	---	3	4	---	---
	MU3001	Mitsubishi 300-10 Diamond	Jet	1.5	---	338	362	---	---
	PA28	Piper 28 Cherokee	SEP	23.1	29.7	5,180	5,550	11,472	13,111
	PA30	Piper 30 Twin Comanche	MEP	0.1	0.1	22	24	42	48
	PA31	Piper 31 Navajo	MEP	0.1	---	25	27	---	---
	R22	Robinson R22B	Helo	0.01	---	3	4	---	---
SA365N	Aerospatiale (Eurocopter) SA-365N Dauphin	Helo	0.01	---	2	2	---	---	
<b>Total</b>				<b>100</b>	<b>100</b>	<b>22,446</b>	<b>24,047</b>	<b>38,621</b>	<b>44,138</b>
<b>TOTAL</b>				<b>---</b>	<b>---</b>	<b>23,348</b>	<b>25,579</b>	<b>38,621</b>	<b>44,138</b>

Source: Flight Explorer®, 2009  
Michigan DOT ARB User's Survey, 2009,  
URS Corporation 2009.

Note: Numbers may not add due to rounding  
SEP – Single Engine Piston  
MEP – Multi Engine Piston  
Jet – Turbofan/Turbo Jet  
TP – Turbo Prop

# FAA INM Aircraft Substitutions

(INM Database contains 274 Aircraft and 260 substitutions)

SUB_ID	SUB_DESCR	ACFT_ID1
BEC200	Beech Super King Air 200	DHC6
BEC300	Beech Super King Air 300	DHC6
BEC30B	Beech Super King Air 300B	DHC6
BEC400	Beechcraft Beechjet 400	MU3001
BEC45	Beechcraft Model 45 Mentor (T34A & T34B)	GASEPV
BEC90	Beech King Air C90	CNA441
BEC9F	Beech F90 Super King Air	CNA441
BECM35	Beechcraft Model M35 Bonanza	GASEPV
CNA182	Cessna 182 Skylane	CNA206
CNA185	Cessna Skywagon	CNA206
CNA404	Cessna 404 Titan	BEC58P
CNA501	Cessna Citation I Single Pilot (SP)	CNA500
CNA525	Cessna Citation Jet	CNA500
CNA550	Cessna Model 550 Citation II	MU3001
CNA551	Cessna Citation II Single Pilot (SP)	MU3001
CNA560	Cessna 560 Citation V	MU3001
CNA650	Cessna 650 Citation VII	CIT3
FAL200	Falcon 200	LEAR35
FAL20A	Falcon 2000	CL600
IA1123	IAI 1123 Westwind	LEAR25
IA1124	IAI 1124 Westwind	IA1125
IARAVA	IAI Arava	DHC6
IL114	Ilyushin-114	CVR580
IL62	Ilyushin-62	707QN
IL76	Ilyushin-76	DC8QN
IL86	Ilyushin-86	DC8QN
IL96	Ilyushin-96	747200
JST1TF	Jetstar 1 Turbofan	LEAR35
JST1TJ	Jetstar 1 Turbojet	LEAR25
JST2TF	Lockheed Jetstar 2	LEAR35
KC135E	Boeing KC135 Stratotanker (Re-engined)	707320
LA42	Lake LA-4-200 Buccaneer	GASEPV
LEAR23	Learjet 23	LEAR25
LEAR24	Learjet 24	LEAR25
LEAR31	Learjet 31	LEAR35
LEAR36	Learjet 36	LEAR35
LEAR45	Learjet 45	LEAR35
LEAR55	Learjet 55	LEAR35
LEAR60	Learjet 60	LEAR35

# FAA INM Aircraft Substitutions

(INM Database contains 274 Aircraft and 260 substitutions)

SUB_ID	SUB_DESCR	ACFT_ID1
BEC200	Beech Super King Air 200	DHC6
BEC300	Beech Super King Air 300	DHC6
BEC30B	Beech Super King Air 300B	DHC6
BEC400	Beechcraft Beechjet 400	MU3001
BEC45	Beechcraft Model 45 Mentor (T34A & T34B)	GASEPV
BEC90	Beech King Air C90	CNA441
BEC9F	Beech F90 Super King Air	CNA441
BECM35	Beechcraft Model M35 Bonanza	GASEPV
CNA182	Cessna 182 Skylane	CNA206
CNA185	Cessna Skywagon	CNA206
CNA404	Cessna 404 Titan	BEC58P
CNA501	Cessna Citation I Single Pilot (SP)	CNA500
CNA525	Cessna Citation Jet	CNA500
CNA550	Cessna Model 550 Citation II	MU3001
CNA551	Cessna Citation II Single Pilot (SP)	MU3001
CNA560	Cessna 560 Citation V	MU3001
CNA650	Cessna 650 Citation VII	CIT3
FAL200	Falcon 200	LEAR35
FAL20A	Falcon 2000	CL600
IA1123	IAI 1123 Westwind	LEAR25
IA1124	IAI 1124 Westwind	IA1125
IARAVA	IAI Arava	DHC6
IL114	Ilyushin-114	CVR580
IL62	Ilyushin-62	707QN
IL76	Ilyushin-76	DC8QN
IL86	Ilyushin-86	DC8QN
IL96	Ilyushin-96	747200
JST1TF	Jetstar 1 Turbofan	LEAR35
JST1TJ	Jetstar 1 Turbojet	LEAR25
JST2TF	Lockheed Jetstar 2	LEAR35
KC135E	Boeing KC135 Stratotanker (Re-engined)	707320
LA42	Lake LA-4-200 Buccaneer	GASEPV
LEAR23	Learjet 23	LEAR25
LEAR24	Learjet 24	LEAR25
LEAR31	Learjet 31	LEAR35
LEAR36	Learjet 36	LEAR35
LEAR45	Learjet 45	LEAR35
LEAR55	Learjet 55	LEAR35
LEAR60	Learjet 60	LEAR35

# Assessment of Aircraft Related Noise Impacts in an Environmental Assessment

- Noise Exposure Contours at DNL 65, 70, and 75 dB
- No-Action and Proposed Project
- Average Annual Day: Daily average of annual operations
- **Impacts determined by:**
  - Yearly Day/Night Average Sound Level (DNL)

# Assessment of Aircraft Related Noise Impacts

- Impacts are determined by comparing future Proposed Project DNL contours to the No-action alternative DNL contour.
- Significant impact occurs at noise sensitive locations with an increase of 1.5 dB or greater within the DNL 65 Contour
- If significant impact exists, analysis within the DNL 60 for an increase of 3 dB or greater is required.

# INM Output Data

- INM provides the following noise data for existing and future conditions for comparison purposes:
  - Noise contours (DNL 65, 70 and 75 dB)
  - Noise levels at identified noise sensitive sites (if necessary)
  - Noise levels in metrics other than DNL, such as  $L_{\max}$ ,  $L_{\text{eq}}$ , SEL, and Number of Events Above (if necessary)

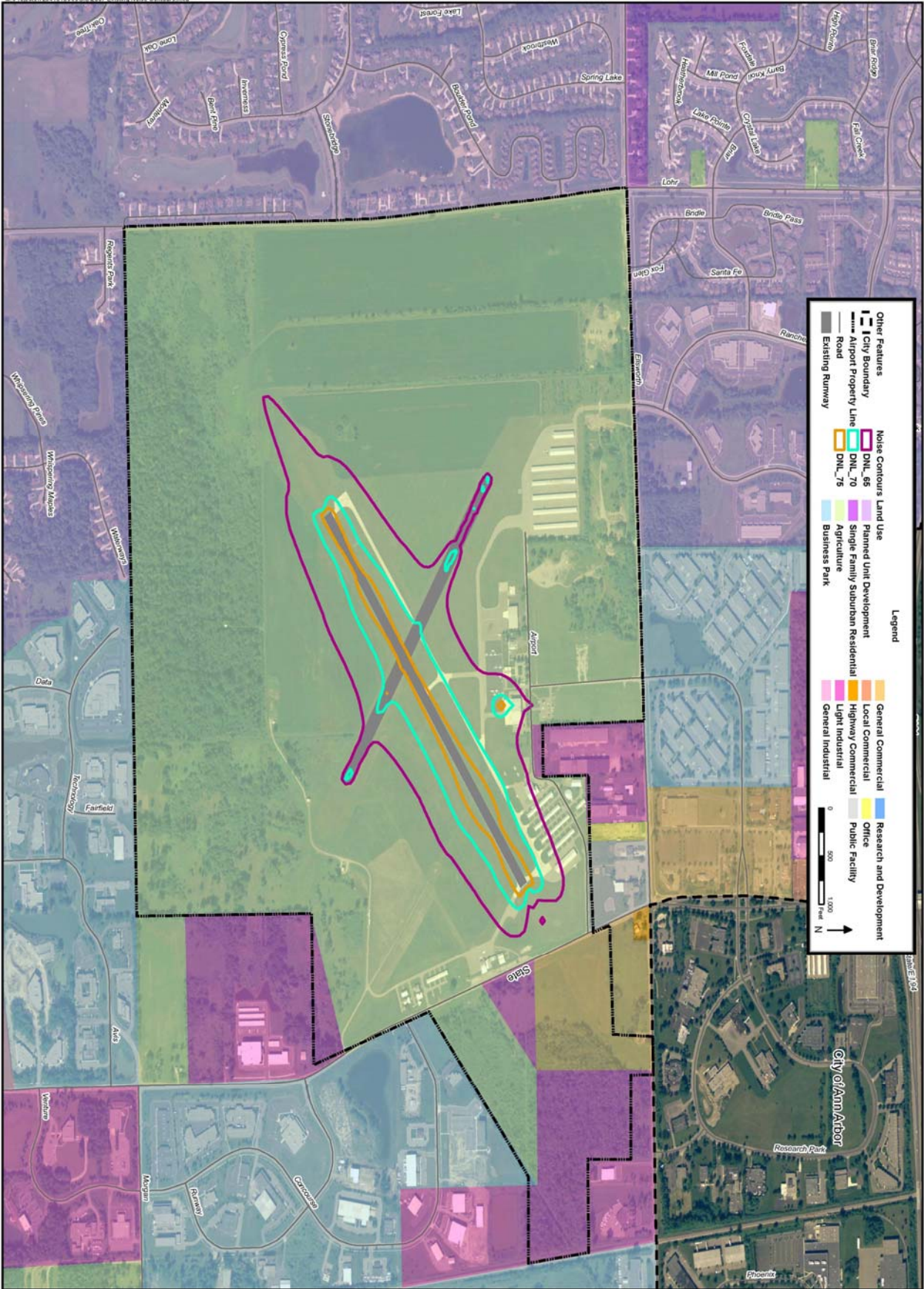


Figure N-1

Ann Arbor Municipal Airport  
2007 Existing Noise Contour Map





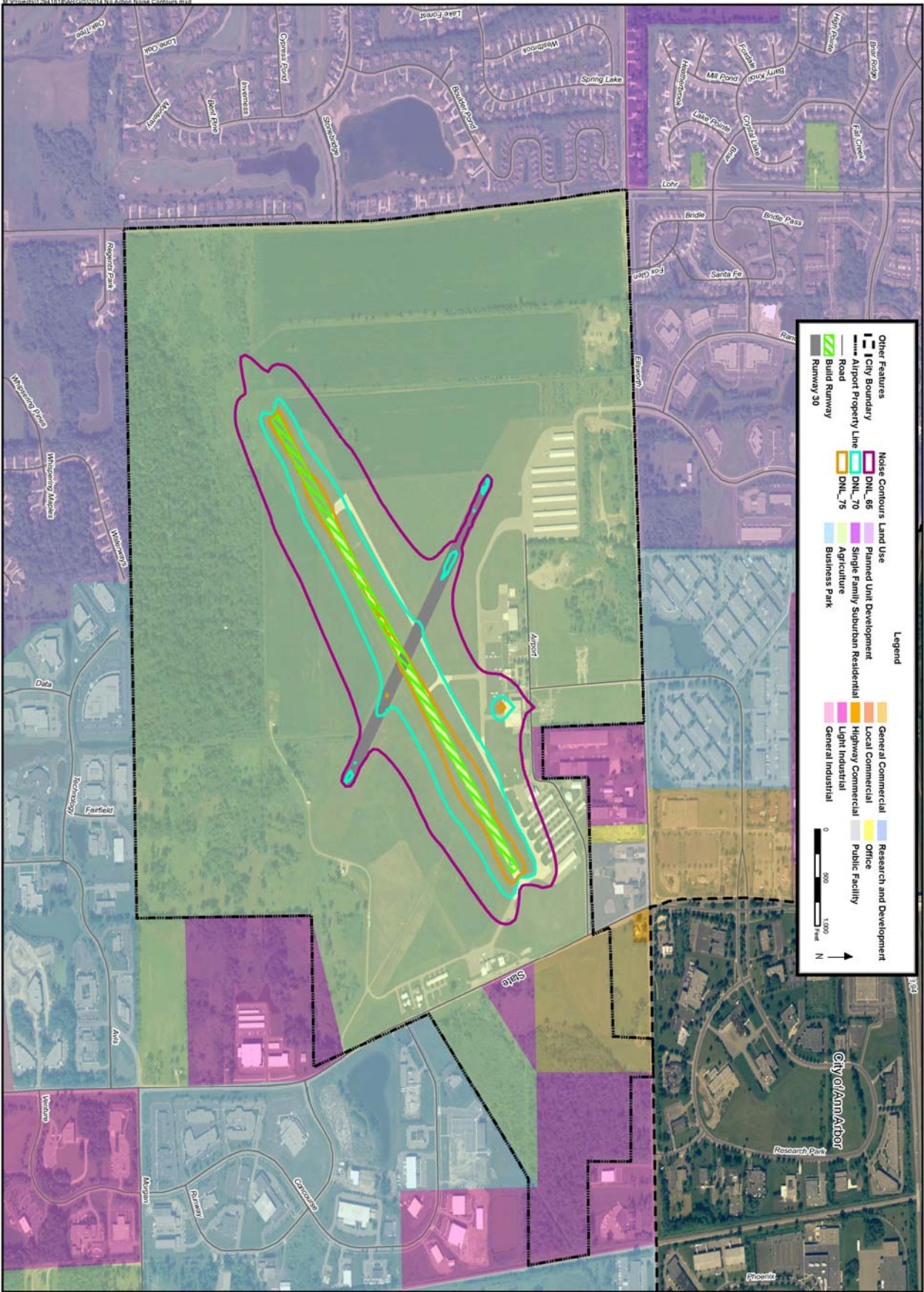


Figure N-3

# Ann Arbor Municipal Airport 2014 Build Noise Contour Map



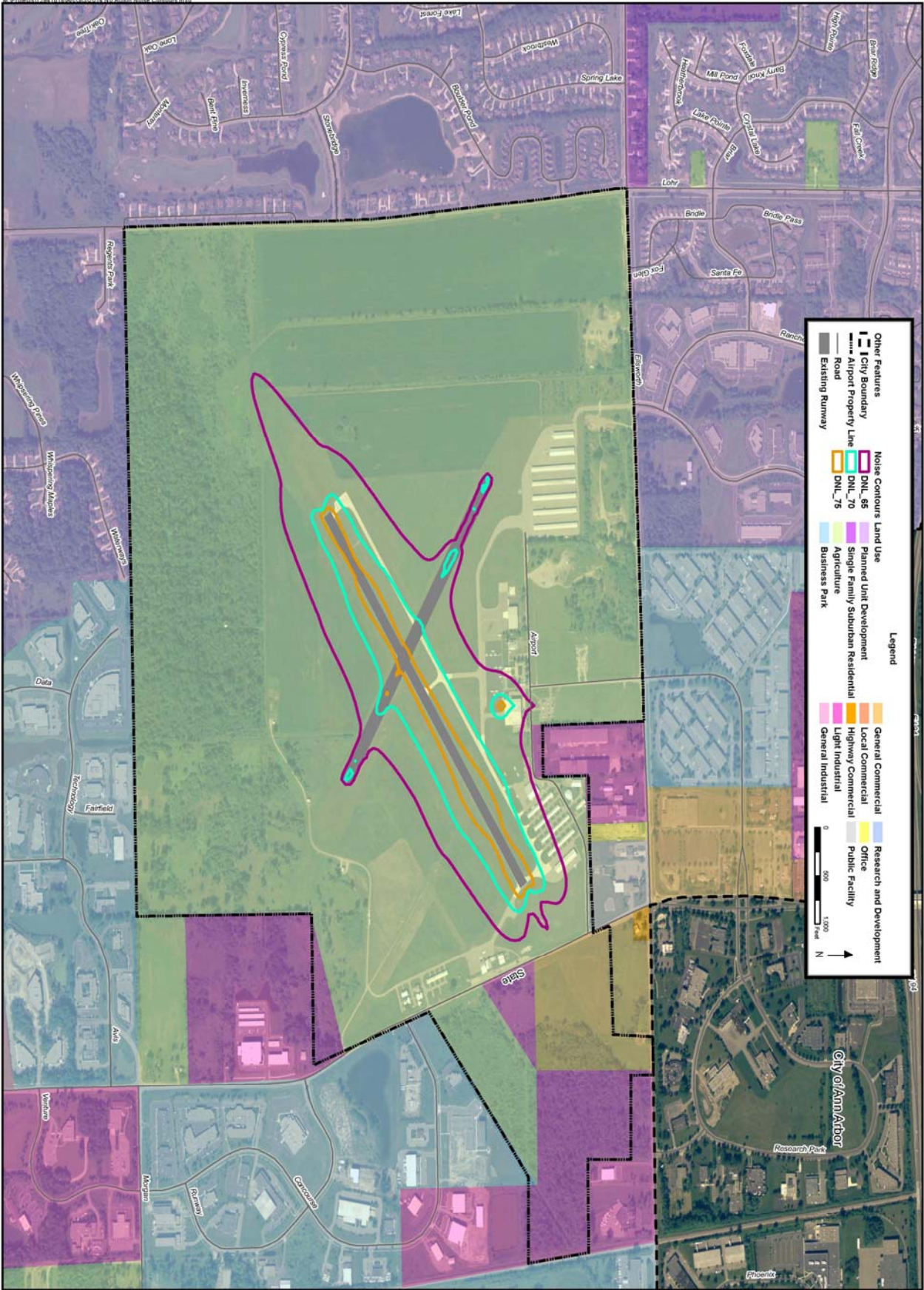


Figure N-2

Ann Arbor Municipal Airport  
 2014 No Action Noise Contour Map



## CRITICAL AIRCRAFT:

The Critical Aircraft is defined by FAA as the most demanding aircraft-type that performs a minimum of 500 annual operations at a particular airport. In cases where the Critical Aircraft weighs less than 60,000 lbs, a classification is used rather than a specific aircraft model.

Based on analysis of the recent User Survey at Ann Arbor Municipal Airport, the current Critical Aircraft classification has been determined to be a **B-II, Small Aircraft**. Aircraft in this category have approach speeds between 91 and 120 knots, wingspans between 49 and 78 feet, and have a maximum certificated takeoff weight of 12,500 lbs. or less.

A representative aircraft of this classification is the Beechcraft King Air 200, a twin-engine turboprop aircraft that typically seats 10-12 passengers, including crew.

## AIRCRAFT CLASSIFICATION (FAA):

### Approach Category:

- Category A: Approach speed less than 91 knots.
- Category B: Approach speed 91 to 120 knots.
- Category C: Approach speed 121 to 140 knots.
- Category D: Approach speed 141 to 165 knots.
- Category E: Approach speed 166 knots +

### Design Group:

- Group I: Wingspan less than 49 feet.
- Group II: Wingspan 49 to 78 feet.
- Group III: Wingspan 79 to 117 feet.
- Group IV: Wingspan 118 to 170 feet.
- Group V: Wingspan 171 to 213 feet.
- Group VI: Wingspan 214 feet +

Small Airplane: An airplane of 12,500 lbs. or less maximum certificated takeoff weight.

Large Airplane: An airplane of more than 12,500 lbs. maximum certificated takeoff weight.

## RUNWAY LENGTH RECOMMENDATIONS FOR B-II, SMALL AIRCRAFT:

**MDOT – Michigan Airport System Plan (MASP 2008):** **4,300 feet**  
(statewide standard)

**FAA – Advisory Circular 150/5325-4B,**  
**“Runway Length Requirements for Airport Design”** **4,200 feet \***  
(airport-specific standard, from Figure 2-2)

\* Note: Runway length obtained graphically from Figure 2-2. The following data for Ann Arbor Municipal Airport was used in the determination:  
Airport Elevation: 839 feet above mean sea level  
Temperature: 83 degrees F mean daily maximum temp of hottest month of year (July)

As stated in FAA Advisory Circular 150/5325-4B, “The design objective for the main primary runway is to provide a runway length for all airplanes that will regularly use it without causing operational weight restrictions.” The Critical Aircraft is considered the regular use aircraft.

The recommended lengths listed above will allow most B-II Small classification aircraft to operate at their optimum capabilities (without weight restrictions), most of the time. Interstate commerce into and out of a community can be negatively impacted if business aircraft are forced to operate with load restrictions (i.e. reduced passengers, fuel, cargo) due to a shorter than recommended length primary runway.

The recommended lengths are also a safety enhancement, that not only provide enough runway for takeoff by a fully-loaded Critical Aircraft, but also provide additional runway for the purpose of bringing the aircraft to a stop in an aborted-takeoff situation. In takeoff situations where pilots detect a problem with the aircraft while on the takeoff roll, if there is not enough runway remaining to bring the aircraft to a stop, pilots are forced to continue the takeoff and deal with the problem in the air. By having enough remaining runway to safely abort a takeoff and bring the aircraft to a stop, a pilot would be able to avoid a potentially hazardous situation of taking to the air with a mechanically-deficient aircraft.

## Citizens Advisory Committee Meeting

July 20, 2009

### Meeting Attendees

Matt Kulhanek	Ann Arbor Municipal Airport
Mark Perry	Airport Advisory Committee
Kristine Martin	5 <sup>th</sup> Ward Resident
Ray Hunter	4 <sup>th</sup> Ward Resident
Tony Derezinski	Ann Arbor City Council
Jad Donaldson	Pilot - Avfuel
David Schrader	FAA Safety Team
Shlomo Castell	Stonebridge Community Association
Jan Godek	Lodi Township Supervisor
Barb Fuller	Pittsfield Township Deputy Supervisor
Kristin Judge	Washtenaw County Commissioner, 7 <sup>th</sup> District
Amy Eckland	JJR
Connie Dimond	JJR
Neal Billetdeaux	JJR
Molly Lamrouex	MDOT
Mark Noel	MDOT
Carol Aldrich	MDOT
Bill Malinowski	URS
Dan Botto	URS

# Exhibit 13

# Citizens Advisory Council – Meeting #3

Ann Arbor Municipal Airport Environmental Assessment

February 22, 2010  
3:00 pm – 4:30 pm

- |    |                                    |             |
|----|------------------------------------|-------------|
| 1. | Introductions                      | 3:00 - 3:10 |
| 2. | Environmental Studies Update       | 3:10 - 3:20 |
|    | a. Wetland Resources               |             |
|    | b. Surface/Groundwater Resources   |             |
|    | c. Cultural Resources              |             |
| 3. | Study Justification                | 3:20 - 3:40 |
|    | a. Purpose and Need Summary        |             |
|    | b. User Survey Supplemental Report |             |
| 4. | Study Status & Next Steps          | 3:40 - 4:00 |
|    | a. Departure Profile Analysis      |             |
|    | b. Next steps                      |             |
| 5. | Discussion                         | 4:00 - 4:30 |
|    | a. CAC member report               |             |

# Information Packet – Citizens Advisory Council Meeting #3

## Ann Arbor Municipal Airport Environmental Assessment

Prepared By: JJR

February 22, 2010

The JJR consultant team has completed investigations to assess existing conditions on airport property and its immediate vicinity for the following categories: noise analysis; land use; socioeconomic; air quality; historic resources; contaminated sites; Section 4(f) resources; and the physical and ecological environment. Data from these investigations is used as a base to identify potential impacts from proposed improvements at the airport. Potential mitigation measures to minimize impacts are also being addressed. Data collection has involved fieldwork, literature searches, and coordination with appropriate resource agencies.

The specific categories of studies are listed below along with a brief description and status of the analysis being completed.

**Noise** – The noise analysis compares the existing noise levels with future levels under two scenarios, a No Build Alternative and a Build Alternative. The Build Alternative assumes the proposed improvements are implemented at the airport. The results of this analysis are compared with the surrounding land use to ensure compatibility.

*Status:* Completed. The noise analysis, which indicates that the Build Alternative is not expected to have any significant aircraft noise impacts, was presented at CAC Meeting #2.

**Land Use** – Existing land use data was collected and compared with any anticipated changes as a result of the proposed improvements at the airport. These changes were compared to the existing land use plans and future land use plans of City of Ann Arbor and surrounding municipalities.

*Status:* Complete. Existing and proposed land use adjacent to and in the immediate vicinity of ARB is compatible with normal airport operations.

**Socioeconomics** – This category includes potential impacts on community displacements (residential and commercial) community cohesion, community facilities, demographics, economy, and environmental justice. Environmental justice considers impacts to low-income and minority populations with the intention of avoiding disproportionate impacts to these populations.

*Status:* Complete. There would be no displacements or impacts to community cohesion, facilities, demographics or economy. There would be no impacts to low-income or minority populations.

**Air Quality** –The study team completed an assessment of the project in accordance with the FAA Air Quality Procedures for Civilian Airports & Air Force Bases (1997). Based on this assessment and prior studies on general aviation airports, the project is not expected to result in violations of National Ambient Air Quality Standards (NAAQS)

*Status:* Complete. It is anticipated that agency coordination will continue through the environmental clearance phase.



**Historic Resources** – The study team evaluated cultural resources, both above-ground and below-ground including a review of the state archaeological site files and the state above-ground resource files to determine if there are any previously recorded cultural resources in or near the airport property.

*Status:* Complete with a determination of no affect from the State Historic Preservation Office.

**Contamination/Hazardous Materials** – The study team researched environmental records including State and Federal databases of sites containing hazardous or contaminated materials to determine whether listed sites exist within the project area. The results of the database search have been summarized in relation to the potential for encountering hazardous or contaminated materials within the limits of the proposed improvements.

*Status:* Complete. The proposed improvements are not anticipated to have an impact on known properties listed by state and/or federal agencies as either contaminated or sites of environmental concern.

**Section 4(f) Resources** - Section 4(f) of the Department of Transportation Act (1966) specifies that publicly-owned land, such as a park, recreational area, or wildlife and waterfowl refuge, of national, state, or local significance, or any land from a historic site of national, state, or local significance, may not be used for transportation projects unless there is no other prudent and feasible alternative.

*Status:* Complete; no Section 4(f) resources will be affected by the proposed Build Alternative.

**Physical and Ecological Environment-** This category encompasses many resources, including water resources, biotic communities, threatened and endangered species, wetland resources, floodplains, and farmland.

**Water Resources** –Based on a review of existing databases and fieldwork, the study team evaluated potential impacts to surface water and subsurface groundwater, including issues related to siltation, runoff, dredge and/or fill activities in navigable waters, aquifer or well contamination, and impacts on sensitive ecological areas.

*Status:* Complete. It is estimated that impervious surface resulting from the Build Alternative would increase slightly from the existing 7 percent to 7.4 percent of the site. Surface and subsurface groundwater resources would not be affected by the proposed improvements.

**Biotic Communities** – Biotic communities that may be impacted by the proposed airport expansion were identified and characterized based on: 1) existing available data, 2) coordination with the U.S. Fish and Wildlife Service (FWS), the Michigan Department of Natural Resources (MDNR), and Michigan Department of Environmental Quality (MDEQ), and 3) fieldwork.

*Status:* Complete. No existing natural biotic communities would be impacted by the proposed Build Alternative.

**Threatened and Endangered Species** – The study team coordinated with the U.S. Fish and Wildlife Service and the Michigan Natural Features Inventory to determine if there are any known threatened or endangered species protected under Federal and/or State jurisdiction within the project area. One state endangered and one state special concern bird species has been observed in the vicinity of the project area.

*Status:* Complete. ARB is coordinating with the Audubon Society to identify restricted mowing areas during breeding seasons for these species.

**Wetlands** – Wetlands were identified through a review of National Wetland Inventory maps, the county soil survey, USGS topographical maps and a field investigation. The Michigan Department of Environmental Quality (MDEQ) completed a field review of the property on July, 21, 2010 to delineate wetlands in the vicinity of proposed improvements.

*Status:* Complete. The Build Alternative would have no wetland impact. The results of the MDEQ investigation will be presented at the February 22, 2010 CAC meeting.

**Floodplains** – The study team reviewed Federal Emergency Management Administration (FEMA) flood boundary maps for the existing stream on the property.

*Status:* Completed. No grading or fill is proposed within the floodplain boundary.

**Farmland** –Impacts to prime and unique farmland, and farmland of state or local significance were determined through a review of county soil maps and coordination with the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS), Michigan Department of Agriculture, and the MDNR. Form AD1006 was completed and submitted to the NRCS for determination of impacts to prime or important agricultural soils.

*Status:* The completed Form AD1006 has been reviewed by the Washtenaw County NRCS with a determination of no impacts to prime and unique farmlands resulting from this project.

**Light Emissions** – Light emissions were evaluated based on the location and type of airfield lighting proposed and proximity to these land uses.

*Status:* Completed. Impacts from light emissions are not considered significant. New lights would be directed upwards and LED units would be used where appropriate.

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**Draft Section 2. Purpose and Need**

## ***Section 2.***

### ***Purpose and Need***

#### **2.1 PROJECT LOCATION AND DESCRIPTION**

*Note: The following information contains a large number of aviation-related acronyms. A glossary with definitions is included in Section 10 of this document.*

Ann Arbor Municipal Airport (ARB) is a public-use, general aviation airport located in Washtenaw County, Michigan. The airport is located in Pittsfield Township and consists of approximately 837 acres. ARB is generally bound by Ellsworth Road to the north, State Road to the east, and Lohr Road to the west (Figure 2-1).

ARB is in close proximity to state highways including US-23, M-14, US-12, and I-94. Direct access to the airport is from Ellsworth and State Roads. The closest public-use airport is Willow Run Airport in Ypsilanti, which is approximately 12 miles to the east (approximately a 20 minute drive by automobile). The southeastern region of Michigan has a high level of commerce, and high levels of commercial, corporate, and general aviation air traffic.

The City of Ann Arbor owns and operates ARB. The city is responsible for contracting with the Fixed Base Operators (FBO), which are Solo Aviation, Ann Arbor Aviation Center, and Bijan Air. ARB's operating budget is an enterprise fund comprised solely of revenue generated by airport operations.

The primary runway, Runway 6/24, is 3,505-feet long by 75-feet wide and is oriented in a northeast/southwest direction. ARB has 22 permanent aviation service buildings, including the administration building, the FBOs, maintenance facilities, conventional box hangars, a privately owned hangar, and the FAA Air Traffic Control Tower (ATCT). The airport also provides 150 T-hangar spaces in an additional 13 T-hangar structures.

The current FAA-approved Airport Layout Plan (ALP) was updated in 2008 (Figure 2-2), and it incorporates the future development proposed in the Airport Capital Improvement Plan for ARB.

The proposed improvements from the ALP that are documented in this EA include:

- Shift and extend existing Runway 6/24, resulting in a runway that would be 4,300-feet long by 75-feet wide.
- Shift and extend the parallel taxiway to coincide with the revised Runway 6/24.
- Provide a new taxiway connector to the extended Runway 6 end.
- Provide a new taxiway connector and holding bay to the shifted Runway 24 end.

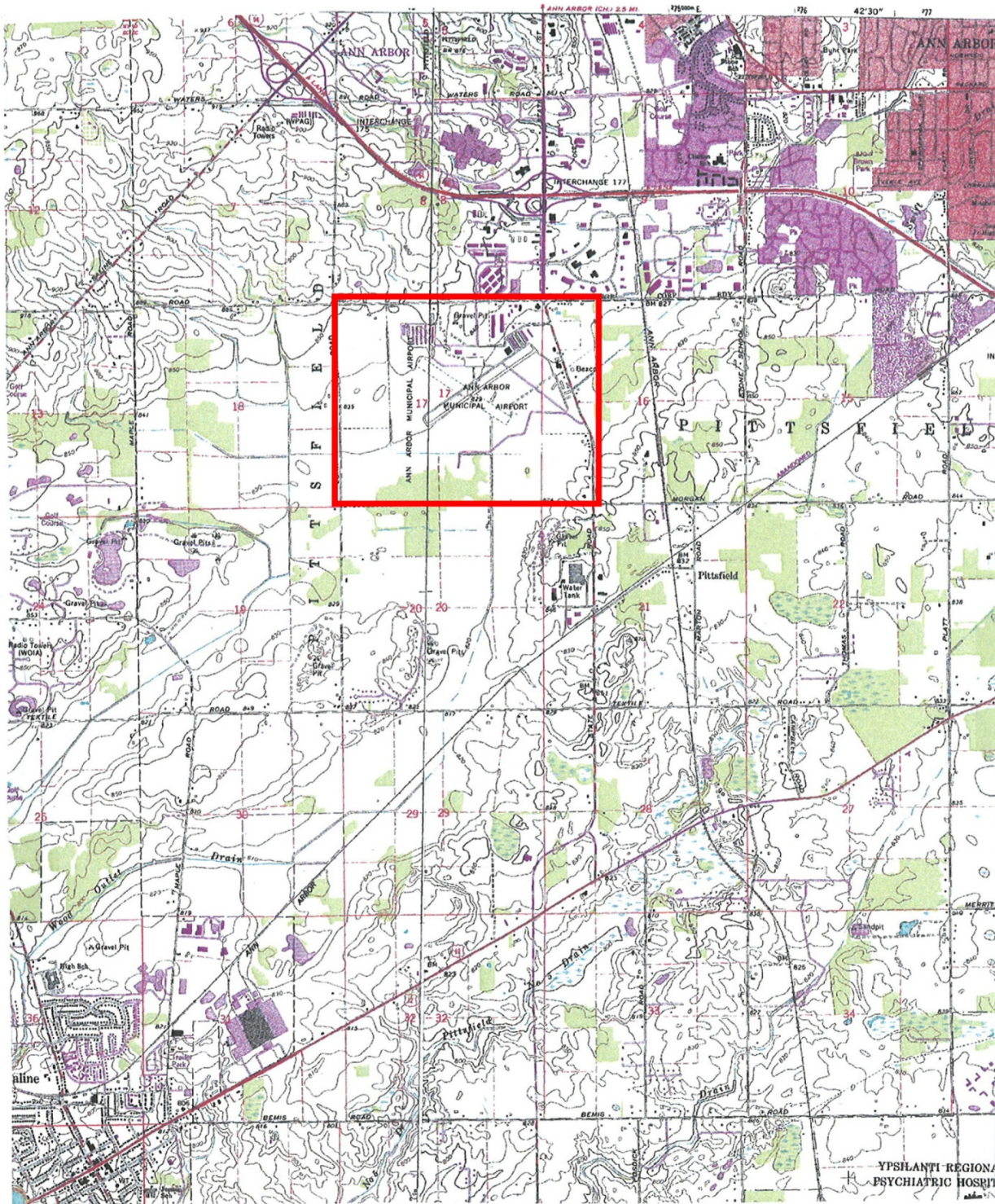


Figure 2.1: Location Map  
Ann Arbor Municipal Airport Environmental Assessment



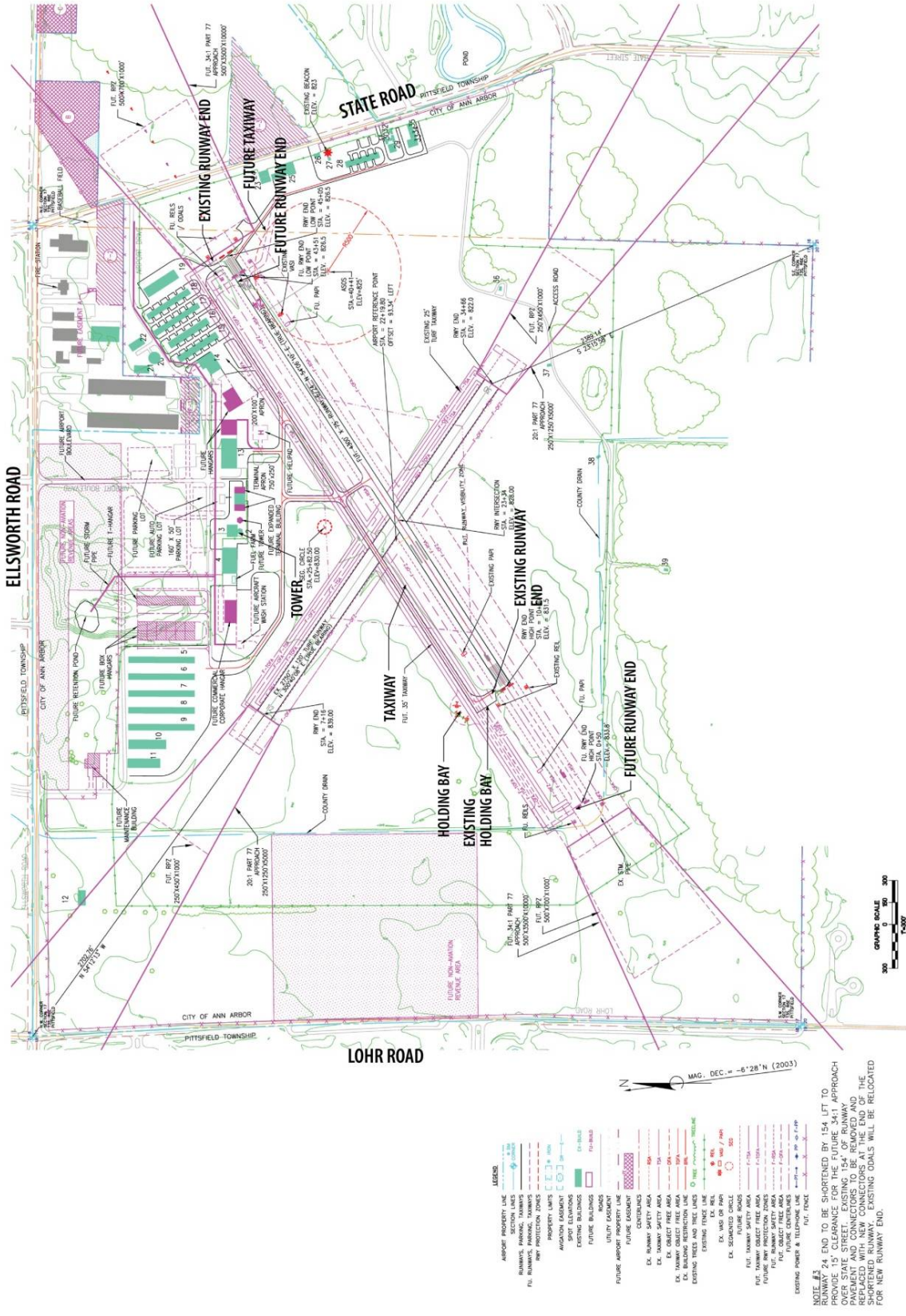


Figure 2.2: Airport Layout Plan  
Ann Arbor Municipal Airport Environmental Assessment

## 2.2 PURPOSE AND NEED

The purpose of the proposed improvements at ARB 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.

The 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. In cases where the critical aircraft weigh less than 60,000 lbs, a classification of aircraft is used rather than a specific individual aircraft model.

A recent Airport User Survey has confirmed that the critical aircraft classification for ARB is “B-II Small Aircraft” (MDOT, 2009). Aircrafts in this category have runway approach speeds between 91 and 120 knots, wingspans between 49- and 79-feet, and maximum certificated takeoff weights of 12,500 lbs or less. A representative aircraft of this classification is the Beechcraft King Air 200, a twin-engine turboprop aircraft that typically seats 10-12 people, including the flight crew.

As stated in FAA Advisory Circular 150/5325-4B, “*The design objective for the main primary runway is to provide a runway length for all airplanes that will regularly use it without causing operational weight restrictions.*” Airplanes that are classified within an airport’s critical aircraft classification are considered by the FAA to be the regular use aircrafts of the primary runway.

Development of the primary runway at ARB to the recommended length of 4,300-feet would allow the majority of B-II Small classification aircraft to operate at their optimum capabilities (without weight restrictions). Interstate commerce into and out of a community can be negatively impacted if business aircraft are forced to operate with load restrictions (i.e. reductions in passengers, cargo, and fuel associated with aircraft range) due to lack of suitable runway length.

An origin-destination analysis was conducted on Instrument Flight Rules (IFR) flight plan records associated with ARB as part of the user survey process. Although the data analyzed did not include records of all operations conducted at ARB, it did confirm that there are a significant number of operations between ARB and distant locations throughout the country.

Flight operations were verified between ARB and at least 31 other states (approximately 63 percent of the continental US). Also, approximately 67 percent of the IFR flight plan records examined were between ARB and out-of-state locations. These factors are strong indicators of corporate flight activity associated with interstate commerce, as opposed to local pleasure flying by general aviation pilots. The large number of states that were linked to ARB is also a strong indicator of use of the airport by many corporations, as opposed to a single or few corporate users. Some of the larger corporations that were confirmed by the user survey as being users of ARB are Synergy International, Wells Fargo, Polaris Industries, Bombardier Aerospace, Avis Industrial Corporation, Thumb Energy, NetJets, and AvFuel. NetJets provides on-demand air charter service and corporate aircraft fractional ownership opportunities to a large number of businesses located throughout the country. AvFuel Corporation, a nationwide supplier of

aviation fuels and aviation support services, is headquartered in Ann Arbor and bases their Cessna 560 Excel Jet at ARB.

The City of Ann Arbor proposes to extend the existing 3,505-foot primary runway to 4,300-feet in total length in order to more effectively accommodate the critical aircraft that currently use the airport. The runway extension would enhance interstate commerce associated with business aviation, and the other proposed modifications would enhance the operational safety of ARB.

The objectives of the proposed project are to:

- Enhance interstate commerce by providing sufficient runway length to allow the majority of critical aircraft to operate without weight restrictions.
- Enhance operational safety by improving the FAA ATCT line-of-sight issues.
- Enhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24, over State Road.
- Reduce the occurrence of runway overrun incidents by small category A-I aircraft (local objective).
- Relocate and potentially upgrade the Runway 24 Approach Light System.

### ***2.2.1 Safety Enhancement***

The proposed 150-foot shift of the Runway 24 threshold to the west would enhance the safety of ground operations by taxiing aircraft. Currently, a hangar structure blocks the line-of-sight from the FAA ATCT to a portion of the parallel taxiway at the east end of the runway, including most of the taxiway hold area for departing aircrafts. While this situation is not considered hazardous, the proposed shift would enhance operational safety, and possibly prevent a runway incursion, by expanding the view of the hold area and parallel taxiway to ATCT personnel.

The proposed shift of the Runway 24 threshold would also allow for a clear 34:1 approach surface to the east end of the runway (the current approach surface is the steeper 20:1). By keeping obstructions below the flatter 34:1 approach surface, an additional margin of safety is provided between approaching aircraft and any ground-based obstacles. This is particularly beneficial when aircraft are operating in low-visibility conditions. Provision of a clear 34:1 approach surface would also potentially allow visibility minimums to the Instrument Approach Procedure to Runway 24 to be lowered to 3/4 of a mile, as opposed to the current 1-mile visibility minimum. This would enhance the all-weather capability of the airport (and also interstate commerce) by allowing aircraft to continue to access the airport when weather conditions resulted in visibility dropping below the current 1-mile minimum.

Due to the proposed relocation of the Runway 24 threshold, it is also proposed that the existing runway approach light system be relocated accordingly. The airport currently uses an Omni-Directional Approach Lighting System (ODALS) to identify the approach end of Runway 24. The sequentially-flashing strobe lights assist pilots in identifying the runway threshold location and runway centerline alignment in low-visibility conditions. Since the FAA no longer installs ODALS, the current approach light system would potentially be upgraded and replaced with the newer Medium Intensity Approach Lighting System with Sequenced Flashers (MALSF) as part



of the relocation. The MALSF would serve the same function as the ODALS, and is structurally very similar.

### **2.2.2 Role of the Airport**

ARB is a public-use facility that serves the local community by supporting economic development and public services. The following businesses and organizations are located at and operate from the airport and employ staff that supports the operations of the airport:

- Two fixed-wing FBOs;
- A helicopter FBO;
- Three national rental car agencies;
- Two flying clubs;
- Four flight schools and pilot training centers;
- FAA ATCT; and,
- Air taxi, aircraft sales, aviation insurance and aviation fueling businesses.

ARB serves the Ann Arbor medical and biomedical industries with professional air ambulance services, transporting patients, human organs, radio isotopes, and other biomedical products and services.

Community pilots and aircraft owners are members of nonprofit organizations providing “no charge” charitable gifts of flight time to citizens in need. Some of these organizations include Wings of Mercy, Angel Flight, and Dreams and Wings. Wings of Mercy has documented 292 flights into or out of ARB since 1992 including 51 flights in 2009.

ARB is included in the FAA’s National Plan of Integrated Airport Systems (NPIAS) as a general aviation airport. Not all public-use airports are included in this nationwide airport system plan. Inclusion in the NPIAS signifies that the FAA considers this airport an important part of the nation’s air transportation system, and it makes ARB eligible to receive federal grants as part of the FAA’s Airport Improvement Program.

ARB is also included in MDOT’s Michigan Airport System Plan (MASP) (MDOT, 2008). The MASP presents the results of an airport system planning process that has been aligned with the goals and objectives of MDOT’s State Long Range Plan. The MASP supports programming decisions and is useful in evaluating programming actions related to airport system and airport facility deficiencies.

As part of the MASP development, each of Michigan’s public-use airports were assigned to one of three tiers based on their contribution to the state system goals. Tier 1 airports respond to essential/critical airport system goals. These airports should be developed to their full and appropriate level. Tier 2 airports complement the essential/critical airport system and/or respond to local community needs. Focus at these airports should be on maintaining infrastructure with a lesser emphasis on facility expansion. Tier 3 airports duplicate services provided by other airports and/or respond to specific needs of individuals and small business.

The MASP identifies ARB as a Tier 1 airport, with a current MASP classification of B-II. Basic standard developmental items for B-II category airports, as outlined in Table 40 of the MASP, are a paved primary runway of 4,300-feet in length by 75-feet wide, a paved parallel taxiway, appropriate runway lighting and visual aids, a runway approach protection plan, basic pilot and aircraft services, all-weather access, year-round access, and landside access. Although it is not a requirement, MDOT encourages all of Michigan's Tier 1 airport sponsors to consider development of their airports to comply with the basic development standards outlined in the MASP.

ARB currently meets all MASP basic development standards for category B-II airports, with the exception of runway length. The current primary runway is only 3,505-feet in length by 75-feet wide. An extension of the primary runway to 4,300-feet in length would result in the airport meeting all state-recommended standards for B-II category airports.

### ***2.2.3 Aircraft Operations and Runway Length Recommendations***

The Airport Reference Code (ARC) is a coding system developed by the FAA to correlate airport design criteria with the operational and physical characteristics of the airplane types that regularly use a particular airport. The critical aircraft, or grouping of aircraft, are generally the largest, most demanding types that conduct at least 500 operations per year at the airport. The ARC for each particular airport is determined based on two characteristics of the critical aircraft: the approach speed to the runway and the wingspan of the aircraft.

The first component, designated by letter A through E, is the critical aircraft's Approach Category. This is determined by the approach speed to the runway:

- Category A: Approach speed less than 91 knots.
- Category B: Approach speed 91 knots or more, but less than 121 knots.
- Category C: Approach speed 121 knots or more, but less than 141 knots.
- Category D: Approach speed 141 knots or more, but less than 166 knots.
- Category E: Approach speed 166 knots or more.

The second component, designated by Roman numeral I through VI, is the critical aircraft's Design Group. This is determined by the wingspan of the aircraft:

- Group I: Wingspan less than 49-feet.
- Group II: Wingspan 49-feet or more, but less than 79-feet.
- Group III: Wingspan 79-feet or more, but less than 118-feet.
- Group IV: Wingspan 118-feet or more, but less than 171-feet.
- Group V: Wingspan 171-feet or more, but less than 214-feet.
- Group VI: Wingspan 214-feet or more, but less than 261-feet.

The FAA has also established categories for aircraft based on their certificated Maximum Takeoff Weights (MTOW), which are determined by each specific aircraft's manufacturer. *Small Aircraft* are those with MTOWs of 12,500 lbs. or less. *Large Aircraft* are those with MTOWs greater than 12,500 lbs.

As previously mentioned, the airport user survey confirmed that the current critical aircraft category (and ARC) for ARB is “**B-II Small Aircraft**”. Based on the findings of the user survey analysis, the primary runway length recommendations by MDOT and FAA are as follows:

**MDOT** – Source: *Michigan Airport System Plan (MASP 2008)* **4,300-feet**  
*Table 40 (statewide standard for all ARC B-II airports)*

**FAA** – Source: *FAA Advisory Circular 150/5325-4B,* **4,200-feet\***  
*“Runway Length Requirements for Airport Design”*  
*Figure 2-2 (airport-specific standard for ARB)*

\* Note: The FAA runway length recommendation was obtained from Figure 2-2 in Advisory Circular 150/5325-4B. The following specifics for ARB were used in the determination:  
Airport Elevation: 839-feet above mean sea level  
Temperature: 83 degrees F mean daily maximum temp, hottest month of year (July)

The FAA recommended runway length of 4,200-feet at ARB was obtained by calculation from FAA Advisory Circular 150/5325-4B, “*Runway Length Requirements for Airport Design*”, a publication that is used nationally by the agency. The resulting recommended runway lengths are airport-specific, and can vary by hundreds of-feet from site to site, depending on the specific airport elevations and mean daily maximum temperatures used in the calculations.

The MDOT recommendation of 4,300-feet is a statewide standard for all airports in the state with category B-II critical aircraft classifications. Since airport elevations and mean maximum temperatures do not vary significantly from airport to airport in Michigan, as opposed to many other states, MDOT uses a single runway length recommendation for all airports of the same critical aircraft classification.

The existing ARC shown on the current ALP for the airport is category B-II. This classification has been confirmed correct by the recent airport user survey. Even if the proposed extension to 4,300-feet is constructed, the ALP shows that the future ARC for the airport will remain category B-II.

#### **2.2.4 Airport Operational Forecasts**

Year 2007 was the onset year of planning activities associated with the potential extension of Runway 6/24, and the year in which the airport manager and FBOs were requested to collect based and itinerant aircraft operational data for the purpose of determining project justification. In order to maintain consistency, FlightAware operational records from target year 2007 were also examined during the user survey analytical process.

Actual total operations for year 2009 were recently published (January 2010) by the FAA for airports with ATCT. From the user survey operational data year 2007 through the most recent operational data year 2009, total annual operations at ARB have decreased approximately 21.8%

(from 72,853 actual in 2007 to 57,004 actual in 2009). Since the operational totals were obtained from actual ATCT records, rather than estimates, they are considered very accurate.

By applying the 21.8% decrease in total annual operations at ARB from 2007 to 2009 to the user survey results, a very accurate estimate can be obtained for the current level of operations by B-II category critical aircraft. The user survey report documents a total of 750 actual annual operations by B-II category critical aircraft from survey data year 2007. A 21.8% decrease in this number is 586 - still well above the FAA's substantial use threshold of 500. Therefore, even with the current decrease in annual operations due to the economic recession, there is still justification at the present time for the runway extension.

The FAA's Terminal Area Forecast (TAF) shows year 2009 to be a low-point in total annual operations at ARB. The TAF projects total annual operations to continually increase every single year, from year 2010 through year 2030. Since the estimated 586 annual operations by B-II category aircraft in year 2009 confirm present justification for the runway extension, the continual increase in operations that are forecasted by the TAF confirm that justification for the runway extension is substantiated through year 2030.

The following actual and forecasted Total Operations at ARB, from year 2000 through year 2030, are from the FAA data sources listed below. The Estimated Category B-II Operations for each year have been calculated based on the percentage of actual B-II operations to actual total operations in survey data year 2007.

**Table 2-1  
Actual and Forecasted Total Operations at ARB**

<b>Year</b>	<b>Total Operations</b>	<b>Estimated Category B-II Operations</b>
2000	104,342 *	1,074
2001	102,321 *	1,053
2002	91,414 *	941
2003	77,051 *	793
2004	65,516 *	674
2005	67,940 *	699
2006	71,785 *	739
2007	72,853 *	750***
2008	64,910 *	668
2009	57,004 *	586
2010	56,986 **	586
2010	57,514 **	592
2012	58,073 **	598
2013	58,639 **	604
2014	59,212 **	610
2015	59,791 **	616
2016	60,376 **	622
2017	60,968 **	628
2018	61,567 **	634
2019	62,173 **	640
2020	62,786 **	646
2021	63,405 **	653
2022	64,032 **	659
2023	64,666 **	666
2024	65,307 **	672
2025	65,956 **	679
2026	66,613 **	686
2027	67,277 **	693
2028	67,948 **	700
2029	68,627 **	706
2030	69,314 **	714

\* = Actual Total Operations from FAA ATCT records  
 \*\* = Forecasted Total Operations from FAA TAF  
 \*\*\* = Actual (from User Survey)

Forecasts from the MDOT MASP also project increasing total operations at ARB from years 2010 through 2030. The MDOT forecasts, which are independent of the FAA forecasts, further substantiate the mid-term and long-term FAA projections of a rebound in activity at ARB to near survey year 2007 operational levels.

AvFuel Corporation, which bases a B-II Large category Citation 560 Excel jet at ARB, has confirmed in writing that their operations at ARB increased from 211 actual operations in 2007 to 223 actual operations in 2008. Their Chief Pilot has also submitted written documentation that forecasts their future operational levels potentially increasing to 350 to 450 operations per year at ARB.

The FAA TAF forecast, MDOT MASP forecast, and AvFuel's operational forecast all provide support to the fact that survey year 2007 operational data that was analyzed in the user survey process is a very pertinent representation of estimated future operational levels at ARB.

### **2.2.5 Surrounding Land Uses**

ARB is bordered by Ellsworth Road to the north, Lohr Road to the west, and State Road to the east. The primary runway is situated in a northeast/southwest direction. Residential, business, industrial, recreational, agricultural, and forested areas are located adjacent to the airport, and efforts were made during the analysis of alternatives to minimize impacts to these resources. Residential properties are located along Lohr Road and business properties are located along State and Ellsworth Roads. A perennial stream crosses through the airport property and flows to the south connecting to a county drain (Wood Outlet). A portion of the stream near the southwest end of the runway is enclosed in a concrete culvert.

### **2.2.6 Other Considerations**

Aircraft performance information and runway length requirements for each airplane are contained in the individual airplane flight operating manual. As quoted from FAA Advisory Circular 150/5325-4B, Paragraph 206, "*This information is provided to assist the airplane operator in determining the runway length necessary to operate safely. Performance information from those manuals was selectively grouped and used to develop the runway length curves in Figures 2-1 and 2-2. The major parameters utilized for the development of these curves were the takeoff and landing distances for Figure 2-1 and the takeoff, landing, and accelerate-stop distances for Figure 2-2.*" As stated earlier in this section, Figure 2-2 of the Advisory Circular was used to determine the FAA-recommended runway length for ARB.

The *accelerate-stop distance* concept referred to above is an important operating consideration. In this concept, the pilot not only considers the amount of runway needed for takeoff, but also the amount of runway needed to abort the takeoff while on the takeoff roll and bring the aircraft to a stop. In situations where pilots detect a problem with the aircraft while on the takeoff roll, they are forced to continue the takeoff and contend with the problem in the air if there is not enough runway remaining to bring the aircraft to a stop. By having enough remaining runway to safely abort a takeoff and stop the aircraft while still on the ground, a pilot would be able to avoid a potentially hazardous situation of taking to the air with a mechanically-deficient aircraft.

A local objective is to reduce the occurrence of runway overrun incidents. While overrun incidents are not officially recognized by the FAA or MDOT as justification for extending runways, there is merit to this local objective. The 11 overrun incident reports that were analyzed showed that most runway overruns at ARB involved small single-engine category A-I aircraft. These types of incidents often involve student pilots or low-time, relatively

inexperienced pilots. There is no evidence in the incident reports that any of the aircraft which overran the end of the existing 3,505-foot runway exceeded the limits of the 300-foot long turf Runway Safety Area. Therefore, in each of these cases, the proposed 4,300-foot long runway would have provided sufficient length for the small category A-I aircraft to safely come to a stop while still on the runway pavement, without running off the runway end.

The considerations mentioned above do not imply that the existing 3,505-foot runway is unsafe in any regard. Accelerate-stop distance requirements can be accommodated on the existing runway if pilots of critical category aircraft operate at reduced load capacities. In the cases of the previous runway overrun incidents, the turf Runway Safety Areas to the existing runway performed as designed and provided a clear area for the overrunning aircraft to come to a stop. There were no reports of personal injuries, although there were reports of aircraft damage in several of the incidents.

### **2.2.7 Summary**

The proposed shift and extension of primary Runway 6/24 at ARB would provide a runway configuration that more effectively accommodates the critical aircraft that presently use the facility. The proposed project would satisfy the FAA design objective of providing sufficient runway length to allow airplanes that regularly use it to operate without weight restrictions. The proposed project would also result in ARB achieving full compliance with all MDOT basic developmental standards outlined in the MASP 2008 for category B-II airports.

In particular, the proposed project would provide the following benefits:

- Enhance business aviation and interstate commerce by providing sufficient runway length to allow the majority of category B-II Small critical aircraft that currently use ARB to operate without load restrictions (i.e. reduction in passengers, cargo, and fuel associated with aircraft range).
- Enhance the safety of ground operations, and lessen the chances of a runway incursion, by expanding the view of the parallel taxiway and aircraft hold area to ATCT personnel.
- Improve the all-weather capability of ARB and enhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24.
- Address the local objective of decreasing the number of runway overruns by small category A-I aircraft by providing approximately 800-feet of additional runway pavement.

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## **Airport User Survey Supplemental Report**



**SUPPLEMENTAL REPORT  
AIRPORT USER SURVEY**

**ANN ARBOR MUNICIPAL AIRPORT (ARB)  
ANN ARBOR, MICHIGAN**

**December 2009**

This Supplemental Report is associated with the original Airport User Survey Report for Ann Arbor Municipal Airport (ARB), dated July 2009. The information contained in this supplement provides additional details and updates to the information contained in the original report.

Additional analysis of the aircraft operational data has resulted in the generation of supplemental information, three new exhibits, and updates to the numbers of annual operations performed by category B-II critical aircraft. The following paragraphs explain in detail the information provided in the new exhibits, as well as the supplemental information and updates to the operational numbers listed in the original user survey report.

**EXHIBIT No. 1: *Annual Operations Analysis by Specific Aircraft Model***

This exhibit shows annual operations at ARB by specific aircraft model, rather than only by their FAA aircraft classification as shown in the original user survey report. The various aircraft models are listed in three separate tables, based upon groupings of their FAA classifications (B-II, C-I, and C-II).

Supplemental data associated with annual operations by the Beechcraft King Air C90 has been included in the B-II category table of this exhibit. Operations by this particular model of aircraft were not included in the original July 2009 Airport User Survey Report.

**EXHIBIT No. 2: *Origin / Destination Analysis by State***

Exhibit No. 2 shows the results of an origin and destination analysis of aircraft operations conducted at ARB, based on examination of the FlightAware database from survey year 2007. Although 274 of the operations had aircraft model and ownership information blocked from the database at the aircraft owner's request, the origin and destination cities of each flight were still included.

The first column of the table shown in this exhibit lists 31 states (and Washington DC) from which operations into ARB originated, or operations out of ARB were going to as a destination. The second column lists operations attributed to each state by the 274 total operations with blocked aircraft and ownership records. The third and fourth columns list operations attributed to each state by B-II Small and B-II Large category aircraft. The last column lists the total number of operations attributed to each state.

The numbers of operations associated with each state are from the FlightAware Instrument Flight Rule (IFR) flight plan database only, and do not include records of all itinerant operations between ARB and other states. Nonetheless, the numbers shown in this exhibit confirm that in 2007, flight operations were conducted between ARB and at least 31 other states (approximately 63% of the continental US). Also, approximately 67% of the IFR flight records for the category B-II critical aircraft were between ARB and out-of-state locations. These factors confirm that there is a significant amount of flight operations being conducted at ARB that are either going to, or coming from, distant locations in other states.

### **EXHIBIT No. 3: *Small 10-Seat Aircraft Analysis***

The table in this exhibit lists *Small* aircraft models (less than or equal to 12,500 lbs. maximum certificated takeoff weight) that have 10 or more passenger seats, and that conducted operations at ARB in survey year 2007. The numbers of annual operations listed in the table are from the FlightAware IFR flight plan database only, and do not include records of all operations by aircraft of this type. The FlightAware records show that there were 425 annual operations by Small 10-seat or higher aircraft.

Exhibit No. 3 also shows that there were 211 annual operations by *Large* category (greater than 12,500 lbs. maximum certificated takeoff weight) B-II aircraft from the Based Aircraft data source and another 85 annual operations by Large category B-II aircraft from the FlightAware data source. The number of annual operations performed by the Small 10-seat or higher aircraft and the Large category aircraft combined is shown as 721.

The operational numbers listed in Exhibit No. 3 do not include blocked FlightAware operations, Visual Flight Rule (VFR) operations, or operations logged by pilots on the Fixed Base Operator (FBO) airport registers. Although the information shown is only a partial representation of all applicable aircraft, the 721 annual operations that were substantiated significantly confirm that Figure 2-2 in FAA Advisory Circular 150/5325-4B is the appropriate chart to reference in the determination of the FAA-recommended runway length of 4,200 feet at ARB.

### **UPDATED BASED AIRCRAFT ANALYSIS:**

The Based Aircraft Analysis of the original user survey report listed 200 estimated annual operations by AvFuel's B-II Large category aircraft (see page 3 of the original report). AvFuel's Chief Pilot has since confirmed in writing that the actual number of operations by their Cessna Citation XL 560 aircraft at ARB over the past three calendar years has been 224 operations in 2006, 211 operations in 2007, and 223 operations in 2008.

In order to maintain consistency with the other survey year 2007 operational records analyzed, Exhibit No. 1 of this Supplemental Report shows the 211 actual annual operations by this aircraft in the "Based Aircraft Data Source" column of the category B-II table, instead of the original estimate of 200.

### **UPDATED ITINERANT AIRCRAFT ANALYSIS: (FBO Data Sources)**

Itinerant (visiting) aircraft operational data that was evaluated as part of the original user survey analysis was obtained from the pilot registration logs (airport registers) of two of the airport's FBOs - Solo Aviation and Ann Arbor Aviation Center. Data was examined for a six-month survey time frame, and cross-checked against FlightAware records in order to prevent counting the same aircraft twice. Any operations that were already included in the FlightAware records were not included in the operational totals that were generated from the FBO records.

The FBO records provided 40 additional operations by B-II and greater category aircraft (32 by category B-II aircraft, 6 by category C-I aircraft, and 2 by category C-II aircraft). Since this data was based on a six-month time frame instead of the full calendar year 2007, these 40 actual operations were prorated into an estimated equivalent annual rate of 80 operations. The additional 40 estimated operations were the only operations in the original user survey analysis that were obtained by prorating actual partial-year data into an estimated equivalent annual rate.

As part of the supplemental analysis, estimated operations that were originally generated as a result of prorating partial-year data were not considered in the determination of the annual operations at ARB. This eliminates the potential effect of seasonal variation in flight activity levels negatively influencing annual operational estimates. Only the 40 actual operations that were documented by the FBOs as having occurred within the six-month survey period were counted as valid operations, since they did in fact occur in 2007. No operations were attributed to the remaining six months.

Exhibit No. 1 of this supplemental report shows only the 40 actual documented operations (32 by category B-II aircraft, 6 by category C-I aircraft, and 2 by category C-II aircraft) in the column that is labeled "2 FBO Register Data Sources".

## UPDATED FLIGHTAWARE DATABASE ANALYSIS:

The FlightAware database analysis that was performed for the original July 2009 Airport User Survey Report resulted in the determination of 265 actual annual operations by B-II Small aircraft, and another 85 actual annual operations by B-II Large aircraft (see page 6 of the original report). However, the resulting numbers did not include operations by the Beechcraft King Air C90 model.

The King Air C90 is a B-II Small category aircraft, with a wingspan of 50'3". Earlier versions of the King Air 90 models (A90 and B90) have wingspans of less than 49', and are therefore category B-I Small aircraft. Since the FlightAware records that were originally analyzed for ARB did not include information which identified the specific model of each King Air 90 operation, no operations by King Air 90s were included in the original user survey analysis and report.

Although the FlightAware records do not provide information regarding the specific model of each King Air 90 operation listed, they do provide the aircraft registration N-number of each aircraft. By entering the N-number into the computerized FAA aircraft registration database, the specific model of each King Air 90 operation was able to be determined. A total of 157 operations by the B-II Small category King Air C90 model have been identified, out of 220 operations by King Air 90 models of all types.

Exhibit No. 1 of this supplemental report shows the 157 King Air C90 operations included in the "Flight Aware Data Source" column of the category B-II table. By adding these operations to the 265 operations by B-II Small aircraft and 85 operations by B-II Large aircraft that were previously identified in the original user survey report, the updated total number of actual annual operations by B-II category aircraft obtained from the FlightAware data source is 507.

The FlightAware database also confirmed usage of the airport by many large corporations, in addition to AvFuel, which is the only one actually based at ARB. Some of the other corporate users of ARB include Synergy International, Wells Fargo, Polaris Industries, Bombardier Aerospace, Avis Industrial Corporation, Thumb Energy, and NetJets. NetJets provides on-demand air charter services and corporate aircraft fractional ownership opportunities to a large number of other corporations that are located throughout the country.

## AIRCRAFT OPERATIONAL FORECASTS:

Year 2007 was the onset year of the current planning activities associated with the potential extension of Runway 6/24. At that time, the airport manager and FBOs were requested to collect based and itinerant aircraft operational data over the course of year 2007 for the purpose of determining project justification. This data was reviewed during the user survey analysis, which was conducted in early 2009.

FlightAware records for any given year are not published until that particular calendar year has ended, and all operations that took place during the course of that year counted. Since the user survey analysis was conducted in early 2009, the most current operational records available at the time from FlightAware were associated with calendar year 2008. Although year 2008 records were available, year 2007 records from FlightAware were used in the user survey analytical process. This was due to the importance of maintaining consistency of year of operational records in the analysis, and not combining operational data collected by the airport manager and FBOs over year 2007 with the more recent FlightAware records from year 2008. The FlightAware records, airport manager records, and FBO records from calendar year 2007 that were used in the user survey analysis were all only one-year old at the time, and still considered valid for use in determining project justification.

The FAA Terminal Area Forecast (TAF) does project a short-term approximate 22% decrease in total annual operations at ARB from user survey year 2007 through year 2009 (from 72,895 actual in 2007 to 56,956 estimated for 2009). However, beginning in year 2010, the TAF projects continuously increasing annual operations at ARB, from the year 2009 low-point through year 2030. Itinerant annual operations are even projected to surpass survey year 2007 levels prior to the end of the 2030 forecast period.

Even if the worst case short-term projected 22% decrease in total annual operations is applied to the user survey results, there is still significant justification for the runway extension. The user survey report documents a total of 750 actual annual operations by B-II category critical aircraft that justify the runway extension. A 22% decrease in this number is 585 - still well above the FAA's substantial use threshold of 500. And again, beginning in 2010, operations at ARB are projected by the FAA to begin increasing every single year from that point forward, through year 2030.

Forecasts from the MDOT Michigan Airport System Plan (MASP 2008) also project increasing itinerant and total operations at ARB from years 2010 through 2030. The MDOT forecasts further substantiate the mid-term and long-term FAA projections of a rebound in current operational activity at ARB to survey year 2007 levels.

AvFuel Corporation, which bases a B-II Large category Citation 560 Excel jet at ARB, has confirmed that their operations at ARB actually increased from 211 operations in 2007 to 223 operations in 2008. Their Chief Pilot estimates that their future operational levels could potentially increase to 350 to 450 operations per year at ARB.

The FAA TAF forecast, MDOT MASP forecast, and AvFuel's operational forecasts all provide support to the fact that survey year 2007 operational data is a very pertinent representation of estimated future operational levels at ARB.

### SUMMARY:

The supplemental analysis that was conducted after publication of the July 2009 Airport User Survey Report has resulted in additional justification in support of extension of Runway 6/24 to 4,300' in length.

Further analysis of the FlightAware IFR flight plan database has confirmed 507 actual operations at ARB in survey year 2007 by B-II category aircraft. This number does not include operations in the FlightAware records with aircraft information blocked at the owner's request, or VFR operations that were conducted without flight plans. Judging by the high number of out-of-state origin and destination locations of operations listed in the blocked category (see Exhibit No. 2), it is very likely that many of the associated aircraft were of the B-II or greater categories. Therefore, actual operations at ARB by aircraft of these categories are likely considerably higher than the 507 substantiated operations obtained from the FlightAware database.

The 507 actual operations by B-II category aircraft that were obtained from the FlightAware database also do not include operations conducted by AvFuel's based Cessna Citation XL 560, or operations obtained from the two FBO airport registers. AvFuel has confirmed 211 actual operations at ARB in 2007 with their B-II category aircraft, and data provided by the FBOs has confirmed 32 actual operations in 2007 by B-II category aircraft.

In summary, the supplemental analysis of this user survey has confirmed a total of 750 actual annual operations at ARB by category B-II aircraft. FlightAware records also confirmed that operations by aircraft in this critical aircraft category were performed by many large corporations, some of which are listed on page 4 of this report.

## CONCLUSION:

In the majority of airport user survey processes, determinations and recommendations are issued based on analysis of estimated annual operations obtained from various airport users. In conducting the user survey at ARB, the analysis focused on evaluation of actual annual operations performed at the airport. This is obviously a much more accurate method of calculating the total number of annual operations associated with the determination of the critical aircraft and Airport Reference Code. It also eliminates the possibility of an airport user inflating their estimated operational numbers, in the hopes of obtaining a longer runway that is not truly justified.

While the numbers listed in this report do not include every operation that occurred at ARB in survey year 2007 with B-II category aircraft, they do confirm substantial usage of the airport by aircraft of this critical aircraft category. The Origin/Destination Analysis has shown a significant number of operations between ARB and distant out-of-state locations, which is a very good indicator of corporate activity associated with interstate commerce, as opposed to pleasure flying by general aviation pilots. FlightAware records also confirmed usage of the airport by many large corporations.

The information contained in this Supplemental Report provides additional justification in support of the findings and recommendations of the original July 2009 Airport User Survey Report. The user survey analysis has shown that justification for the proposed extension of primary Runway 6/24 to 4,300-feet has been confirmed, and the proposed project has been determined to be eligible to receive state and federal funding.

Although justification for the proposed project has been substantiated according to current MDOT and FAA standards associated with runway length recommendations, neither agency requires that the runway be extended. It is ultimately – and entirely – the decision of the city of Ann Arbor whether or not to proceed with the development of the project.



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Mark W. Noel, P.E., Manager  
Project Development Section  
MDOT – Airports Division

ANN ARBOR MUNICIPAL AIRPORT USER SURVEY - SUPPLEMENTAL REPORT - DECEMBER 2009

EXHIBIT NO. 1

ANNUAL OPERATIONS ANALYSIS BY SPECIFIC AIRCRAFT MODEL

Aircraft Model	FAA Approach Category	FAA Design Group	FAA Weight Class	Seating	Maximum Takeoff Weight (lbs.)	Aircraft Engine Type	Flight-Aware Data Source	Based Aircraft Data Source	2 FBO Register Data Sources	Total Annual Operations by Model
Aero Commander 695	B	II	Small	<10	<12,500	Multi-Eng	4	0	0	4
Beechcraft King Air C90	B	II	Small	10+	<12,500	Multi-Eng	157	0	0	157
Beechcraft King Air 100	B	II	Small	10+	<12,500	Multi-Eng	39	0	2	41
Beechcraft King Air 200	B	II	Small	10+	<12,500	Multi-Eng	215	0	8	223
Cessna 441 Conquest II	B	II	Small	<10	<12,500	Multi-Eng	7	0	4	11
Beechcraft King Air 300	B	II	Large	10+	12,500+	Multi-Eng	11	0	8	19
Beechcraft King Air 350	B	II	Large	10+	12,500+	Multi-Eng	43	0	4	47
Cessna Citation II 550	B	II	Large	<10	12,500+	Jet	6	0	2	8
Cessna Citation XL 560	B	II	Large	<10	12,500+	Jet	25	211	2	238
Cessna Citation 680	B	II	Large	<10	12,500+	Jet	0	0	2	2

Total B-II Category Annual Operations 507 211 32 750

Learjet 25	C	I	Large	<10	12,500+	Jet	0	0	2	2
Learjet 31	C	I	Large	<10	12,500+	Jet	0	0	2	2
Learjet 45	C	I	Large	<10	12,500+	Jet	0	0	2	2

Total C-I Category Annual Operations 0 0 6 6

IAI Westwind 1125	C	II	Large	<10	12,500+	Jet	0	0	2	4
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Total C-II Category Annual Operations 0 0 2 4

**CRITICAL AIRCRAFT CATEGORY DETERMINATION:** B-II (Based on 750 Total Annual Operations by Aircraft of this Category)

NOTE: The annual operations listed in the above tables are ACTUAL documented operations from calendar year 2007. The numbers do NOT include any ESTIMATED operations obtained through proration of partial-year data, or other methods. Operations recorded by the FBOs and listed above represent only a partial-year (six-month) time frame.

A total of 274 operations in the FlightAware database had aircraft model and ownership information blocked at the owner's request. As a result, their operational numbers are NOT included in the information shown above. Judging by the high number of out-of-state origin and destination locations of aircraft in the blocked category (see Exhibit No. 2), it is very likely that many of the associated aircraft were of the B-II and greater categories. Therefore, actual operations at ARB by aircraft of these categories are likely considerably higher than the numbers shown above.



EXHIBIT NO. 2 ORIGIN / DESTINATION ANALYSIS BY STATE

Origin / Destination Analysis of IFR Aircraft Operations Between ARB and Other States (Records from FlightAware 2007 Database)				
STATE	Aircraft Type & Category Blocked	B-II Small Category	B-II Large Category	Totals by State
1 Alabama	0	1	0	1
2 Arizona	1	0	0	1
3 Arkansas	2	1	0	3
4 Connecticut	5	2	0	7
5 Florida	29	3	3	35
6 Georgia	5	6	12	23
7 Illinois	25	64	5	94
8 Indiana	6	21	1	28
9 Iowa	1	20	3	24
10 Kansas	3	0	0	3
11 Kentucky	2	13	0	15
12 Maine	2	0	0	2
13 Maryland	1	3	7	11
14 Massachusetts	5	0	1	6
15 Michigan	79	162	20	261
16 Minnesota	2	3	2	7
17 Missouri	0	5	0	5
18 Nebraska	3	0	1	4
19 New Hampshire	1	2	0	3
20 New Jersey	9	2	4	15
21 New York	6	5	1	12
22 North Carolina	4	1	1	6
23 Ohio	16	38	13	67
24 Pennsylvania	14	23	4	41
25 South Carolina	0	4	0	4
26 South Dakota	4	18	0	22
27 Tennessee	2	5	0	7
28 Texas	30	0	0	30
29 Virginia	1	3	0	4
30 Washington DC	5	1	2	8
31 West Virginia	1	7	0	8
32 Wisconsin	10	9	4	23
No Record	0	0	1	1

Totals by Category                    274                    422                    85                    781

IFR Aircraft Operation Totals by Category:

Within Michigan	79	162	20	261
Outside of Michigan	195	260	64	519
No Record	0	0	1	1

NOTE: The numbers of operations listed above are ACTUAL documented operations from calendar year 2007. The numbers do NOT include any ESTIMATED operations obtained through proration of partial-year data, or other methods.

The numbers shown above are from the FlightAware IFR Flight Plan Database only, and do NOT include records of all itinerant operations between ARB and other states. Nonetheless, the numbers shown above confirm that in 2007, flight operations were conducted between ARB and at least 31 other states and Washington DC (approx 63% of the continental US). Approximately 67% of these IFR flight records were between ARB and out-of-state locations.

EXHIBIT NO. 3

SMALL 10-SEAT AIRCRAFT ANALYSIS

Small Airplanes Having 10 or More Passenger Seats (Records from FlightAware 2007 Database)							
Aircraft Model	FAA Approach Category	FAA Design Group	FAA Weight Class	Seating	Maximum Takeoff Weight	Aircraft Engine Type	Annual Operations
Cessna Caravan 208	A	II	Small	10+	<12,500	Single-Eng	11
Swearingen Merlin III	B	I	Small	10+	<12,500	Multi-Eng	3
Beechcraft King Air C90	B	II	Small	10+	<12,500	Multi-Eng	157
Beechcraft King Air 100	B	II	Small	10+	<12,500	Multi-Eng	39
Beechcraft King Air 200	B	II	Small	10+	<12,500	Multi-Eng	215

Total Small 10-Seat Aircraft Annual Operations

425

Total B-II Large Category Aircraft Annual Operations

Based Aircraft Data Source (B-II Large):  
FlightAware Data Source (B-II Large):

211  
85

Grand Total Annual Operations at ARB Applicable to Figure 2-2 in FAA Advisory Circular 150/5325-4B:

721

NOTE: The annual operations listed above are ACTUAL documented operations from calendar year 2007. The numbers do NOT include any ESTIMATED operations obtained through proration of partial-year data, or other methods.

The numbers shown in the table above are from the FlightAware IFR Flight Plan Database only, and do NOT include records of all small aircraft operations at ARB with 10-seat or greater aircraft models. Nonetheless, the above analysis confirms that Figure 2-2 in FAA AC 150/5325-4B is the appropriate chart to reference in the determination of the FAA-recommended runway length for Ann Arbor Municipal Airport.

# **Exhibit 14**

**FOR FURTHER INFORMATION CONTACT:**  
Copies of the applications are available for inspection in the Records Center, East Building, PHH-30, 1200 New Jersey Avenue, Southeast, Washington, DC or at <http://regulations.gov>.

This notice of receipt of applications for special permit is published in accordance with Part 107 of the Federal hazardous materials transportation law (49 U.S.C. 5117(b); 49 CFR 1.53(b)).

Issued in Washington, DC, on March 11, 2010.  
**Delmer F. Billings,**  
*Director, Office of Hazardous Materials, Special Permits and Approvals.*

NEW SPECIAL PERMITS

Application No.	Docket No.	Applicant	Regulation(s) affected	Nature of special permits thereof
14977-N .....	.....	Air Products and Chemicals, Inc. Allentown, PA.	49 CFR 173.301(f) .....	To authorize the transportation in commerce of certain DOT Specification 3T cylinders containing Silane without pressure relief devices by motor vehicle and cargo vessel. (modes 1, 3).
14978-N .....	.....	Air Products and Chemicals, Inc. Allentown, PA.	49 CFR 173.181 .....	To authorize the transportation in commerce of pyrophoric liquids in inner metal containers (bubblers) with openings greater than 25mm (1 inch) which are engineered to specific electronics applications that require a larger opening. (modes 1, 3).
149979-N ....	.....	M & N Aviation, Carolina Inc.	49 CFR 172.101 Column (9B).	To authorize the air transportation in commerce of certain explosives which are forbidden or exceed quantity limits for shipment by cargo-only aircraft. (mode 4).
14980-N .....	.....	Fisk Tank Carrier, Inc. Columbus, WI.	49 CFR 173.315 (j)(4) .....	To authorize the one-way transportation in commerce of certain non-DOT specification storage tanks containing propane. (mode 1).
14981-N .....	.....	Eclipse Aerospace, Inc. (EAI) Albuquerque, NM.	49 CFR 173.309(b) .....	To authorize the manufacture, marking, sale and use of non-DOT specification cylinders for use as fire extinguishers. (modes 1, 2, 3, 4, 5).

[FR Doc. 2010-5898 Filed 3-18-10; 8:45 am]

BILLING CODE 4909-60-M

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**Notice of Availability of Draft Environmental Assessment; Ann Arbor Municipal Airport, Ann Arbor, MI**

**AGENCY:** The Federal Aviation Administration is issuing this notice on behalf of the Michigan Department of Transportation (MDOT), Bureau of Aeronautics and Freight Services.

**ACTION:** Notice of Availability of a Draft Environmental Assessment (EA) for public review and comment.

**SUMMARY:** The FAA has delegated selected responsibilities for compliance with the National Environmental Protection Act to the MDOT as part of the State Block Grant Agreement authorized under Title 49 U.S.C., Section 47128. This notice is to advise the public pursuant to the National Environmental Policy Act of 1969, as amended, (NEPA) 42 U.S.C. 4332(2)(c) that MDOT has prepared a Draft EA for the proposed extension of runway 6/24 at the Ann Arbor Municipal Airport. While not required for an EA, the FAA is issuing this notice to facilitate public involvement. The Draft EA assesses the potential environmental impacts

resulting from the proposed extension of runway 6/24 from 3,500 feet to 4,300 feet. This evaluation also includes the relocation or replacement of the Federally Owned Omni Directional Approach Lighting System. All reasonable alternatives were considered including the no action alternative.

**DATES:** Written comments on the Draft EA must be received by MDOT on or before 5:00 p.m. on April 12, 2010. Comments may be sent by electronic mail to Molly Lamrouex at [lanrouexm@michigan.gov](mailto:lanrouexm@michigan.gov) or written comments may be submitted to Molly Lamrouex, MDOT Bureau of Aeronautics and Freight Services, 2700 Port Lansing Road, Lansing, MI 48906. The Draft EA can be reviewed at the following locations:

- (a) Ann Arbor City Library, 343 S. Fifth Ave., Ann Arbor, MI 48104
- (b) Pittsfield Township Hall, 6201 W. Michigan Ave., Ann Arbor, MI 48108
- (c) Ann Arbor Municipal Airport, 801 Airport Dr., Ann Arbor, MI 48103
- (d) Ann Arbor City Hall, 100 N. Fifth Ave., Ann Arbor, MI 48104
- (e) MDOT BAFS, 2700 Port Lansing Road, Lansing MI 48906

Copies of the Draft EA are available by contacting Molly Lamrouex, MDOT Bureau of Aeronautics and Freight Services, 2700 Port Lansing Road, Lansing, MI 48906 or by phone at 517-

335-9866. The Draft EA is also available at <http://www.a2gov.org/government/publicservices/fleetandfacility/Airport/Pages/default.aspx> A public hearing to provide information on the draft EA and accept comments from the public will be held from 4 to 7 p.m. on Wednesday, March 31, 2010 at the Cobblestone Farm Barn, 2781 Packard Rd., Ann Arbor, MI 48108.

**SUPPLEMENTARY INFORMATION:** The EA includes analysis used to evaluate the potential environmental impacts in the study area. Upon publication of the Draft EA and a Final EA, MDOT will be coordinating with federal, state and local agencies, as well as the public, to obtain comments and suggestions regarding the EA for the proposed project. The Draft EA assesses impacts and reasonable alternatives including a no action alternative pursuant to NEPA; FAA Order 1050.1, Policies and Procedures for Considering Environmental Impacts; FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions; and the President's Council on Environmental Quality (CEQ) Regulations implementing the

provisions of NEPA, and other appropriate Agency guidance.

**Joe Hebert,**

*Acting Manager, Detroit Airports District Office, Great Lakes Region.*

[FR Doc. 2010-5521 Filed 3-18-10; 8:45 am]

BILLING CODE 4910-13-P

## DEPARTMENT OF TRANSPORTATION

### Federal Transit Administration

#### Notice of Limitation on Claims Against Proposed Public Transportation Projects

**AGENCY:** Federal Transit Administration (FTA), DOT.

**ACTION:** Notice of Limitation on Claims.

**SUMMARY:** This notice announces final environmental actions taken by the Federal Transit Administration (FTA) for the following projects: (1) Jacksonville Transit Authority, Rapid Transit System Phase One, Jacksonville, FL; (2) Salem-Keizer Transit, Keizer Transit Center Project, Salem, OR; (3) Massachusetts Bay Transportation Authority, Installation of Elevators at Park Street Station Project, Boston, MA; (4) Erie Metropolitan Transit Authority, Expansion of the 14th Street Bus Facility, Erie, PA; and (5) Metropolitan Council, Central Corridor Light Rail Transit Project—Construction of Three Infill Stations, St. Paul, MN. The purpose of this notice is to announce publicly the environmental decisions by FTA on the subject projects and to activate the limitation on any claims that may challenge these final environmental actions.

**DATES:** By this notice, FTA is advising the public of final agency actions subject to Section 139(l) of Title 23, United States Code (U.S.C.). A claim seeking judicial review of the FTA actions announced herein for the listed public transportation projects will be barred unless the claim is filed on or before September 14, 2010.

**FOR FURTHER INFORMATION CONTACT:** Antoinette Quagliata, Environmental Protection Specialist, Office of Planning and Environment, 202-366-4265, or Christopher Van Wyk, Attorney-Advisor, Office of Chief Counsel, 202-366-1733. FTA is located at 1200 New Jersey Avenue, SE., Washington, DC 20590. Office hours are from 9 a.m. to 5:30 p.m., EST, Monday through Friday, except Federal holidays.

**SUPPLEMENTARY INFORMATION:** Notice is hereby given that FTA has taken final agency actions by issuing certain approvals for the public transportation

projects listed below. The actions on these projects, as well as the laws under which such actions were taken, are described in the documentation issued in connection with each project to comply with the National Environmental Policy Act (NEPA) and in other documents in the FTA administrative record for the project. Interested parties may contact either the project sponsor or the relevant FTA Regional Office for more information on these projects. Contact information for FTA's Regional Offices may be found at <http://www.fta.dot.gov>.

This notice applies to all FTA decisions on the listed projects as of the issuance date of this notice and all laws under which such actions were taken, including, but not limited to, NEPA [42 U.S.C. 4321-4375], Section 4(f) of the Department of Transportation Act of 1966 [49 U.S.C. 303], Section 106 of the National Historic Preservation Act [16 U.S.C. 470f], and the Clean Air Act [42 U.S.C. 7401-7671q]. This notice does not, however, alter or extend the limitation period of 180 days for challenges of project decisions subject to previous notices published in the **Federal Register**. For example, this notice does not extend the limitation on claims announced in the **Federal Register** on September 2, 2009 (74 FR 169) for the original Record of Decision (ROD) issued for the Central Corridor Light Rail Transit Project.

The projects and actions that are the subject of this notice are:

1. *Project name and location:* Jacksonville Rapid Transit System Phase One—Downtown Transit Enhancements, Jacksonville, FL. *Project sponsor:* Jacksonville Transit Authority. *Project description:* The project will construct a Bus Rapid Transit system in Jacksonville, Florida. This project is a part of an overall strategy to bring high-capacity public transit to downtown Jacksonville. The 5.6 mile system will include: Restructured bus routes, 2.84 miles of dedicated bus lanes, 15 station-stop enhancements, a traffic signal priority system, and a real-time traveler information network. *Final agency actions:* Section 106 finding of no adverse effect; project-level air quality conformity determination; no use of Section 4(f) properties; and a Finding of No Significant Impact (FONSI) signed February 11, 2010. *Supporting documentation:* Supplemental Environmental Assessment dated November 2009 and Environmental Assessment dated September 2008.

2. *Project name and location:* Keizer Transit Center Project, Salem, OR. *Project sponsor:* Salem-Keizer Transit. *Project description:* The project will

construct a transit hub for the medium-sized community of Salem, Oregon, located 40 miles south of Portland. The proposed Keizer Transit Center will accommodate transfers between bus routes, have a 70-space park-and-ride lot, a passenger plaza, a kiss-and-ride lot, a transit information kiosk, and bicycle storage units. *Final agency actions:* Section 106 finding of no adverse effect; project-level air quality conformity determination; no use of Section 4(f) properties; and a Finding of No Significant Impact (FONSI) signed February 4, 2010. *Supporting documentation:* Environmental Assessment dated December 2009.

3. *Project name and location:* Installation of Elevators at Park Street Station, Boston, MA. *Project sponsor:* Massachusetts Bay Transportation Authority. *Project description:* The project will modernize elevators at the Park Street Station of the Massachusetts Bay Transportation Authority. Park Street is an intersection point for both the Green and Red subway lines. The station has a unique historic heritage, originally built in 1897, as one of America's first street-level subway systems. The current travel path between the Green and Red Lines requires three elevator transfers and an approximate 0.10 mile walk. This path is unduly long and can pose a challenge for persons with limited mobility or low physical stamina. The purpose of the project is to provide a shorter elevator-accessible path between the Green Line westbound platform and Red Line center platform. *Final agency actions:* Section 106 finding of no adverse effect; project-level air quality conformity determination; Section 4(f) de minimis impact determination; and a Finding of No Significant Impact (FONSI) signed December 29, 2009. *Supporting documentation:* Environmental Assessment dated August 2009.

4. *Project name and location:* Expansion of the 14th Street Bus Facility, Erie, PA. *Project sponsor:* Erie Metropolitan Transit Authority. *Project description:* The project involves the expansion of a bus maintenance and storage facility in Erie, Pennsylvania. Located on the western coast of Pennsylvania, the city of Erie is 120 miles north of Pittsburgh. The proposed 9-acre site will house bus maintenance, storage, fueling, and washing facilities. Site plans also include provisions for additional parking and administrative office space. In total, the project will centralize operations from nine under-utilized buildings into the new facility. *Final agency actions:* Section 106 finding of no adverse effect; project-level air quality conformity

# Exhibit 15



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April 19, 2010

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Re: Comments by The Charter Township of Pittsfield on the Environmental Assessment for Ann Arbor Municipal Airport

Dear Ms. Lamrouex:

The following comments are submitted on behalf of The Charter Township of Pittsfield on the February 2010 Environmental Assessment for Ann Arbor Municipal Airport (“EA”).

I. THE PROJECT’S STATED PURPOSE AND NEED IS UNSUPPORTED BY THE EVIDENCE.

An EA must include a discussion of the purpose and need for the proposed action which must “specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.” [40 C.F.R. § 1502.13]. In addressing the Purpose and Need section of an EA, FAA Order 1050.1E provides that: “This discussion identifies the problem facing the proponent (that is, the need for an action), the purpose of the action (that is, the proposed solution to the problem), and the proposed timeframe for implementing the action.” FAA Order 1050.1E, ¶ 405c. The EA accomplishes none of these goals.



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A. The EA Supports Neither the Problem it Aims to Solve Nor its Purported Solution.

First, the EA defines the *purpose* of the Project<sup>1</sup> as “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.” [EA, p. 2-4]. The EA defines “critical aircraft” as “the most demanding aircraft-type that performs a minimum of 500 annual operations at a particular airport,” *Id.*, and states that a 2009 MDOT Airport User Survey “has confirmed that the critical aircraft classification for ARB is ‘B-II Small Aircraft.’” *Id.*

To effectuate the stated purpose, the EA purports to support the construction of a runway extension from 3,505 feet to 4,300 feet. However, the extant evidence is clear that no “B-II Small Aircraft” require a 4,300 foot long runway. All B-II Small Aircraft are capable of operating on the existing 3,505 feet long runway without weight restriction. *See*, attached Williams Aviation Consultants Report [incorporated herein by reference]. In fact, the representative B-II Small Aircraft cited in the EA, the Beechcraft King Air 200, requires only 2,579 feet of runway to take-off fully loaded, and 2,845 feet to land. *See*, [http://www.hawkerbeechcraft.com/beechcraft/king\\_airb200gt/specifications.aspx](http://www.hawkerbeechcraft.com/beechcraft/king_airb200gt/specifications.aspx). Thus, the statement that “[d]evelopment of the primary runway at ARB to the recommended length of 4,300-feet would allow the majority of B-II Small Aircraft to operate at their optimum capabilities (without weight restrictions)” [p. 2-4], although true, is misleading. There is no need to extend Runway 6/24 to allow B-II aircraft to operate at ARB. They can operate on a 3,505 foot runway without weight restrictions. Therefore, the statement that interstate commerce would be negatively impacted by B-II Small weight restrictions does not state a valid need, and the purported purpose of “provid[ing] facilities that more effectively and efficiently accommodate the *critical aircraft* that presently use the airport” is an unnecessary solution to a nonexistent problem.

B. The EA Incorrectly Relies on *Total* Annual Operations to Support the Proposed Runway Extension.

The EA states, “[t]he critical aircraft, or grouping of aircraft are generally the largest, most demanding types that conduct at least 500 operations per year at the airport” [EA, p. 2-7], and concludes that the proper Airport Reference Code (“ARC”) for ARB is “B-II Small”, based on a total of “750 actual annual operations by B-II category critical aircraft from survey data year

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<sup>1</sup> The proposed improvements described at page 2-1 of the EA are referred to herein as the “Project.”





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2007.” [EA, p. 2-9]. However, the EA’s use of “annual operations” differs markedly from the FAA criteria for selecting runway lengths and widths set forth in FAA Order 5090.3C:

#### 3-4. AIRPORT DIMENSIONAL STANDARDS

Airport dimensional standards (such as runway length and width, separation standards, surface gradients, etc.) should be selected which are appropriate for the critical aircraft that will make substantial use of the airport in the planning period. Substantial use means either 500 or more annual *itinerant* operations, or scheduled commercial service. FAA Order 5090.3C, p. 21 (emphasis added).

(FAA Order 5090.3C does not state that critical aircraft must be the “largest.”)

The FAA divides General Aviation operations into two categories, “local” and “itinerant.” Itinerant operations are defined as “an operation performed by an aircraft, either IFR, SVFR, or VFR, that lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area.” [U.S. DOT JO 7210.695, p. 5]. Local operations are defined as “those operations performed by aircraft that remain in the local traffic pattern, execute simulated instrument approaches or low passes at the airport, and the operations to or from the airport and a designated practice area within a 20-mile radius of the tower.” *Id.*

The EA, without reference to this distinction, relies on “annual operations” and “total annual operations” not “itinerant operations,” *see*, EA, Table 2-1, p. 2-10. Separating itinerant and local operations at ARB would result in a dramatic reduction in the number of annual critical aircraft operations at the airport. For example, data from the website City-Data.com shows that there were 29,322 itinerant operations and 43,573 local operations at ARB in 2007, the year used by MDOT in the EA. *See*, <http://www.city-data.com/airports/Ann-Arbor-Michigan.html>. In that itinerant operations account for approximately 40% of the total operations at ARB, itinerant B-II operations for 2007 would be in the neighborhood of 300 operations per year [40% of 750 total operations], substantially below the FAA’s threshold of 500 annual operations to constitute “substantial use.” Moreover, the Airport User Survey shows only 293 annual B-II Small operations at ARB in 2007. [EA Appendix A-1, p. 7]. Thus, the FAA Order 5090.3C airport dimensional standards for B-II small aircraft do not apply.



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C. Shifting Runway 6/24 150 Feet to the Southwest Will Not Achieve an Additional Margin of Safety.

The EA states as part of its purpose to “[e]nhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24, over State Road.” [EA, p. 2-5]. Operational safety in low visibility conditions will not be enhanced by providing a clear 34:1 approach surface to Runway 24. The EA is correct in stating that shifting the Runway 24 threshold 150 feet west would enhance safety by effectively removing the current obstruction to line-of-site vision (hangar) of the parallel taxiway for ATCT personnel. [EA, p. 2-5]. However, in the next paragraph the EA states, “The proposed shift of the Runway 24 threshold would also allow for a clear 34:1 approach surface to the east end of the runway (the current approach surface is the steeper 20:1). By keeping obstructions below the flatter 34:1 approach surface, an additional margin of safety is provided between approaching aircraft and any ground-based obstacles.” [EA, p. 2-5]. This statement lacks support in either the Instrument Approach Procedure (IAP) design or Terminal Instrument Procedures (“TERPS”) Obstruction Standards.

Both the 20:1 and the 34:1 surfaces exist simultaneously for every published IAP, and are defined as “Obstacle Identification Surfaces” which do not establish obstacle clearance safety margins, but rather only define instrument approach visibility minimums. The FAA does not require either of these two surfaces to be free of penetration by obstacles, and thus “providing an additional margin of safety,” as stated in the EA, does not apply in the case of these two surfaces. Other TERPS surfaces (Obstacle Clearance Surfaces) are established which do ensure clearance from obstructions, and the FAA requires that these Obstacle Clearance Surfaces be clear of structures and terrain. The current IAPs to Runway 24 were designed by the FAA to accommodate all existing obstructions. Thus, shifting the runway 150’ southwest would not enhance safety. Assuming that the EA is correct in the assertion that shifting the Runway 24 threshold would eliminate obstruction penetrations to the existing 34:1 Obstacle Identification Surface, the effect would not be a safety improvement, but would result only in a reduction in the required approach visibility minimums. [See, attached Williams Aviation Consultants Report]

II. THE EA DOES NOT CONSIDER ALL REASONABLE ALTERNATIVES.

The National Environmental Policy Act (“NEPA”) [42 U.S.C. §§ 4321 *et seq.*] requires that federal agencies examine all reasonable alternatives in preparing environmental documents. [42 U.S.C. § 4332(c)(iii)]. An agency preparing an EA should develop a range of alternatives that could reasonably achieve the need that the proposed action is intended to address. The Council on Environmental Quality (“CEQ”) Regulations (“NEPA Regulations”), which implement NEPA, require that Federal agencies “[u]se the NEPA process to identify and assess



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the reasonable alternatives to the proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment” 40 C.F.R. § 1500.2(e), and that “agencies shall . . . (a) Rigorously explore and objectively evaluate all reasonable alternatives . . .” 40 C.F.R. § 1502.14(a). The EA fails to explore all reasonable alternatives to the Preferred Alternative selected.

The EA [p. 2-5] lists five objectives of the proposed project:

- Enhance interstate commerce by providing sufficient runway length to allow the majority of critical aircraft to operate without weight restrictions.
- Enhance operational safety by improving the FAA ATCT line-of-sight issues.
- Enhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24, over State Road.
- Reduce the occurrence of runway overrun incidents by small category A-I aircraft (local objective).
- Relocate and potentially upgrade the Runway 24 Approach Light System.

As shown in Section I above, enhancing interstate commerce by providing sufficient runway length to allow the majority of critical aircraft to operate without weight restrictions is not a valid need. Further, lengthening Runway 6/24 is not necessary to achieve the remaining four objectives. Those objectives could be met by simply shifting Runway 6/24 150 feet to the southwest, *i.e.*, removing 150 feet from the approach end of Runway 24 and adding 150 feet to the departure end of Runway 24. Runway length would remain 3,505 feet.

Section 2.2.1 of the EA states that a 150-foot shift of the Runway 24 threshold to the west would (1) enhance the safety of ground operations by taxiing aircraft; (2) enhance operational safety, and possibly prevent runway incursions, by expanding the view of the hold area and parallel taxiway to ATCT personnel; (3) allow for a clear 34:1 approach surface to the east end of the runway, providing an added margin of safety between approaching aircraft and ground-based obstacles, which is particularly beneficial when aircraft are operating in low-visibility conditions; and (4) include relocation and replacement of the existing runway approach light system with newer Medium Intensity Approach Lighting System with Sequenced Flashers (MALSF). [EA, pp. 2-5, 2-6]. Shifting Runway 6/24 150 feet to the southwest without lengthening the runway would also accommodate future widening of State Road. Nevertheless, this reasonable alternative was not considered in the EA.



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An Environmental Assessment “shall include brief discussions of . . . alternatives . . .” 40 C.F.R. § 1508.9(b).<sup>2</sup> Absent an analysis of an alternative based on a 150-foot southwesterly shift of the runway, without lengthening the runway, the EA is inadequate.

III. THE EA FAILS TO ADEQUATELY ANALYZE OR DISCLOSE THE PROJECT’S AIR QUALITY IMPACTS WHERE IT FAILS TO ADDRESS OR DETERMINE THE PROJECT’S CLEAN AIR ACT CONFORMITY.

Section 7506 of the Federal Clean Air Act [42 U.S.C. §§ 7401 *et seq.*] mandates that “[n]o department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity which does not conform to [a State Implementation Plan] after it has been approved or promulgated under [42 U.S.C. § 7410].” The Environmental Protection Agency (EPA) has promulgated regulations implementing Section 7506 (the “Conformity Provision”) in 40 C.F.R. §§ 93.150 *et seq.* (“General Conformity Rule”). The General Conformity Rule requires, in part, that Federal agencies first determine if a project is either exempt from conformity analysis or presumed to conform. If it is neither, the agency must conduct a conformity applicability analysis to determine if a full conformity determination is required. *See, Air Quality Procedures for Civilian Airports and Air Force Bases*, p. 13.

The project area, *i.e.*, Washtenaw County, is in attainment for five of the seven criteria pollutants [p. 4-17], and marginal nonattainment for Ozone [p. C-3].<sup>3</sup> The area is designated as in nonattainment for PM<sub>2.5</sub>. [EA, p. C-4]. Therefore, one of the following must apply: (1) the Project is exempt from conformity; or (2) the Project is presumed to conform; or (3) the agency must conduct a conformity applicability analysis to determine if a conformity determination for PM<sub>2.5</sub> is required. The EA does not indicate that any of the required actions was performed.

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<sup>2</sup> Courts have consistently held that the “existence of reasonable but unexamined alternatives renders an EIS inadequate.” *See, e.g., Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1065 (9<sup>th</sup> Cir. 1998).

<sup>3</sup> The original six criteria pollutants are Ozone (O<sub>3</sub>), Particulate Matter (PM<sub>10</sub>), Carbon Monoxide (CO), Nitrogen Oxides (NO<sub>2</sub>), Sulfur Dioxide (SO<sub>2</sub>) and Lead (Pb). FAA Order 1050.1E (“Environmental Impacts; Policies and Procedures”), p. A-3, ¶ 2.1b, includes both PM<sub>10</sub> and PM<sub>2.5</sub> under the category Particulate Matter. On April 5, 2010 the EPA published Revisions to the General Conformity Regulations Final Rule [75 Fed. Reg. 17254-279 (2010)] which, among other things, added PM<sub>2.5</sub> to the list of criteria pollutants in 40 C.F.R. § 93.153(b).



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As a threshold matter, the EA is internally inconsistent with regard to whether the Project is exempt or presumed to conform. At page C-4, the EA states unequivocally that “[f]or this analysis it will be assumed that the project is neither exempt nor presumed to conform.” [Emphasis added.] However, at page C-5 the EA states “. . . a conformity determination is not required and the proposed project is presumed to conform to the state implementation plan.” [Emphasis added.] Under either scenario, however, the EA is deficient and fails to meet the “public disclosure” requirement under the National Environmental Policy Act (“NEPA”), 42 U.S.C. §§ 4321 *et seq.*

A. The EA Fails to Establish That the Project Is Exempt.

A federal agency has two options to determine that a project is exempt from conformity analysis: (1) if the project is included in the list of exempt actions listed in § 93.153(c)(2); or (2) if the project’s total of direct and indirect emissions are below the emissions levels specified in § 93.153(b) of the Conformity Regulations (“*de minimis*”). § 93.153(c)(1).

The first option does not apply here because runway and taxiway extension projects such as the one described in the EA [p. 2-1] are not included in the exempt actions listed in § 93.153(c)(2). Nor does the EA establish that the Project can be considered exempt as *de minimis* under 40 C.F.R. § 93.153(c)(1). The EA instead relies on a 1996 MDOT Bureau of Aeronautics Air Quality Study of seven general aviation airports (which notably do not include ARB) for the conclusion that “typical GA airports generate a low level of pollutants.” [EA, p. 4-17]. From that nonspecific conclusion, the EA further generalizes to the assertion that, because ARB is comparable in size and activity to the seven airports studied, it can be assumed that emissions resulting from the Project will not exceed the conformity threshold levels and, on that basis, concludes that a conformity analysis is not required.

This assumption is fatally flawed, however, for at least two reasons: (1) the EA does not quantify PM<sub>2.5</sub> emissions from flight operations at ARB at all, relying exclusively on the 1996 Study; and (2) because there is no quantification, there is also no comparison with the explicit *de minimis* thresholds established in 40 C.F.R. § 93.153(c)(1). It is correct that the original version of 40 C.F.R. § 93.153(c)(1) did not establish explicit thresholds for PM<sub>2.5</sub>, as distinguished from PM<sub>10</sub>. However, the newly implemented revised General Conformity Rule does establish that distinction, and now serves as the template for the air quality analysis required in the EA. Moreover, FAA Order 1050.1E, Appendix A, p. A3, § 2.16 includes both PM<sub>10</sub> and PM<sub>2.5</sub> in “particulate matter.”



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B. The EA Fails to Establish That the Project Is Presumed to Conform.

The second option, the presumption of conformity does not apply here either. In July, 2007, the FAA published a “Federal Presumed to Conform Actions Under General Conformity Final Notice” [72 Fed.Reg. 41,565-580 (July 2007)] in which the FAA listed fifteen Airport Project categories which the FAA presumes to conform to applicable SIPs. The runway and taxiway extension project described in the EA does not fall within any of those presumed to conform categories. Therefore, the FAA cannot rely on the Presumed to Conform Final Notice to presume that the Project is in conformity.

C. The EA Fails to Establish the Project’s Conformity Status.

Finally, even if, for argument’s sake, the study of airports other than ARB were adequate for air quality analysis of ARB in the EA (which it is not), the 1996 Study would be an inadequate substitute for the required analysis. 40 C.F.R. § 93.159 requires that analyses under the General Conformity Rule be based on, among other things: (1) “the latest planning assumptions,” § 93.159(a); and (2) “the latest and most accurate emissions estimation techniques available,” § 93.159(b). The 1996, 14-year old, Study patently fails to fall within either, let alone both, of these parameters.

In summary, the EA fails to establish the existence of any of the necessary components of the required finding of conformity for a Federal project, and, thus, is inadequate under both NEPA and the Clean Air Act.

IV. THE EA FAILS TO ACCOUNT FOR WELLS ON AIRPORT PROPERTY.

While Section 4.5.2 of the EA purports to address “Geology, Groundwater, and Soils” affected by the Project, it understates the significance of the fact that water resources are a principal use of the grounds where the airport is located.

“If there is the potential for contamination of an aquifer designated by the [EPA] as a sole or principal drinking water resource for the area, the responsible FAA official needs to consult with the EPA regional office, as required by section 1424(e) of the Safe Drinking Water Act, as amended.” FAA Order 1050.1E, pp. A-74, 75, ¶ 17.1c. “When the thresholds indicate that the potential exists for significant water quality impacts, additional analysis in consultation with State or Federal agencies responsible for protecting water quality will be necessary. *Id.*, pp. A-75, A-76, ¶ 17.4a. “If the EA and early consultation [with the EPA] show that there is a potential for exceeding water quality standards [or] identify water quality problems that cannot be avoided or mitigated . . . an EIS may be required. *Id.*, pp. A-75, ¶ 17.3.



There are two issues raised by the Project that require further examination in the EA. First, there is the issue of contamination from the Airport. The Airport is the location of a porous sand/gravel formation that yields a large amount of water for pumping. Historically, the land where the Airport is located was originally acquired by the City of Ann Arbor for water rights in 1929. Until recently, 15% of Ann Arbor's water supply came from the three wells located on Airport property. Water Quality Report, 2008, City of Ann Arbor, p. 2 (available at [http://www.a2gov.org/government/publicservices/water\\_treatment/documents/ccr.pdf](http://www.a2gov.org/government/publicservices/water_treatment/documents/ccr.pdf)). Due to the importance of the water supply at ARB, the EA needs to have more than a few passing words ("Based on coordination with the City of Ann Arbor, the proposed runway extension would not impact the water supply wells or the new water supply line (Bahl, 2009)"). [EA, p. 4-20].

Second, paving the area for a runway, roads, *etc.* increases the impervious area on the aquifer. This in turn reduces the infiltration of water that feeds the aquifer/City water supply. Adding 950 feet to the end of the runway adds another 71,250 square feet of impervious area over an aquifer that is vital to the City of Ann Arbor. Further environmental review should provide detailed analyses of the impact of this increase in impervious surface, as well as the possibility of contamination, currently unexplored in the EA.

V. THE EA FAILS TO ANALYZE THE PRESENCE OF HAZARDOUS WILDLIFE NEAR THE AIRPORT AND FAILS TO PRESENT ANY MANDATORY MITIGATION MEASURES.

FAA Advisory Circular 150/5200-33B ["Hazardous Wildlife Attractants on or Near Airports"] contains standards for land uses that have the potential to attract hazardous wildlife on or near public-use airports. The standards are applicable to airport development projects, including airport construction, expansion and renovation. Airports that have received Federal grant-in-aid assistance must use these standards. [See, AC 150/5200-33B, p. ii]. The FAA recommends separation distances of 5,000 feet at airports that do not sell Jet-A fuel, and 10,000 feet at airports that sell Jet-A fuel for hazardous wildlife attractants. [AC 150/5200-33B, p.1]. ARB sells Jet-A fuel.

The FAA also "recommends a distance of 5 statute miles between the farthest edge of the airport's AOA [Air Operations Area] and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace." [AC 150/5200-33B, p. 1]. Finally, AC 150/5200-33B provides that "[a]irport operators should identify hazardous wildlife attractants and any associated wildlife hazards during any planning process for new airport development projects" [p. 17] and "[t]he FAA will not approve the placement of airport development projects pertaining to aircraft movement in the vicinity of hazardous wildlife attractants without appropriate mitigating measures." [pp. 17-18].



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The FAA ranks geese as number three [3] in a list of the relative hazard to aircraft for 25 species groups. [AC 150/5200-33B, Table 1, p. iii]. However, the EA does not disclose that the area surrounding the airport is a prime habitat for large numbers of Canada Geese. EA Appendix F lists 38 species of birds that have either been observed, or for which there has been confirmed or probable breeding in Airport fields during 2006 through 2008. The list does not include Canada Geese. Canada Geese populate waterways on a golf course, in business parks and in neighboring wetlands located west and southwest of the Airport, well within the separation distances prescribed by the FAA.

The preferred alternative (Build Alternative 3) would extend Runway 6/24 950 feet to the southwest. The extension would allow aircraft landing on Runway 6 and departing on Runway 24 to overfly areas populated by Canada Geese at altitudes of less than 100 feet. The EA does not consider this hazardous condition. Even though they are not designated as “special concern”, “threatened” or “endangered,” the presence of Canada Geese in the Airport area poses a hazard to aircraft operational safety, and should be identified and analyzed in the EA, along with proper mitigation measures.

#### VI. THE EA DOES NOT ACKNOWLEDGE OR ANALYZE THE PROJECT’S MANIFEST GROWTH-INDUCING IMPACTS.

A Federal agency is required to evaluate not merely the direct impacts of a project, but also its indirect impacts, including those “caused by the action and later in time but still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). Indirect impacts include a project’s growth-inducing effects, such as changes in patterns of land use and population distribution associated with the project [40 C.F.R., § 1508.8(b)] and increased population, increased traffic, and increased demand for services. *City of Davis v. Coleman*, 521 F.2d 661, 675 (9<sup>th</sup> Cir. 1975). “The growth-inducing effects of [a] project appear to be its *raison d’etre*.” *Id.* The EA ignores this requirement, even though the Project is virtually defined by its growth-inducing impacts. Despite the fact that the EA assumes that the “percent of night and jet operations would remain constant between the existing condition and the future years” [EA, p. 4-2], there is substantial evidence to indicate that the Project will cause a large increase in both types of operations.

As indicated above, there are no weight restrictions that must be lifted to allow the EA’s “critical aircraft” to operate at ARB without weight restrictions. The “load restrictions” referenced on page 2-12 refer not to category B-II aircraft, but to higher category aircraft (jets in the C-I and C-II categories) which must currently operate at reduced weights in order to use the 3,505-foot runway. (Required takeoff length is the primary restrictor.) Operationally, weight is reduced by carrying fewer passengers, less baggage and/or less fuel, all of which discourage these aircraft from conducting operations at ARB.





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For example, a Cessna Citation II (Category B-II) requires 2,990 feet for takeoff at maximum certificated gross weight on a standard day, and can operate at unrestricted weight from the existing 3,505 foot runway. A Lear 35 (Category C-I), on the other hand, requires 5,000 feet for takeoff at maximum certificated gross weight on a standard day. While extending the runway to 4,300 feet would not facilitate unrestricted operations by the Lear 35, the required weight reduction would be less than is currently required. Therefore, the runway extension to 4,300 feet would operationally benefit the Category C-I Lear 35, but would provide no operational benefit to the Category B-II Citation jet, which the EA states is a “critical aircraft.”

The longer runway will facilitate the loading of additional passengers and baggage on high performance jet aircraft. Also, the ability to carry additional fuel may mean that, in certain cases, costly and time consuming intermediate fuel stops will become unnecessary. If the runway is lengthened to 4,300 feet, it is reasonably foreseeable that ARB will become much more attractive to operators of higher performance jet aircraft, such as the Lear 25 (Category C-I), Cessna Citation III (Category C-II) and Cessna Citation Sovereign (Category C-II), who could then operate at ARB instead of driving to and from Willow Run Airport.

Contrary to the unsupported assertions in the EA [EA, p. 42; Appendix B-1, p. B-4], it is reasonably foreseeable that the fleet mix will change in favor of a higher percentage of jet operations, as compared to the current level of light single and multi-engine propeller driven aircraft operations. The smaller Category A-I/II and B-I aircraft account for a high percentage of ARB operations. B-II aircraft account for a low percentage of ARB operations.

It is, therefore, reasonably foreseeable that the number of night operations will increase as the number of arrivals of longer haul business jets often occur in the evening hours due to the longer time duration of their trips. Since one of the stated purposes of the EA is to increase interstate commerce, this is not merely an indirect, but also a direct effect, the Project will have on the surrounding community. This will also affect the fleet mix of night operations to reflect a higher percentage of jet operations than exist under current conditions.

Thus, the evidence is clear that the Project will cause an increase in both jet *and* night operations. It is also reasonably foreseeable that these added high-performance jet aircraft operations and night operations will be accompanied by significant noise and air quality impacts. Nevertheless, the EA fails to acknowledge, let alone analyze, these reasonably foreseeable impacts caused by expansion of Airport physical facilities and operational profile and, thus, is inadequate.



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VII. NOISE MODELING FOR THE PROJECT FAILED TO INCLUDE INCREASED JET AIRCRAFT AND NIGHTTIME OPERATIONS IN DEVELOPING NOISE CONTOURS.

The FAA's Integrated Noise Model ("INM") was used to model annual operations for the 2009 existing condition, *i.e.*, April 2008 through March 2009 [EA Appendix B-1, p. B-4] and develop 65, 70 and 75 DNL noise contours for the Project. [EA, p. 4-3]. The EA states that "[t]he existing 65 DNL contour does not extend beyond airport property." [EA, p. 4-3]. During the time modeled, jet operations accounted for approximately 2 percent of total operations at ARB, and nighttime operations accounted for 4.2 percent of total operations. [EA, p. 4-2]. The EA states: (1) "[t]he percent of night and jet operations would remain constant between the existing condition and the future years"; (2) "fleet mix between the 2009 Existing Condition and the 2014 Future Alternatives would remain static" [EA, p. 4-2; Appendix B-1, p. B-4]; and "[t]he ARB 2014 proposed project alternative DNL 65 dBA noise contour does not extend beyond airport property." [EA, p. B-6].

However, as shown in Section VI above, the Project will likely facilitate an increased number of night operations, and a change in fleet mix, which will include higher performance jet aircraft. DNL calculations depend on, among other things, forecast numbers of operations, operational fleet mix and times of operation (day verses night). [EA, Appendix B-2, p. B-16]. However, the EA fails to model or assess future increased night operations and fleet mix changes resulting from the Project.

The FAA is required to use INM to produce, among other things: (1) noise contours at the DNL 75 dB, DNL 70 dB and DNL 65 dB levels; (2) analysis within the proposed alternative DNL 65 dB contour to identify noise sensitive areas where noise will increase by DNL 1.5 dB<sup>4</sup>; and (3) analysis within the ***DNL 60-65 dB contours*** to identify noise sensitive areas where noise will increase by DNL 3dB, *if* DNL 1.5 dB increases as documented within the DNL 65 dB contour. [FAA Order 1050.1E, Appendix A, p. A-62, ¶ 14.4d].

As the noise modeling failed to take into account the foreseeable increases in nighttime and jet aircraft operations at ARB, the questions of whether the future DNL 65 dB contour will be increased, and to what extent, and whether increased noise levels within the DNL 65 dB contour would necessitate designation of a DNL 60 dB contour remain unanswered.

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<sup>4</sup> A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe." [FAA Order 1050.1E, Appendix A, P. A-61, ¶ 14.3]



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VIII. THE EA FAILS TO CONSIDER THE POLITICAL JURISDICTIONS AFFECTED BY THE PROJECT.


FAA Order 5050.4B, paragraph 706 provides a format for integrating the NEPA process with special purpose laws outside the scope of NEPA in preparing environmental assessments. Paragraph 706.e.(4) requires that an environmental assessment address “[p]olitical jurisdiction(s) the proposed action would affect.” The EA fails to do that. The EA does not disclose that Pittsfield Township, the political jurisdiction in which the Project is located, and neighboring Lodi Township have both passed resolutions opposing the Project. The EA also fails to identify or analyze the effect that environmental impacts, which are certain to result from the Project (*e.g.*, noise, air quality, safety, economic impacts, *etc.*), will have on those political jurisdictions.

IX. CONCLUSION.

Given the Project’s many potential significant environmental impacts that have not been identified or analyzed in the EA, a full Environmental Impact Statement (EIS) is required prior to approval and implementation of the Project. “No matter how thorough, an EA can never substitute for preparation of an EIS, if the proposed action could significantly affect the environment.” *Anderson v. Evans*, 371 F.3d 475, 494 (9<sup>th</sup> Cir. 2004).

Sincerely,

CHEVALIER, ALLEN & LICHMAN, LLP

  
for Barbara E. Lichman, Ph.D.

Attachment (1)



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## Williams Aviation Consultants

Williams Aviation Consultants, Inc. was retained by the law firm of Chevalier, Allen & Lichman, LLP to review and comment on Chapters 1 and 2, and Appendices A and B of the DRAFT Ann Arbor Municipal Airport Environmental Assessment (DEA), February, 2010. The following are our comments on the DEA.

### **A. Accommodating the Critical Aircraft at Ann Arbor Municipal Airport (ARB)**

As stated in paragraph 2.2.7, *“The proposed shift and extension of primary Runway 6/24 at ARB would provide a runway configuration that more effectively accommodates the critical aircraft that presently use the facility. (Emphasis added)*

In particular, the proposed project would provide the following benefits:

- *Enhance business aviation and interstate commerce by providing sufficient runway length to allow the majority of category B-II Small critical aircraft that currently use ARB to operate without load restrictions (i.e. reduction in passengers, cargo, and fuel associated with aircraft range). (Emphasis added)*

According to paragraph 2.2, Purpose and Need, *“The purpose of the proposed improvements at ARB 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. (Emphasis added)*

The 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. In cases where the critical aircraft weigh less than 60,000 lbs, a classification of aircraft is used rather than a specific individual aircraft model. A recent Airport User Survey has confirmed that the critical aircraft classification for ARB is *“B-II Small Aircraft.” (Emphasis added)*

Also stated under *“Purpose and Need” “Development of the primary runway at ARB to the recommended length of 4,300-feet would allow the majority of B-II Small classification aircraft to operate at their optimum capabilities (without weight restrictions). (Emphasis added)*

***WAC Comment: There are no aircraft in the B-II Small aircraft classification that require a runway length of 4,300 feet to conduct normal operations. All B-II Small Aircraft are capable of operating out of the current runway (3,505 feet long) without the need to reduce weight by off-loading passengers, baggage or fuel.***

***Regarding the establishment of the critical aircraft, ARB lacks the required number of 500 annual operations by B-II Small Aircraft, so they have added larger aircraft such as B-II Large, Category C-I and C-II operations to meet the 500 classification requirement. It is the Category C-I and C-II aircraft which would benefit by the runway extension to 4,300 feet, not***

*those aircraft that fall within the definition of Category B-II Small Aircraft. The current runway length of 3,500 feet is sufficient to handle all Category B-II Small Aircraft.*

**B. Lengthening Runway 6/24 to 4,300 Feet: The Impact on Aircraft Load Restrictions and Fleet Mix**

*The “load restrictions” referenced above in paragraph 2.2.7 refer to the fact that the higher category aircraft (primarily jets in the C-I and C-II categories) must currently operate at reduced weights in order to operate out of the current 3,500 foot runway (required takeoff length is the primary restrictor). Operationally, weight is reduced by carrying fewer passengers, less baggage and/or less fuel; all of which discourage these aircraft from conducting operations out of ARB.*

*For example: A Cessna Citation II (Category B-II) requires 2,990 feet for takeoff at maximum certificated gross weight on a standard day and may therefore operate unrestricted as to weight from the current 3,500 foot runway. A Lear 35 (Category C-I) requires 5,000 feet for takeoff at maximum certificated gross weight on the same standard day.*

*The Category B-II Citation II can conduct unrestricted operations from the current 3,500 foot runway. Whereas extending the runway to 4,300 feet would not facilitate unrestricted operations by the Category C-I, Lear 35, the required weight reduction would be less than is currently required. In this way, the runway extension to 4,300 feet would operationally benefit the Category C-I Lear 35, but would provide no operational benefit to the Category B-II Small Citation jet, or any other Category B-II Small aircraft.*

*All Category B-II Small aircraft, i.e. the ARB critical design aircraft, are currently accommodated on the existing 3,500 foot runway. Contrary to what is stated in the DEA, lengthening the runway to 4,300 feet **WOULD NOT** “provide a runway configuration that more effectively accommodates the critical aircraft that presently use the facility.”*

*If the runway is lengthened to 4,300 feet, other jets such as the Lear 25 (Category C-I), Cessna Citation III (Category C-II) and Cessna Citation Sovereign (Category C-II) may be able to operate out of ARB with minor reductions in takeoff weight. This will impact the community as it could reasonably be expected that the longer runway will attract more of the larger, higher performance jet aircraft to the airport.*

*These added high performance jet aircraft operations will be accompanied by noise and air quality impacts. Many of these operations will take place at night, thereby negatively affecting the general quiet of the surrounding community.*

**C. Shifting Runway 6/24 150 Feet to the West While Maintaining the Current Runway Length of 3,500 Feet: The Impact on Load Restrictions, Future Fleet Mix and Safety of Operations**

*Load Restrictions*

*Maintaining the current runway length of 3,500 feet would mean that the Category C-1 and C-II aircraft would continue to suffer significant load restrictions. These load restrictions would thereby continue to serve as a deterrent to these aircraft operating out of ARB.*

*Future Fleet Mix*

*Maintaining the current runway length would serve to maintain the current fleet mix. Category B-II Small jet aircraft include lower powered models such as the smaller versions of the Cessna Citation (Category B-I/II) and the Mitsubishi Diamond jet (Category B-I). Higher powered jet aircraft such as the Lear 25 (Category C-I), Lear 35 (Category C-I), IAI Astra (Category C-I) and Cessna Citation III (Category C-II) may be generally discouraged from flying into Ann Arbor and would generally, with few exceptions choose to land at Detroit and drive the 40 miles to Ann Arbor.*

*Safety of Operations*

*2.2.1 Safety Enhancements:*

*In the first paragraph, the consultant is correct in stating that shifting the Runway 24 threshold 150 feet west would enhance safety by effectively removing the current obstruction to line-of-site vision (hangar) of the parallel taxiway for ATCT personnel.*

*However, in the next paragraph the consultant states, "The proposed shift of the Runway 24 threshold would also allow for a clear 34:1 approach surface to the east end of the runway (the current approach surface is the steeper 20:1). By keeping obstructions below the flatter 34:1 approach surface, an additional margin of safety is provided between approaching aircraft and any ground-based obstacles."*

*This statement betrays a lack of understanding by the consultant of Instrument Approach Procedure (IAP) design and TERPS Obstruction Standards. Regarding the 20:1 and the 34:1 surfaces; it is not either/or, but both/and. Both the 20:1 and the 34:1 surfaces exist simultaneously for every published IAP and are defined as "Obstacle Identification Surfaces" which do not establish obstacle clearance safety margins but rather only define instrument approach visibility minimums. The FAA does not require either of these two surfaces to be free of penetration by obstacles, and thus "providing an additional margin of safety" as stated by the consultant does not apply in the case of these two surfaces.*

*Other TERPS surfaces (Obstacle Clearance Surfaces) are established which do ensure clearance from obstructions and the FAA requires that these Obstacle Clearance Surfaces be clear of structures and terrain. The current IAPs to Runway 24 were designed by the*

*FAA to accommodate all existing obstructions. In this respect, shifting the runway 150' to the west would not enhance safety.*

*Summary: Assuming that the consultant is correct in their assertion that shifting the threshold would eliminate obstruction penetrations to the existing 34:1 Obstacle Identification Surface, the effect would not be a safety improvement but would only result in a reduction in the required approach visibility minimums.*

**D. Appendix B Noise Analysis Report**  
**B-1 Noise Impact Analysis**  
**B.1.3 Data**  
**Flight Operations**

The consultant states “INM-modeled annual operations for the 2009 existing condition, consisting of operations from April 2008 through March 2009, totaled 61,969 operations, which is approximately 169 daily operations. Jet operations accounted for approximately 2 percent of the total operations. Nighttime operations accounted for 4.2 percent of the total operations.”

2014 future condition aircraft operations were obtained from the 2008 FAA TAF for ARB. Modeled annual operations for the 2014 condition totaled 69,717 operations, or approximately 191 daily operations. *It is assumed that the percent of night and jet operations will remain constant between the existing condition and the future years. In addition, it is also assumed that the fleet mix between the 2009 Existing Condition and the 2014 Future Alternatives will remain static.* The existing and future fleet mix with annual operations is shown in Table B-2.” (Emphasis added)

*The consultant wrongly assumes that the percent of night and jet operations will remain constant, and that the fleet mix will remain static if Runway 6/24 is lengthened to 4,300 feet.*

*The longer runway will make ARB much more attractive to larger and higher performance jet aircraft as the added runway length will facilitate the loading of additional passengers and baggage on to these aircraft. Also, being able to carry additional fuel may mean that, in certain cases, costly and time consuming intermediate fuel stops will become unnecessary. As ARB becomes more attractive to higher performance jet aircraft, these larger aircraft may then consider operations to/from ARB in lieu of landing at Detroit and driving to Ann Arbor.*

*As more high performance jet aircraft begin operations at ARB, the fleet mix will change in favor of a higher percentage of jet operations as compared to the current level of light single and multiengine propeller driven aircraft operations. The smaller Category A-I/II and B-I aircraft currently reflect a high percentage of ARB operations. B-II Small aircraft (the critical design aircraft) reflect a low percentage of ARB operations. Recall that Category B-II Large and Category C aircraft had to be added to the currently operating Category B-II Small aircraft design group in order to meet the 500 operation requirement for establishing the critical aircraft and thereby justify the runway extension.*

*The number of night operations also has the strong potential to increase as the number of arrivals of the larger, longer haul business jets often occur in the evening hours due to the longer time duration of their trips. This will also affect the fleet mix of night operations to reflect a higher percentage of jet operations than exist under current conditions.*



# **Exhibit 16**



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April 19, 2010

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Re: Comments on the Ann Arbor Municipal Airport Environmental Assessment

Dear Ms. Lamrouex:

Comments by the Committee for Preserving Community Quality on the Ann Arbor Municipal Airport Environmental Assessment are attached.

Sincerely,

CHEVALIER, ALLEN & LICHMAN, LLP

Steven M. Taber

**Committee for Preserving Community Quality  
5221 Crooked Stick Drive  
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734-944-9455**

April 19, 2010

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Re: Comments by The Committee for Preserving Community Quality on the  
Environmental Assessment for Ann Arbor Municipal Airport

Dear Ms. Lamrouex:

The Committee for Preserving Community Quality, a community group representing approximately 400 residents of Pittsfield and Lodi Townships and the cities of Ann Arbor and Saline, is filing these comments to strenuously object to the February 2010 Environmental Assessment for Ann Arbor Municipal Airport ("EA"). We feel, as the evidence below conclusively documents, that the EA is seriously flawed and that the proposed project is both dangerous and cannot be justified.

I. THE PROJECT'S STATED PURPOSE AND NEED IS UNSUPPORTED BY THE EVIDENCE.

An EA must include a discussion of the purpose and need for the proposed action which must "specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." [40 C.F.R. § 1502.13]. In addressing the Purpose and Need section of an EA, FAA Order 1050.1E provides that: "This discussion identifies the problem facing the proponent (that is, the need for an action), the purpose of the action (that is, the proposed solution to the problem), and the proposed timeframe for implementing the action." FAA Order 1050.1E, ¶ 405c. The EA accomplishes none of these goals.

A. The EA Supports Neither the Problem it Aims to Solve Nor its Purported Solution.

First, the EA defines the *purpose* of the Project as “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.” [EA, p. 2-4]. The EA defines “critical aircraft” as “the most demanding aircraft-type that performs a minimum of 500 annual operations at a particular airport,” *Id.*, and states that a 2009 MDOT Airport User Survey “has confirmed that the critical aircraft classification for ARB is ‘B-II Small Aircraft.’” *Id.* To effectuate the stated purpose, the EA purports to support the construction of a runway extension from 3,505 feet to 4,300 feet. However, the extant evidence is clear that no “B-II Small Aircraft” require a 4,300 foot long runway. All B-II Small Aircraft are capable of operating on the existing 3,505 feet long runway without weight restriction. *See*, attached Williams Aviation Consultants Report [incorporated herein by reference]. In fact, the representative B-II Small Aircraft cited in the EA, the Beechcraft King Air 200, requires only 2,579 feet of runway to take-off fully loaded, and 2,845 feet to land. *See*, [http://www.hawkerbeechcraft.com/beechcraft/king\\_airb200gt/specifications.aspx](http://www.hawkerbeechcraft.com/beechcraft/king_airb200gt/specifications.aspx). Thus, the statement that “[d]evelopment of the primary runway at ARB to the recommended length of 4,300-feet would allow the majority of B-II Small Aircraft to operate at their optimum capabilities (without weight restrictions)” [p. 2-4], although true, is misleading. There is no need to extend Runway 6/24 to allow B-II aircraft to operate at ARB. They can operate on a 3,505 foot runway without weight restrictions. Therefore, the statement that interstate commerce would be negatively impacted by B-II Small weight restrictions does not state a valid need, and the purported purpose of “provid[ing] facilities that more effectively and efficiently accommodate the *critical aircraft* that presently use the airport” is an unnecessary solution to a nonexistent problem.

B. The EA Incorrectly Relies on Total Annual Operations to Support the Proposed Runway Extension.

The EA states, “[t]he critical aircraft, or grouping of aircraft are generally the largest, most demanding types that conduct at least 500 operations per year at the airport” [EA, p. 2-7], and concludes that the proper Airport Reference Code (“ARC”) for ARB is “B-II Small”, based on a total of “750 actual annual operations by B-II category critical aircraft from survey data year 2007.” [EA, p. 2-9]. However, the EA’s use of “annual operations” differs markedly from the FAA criteria for selecting runway lengths and widths set forth in FAA Order 5090.3C:

3-4. AIRPORT DIMENSIONAL STANDARDS

Airport dimensional standards (such as runway length and width, separation standards, surface gradients, etc.) should be selected which are appropriate for the critical aircraft that will make substantial use of the airport in the planning period. Substantial

use means either 500 or more annual *itinerant* operations, or scheduled commercial service. FAA Order 5090.3C, p. 21 (emphasis added).

(FAA Order 5090.3C does not state that critical aircraft must be the “largest.”)

The FAA divides General Aviation operations into two categories, “local” and “itinerant.” Itinerant operations are defined as “an operation performed by an aircraft, either IFR, SVFR, or VFR, that lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area.” [U.S. DOT JO 7210.695, p. 5]. Local operations are defined as “those operations performed by aircraft that remain in the local traffic pattern, execute simulated instrument approaches or low passes at the airport, and the operations to or from the airport and a designated practice area within a 20-mile radius of the tower.” *Id.*

The EA, without reference to this distinction, relies on “annual operations” and “total annual operations” not “itinerant operations,” *see* EA, Table 2-1, p. 2-10. Separating itinerant and local operations at ARB would result in a dramatic reduction in the number of annual critical aircraft operations at the airport. For example, data from the website City-Data.com shows that there were 29,322 itinerant operations and 43,573 local operations at ARB in 2007, the year used by MDOT in the EA. *See*, <http://www.city-data.com/airports/Ann-Arbor-Michigan.html>. In that itinerant operations account for approximately 40% of the total operations at ARB, itinerant B-II operations for 2007 would be in the neighborhood of 300 operations per year [40% of 750 total operations], substantially below the FAA’s threshold of 500 annual operations to constitute “substantial use.” Moreover, the Airport User Survey shows only 293 annual B-II Small operations at ARB in 2007. [EA Appendix A-1, p. 7]. Thus, the FAA Order 5090.3C airport dimensional standards for B-II small aircraft do not apply.

Even if, for argument’s sake, we were to accept the critical aircraft data reported in the Airport User Survey [EA Appendix A-1, p.7], a detailed analysis shows that a weighted average of 78 percent of those B-II aircraft operations took place within a 450-mile radius of ARB, according to MDOT’s own data analysis (Exhibit 1). These represent areas that are within the flight range of ARB’s current based fleet, according to the User Survey data, from the current-length runway. Thus, by another means of calculus, itinerant operations beyond the range of need are fewer than 200 and Purpose and Need fails.

Further, MDOT’s choice of 2007 as a year of certification for critical aircraft was based on an arbitrary and capricious decision. The year 2007 represents the greatest number of ARB operations in the 5-year period 2004-2009 and was selected, according to the MDOT analyst involved, because “our thoughts were that the current recession could possibly have affected the 2008 operational levels in such a way that 2008 year records would not be a true indicator of a post-recession return to normal operations at the airport. . . .” (Noel, 2009). Even the FAA suggests ARB will not return to such high operating levels as 2007 for the next 20 years [FAA Terminal Area Forecast, EA, p. 2-10.] Thus, MDOT was showing bias and affording Ann Arbor a huge advantage in not even evaluating operational data from any other year. Objectively, since

its standard is the independent Flight Aware data base, MDOT should analyze critical aircraft operational data for the five years 2004-2009 and base its decision on an average of those years' operational data.

C. Shifting Runway 6/24 150 Feet to the Southwest Will Not Achieve an Additional Margin of Safety.

The EA states as part of its purpose to “[e]nhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24, over State Road.” [EA, p. 2-5]. Operational safety in low visibility conditions will not be enhanced by providing a clear 34:1 approach surface to Runway 24. The EA is correct in stating that shifting the Runway 24 threshold 150 feet west would enhance safety by effectively removing the current obstruction to line-of-site vision (hangar) of the parallel taxiway for ATCT personnel. [EA, p. 2-5]. However, in the next paragraph the EA states, “The proposed shift of the Runway 24 threshold would also allow for a clear 34:1 approach surface to the east end of the runway (the current approach surface is the steeper 20:1). By keeping obstructions below the flatter 34:1 approach surface, an additional margin of safety is provided between approaching aircraft and any ground-based obstacles.” [EA, p. 2-5]. This statement lacks support in either the Instrument Approach Procedure (IAP) design or Terminal Instrument Procedures (“TERPS”) Obstruction Standards.

Both the 20:1 and the 34:1 surfaces exist simultaneously for every published IAP, and are defined as “Obstacle Identification Surfaces” which do not establish obstacle clearance safety margins, but rather only define instrument approach visibility minimums. The FAA does not require either of these two surfaces to be free of penetration by obstacles, and thus “providing an additional margin of safety” as stated in the EA does not apply in the case of these two surfaces. Other TERPS surfaces (Obstacle Clearance Surfaces) are established which do ensure clearance from obstructions, and the FAA requires that these Obstacle Clearance Surfaces be clear of structures and terrain. The current IAPs to Runway 24 were designed by the FAA to accommodate all existing obstructions. Thus, shifting the runway 150’ west would not enhance safety. Assuming that the EA is correct in the assertion that shifting the Runway 24 threshold would eliminate obstruction penetrations to the existing 34:1 Obstacle Identification Surface, the effect would not be a safety improvement, but would result only in a reduction in the required approach visibility minimums. [See, attached Williams Aviation Report]

D. EA Falsely Intends to Convey Rural Setting in Densely Populated Area

The EA intends to deceive readers as to the cosmopolitan location of the airport, utilizing Figure 2.1 [Page 2-2], for instance, which depicts unpaved Lohr and Textile Roads and vacant land and rock pits and gravel pits where developed communities of Pittsfield (Brian Hill, Lake Forest, Lake Forest Highlands, Lohr Lakes Village, St. James Woods, Silo Ridge, Stonebridge, and Waterways) and Lodi (Travis Pointe) Townships exist today, with more than 2,000 homes – making the area appear far more rural and not susceptible to the safety risks from added airport development that are actually posed.

## II. THE EA DOES NOT CONSIDER ALL REASONABLE ALTERNATIVES.

The National Environmental Policy Act (“NEPA”) [42 U.S.C. §§ 4321 *et seq.*] requires that federal agencies examine all reasonable alternatives in preparing environmental documents. [42 U.S.C. § 4332(c)(iii)]. An agency preparing an EA should develop a range of alternatives that could reasonably achieve the need that the proposed action is intended to address. The Council on Environmental Quality (“CEQ”) Regulations (“NEPA Regulations”), which implement NEPA, require that Federal agencies “[u]se the NEPA process to identify and assess the reasonable alternatives to the proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment” 40 C.F.R. § 1500.2(e), and that “agencies shall . . . (a) Rigorously explore and objectively evaluate all reasonable alternatives . . .” 40 C.F.R. § 1502.14(a). The EA fails to explore all reasonable alternatives to the Preferred Alternative selected.

The EA [p. 2-5] lists five objectives of the proposed project:

- Enhance interstate commerce by providing sufficient runway length to allow the majority of critical aircraft to operate without weight restrictions.
- Enhance operational safety by improving the FAA ATCT line-of-sight issues.
- Enhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24, over State Road.
- Reduce the occurrence of runway overrun incidents by small category A-I aircraft (local objective).
- Relocate and potentially upgrade the Runway 24 Approach Light System.

As shown in Section I above, enhancing interstate commerce by providing sufficient runway length to allow the majority of critical aircraft to operate without weight restrictions is not a valid need. Further, lengthening Runway 6/24 is not necessary to achieve the remaining four objectives. Those objectives could be met by simply shifting Runway 6/24 150 feet to the southwest, *i.e.*, removing 150 feet from the approach end of Runway 24 and adding 150 feet to the departure end of Runway 24. Runway length would remain 3,505 feet. Section 2.2.1 of the EA states that a 150-foot shift of the Runway 24 threshold to the west would (1) enhance the safety of ground operations by taxiing aircraft; (2) enhance operational safety, and possibly prevent runway incursions, by expanding the view of the hold area and parallel taxiway to ATCT personnel; (3) allow for a clear 34:1 approach surface to the east end of the runway, providing an added margin of safety between approaching aircraft and ground-based obstacles, which is particularly beneficial when aircraft are operating in low-visibility conditions; and (5) include relocation and replacement of the existing runway approach light system with newer Medium

Intensity Approach Lighting System with Sequenced Flashers (MALSF). [EA, pp. 2-5, 2-6]. Shifting Runway 6/24 150 feet to the Southwest without lengthening the runway would also accommodate future widening of State Road. Nevertheless, this “reasonable alternative” was not considered in the EA.

An Environmental Assessment “shall include brief discussions of . . . alternatives . . .” 40 C.F.R. § 1508.9(b).<sup>1</sup> Absent an analysis of an alternative based on a 150-foot southwesterly shift of the runway, without lengthening the runway, the EA is inadequate.

III. THE EA FAILS TO ADEQUATELY ANALYZE OR DISCLOSE THE PROJECT’S AIR QUALITY IMPACTS WHERE IT FAILS TO ADDRESS OR DETERMINE THE PROJECT’S CLEAN AIR ACT CONFORMITY.

Section 7506 of the Federal Clean Air Act [42 U.S.C. §§ 7401 *et seq.*] mandates that “[n]o department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity which does not conform to [a State Implementation Plan] after it has been approved or promulgated under [42 U.S.C. § 7410].” The Environmental Protection Agency (EPA) has promulgated regulations implementing Section 7506 (the “Conformity Provision”) in 40 C.F.R. §§ 93.150 *et seq.* (“General Conformity Rule”). The General Conformity Rule requires, in part, that Federal agencies first determine if a project is either exempt from conformity analysis or presumed to conform. If it is neither, the agency must conduct a conformity applicability analysis to determine if a full conformity determination is required. *See, Air Quality Procedures for Civilian Airports and Air Force Bases*, p. 13.

The project area, *i.e.*, Washtenaw County, is in attainment for five of the seven criteria pollutants [p. 4-17], and marginal nonattainment for Ozone [p. C-3].<sup>2</sup> The area is designated as in nonattainment for PM<sub>2.5</sub>. [EA, p. C-4]. Therefore, one of the following applies: (1) the project is exempt from conformity; (2) the project is presumed to conform; or (3) the agency must conduct a conformity applicability analysis to determine if a conformity determination for PM<sub>2.5</sub> is required. The EA does not indicate that any of the required actions was performed

As a threshold matter, the EA is internally inconsistent with regard to whether the Project is exempt or presumed to conform. At page C-4, the EA states unequivocally that “[f]or this

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<sup>1</sup> Courts have consistently held that the “existence of reasonable but unexamined alternatives renders an EIS inadequate.” *See, e.g., Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998).

<sup>2</sup> The original six criteria pollutants are Ozone (O<sub>3</sub>), Particulate Matter (PM<sub>10</sub>), Carbon Monoxide (CO), Nitrogen Oxides (NO<sub>2</sub>), Sulfur Dioxide (SO<sub>2</sub>) and Lead (Pb). FAA Order 1050.1E (“Environmental Impacts; Policies and Procedures”), p. A-3, ¶ 2.1b, includes both PM<sub>10</sub> and PM<sub>2.5</sub> under the category Particulate Matter. On April 5, 2010 the EPA published Revisions to the General Conformity Regulations Final Rule [75 Fed. Reg. 17254-279 (2010)] which, among other things, added PM<sub>2.5</sub> to the list of criteria pollutants in 40 C.F.R. § 93.153(b).



analysis it will be assumed that the project is neither exempt nor presumed to conform.” [Emphasis added.] However, at page C-5 the EA states “. . . a conformity determination is not required and the proposed project is presumed to conform to the state implementation plan.” [Emphasis added.] Under either scenario, however, the EA is deficient and fails to meet the “public disclosure” requirement under the National Environmental Policy Act (“NEPA”), 42 U.S.C. §§ 4321 *et seq.*

A. The EA Fails to Establish That the Project Is Exempt.

A federal agency has two options to determine that a project is exempt from conformity analysis: (1) if the project is included in the list of exempt actions listed in § 93.153(c)(2); or (2) if the project’s total of direct and indirect emissions are below the emissions levels specified in § 95.153(b) of the Conformity Regulations (“*de minimis*”), § 93.153(c)(1).

The first option does not apply here because runway and taxiway extension projects such as the one described in the EA [p. 2-1] are not included in the exempt actions listed in Section 93.153(c)(2). Nor does the EA establish that the Project can be considered exempt as *de minimis* under 40 C.F.R. § 93.153(c)(1). The EA instead relies on the 1996 MDOT Bureau of Aeronautics Air Quality Study of seven general aviation airports (which notably do not include ARB) for the conclusion that “typical GA airports generate a low level of pollutants.” [EA, p. 4-17]. From that nonspecific conclusion, the EA further generalizes to the assertion that, because ARB is comparable in size and activity to the seven airports studied, it can be assumed that emissions resulting from the Project will not exceed the conformity threshold levels, and, on that basis, concludes that a conformity analysis is not required.

This assumption is fatally flawed, however, for at least two reasons: (1) the EA does not quantify PM2.5 emissions from flight operations at ARB at all, relying exclusively on the 1996 Study; and (2) because there is no quantification, there is also no comparison with the explicit *de minimis* thresholds established in 40 C.F.R. § 93.153(c)(1). It is correct that the original version of 40 C.F.R. § 93.153(c)(1) did not establish explicit thresholds for PM2.5, as distinguished from PM10. However, the newly implemented revised General Conformity Rule does establish that distinction, and now serves as the template for the air quality analysis required in the EA. Moreover, FAA Order 1050.1E, Appendix A, p. A3, § 2.16 includes both PM10 and PM2.5 in “particulate matter.”

B. The EA Fails to Establish That the Project Is Presumed to Conform.

The second option, the presumption of conformity does not apply here either. In July, 2007, the FAA published a “Federal Presumed to Conform Actions Under General Conformity Final Notice” [72 Fed.Reg. 41,565-580 (July 2007)] in which the FAA listed fifteen Airport Project categories which the FAA presumes to conform to applicable SIPs. The runway and taxiway extension project described in the EA does not fall within any of those presumed to conform categories. Therefore, the FAA cannot rely on the Presumed to Conform Final Notice to presume that the Project is in conformity.

C. The EA Fails to Establish the Project's Conformity Status.

Finally, even if, for argument's sake, the study of airports other than ARB were adequate for air quality analysis of ARB in the EA, the 1996 Study would be an inadequate substitute for the required analysis. 40 C.F.R. § 93.159 requires that analyses under the General Conformity Rule be based on, among other things: (1) "the latest planning assumptions," 93.159(a); and (2) "the latest and most accurate emissions estimation techniques available," 93.159(b). The 1996, 14-year old, Study patently fails to fall within either, let alone both, of these parameters.

In summary, the EA fails to establish the existence of any of the necessary components of the required finding of conformity for a Federal project, and, thus, is inadequate under both NEPA and the Clean Air Act.

IV. THE EA FAILS TO ACCOUNT FOR WELLS ON AIRPORT PROPERTY.

While Section 4.5.2 of the EA purports to address "Geology, Groundwater, and Soils" affected by the Project, it understates the significance of the fact that water resources are a principal use of the grounds where the airport is located.

"If there is the potential for contamination of an aquifer designated by the [EPA] as a sole or principal drinking water resource for the area, the responsible FAA official needs to consult with the EPA regional office, as required by section 1424(e) of the Safe Drinking Water Act, as amended." FAA Order 1050.1E, pp. A-74, 75, ¶ 17.1c. "When the thresholds indicate that the potential exists for significant water quality impacts, additional analysis in consultation with State or Federal agencies responsible for protecting water quality will be necessary. *Id.*, pp. A-75, A-76, ¶ 17.4a. "If the EA and early consultation [with the EPA] show that there is a potential for exceeding water quality standards [or] identify water quality problems that cannot be avoided or mitigated . . . an EIS may be required. *Id.*, pp. A-75, ¶ 17.3.

There are two issues raised by the Project that require further examination in the EA. First, there is the issue of contamination from the Airport. The Airport is the location of a porous sand/gravel formation that yields a large amount of water for pumping. Historically, the land where the airport is located was originally acquired by the City of Ann Arbor for water rights in 1929. Until recently, 15% of Ann Arbor's water supply came from the three wells located on Airport property. Water Quality Report, 2008, City of Ann Arbor, p. 2 (available at [http://www.a2gov.org/government/publicservices/water\\_treatment/documents/ccr.pdf](http://www.a2gov.org/government/publicservices/water_treatment/documents/ccr.pdf)). Due to the importance of the water supply at ARB, the EA needs to have more than a few passing words ("Based on coordination with the City of Ann Arbor, the proposed runway extension would not impact the water supply wells or the new water supply line (Bahl, 2009)"). [EA, p. 4-20].

Second, paving the area for a runway, roads, *etc.* increases the impervious area on the aquifer. This in turn reduces the infiltration of water that feeds the aquifer/City water supply. Adding 950 feet to the end of the runway adds another 71,250 square feet of impervious area

over an aquifer that is vital to the City of Ann Arbor. Further environmental review should provide detailed analyses of the impact of this increase in impervious surface, as well as the possibility of contamination, currently unexplored in the EA.

V. THE EA FAILS TO ANALYZE THE PRESENCE OF HAZARDOUS WILDLIFE NEAR THE AIRPORT AND FAILS TO PRESENT ANY MANDATORY MITIGATION MEASURES.

FAA Advisory Circular 150/5200-33B [“Hazardous Wildlife Attractants on or Near Airports”] contains standards for land uses that have the potential to attract hazardous wildlife on or near public-use airports. The standards are applicable to airport development projects, including airport construction, expansion and renovation. Airports that have received Federal grant-in-aid assistance must use these standards. [See AC 150/5200-33B, p. ii]. The FAA recommends separation distances of 5,000 feet at airports that do not sell Jet-A fuel, and 10,000 feet at airports that sell Jet-A fuel for hazardous wildlife attractants. [AC 150/5200-33B, p.1]. The Ann Arbor Municipal Airport sells both. The FAA also “recommends a distance of 5 statute miles between the farthest edge of the airport’s AOA [Air Operations Area] and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.” [AC 150/5200-33B, p. 1]. Finally, AC 150/5200-33B provides that “[a]irport operators should identify hazardous wildlife attractants and any associated wildlife hazards during any planning process for new airport development projects” [p. 17] and “[t]he FAA will not approve the placement of airport development projects pertaining to aircraft movement in the vicinity of hazardous wildlife attractants without appropriate mitigating measures.” pp. 17-18].

The FAA ranks geese as number three [3] in a list of the relative hazard to aircraft for 25 species groups. [AC 150/5200-33B, Table 1, p. iii]. However, the EA does not disclose that the area surrounding the airport is a prime habitat for large numbers of Canada Geese, which data clearly show it to be. More than a dozen Canada geese water habitats fall within the designated risk area (Exhibit 2), which are populated by numerous Canada geese much of the year (Exhibit 3 photographs), so much so that less than 1,000 feet from the Ann Arbor Municipal Airport itself, city officials must warn motorists of a Canada goose road crossing (Exhibit 4). And yet EA Appendix F lists 38 species of birds that have either been observed, or for which there has been confirmed or probable breeding in Airport fields during 2006 through 2008. And the list does not include Canada Geese. Canada Geese populate waterways on a golf course, in business parks and in neighboring wetlands located west and southwest of the airport, well within the separation distances prescribed by the FAA, as the exhibits document.

We raise the Canada geese issue because of growing safety concerns with respects to bird strikes in aviation. We know, for instance, that a 12-pound Canada goose struck by an aircraft traveling at 150 miles per hour has the kinetic energy impact of a 1,000 pound weight dropped from 10 feet. With more than 9,000 bird strike incidents in the U.S. last year (Associated Press, 2010), and seven reported in the history of the Ann Arbor Airport itself, it is a serious issue.

This type of risk contributed to the deaths of three passengers and two crew members in the crash of a Cessna Citation in Oklahoma City in 2008 because, according to the National Transportation Safety Board, a large bird hit the plane wing because the FAA had done an inadequate job of enforcement of wildlife hazard requirements (National Transportation Safety Board, 2009). With many large birds in the ARB area, in close proximity to many homes, at low altitudes of under 100 feet, citizens surrounding ARB do not want that type of disaster to be repeated here because of an ill-informed EA that ignores Canada geese.

It must be underscored that Canada geese were a subject of detailed communication between preparers of the EA and at least one member of the EA's Citizens Advisory Committee (CAC). CAC Committee Member Shlomo Castell, a commercial passenger airline pilot, requested that the EA's preparer, contractor JJR, collect papers from a national Birdstrike Prevention Forum in Chicago and, perhaps, seek the assistance of the panel's FAA liaison for a follow-up discussion with an FAA expert who presented important information at the conference for relevant Canada geese research. Mr. Castell's request was summarily rebuffed by JJR study coordinator Amy Eckland, writing, "The scope of this proposed project is to address the recommended runway length design parameters for the critical aircraft and to address line of sight issues from the tower. I will be meeting with CAC member and City of Ann Arbor Ornithologist, Dea Armstrong, to better understand the birds that are known to occur around the airport. Reviewing all of the information presented at the bird strike conference is an extensive inquiry that is beyond the scope of this project."

Mr. Castell followed up, explaining that in his view as a CAC member, bird strikes were environmental and a safety issue, and that as the only professional commercial passenger airline pilot on the panel he felt it important that such information be analyzed and that a "careful environmental study using FAA funds (via MDOT) would seriously consider the current work of the FAA's top bird strike expert." Mr. Castell went on to add: ". In my flying career, I have encountered three bird strikes. The most severe one involved three geese on a final approach to Detroit in a Boeing 727. Their bones were later found in the wing's leading edge and flaps. Thankfully they were not ingested by the engines. Should something similar ever occur to a departing business jet, turbo-prop or light twin out of ARB, results will most likely be different."

But the subject was ignored by JJR, the EA and Ann Arbor.

Consequently, the preferred alternative (Build Alternative 3) would extend Runway 6/24 950 feet to the southwest. The extension would allow aircraft landing on Runway 6 and departing on Runway 24 to overfly areas populated by Canada Geese at altitudes of less than 100 feet. The EA does not consider this hazardous condition. Even though they are not designated as "special concern", "threatened" or "endangered," the presence of Canada Geese in the Airport area poses a hazard to aircraft operational safety, and should be identified and analyzed in the EA, along with proper mitigation measures.

VI. THE EA DOES NOT ACKNOWLEDGE OR ANALYZE THE PROJECT'S  
MANIFEST GROWTH-INDUCING IMPACTS.

A Federal agency is required to evaluate not merely the direct impacts of a project, but also its indirect impacts, including those “caused by the action and later in time but still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). Indirect impacts include a project’s growth-inducing effects, such as changes in patterns of land use and population distribution associated with the project [40 C.F.R., § 1508.8(b)] and increased population, increased traffic, and increased demand for services. *City of Davis v. Coleman*, 521 F.2d 661, 675 (9th Cir. 1975). The “growth-inducing effects of [an] airport project appear to be its ‘raison d’etre.’” *California v. U.S. D.O.T.*, 260 F.Supp.2d at 978, citing *City of Davis, supra*, 521 F.2d at 675. The EA ignores this requirement, even though the Project is virtually defined by its growth-inducing impacts. Despite the fact that the EA assumes that the “percent of night and jet operations would remain constant between the existing condition and the future years,” [EA, p. 4-2] there is substantial evidence to indicate that the Project will cause a large increase in both types of operations.

As indicated above, there are no weight restrictions that must be lifted to allow the EA’s “critical aircraft” to operate at ARB without weight restrictions. The “load restrictions” referenced on page 2-12 refer not to category B-II aircraft, but to the fact that higher category aircraft (jets in the C-I and C-II categories) must currently operate at reduced weights in order to use the current 3,505 foot runway. (Required takeoff length is the primary restrictor.) Operationally, weight is reduced by carrying fewer passengers, less baggage and/or less fuel, all of which discourage these aircraft from conducting operations at ARB.

For example, a Cessna Citation II (Category B-II) requires 2,990 feet for takeoff at maximum certificated gross weight on a standard day, and can operate at unrestricted weight from the existing 3,505 foot runway. A Lear 35 (Category C-I), on the other hand, requires 5,000 feet for takeoff at maximum certificated gross weight on a standard day. While extending the runway to 4,300 feet would not facilitate unrestricted operations by the Lear 35, the required weight reduction would be less than is currently required. Therefore, the runway extension to 4,300 feet would operationally benefit the Category C-I Lear 35, but would provide no operational benefit to the Category B-II Citation jet, which the EA states is a “critical aircraft.”

The longer runway will facilitate the loading of additional passengers and baggage on high performance jet aircraft. Also, the ability to carry additional fuel may mean that, in certain cases, costly and time consuming intermediate fuel stops will become unnecessary. If the runway is lengthened to 4,300 feet, it is reasonably foreseeable that ARB will become much more attractive to operators of higher performance jet aircraft, such as the Lear 25 (Category C-I), Cessna Citation III (Category C-II) and Cessna Citation Sovereign (Category C-II), who could then operate at ARB instead of driving to and from Willow Run Airport.

Contrary to the unsupported assertions in the EA [EA, p. 42; Appendix B-1, p. B-4], it is reasonably foreseeable that the fleet mix will change in favor of a higher percentage of jet operations as compared to the current level of light single and multi-engine propeller driven aircraft operations. The smaller Category A-I/II and B-I aircraft account for a high percentage of ARB operations. B-II aircraft account for a low percentage of ARB operations.

It is, therefore, reasonably foreseeable that the number of night operations will increase as the number of arrivals of longer haul business jets often occur in the evening hours due to the longer time duration of their trips. Since one of the stated purposes of the EA is to increase interstate commerce, this is not merely an indirect, but also a direct effect, the Project will have on the surrounding community. This will also affect the fleet mix of night operations to reflect a higher percentage of jet operations than exist under current conditions.

Thus, the evidence is clear that the Project will cause an increase in both jet *and* night operations. It is also reasonably foreseeable that these added high-performance jet aircraft operations and night operations will be accompanied by significant noise and air quality impacts. Nevertheless, the EA fails to acknowledge, let alone analyze, these reasonably foreseeable impacts caused by expansion of airport physical facilities and operational profile and, thus, is inadequate.

This is especially troublesome because these increased number of high-performance aircraft impact almost 10,000 citizens within Pittsfield Township and another 10,000 in surrounding communities and would cross over rooftops at projected altitudes of 93 feet when landing on an extended Runway 6 in densely populated neighborhoods.

#### VII. POLITICAL JURISDICTIONS PROPOSED ACTION OR ALTERNATIVES WOULD IMPACT

It is not surprising that Ann Arbor completely ignored the implications of its proposed actions or alternatives on the political jurisdictions affected, as described in Federal Aviation Administration Order 5050.4B in response to the National Environmental Policy Act, in its Environmental Assessment – and, in fact, omitted this section completely -- since the principal jurisdiction affected, Pittsfield Township, in which the airport is wholly located, has unanimously passed a Resolution to oppose the expansion and is strenuously fighting it. Neighboring Lodi Township has passed a similar Resolution opposing the expansion. That Ann Arbor continues its push to expand its airport in the face of such opposition represents an unconscionable, heavy-handed and perverse assertion of land rights despite the will of its neighbors, subjecting citizens of other communities to undue risks.

Worse, MDOT, which with its predecessor state agencies has been advocating the expansion of the Ann Arbor Airport's primary runway for almost four decades now, is charged under 49 USC 47128 with serving as the FAA's agent in Michigan but jeopardized its block grant status by taking an advocacy position, often abdicating its public agency obligation to represent all Michigan citizens and, instead, become a de facto sponsor of the Ann Arbor expansion. In so doing it subjects both the government of Pittsfield and the people of Pittsfield to untold potential future damage both in safety risks and in economic loss that could result in an effective taking of their property rights because of repeated low flying, heavy jet aircraft, forcing them to seek recovery in the event of a tragic accident or inverse condemnation class action proceedings, from Ann Arbor, a city already suffering from such financial difficulty that it could

be unable to pay any significant damage awards. As such, Pittsfield victims would be left without effective remedy at law.

Thus, on behalf of the people of Pittsfield, Lodi, Ann Arbor, and Saline, the Committee for Preserving Community Quality seeks protection at the federal level to preserve the 14<sup>th</sup> Amendment rights of all area citizens, but notably Pittsfield citizens, and asks federal intervention to preserve their due process rights, since their local government is afforded no voice in the ultimate decision. Federal law, however, provides the Pittsfield government and citizens extraordinary petition rights direct to the U.S. Secretary of Transportation because their situation is so unusual and so serious (49 USC 47106 (C) (1) (iii)).

Pittsfield citizens would be subjected to a perfect storm of potential risks from low-flying aircraft in heavily populated neighborhoods that are also occupied by wildlife, including many Canada geese, during much of the year. This is confirmed by a study conducted by MDOT and Ann Arbor's own airport architects (URS Corporation) (Exhibit 5), which was excluded from the EA, and visualized on a projection of what the approach to an expanded Runway 6 would look like relative to the close proximity to area homes, which was corrected for accuracy (Exhibit 6).

An expanded Ann Arbor Municipal Airport would attract more jets of more types and bring multi-engine aircraft closer to heavily populated residential areas – within 600 yards at altitudes of 93 feet above rooftops of semi-luxury homes, or lower, on a regular, planned basis. Aircraft landing on Runway 6 would pass Lohr Road below 90 feet – the site of a new, planned non-motorized bike path, designated the Lohr-Textile Greenway Project, for which the Washtenaw County Parks and Recreation Commission has awarded Pittsfield a \$ 300,000 Connecting Communities grant. Thus, low-flying, heavy jets would be landing just feet over people traversing a new non-motorized trail.

This is especially dangerous with heavier aircraft because, in the event of any common multi-engine aircraft mishaps -- such as an engine failure on takeoff, a bird strike on takeoff, climb out, or approach, or similar incident – with aircraft in very close proximity to homes, the risk could be grave – a perfect storm of environmental or human risk. Contrary to common belief, any twin-engine jet would lose 80 percent of its climb performance – and at low altitudes that could be tragic. In a light twin-engine aircraft, the consequences would be worse, because most will not continue to climb on one engine in takeoff configuration; neither can they turn back toward the airport at low altitude in takeoff configuration, which is why so many classically crash near airports.

This is no allusive fear. In June 2009, a small single-engine plane landing at the Ann Arbor Airport made an emergency landing 1,200 yards short of the field on a Stonebridge Golf Club fairway in Pittsfield after its engine died at low altitude on final approach. (Exhibit 7) The pilot said if there had been people on the fairway at the time, he would have “crashed into the trees,” which would have probably been fatal for him and his grandson, whom he was instructing at the time (Wunderlich, 2008). And it is not insignificant that, between 1973 and 2001, nine people died from accidents flying in the Ann Arbor Airport traffic pattern within three miles of the airport (NTSB reports, 1973-2001). With the Ann Arbor runway moved 950 feet farther to

the southwest and even closer to hundreds of homes, as proposed, and planes still lower on approach – and planes heavier, larger, carrying greater payloads, and more people – this poses a risk too grave to bring to a heavily populated community.

Such impacts and safety implications on political jurisdictions where airport decision-making bodies are absentees – and where local citizens and their governments have no say – must be investigated to protect the safety of all concerned. This was not done or addressed in the EA in any way.

VIII. NOISE MODELING FOR THE PROJECT FAILED TO INCLUDE INCREASED JET AIRCRAFT AND NIGHTTIME OPERATIONS IN DEVELOPING NOISE CONTOURS.

The FAA’s Integrated Noise Model (“INM”) was used to model annual operations for the 2009 existing condition, *i.e.*, April 2008 through March 2009 [EA Appendix B-1, p. B-4] and develop 65, 70 and 75 DNL noise contours for the Project. [EA, p. 4-3]. The EA states that “[t]he existing 65 DNL contour does not extend beyond airport property.” [EA, p. 4-3]. During the time modeled, jet operations accounted for approximately 2 percent of total operations at ARB, and nighttime operations accounted for 4.2 percent of total operations. [EA, p. 4-2]. The EA states: (1) “[t]he percent of night and jet operations would remain constant between the existing condition and the future years”; (2) “fleet mix between the 2009 Existing Condition and the 2014 Future Alternatives would remain static” [EA, p. 4-2; Appendix B-1, p. B-4]; and “[t]he ARB 2014 proposed project alternative DNL 65 dBA noise contour does not extend beyond airport property.” [EA, p. B-6].

However, as shown in Section VI above, the Project will likely facilitate an increased number of night operations, and a change in fleet mix, which will include higher performance jet aircraft. DNL calculations depend on, among other things, forecast numbers of operations, operational fleet mix and times of operation (day verses night). [EA, Appendix B-2, p. B-16]. However, the EA fails to model or assess future increased night operations and fleet mix changes resulting from the Project.

The FAA is required to use INM to produce, among other things: (1) noise contours at the DNL 75 dB, DNL 70 dB and DNL 65 dB levels; (2) analysis within the proposed alternative DNL 65 dB contour to identify noise sensitive areas where noise will increase by DNL 1.5 dB;<sup>3</sup> and (3) analysis within the ***DNL 60-65 dB contours*** to identify noise sensitive areas where noise will increase by DNL 3dB, *if* DNL 1.5 dB increases as documented within the DNL 65 dB contour. [FAA Order 1050.1E, Appendix A, p. A-62, ¶ 14.4d].

As the noise modeling failed to take into account the foreseeable increases in nighttime

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<sup>3</sup> A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe.” [FAA Order 1050.1E, Appendix A, P. A-61, ¶ 14.3]



and jet aircraft operations at ARB, the questions of whether the future DNL 65 dB contour will be increased, and to what extent, and whether increased noise levels within the DNL 65 dB contour would necessitate designation of a DNL 60 dB contour remain unanswered.

#### IX. PROCEDURAL JUSTICE.

For 40 months, the Ann Arbor Municipal Airport expansion proposal has been in the works. Most of that time, it has been clouded in injustice. A long line of Procedural Justice violations began with the birth of the expansion proposal by Ann Arbor on January 22, 2007. On that day, the Ann Arbor City Council unanimously approved Resolution R-31-1-07, formally adopting the airport's previous Airport Layout Plan (ALP) and ordering the city staff to return with a separate proposal to expand the airport's primary runway within 60 days and that "notification of the proposal be sent out to citizens in the surrounding area."

Not only did the Ann Arbor city staff not return to its City Council with an expansion proposal within 60 days, it did not share such a proposal with neighboring citizens such as Pittsfield as required by its Council's order. Instead, however, just 37 days after its initial City Council Resolution order, on February 28, 2007, the city of Ann Arbor secretly submitted to MDOT-AERO a proposal for an 800-foot extension of primary runway 06-24 at Ann Arbor Municipal Airport – essentially, the present proposal being considered by the FAA. No corresponding notice was given to Pittsfield.

Thus began a plan by an overzealous Ann Arbor City Administration and Airport Manager run amok, beyond the control and limits of even its own elected officials and their mandates, in what amounted to an illegal and systematic effort to evade and elude any type of public disclosure about its airport expansion plans, regardless of the legal and political consequences.

On September 12, 2007, the proposed ALP was amended at the request of MDOT to allow for the 150-foot southwesterly movement of the entire primary runway, to provide for the eventual widening of State Street-State Road, which MDOT concedes cannot be funded for decades. Still, Pittsfield had not been informed by the applicant or MDOT about the proposed expansion on land within its jurisdiction, even though the Airport Emergency Plan calls for Pittsfield to provide primary Fire and Rescue Protection at the airport.

On April 23, 2008, MDOT approved the revised Ann Arbor Airport ALP. The state review had taken 420 days.

On June 4, 2008, the FAA's review of the Ann Arbor Airport ALP was begun by Cheri Walter, an Airspace Program Manager of the FAA. On the day she began her review, Ann Arbor Airport Manager Matt Kulhanek wrote her the following:

Cheri: Wow! I can't tell you how much I appreciate your timely response to our review. I was happy to just hear that you were moving it to the top of the pile. For you to be that responsive to our local concerns reflects someone with a good heart who truly wants to serve their customers. I can honestly say that I have never received such a high

level of service from the FAA. I would be honored to share that with your supervisor if you want to provide me with the contact information. Again, thank you so much. I hope that at some point in the near future, this action assists us in providing a longer and safer runway for the aviation community. Have a great day! (Kulhanek, 2008.)

Ms. Walter responded early the next morning with a note of thanks and the e-mail address of her supervisor, John Weizenbach, to whom Mr. Kulhanek wrote on the following day:

Mr. Weizenbach, I wanted to send you a short email to inform you of the excellent customer service I recently received from a member of your staff, Cheri Walter. Ms. Walter was assigned the airway facilities review for the Ann Arbor (MI) Layout Plan update. Unfortunately, the ALP update had taken an extended period of time through MDOT staff. This delay was causing timing and political issues on our proposed runway extension project. I was able to explain this to Ms. Walter whose response was remarkable. She located our plan and completed the review in a very timely manner. This quick turnaround from the FAA will greatly aid the success of our proposed project. Ms. Walter was pleasant, accommodating and very open to our local concerns. As a customer of the FAA, I could not have asked for better service. You should be very proud to have someone like Ms. Walter on your staff and representing the FAA in such a positive way. Have a great day. (Kulhanek, 2008.)

Not surprisingly, the FAA approved the Ann Arbor ALP on June 23, 2008 – just 19 days after the review was begun, less than 1/20<sup>th</sup> the time the state review took, and after the e-mail exchange of praise between the Ann Arbor Airport manager and the FAA reviewer. And, still, Pittsfield had not been officially notified about the expansion proposal.

On August 22, 2008, Ann Arbor first officially provided Pittsfield plans and notification of the proposed ARB expansion and detailed proposed changes in the ALP. These documents were required to be provided more than 18 months earlier under both the January 2007 Ann Arbor City Council Resolution mentioned hereinabove and under a separate 1979 Policy Statement referenced by the Ann Arbor official authoring the letter. It is noteworthy, that this first notification from Ann Arbor to Pittsfield is dated 59 days after the FAA approved the revised Ann Arbor Airport ALP. Under 49 USC 46110, routine federal court appeals are barred after 60 days. Thus, Pittsfield was effectively barred from legally objecting to the Ann Arbor ALP before even being notified by Ann Arbor about its revised ALP.

Pittsfield responded to Ann Arbor's August notice, objecting to the proposed expansion, citing the (1) increased noise that would be generated, (2) larger aircraft that would be attracted, and (3) and greater use by heavier aircraft that could result. Pittsfield subsequently unanimously Resolved (March 24, 2009) to oppose any expansion of the Ann Arbor Municipal Airport. Lodi Township subsequently passed a similar Resolution.

The Ann Arbor City Council approved the revised Ann Arbor ALP on September 22, 2008, without considering Pittsfield's objections, or those of Lodi Township.

Subsequently, in Spring 2009, a Citizens Advisory Committee (CAC) was appointed to advise the preparers of the Environmental Assessment submitted by Ann Arbor. The CAC was initially comprised of:

- The Ann Arbor Airport manager.
- The chairman of Ann Arbor's Airport Advisory Committee.
- An Ann Arbor 4<sup>th</sup> Ward resident, who is also a member of the Airport Advisory Committee.
- An Ann Arbor 3<sup>rd</sup> Ward resident, who is also a flight instructor at the airport.
- Another pilot based at the airport, who is also chief pilot of Avfuel, which operates the Cessna Citation 560 Excel based at the airport, which stands to be the single greatest beneficiary from the runway extension.
- Another airport flight instructor, who is also a member of the airport-based FAA Safety Team.
- A citizen member from Ann Arbor's 5<sup>th</sup> Ward.
- A representative from Ann Arbor's 2<sup>nd</sup> Ward, who is also a member of the Ann Arbor City Council.
- A representative of the Washtenaw Audubon Society, which conducted a previous study that found no Canada geese among 38 other species on the airport.
- Lodi Township Supervisor Jan Godek.
- Pittsfield Township Deputy Supervisor Barbara Fuller.

It was only after extensive political pressure that two additional outside members were added to the CAC:

- Shlomo Castell, a commercial passenger airline pilot from the Stonebridge Community Association in Pittsfield Township, and
- Kristin Judge, Washtenaw County Commissioner from District 7, which includes Pittsfield.

Even so, for an airport located in Pittsfield Township that most dramatically impacts Pittsfield and Lodi Townships and Ward 4 of Ann Arbor, the CAC was dominated by Ann Arbor and airport members who stood to benefit from the expansion and the CAC was under-represented by those immediately outside the airport perimeter whose safety could be placed at greater risk by any expansion. The Environmental Assessment never addressed nor studied the safety implications of any such expansion.

Throughout the process, the only opportunity for any public discussion -- with elected public officials present -- about the proposed expansion plan was before the Ann Arbor City Council, where speakers must call-in to register in advance. Only the first ten callers on the day of Council meetings are permitted to speak. Speakers are limited to three minutes. Such a process typically has a stifling effect on open and candid discussions for subjects as complex as an airport ALP and runway expansion proposal.

To satisfy the federal "Public Hearing" requirement, MDOT and Ann Arbor devised an equally stifling process. On March 31, 2010, a three-hour "open house" was held during the dinner hour period between 4-7 pm, during which individuals could assemble and provide public comments in response to the Environmental Assessment. Local media announcements of the event (AnnArbor.com) encouraged citizens to send Environmental Assessment comment letters directly to the Airport Manager, rather than MDOT, until Respondents intervened and requested that MDOT correct the process to restore a semblance of fairness. At the session itself, there was no dias of public officials impaneled. There were no open, public statements with the media present. All testimony was given in private rooms to court reporters, to be forwarded to MDOT for later evaluation and, presumably, incorporation into some finalized Environmental Assessment.

That citizens, not public officials, needed to police the process was the ultimate insult to ensure any semblance of fairness and equity. By this public hearing process being so restricted, members of the public were effectively deprived of their due process rights under the 14<sup>th</sup> Amendment of the U.S. Constitution to ever have an opportunity to speak in an open and fair forum in a reasonable amount of time in opposition to the airport expansion before a public body. That is because, if the expansion proposal goes forward, the Ann Arbor City Council generally restricts all outside speakers to three minutes, which is hardly an adequate time to offer an organized and coherent argument against such a complex proposition as an airport expansion, whereas -- at the same time -- city officials and their surrogates are afforded unlimited time to speak to the City Council to advocate in favor of the runway expansion, in clear violation to due process protections. Thus, by closing off the fairness and balance intended by this only federally-mandated forum, related to EA comments, stifled the only open public commentary and dissent regarding the airport, in violation of the law.

## IX. CONCLUSION.

Given the Project's many potential significant environmental impacts that have not been identified or fully analyzed in the EA, the substantial potential risks to human and environmental life living in the vicinity of the airport that have not been properly studied and are placed at risk

Molly Lamrouex, Airports Division  
MDOT Bureau of Aeronautics and Freight Services  
April 19, 2010  
Page 19

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by the proposed expansion, it should be rejected. At minimum, a full Environmental Impact Statement (EIS) is required prior to approval and implementation of the Project. "No matter how thorough, an EA can never substitute for preparation of an EIS, if the proposed action could significantly affect the environment." *Anderson v. Evans*, 371 F.3d 475, 494 (9th Cir. 2004).

Sincerely,

A handwritten signature in black ink, appearing to read "A. R. McGill", written in a cursive style.

Andrew R. McGill, Ph.D.

## References

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- Dolbeer, Richard A. and Wright, Sandra E., *Safety management systems: how useful will the FAA National Wildlife Strike Database be?*, *Human-Wildlife Conflicts*, 3 (2): 167-178, Fall 2009.
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- Walter, Cheri., E-mail communication with Matthew Kulhanek, City of Ann Arbor, Freedom of Information Act Request 09-082, City of Ann Arbor, June 5, 2008.
- Wunderlich, K.L., Personal report, June 16, 2009.



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## Williams Aviation Consultants

Williams Aviation Consultants, Inc. was retained by the law firm of Chevalier, Allen & Lichman, LLP to review and comment on Chapters 1 and 2, and Appendices A and B of the DRAFT Ann Arbor Municipal Airport Environmental Assessment (DEA), February, 2010. The following are our comments on the DEA.

### **A. Accommodating the Critical Aircraft at Ann Arbor Municipal Airport (ARB)**

As stated in paragraph 2.2.7, *“The proposed shift and extension of primary Runway 6/24 at ARB would provide a runway configuration that more effectively accommodates the critical aircraft that presently use the facility. (Emphasis added)*

In particular, the proposed project would provide the following benefits:

- *Enhance business aviation and interstate commerce by providing sufficient runway length to allow the majority of category B-II Small critical aircraft that currently use ARB to operate without load restrictions (i.e. reduction in passengers, cargo, and fuel associated with aircraft range). (Emphasis added)*

According to paragraph 2.2, Purpose and Need, *“The purpose of the proposed improvements at ARB 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. (Emphasis added)*

The 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. In cases where the critical aircraft weigh less than 60,000 lbs, a classification of aircraft is used rather than a specific individual aircraft model. A recent Airport User Survey has confirmed that the critical aircraft classification for ARB is *“B-II Small Aircraft.” (Emphasis added)*

Also stated under *“Purpose and Need” “Development of the primary runway at ARB to the recommended length of 4,300-feet would allow the majority of B-II Small classification aircraft to operate at their optimum capabilities (without weight restrictions). (Emphasis added)*

***WAC Comment: There are no aircraft in the B-II Small aircraft classification that require a runway length of 4,300 feet to conduct normal operations. All B-II Small Aircraft are capable of operating out of the current runway (3,505 feet long) without the need to reduce weight by off-loading passengers, baggage or fuel.***

***Regarding the establishment of the critical aircraft, ARB lacks the required number of 500 annual operations by B-II Small Aircraft, so they have added larger aircraft such as B-II Large, Category C-I and C-II operations to meet the 500 classification requirement. It is the Category C-I and C-II aircraft which would benefit by the runway extension to 4,300 feet, not***

*those aircraft that fall within the definition of Category B-II Small Aircraft. The current runway length of 3,500 feet is sufficient to handle all Category B-II Small Aircraft.*

**B. Lengthening Runway 6/24 to 4,300 Feet: The Impact on Aircraft Load Restrictions and Fleet Mix**

*The “load restrictions” referenced above in paragraph 2.2.7 refer to the fact that the higher category aircraft (primarily jets in the C-I and C-II categories) must currently operate at reduced weights in order to operate out of the current 3,500 foot runway (required takeoff length is the primary restrictor). Operationally, weight is reduced by carrying fewer passengers, less baggage and/or less fuel; all of which discourage these aircraft from conducting operations out of ARB.*

*For example: A Cessna Citation II (Category B-II) requires 2,990 feet for takeoff at maximum certificated gross weight on a standard day and may therefore operate unrestricted as to weight from the current 3,500 foot runway. A Lear 35 (Category C-I) requires 5,000 feet for takeoff at maximum certificated gross weight on the same standard day.*

*The Category B-II Citation II can conduct unrestricted operations from the current 3,500 foot runway. Whereas extending the runway to 4,300 feet would not facilitate unrestricted operations by the Category C-I, Lear 35, the required weight reduction would be less than is currently required. In this way, the runway extension to 4,300 feet would operationally benefit the Category C-I Lear 35, but would provide no operational benefit to the Category B-II Small Citation jet, or any other Category B-II Small aircraft.*

*All Category B-II Small aircraft, i.e. the ARB critical design aircraft, are currently accommodated on the existing 3,500 foot runway. Contrary to what is stated in the DEA, lengthening the runway to 4,300 feet **WOULD NOT** “provide a runway configuration that more effectively accommodates the critical aircraft that presently use the facility.”*

*If the runway is lengthened to 4,300 feet, other jets such as the Lear 25 (Category C-I), Cessna Citation III (Category C-II) and Cessna Citation Sovereign (Category C-II) may be able to operate out of ARB with minor reductions in takeoff weight. This will impact the community as it could reasonably be expected that the longer runway will attract more of the larger, higher performance jet aircraft to the airport.*

*These added high performance jet aircraft operations will be accompanied by noise and air quality impacts. Many of these operations will take place at night, thereby negatively affecting the general quiet of the surrounding community.*



**C. Shifting Runway 6/24 150 Feet to the West While Maintaining the Current Runway Length of 3,500 Feet: The Impact on Load Restrictions, Future Fleet Mix and Safety of Operations**

*Load Restrictions*

*Maintaining the current runway length of 3,500 feet would mean that the Category C-I and C-II aircraft would continue to suffer significant load restrictions. These load restrictions would thereby continue to serve as a deterrent to these aircraft operating out of ARB.*

*Future Fleet Mix*

*Maintaining the current runway length would serve to maintain the current fleet mix. Category B-II Small jet aircraft include lower powered models such as the smaller versions of the Cessna Citation (Category B-I/II) and the Mitsubishi Diamond jet (Category B-I). Higher powered jet aircraft such as the Lear 25 (Category C-I), Lear 35 (Category C-I), IAI Astra (Category C-I) and Cessna Citation III (Category C-II) may be generally discouraged from flying into Ann Arbor and would generally, with few exceptions choose to land at Detroit and drive the 40 miles to Ann Arbor.*

*Safety of Operations*

*2.2.1 Safety Enhancements:*

*In the first paragraph, the consultant is correct in stating that shifting the Runway 24 threshold 150 feet west would enhance safety by effectively removing the current obstruction to line-of-site vision (hangar) of the parallel taxiway for ATCT personnel.*

*However, in the next paragraph the consultant states, "The proposed shift of the Runway 24 threshold would also allow for a clear 34:1 approach surface to the east end of the runway (the current approach surface is the steeper 20:1). By keeping obstructions below the flatter 34:1 approach surface, an additional margin of safety is provided between approaching aircraft and any ground-based obstacles."*

*This statement betrays a lack of understanding by the consultant of Instrument Approach Procedure (IAP) design and TERPS Obstruction Standards. Regarding the 20:1 and the 34:1 surfaces; it is not either/or, but both/and. Both the 20:1 and the 34:1 surfaces exist simultaneously for every published IAP and are defined as "Obstacle Identification Surfaces" which do not establish obstacle clearance safety margins but rather only define instrument approach visibility minimums. The FAA does not require either of these two surfaces to be free of penetration by obstacles, and thus "providing an additional margin of safety" as stated by the consultant does not apply in the case of these two surfaces.*

*Other TERPS surfaces (Obstacle Clearance Surfaces) are established which do ensure clearance from obstructions and the FAA requires that these Obstacle Clearance Surfaces be clear of structures and terrain. The current IAPs to Runway 24 were designed by the*

*FAA to accommodate all existing obstructions. In this respect, shifting the runway 150' to the west would not enhance safety.*

*Summary: Assuming that the consultant is correct in their assertion that shifting the threshold would eliminate obstruction penetrations to the existing 34:1 Obstacle Identification Surface, the effect would not be a safety improvement but would only result in a reduction in the required approach visibility minimums.*

#### **D. Appendix B Noise Analysis Report**

##### **B-1 Noise Impact Analysis**

##### **B.1.3 Data**

##### **Flight Operations**

The consultant states "INM-modeled annual operations for the 2009 existing condition, consisting of operations from April 2008 through March 2009, totaled 61,969 operations, which is approximately 169 daily operations. Jet operations accounted for approximately 2 percent of the total operations. Nighttime operations accounted for 4.2 percent of the total operations."

2014 future condition aircraft operations were obtained from the 2008 FAA TAF for ARB. Modeled annual operations for the 2014 condition totaled 69,717 operations, or approximately 191 daily operations. *It is assumed that the percent of night and jet operations will remain constant between the existing condition and the future years. In addition, it is also assumed that the fleet mix between the 2009 Existing Condition and the 2014 Future Alternatives will remain static.* The existing and future fleet mix with annual operations is shown in Table B-2." (Emphasis added)

*The consultant wrongly assumes that the percent of night and jet operations will remain constant, and that the fleet mix will remain static if Runway 6/24 is lengthened to 4,300 feet.*

*The longer runway will make ARB much more attractive to larger and higher performance jet aircraft as the added runway length will facilitate the loading of additional passengers and baggage on to these aircraft. Also, being able to carry additional fuel may mean that, in certain cases, costly and time consuming intermediate fuel stops will become unnecessary. As ARB becomes more attractive to higher performance jet aircraft, these larger aircraft may then consider operations to/from ARB in lieu of landing at Detroit and driving to Ann Arbor.*

*As more high performance jet aircraft begin operations at ARB, the fleet mix will change in favor of a higher percentage of jet operations as compared to the current level of light single and multiengine propeller driven aircraft operations. The smaller Category A-I/II and B-I aircraft currently reflect a high percentage of ARB operations. B-II Small aircraft (the critical design aircraft) reflect a low percentage of ARB operations. Recall that Category B-II Large and Category C aircraft had to be added to the currently operating Category B-II Small aircraft design group in order to meet the 500 operation requirement for establishing the critical aircraft and thereby justify the runway extension.*

*The number of night operations also has the strong potential to increase as the number of arrivals of the larger, longer haul business jets often occur in the evening hours due to the longer time duration of their trips. This will also affect the fleet mix of night operations to reflect a higher percentage of jet operations than exist under current conditions.*

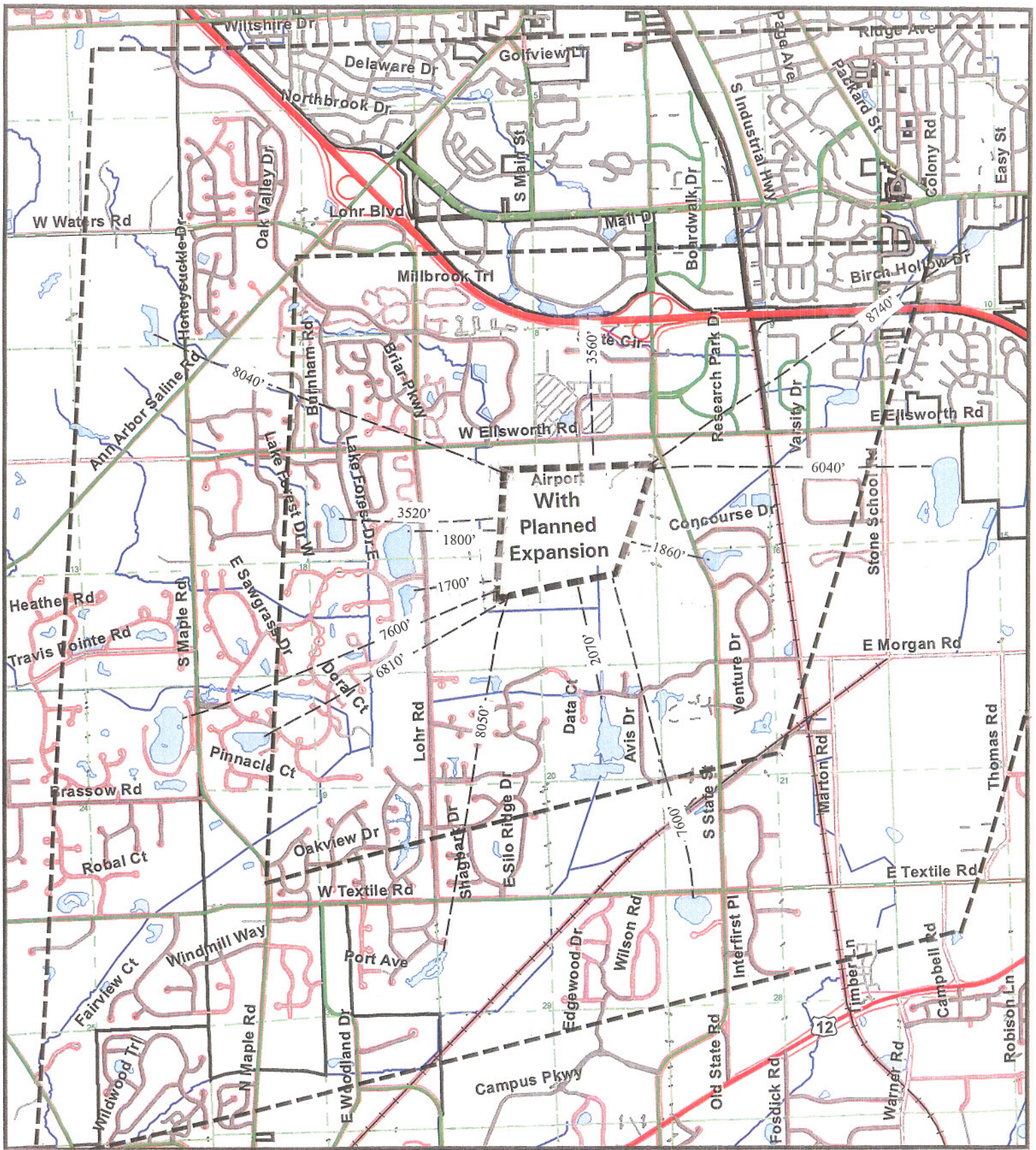
EXHIBIT 1

**Table 1****Analysis of MDOT-AERO Origin-Destination Data**

Analysis of MDOT-AERO Origin / Destination Analysis of IFR Operations

<b>State</b>	<b>B-II Large</b>	<b>B-II Small</b>
Illinois	5	64
Indiana	1	21
Michigan	20	162
Ohio	13	38
Wisconsin	4	9
<b>Great Lakes Region Total</b>	<b>43</b>	<b>294</b>
D.C.	2	1
Kentucky	0	13
Maryland	7	3
Pennsylvania	4	23
W. Virginia	0	7
<b>Added Flights Within 450-Mile Radius of ARB</b>	<b>13</b>	<b>47</b>
<b>Total Flights Within 450-Mile Radius of ARB</b>	<b>56</b>	<b>341</b>
<b>% B-II Operations Within 450-Mile Radius of ARB</b>	<b>66%</b>	<b>81%</b>

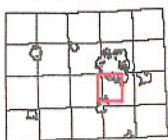
EXHIBIT 2



April 2010

GIS Map Print

Location Map



0 2,400 4,800



Feet

1 inch = 3,000 feet

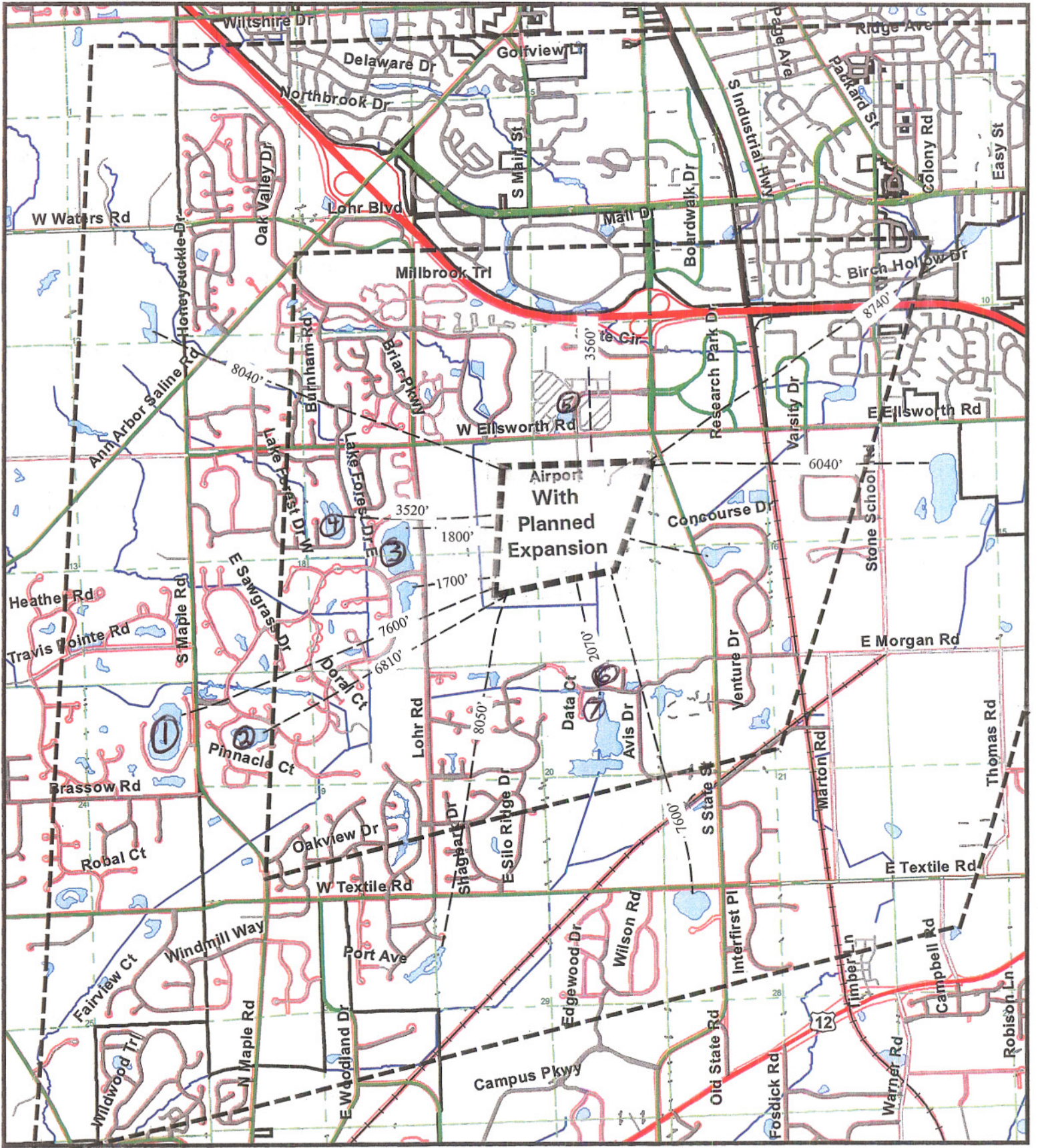


The information contained in this cadastral map is used to locate, identify and inventory parcels of land in Washington County for appraisal and taxing purposes only and is not to be construed as a "survey description". The information is provided with the understanding that the conclusions drawn from such information are solely the responsibility of the user. Any assumption of legal status of this data is hereby disclaimed.

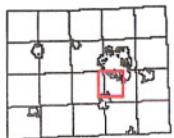
NOTE: PARCELS MAY NOT BE TO SCALE

EXHIBIT 3





Location Map

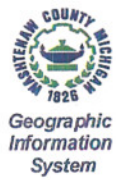


0 2,400 4,800

Feet

1 inch = 3,000 feet

GIS Map Print



The information contained in this cadastral map is used to locate, identify and inventory parcels of land in Washtenaw County for appraisal and taxing purposes only and is not to be construed as a "survey description". The information is provided with the understanding that the conclusions drawn from such information are solely the responsibility of the user. Any assumption of legal status of this data is hereby disclaimed.

NOTE: PARCELS MAY NOT BE TO SCALE



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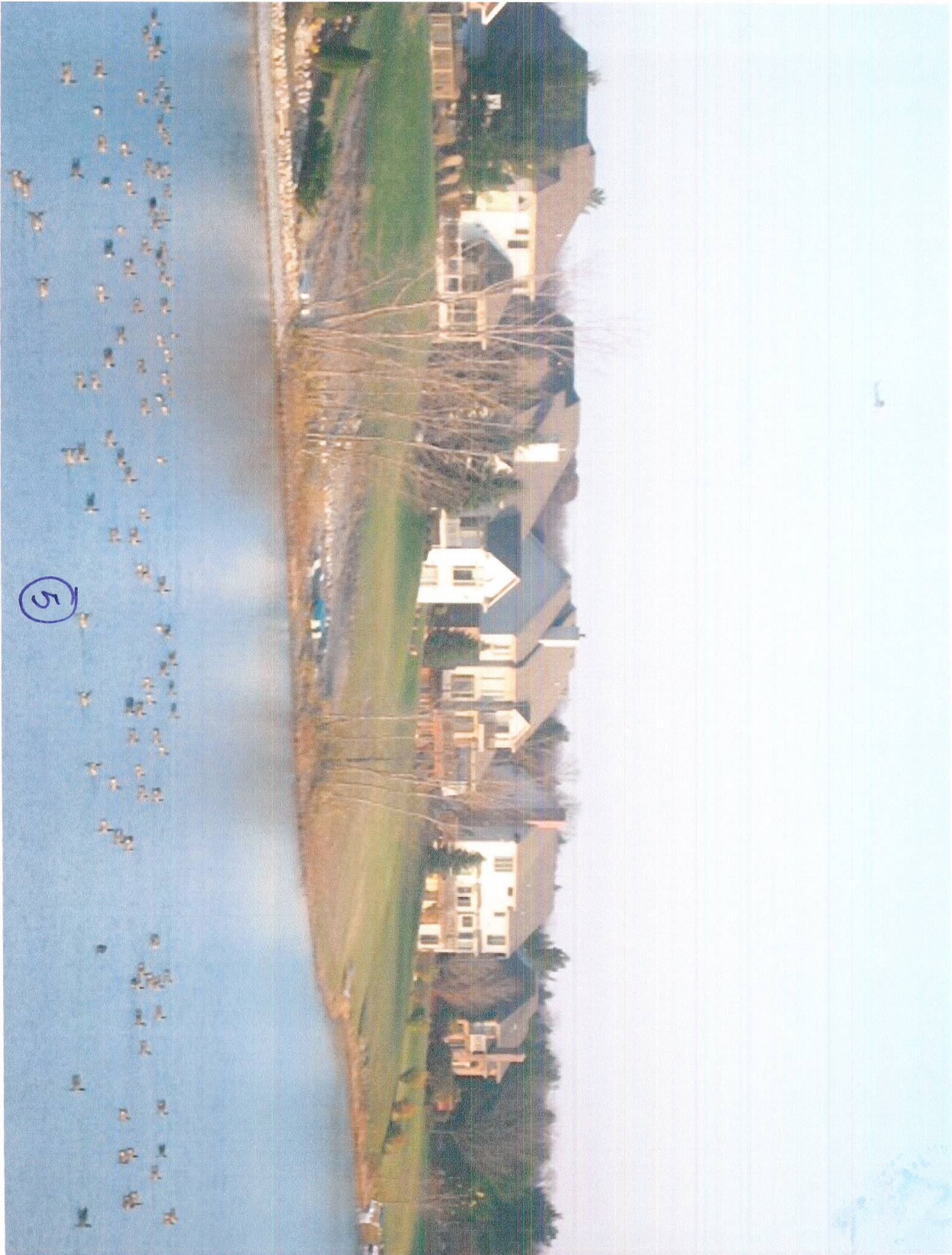
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WY





4



5



6



②



EXHIBIT 4

STOP

WARNING  
GOOSE  
CROSSING

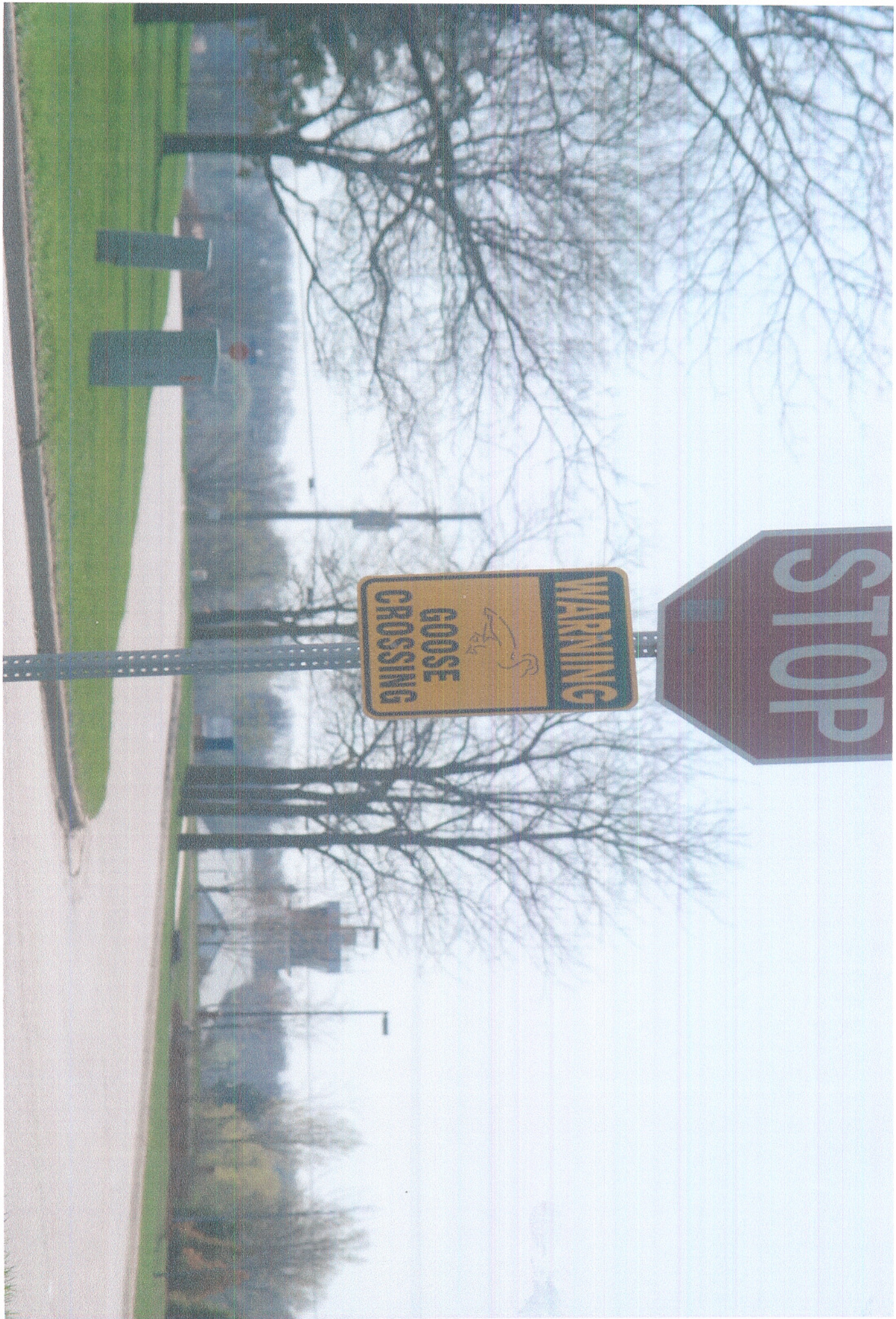
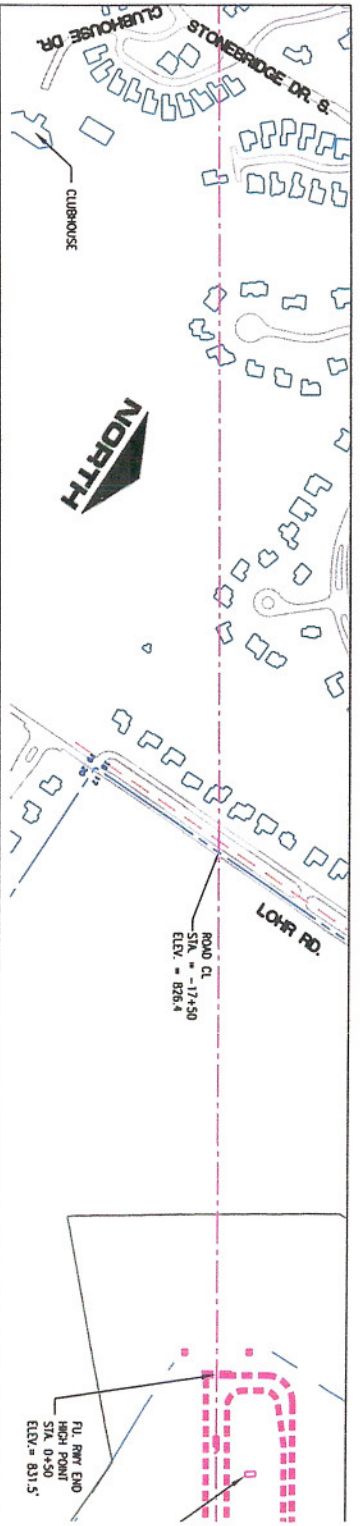
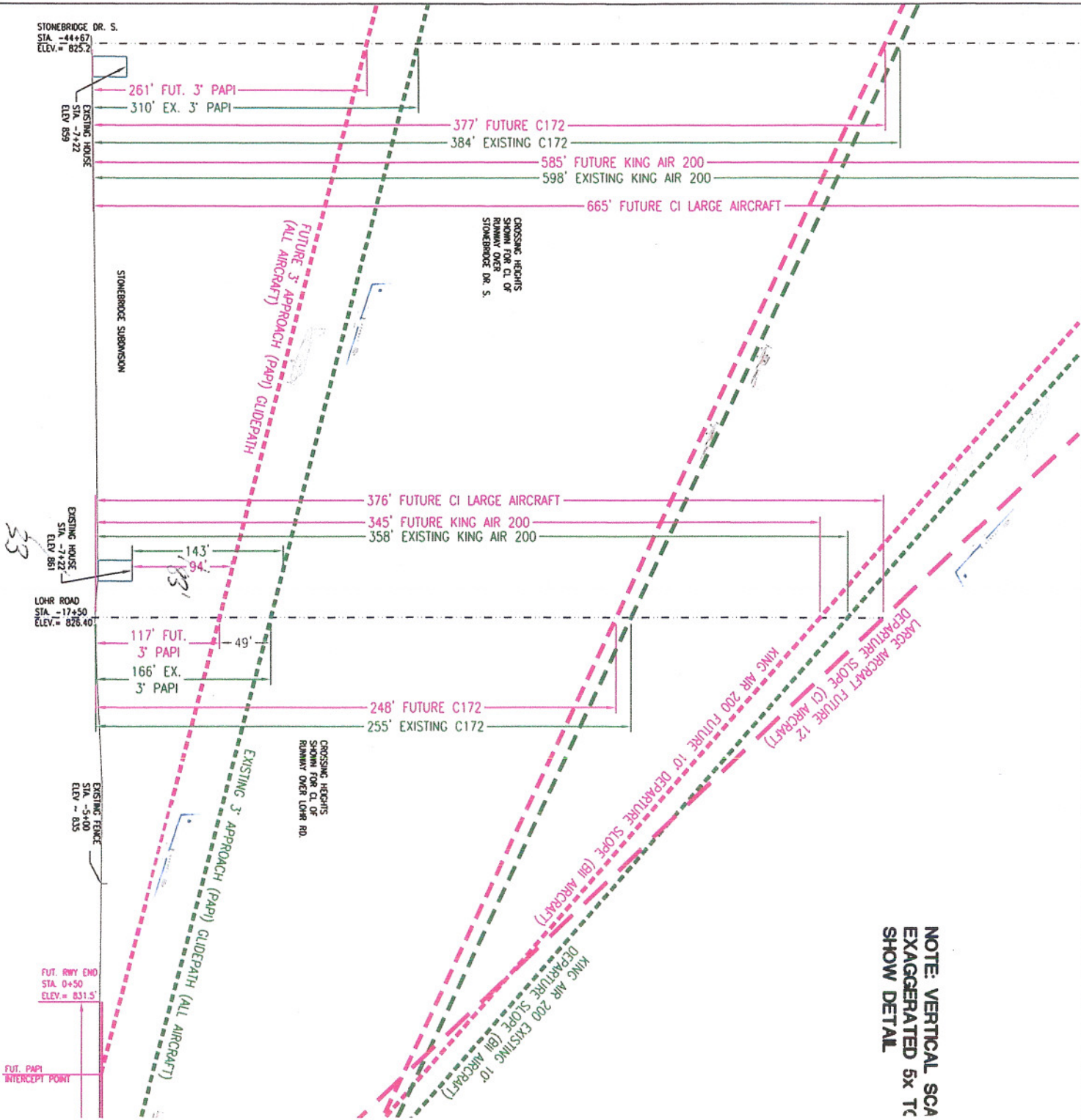
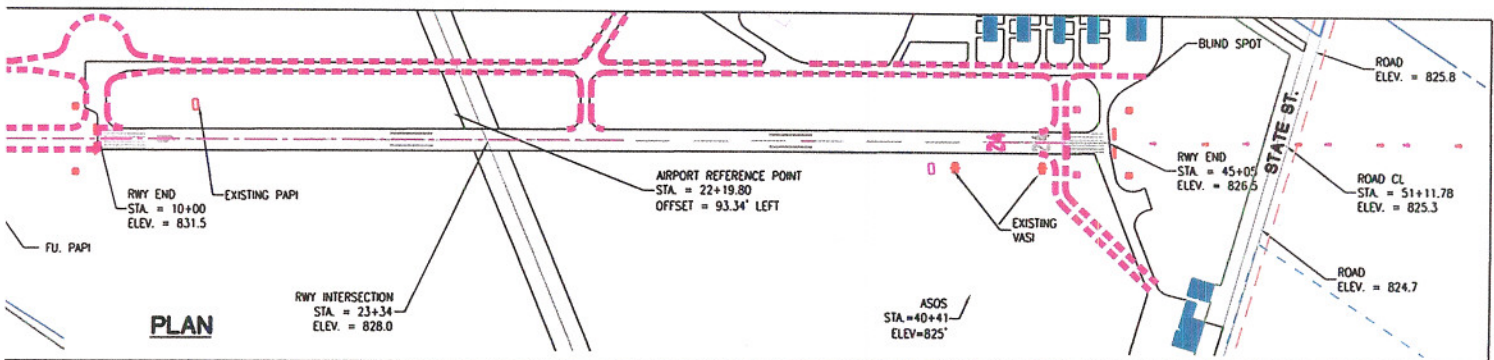


EXHIBIT 5

# APPROACH AND DEPARTURE



NOTE: VERTICAL SCA EXAGGERATED 5X TC SHOW DETAIL



**APPROACHES**

APPROACH SLOPE FOR ALL AIRCRAFT WOULD BE AT 3' ALONG THE PRECISION APPROACH PATH INDICATOR (PAPI).  
**APPROACH CLEARANCE (LOHR RD.)**  
 166' EXISTING  
 117' PROPOSED EXTENSION

**TYPICAL CLIMB PERFORMANCE BY AIRCRAFT TYPE**

AIRCRAFT TYPE	TYPICAL CLIMB ANGLE	TYPICAL CLIMB RATES
SINGLE ENGINE PISTON	4°-7°	500-1,000 FT/MIN
TWIN ENGINE PISTON	7°-9°	1,00-1,500 FT/MIN
TWIN ENGINE TURBOPROP	10°-11°	2,000-2,500 FT/MIN
JET	12°-16°	3,000-4,000 FT/MIN

**DEPARTURES**

DEPARTURE SLOPES ARE SHOWN FOR 3 AIRCRAFT TYPES FOR THE 839' AIRPORT ELEVATION AT 83°F. CROSSING HEIGHTS SHOWN FOR CL OF RUNWAY OVER LOHR RD.

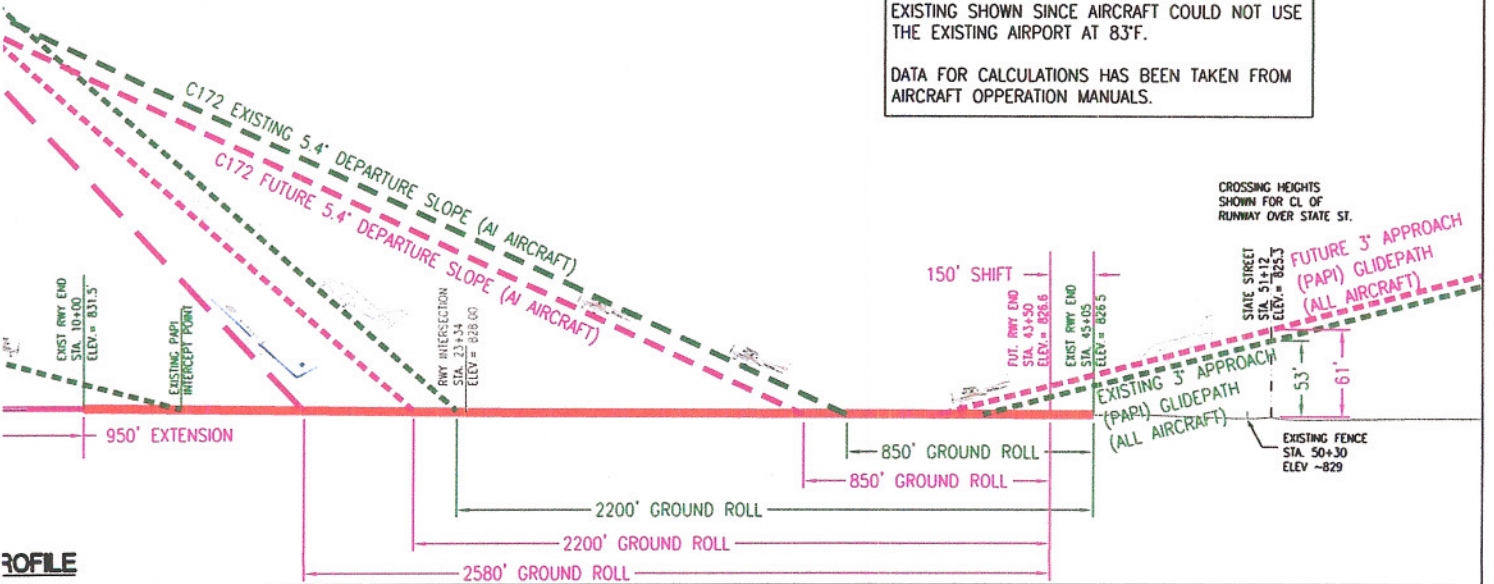
**CESNA 172 - A1 SMALL AIRCRAFT**  
 MAX. GROSS LOAD: 2,300 LBS  
 CLIMB RATE: 700 FT. PER MINUTE  
 CLIMB AIRSPEED: 73 KNOTS  
 CLIMB ANGLE: 5.4°  
 GROUND ROLL: 850 FT.  
**DEPARTURE CLEARANCE (LOHR RD.)**  
 255' EXISTING  
 248' PROPOSED EXTENSION

**KING AIR 200 - BII SMALL AIRCRAFT**  
 MAX. GROSS LOAD: 12,500 LBS  
 CLIMB RATE: 2,400 FT. PER MINUTE  
 CLIMB AIRSPEED: 125 KNOTS  
 CLIMB ANGLE: 10°  
 GROUND ROLL: 2200 FT.  
**DEPARTURE CLEARANCE (LOHR RD.)**  
 358' EXISTING  
 345' PROPOSED EXTENSION

**HAWKER 700A - C1 LARGE AIRCRAFT**  
 MAX. GROSS LOAD: 24,800 LBS\*  
 CLIMB RATE: 3,000 FT. PER MINUTE  
 CLIMB AIRSPEED: 135 KNOTS  
 CLIMB ANGLE: 12°  
 GROUND ROLL: 2850 FT.  
**DEPARTURE CLEARANCE (LOHR RD.)**  
 376' PROPOSED EXTENSION

\* FOR FUTURE RUNWAY LENGTH AIRCRAFT COULD ONLY USE AIRPORT AT 60% LOAD AT 83°F. NO EXISTING SHOWN SINCE AIRCRAFT COULD NOT USE THE EXISTING AIRPORT AT 83°F.

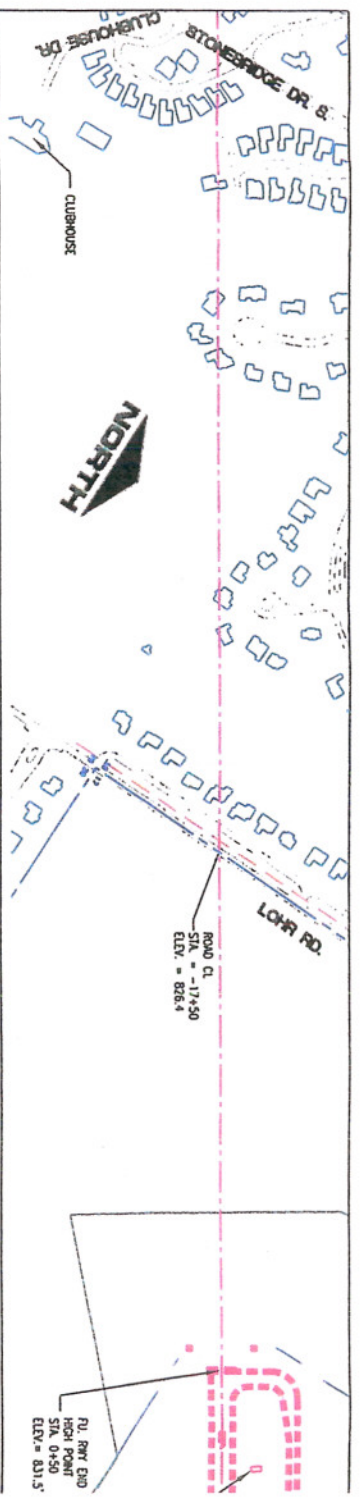
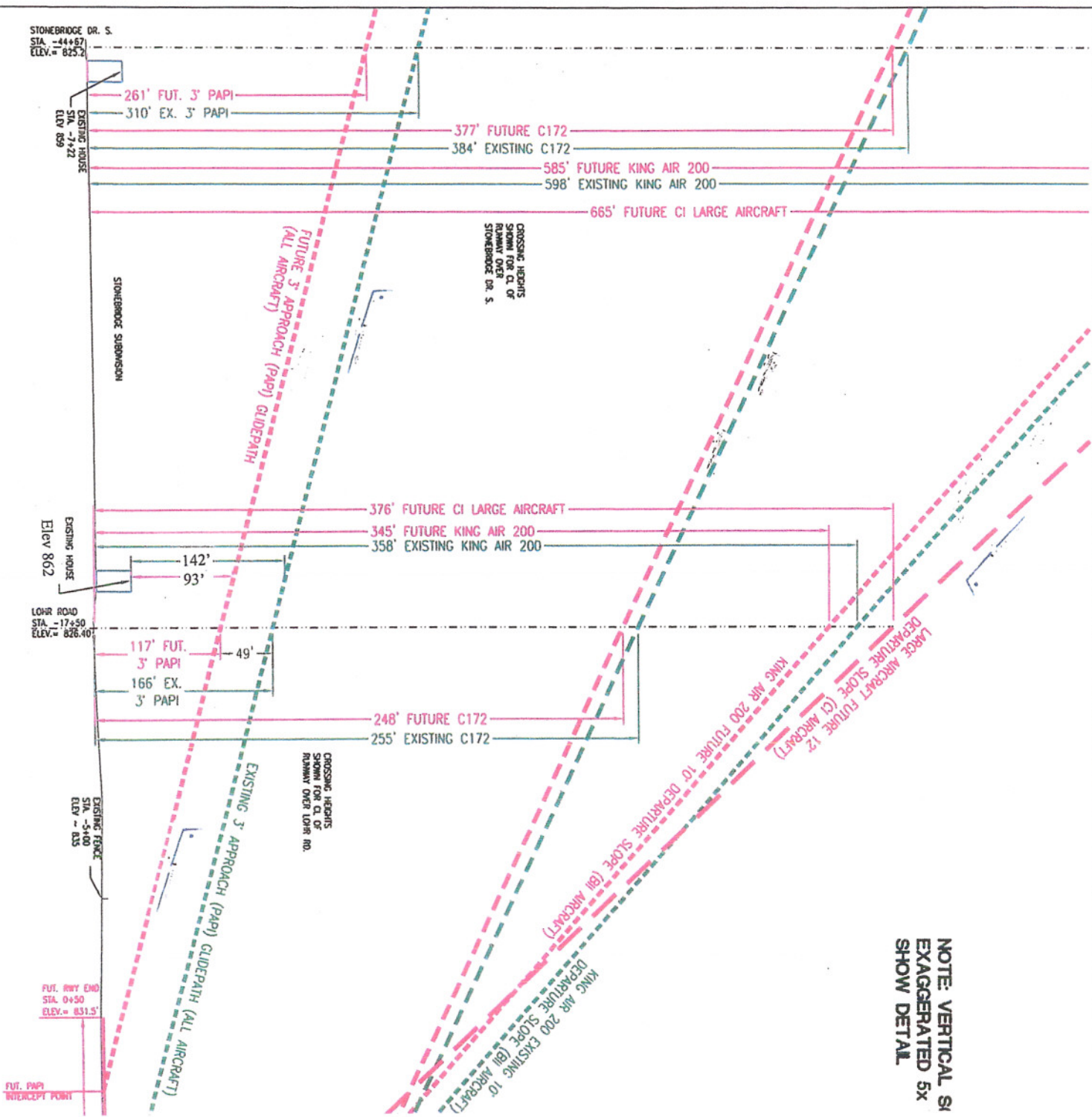
DATA FOR CALCULATIONS HAS BEEN TAKEN FROM AIRCRAFT OPERATION MANUALS.



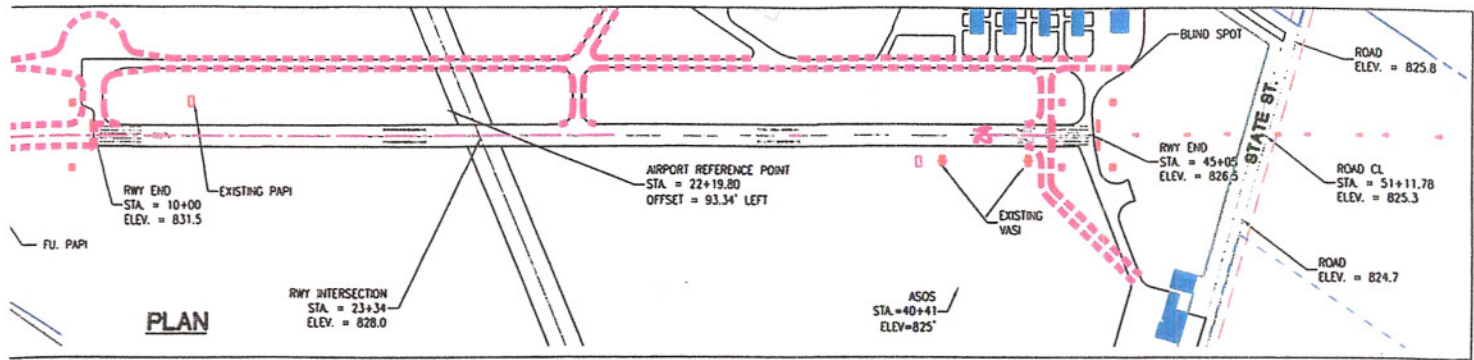
# CLEARANCES

EXHIBIT 6

# Corrected APPROACH AND DEPARTURE



**NOTE: VERTICAL S.I. EXAGGERATED 5X SHOW DETAIL**



**APPROACHES**

APPROACH SLOPE FOR ALL AIRCRAFT WOULD BE AT 3° ALONG THE PRECISION APPROACH PATH INDICATOR (PAPI).  
**APPROACH CLEARANCE (LOHR RD.)**  
 166' EXISTING  
 117' PROPOSED EXTENSION

**TYPICAL CLIMB PERFORMANCE BY AIRCRAFT TYPE**

AIRCRAFT TYPE	TYPICAL CLIMB ANGLE	TYPICAL CLIMB RATES
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**DEPARTURES**

DEPARTURE SLOPES ARE SHOWN FOR 3 AIRCRAFT TYPES FOR THE 839' AIRPORT ELEVATION AT 83°F. CROSSING HEIGHTS SHOWN FOR CL OF RUNWAY OVER LOHR RD.

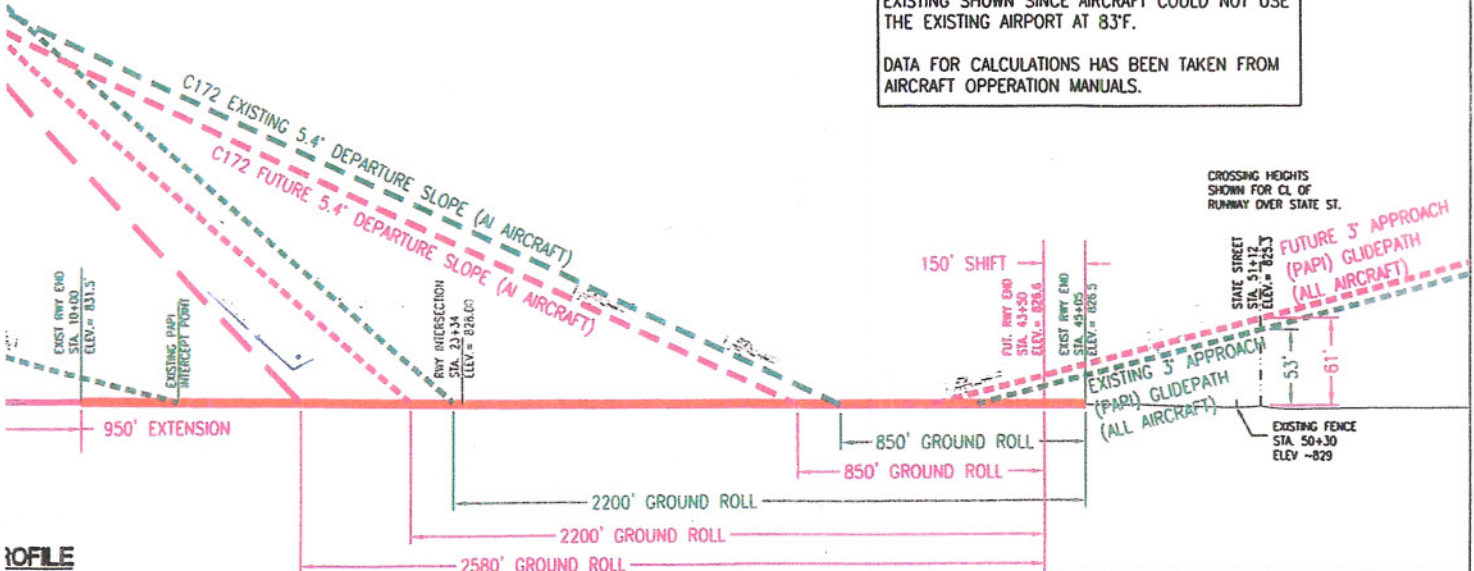
**CESSNA 172 - A1 SMALL AIRCRAFT**  
 MAX. GROSS LOAD: 2,300 LBS  
 CLIMB RATE: 700 FT. PER MINUTE  
 CLIMB AIRSPEED: 73 KNOTS  
 CLIMB ANGLE: 5.4°  
 GROUND ROLL: 850 FT.  
**DEPARTURE CLEARANCE (LOHR RD.)**  
 255' EXISTING  
 248' PROPOSED EXTENSION

**KING AIR 200 - B11 SMALL AIRCRAFT**  
 MAX. GROSS LOAD: 12,500 LBS  
 CLIMB RATE: 2,400 FT. PER MINUTE  
 CLIMB AIRSPEED: 125 KNOTS  
 CLIMB ANGLE: 10°  
 GROUND ROLL: 2200 FT.  
**DEPARTURE CLEARANCE (LOHR RD.)**  
 358' EXISTING  
 345' PROPOSED EXTENSION

**HAWKER 700A - C1 LARGE AIRCRAFT**  
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 376' PROPOSED EXTENSION

\* FOR FUTURE RUNWAY LENGTH AIRCRAFT COULD ONLY USE AIRPORT AT 60% LOAD AT 83°F. NO EXISTING SHOWN SINCE AIRCRAFT COULD NOT USE THE EXISTING AIRPORT AT 83°F.

DATA FOR CALCULATIONS HAS BEEN TAKEN FROM AIRCRAFT OPERATION MANUALS.



**CLEARANCES**

Base Map by:

**URS** GRAND RAPIDS, MI., 3524 SPANGLER DR., S.E. PROJECT NO. 125-0723  
 815 574-3800

**ANN ARBOR MUNICIPAL AIRPORT**



EXHIBIT 7

**Exhibit 7**

**Aircraft Emergency Landing: Stonebridge Golf Course – June 2009**



# **Exhibit 17**



## JANIS A. BOBRIN

### WATER RESOURCES COMMISSIONER

705 North Zeeb Road

P.O. Box 8645

Ann Arbor, MI 48107-8645

email: [drains@ewashtenaw.org](mailto:drains@ewashtenaw.org)

<http://drain.ewashtenaw.org>

DENNIS M. WOJCIK, P.E.  
Chief Deputy Water Resources  
Commissioner

DANIEL R. MYERS, P.E.  
Director of Public Works

Telephone 734.222.6860  
Fax 734.222.6803

April 19, 2010

Ms. Molly Lamrouex  
Airports Division  
MDOT Bureau of Aeronautics and Freight Services  
2700 Port Lansing Road  
Lansing, Michigan 48906

Re: Ann Arbor Municipal Airport, Environmental Assessment

Dear Ms. Lamrouex:

This office has completed a review of the subject document received by this office on April 07, 2010. This review only took under consideration the sections that were in regard to water resources.

As a result of this review the following comments are offered:

1. The Wood Outlet Drain, a designated county drain, extends approximately 1,000 linear feet further to the north than is shown in Figure 4.8.
2. It is indicated that build alternative 3 is the preferred alternative. This alternative extends the runway 950 linear feet to the west.
3. It is indicated that the preferred alternative does not impact the stream that is existing on the site. Using GIS measurements it appears that the stream is less than 1,000 linear feet from the existing runway. The runway extension would bring this infrastructure within 50 linear feet or less of the stream. In addition to this the grading limits shown in Appendix D-7 clearly extend into and beyond the location of the stream. Based on this information it is not understood how it has been concluded that there are no impacts to the stream.
4. It is indicated that the preferred alternative does not impact the floodplain for the stream that is existing on the site. It is indicated that proposed grading for the expansion would not occur within the designated floodplain boundary. Based on the floodplain boundary shown on FEMA Community-Panel Number: 260623 0010 C these statements are incorrect. Not only do the grading limits indicated for the preferred alternative extend into the floodplain boundary but the runway extension itself will extend into this floodplain

boundary. Based on this information it is not understood how it has been concluded that there are no impacts to the floodplain.

5. It is noted in the report that: "The amount of impervious surface on site would increase slightly due to the extension of the runway and taxiway from the existing 7 percent of the 837 acres to 7.4 percent." This slight increase noted equates to an additional 3.348 acres or 145,839 square feet. This increase in impervious surface is considered by this office to be significant and not slight particularly knowing that the additional runoff from this area will discharge to the Wood Outlet Drain.
6. It is noted in the report that: "Implementation of appropriate best management practices (BMPs) would continue to control the rate of stormwater runoff and maintain water quality standards." It is unknown by this office as to what the control rate of stormwater is currently being implemented or whether this rate meets county standards. The additional volume created by this increase in imperviousness is not spoken to at all by the report. The type or locations of the appropriate BMPs indicated are not identified.

If you would like to discuss these issues please contact me.

Sincerely,

Dennis M. Wojcik, P.E.  
Chief Deputy Water Resources Commissioner

CC: M. Kulhanek, City of Ann Arbor  
N. Billetdeaux, JJR

# Exhibit 18



U.S. Department  
of Transportation  
Federal Aviation  
Administration



Detroit Airports District Office  
Metro Airport Center  
11677 S. Wayne Road, Ste. 107  
Romulus, MI 48174

May 13, 2010

Michigan Department of Transportation  
Bureau of Aeronautics and Freight Services  
c/o Ms. Molly Lamrouex  
2700 Port Lansing Road  
Lansing, MI 48906

Subject: Draft Environmental Assessment for Ann Arbor Municipal Airport  
Federal Aviation Administration Review Comments

Dear Ms. Lamrouex:

We have completed a review of the draft Environmental Assessment (EA) submitted to the Federal Aviation Administration (FAA) Detroit Airports District Office (ADO). Based on our review the FAA offers the following.

Air Traffic offers the following comments:

No comments.

Tech Ops offers the following comments:

Cover sheet. If the document is to be accepted as a federal document the coversheet will need to reflect this.

Section 2.1. Second bullet states "Shift and extend the parallel taxiway to coincide with the revised Runway 6/24". We recommend *revised* be changed to *extended*.

Section 2.2. This section does not appear to clearly state the need for the proposed action. Are the bulleted "objectives of the proposed project" actually proposed actions? The last bullet states "Relocate and potentially upgrade the Runway 24 Approach Light System". When will it be known if the approach light system will be replaced or upgraded? What is this dependent on? The remainder of the document deals with the impact of the runway extension, but does not address impacts related to the relocation of the existing light system or an upgrade to a new system. Also, action associated with Runway End Identifier Lights (REIL) is mentioned later in Section 4.17 and should be listed here as a proposed action. Are there any other NAVAIDS moving or being established?

Section 2.2.1. This section states that the Medium Intensity Approach Lighting System with Sequenced Flashers (MALSF) would serve the same function as the Omni-Directional Approach Lighting System (ODALS) and is structurally very similar. How would the footprint of the MALSF structures compare to the ODALS? What environmental impacts would installation of a MALSF create?

Section 3.1.2. We suggest adding a qualifier in the second paragraph to state the following: "...would be greater than those expected with the *proposed* expansion of ARB in its current location."

Section 4.4. The Consequences of the Preferred Alternative section states: "Comparisons of existing conditions at various airports with future build out conditions indicate that the net change in air emission is still below standards." Do these *conditions* include runway extension projects similar to the proposed action at ARB?

This section additionally states: "Consequently, the air model results for the Preferred Alternative would be identical to those for the No Build Condition." This statement implies that no air emissions would result from the proposed action. Is this accurate?

Section 4.5.1. Would the existing Storm Water Pollution Prevention Program cover the additional impervious surface area?

Section 4.5.2. We would recommend rewording the first sentence of the Consequences of the Preferred Alternative section to the following (if true and appropriate): *Surface and subsurface geological conditions would not be impacted by the Preferred Alternative.*

Flight Procedures offers the following comments:

No comments were provided by Flight Procedures Office (FPO).

However, it should be noted that the FPO must be notified by formal letter to request the development of future approach procedures for the relocated runway end coordinates. Information needed includes identification of when construction will start, finish, when the equipment will be relocated, etc. This information is critical for developing/amending approach procedures. The FPO must know the project phasing in order to have procedures ready when construction is complete. (Equipment relocation, threshold displacements, etc). Changes in runway pavement length will result in survey data. Please note that survey data must meet the specifications outlined in Advisory Circulars 150/5300-16, 17, and 18. Third party surveys must be coordinated with the FPO. The proponent must submit Proposed Equipment Relocation Data along with information related to any equipment that will be relocated or added to AVN-210 and ATA-110. 7. Publication of new/amended Approach Procedures could take from 18 months to 2 years after runway data is submitted to AVN-210 and ATA-110. NOTE: Development of Approach Procedures will not begin until an official letter of request for development of procedures is received by FPO and the proposed runway data and equipment data provided to AVN-210 and ATA-110. Proponent must update the airport FAA Form 5010-1 to reflect new runway data and updated runway changes.

Airports Division offers the following comments:

The report is not clear if there is a federal action being requested.

Based on the information contained within the draft EA it appears that at least two federal actions are being requested. These actions include the relocation or replacement of the current approach lighting system as well as the development for future approach procedures for the new runway end locations. The FAA recommends that these actions be clearly identified throughout the document. The first page of the document states that this draft EA will become a State of Michigan document when signed by the State Official and does not include similar



language for the Federal Aviation Administration although there is a signature line included for a federal official. Please refer to FAA Order 5050.4B section 707(f).

Section 1 page 1-1. The draft EA states that the projects under consideration are those shown on the FAA approved Airport Layout Plan (ALP). This statement should be clarified as to the role of Michigan Department of Transportation (MDOT) in conditionally approving the ALP set on behalf of the FAA under the authority of the State Block Grant Program. When referencing the ALP throughout the document, additional emphasis should be made to the June 23, 2008 ALP approval letter that clearly states that the approval is conditional. Several conditions were placed on the approval letter including the requirements that the projects contained within the ALP set must comply with the National Environmental Policy Act (NEPA). The FAA recommends inclusion of the conditional ALP approval letter in the draft EA for disclosure purposes.

We also suggest the executive summary clearly outline who will be responsible for actions associated with the proposed project (i.e. local sponsor, local unit of government, State of Michigan, Federal Government). For the FAA to co-sign the document, the requested Federal Actions must be clearly identified within the executive summary and throughout the document where appropriate.

Section 2 page 2-1. References to the ALP set need to clarify that MDOT has only conditionally approved the ALP.

Section 2.2 page 2-4. The classification of a B-II Small Aircraft has been determined with a reference to MDOT 2009. Is the B-II "Small Aircraft" a designation that is contained within MDOT planning guidance? The FAA is not familiar with the classification of "small" when identifying the critical design aircraft for an airport. Please clarify how this distinction was derived.

Section 2.2 page 2-4. The paragraph discussing Origin-Destination Analysis should be expanded (or references made where information can be reviewed) to provide clarification to the general statements that are made. Specifically, is there a list of destinations that can be provided that will substantiate the need for a runway extension? A listing of destinations may aid the reader in putting the proposed project into perspective and may further substantiate the need for a runway extension. The report states that a significant number of operations occur between ARB and distant locations without quantifying the number and types of operations that are being referenced. The FAA recommends this be clarified in the report or referenced to the appropriate appendices.

Section 2.2 page 2-5. Are the bulleted items for the objectives of the proposed project presented in order of relative importance?

The statement that the project will enhance interstate commerce does not appear to be substantiated by supporting documentation here or elsewhere in the document. How has this been verified? What are the enhancements? Is this a need for the project? The FAA recommends referring to FAA Orders and Advisory Circulars that address runway length, operational capacity of the aircraft utilizing ARB, and any deficiencies that currently exist at ARB that are a function of the current runway length. Without a detailed discussion and explanation of what the interstate commerce enhancement is and how this has been quantified as a current need, the FAA does not recognize this as a need for the project based on the information provided.

If enhancing interstate commerce is a stated need for the project then the report should be expanded to include a full range of alternatives that can address this need including alternative modes of transportation as an example.

The last bulleted objective in this section is for the relocation and potential upgrade of the Runway 24 approach lighting system. The report does not appear to document why this is a need for the project or if the approach lighting system is currently required or needed in the future.

What benefit does the current approach lighting system provide the airport? There does not appear to be a credit for a reduction in minimums at the airport as a result of having the ODALS. Has a Benefit Cost Analysis (BCA) been completed or requested of the FAA substantiating the need for relocating or replacing the ODALS? Depending on the results of the BCA and associated justification for relocating the existing or installing a replacement light lane at ARB, the potential exists that the Federal Action may be limited to abandoning the existing ODALS and no relocation or replacement would occur with federal funds.

Section 2.2.1 page 2-5. The first paragraph implies that runway incursions have been occurring at ARB as a result of issues with the current line of sight between the ATCT and a portion of the taxiway system and taxiway hold area. The report further indicates that the proposed project will possibly prevent incursions from occurring. Are there any documented runway incursions resulting from the current line of sight issue that can be included in the report to substantiate this claim? The FAA supports safety enhancement projects and would consider this a measure to improve the line of sight from the ATCT to parallel taxiway and the hold area if it can be demonstrated that the existing condition contributes to runway incursions. While a goal of the FAA is to reduce the number of runway incursions at airports nationwide, the FAA can not definitively conclude that this proposed safety enhancement at ARB will potentially prevent runway incursions but rather if the line of sight issue is improved this may reduce the possibility of runway incursions.

This section includes discussion of the potential to achieve a clear 34:1 approach and reduce minimums at the airport. The ADO previously requested clarification on this issue in an e-mail dated March 4, 2010 (attached for reference). Based on the e-mail exchange, the FAA understands there is no anticipation of a reducing of minimums at this airport for the foreseeable planning future.

Since minimums will not be reduced as a result of the project, the FAA is unclear on the need for a 34:1 approach or how it enhances safety of the approach procedures currently published for the airport based on the existing 20:1 approaches. The document should better explain how providing a 34:1 approach enhances safety for the existing and future users at the airport or how this also may impact interstate commerce. Has the current 20:1 clear approach resulted in missed approaches that have been documented? If so how often does this condition occur?

Is providing clear 34:1 approaches a project need or a benefit that may result from the relocation of the runway? Earlier in the report it was identified as a stated objective, however, the discussion in the report does not appear to substantiate the need for this when combined with the e-mail exchange of March 4, 2010 and conditionally approved ALP dated June 23, 2008.

While the future 34:1 approaches are identified on the conditionally approved ALP, it should be noted that this would result in an expansion of the approach surface from the existing 500'x2,000'x5,000' to 500'x3,500'x10,000'. The EA needs to fully disclose the increase in the approach surface if a 34:1 approach is achieved and document any environmental impacts that result from the larger approach surface.

Section 2.2.2 page 2-6. It is not clear to the FAA why there is a summary of Wings of Mercy operations since 1992 including 51 flights reported in 2009. This data appears to be in addition to what was collected as part of the user survey report that relied predominately on information from calendar year 2007. What is the relevance of including the 2009 data or specifically identifying the Wings of Mercy flight operations? Are there a range of aircraft types that fly for Wings of Mercy? Does the proposed runway extension impact their operational capacity?

Section 2.2.2 page 2-7. Discussion on the Michigan State System Plan (MASP) identifies the airport reference code (ARC) as B-II. Does the MASP differentiate between B-II small and B-II large? In absence of a clearly defined category of B-II "small aircraft", the FAA would suggest simply referring to the airport with a B-II ARC.

Section 2.2.3 pages 2-7 and 2-8. This section most clearly identifies why a runway extension is being proposed in accordance with FAA advisory circulars and State standards outlined in the 2008 MASP. This section, in combination with section 2.2.4 that documents substantial use (i.e. over 500 annual operations) by the B-II critical design family of aircraft appears to substantiate the justification for the runway extension based on the 2007 operational data.

Section 2.2.4 page 2-9. Detailed operational information is presented for calendar year 2007. Subsequent years are generalized based on trend analysis and overall decrease in operations as reported in the FAA Terminal Area Forecast (TAF). There does not appear to be an evaluation to account for the 21.8% decrease in operations between 2007 and 2009. Would it be prudent to verify if the operational decrease impacted one user group more than other user groups? Are the numbers of local and itinerant operations decreasing at the same rate or is one segment impacted to a greater extent? This evaluation may be accomplished through additional user survey data collection or potentially from the ATCT located at ARB for subsequent years since 2007. Additionally, the FAA recommends that the year of the TAF being utilized for this report be identified.

Section 2.2.4 page 2-11. Specific information for AvFuel Corporation is presented to validate assumptions for the continued classification of the airport as B-II. It should be noted that AvFuel bases a Citation 560 Excel jet at ARB and is designated in the report as a B-II "Large" aircraft. The discussion further indicates that the Chief Pilot submitted written documentation regarding potential future operational levels at ARB. The written documentation does not appear to be included within the report or appendices. However, according to the text in the report, the Chief Pilot anticipates future operational levels increasing to 350-450 annual operations. This level of use, in combination with a limited number of additional similar B-II aircraft would appear to classify the airport as a B-II "Large" designation. The FAA reiterates the hesitation on identification of either a "small" or "large" within an airport reference code and recommends that any qualifier to the size of the B-II critical design aircraft be removed from the report. The number of operations forecasted to occur by AvFuel Corporation would further support the elimination of the qualifier as "small" to the ARC.

Section 2.2.6 page 2-12. The local objective of reducing runway overrun incidents appears to conclude that if the added runway length were present, all the incidents would have been

avoided. Based on information presented, the FAA does not necessarily come to the same conclusion. There are many factors that go into any overrun incident and if additional runway length were present this may have only prolonged the overrun incident. The A-I category of aircraft involved with overrun incidents do not appear to have needed any length beyond the existing runway length to operate at full capacity and in a safe manner.

The paragraph that references Accelerated Stop Distance Available (ASDA) requirements appear to include fleet mixes other than A-I and implies that aircraft can accommodate their operational requirements with a reduced load capacity. The ADO is not aware of any A-I aircraft operating at ARB that would need to operate at a reduced load capacity to adequately satisfy their calculations for safely operating at ARB.

It is not clear when the 11 overrun incidents occurred, their cause, or conclusions that support that runway length was a factor in the overrun incidents. Can additional information be provided to support this position? If additional information is not available the FAA recommends removing this section from the document.

The FAA recognizes that this section of the report was included as a local objective and it is clearly and appropriately stated that the FAA does not recognize this as a need for extending the runway at ARB.

Section 2.2.7 page 2-12. The first bullet point indicates that additional runway length will allow for the majority of B-II "small" aircraft to operate without load restrictions. Has it been documented that the current B-II "small" users operate with load restrictions? If so, how often does this occur and what are the quantifiable impacts to their operations?

The third bullet implies that operational safety will be improved with a clear 34:1 approach. Currently the airport has LPV approaches with minimums of 300' and 1 mile. The ADO questions if a flatter approach is warranted in absence of reducing minimums as indicated in the March 4, 2010 e-mail correspondence. The discussion on the 34:1 approach should be re-evaluated and its need clearly identified. Currently the report does not seem to substantiate a need for a 34:1 approach if minimums are not anticipated to be lowered.

Section 3 page 3-1. The report indicates that alternatives were developed to meet the goals of ARB. These goals are to improve safety and efficiency and serve current users. These goals do not appear to be consistent with those previously outlined in the bullet points of section 2.2 (purpose and need). This section should refer to the stated needs and evaluate the alternatives ability to meet those needs.

Section 3.1.3 pages 3-3 and 3-4. There is discussion on extending the runway to the east and a listing of items impacted by pursuing this alternative. There is, however, no conclusion or statement that this option either should be, or was, eliminated. It can be inferred later in the report by the absence of this alternative that it was eliminated but the conclusion as to why it has been eliminated has not been stated.

When addressing the FAA's comments (included within this letter) associated with the stated needs for the project earlier in the report, the responses to these comments may influence the conclusions on why some of the alternatives carried forward have been eliminated. Specifically, if needs stated in section 2.2 are not further substantiated, or it is concluded that one or more of the needs do not exist, additional alternatives may need to be carried forward if they adequately

address the needs for the project. The FAA will re-evaluate the conclusions of the alternatives section once the FAA's comments on the purpose and need section are addressed.

Section 3.3 page 3-8. Based on the information presented in the draft EA, the FAA has not reached the same conclusion that alternatives 1 and 2 do not meet the stated needs for the project. An apparent evaluation parameter for alternative 2 included in section 3.3.3 discusses the tower line of sight. This evaluation matrix does not appear to be consistent with those goals stated in Section 3 on page 3-1. The previous comment on the apparent disconnect between the different sections of the report also applies to the specific alternative evaluation. The FAA recommends that the decision matrix for which alternatives were eliminated be clarified in the EA.

Table 3-1 page 3-8. The table appears to incorrectly dismiss alternative 1 because it does not meet purpose and need. The discussion in 3.3.2 does not support that conclusion. Additionally, there is reference to a future expansion of State Road. This appears to be the first reference to this issue. Is this a need for the State Road expansion project? In what time frame is the State Road expansion project expected to occur? Should there be expanded discussion on other regional planning projects in this EA so the public can better understand the different parameters that ARB is confined to or bound by?

Additional alternatives that may be considered for evaluation to address the need statements could include a combination of items such as: alternative modes of transportation to address enhancing interstate commerce, removal or relocation of obstructions that limit the ATCT line of sight issues, and raising or constructing a new ATCT to address the line of sight issues. Have any previous discussion on additional alternatives been eliminated prior to, or as part of the planning and environmental assessment process for ARB?

Section 3.4 page 3-9. This section contains a brief summary of environmental resources that will not be impacted by build alternative 3. Would it be advantageous to also summarize environmental impacts associated with the other build alternatives? There is a general statement regarding noise impact analysis in this section that identifies that the 65 DNL contour is not within 1,000 feet of any residential structure. What is the purpose for this statement? The FAA is not aware of an environmental impact decision matrix associated with the distance between residential structures and the 65 DNL contour.

Section 4.3.5 page 4-17. The conclusion for the implementation of the preferred alternative states that a positive result of improvements is the ability of business owners to achieve improved fleet efficiency for critical aircraft by maximizing their passenger and/or cargo loads. How has this statement been substantiated? What records exist that current users at ARB are not operating at maximum passenger and/or cargo loads? What has been the economic impact of the reduction of loads if they are occurring?

Section 4.9 pages 4-22 and 4-23. State endangered and special concern species were identified at ARB. The sponsor appears to be proposing a mitigation effort to limit grading for the project to avoid breeding seasons for the specific species. Has this proposed mitigation plan been found to be acceptable by the resource agencies? There is reference to an Audubon Society agreement regarding mowing boundaries. Who is the agreement between? Has this agreement been reviewed by the environmental assessment preparation team? Are there limitations or restrictions for use of airport land as a result of this agreement? Has the Audubon Society been included or have they provided input to this draft EA?

Section 4-15 pages 4-24 and 4-25. The FAA recommends that the score from the USDA form AD 1006 be disclosed in this section and explain what the score means. The consequences identify that some prime and unique farmland of local importance are impacted by this project. The amount of prime and unique farmland should be quantified. Are there any mitigation requirements for this change in use?

Section 4-16 page 4-25. The report identified a decrease in facility energy usage with the installation of LED taxiway lights. Is this net decrease in energy usage compared to baseline or existing conditions?

Section 4-17 page 4-25. There is no discussion on potential relocation of the ODALS or replacement with upgraded equipment. Would there be impacts with either scenario (relocation or replacement)? It should also be noted that the potential exists for the current ODALS to be abandoned if a relocation or upgrade is not justified with a BCA.

Section 4-20 page 4-26. The evaluation regarding construction impacts in the draft EA do not appear to address staging areas during project implementation. The FAA recommends the report verify that staging areas will not impact environmental resources; and as necessary, outline any required mitigation measures for staging area impacts.

Section 4-21 page 4-26. Should the reference to ASTM Standard E1527-94 be updated to E1527-05? The EA should also state if the review was done in accordance with FAA Order 1050.19B, "Environmental Due Diligence Audits".

Section 5 page 5-1. The FAA suggests that this section be titled *Mitigation* rather than *Environmental Consequences – Other Considerations*. We also question if it is prudent to discuss noise, social impacts and community disruption, wetland impacts, and threatened and endangered species in this section since there appear to be no mitigation requirements associated with any of these categories. The FAA suggests either listing all environmental categories reviewed that do not require mitigation or not list any of the categories that do not have required mitigation. Is it a true statement that there are no mitigation measures for threatened and endangered species? Section 4.9 appears to indicate there are seasonal limitations on when grading will occur.

Would it be better to outline required permits for the project in this section, best management practices, construction requirements, etc. rather than having a discussion on what mitigation measures are not required?

Section 6.2.1 pages 6-1 and 6-2. This section includes a summary of when Citizen's Advisory Committee (CAC) meetings were held and the overall agenda for each meeting. The EA does not document either in the text or in an appendix what issues may have been raised and how they were addressed in the CAC meetings. The FAA suggests additional information from the CAC meetings be included in the EA.

Section 6.2.2, page 6-2. The last sentence of this section should indicate that comments received will be reviewed, summarized, and addressed.

Section 7 page 7-3. This section identifies a request that the state and federal agencies approve a Finding of No Significant Impact. This is the first location in the document that specifically requests a federal action. As discussed previously, the FAA requests that earlier in the document the specific actions being requested of each agency be outlined. Based on the

review of this document the FAA anticipates that the FAA will be requested to evaluate, and as appropriate, abandon/relocate/replace the existing approach lighting system and develop new flight procedures for the new runway end locations.

**Next steps.**

The draft EA appears to be intended to be a jointly executed document by both MDOT and the FAA. Since there are several updates/clarifications requested by the FAA contained in this letter and the sponsor's responses may be substantial, it would be prudent to afford the public an additional opportunity to review and comment on the changes that are anticipated to be made for the final draft publication. Most specifically, the document will need to clearly outline the requested local, state and federal actions. Since this was not clearly presented in the initial draft EA, the FAA may consider these changes and clarifications as a material change to the document that should result in solicitation of additional public comment. This may be accomplished by an additional public information meeting or public hearing.

Once the FAA receives confirmation that the above comments have been addressed in the form of an updated draft EA, the FAA requests that we be allotted sufficient time to review, comment, and potentially concur with the updates prior to making the document available to the public for further comment.

If you desire further clarification of these comments, please contact me at (734) 229-2916.

Sincerely,



Brad N. Davidson, P.E.  
Community Planner/Environmental Protection Specialist  
Detroit Airports District Office

Encl: E-mail correspondence dated March 4, 2010 between the ADO and MDOT

# Exhibit 19





JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
LANSING

KIRK T. STEUDLE  
DIRECTOR

November 15, 2010

Mr. Ernest P. Gubry  
Environmental Protection Specialist  
Detroit Airports District Office  
Metro Airport Center  
11677 S. Wayne Road, Ste. 107  
Romulus, MI 48174

Re: Ann Arbor Municipal Airport (ARB), Environmental Assessment (EA)  
Response to Federal Aviation Administration (FAA) Comments

Dear Mr. Gubry:

The Michigan Department of Transportation (MDOT) Bureau of Aeronautics and Freight Services received comments from your office regarding the draft ARB EA dated May 13, 2010. This letter serves as a response to those comments. Please refer to FAA comments shown below in bold text, followed by MDOT responses.

- 1) **Cover sheet.** If the document is to be accepted as a federal document the coversheet will need to reflect this.

**Response:** We were unaware of FAA's current preferred format for cover sheets. Please provide FAA guidance documentation/templates for EA cover sheets. An example of an acceptable cover sheet format would be helpful. We will revise the cover sheet to meet FAA requirements.

- 2) **Section 2.1.** Second bullet states "Shift and extend the parallel taxiway to coincide with the revised Runway 6/24". We recommend revised be changed to extended.

**Response:** Comment acknowledged. This change will be noted in the amended EA.

- 3) **Section 2.2.** This section does not appear to clearly state the need for the proposed action. Are the bulleted "objectives of the proposed project" actually proposed actions? The last bullet states "Relocate and potentially upgrade the Runway 24 Approach Light System". When will it be known if the approach light system will be replaced or upgraded? What is this dependent on? The remainder of the document deals with the impact of the runway extension, but does not address impacts related to the relocation of the existing light system or an upgrade to a new system. Also, action associated with Runway End Identifier Lights (REIL) is

Mr. Ernest P. Gubry  
November 15, 2010

Page 2 of 25

mentioned later in Section 4.17 and should be listed here as a proposed action. Are there any other NAVAIDS moving or being established?

**Response:** The bulleted items are considered objectives of the proposed project. The last bullet: "Relocate and potentially upgrade the Runway 24 Approach Light System", was included because the Omni-Directional Approach Lighting System (ODALS) will need to be relocated if the runway is shifted to the southwest, and these lights are very old. Since the ODALS are owned by the FAA, it is the responsibility of the FAA to determine whether the existing lights will be relocated, replaced with the more current MALSF, or abandoned altogether.

There is local preference by the pilots to maintain the ODALS. Since replacing/relocating the ODALS for the shifted runway end does not result in any adverse impacts, the EA conservatively included their relocation. A decision by the FAA that there is no benefit in maintaining them does not result in significant changes to the affected environment described in the EA.

The area of potential effect evaluated in the EA includes the area where the light system would be upgraded and/or relocated. Therefore potential impacts from an upgraded/relocated lighting system have been addressed.

The preferred alternative for a revised Runway 6/24 will result in the relocation and reestablishment of all other associated runway lighting. These lighting systems include Medium Intensity Runway Lights (MIRL), Runway End Identifier Lights (REIL), and Visual Approach Slope Indicator lights (VASI), as well as the Medium Intensity Taxiway Lights (MITL) on the parallel taxiway. These systems are owned and operated by the sponsor and are inherently part of the runway project. They were not called out in the project Purpose and Need, just as the need for new runway paint marking was not called out. Relocation/upgrade of the ODALS was called out specifically in the project justification because this action results in the need for FAA signature on this document. There are no other FAA-owned navigational aids (NAVAIDS) associated with the proposed project.

- 4) Section 2.2.1. This section states that the Medium Intensity Approach Lighting System with Sequenced Flashers (MALSF) would serve the same function as the Omni-Directional Approach Lighting System (ODALS) and is structurally very similar. How would the footprint of the MALSF structures compare to the ODALS? What environmental impacts would installation of a MALSF create?

**Response:** The footprint of the MALSF would be 100' shorter than the footprint of the existing ODALS.

The MALSF consists of seven light structures, all of which are located on the extended runway centerline. The structures are located with a 200' spacing between each, for a total overall length of 1,400'.

Mr. Ernest P. Gubry  
November 15, 2010

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The ODALS consist of five light structures located on the extended runway centerline, with a 300' spacing between each structure, for a total overall length of 1,500'. Two additional ground-level light fixtures are located at the runway threshold, one on each side.

Additional details regarding MALSF and ODALS approach light systems are included in FAA Advisory Circular 150/5340-30D. Installation of the MALSF will not result in any adverse environmental impacts, as identified in Section 4.17.

- 5) **Section 3.1.2.** We suggest adding a qualifier in the second paragraph to state the following: "...would be greater than those expected with the proposed expansion of ARB in its current location."

**Response:** Comment acknowledged. This change will be noted in the amended EA.

- 6) **Section 4.4. The Consequences of the Preferred Alternative section states:** "Comparisons of existing conditions at various airports with future build out conditions indicate that the net change in air emission is still below standards." Do these conditions include runway extension projects similar to the proposed action at ARB?

**Response:** The conditions referenced in this section are based on the comparison of operational emission rates of seven case study airports across the state. The case studies, which included airports similar to ARB, did evaluate the operational emission rates of the airports in their proposed ultimate build out conditions.

Project construction emission rates are estimated to be less than eight tons per year of NO<sub>x</sub>, well below the Environmental Protection Agencies de minimis threshold of 100 tons/year (rates derived from US Court of Appeals Case, City of Olmstead Falls v. FAA, 2002). Therefore, the emissions do not constitute a change in conditions for the proposed ARB runway extension project.

- 7) **This section additionally states:** "Consequently, the air model results for the Preferred Alternative would be identical to those for the No Build Condition." This statement implies that no air emissions would result from the proposed action. Is this accurate?

**Response:** As stated in this section of the draft EA, the Air Quality Study conducted by Landrum and Brown concluded that proposed projects at general aviation airports are not expected to cause or contribute to any new violations of the National Ambient Air Quality Standards (NAAQS). Also, the results of the air model analysis showed that net aircraft emissions are not expected to increase as a result of the proposed project. Therefore, aircraft emissions should be the same - with or without the project.

Additionally, a model was run to determine automotive-related emissions associated with the proposed project. Since there would be no revisions to the existing roadway system

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as a result of the project, the model showed that there would be no increase in air emissions attributed to automobiles.

- 8) Section 4.5.1. Would the existing Storm Water Pollution Prevention Program cover the additional impervious surface area?

Response: Yes

- 9) Section 4.5.2. We would recommend rewording the first sentence of the Consequences of the Preferred Alternative section to the following (if true and appropriate): Surface and subsurface geological conditions would not be impacted by the Preferred Alternative.

Response: Comment acknowledged. This change will be noted in the amended EA.

Flight Procedures offers the following comments:

- 10) No comments were provided by Flight Procedures Office (FPO).
- 11) However, it should be noted that the FPO must be notified by formal letter to request the development of future approach procedures for the relocated runway end coordinates. Information needed includes identification of when construction will start, finish, when the equipment will be relocated, etc. This information is critical for developing/amending approach procedures. The FPO must know the project phasing in order to have procedures ready when construction is complete. (Equipment relocation, threshold displacements, etc). Changes in runway pavement length will result in survey data. Please note that survey data must meet the specifications outlined in Advisory Circulars 150/5300-16, 17, and 18. Third party surveys must be coordinated with the FPO. The proponent must submit Proposed Equipment Relocation Data along with information related to any equipment that will be relocated or added to AVN-210 and ATA-110. 7. Publication of new/amended Approach Procedures could take from 18 months to 2 years after runway data is submitted to AVN-210 and ATA-110. NOTE: Development of Approach Procedures will not begin until an official letter of request for development of procedures is received by FPO and the proposed runway data and equipment data provided to AVN-210 and ATA-110. Proponent must update the airport FAA Form 5010-1 to reflect new runway data and updated runway changes.

Response: Comments acknowledged

Airports Division offers the following comments:

- 12) The report is not clear if there is a federal action being requested.

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**Response:** The format of the draft EA is the same format used for other EA's co-signed by MDOT and FAA under the block grant agreement. The FAA was involved with this project since it began and understands the proposed actions. That said, we acknowledge the document does not explicitly state the 'proposed federal action'. We suggest that previous FAA/MDOT actions have included this information in the Finding of No Significant Impact (FONSI) document and that we use the same approach with this project.

- 13) Based on the information contained within the draft EA it appears that at least two federal actions are being requested. These actions include the relocation or replacement of the current approach lighting system as well as the development for future approach procedures for the new runway end locations. The FAA recommends that these actions be clearly identified throughout the document. The first page of the document states that this draft EA will become a State of Michigan document when signed by the State Official and does not include similar language for the Federal Aviation Administration although there is a signature line included for a federal official. Please refer to FAA Order 5050.4B section 707(f).

**Response:** As stated above, the requested federal action is relocation or abandonment of the federally owned NAVAIDS (ODALS). MDOT has never included development of a new approach as a stated action in an EA. To date, FAA Flight Procedures Office has always completed separate environmental clearance for new approaches. We request clarification from FAA that this is necessary and suggest that development of a new approach is inherent as part of the proposed runway shift/extension (e.g. like paint marking) and should not have to be called out as a separate proposed action.

- 14) Section 1 page 1-1. The draft EA states that the projects under consideration are those shown on the FAA approved Airport Layout Plan (ALP). This statement should be clarified as to the role of Michigan Department of Transportation (MDOT) in conditionally approving the ALP set on behalf of the FAA under the authority of the State Block Grant Program. When referencing the ALP throughout the document, additional emphasis should be made to the June 23, 2008 ALP approval letter that clearly states that the approval is conditional. Several conditions were placed on the approval letter including the requirements that the projects contained within the ALP set must comply with the National Environmental Policy Act (NEPA). The FAA recommends inclusion of the conditional ALP approval letter in the draft EA for disclosure purposes.

**Response:** The standard language that is used in the ALP approval letters for all FAA-NPIAS airports is that they are "conditionally approved", subject to environmental clearances, justification for development of specific projects, etc.

This language was originally developed by the FAA back when that agency was responsible for signing the ALP approval letters. When MDOT became a block grant state and took over the responsibility of signing the ALP approval letters on behalf of the

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FAA, we kept the same boilerplate language that the FAA had been using, and referred to all approvals as "conditional approvals".

Although the standard language in the approval letter for the April 2008 ALP for Ann Arbor Municipal Airport states that it has been "conditionally approved" by MDOT, it is in fact a fully-approved ALP, the same as any other airport with an approved ALP. The ALP was reviewed by many branches of the FAA through the customary FAA-Airspace Review process, and all FAA comments or concerns were addressed prior to MDOT signing the standard format approval letter on behalf of the FAA.

Paragraph No. 1 of the ALP approval letter specifically states that the FAA has concurred with the proposed development on the ALP for planning purposes based on current safety, utility, and efficiency standards, with the condition that justification of need is required prior to seeking FAA financial participation in the actual development of the projects.

Since the ALP has in fact been thoroughly reviewed and approved by both the FAA and MDOT, we do not agree that when referencing the current approved ALP in the EA, there is a need to specify that it is "only conditionally approved by MDOT". Stating such would be misleading, as it infers that the ALP does not have FAA approval, and only a limited approval by MDOT.

ALP approval letters have never been a part of any of our past EAs, and there are no established procedures which require or recommend the inclusion of such. If the FAA would like to discuss a change in policy regarding inclusion of ALP approval letters in all future EAs, we are open to further discussion.

- 15) We also suggest the executive summary clearly outline who will be responsible for actions associated with the proposed project (i.e. local sponsor, local unit of government, State of Michigan, Federal Government). For the FAA to co-sign the document, the requested Federal Actions must be clearly identified within the executive summary and throughout the document where appropriate.

Response: The format of the draft EA is the same format used for other EA's co-signed by MDOT and FAA under the block grant agreement. The FAA was involved with this project since it began and understands the proposed actions. That being said, we acknowledge the document does not explicitly state the 'proposed federal action'. We suggest that previous FAA/MDOT actions have included this information in the FONSI document and that we use the same approach with this project.

- 16) Section 2 page 2-1. References to the ALP set need to clarify that MDOT has only conditionally approved the ALP.

Response: See response to comment 14.

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- 17) Section 2.2 page 2-4. The classification of a B-II Small Aircraft has been determined with a reference to MDOT 2009. Is the B-II "Small Aircraft" a designation that is contained within MDOT planning guidance? The FAA is not familiar with the classification of "small" when identifying the critical design aircraft for an airport. Please clarify how this distinction was derived.

**Response:** In the User Survey Report, reference is made to FAA Advisory Circular 150/5325-4B "*Runway Length Requirements for Airport Design*". In this AC, the FAA has published guidance and runway length curves for family groupings of airplanes with similar performance characteristics and operating weights.

Chapter 2 of the AC provides FAA runway length recommendations and runway length curves for "Small Airplanes with Maximum Certificated Takeoff Weight of 12,500 Pounds or Less". Chapter 3 provides FAA guidance and runway length curves for "Airplanes with Maximum Certificated Takeoff Weight of More Than 12,500 Pounds Up To and Including 60,000 Pounds" (Large Airplanes).

In order to determine which chapter of the FAA AC was applicable to ARB, the weight classification of the critical aircraft family had to first be identified. The user survey analysis confirmed that the family grouping of airplanes that were included in the B-II critical aircraft category were of the "small" aircraft weight classification. Therefore, the runway length curves from Chapter 2 of the AC were referenced in the User Survey Report in the discussion regarding runway length recommendations. Use of the runway length curves from Chapter 3 would have resulted in longer runway length recommendations.

The critical aircraft weight category analysis was conducted solely for the purpose of referencing FAA AC 150/5325-4B. MDOT planning guidance regarding runway length recommendations does not distinguish between weight categories. The critical aircraft category as listed on the current approved ALP is "B-II". No reference is made to the small or large weight category.

- 18) Section 2.2 page 2-4. The paragraph discussing Origin-Destination Analysis should be expanded (or references made where information can be reviewed) to provide clarification to the general statements that are made. Specifically, is there a list of destinations that can be provided that will substantiate the need for a runway extension? A listing of destinations may aid the reader in putting the proposed project into perspective and may further substantiate the need for a runway extension. The report states that a significant number of operations occur between ARB and distant locations without quantifying the number and types of operations that are being referenced. The FAA recommends this be clarified in the report or referenced to the appropriate appendices.

**Response:** Additional Origin-Destination information, including a list of 32 states and numbers of operations between ARB and each state, is included in Exhibit No. 2 of the Supplemental Report to the Airport User Survey. The Supplemental Report is included

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in Appendix A-2 of the draft EA, which was reviewed by your office. We will add a note to the amended EA referencing Appendix A-2 for additional information.

- 19) Section 2.2 page 2-5. Are the bulleted items for the objectives of the proposed project presented in order of relative importance?

Response: No, it is simply a list of objectives for the proposed project.

- 20) The statement that the project will enhance interstate commerce does not appear to be substantiated by supporting documentation here or elsewhere in the document. How has this been verified? What are the enhancements? Is this a need for the project? The FAA recommends referring to FAA Orders and Advisory Circulars that address runway length, operational capacity of the aircraft utilizing ARB, and any deficiencies that currently exist at ARB that are a function of the current runway length. Without a detailed discussion and explanation of what the interstate commerce enhancement is and how this has been quantified as a current need, the FAA does not recognize this as a need for the project based on the information provided.

Response: The need for the project is not based on the enhancement of interstate commerce. Therefore, there is no documentation provided in the EA to substantiate that position. The need for the project is based on the objective of providing a primary runway of suitable length to safely accommodate critical category aircraft without operational weight restrictions.

Section 2.2 (Purpose and Need) and Appendix A (User Survey Reports) of the EA explain in detail the purpose, need, and justification for the project. FAA Advisory Circular 150/5325-4B "*Runway Length Requirements for Airport Design*" and the Michigan Airport System Plan (MASP) airport development standards were referenced in determining project justification and proposed runway length.

Enhancement of interstate commerce is a benefit of providing a runway long enough to avoid weight restrictions on critical aircraft. If business aircraft have to fly with restricted loads of passengers and/or cargo, there are obviously negative financial impacts to the operators. Such cases may result in an operator having to use two separate aircraft when one operated at its full capacity would have been sufficient to accomplish the objective. Also, if business aircraft have to fly with restricted fuel loads, the operators potentially would have to make interim fuel stops prior to reaching their destinations. Additional fuel stops result in time delays and additional operational expenses.

The final EA will clarify that the enhancement of interstate commerce is not a project objective or need, but rather a benefit of the proposed project.

- 21) If enhancing interstate commerce is a stated need for the project then the report should be expanded to include a full range of alternatives that can address this need including alternative modes of transportation as an example.



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**Response:** As stated above, the enhancement of interstate commerce is not a stated need for the project, but rather an obvious benefit of the project. The airport serves aircraft that are being used for interstate commerce. Provision of a runway of sufficient length to allow critical category aircraft to operate without weight restrictions is a stated objective of the project.

- 22) The last bulleted objective in this section is for the relocation and potential upgrade of the Runway 24 approach lighting system. The report does not appear to document why this is a need for the project or if the approach lighting system is currently required or needed in the future.

**Response:** See response to comment 3.

- 23) What benefit does the current approach lighting system provide the airport? There does not appear to be a credit for a reduction in minimums at the airport as a result of having the ODALS. Has a Benefit Cost Analysis (BCA) been completed or requested of the FAA substantiating the need for relocating or replacing the ODALS? Depending on the results of the BCA and associated justification for relocating the existing or installing a replacement light lane at ARB, the potential exists that the Federal Action may be limited to abandoning the existing ODALS and no relocation or replacement would occur with federal funds.

**Response:** A BCA has not been completed at this time. Please see response to comment 3.

- 24) Section 2.2.1 page 2-5. The first paragraph implies that runway incursions have been occurring at ARB as a result of issues with the current line of sight between the ATCT and a portion of the taxiway system and taxiway hold area. The report further indicates that the proposed project will possibly prevent incursions from occurring. Are there any documented runway incursions resulting from the current line of sight issue that can be included in the report to substantiate this claim? The FAA supports safety enhancement projects and would consider this a measure to improve the line of sight from the ATCT to parallel taxiway and the hold area if it can be demonstrated that the existing condition contributes to runway incursions. While a goal of the FAA is to reduce the number of runway incursions at airports nationwide, the FAA can not definitively conclude that this proposed safety enhancement at ARB will potentially prevent runway incursions but rather if the line of sight issue is improved this may reduce the possibility of runway incursions.

**Response:** The first paragraph does not imply that runway incursions have been occurring at ARB as a result of ATCT line-of-sight issues. It merely states that the proposed threshold shift would "enhance operational safety" and "possibly prevent a runway incursion by expanding the view of the hold area and parallel taxiway to ATCT personnel". Certainly if the threshold shift "may reduce the possibility of runway

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incursions" as stated in your comment, then it would also "possibly prevent a runway incursion" from taking place.

The main point is that ATCT personnel do not have a clear view of the taxiway end and hold line area. The obstructed view restricts their ability to clearly see taxiing or holding aircraft and their N-numbers, and increases the possibility of runway incursion due to either pilot or controller error. While we are not aware of any incursions that have occurred as a result of this condition, we believe it is appropriate to address the condition while the runway extension is being considered.

Mr. Charles Smith, ATCT Manager at ARB, has expressed his concern over the non-visibility area and potential for runway incursion. He has stated in written correspondence to our office "I believe that the potential for an event is very real".

We are unclear why the FAA questions the justification of this safety enhancement measure when it obviously improves the existing condition and it is supported by ATCT management and staff. Does the FAA need records of adverse events that have actually occurred before they agree that there is justification to address a less than optimal situation?

MDOT would rather be proactive in enhancing the safety of this situation prior to a potentially catastrophic runway incursion taking place, rather than waiting for one to take place just for the record, and be reactive to it afterwards. We repeat neither the extension nor the shift result in measurable adverse impacts to the environment or surrounding communities.

- 25) This section includes discussion of the potential to achieve a clear 34:1 approach and reduce minimums at the airport. The ADO previously requested clarification on this issue in an e-mail dated March 4, 2010 (attached for reference). Based on the e-mail exchange, the FAA understands there is no anticipation of a reducing of minimums at this airport for the foreseeable planning future.

Response: Comment acknowledged. Additional clarification regarding the 34:1 approach surface will be provided in the amended EA.

- 26) Since minimums will not be reduced as a result of the project, the FAA is unclear on the need for a 34:1 approach or how it enhances safety of the approach procedures currently published for the airport based on the existing 20:1 approaches. The document should better explain how providing a 34:1 approach enhances safety for the existing and future users at the airport or how this also may impact interstate commerce. Has the current 20:1 clear approach resulted in missed approaches that have been documented? If so how often does this condition occur?

Response: There is currently not a "need" for the 34:1 approach. However, shifting the runway threshold to eliminate the ATCT line-of-sight concerns does result in the provision of a clear 34:1 surface to the relocated threshold.

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As stated in the EA, with obstacles in the approach area remaining below the flatter 34:1 surface (as opposed to the existing steeper 20:1 surface), an additional margin of safety is provided between approaching aircraft and ground-based obstacles. This is particularly beneficial in low-visibility conditions, such as when aircraft are operating at night or in fog, rain, or snow.

If an aircraft is making an approach to a runway in conditions with poor visibility of the airport environment (either IFR or night VFR), and the pilot unwittingly drops below the intended glide path, there is the potential for the aircraft to strike an unseen obstacle in the approach area. Since a clear 34:1 approach surface provides a greater vertical distance between the aircraft and the obstacles than the clear 20:1 surface provides, the aircraft is less likely to collide with the unseen obstacles. It is obvious that an additional margin of safety is provided by a clear 34:1 approach surface, even though it is not required and it is not the reason for the proposed threshold relocation.

The EA stated that interstate commerce would be enhanced if the all-weather capability of the airport was improved by lowering visibility minimums of the Instrument Approach Procedure from the current 1-mile minimum to  $\frac{3}{4}$ -mile minimum. This would allow the airport to remain open for flight activity when the visibility dropped below 1-mile, thereby allowing for the continuation of business and interstate commerce. The EA did not say that the threshold shift, or providing for a 34:1 approach surface, would enhance interstate commerce.

Since we agreed to remove reference to the potential of a future  $\frac{3}{4}$ -mile visibility minimum Instrument Approach Procedure from the draft EA document (as stated in our response to the ADO e-mail dated March 4, 2010), we will also remove reference to the fact that interstate commerce would be enhanced by a  $\frac{3}{4}$ -mile approach procedure. Statements of clarification will be added to the amended EA.

Missed approaches are the result of pilots not being able to visually detect the airport environment well enough to complete the final phase of landing visually, upon reaching the published Minimum Descent Altitude of the Instrument Approach Procedure. They are unrelated to a clear 20:1 approach surface versus a clear 34:1 approach surface. Therefore, the current 20:1 approach surface has not resulted in missed approaches, documented or otherwise.

**27) Is providing clear 34:1 approaches a project need or a benefit that may result from the relocation of the runway? Earlier in the report it was identified as a stated objective, however, the discussion in the report does not appear to substantiate the need for this when combined with the e-mail exchange of March 4, 2010 and conditionally approved ALP dated June 23, 2008.**

**Response:** As previously stated, a clear 34:1 approach is not a project need, but it is a benefit that results from the relocation of the Runway 24 threshold. The threshold is not

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proposed to be relocated in order to provide for a clear 34:1 approach surface, but rather to enhance safety by eliminating the ATCT line-of-sight and non-visibility concerns.

- 28) While the future 34:1 approaches are identified on the conditionally approved ALP, it should be noted that this would result in an expansion of the approach surface from the existing 500'x2,000'x5,000' to 500'x3,500'x10,000'. The EA needs to fully disclose the increase in the approach surface if a 34:1 approach is achieved and document any environmental impacts that result from the larger approach surface.

**Response:** The achievement of a clear 34:1 approach surface is a byproduct of the proposed shift of the Runway 24 threshold for ATCT visibility purposes. The proposed project does not require a clear 34:1 approach surface, nor does it require any other 34:1 approach surface standards, including the application of the expanded approach surface dimensions. Therefore, discussion regarding environmental impacts that are associated with a larger approach surface are not included in the EA.

- 29) Section 2.2.2 page 2-6. It is not clear to the FAA why there is a summary of Wings of Mercy operations since 1992 including 51 flights reported in 2009. This data appears to be in addition to what was collected as part of the user survey report that relied predominately on information from calendar year 2007. What is the relevance of including the 2009 data or specifically identifying the Wings of Mercy flight operations? Are there a range of aircraft types that fly for Wings of Mercy? Does the proposed runway extension impact their operational capacity?

**Response:** This information was requested by FAA staff and it is intended to describe the nature of operations at the airport.

- 30) Section 2.2.2 page 2-7. Discussion on the Michigan State System Plan (MASP) identifies the airport reference code (ARC) as B-II. Does the MASP differentiate between B-II small and B-II large? In absence of a clearly defined category of B-II "small aircraft", the FAA would suggest simply referring to the airport with a B-II ARC.

**Response:** The MASP does not differentiate between B-II small and B-II large. Tables 40 and 41 of the MASP show that for the B-II airport classification as a whole, a primary runway length of 4,300' is an airport development standard throughout the state of Michigan. The ARC as listed on the current ALP is B-II, with no reference to either the small or large category. As stated earlier in this document, the reason that the small and large weight classifications were defined during the identification of the critical aircraft category was solely for the purpose of referencing the runway length recommendations contained within FAA AC 150/5325-4B.

- 31) Section 2.2.3 pages 2-7 and 2-8. This section most clearly identifies why a runway extension is being proposed in accordance with FAA advisory circulars and State standards outlined in the 2008 MASP. This section, in combination with section 2.2.4 that documents substantial use (i.e. over 500 annual operations) by the B-II

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critical design family of aircraft appears to substantiate the justification for the runway extension based on the 2007 operational data.

**Response:** Comment acknowledged. Justification for the project is also substantiated by analysis of year 2009 operational data – the most current available. The updated analysis will be included in the amended EA.

- 32) Section 2.2.4 page 2-9. Detailed operational information is presented for calendar year 2007. Subsequent years are generalized based on trend analysis and overall decrease in operations as reported in the FAA Terminal Area Forecast (TAF). There does not appear to be an evaluation to account for the 21.8% decrease in operations between 2007 and 2009. Would it be prudent to verify if the operational decrease impacted one user group more than other user groups? Are the numbers of local and itinerant operations decreasing at the same rate or is one segment impacted to a greater extent? This evaluation may be accomplished through additional user survey data collection or potentially from the ATCT located at ARB for subsequent years since 2007. Additionally, the FAA recommends that the year of the TAF being utilized for this report be identified.

**Response:** Additional user survey data for calendar year 2009 has been collected and analyzed. This is the most up-to-date operational data available. Full details are included in the *Year 2009 Operational Data Analysis*. This report will be included in the amended EA.

The FAA TAF forecasted a 21.8% decrease in operations at ARB from years 2007 through 2009. Analysis of the actual year 2009 operational data later confirmed that even with the forecasted decrease in operations, there were still over 500 annual itinerant operations conducted by category B-II aircraft at ARB in 2009. Therefore, the current critical aircraft category has been substantiated as B-II.

The FAA TAF report that was referred to in the EA was obtained from the FAA database on July 2, 2009. During the most recent update of the user survey (Year 2009 Operational Data Analysis), an updated TAF was obtained from the FAA database on August 26, 2010 (forecasts issued December 2009). This most current version of the TAF projects itinerant operations at ARB to reverse the recent downward trend, and continually increase from years 2010 through 2030. A copy of this TAF will be included in the amended EA.

- 33) Section 2.2.4 page 2-11. Specific information for AvFuel Corporation is presented to validate assumptions for the continued classification of the airport as B-II. It should be noted that AvFuel bases a Citation 560 Excel jet at ARB and is designated in the report as a B-II "Large" aircraft. The discussion further indicates that the Chief Pilot submitted written documentation regarding potential future operational levels at ARB. The written documentation does not appear to be included within the report or appendices. However, according to the text in the report, the Chief Pilot anticipates future operational levels increasing to 350-450 annual operations.

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This level of use, in combination with a limited number of additional similar B-II aircraft would appear to classify the airport as a B-II "Large" designation. The FAA reiterates the hesitation on identification of either a "small" or "large" within an airport reference code and recommends that any qualifier to the size of the B-II critical design aircraft be removed from the report. The number of operations forecasted to occur by AvFuel Corporation would further support the elimination of the qualifier as "small" to the ARC.

Response: It is noted in both the December 2009 Supplemental Report and the September 2010 update to the airport user survey (Year 2009 Operational Data Analysis) that AvFuel Corporation bases a B-II large category Citation 560 Excel jet at ARB. The December 2009 report was included in Appendix A-2 of the draft EA that was reviewed by your office.

Letters from AvFuel's Chief Pilot, which provide operational information for their Citation 560 Excel jet, are included in the September 2010 update to the airport user survey. This update will be included in the amended EA.

As mentioned in earlier responses, the user survey analysis distinguished between small and large category aircraft in order to determine the appropriate runway length guidance from FAA AC 150/5325-4B. The Airport Reference Code as shown on the ALP is B-II, with no reference to the small or large category.

- 34) Section 2.2.6 page 2-12. The local objective of reducing runway overrun incidents appears to conclude that if the added runway length were present, all the incidents would have been avoided. Based on information presented, the FAA does not necessarily come to the same conclusion. There are many factors that go into any overrun incident and if additional runway length were present this may have only prolonged the overrun incident. The A-I category of aircraft involved with overrun incidents do not appear to have needed any length beyond the existing runway length to operate at full capacity and in a safe manner.

Response: The vast majority, if not all, of the A-I category of aircraft that utilize ARB (including those involved with overrun incidents) do not need additional runway length to operate at full capacity and in a safe manner. Justification for the proposed runway extension was based solely on operational levels and needs by the more demanding category B-II aircraft.

Reduction of runway overrun incidents is clearly stated in the EA as a local objective, and it is not recognized by the FAA or MDOT as providing justification for the proposed runway extension. However, there is merit to the local objective, as the runway extension would in fact provide additional pavement for landing rollout for the small category A-I aircraft, and thereby reduce the potential for this category of aircraft to roll off the runway end into the turf Runway Safety Area.

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- 35) The paragraph that references Accelerated Stop Distance Available (ASDA) requirements appear to include fleet mixes other than A-I and implies that aircraft can accommodate their operational requirements with a reduced load capacity. The ADO is not aware of any A-I aircraft operating at ARB that would need to operate at a reduced load capacity to adequately satisfy their calculations for safely operating at ARB.

**Response:** We are also unaware of any A-I category aircraft operating at ARB that would need to operate at reduced load capacity to adequately satisfy their calculations for safely operating at ARB. And yes, the larger category aircraft, including the B-II category critical aircraft, can safely accommodate accelerate-stop distance requirements at ARB with a reduced load capacity.

However, as stated in FAA AC 150/5325-4B, *"The design objective for the main primary runway is to provide a runway length for all airplanes that will regularly use it without causing operational weight restrictions"*. As clearly stated in the EA, the main objective of the proposed project is to provide a primary runway of sufficient length to allow the B-II critical aircraft family to operate without weight restrictions.

The point of your comment is unclear.

- 36) It is not clear when the 11 overrun incidents occurred, their cause, or conclusions that support that runway length was a factor in the overrun incidents. Can additional information be provided to support this position? If additional information is not available the FAA recommends removing this section from the document.

**Response:** Lack of suitable runway length was not a causal factor in the overrun incidents. Pilot error and mechanical problems with aircraft brakes were the factors indicated in the incident reports that resulted in the aircraft overrunning the runway end.

As previously stated, the justification for the extension of Runway 6/24 is based solely on the operational levels and requirements of category B-II critical aircraft. The local objective of reducing runway overruns is not recognized by existing MDOT or FAA standards as providing justification for the runway extension, and therefore it was mentioned in the "Other Considerations" section of the EA. Since this local objective does not technically generate justification for the runway extension from the state or federal perspective, there was no related in-depth information provided in the EA to substantiate the local perspective.

- 37) The FAA recognizes that this section of the report was included as a local objective and it is clearly and appropriately stated that the FAA does not recognize this as a need for extending the runway at ARB.

**Response:** Comment acknowledged.

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38) Section 2.2.7 page 2-12. The first bullet point indicates that additional runway length will allow for the majority of B-II "small" aircraft to operate without load restrictions. Has it been documented that the current B-II "small" users operate with load restrictions? If so, how often does this occur and what are the quantifiable impacts to their operations?

Response: According to FAA AC 150/5325-4B, "*Runway Length Requirements for Airport Design*", when the maximum certificated takeoff weight (MTOW) of critical category airplanes is 60,000 lbs. or less, the recommended runway length is determined according to a *family grouping of airplanes* having similar performance characteristics and operating weights. When the MTOW of critical category airplanes exceeds 60,000 lbs., the recommended runway length is determined according to *individual airplanes*.

Since the user survey confirmed that the current critical aircraft category at ARB is B-II small aircraft (12,500 lbs. or less), Figure 2-2 of the AC and Table 40 of the MASP were referenced in the determination of the recommended runway length of 4,300'. The runway length curves shown in Figure 2-2 of the AC were developed by the FAA for a family grouping of airplanes with similar performance characteristics and operating weights. As noted in the AC, the FAA considered takeoff, landing, and accelerate-stop distance requirements of the family grouping in the development of the runway length curves.

It has not been documented that all current B-II small aircraft operate with load restrictions at ARB, since we do not have information specific to the performance characteristics and corporate operating policies of every B-II category aircraft. However, as a means of confirming the accuracy and relevancy of the runway length curves developed for the family grouping of aircraft depicted in Figure 2-2 of the AC, an analysis was conducted using the individual airplane flight manual from the State of Michigan's Beechcraft King Air 200.

This airplane model is a very common B-II small category corporate aircraft, many of which currently operate at ARB. It is also a representative airplane of the family grouping of aircraft included in Figure 2-2. Analysis of the flight manual confirmed that this aircraft would indeed have to operate with load restrictions at ARB on an 83 degree F design day on the existing 3,505' runway. The analysis also confirmed that this same airplane could operate without load restrictions in the same conditions on the proposed 4,300' runway.

As stated on the title page of the FAA AC, "For airport projects receiving federal funding, the use of this AC is mandatory". The runway length curves contained within were developed based on the FAA objective of providing a runway of sufficient length to allow the critical aircraft family to operate without weight restrictions. The proposed project would achieve the FAA objective and benefit the family grouping as a whole by allowing for the majority, if not all, of B-II small category aircraft to operate without load restrictions.



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The determination of quantifiable impacts of load restrictions is beyond the scope of the user survey process, and such highly detailed information is typically not used in the determination of justification for runway extensions. The benefits or requirements to perform such a study are also not discussed anywhere in the FAA AC regarding runway length requirements.

- 39) The third bullet implies that operational safety will be improved with a clear 34:1 approach. Currently the airport has LPV approaches with minimums of 300' and 1 mile. The ADO questions if a flatter approach is warranted in absence of reducing minimums as indicated in the March 4, 2010 e-mail correspondence. The discussion on the 34:1 approach should be re-evaluated and its need clearly identified. Currently the report does not seem to substantiate a need for a 34:1 approach if minimums are not anticipated to be lowered.

Response: As previously stated, there is not a "need" for a 34:1 approach. Rather, shifting the runway 24 threshold to eliminate the ATCT line-of-sight concerns results in the provision of a clear 34:1 surface to the relocated threshold. Additional clarification regarding the 34:1 approach surface will be provided in the amended EA.

- 40) Section 3 page 3-1. The report indicates that alternatives were developed to meet the goals of ARB. These goals are to improve safety and efficiency and serve current users. These goals do not appear to be consistent with those previously outlined in the bullet points of section 2.2 (purpose and need). This section should refer to the stated needs and evaluate the alternatives ability to meet those needs.

Response: The introductory paragraph to section 3 was intended to summarize project purpose and need as a means of introducing the alternatives considered. While the objectives previously stated in the project Purpose and Need of section 2 are not stated verbatim here, we believe "improve safety and efficiency, and serve current users" is sufficient summary.

- 41) Section 3.1.3 pages 3-3 and 3-4. There is discussion on extending the runway to the east and a listing of items impacted by pursuing this alternative. There is, however, no conclusion or statement that this option either should be, or was, eliminated. It can be inferred later in the report by the absence of this alternative that it was eliminated but the conclusion as to why it has been eliminated has not been stated.

Response: The last sentence in section 3.1.3 should have stated that this alternative was dismissed and why. Specifically, it should have stated "this alternative was dismissed because it is not compatible with local plans and due to the extent of safety, transportation and wetland impacts from relocating State Road". This sentence will be added to the amended EA.

- 42) When addressing the FAA's comments (included within this letter) associated with the stated needs for the project earlier in the report, the responses to these comments may influence the conclusions on why some of the alternatives carried

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forward have been eliminated. Specifically, if needs stated in section 2.2 are not further substantiated, or it is concluded that one or more of the needs do not exist, additional alternatives may need to be carried forward if they adequately address the needs for the project. The FAA will re-evaluate the conclusions of the alternatives section once the FAA's comments on the purpose and need section are addressed.

Response: Comment acknowledged.

- 43) Section 3.3 page 3-8. Based on the information presented in the draft EA, the FAA has not reached the same conclusion that alternatives 1 and 2 do not meet the stated needs for the project. An apparent evaluation parameter for alternative 2 included in section 3.3.3 discusses the tower line of sight. This evaluation matrix does not appear to be consistent with those goals stated in Section 3 on page 3-1. The previous comment on the apparent disconnect between the different sections of the report also applies to the specific alternative evaluation. The FAA recommends that the decision matrix for which alternatives were eliminated be clarified in the EA.

Response: See responses to comments 24 and 40. This comment appears related to the need for addressing the ATCT line-of-sight issue and the need for the shift of the Runway 24 threshold.

- 44) Table 3-1 page 3-8. The table appears to incorrectly dismiss alternative 1 because it does not meet purpose and need. The discussion in 3.3.2 does not support that conclusion. Additionally, there is reference to a future expansion of State Road. This appears to be the first reference to this issue. Is this a need for the State Road expansion project? In what time frame is the State Road expansion project expected to occur? Should there be expanded discussion on other regional planning projects in this EA so the public can better understand the different parameters that ARB is confined to or bound by?

Response: Alternative 1 was considered because it moves the approach south of the Stonebridge neighborhood. It would result in measurable adverse environmental impacts including wetland fill, stream impacts and tree clearing. The rationale for dismissal of this alternative indicated in 3.3.2 is valid. We agree that it would meet the project purpose and need and a revised Table 3-1 will be included in the amended EA.

Any future widening of State Road, as recommended in the 2006 State Road Corridor Study, would be completely independent of the proposed airport project. We do not know when, or even if, the Washtenaw County Road Commission proposes to widen State Road. As previously stated, the justification for the proposed shift of the Runway 24 threshold is to resolve ATCT line-of-sight issues. The provision of additional room to widen State Road would be a secondary benefit of the shift, but it is not a driving reason for the shift.

# Exhibit 20

## City Council Acts on Zoning, Airport, Streets

Also: Residents raise concerns over flooding, DTE "smart meters"

BY DAVE ASKINS

APRIL 21, 2012 at 6 pm

**Ann Arbor city council meeting (April 16, 2012):** The most significant item on the council's agenda was the introduction of the city's proposed fiscal year 2013 budget by city administrator Steve Powers.

But Powers led off the presentation by explaining that Monday evening would not be a time for detailed discussion and questions about the budget. For details of that presentation, see Chronicle coverage: ["Ann Arbor Council Gets Draft 2013 Budget."](#)

The budget presentation occurred Monday night because of a city charter requirement. It was Powers' first such presentation – as he was hired by the council last year, and started the job in September. The city council will have until May 21, its second meeting in May, to modify and adopt the budget.

In terms of the sheer number of agenda items, the topic of zoning and land use was a main focus of the meeting. The council unanimously rejected a proposed conditional rezoning of 1320 S. University to a higher density than its current D2 (downtown interface) designation. But winning unanimous approval was a site plan for a Tim Hortons on South State Street, near Ellsworth. The council also gave initial approval to AAA Michigan for a rezoning request involving a parcel on South Main, which the auto club would like to have designated as P (parking). A half dozen different rezoning requests for parcels that had recently been annexed into the city also received initial approval.

Prompting considerable discussion among councilmembers were four resolutions concerning an environmental study on a possible extension of a runway at the Ann Arbor municipal airport. The resolutions all passed, but the main grant funding went through on just a 7-4 vote. The city was being asked for an additional \$1,125 in matching funds to wrap up the final stages of an environmental assessment being done by the Michigan Dept. of Transportation, which was already mostly completed two years ago.

Also related to transportation, the council authorized over \$6 million in contracts related to street resurfacing projects. That included a second set of local streets (after having approved funding for the first set at its previous meeting) as well as the section of East Stadium Boulevard between Packard and Washtenaw. In connection with those infrastructure projects, the council also authorized contracts for materials testing.

In other action related to infrastructure, the council approved a \$93,438 item for construction of unisex bathrooms in city hall – but not without questions about the scope of the overall municipal center renovation work.

On personnel-related items, the council gave final approval to legislation that incorporates provisions of the collectively bargained labor contracts with police command officers and firefighters into the city's set of ordinances on retirement and health care.

As a result of other council action on Monday night, Ann Arbor police officers will be able to arrest



WEMU's Andrew Cluley had questions about the budget for Ann Arbor city administrator Steve Powers after the April 16 council meeting. Image links to Cluley's report. (Photos by the writer.)

and charge “super drunk” drivers who have more than 0.17 blood alcohol content – because the council modified the city’s ordinances to conform with recent changes in state law.

In other business, the council also authorized a contract with a new auditor, The Rehmann Group, set a hearing on a tax abatement for Sakti3, and imposed a temporary ban on digital billboards.

Highlights of public commentary included concerns about new DTE “smart meters” and localized flooding incidents in the city. The flooding was attributed by residents to the city’s layering of new asphalt onto an adjacent street, and to the city’s sanitary sewer disconnection program.

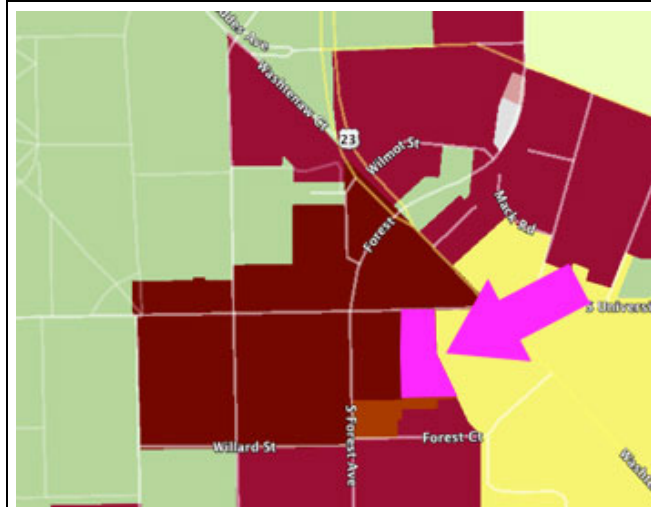
## 1320 S. University Rezoning

The council was asked to consider a request to conditionally rezone 1320 S. University – from D2 (downtown interface) to D1 (downtown core).

The request included setting conditions on the D1 designation, such as restrictions on height and floor area that are less than what’s allowed in “unconditioned” D1. For example, the by-right height limit in D1 is 180 feet, but one condition the owner of the property – Philip Sotiroff – wanted to place on the property was a 145-foot height limit.

That 145-foot limit, however, is more than twice the limit of the parcel’s current D2 zoning, which allows buildings only as tall as 60 feet. Currently at the site – on the south side of South University, between Forest and Washtenaw avenues – is the three-story Park Plaza apartment building.

The site is adjacent to a D1 parcel to the east, where the Landmark apartment building is being constructed, at 601 S. Forest. But the 1320 S. University property also abuts lower-density residential zoning. Single-family homes are located to the south of the site, and a fraternity is located to the west.



The magenta parcel and arrow indicate the 1320 S. University parcel proposed for conditional rezoning to a higher density use that’s found in the dark brown (D1) areas to the west and north. The light brown area to the south and west is D2 (downtown interface). Light green is PL (public land). Yellow is R2B and dark purple is R4C – both residential zoning. (Image links to higher resolution image.)

The South University area was an intensely debated part of the [A2D2 downtown rezoning initiative](#), which the city council finally ratified on [Nov. 16, 2009](#) after more than two years of planning work. As part of that process, the city planning commission had initially recommended a zoning map that assigned D1 zoning to the 1320 S. University parcel. The city council subsequently drew the lines differently, which resulted in a D2 designation for the parcel, and sent the map back to the planning commission. The planning commission then revised some parts of its map, including the designation for 1320 S. University.

More recently, at its [Feb. 7, 2012](#) meeting, planning commissioners voted unanimously not to recommend that 1320 S. University be rezoned from D2 to D1.

### Council on S. University Rezoning: Public Hearing

**Marc Gerstein** introduced himself as a resident of Forest Court, and since 1982 the owner of a house that abuts the south boundary of a parking lot at the rear of 1320 S. University. He noted that any change in the zoning will affect him directly. He urged the council to follow the staff report and the unanimous recommendation of the city planning commission and to reject the request for conditional rezoning from D2 to D1.

He noted that the planning staff report finds that D2 was warranted for the parcel and was carefully considered by the city planning commission and the council. The staff had found there was no error in that decision. He noted there’d been no changes in the neighborhood since passage of A2D2 two years ago. To rezone the parcel now would strip away any buffer between the small residential houses and the 1320 S. University parcel. He concluded by asking the council to deny the petition for rezoning.

### Council on S. University Rezoning: Council Deliberations

Tony Dereziński (Ward 2), who is the city council's representative to the city planning commission, described the location of the parcel proposed to be rezoned. Two high-rise buildings stand to the west at South University and South Forest – University Towers on the northwest corner and the currently under-construction Landmark Building (formerly called the 601 S. Forest). To the east stands a fraternity house. Dereziński noted the A2D2 zoning ordinances had been adopted after considerable debate. The planning commission had unanimously agreed with the recommendation of the staff that the parcel not be rezoned, he said.

Christopher Taylor (Ward 3) also concurred that the prior community conversation had been rigorous and extensive and warrants the council's respect.

Jane Lumm (Ward 2) added that she felt having a buffer in the form of D2 zoning makes a great deal of sense.

*Outcome: The council unanimously rejected the proposed conditional rezoning of 1320 S. University.*

The city council's vote was just its initial consideration of the request – a “first reading.” A rezoning request, like any ordinance change, requires initial approval, followed by a public hearing and a final vote at a subsequent meeting. Often, councilmembers will advance an ordinance change to a second reading, if they have not settled on a position and are interested in hearing the sentiments that might be expressed at a public hearing. So the fact that the council rejected the proposal on first reading can be taken as a measure of the council's especially strong opposition to changing the zoning that was agreed on as part of the A2D2 process.

## **Tim Hortons Site Plan**

On the April 16 agenda was a site plan for a new Tim Hortons restaurant at 3965 S. State St. The site plan had received a unanimous recommendation for approval by the Ann Arbor planning commission at its March 6, 2012 meeting. The site is located on the east side of the street, near the intersection of State and Ellsworth.

The plan calls for demolishing a vacant building on the 2.23-acre site where previous restaurants, including Enzo's and Gallagher's, were located. In its place, a one-story 1,953-square-foot restaurant with drive-thru facilities would be built on a 1.18-acre site divided from the current parcel. The building would face West Ellsworth and use an existing shared drive on South State, as well as a relocated drive onto West Ellsworth. An outdoor seating area is proposed on the east side of the building.

The property is zoned C3 (fringe commercial), which allows for construction of a drive-thru restaurant. The planning commission's recommendation of approval was contingent on two issues: (1) submission of a tree health evaluation form, and (2) approval of the parcel's land division, prior to the city issuing permits for construction of the new building.

Much of the discussion among planning commissioners at their meeting had focused on the proposed roundabout at State and Ellsworth. A spokesman for Tim Hortons said they'd found out about the roundabout plans late in the process, but were working to integrate their own plans to accommodate it. He indicated that if the company gets approval from the city, they hope to open in August. Construction for the roundabout is expected to begin in the spring of 2013, with completion in the fall of that year.

During council deliberations on April 16, Tony Dereziński (Ward 2), the city council's representative to the planning commission, made some brief remarks. He described it as a property that's been vacant for a couple of years. It would be a great improvement, he said. The planning commission went through ingress and egress issues. Dereziński said he felt it adds value and would be a good place to get coffee in the morning.

Sabra Briere (Ward 1) noted that the State Street corridor is currently undergoing a study. She wondered how this particular project fits into the ongoing discussions that the corridor study group has had. City planning manager Wendy Rampson told Briere that it doesn't really fit into ongoing discussions on the corridor, but it does remove a relatively blighted building on the site. The corridor study has not gotten as far as making land use recommendations yet, Rampson said.

Responding to a question from mayor John Hieftje, Rampson said that the plan is to begin construction in May. Tim Hortons is moving in a timely way, she said. A land division needs to be completed before they can start, she said. And the Tim Hortons team is coordinating with the Washtenaw County team that is planning the roundabout at Ellsworth and State. She figured in a couple of months, construction might start.

*Outcome: The council voted unanimously to approve the Tim Hortons site plan.*

## **AAA Request for Parking Zoning**

Before the council for its consideration was initial approval to a proposal from AAA Michigan to rezone half of a parcel located at 1200 S. Main to P (parking). To take effect, the initial approval from the city council would need to be followed by a second and final approval following a public hearing at a subsequent meeting.

The rezoning to P (parking) is part of a two-parcel site plan proposal – for which the city planning commission provided a positive recommendation at its March 6, 2012 meeting. At that meeting, the commission took two votes on the 1200 S. Main parcel – the site plan and the rezoning proposal. And on both votes, the planning commission split 6-3. For the other, adjacent parcel at 1100 S. Main, the city planning commission voted unanimously to recommend the site plan for approval.

In front of the city council on April 16, however, was just the resolution to rezone a portion of the 1200 S. Main parcel to P (parking).

The two parcels, at 1100 and 1200 S. Main, are across from Michigan Stadium. An AAA branch built in the 1950s is located there. The owner wants to build a new branch on a different part of the site, tear down the existing building, and reconfigure parking spaces.

The two parcels are part of a 1.5-acre site containing four parcels owned by the auto club and all zoned O (office). Located on the 1200 S. Main parcel is the current one-story branch building with walk-out basement and 36 parking spaces, with exits onto South Main, Berkley and Potter.

The 1100 S. Main site is a surface parking lot, which has 72 spaces and exits onto both Potter and Keech. The owner is requesting to build a one-story, 5,443-square-foot new branch building on the northeast corner of that site, with parking for 21 spaces. A second phase of the project would include an eventual 2,230-square-foot addition to the south side of that building. There are six landmark trees on the site, and the plan would require removal of two that are located along South Main, near Keech. Other trees would be added elsewhere on the site.

After the new structure is completed, the old building at 1200 S. Main would be torn down and a 14-space parking lot would be put on that parcel. And to do that, the proposal asks that the northern 123 feet of that parcel – about half of the parcel – be rezoned from O (office) to P (parking), so that parking could become the principal use for that site. A site plan for that parcel is also required. The rezoning to P (parking) is what the city council considered on April 16.

The owner's overall plan called for a total of 35 spaces – a reduction from the current parking on the site, which was approved in the mid-1970s but no longer conforms with existing zoning. The 35 spaces would be four more spaces than the 31 maximum number permitted under the O (office) zoning, based on the new building's square footage in both phases. That's why the owner requested that a portion of the overall site be rezoned for parking – in the P (parking) district, there is no maximum.

### **AAA Request for Parking Zoning: Council Deliberations**

City planning manager Wendy Rampson was asked to the podium to summarize the proposal, which she did. The current configuration has the AAA office sitting on the parcel to the south, with surface parking on the parcel to the north. She said the configuration was approved in the 1970s based on an interpretation that parking would be allowed on the northern parcel, based on the ownership by AAA of both parcels. The city does things differently now – if there's no other use on a parcel besides parking, then the city requires that it be zoned P (parking).

Rampson described what AAA wants to do as a “flip flop” – build a new branch office on the northern parcel and put parking on the south parcel. It's that south parcel that AAA wants rezoned. She noted that the city planning commission vote was 6-3 on rezoning. Staff also had some concerns about approving parking as a principle use, because that's something the city is trying to get away from. The plan has a lot of benefits with respect to stormwater detention, she said, and reduces the amount of impervious surface across the two sites, as well as the total amount of parking.

Tony Derezenski (Ward 2) said the site plan really did sell the proposal. The building that AAA is putting up is an improvement over the one that's currently there. The old building has a lot of mileage on it, he said. With its location across from the University of Michigan football stadium, the building would be noticed by a large number of visitors to Ann Arbor, he said.

Rampson added that it's a two-phase project. In the new building, AAA anticipates adding more services, so that's the rationale for wanting to have parking available on both parcels.

Carsten Hohnke (Ward 5) said he felt like the project is a step in a better direction, but not what the city would want if the project were starting from scratch. He wondered what AAA's plans would be if the council turned down the request to rezone. Rampson said she didn't know. Before AAA brought forward their proposal, however, they'd gone over ways to solve the parking issue without rezoning. One possibility would be to retrofit the existing building. They also considered different configurations that would reduce the amount of parking. But ultimately AAA did not want to pursue those, she said.

Mike Anglin (Ward 5) asked if there'd been given any consideration to moving the building further away from the sidewalk, and he wondered if AAA could be forced to comply with a greater setback requirement. Rampson reminded Anglin that the recent area, height and placement revisions had reduced the amount of setback required – which in this case allowed the building to be moved further way from the residential area to the west and closer to Main Street. Rampson also explained that the curbcuts to Main Street would be removed.

Stephen Kunselman (Ward 3) wanted to know what assurance the council would have that the old building will be torn down. Rampson explained that once it's zoned P (parking), the building couldn't be used for anything. And AAA is not intending to keep the building in place – the space is needed for parking.

*Outcome: The council gave unanimous initial approval to the AAA Michigan rezoning request for 1200 S. Main.*

## **Annexation Rezoning**

The council was asked to consider initial approvals of six separate rezoning requests associated with annexation into the city of Ann Arbor from Scio Township. The zoning change in all cases is from the township to a residential category.

Five of the properties were annexed into the city on Oct. 3, 2011 – in connection with the expansion of a well-prohibition zone due to 1,4 dioxane groundwater contamination caused by the Pall Corp.'s Wagner Road facility, formerly owned by Gelman Sciences. Those five properties are: 305 Pinewood St.; 3225 Dexter Rd.; 427 Barber Ave.; 545 Allison Dr.; and 3249 Dexter Rd.

Annexation into the city allows the properties to connect to city of Ann Arbor water services. Pall has paid all petition filing fees as well as the connection and improvement charges for water and sanitary sewer service that are related to the annexations. The zoning for which the city council gave initial approval is for R1C (residential). [[Google map of well prohibition zones and property locations](#)] [[.jpg of map with well prohibition zones and property locations](#)]

A sixth parcel for which the council gave initial rezoning approval – also due to annexation, but not related to the well-prohibition zone – is located at 1575 Alexandra Blvd. The parcel was given initial approval to be rezoned from the township to R1A (residential) zoning.

As ordinance changes, all rezoning requests require an initial approval from the city council, followed by a public hearing and a final approval at a subsequent meeting.

Sabra Briere (Ward 1) offered the only council comment on any of the annexation-related rezoning requests, noting that they all went from township zoning to single-family residential.

*Outcome: The council unanimously approved all the annexation-related rezoning requests. The requests need to come back for a second and final approval by the council, after a public hearing.*

## **Ann Arbor Airport Study**

On April 16 the council considered four different resolutions in connection with Ann Arbor's municipal airport, three of them connected to the completion of an environmental assessment of a proposed 800-foot lengthening of the airport runway.

The city council had initially authorized funding for the assessment project at its Feb. 2, 2009 meeting. The assessment began on May 4, 2009. The process appeared to culminate in a public hearing in April 2010. [See Chronicle coverage: "[Ann Arbor Airport Study Gets Public Hearing.](#)"] In the interim, city councilmembers have removed the runway extension from the city's capital improvements plan (CIP) each year they've been asked to give the CIP its annual approval.

However, when the Federal Aviation Administration responded to the draft report, that prompted communication between the city of Ann Arbor and the FAA. And that back-and-forth has resulted in FAA requests for more work, which is meant to wrap up the environmental assessment (EA). From the staff memo accompanying one of the resolutions:



The FAA's response was received nearly a year later (September, 2011). The remaining work on the EA includes modifications based on the FAA comments, coding public and agency comments and responses for the final EA document, preparation of the Errata and FONSI for submission to MDOT-Aero. There is about 2-3 months of work remaining to complete the EA.

One of the resolutions authorizes \$800 for an additional map to be prepared by URS Corp., one of two consultants that the Michigan Dept. of Transportation is using for the project. The amount is covered by MDOT's project contingency budget. This item is not specifically related to the environmental assessment.

A separate resolution authorized \$12,000 of additional consulting work, also with URS. A third resolution authorized an additional \$26,552 worth of consulting work from SmithGroupJJR. The additional work by URS and SmithGroupJJR is being covered by a \$45,000 grant program, which consists of \$42,750 in federal funds, \$1,125 in state funds and \$1,125 in airport matching funds (the city's portion.) Authorization of the grant program was the fourth airport-related item on the agenda.

### **Ann Arbor Airport Study: Public Comment**

During public comment, **James Vincze** introduced himself as a member and vice chair of the airport advisory committee. He urged the council to complete the airport runway extension study. It's important to get the process completed, he said. Significant time and resources have already been spent and the public has been involved. Matt Kulhanek is a good airport manager, he said. Voting to complete the study doesn't mean the council favors runway extension, he said. Rather, it means the council wants to get the facts out and have a complete study and analysis.

### **Ann Arbor Airport Study: Council Deliberations**

Airport manager Matt Kulhanek was asked to the podium to answer questions. Jane Lumm (Ward 2) began by asking why the city is continuing to spend money to study the runway extension, when the council had consciously removed the extension from the city's capital improvements plan. She had a hard time reconciling that, even though the amounts of money weren't actually all that large.

Kulhanek pointed out that the first airport-related item on the agenda – the \$800 for the map preparation – was not related to the environmental assessment.

So mayor John Hieftje then asked the council to vote on that item. And that vote was unanimous in favor.

Kulhanek noted that the council's direction had been to get the facts on the proposed runway extension and that direction had come on two occasions, with votes to fund the environmental assessment. He said the council's subsequent action to remove the runway extension from the capital improvements plan was based on a concern that by including it in the capital projects budget, it reflected a de facto support of actually doing the project. But at no time has the staff received direction to pull back from completing the environmental assessment. Kulhanek indicated that another grant agreement would be coming to the council later, after the one they were considering that evening.



Jane Lumm (Ward 2) talks to Kathe Wunderlich (back to camera)

Mike Anglin (Ward 5) asked for clarification of the unexpected review by the FAA technical committee to which the staff memo had referred. Kulhanek explained that when the document was first entered into the system, the city was not expecting further FAA review. But two weeks ago, he said, the city received notification from FFA technical operations, a branch within the FAA, indicating that branch would need to sign off on it. The reason that technical operations would need to review it was due to two sets of navigational aids that would be relocated if the runway project moves forward. The document had already been given an 11-month review by the district office of the

before the council meeting. Wunderlich has worked as part of a citizens group opposing the runway extension.

FAA, and the conclusion had initially been that the technical operations division didn't need to review it. At that point, the city had

the understanding the FAA was finished. That changed in the last two weeks, when city staff found out that FAA technical operations would need to review it.

Stephen Kunselman (Ward 3) asked if the resolution that night was specifically for the relocation of navigational aids. No, replied Kulhanek. A resolution to approve another grant for that would come some time in the future. The grant before the council that night was to finish up the documentation of the environmental assessment and get it in a final format to submit to the FAA for review. What would come back to the council later is a reimbursement agreement for the work the FAA will have done to review the documentation.

Kunselman said he was confused why there'd be the need for another reimbursement agreement. Kulhanek reviewed the purpose of that night's grant agreement.

Sabra Briere (Ward 1) was up next to question Kulhanek and she apologized for putting him on the spot. His reply indicated he'd anticipated lots of questions: "That's okay, I didn't think I was going to get a pass tonight!"

In 2009, Briere said, the council had approved two grants and in 2010 the council had approved an additional grant. At the time, she said, she thought that the EA document was in draft form and almost complete. Kulhanek indicated that was not the case. The grant funding in 2009 had kicked off the project, he said. When the 2009 grants were approved, the city had also approved contracts with the two engineering firms.



Sabra Briere (Ward 1) briefed Stephen Kunselman (Ward 3) before the start of the meeting. They both voted against the grant funding for the environmental assessment of the airport runway extension.

Briere summarized what the council was considering as funding additional work by the engineering firms to get the EA document into shape to be submitted to the FAA. Kulhanek indicated that was basically right. The work the two firms would do would in essence finalize the document for everything except the FAA technical operations review. That review will have a specific scope – just the impact on the navigational aids.

Responding to a question from Briere, Kulhanek explained that the EA would cover more than just a discussion of navigational aids. It would include economic impacts, physical impacts, noise impacts, and wetlands impacts. There's a whole variety of things that are included. It's a broad document that includes public comment, as well as input from various agencies like the county road commission, county water resources commissioner and the like.

Briere said she had trouble understanding why an environmental assessment would take four years.

Hieftje asked if Kulhanek saw a benefit to the city and users of the airport, if the council does not want to go ahead with the runway extension, once the process is completed. Kulhanek told the mayor that he felt the biggest benefit would be to finishing what they've started back in 2009. The council would be able to make a decision based on an actual study of what the impacts are – not what our gut feels or our heart feels. A decision could be based on actual data and feedback from the public and various agencies and everyone involved. Kulhanek said there's already been a lot of time and money invested in getting to this point in the project, and he thought it's important to follow through to have solid information. If the council chooses not to go forward on the runway project, it can make that choice.

Hieftje started adding up the money in the request. He asked Kulhanek how much more money would need to be spent – local as well as other money – to complete the project. Kulhanek said the first three grant agreements totaled \$309,000.

The city's share of that had been \$7,725. From a local perspective, he said, that's a minor cost. The



Mayor John Hieftje opposed the grant funding for completion of the environmental assessment for an extension of the Ann Arbor municipal airport.

grant agreement before the council that night was for \$45,000 with a local share of \$1,125. The next and last grant agreement will be around \$30,000. The total for the EA would be around \$385,000 with a local share of less than \$10,000, Kulhanek said.

Kulhanek estimated that it would take the consultants another two months to do the additional work. He thought that three to six months from now, the last grant agreement would be back in front of the council for approval. Assuming three to four months for review, Kulhanek estimate that it would be early 2013 before the process was complete.

Hieftje asked again if there was some benefit to the environmental study, beyond knowing the impact of the runway extension. Kulhanek said it's good information. Knowing the noise levels is useful. Knowing about bird species is also useful, he said. There are some mowing restrictions to protect their habitats.

Kunselman contended that everything Kulhanek had just mentioned as beneficial had already been done, so what the council was being asked to do was approve more money for consultants to wrap things up. He said the city continues to throw money at a project at the end. He said he'd vote no on everything. It's taxpayer dollars, whether it's local or federal. He said his constituents don't want the runway extension and he'd vote no on that, too. The consultants can wrap it up without additional money, he said. He said he was done throwing money at this kind of thing.

Lumm said she'd been struggling with this. She allowed that it was a very small city share. Ultimately though, what the council would be doing is spending money on something that won't move forward. She reiterated the fact that the council had removed the project from the CIP, which she translated into a decision that the council wouldn't move forward. Kulhanek ventured that the council might be "wowed" by the EA and perhaps be open to the possibility of extending the runway.

*Outcome: The main resolution, on the \$45,000 grant, was approved on a 7-4 vote. Voting for a grant contract with the Michigan Dept. of Transportation were Sandi Smith (Ward 1), Tony Derezhinski (Ward 2), Christopher Taylor (Ward 3), Margie Teall (Ward 4), Marcia Higgins (Ward 4), Carsten Hohnke (Ward 5) and Mike Anglin (Ward 5). Opposing it were Sabra Briere (Ward 1), Jane Lumm (Ward 2), Stephen Kunselman (Ward 3) and mayor John Hieftje. Both contracts with the consultants were opposed by Lumm and Kunselman. Hieftje joined them in opposing the contract with SmithGroupJJR.*

## Street Repair

The council was asked to consider two major contracts involving street resurfacing and reconstruction. One was a second large contract for street resurfacing work this season – \$4,054,599 with Barrett Paving Materials Inc. At its previous meeting on April 2, 2012, the council had authorized a \$3.6 million contract with Barrett for an initial set of streets to be resurfaced. The project includes a \$405,000 contingency.

The second set of streets includes portions of the following: South Seventh Street, Mt. Pleasant Avenue, Park Drive, Mt. Vernon Avenue, Manhattan Drive, Meadowbrook Avenue, Martha Avenue, Palomar Drive, Catalina Avenue, Eton Court, South Forest Avenue, Vinewood Blvd., Dorset Road, Berkshire Road, Woodside Road, Londonderry Road, Tremmel Avenue, Page Court, Pine Valley Court, Esch Avenue, and Esch Court.

Also at the April 16 meeting, in connection with the regular street resurfacing program, the council considered a \$143,455 contract with a different company, CTI and Associates Inc. (CTI), for construction materials testing services. The materials to be tested include oils, aggregates, asphalt, and concrete. Funds for the street resurfacing projects are drawn from the city's street repair tax, which voters agreed to renew in November 2011 for another five years, through 2016.

Another road construction project on the agenda was a contract with Dan's Excavating Inc. for \$2,314,951 for replacement of two old water mains and resurfacing of the East Stadium Boulevard from Washtenaw Avenue to Packard Street. The total project is estimated to cost \$3,600,000. Of that amount, \$1,400,000 will come from the water fund capital budget and \$2,200,000 will come from millage approved capital budget.

The East Stadium project will maintain the existing five lanes of vehicular traffic, and new bike lanes will be added on both sides of the street.

Also on the agenda was a materials testing contract for the East Stadium Boulevard project – \$50,185 with Inspection Services Company Inc.

The only substantive discussion on the four items was on the materials testing. Mike Anglin (Ward 5) asked why the materials testing was being done. City project engineer Igor Kotlyar explained that such testing is always done for such projects. It's a standard testing procedure, he said. Some of it involves making sure the proper materials are delivered to the site. But it also involves making sure that the materials are properly deployed as the project work is done.

For example, when a water main is backfilled with sand, it's tested to make sure that the sand is compacted to the proper density. Gravel that's put into the road bed is also tested for property compaction, Kotlyar explained. Homayoon Pirooz, head of project management for the city, responded to a question from Anglin by explaining that the city itself is not certified to perform that kind of testing, and does not have the certified equipment to do that. He indicated that it's essentially a specialty.

*Outcome: The council unanimously approved the four resolutions involved with street resurfacing and reconstruction work.*

## **Fire, Police Retirement/Health Changes**

On the April 16 agenda was a resolution for final approval of changes to the employee retirement system to accommodate recent changes to the collective bargaining agreement with the city's police command officers union and firefighters union. Also before the council was final approval to revisions of the retirement health care benefits to reflect changes to those collectively bargained agreements.

Changes to the retirement system include: (1) increasing the pension contribution of command officer members to 6% from 5%; (2) implementing a pick-up feature as permitted by the Internal Revenue Code for the pension contributions of firefighters and command officers, converting their 6% pre-tax contribution to a 6% post-tax contribution; (3) increasing the vesting and final average compensation requirements for firefighters hired after July 1, 2012; and (4) implementing a federal provision that allows eligible retired public safety officers to pay qualified health insurance premiums directly from their pensions.

The change to the retiree health care system stipulates that new hires after July 1, 2012 will be eligible for an access-only health care plan at the time of their retirement, instead of a city-paid retiree health care plan.

### **Fire, Police Retirement/Health Changes: Public Hearings**

On the retirement changes for police command officers and fire personnel, **Thomas Partridge** questioned whether the public had been fully informed on the substance of the change. He felt that representatives of the police department and the union representatives involved in the contract negotiations should have been present to explain their side of the issue.

**Edward Vielmetti** flipped through the pages of the ordinance revision in the three-ring binder that holds the council agenda, and counted out the number of pages that had been red-lined as he flipped through them. When he got to 16, he did not continue counting, but noted that more than 16 pages of the ordinance have been amended. He stated that he had no idea how councilmembers could evaluate whether this is a good idea or a bad idea. He said that he himself (if he were a member of council) wouldn't know what to do with a proposal like that. He hoped the city was making a wise choice.

On the retiree health care benefits, Partridge complained that Gov. Rick Snyder and former city administrator Roger Fraser [who now works for the state as an assistant state treasurer] are attempting to erode benefits to public employees, including those in high-risk jobs.

### **Fire, Police Retirement/Health Changes: Council Deliberations**

On the retirement changes, Sabra Briere (Ward 1) said she believed the primary changes reflect the

bargained-for benefits from recent union settlements. The city is taking advantage of IRS rules, she said.

On the retiree health care changes, Jane Lumm (Ward 2) said that the changes to the ordinance were consistent with the changes to the access-only health plan that had been adopted by the command officers and firefighters.

*Outcome: The council unanimously approved the ordinance changes affecting retirement and health care benefits for police command officers and firefighters.*

## **0.17 BAC as Separate Offense**

The council considered final approval to a change in the city's traffic ordinance to adopt a provision of the Michigan Vehicle Code – which establishes driving with a blood alcohol content (BAC) of more than 0.17 as a separate offense from operating under the influence. The council had given its initial approval to the ordinance change on April 2.

The Michigan legislature had previously changed the MVC, which Ann Arbor has adopted, to include the separate charge for the very high BAC of 0.17. However, the legislature did not at that time change the Home Rule Cities Act to allow cities to impose the greater penalty of 180 days in jail and/or \$700 fine that comes with the BAC 0.17 charge. But in February 2012, the legislature amended the Home Rule Cities Act to allow for that penalty. Ann Arbor is making the change to its local ordinance in order to be able to charge drivers with the 0.17 offense.

Records from January 2010 through February 2012 provided to The Chronicle by CLEMIS (Courts and Law Enforcement Management Information System) show three instances of 0.17 offenses – which could not at the time be charged as a separate offense. The CLEMIS records for the same time period also show three reports for the moderately higher BAC level of .08, which could already be charged separately from operating under the influence. [[.jpg of bar graph of OWI offenses](#)]

As a change to the city's ordinances, the change required a second vote and a public hearing (which is separate from the general public commentary held at the start of the meeting.)

### **0.17 BAC: Public Hearing**

**Edward Vielmetti** led off the hearing by asking where a copy of the proposed changes to the ordinance might be found. Mayor John Hieftje told him it was available online or in a large three-ring binder near the podium – which **Thomas Partridge** had been perusing. Vielmetti then reviewed the ordinance change, while Partridge held forth.

Partridge began by complaining about Hieftje's standard boilerplate recitation of the rules for public hearings, which include a provision that speakers confine their remarks to the topic of the public hearing. Partridge construes the rule as a way of inappropriately limiting free speech.

On the substance of the ordinance change, Partridge said it would have been better to attach a resolution that would stop people who are high on alcohol and drugs from driving or causing disruptive behavior in the city of Ann Arbor. He called for a parallel amendment to go forward, that would encourage and require all retailers and bars serving alcohol and supermarkets selling alcohol, to note the names and identity of people who purchase alcohol. He also called for bars to refuse service to patrons who have visited other bars before arriving, who are clearly under the influence of alcohol, and who intend to drive.

Based on his review – while Partridge was speaking – of the ordinance changes, Vielmetti said it appeared to him that the ordinance changes would increase the penalties for driving “super drunk.” He pointed out that there are a number of students in Ann Arbor who don't just drive relatively drunk, but who also walk relatively drunk. And they may be so drunk that they pose a danger to others while driving, but also to themselves due to alcohol poisoning.

From reading the student press, Vielmetti said it's his understanding that there's a concern about prosecution for those who help their classmates who are trying to obtain treatment for alcohol poisoning – because they might be slapped with a “minor in possession” citation themselves. He cautioned the council not to overly hastily increase the penalties for drunken behavior, without also addressing the needs of those who need to receive treatment. It would be unfortunate to put yourself in a situation where you thought you were making an improvement, and then create some unintended consequences, he said – people driving themselves home, because they weren't ready to help their friends walk themselves home.

## 0.17 BAC: Council Deliberations

Sabra Briere (Ward 1) alluded to Vielmetti's comments during the public hearing, by saying she liked the idea of finding a solution for adolescents who are at risk of underage drinking violations. She felt the decision was straightforward. People who have 0.17 BAC should pay a heavier penalty, she said.

Stephen Kunselman (Ward 3) asked if the state law on 0.17 BAC was already in effect for people on University of Michigan property. Assistant city attorney Abigail Elias responded to the question by saying that for the "super drunk" provisions, which are for driving or operating a vehicle, the change to the ordinance simply brings it into conformity with the state law. If anyone were driving where the city did not have jurisdiction, she said, state law would apply.

Kunselman followed up by asking if UM's department of public safety already has the authority to enforce the 0.17 BAC provisions on the Ann Arbor city streets. Elias told Kunselman that Ann Arbor police officers would enforce the law on city streets. She said she did not know if UM DPS officers were enforcing state law on city streets. That's a question she could not answer, she said. Mayor John Hieftje said his understanding was that UM DPS officers have the ability to enforce laws on Ann Arbor city streets, but it's unusual for them to do so. He stated that he'd be happy to see UM DPS join in helping out on the "party patrol" that the Ann Arbor police department uses to police student neighborhoods on evenings when parties are frequently held.

*Outcome: The council unanimously approved the 0.17 BAC ordinance change.*

## Selection of Auditor

The council was asked to consider a five-year contract for independent auditing work with The Rehmann Group – based on its \$344,500 bid. The contract allows for two one-year extensions.

Margie Teall (Ward 4) chairs the council's audit committee.

Abraham & Gaffney, the firm that the city has used for the last few years, also bid on the work. The Abraham & Gaffney bid

came in at \$387,500. Two other firms also bid for the city of Ann Arbor auditing work: Andrews, Hooper, Pavlik PLLC (\$340,500); and Doeren Mayhew (\$361,300).

Andrews, Hooper, Pavlik's was the low bid, but the selection was not made purely on price. The amount of the bid counted for 30 points out of a possible 100. The other two categories were "expertise and experience" (40 points) and "auditing approach" (30 points). Rehmann and Abraham & Gaffney both scored the maximum 70 on the categories other than price. The memo accompanying the resolution indicates that the choice was also based on "a desire to periodically change service providers." [[.pdf of scoring metric and comments](#)]

For Rehmann, then, the fact that it was *not* the incumbent firm was an advantage for the city auditing contract award. Last year, when it competed for the Ann Arbor Transportation Authority's auditing contract, Rehmann had found its incumbent status to be a *disadvantage*. Because of the auditor rotation policy the AATA board had adopted on June 16, 2011, Rehmann was not eligible for selection when the AATA board opted to award the contract to Plante & Moran on Sept. 15, 2011.

## Selection of Auditor: Council Deliberations

Margie Teall (Ward 4) introduced the resolution as chair of the audit committee, indicating that she was pleased that the audit committee had been asked to be a part of the selection and evaluation process. The audit committee had been pleased with the representative from Rehmann who had interviewed with the committee.

Jane Lumm (Ward 2) said she supported the selection of Rehmann, saying that it was considered best practice to rotate auditors and that Rehmann is well respected. She asked about the notation in the evaluation of proposals that indicated Rehmann projected using 200 hours less than Abraham & Gaffney. She asked if the city is comfortable with that.

Sandi Smith (Ward 1), who also serves on the audit committee, noted that the auditor's contract is a multi-year contract. The firm will need fewer hours as they get more familiar with the city's auditing project over time.

*Outcome: The council unanimously approved the selection of The Rehmann Group as the city's auditor.*

## Hearing on Sakti3 Tax Abatement

On the agenda was a resolution to set a public hearing for May 7 regarding a tax abatement for

Sakti3 – an Ann Arbor-based battery technology spinoff from the University of Michigan. Sakti3 is led by UM professor Ann Marie Sastry.

According to the staff memo accompanying the resolution, Sakti3 is requesting an abatement on \$151,433 of real property improvements and \$1,374,861 of new personal property. If approved, it would reduce Sakti3 Inc.'s annual tax bill by \$23,200 for each of three years in the recommended abatement period. The new building improvements and personal property investments would generate about \$29,500 in property taxes for each year during the abatement period.

Previously, the council voted on March 21, 2011 to set a public hearing on the establishment of the industrial development district under which Sakti3 is applying for an abatement. And on April 4, 2011, the city council voted to establish the district.

*Outcome: Without comment, the council unanimously approved setting a May 7 public hearing on a tax abatement for Sakti3.*

## **Digital Billboards**

The council was asked to consider a 180-day moratorium on two items: (1) city staff consideration of applications to erect digital billboards; and (2) the erection of digital billboards.

Coming under the temporary moratoria are “billboards commonly referred to as ‘electronic message centers,’ ‘electronic message boards,’ ‘changeable electronic variable message signs,’ or any billboard containing LEDs, LCDs, plasma displays, or any similar technology to project an illuminated image that can be caused to move or change, or to appear to move or change, by a method other than physically removing and replacing the sign or its components, including by digital or electronic input.”

The resolution acknowledged that such signs are already prohibited by the city’s sign ordinance. From that ordinance, the list of prohibited signs include those that “...incorporate in any manner or are illuminated by any flashing or moving lights other than for conveyance of noncommercial information which requires periodic change.”

The resolution was added late to the agenda, after printed copies of the agenda were made for the council chamber audience. Based on the time stamp on the online agenda, the item appears to have been added at 6:48 p.m. – for the council meeting scheduled to start at 7 p.m. The item was sponsored by mayor John Hieftje.

Sabra Briere (Ward 1) said she was confident there are some places for digital billboards in our lives, but she did not want to see them on crowded downtown Ann Arbor streets. Imposing a temporary moratorium on whether to allow them in the city limits made sense to her, she said.

Mike Anglin (Ward 5) said that many of the billboards in the city had 30-35 year leases on them, and it becomes complex to get them removed. He said that Adams Outdoor Advertising had been asking to “do trades” for many years. As issues for the public, Anglin identified distractibility while driving and “virtual vision pollution.” He gave the corner of Madison and Main, late at night, as an example. It looks like you’re coming into an entertainment area, he said, like vaudeville or something. He called for a community discussion about whether to have digital billboards. Do they bring value? he asked. He didn’t want to make the decision piecemeal.

*Outcome: The council unanimously approved the temporary 180-day moratorium on digital billboards.*

## **Personal Computer Replacement**

The council had on its agenda a \$450,000 purchase order with Sehi Computer Products to cover the replacement of personal computers over the next two years.

The project budget includes the purchase of a minimum of 305 desktops and 195 laptops. Funding for replacement of the city’s computers comes from the information technology services unit.

Sabra Briere (Ward 1) asked for an explanation of the city’s replacement policy. Paul Fulton, the city’s IT service delivery manager, described how the replacement cycle for desktop machines and special-purpose laptops is five years. The replacement cycle for general purpose laptops is three years. About four years ago, he said, the city did a general refresh, and those machines are now coming due for replacement – a total of about 500 machines.

*Outcome: The \$450,000 purchase order with Sehi Computer Products was unanimously approved.*

## **Biosolids Contract**

The council considered a contract with BioTech Agronomics Inc. to spread biosolids from the wastewater treatment plant on agricultural fields – during April to December. The rest of the year, the material gets landfilled. The contract pays about \$0.0321 per gallon, which works out to approximately \$514,000 per year.

Stephen Kunselman (Ward 3) wanted to know where the material was going. Ed Sajewski, contract/project services manager for the wastewater treatment plant, explained that it would be spread on farm fields in the outlying area. He described the nutritive benefit – carbon, nitrogen, phosphorus – of applying the material to fields, as opposed to just landfilling it. Kunselman wondered if there were testing procedures to make sure no heavy metals were in the material. Yes, replied Sajewski, the city has a lab to do that testing, and it's required to be done through the permit the city has with the U.S. Environmental Protection Agency.

*Outcome: The council unanimously approved the \$514,000 contract for spreading of biosolids.*

## Mowing Contracts

The city council considered three contracts for mowing different city-owned properties – traffic islands, areas of the wastewater treatment plant, and neighborhood athletic fields: (1) Green-Vision Lawn & Landscaping (\$105,336 for 3 years); (2) A2 Outdoors Creations (\$43,275 for 3 years); and (3) KBK Landscaping for mowing and trimming services at neighborhood athletic fields and five city locations in the amount of \$17,190/year (\$51,570 for 3 years).

Sabra Briere (Ward 1) said that people who drive into the city would have a right to complain if the city didn't maintain the traffic islands. Logistically, she described it as a challenge to get the mower out to the locations and to then mow just five square yards.

Stephen Kunselman (Ward 3) asked about the four parks that are a part of the contract – which parks? Matt Warba, acting field operations manager, told Kunselman the four are: Miller Nature Area, Forsythe, Kempf House and 875 S. Maple. Warba confirmed what Briere had said about the logistical challenge of mowing the areas covered in the contracts. He said there are 184 traffic islands. The city's strength is mowing large areas of grass, not the small intricate areas like traffic islands or the areas around Kempf House, a museum located on South Division.

*Outcome: The council voted unanimously to approve the mowing contracts.*

## City Hall Restrooms

Pulled out of the consent agenda by Jane Lumm (Ward 2) for separate consideration was a \$93,438 contract with LC Construction LLC. The project involves the construction of five unisex restrooms, on floors 2-6, in the old elevator tower of city hall.

Lumm was dissatisfied with the answer she'd received from staff before the meeting to a question about why the bathrooms had not been constructed as part of the overall municipal center renovation project.

She characterized the response she'd received as essentially, "We ran out of money." She wanted all the costs for such projects captured in one place.

Otherwise, it's hard to understand which costs are related to city hall renovation and which are not, she said.



Paul Fulton (right, foreground) is typically on hand before the council meetings start, to handle any computer issues councilmembers might have. On April 16, he was called to the podium during the meeting to explain the computer replacement cycle.





*Outcome: The council unanimously approved the restroom construction contract.*

Before the council meeting, Jane Lumm (Ward 2) talked with city administrator Steve Powers (left).

## **Placid Way Park Improvements**

Pulled out of the consent agenda by Sabra Briere (Ward 1) for separate consideration was a \$79,980 contract with Michigan Recreational Construction Inc. for improvements to Placid Way Park. The contract – which involves installing new play equipment as well as park furniture and landscaping – had been recommended for approval by the city’s park advisory commission at their March 20, 2012 meeting. The 1.32-acre neighborhood park is located on the city’s north side near the larger Dhu Varren Woods Nature Area and Foxfire South Park.

In her brief remarks, Briere described Placid Way as an unusual park that runs between neighborhoods. It’s heavily-used by a neighborhood that has many children, she said. And it’s a pathway from one neighborhood to another. She was happy see the upgrades happening. Mike Anglin (Ward 5) who serves as one of two city council ex officio non-voting appointees to the park advisory commission, noted the discussion that PAC had had on the park.

*Outcome: The council unanimously approved the Placid Way Park renovation contract.*

## **Technical Amendment to Retirement System**

Before the council for its final consideration were some amendments to the city ordinance that governs the retirement system. The first change explicitly describes the process that’s already used to establish the interest rate in crediting participant contribution accounts. The second change corrects a language error introduced with an ordinance revision made last year, which misstates the methodology for calculating a participant’s early retirement benefit. The staff memo accompanying the council resolution indicates that the rates have been calculated correctly, despite the language error.

During the public hearing on the amendments, **Edward Vielmetti** introduced himself as a graduate of the University of Michigan’s economics department. He said he didn’t know very much about retirement planning. But he said he did know that projections for future returns are notoriously unreliable. In the past, retirement plans that made naive assumptions about future returns have had catastrophic surprises attached to them. He said he could speak to that from some of his own investments over the last 20 years.

Even portfolios that appear to be diversified usually are not, Vielmetti said. He urged the council to do something other than the simplest straight-line projection of future interest rates to project the range of possible outcomes – because a very good year or very bad year early in the cycle can make an enormous difference. Retirement planning is a serious business, he said, and he hoped the city is not taking an oversimplified approach.

Deliberations by the council included brief remarks from Jane Lumm (Ward 2), who characterized the amendments as technical changes that had been requested by the city attorney’s office. It’s not a change to the actual retirement plan, but rather a cleanup of some language, she said.

*Outcome: The council unanimously approved the technical changes to the retirement ordinance.*

## **Communications and Comment**

Every city council agenda contains multiple slots for city councilmembers and the city administrator to give updates or make announcements about issues that are coming before the city council. And every meeting typically includes public commentary on subjects not necessarily on the agenda.

### **Comm/Comm: Greenbelt**

Carsten Hohnke (Ward 5) gave an update on the most recent greenbelt advisory commission – as the city council appointee to that body. He briefed his council colleagues on the mid-year financial report the group had received at its last meeting – there’s about \$6 million left in the millage fund for greenbelt acquisitions, and \$4.5 million that’s designated for park acquisitions. [For a more detailed look at the April 5, 2012 GAC meeting, see Chronicle coverage: "Greenbelt Commission Briefed on Food Hub," which includes details of the mid-year financial report.] Hohnke also highlighted a deal that the Southeast Michigan Land Conservancy had closed on 100 acres along Prospect Road, a large portion of which is open to the public. The deal was done in partnership with the Ann Arbor greenbelt program. [For coverage, see "Superior Greenway Deal Adds 100 Acres."]

### **Comm/Comm: Parks Millage**

Christopher Taylor (Ward 3) – in his capacity as one of two city council ex officio non-voting appointees to the city park advisory commission – reminded his colleagues of the remaining public outreach activity the city is doing on the park maintenance and capital improvements millage renewal. [For coverage of the millage proposal, which the city council will likely put on the November 2012 ballot, see "Park Commission Briefed on Millage Renewal."] A public meeting on the renewal of the tax will be held on April 23 from 6:30-7:30 p.m. at Leslie Science and Nature Center. And the final meeting will be April 26 at the Ann Arbor District Library Traverwood branch, Taylor said.

#### **Comm/Comm: UM Wall Street Parking**

Sabra Briere (Ward 1) reported that earlier in the day, Jim Kosteva –University of Michigan director of community relations – had informed members of the Ann Arbor city council that UM’s board of regents would be voting on April 19 on a proposal to build a 700-space parking structure, to be located between Wall Street and Maiden Lane. [As expected, UM regents approved the project.]

By way of background, the university announced on Feb. 10, 2012 that it was withdrawing from a partnership with the city to build additional parking at the same site where the city hopes to build a transit station – just south of Fuller Road and north of East Medical Center Drive. The Fuller Road site, as a location for additional university parking, had been an alternative to constructing additional parking on Wall Street – which the UM was on course to build up until 2009. The news Briere was reporting, then, reflects the UM’s decision to revert to a previous course.

Since before she was first elected [in 2007], Briere said, other members of the city council, the mayor, and other residents had tried to convince regents that while additional parking might be necessary, it should be considered for a satellite location, not a residential street. She said some folks look at the barren parking lot that forms the block between Maiden Lane and Wall Street and say, “Well, who’d want to live there, anyway? Go ahead, shove in a parking structure.”

Briere said she’d rather have seen a much more serious effort on the part of UM to improve mass transit. She wanted to encourage the university to develop more aggressive carpooling and alternative transportation options for staff. She wanted to see the number of people reduced who feel that they need to be able to get into their car without walking or waiting. She wanted better consideration of the infrastructure and the environmental impact that the parking structure would have on the community.

For those who think that no one will care and that it’s all a wasteland, she asked them to remember, “It’s the university that created that wasteland, and the university that wants to make it increasingly inhospitable to the residents who live [there].” She asked the regents of the University of Michigan to remember that good neighbors work together. They could just as easily build parking structures on the north campus or the athletic campus, creating options for those who want to park there, and reducing the number of employees who choose to park and not ride [a play on the term for lots designed for people to arrive, park, then take public transportation to their final destination – called park-and-ride lots.]

#### **Comm/Comm: Agenda Item Titles**

Sabra Briere (Ward 1) noted that the length of the titles to agenda items had begun to creep longer and they were not getting clearer as a result. She asked that the 20-word rule on agenda item titles be followed.

By way of illustration, the following title appeared on that night’s agenda (137 words):

An Ordinance to Amend Sections 1:552.1, 1:561, 1:562, 1:565, 1:566, 1:567, 1:568, 1:572 and 1:592 of Chapter 18, Employees Retirement System, Title I of the Code of the City of Ann Arbor to Implement a “Pick-Up” Provision Allowed by Internal Revenue Code 414(h) for Members represented by the IAFF, Local 693 and the Command Officers Association, and Increase the Contribution Level for Members Represented by the Command Officers Association, and to Implement a HELPS provision for Eligible Retired Public Safety Officers, and to Implement an Other Qualified Adult Pop-Up Provision for Members represented by the Ann Arbor Police Officers Association, the Command Officers Association and AFSCME, and to Implement Other Collectively Bargained Changes for Members Represented by the IAFF, Local 693 (Ordinance No. ORD-12-10)

#### **Comm/Comm: Medical Marijuana Dispensary Licenses**

Sabra Briere (Ward 1) also told her colleagues that she'd listened to their requests at the council's previous meeting, on April 2, 2012, that medical marijuana dispensary licenses be brought to the council for a vote. However, after further consultation with the city attorney, Stephen Postema, she reported that he's said he would not be able to provide adequate background information to the council on the issue until June. She wanted to let her colleagues know that she had checked, and that Postema was not prepared to move as quickly as she was.

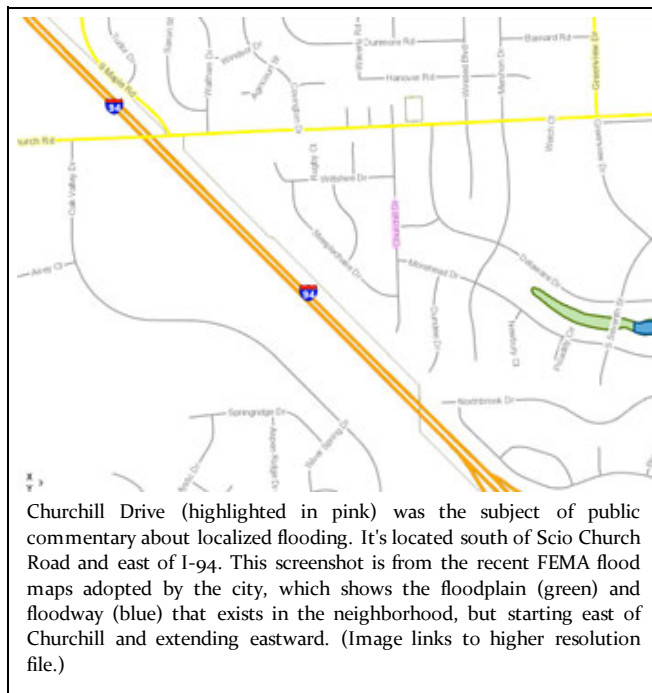
### Comm/Comm: Blight Removal

Stephen Kunselman (Ward 3) reported that the city's efforts at blight removal are working in his neighborhood, on Springbrook. He thanked everyone who supports blight removal and the city staff for making it happen.

### Comm/Comm: Localized Flooding

During public commentary time, **Ellen Fisher** told the council she was speaking for herself and many of her neighbors in the Churchill Drive area. [It's an area on the west side of the city, east of I-94 and south of Scio Church Road.] She reminded councilmembers that some of them had heard from her before in letters she'd written. That night, she said she wanted to put a face to the message. She told the council that she and her husband had moved into their house on March 23, 1974 – 38 years ago. For 26 years, they had no problems, she reported. However, they'd experienced three localized floods in the neighborhood since 2000, two within the last two years.

She contended that three specific actions by the city of Ann Arbor were responsible for the flooding – which resulted in her home now serving as the “neighborhood detention pond.” First, she said, residential development had been allowed north of Scio Church Road, which caused additional water to flow into the Churchill Downs neighborhood during bad storms. Second, she said, in 1998 the roads in the neighborhood (Wiltshire and Churchill) were resurfaced. But instead of removing older pavement, she said, new asphalt was just laid on top of the old. As a result of laying down new asphalt on top of the old, she described the crown of the road now as above the curb, and the curb as only two inches high. So any time the water gets deeper than two inches on the road during a storm, it's forced off the road into people's houses.



The third city action, she said, was the footing drain disconnection program implemented after the floods of 2000. Since that time, the city has known that the stormwater system in the Churchill Downs area is inadequate, she said. But in 2009 homeowners there had to participate in the footing drain disconnect program.

By way of background, the program requires disconnection of a property's footing drains to the sanitary sewer system, with a new connection made to the stormwater system. The move is meant to prevent the phenomenon of raw sewage backing up into people's basements – due to overloading the sanitary system, which is not designed to deal with the volume of water associated with storms. Fisher's contention is that the stormwater system in the neighborhood is also not adequate to handle the volume of water due to storms.

Fisher continued by describing another flood just a month ago, and showed the council a photo of her house, which she described as an island surrounded by water – 5-6 inches. Storm drain covers were blown off, and geysers shot up five feet into the air, she reported. Water flowed into their basement through the egress windows and up from the sump that was installed through the footing drain disconnect program.

The city of Ann Arbor has attributed this to an “act of god,” she said. But she called the flood in her basement an “act of the city.” She called on the city to accept responsibility. In the short term, she



Marcia Higgins (Ward 4) as she listens to Ellen Fisher's public comment on localized flooding issues. To Higgins' right (in green shirt) is Margie Teall (Ward 4). Fisher was speaking about flooding in Ward 4.

called for the city to solve the problem of water entering the basement through the sump and to cover the cost of cleanup and mitigation. In the long term, she said, the city needs to address flooding in the neighborhood. She presented the council with a petition signed by several residents of the neighborhood, many of whom were in the audience at city council chambers.

**Lowell Fisher**, Ellen Fisher's husband, spoke from his wheelchair. He told the council that the floods were taking an emotional and financial toll on him. The value of their home has plummeted, he said. They're afraid to restore their basement – so they're left with a basement they can't use. Because he can't visit all his children, they travel to visit him. They need their basement to host their children and grandchildren. Two years ago a flood cost

them \$20,000. But their claim for \$5,000 in cleanup costs was denied. Nothing was done by the city to prevent another occurrence, he said. He stressed that the floods are not freak storms. There had been storms for the last 26 years prior to the occurrence of flooding problems. He concluded that it's time for the city to take action. More than a dozen people stood in the audience to show support during Fisher's remarks.

#### **Comm/Comm: Smart Meters**

**Nanci Gerler** alluded to a mayoral proclamation that led off the meeting, which established April 22, 2012 as Earth Day in Ann Arbor – the 42nd anniversary of the international observation of Earth Day, which was launched in Ann Arbor on March 10-14, 1970.

Gerler told the council she'd attended the first Earth Day and still has an Earth Day button somewhere in her house. She told the council she appreciated being a part of a community that values the environment and accessibility for those with disabilities. She warned the council that DTE's smart meters had been introduced in Ann Arbor like a Trojan horse, using the guise of sustainability. Only recently had the meters been installed in Ann Arbor, she said, but other parts of the state had a longer experience with them. She told the council that 18 other municipalities have passed resolutions and moratoriums on smart meters, due to questions health safety and invasion of privacy, she said. Why not Ann Arbor? she wondered. Ann Arbor is usually progressive on such issues.

Gerler described how DTE is making no exceptions, and does not give consumers the right to opt out. She said that she'd been told by the Michigan Public Service Commission that if she refuses to allow installation, she could have her electricity shut off, even if she pays in a timely fashion. She offered to work with councilmembers to bring them up to speed on the issue. She asked councilmembers to help her get the message out.

**Darren Schmidt** introduced himself as the president and CEO of the Nutritional Healing Center of Ann Arbor. He described how the center helps people improve their health through nutrition. He said that a few years ago he became aware that some of the fatigue, memory loss, sleep disorders, and illnesses including Parkinson's Disease could be attributed to "dirty electricity" and magnetic fields. [The council's agenda included a mayoral proclamation establishing April as Parkinson's Disease Awareness Month.] He showed the council a book titled "Dirty Electricity," which that concluded electromagnetic frequencies and radio frequencies are the No. 1 cause of cancer in the U.S. He cited another book, titled "Zapped," that provides ways to avoid electromagnetic pollution.

Schmidt said 3-5% of the population are extremely sensitive to magnetic fields and 35-50% are somewhat sensitive, but may not know it. Most doctors don't know anything about this condition, he said. He had stumbled across it because his patients need the best care possible and they're not constrained by pharmaceutical requirements. He also showed the council a letter from the American Academy of Environmental Medicine. The president-elect of that organization, he said, is Amy Dean, who's a doctor of osteopathic medicine (D.O.) and based in Ann Arbor. The AAEM on April 12 released its position paper on electromagnetic fields and radio frequency health effects, and that paper had called for immediate caution on installation of "smart meters." He compared installing "smart meters"

in neighborhoods to “living in a microwave” that can’t be turned off.

### Comm/Comm: Affordable Services for Most Vulnerable

**Thomas Partridge** called on the council to fund services for the most vulnerable – from disabled citizens, to senior citizens, to the middle class – those who need job opportunities and access to public transportation to get to those jobs. He called for the nomination of Barack Obama for re-election as president of the United States.

**Present:** Jane Lumm, Mike Anglin, Margie Teall, Sabra Briere, Sandi Smith, Tony Derezinski, Stephen Kunselman, Marcia Higgins, John Hieftje, Christopher Taylor, Carsten Hohnke.

**Next council meeting:** Monday, May 7, 2012 at 7 p.m. in the second-floor council chambers at city hall, 301 E. Huron. [confirm date]

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## 12 Comments


1.  BY JIM REES  
APRIL 21, 2012 at 8:24 pm | [PERMALINK](#)

Did the airport runway extension study take into account the donut imbalance that will result from having a Tim Horton’s off the northeast end of the runway and no donuts off the southwest end?

On a more serious note, I was surprised to read in the Detroit Free Press that DTE has asked for a rate increase to pay for the new “smart” meters. I thought the whole idea was that they’d be cheaper because meter readers would no longer have to be sent out. If they end up costing us more than the old meters, what’s the point?


2.  BY TEACHERPATTI  
APRIL 21, 2012 at 11:16 pm | [PERMALINK](#)

Um, is that stuff about the smart meters and cancer and that true? Cuz I’m kind of worried.

3.  BY TOM WHITAKER  
APRIL 22, 2012 at 11:03 am | [PERMALINK](#)

I’m not clear on the biosolids contract that was approved. Is the City PAYING \$514K to have biosolids spread on farm fields, or is the City being PAID \$514K for providing this “fertilizer”?


If the City is paying, how much more or less is this cost per gallon (\$0.0321) than the cost of landfilling it?

4.  BY DAVE ASKINS  
APRIL 22, 2012 at 11:21 am | [PERMALINK](#)

Re: [3] It's the city's cost.

Assuming a weight of about 8 pounds a gallon, that works out to  $((US\$ 0.0321) / 8) * 2000 = 8.02500$  U.S. dollars per ton.


From minutes of a March 2012 meeting of the "organics subcommittee" of the solid waste unit (comparing the cost of processing organics versus landfilling them) it looks like the city currently pays \$26 per ton to put material in a landfill.

5.  BY TOM WHITAKER  
APRIL 22, 2012 at 10:30 pm | [PERMALINK](#)

Thanks, Dave.

While you were looking into that, I checked the web to see if Bio Tech Agronomics was affiliated with WeCare Organics, the firm running the City's compost facility. I could not find any connection between the two in the brief time I spent on it.

WeCare Organics blends biosolids into compost in other cities, and has affiliates that transport biosolids and make fertilizer products from blends of compost and biosolids. Some people expressed concern that WeCare would introduce biosolids into Ann Arbor's compost, but assurances were provided around the Council table that this would not happen and as far as I know, it hasn't happened.

6.  BY EDWARD VIELMETTI  
APRIL 23, 2012 at 12:03 am | [PERMALINK](#)

The "student press" alluded to in my commentary on minor-in-possession laws can be found starting here:

[\[link\]](#)


with this pull quote

"To combat the potential issue at the University, members of the Central Student Government — formerly known as the Michigan Student Assembly — are working on a proposal to implement medical amnesty at the University, a policy that would protect students from receiving an MIP if they call for alcohol-related medical attention for another person while also under the influence."


7.  BY LIEBEZEIT  
APRIL 23, 2012 at 5:14 am | [PERMALINK](#)

"He said that a few years ago he became aware that some of the fatigue, memory loss, sleep disorders, and illnesses including Parkinson's Disease could be attributed to "dirty electricity" and magnetic fields."

Hilarious...classic Ann Arbor.


8.  BY JIM REES  
APRIL 23, 2012 at 8:24 am | [PERMALINK](#)

If you are concerned about the electromagnetic fields from your electric service, there is a simple solution. Call up DTE and ask them to remove the meter.

9.  BY DAVE ASKINS  
APRIL 23, 2012 at 10:18 am | [PERMALINK](#)

Re: [8] Calling DTE and asking them to remove the meter.


Our smart meter was installed a few weeks ago. I called customer service just now to test whether a simple phone call could do the trick. According to the customer service representative I talked to, there's currently no provision for opting out either before or after the fact. However, she indicated that talks are taking place between DTE and the [Michigan Public Service Commission](#) about providing customers the ability to opt out. To be clear, I'm not actually interested in having the "smart meter" removed; I was just following up on Jim's suggestion.

10.  BY DAVE ASKINS  
APRIL 23, 2012 at 10:51 am | [PERMALINK](#)


And to follow up on [9], the "talks" that are taking place between DTE and MPSC can be more precisely described as follows, based on a conversation with MPSC just now.

On Jan. 12, [MPSC issued an order](#) requiring utilities to file information with MPSC about "smart meter" rollout plans, including estimated cost, funding, estimated savings, and non-monetary benefits, scientific information, and whether an opt out would be provided (included how costs associated with opt outs might be recovered.) The deadline for that filing was March 16, [which DTE met](#). Public comment on that was open through April 16. The information filed in response to MPSC's order will all be compiled into a report, supplemented with independent review of relevant literature, and produced by June 29. At that point, MPSC commissioners will have a document on the basis of which they could issue further orders or weigh future rate cases brought by DTE before the MPSC.

Also in the mix is pending [House Bill 5439](#), which would legislatively provide for an opt-out by consumers and regulate how data collected by the meters is used.

11.  BY JIM REES  
APRIL 23, 2012 at 1:03 pm | [PERMALINK](#)

Dave, you misunderstood me. You are perfectly within your rights to have the meter removed, and if DTE won't do it, you can remove it yourself (safely, please!). You will then be left with no electromagnetic fields in your house from your DTE electric service. You will also have no electricity.

12.  BY DAVE ASKINS  
APRIL 23, 2012 at 1:09 pm | [PERMALINK](#)

Re: [11] Ah! Yes, I did misunderstand you.

# Exhibit 21





**FAA  
Airports**

## **Grant Assurances Airport Sponsors**

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### **A. General.**

1. These assurances shall be complied with in the performance of grant agreements for airport development, airport planning, and noise compatibility program grants for airport sponsors.
2. These assurances are required to be submitted as part of the project application by sponsors requesting funds under the provisions of Title 49, U.S.C., subtitle VII, as amended. As used herein, the term "public agency sponsor" means a public agency with control of a public-use airport; the term "private sponsor" means a private owner of a public-use airport; and the term "sponsor" includes both public agency sponsors and private sponsors.
3. Upon acceptance of this grant offer by the sponsor, these assurances are incorporated in and become part of this grant agreement.

### **B. Duration and Applicability.**

1. **Airport development or Noise Compatibility Program Projects Undertaken by a Public Agency Sponsor.** The terms, conditions and assurances of this grant agreement shall remain in full force and effect throughout the useful life of the facilities developed or equipment acquired for an airport development or noise compatibility program project, or throughout the useful life of the project items installed within a facility under a noise compatibility program project, but in any event not to exceed twenty (20) years from the date of acceptance of a grant offer of Federal funds for the project. However, there shall be no limit on the duration of the assurances regarding Exclusive Rights and Airport Revenue so long as the airport is used as an airport. There shall be no limit on the duration of the terms, conditions, and assurances with respect to real property acquired with federal funds. Furthermore, the duration of the Civil Rights assurance shall be specified in the assurances.
2. **Airport Development or Noise Compatibility Projects Undertaken by a Private Sponsor.** The preceding paragraph 1 also applies to a private sponsor except that the useful life of project items installed within a facility or the useful life of the facilities developed or equipment acquired under an airport development or noise compatibility program project shall be no less than ten (10) years from the date of acceptance of Federal aid for the project.

- 3. Airport Planning Undertaken by a Sponsor.** Unless otherwise specified in this grant agreement, only Assurances 1, 2, 3, 5, 6, 13, 18, 30, 32, 33, and 34 in section C apply to planning projects. The terms, conditions, and assurances of this grant agreement shall remain in full force and effect during the life of the project.

**C. Sponsor Certification.** The sponsor hereby assures and certifies, with respect to this grant that:

- 1. General Federal Requirements.** It will comply with all applicable Federal laws, regulations, executive orders, policies, guidelines, and requirements as they relate to the application, acceptance and use of Federal funds for this project including but not limited to the following:

#### **Federal Legislation**

- a. Title 49, U.S.C., subtitle VII, as amended.
- b. Davis-Bacon Act - 40 U.S.C. 276(a), et seq.<sup>1</sup>
- c. Federal Fair Labor Standards Act - 29 U.S.C. 201, et seq.
- d. Hatch Act – 5 U.S.C. 1501, et seq.<sup>2</sup>
- e. Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 Title 42 U.S.C. 4601, et seq.<sup>1 2</sup>
- f. National Historic Preservation Act of 1966 - Section 106 - 16 U.S.C. 470(f).<sup>1</sup>
- g. Archeological and Historic Preservation Act of 1974 - 16 U.S.C. 469 through 469c.<sup>1</sup>
- h. Native Americans Grave Repatriation Act - 25 U.S.C. Section 3001, et seq.
- i. Clean Air Act, P.L. 90-148, as amended.
- j. Coastal Zone Management Act, P.L. 93-205, as amended.
- k. Flood Disaster Protection Act of 1973 - Section 102(a) - 42 U.S.C. 4012a.<sup>1</sup>
- l. Title 49, U.S.C., Section 303, (formerly known as Section 4(f))
- m. Rehabilitation Act of 1973 - 29 U.S.C. 794.
- n. Civil Rights Act of 1964 - Title VI - 42 U.S.C. 2000d through d-4.
- o. Age Discrimination Act of 1975 - 42 U.S.C. 6101, et seq.
- p. American Indian Religious Freedom Act, P.L. 95-341, as amended.
- q. Architectural Barriers Act of 1968 -42 U.S.C. 4151, et seq.<sup>1</sup>
- r. Power plant and Industrial Fuel Use Act of 1978 - Section 403- 2 U.S.C. 8373.<sup>1</sup>
- s. Contract Work Hours and Safety Standards Act - 40 U.S.C. 327, et seq.<sup>1</sup>
- t. Copeland Anti kickback Act - 18 U.S.C. 874.1
- u. National Environmental Policy Act of 1969 - 42 U.S.C. 4321, et seq.<sup>1</sup>
- v. Wild and Scenic Rivers Act, P.L. 90-542, as amended.
- w. Single Audit Act of 1984 - 31 U.S.C. 7501, et seq.<sup>2</sup>
- x. Drug-Free Workplace Act of 1988 - 41 U.S.C. 702 through 706.

#### **Executive Orders**

Executive Order 11246 - Equal Employment Opportunity<sup>1</sup>  
Executive Order 11990 - Protection of Wetlands  
Executive Order 11998 – Flood Plain Management  
Executive Order 12372 - Intergovernmental Review of Federal Programs  
Executive Order 12699 - Seismic Safety of Federal and Federally Assisted New  
Building Construction<sup>1</sup>  
Executive Order 12898 - Environmental Justice

### **Federal Regulations**

- a. 14 CFR Part 13 - Investigative and Enforcement Procedures.
- b. 14 CFR Part 16 - Rules of Practice For Federally Assisted Airport Enforcement Proceedings.
- c. 14 CFR Part 150 - Airport noise compatibility planning.
- d. 29 CFR Part 1 - Procedures for predetermination of wage rates.<sup>1</sup>
- e. 29 CFR Part 3 - Contractors and subcontractors on public building or public work financed in whole or part by loans or grants from the United States.<sup>1</sup>
- f. 29 CFR Part 5 - Labor standards provisions applicable to contracts covering federally financed and assisted construction (also labor standards provisions applicable to non-construction contracts subject to the Contract Work Hours and Safety Standards Act).<sup>1</sup>
- g. 41 CFR Part 60 - Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor (Federal and federally assisted contracting requirements).<sup>1</sup>
- h. 49 CFR Part 18 - Uniform administrative requirements for grants and cooperative agreements to state and local governments.<sup>3</sup>
- i. 49 CFR Part 20 - New restrictions on lobbying.
- j. 49 CFR Part 21 - Nondiscrimination in federally-assisted programs of the Department of Transportation - effectuation of Title VI of the Civil Rights Act of 1964.
- k. 49 CFR Part 23 - Participation by Disadvantage Business Enterprise in Airport Concessions.
- l. 49 CFR Part 24 - Uniform relocation assistance and real property acquisition for Federal and federally assisted programs.<sup>1,2</sup>
- m. 49 CFR Part 26 – Participation By Disadvantaged Business Enterprises in Department of Transportation Programs.
- n. 49 CFR Part 27 - Nondiscrimination on the basis of handicap in programs and activities receiving or benefiting from Federal financial assistance.<sup>1</sup>
- o. 49 CFR Part 29 – Government wide debarment and suspension (nonprocurement) and government wide requirements for drug-free workplace (grants).
- p. 49 CFR Part 30 - Denial of public works contracts to suppliers of goods and services of countries that deny procurement market access to U.S. contractors.

- q. 49 CFR Part 41 - Seismic safety of Federal and federally assisted or regulated new building construction.<sup>1</sup>

#### **Office of Management and Budget Circulars**

- a. A-87 - Cost Principles Applicable to Grants and Contracts with State and Local Governments.
- b. A-133 - Audits of States, Local Governments, and Non-Profit Organizations

<sup>1</sup> These laws do not apply to airport planning sponsors.

<sup>2</sup> These laws do not apply to private sponsors.

<sup>3</sup> 49 CFR Part 18 and OMB Circular A-87 contain requirements for State and Local Governments receiving Federal assistance. Any requirement levied upon State and Local Governments by this regulation and circular shall also be applicable to private sponsors receiving Federal assistance under Title 49, United States Code.

Specific assurances required to be included in grant agreements by any of the above laws, regulations or circulars are incorporated by reference in this grant agreement.

#### **2. Responsibility and Authority of the Sponsor.**

- a. **Public Agency Sponsor:** It has legal authority to apply for this grant, and to finance and carry out the proposed project; that a resolution, motion or similar action has been duly adopted or passed as an official act of the applicant's governing body authorizing the filing of the application, including all understandings and assurances contained therein, and directing and authorizing the person identified as the official representative of the applicant to act in connection with the application and to provide such additional information as may be required.
- b. **Private Sponsor:** It has legal authority to apply for this grant and to finance and carry out the proposed project and comply with all terms, conditions, and assurances of this grant agreement. It shall designate an official representative and shall in writing direct and authorize that person to file this application, including all understandings and assurances contained therein; to act in connection with this application; and to provide such additional information as may be required.

#### **3. Sponsor Fund Availability.** It has sufficient funds available for that portion of the project costs which are not to be paid by the United States. It has sufficient funds available to assure operation and maintenance of items funded under this grant agreement which it will own or control.

#### **4. Good Title.**

- a. It, a public agency or the Federal government, holds good title, satisfactory to the Secretary, to the landing area of the airport or site thereof, or will give assurance satisfactory to the Secretary that good title will be acquired.

- b. For noise compatibility program projects to be carried out on the property of the sponsor, it holds good title satisfactory to the Secretary to that portion of the property upon which Federal funds will be expended or will give assurance to the Secretary that good title will be obtained.

**5. Preserving Rights and Powers.**

- a. It will not take or permit any action which would operate to deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in this grant agreement without the written approval of the Secretary, and will act promptly to acquire, extinguish or modify any outstanding rights or claims of right of others which would interfere with such performance by the sponsor. This shall be done in a manner acceptable to the Secretary.
- b. It will not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the property shown on Exhibit A to this application or, for a noise compatibility program project, that portion of the property upon which Federal funds have been expended, for the duration of the terms, conditions, and assurances in this grant agreement without approval by the Secretary. If the transferee is found by the Secretary to be eligible under Title 49, United States Code, to assume the obligations of this grant agreement and to have the power, authority, and financial resources to carry out all such obligations, the sponsor shall insert in the contract or document transferring or disposing of the sponsor's interest, and make binding upon the transferee all of the terms, conditions, and assurances contained in this grant agreement.
- c. For all noise compatibility program projects which are to be carried out by another unit of local government or are on property owned by a unit of local government other than the sponsor, it will enter into an agreement with that government. Except as otherwise specified by the Secretary, that agreement shall obligate that government to the same terms, conditions, and assurances that would be applicable to it if it applied directly to the FAA for a grant to undertake the noise compatibility program project. That agreement and changes thereto must be satisfactory to the Secretary. It will take steps to enforce this agreement against the local government if there is substantial non-compliance with the terms of the agreement.
- d. For noise compatibility program projects to be carried out on privately owned property, it will enter into an agreement with the owner of that property which includes provisions specified by the Secretary. It will take steps to enforce this agreement against the property owner whenever there is substantial non-compliance with the terms of the agreement.
- e. If the sponsor is a private sponsor, it will take steps satisfactory to the Secretary to ensure that the airport will continue to function as a public-use airport in accordance with these assurances for the duration of these assurances.
- f. If an arrangement is made for management and operation of the airport by any agency or person other than the sponsor or an employee of the sponsor, the sponsor will reserve sufficient rights and authority to insure

that the airport will be operated and maintained in accordance Title 49, United States Code, the regulations and the terms, conditions and assurances in this grant agreement and shall insure that such arrangement also requires compliance therewith.

- g. Sponsors of commercial service airports will not permit or enter into any arrangement that results in permission for the owner or tenant of a property used as a residence, or zoned for residential use, to taxi an aircraft between that property and any location on airport. Sponsors of general aviation airports entering into any arrangement that results in permission for the owner of residential real property adjacent to or near the airport must comply with the requirements of Sec. 136 of Public Law 112-95 and the sponsor assurances.

6. **Consistency with Local Plans.** The project is reasonably consistent with plans (existing at the time of submission of this application) of public agencies that are authorized by the State in which the project is located to plan for the development of the area surrounding the airport.
7. **Consideration of Local Interest.** It has given fair consideration to the interest of communities in or near where the project may be located.
8. **Consultation with Users.** In making a decision to undertake any airport development project under Title 49, United States Code, it has undertaken reasonable consultations with affected parties using the airport at which project is proposed.
9. **Public Hearings.** In projects involving the location of an airport, an airport runway, or a major runway extension, it has afforded the opportunity for public hearings for the purpose of considering the economic, social, and environmental effects of the airport or runway location and its consistency with goals and objectives of such planning as has been carried out by the community and it shall, when requested by the Secretary, submit a copy of the transcript of such hearings to the Secretary. Further, for such projects, it has on its management board either voting representation from the communities where the project is located or has advised the communities that they have the right to petition the Secretary concerning a proposed project.
10. **Air and Water Quality Standards.** In projects involving airport location, a major runway extension, or runway location it will provide for the Governor of the state in which the project is located to certify in writing to the Secretary that the project will be located, designed, constructed, and operated so as to comply with applicable air and water quality standards. In any case where such standards have not been approved and where applicable air and water quality standards have been promulgated by the Administrator of the Environmental Protection Agency, certification shall be obtained from such Administrator. Notice of certification or refusal to certify shall be provided within sixty days after the project application has been received by the Secretary.
11. **Pavement Preventive Maintenance.** With respect to a project approved after January 1, 1995, for the replacement or reconstruction of pavement at the airport,

it assures or certifies that it has implemented an effective airport pavement maintenance-management program and it assures that it will use such program for the useful life of any pavement constructed, reconstructed or repaired with Federal financial assistance at the airport. It will provide such reports on pavement condition and pavement management programs as the Secretary determines may be useful.

- 12. Terminal Development Prerequisites.** For projects which include terminal development at a public use airport, as defined in Title 49, it has, on the date of submittal of the project grant application, all the safety equipment required for certification of such airport under section 44706 of Title 49, United States Code, and all the security equipment required by rule or regulation, and has provided for access to the passenger enplaning and deplaning area of such airport to passengers enplaning and deplaning from aircraft other than air carrier aircraft.
- 13. Accounting System, Audit, and Record Keeping Requirements.**

  - a. It shall keep all project accounts and records which fully disclose the amount and disposition by the recipient of the proceeds of this grant, the total cost of the project in connection with which this grant is given or used, and the amount or nature of that portion of the cost of the project supplied by other sources, and such other financial records pertinent to the project. The accounts and records shall be kept in accordance with an accounting system that will facilitate an effective audit in accordance with the Single Audit Act of 1984.
  - b. It shall make available to the Secretary and the Comptroller General of the United States, or any of their duly authorized representatives, for the purpose of audit and examination, any books, documents, papers, and records of the recipient that are pertinent to this grant. The Secretary may require that an appropriate audit be conducted by a recipient. In any case in which an independent audit is made of the accounts of a sponsor relating to the disposition of the proceeds of a grant or relating to the project in connection with which this grant was given or used, it shall file a certified copy of such audit with the Comptroller General of the United States not later than six (6) months following the close of the fiscal year for which the audit was made.
- 14. Minimum Wage Rates.** It shall include, in all contracts in excess of \$2,000 for work on any projects funded under this grant agreement which involve labor, provisions establishing minimum rates of wages, to be predetermined by the Secretary of Labor, in accordance with the Davis-Bacon Act, as amended (40 U.S.C. 276a-276a-5), which contractors shall pay to skilled and unskilled labor, and such minimum rates shall be stated in the invitation for bids and shall be included in proposals or bids for the work.
- 15. Veteran's Preference.** It shall include in all contracts for work on any project funded under this grant agreement which involve labor, such provisions as are necessary to insure that, in the employment of labor (except in executive, administrative, and supervisory positions), preference shall be given to Vietnam

era veterans, Persian Gulf veterans, Afghanistan-Iraq war veterans, disabled veterans, and small business concerns owned and controlled by disabled veterans as defined in Section 47112 of Title 49, United States Code. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

- 16. Conformity to Plans and Specifications.** It will execute the project subject to plans, specifications, and schedules approved by the Secretary. Such plans, specifications, and schedules shall be submitted to the Secretary prior to commencement of site preparation, construction, or other performance under this grant agreement, and, upon approval of the Secretary, shall be incorporated into this grant agreement. Any modification to the approved plans, specifications, and schedules shall also be subject to approval of the Secretary, and incorporated into this grant agreement.
- 17. Construction Inspection and Approval.** It will provide and maintain competent technical supervision at the construction site throughout the project to assure that the work conforms to the plans, specifications, and schedules approved by the Secretary for the project. It shall subject the construction work on any project contained in an approved project application to inspection and approval by the Secretary and such work shall be in accordance with regulations and procedures prescribed by the Secretary. Such regulations and procedures shall require such cost and progress reporting by the sponsor or sponsors of such project as the Secretary shall deem necessary.
- 18. Planning Projects.** In carrying out planning projects:

  - a. It will execute the project in accordance with the approved program narrative contained in the project application or with the modifications similarly approved.
  - b. It will furnish the Secretary with such periodic reports as required pertaining to the planning project and planning work activities.
  - c. It will include in all published material prepared in connection with the planning project a notice that the material was prepared under a grant provided by the United States.
  - d. It will make such material available for examination by the public, and agrees that no material prepared with funds under this project shall be subject to copyright in the United States or any other country.
  - e. It will give the Secretary unrestricted authority to publish, disclose, distribute, and otherwise use any of the material prepared in connection with this grant.
  - f. It will grant the Secretary the right to disapprove the sponsor's employment of specific consultants and their subcontractors to do all or any part of this project as well as the right to disapprove the proposed scope and cost of professional services.
  - g. It will grant the Secretary the right to disapprove the use of the sponsor's employees to do all or any part of the project.
  - h. It understands and agrees that the Secretary's approval of this project grant or the Secretary's approval of any planning material developed as part of



this grant does not constitute or imply any assurance or commitment on the part of the Secretary to approve any pending or future application for a Federal airport grant.

**19. Operation and Maintenance.**

- a. The airport and all facilities which are necessary to serve the aeronautical users of the airport, other than facilities owned or controlled by the United States, shall be operated at all times in a safe and serviceable condition and in accordance with the minimum standards as may be required or prescribed by applicable Federal, state and local agencies for maintenance and operation. It will not cause or permit any activity or action thereon which would interfere with its use for airport purposes. It will suitably operate and maintain the airport and all facilities thereon or connected therewith, with due regard to climatic and flood conditions. Any proposal to temporarily close the airport for non-aeronautical purposes must first be approved by the Secretary. In furtherance of this assurance, the sponsor will have in effect arrangements for-
- 1) Operating the airport's aeronautical facilities whenever required;
  - 2) Promptly marking and lighting hazards resulting from airport conditions, including temporary conditions; and
  - 3) Promptly notifying airmen of any condition affecting aeronautical use of the airport. Nothing contained herein shall be construed to require that the airport be operated for aeronautical use during temporary periods when snow, flood or other climatic conditions interfere with such operation and maintenance. Further, nothing herein shall be construed as requiring the maintenance, repair, restoration, or replacement of any structure or facility which is substantially damaged or destroyed due to an act of God or other condition or circumstance beyond the control of the sponsor.
- b. It will suitably operate and maintain noise compatibility program items that it owns or controls upon which Federal funds have been expended.

**20. Hazard Removal and Mitigation.** It will take appropriate action to assure that such terminal airspace as is required to protect instrument and visual operations to the airport (including established minimum flight altitudes) will be adequately cleared and protected by removing, lowering, relocating, marking, or lighting or otherwise mitigating existing airport hazards and by preventing the establishment or creation of future airport hazards.

**21. Compatible Land Use.** It will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. In addition, if the project is for noise compatibility program implementation, it will not cause or permit any change in land use, within its jurisdiction, that will reduce its compatibility, with respect to the airport, of the noise compatibility program measures upon which Federal funds have been expended.

**22. Economic Nondiscrimination.**

- a. It will make the airport available as an airport for public use on reasonable terms and without unjust discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport.
- b. In any agreement, contract, lease, or other arrangement under which a right or privilege at the airport is granted to any person, firm, or corporation to conduct or to engage in any aeronautical activity for furnishing services to the public at the airport, the sponsor will insert and enforce provisions requiring the contractor to-
  - 1) furnish said services on a reasonable, and not unjustly discriminatory, basis to all users thereof, and
  - 2) charge reasonable, and not unjustly discriminatory, prices for each unit or service, provided that the contractor may be allowed to make reasonable and nondiscriminatory discounts, rebates, or other similar types of price reductions to volume purchasers.
- c. Each fixed-based operator at the airport shall be subject to the same rates, fees, rentals, and other charges as are uniformly applicable to all other fixed-based operators making the same or similar uses of such airport and utilizing the same or similar facilities.
- d. Each air carrier using such airport shall have the right to service itself or to use any fixed-based operator that is authorized or permitted by the airport to serve any air carrier at such airport.
- e. Each air carrier using such airport (whether as a tenant, non tenant, or subtenant of another air carrier tenant) shall be subject to such nondiscriminatory and substantially comparable rules, regulations, conditions, rates, fees, rentals, and other charges with respect to facilities directly and substantially related to providing air transportation as are applicable to all such air carriers which make similar use of such airport and utilize similar facilities, subject to reasonable classifications such as tenants or non tenants and signatory carriers and non signatory carriers. Classification or status as tenant or signatory shall not be unreasonably withheld by any airport provided an air carrier assumes obligations substantially similar to those already imposed on air carriers in such classification or status.
- f. It will not exercise or grant any right or privilege which operates to prevent any person, firm, or corporation operating aircraft on the airport from performing any services on its own aircraft with its own employees [including, but not limited to maintenance, repair, and fueling] that it may choose to perform.
- g. In the event the sponsor itself exercises any of the rights and privileges referred to in this assurance, the services involved will be provided on the same conditions as would apply to the furnishing of such services by commercial aeronautical service providers authorized by the sponsor under these provisions.

- h. The sponsor may establish such reasonable, and not unjustly discriminatory, conditions to be met by all users of the airport as may be necessary for the safe and efficient operation of the airport.
- i. The sponsor may prohibit or limit any given type, kind or class of aeronautical use of the airport if such action is necessary for the safe operation of the airport or necessary to serve the civil aviation needs of the public.

**23. Exclusive Rights.** It will permit no exclusive right for the use of the airport by any person providing, or intending to provide, aeronautical services to the public. For purposes of this paragraph, the providing of the services at an airport by a single fixed-based operator shall not be construed as an exclusive right if both of the following apply:

- a. It would be unreasonably costly, burdensome, or impractical for more than one fixed-based operator to provide such services, and
- b. If allowing more than one fixed-based operator to provide such services would require the reduction of space leased pursuant to an existing agreement between such single fixed-based operator and such airport. It further agrees that it will not, either directly or indirectly, grant or permit any person, firm, or corporation, the exclusive right at the airport to conduct any aeronautical activities, including, but not limited to charter flights, pilot training, aircraft rental and sightseeing, aerial photography, crop dusting, aerial advertising and surveying, air carrier operations, aircraft sales and services, sale of aviation petroleum products whether or not conducted in conjunction with other aeronautical activity, repair and maintenance of aircraft, sale of aircraft parts, and any other activities which because of their direct relationship to the operation of aircraft can be regarded as an aeronautical activity, and that it will terminate any exclusive right to conduct an aeronautical activity now existing at such an airport before the grant of any assistance under Title 49, United States Code.

**24. Fee and Rental Structure.** It will maintain a fee and rental structure for the facilities and services at the airport which will make the airport as self-sustaining as possible under the circumstances existing at the particular airport, taking into account such factors as the volume of traffic and economy of collection. No part of the Federal share of an airport development, airport planning or noise compatibility project for which a grant is made under Title 49, United States Code, the Airport and Airway Improvement Act of 1982, the Federal Airport Act or the Airport and Airway Development Act of 1970 shall be included in the rate basis in establishing fees, rates, and charges for users of that airport.

**25. Airport Revenues.**

- a. All revenues generated by the airport and any local taxes on aviation fuel established after December 30, 1987, will be expended by it for the capital or operating costs of the airport; the local airport system; or other local facilities which are owned or operated by the owner or operator of the

airport and which are directly and substantially related to the actual air transportation of passengers or property; or for noise mitigation purposes on or off the airport. The following exceptions apply to this paragraph:

- 1) If covenants or assurances in debt obligations issued before September 3, 1982, by the owner or operator of the airport, or provisions enacted before September 3, 1982, in governing statutes controlling the owner or operator's financing, provide for the use of the revenues from any of the airport owner or operator's facilities, including the airport, to support not only the airport but also the airport owner or operator's general debt obligations or other facilities, then this limitation on the use of all revenues generated by the airport (and, in the case of a public airport, local taxes on aviation fuel) shall not apply.
  - 2) If the Secretary approves the sale of a privately owned airport to a public sponsor and provides funding for any portion of the public sponsor's acquisition of land, this limitation on the use of all revenues generated by the sale shall not apply to certain proceeds from the sale. This is conditioned on repayment to the Secretary by the private owner of an amount equal to the remaining unamortized portion (amortized over a 20-year period) of any airport improvement grant made to the private owner for any purpose other than land acquisition on or after October 1, 1996, plus an amount equal to the federal share of the current fair market value of any land acquired with an airport improvement grant made to that airport on or after October 1, 1996.
  - 3) Certain revenue derived from or generated by mineral extraction, production, lease, or other means at a general aviation airport (as defined at Section 47102 of title 49 United States Code), if the FAA determines the airport sponsor meets the requirements set forth in Sec. 813 of Public Law 112-95.
- b. As part of the annual audit required under the Single Audit Act of 1984, the sponsor will direct that the audit will review, and the resulting audit report will provide an opinion concerning, the use of airport revenue and taxes in paragraph (a), and indicating whether funds paid or transferred to the owner or operator are paid or transferred in a manner consistent with Title 49, United States Code and any other applicable provision of law, including any regulation promulgated by the Secretary or Administrator.
  - c. Any civil penalties or other sanctions will be imposed for violation of this assurance in accordance with the provisions of Section 47107 of Title 49, United States Code.

**26. Reports and Inspections.** It will:

- a. submit to the Secretary such annual or special financial and operations reports as the Secretary may reasonably request and make such reports

available to the public; make available to the public at reasonable times and places a report of the airport budget in a format prescribed by the Secretary;

- b. for airport development projects, make the airport and all airport records and documents affecting the airport, including deeds, leases, operation and use agreements, regulations and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request;
- c. for noise compatibility program projects, make records and documents relating to the project and continued compliance with the terms, conditions, and assurances of this grant agreement including deeds, leases, agreements, regulations, and other instruments, available for inspection by any duly authorized agent of the Secretary upon reasonable request; and
- d. in a format and time prescribed by the Secretary, provide to the Secretary and make available to the public following each of its fiscal years, an annual report listing in detail:
  - 1) all amounts paid by the airport to any other unit of government and the purposes for which each such payment was made; and
  - 2) all services and property provided by the airport to other units of government and the amount of compensation received for provision of each such service and property.

**27. Use by Government Aircraft.** It will make available all of the facilities of the airport developed with Federal financial assistance and all those usable for landing and takeoff of aircraft to the United States for use by Government aircraft in common with other aircraft at all times without charge, except, if the use by Government aircraft is substantial, charge may be made for a reasonable share, proportional to such use, for the cost of operating and maintaining the facilities used. Unless otherwise determined by the Secretary, or otherwise agreed to by the sponsor and the using agency, substantial use of an airport by Government aircraft will be considered to exist when operations of such aircraft are in excess of those which, in the opinion of the Secretary, would unduly interfere with use of the landing areas by other authorized aircraft, or during any calendar month that –

- a. Five (5) or more Government aircraft are regularly based at the airport or on land adjacent thereto; or
- b. The total number of movements (counting each landing as a movement) of Government aircraft is 300 or more, or the gross accumulative weight of Government aircraft using the airport (the total movement of Government aircraft multiplied by gross weights of such aircraft) is in excess of five million pounds.

**28. Land for Federal Facilities.** It will furnish without cost to the Federal Government for use in connection with any air traffic control or air navigation activities, or weather-reporting and communication activities related to air traffic control, any areas of land or water, or estate therein, or rights in buildings of the sponsor as the Secretary considers necessary or desirable for construction, operation, and maintenance at Federal expense of space or facilities for such

purposes. Such areas or any portion thereof will be made available as provided herein within four months after receipt of a written request from the Secretary.

**29. Airport Layout Plan.**

- a. It will keep up to date at all times an airport layout plan of the airport showing (1) boundaries of the airport and all proposed additions thereto, together with the boundaries of all offsite areas owned or controlled by the sponsor for airport purposes and proposed additions thereto; (2) the location and nature of all existing and proposed airport facilities and structures (such as runways, taxiways, aprons, terminal buildings, hangars and roads), including all proposed extensions and reductions of existing airport facilities; (3) the location of all existing and proposed nonaviation areas and of all existing improvements thereon; and (4) all proposed and existing access points used to taxi aircraft across the airport's property boundary. Such airport layout plans and each amendment, revision, or modification thereof, shall be subject to the approval of the Secretary which approval shall be evidenced by the signature of a duly authorized representative of the Secretary on the face of the airport layout plan. The sponsor will not make or permit any changes or alterations in the airport or any of its facilities which are not in conformity with the airport layout plan as approved by the Secretary and which might, in the opinion of the Secretary, adversely affect the safety, utility or efficiency of the airport.
- b. If a change or alteration in the airport or the facilities is made which the Secretary determines adversely affects the safety, utility, or efficiency of any federally owned, leased, or funded property on or off the airport and which is not in conformity with the airport layout plan as approved by the Secretary, the owner or operator will, if requested, by the Secretary (1) eliminate such adverse effect in a manner approved by the Secretary; or (2) bear all costs of relocating such property (or replacement thereof) to a site acceptable to the Secretary and all costs of restoring such property (or replacement thereof) to the level of safety, utility, efficiency, and cost of operation existing before the unapproved change in the airport or its facilities except in the case of a relocation or replacement of an existing airport facility due to a change in the Secretary's design standards beyond the control of the airport sponsor.

- 30. Civil Rights.** It will comply with such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from funds received from this grant. This assurance obligates the sponsor for the period during which Federal financial assistance is extended to the program, except where Federal financial assistance is to provide, or is in the form of personal property or real property or interest therein or structures or improvements thereon in which case the assurance obligates the sponsor or any transferee for the longer of the following periods: (a) the period during which the property is used for a purpose for which Federal financial assistance is extended, or for another purpose involving the provision of similar services or benefits, or

(b) the period during which the sponsor retains ownership or possession of the property.

**31. Disposal of Land.**

- a. For land purchased under a grant for airport noise compatibility purposes, including land serving as a noise buffer, it will dispose of the land, when the land is no longer needed for such purposes, at fair market value, at the earliest practicable time. That portion of the proceeds of such disposition which is proportionate to the United States' share of acquisition of such land will be, at the discretion of the Secretary, (1) reinvested in another project at the airport, or (2) transferred to another eligible airport as prescribed by the Secretary. The Secretary shall give preference to the following, in descending order, (1) reinvestment in an approved noise compatibility project, (2) reinvestment in an approved project that is eligible for grant funding under Section 47117(e) of title 49 United States Code, (3) reinvestment in an approved airport development project that is eligible for grant funding under Sections 47114, 47115, or 47117 of title 49 United States Code, (4) transferred to an eligible sponsor of another public airport to be reinvested in an approved noise compatibility project at that airport, and (5) paid to the Secretary for deposit in the Airport and Airway Trust Fund. If land acquired under a grant for noise compatibility purposes is leased at fair market value and consistent with noise buffering purposes, the lease will not be considered a disposal of the land. Revenues derived from such a lease may be used for an approved airport development project that would otherwise be eligible for grant funding or any permitted use of airport revenue.
- b. For land purchased under a grant for airport development purposes (other than noise compatibility), it will, when the land is no longer needed for airport purposes, dispose of such land at fair market value or make available to the Secretary an amount equal to the United States' proportionate share of the fair market value of the land. That portion of the proceeds of such disposition which is proportionate to the United States' share of the cost of acquisition of such land will, (1) upon application to the Secretary, be reinvested or transferred to another eligible airport as prescribed by the Secretary. The Secretary shall give preference to the following, in descending order: (1) reinvestment in an approved noise compatibility project, (2) reinvestment in an approved project that is eligible for grant funding under Section 47117(e) of title 49 United States Code, (3) reinvestment in an approved airport development project that is eligible for grant funding under Sections 47114, 47115, or 47117 of title 49 United States Code, (4) transferred to an eligible sponsor of another public airport to be reinvested in an approved noise compatibility project at that airport, and (5) paid to the Secretary for deposit in the Airport and Airway Trust Fund.
- c. Land shall be considered to be needed for airport purposes under this assurance if (1) it may be needed for aeronautical purposes (including runway protection zones) or serve as noise buffer land, and (2) the revenue

from interim uses of such land contributes to the financial self-sufficiency of the airport. Further, land purchased with a grant received by an airport operator or owner before December 31, 1987, will be considered to be needed for airport purposes if the Secretary or Federal agency making such grant before December 31, 1987, was notified by the operator or owner of the uses of such land, did not object to such use, and the land continues to be used for that purpose, such use having commenced no later than December 15, 1989.

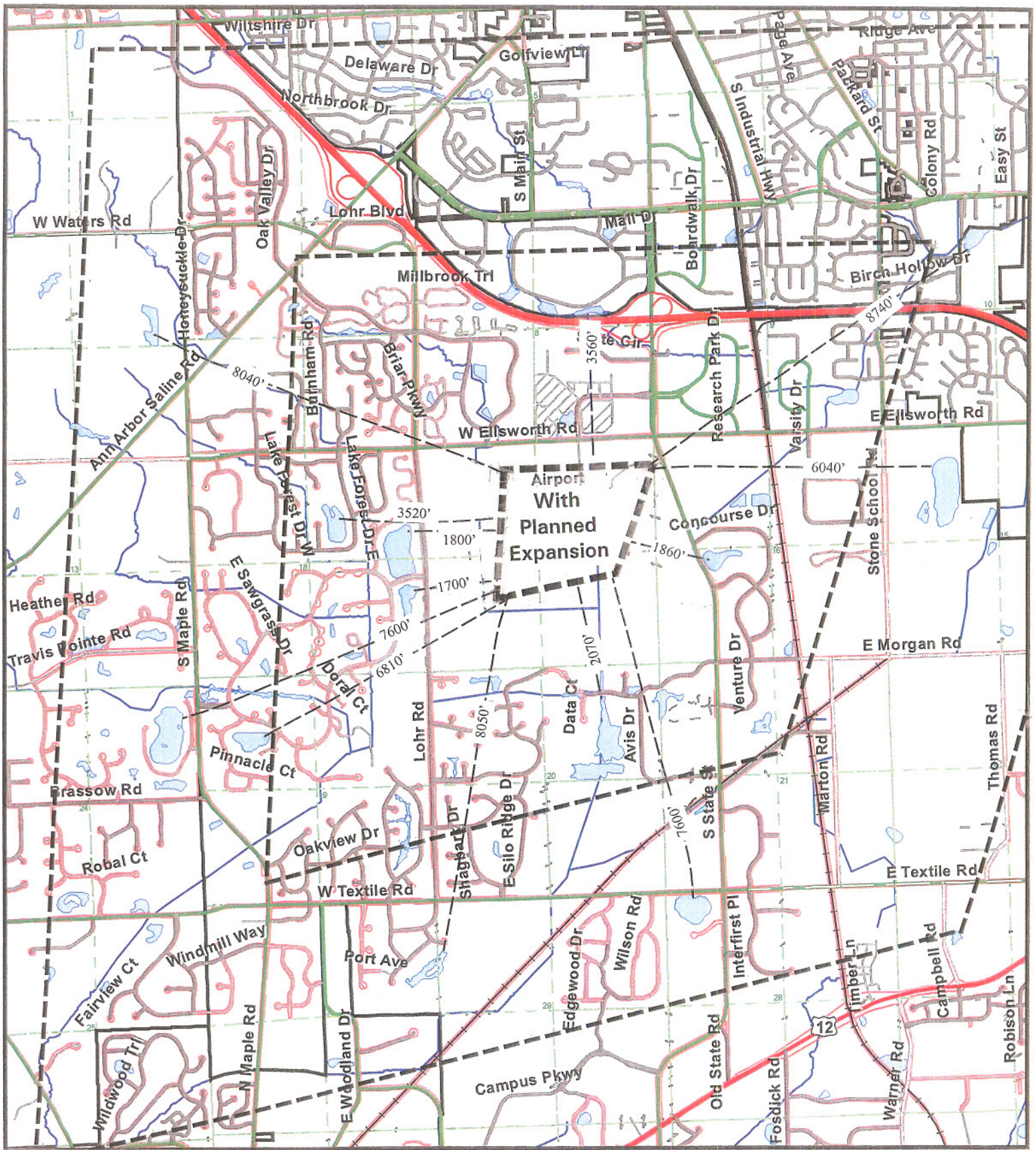
- d. Disposition of such land under (a) (b) or (c) will be subject to the retention or reservation of any interest or right therein necessary to ensure that such land will only be used for purposes which are compatible with noise levels associated with operation of the airport.
32. **Engineering and Design Services.** It will award each contract, or sub-contract for program management, construction management, planning studies, feasibility studies, architectural services, preliminary engineering, design, engineering, surveying, mapping or related services with respect to the project in the same manner as a contract for architectural and engineering services is negotiated under Title IX of the Federal Property and Administrative Services Act of 1949 or an equivalent qualifications-based requirement **prescribed** for or by the sponsor of the airport.
  33. **Foreign Market Restrictions.** It will not allow funds provided under this grant to be used to fund any project which uses any product or service of a foreign country during the period in which such foreign country is listed by the United States Trade Representative as denying fair and equitable market opportunities for products and suppliers of the United States in procurement and construction.
  34. **Policies, Standards, and Specifications.** It will carry out the project in accordance with policies, standards, and specifications approved by the Secretary including but not limited to the advisory circulars listed in the Current FAA Advisory Circulars for AIP projects, dated \_\_\_\_\_ (the latest approved version as of this grant offer) and included in this grant, and in accordance with applicable state policies, standards, and specifications approved by the Secretary.
  35. **Relocation and Real Property Acquisition.** (1) It will be guided in acquiring real property, to the greatest extent practicable under State law, by the land acquisition policies in Subpart B of 49 CFR Part 24 and will pay or reimburse property owners for necessary expenses as specified in Subpart B. (2) It will provide a relocation assistance program offering the services described in Subpart C and fair and reasonable relocation payments and assistance to displaced persons as required in Subpart D and E of 49 CFR Part 24. (3) It will make available within a reasonable period of time prior to displacement, comparable replacement dwellings to displaced persons in accordance with Subpart E of 49 CFR Part 24.
  36. **Access By Intercity Buses.** The airport owner or operator will permit, to the maximum extent practicable, intercity buses or other modes of transportation to



have access to the airport; however, it has no obligation to fund special facilities for intercity buses or for other modes of transportation.

- 37. Disadvantaged Business Enterprises.** The recipient shall not discriminate on the basis of race, color, national origin or sex in the award and performance of any DOT-assisted contract or in the administration of its DBE program or the requirements of 49 CFR Part 26. The Recipient shall take all necessary and reasonable steps under 49 CFR Part 26 to ensure non discrimination in the award and administration of DOT-assisted contracts. The recipient's DBE program, as required by 49 CFR Part 26, and as approved by DOT, is incorporated by reference in this agreement. Implementation of this program is a legal obligation and failure to carry out its terms shall be treated as a violation of this agreement. Upon notification to the recipient of its failure to carry out its approved program, the Department may impose sanctions as provided for under Part 26 and may, in appropriate cases, refer the matter for enforcement under 18 U.S.C. 1001 and/or the Program Fraud Civil Remedies Act of 1986 (31 U.S.C. 3801).
- 38. Hangar Construction.** If the airport owner or operator and a person who owns an aircraft agree that a hangar is to be constructed at the airport for the aircraft at the aircraft owner's expense, the airport owner or operator will grant to the aircraft owner for the hangar a long term lease that is subject to such terms and conditions on the hangar as the airport owner or operator may impose.
- 39. Competitive Access.**
- a. If the airport owner or operator of a medium or large hub airport (as defined in section 47102 of title 49, U.S.C.) has been unable to accommodate one or more requests by an air carrier for access to gates or other facilities at that airport in order to allow the air carrier to provide service to the airport or to expand service at the airport, the airport owner or operator shall transmit a report to the Secretary that-
    - 1) Describes the requests;
    - 2) Provides an explanation as to why the requests could not be accommodated; and
    - 3) Provides a time frame within which, if any, the airport will be able to accommodate the requests.
  - b. Such report shall be due on either February 1 or August 1 of each year if the airport has been unable to accommodate the request(s) in the six month period prior to the applicable due date.

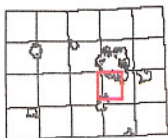
# **Exhibit 22**



April 2010

GIS Map Print

Location Map



0 2,400 4,800



Feet

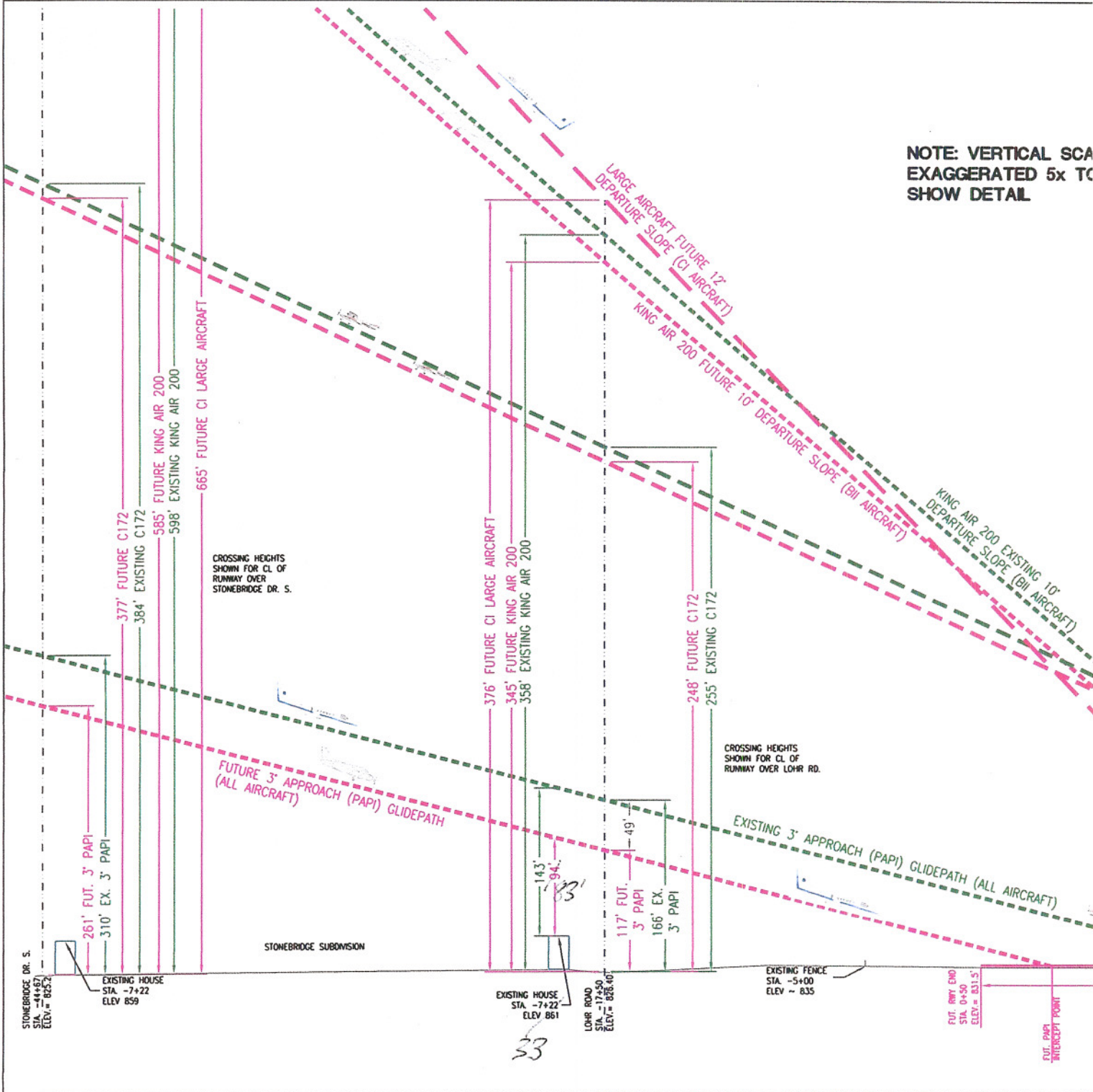
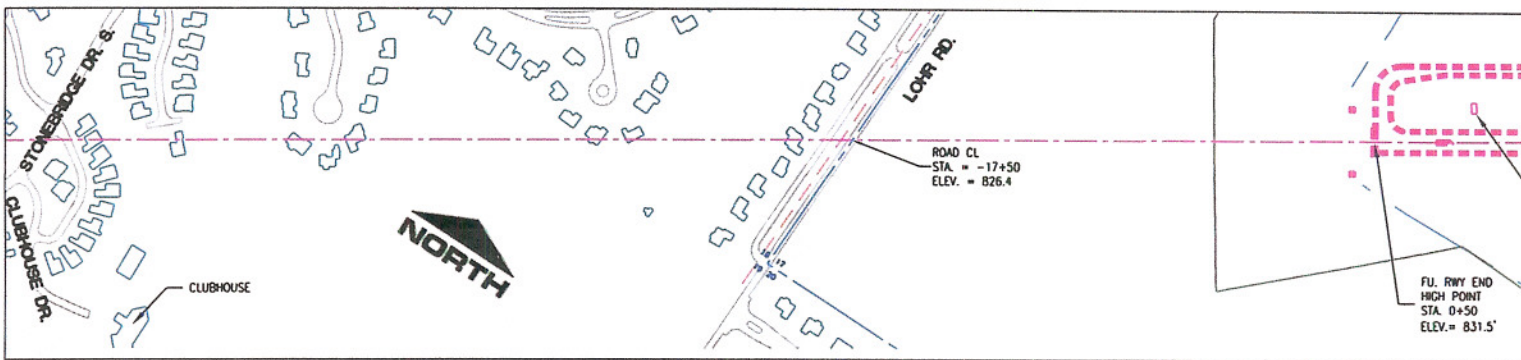
1 inch = 3,000 feet



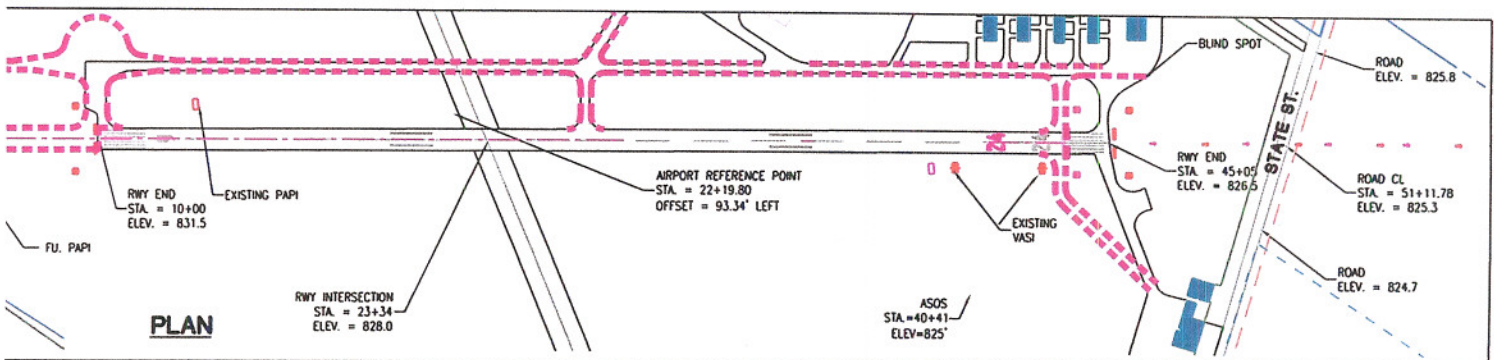
The information contained in this cadastral map is used to locate, identify and inventory parcels of land in Washierew County for appraisal and taxing purposes only and is not to be construed as a "survey description". The information is provided with the understanding that the conclusions drawn from such information are solely the responsibility of the user. Any assumption of legal status of this data is hereby disclaimed.

NOTE: PARCELS MAY NOT BE TO SCALE

# Exhibit 23



# APPROACH AND DEPARTURE



**APPROACHES**

APPROACH SLOPE FOR ALL AIRCRAFT WOULD BE AT 3' ALONG THE PRECISION APPROACH PATH INDICATOR (PAPI).

APPROACH CLEARANCE (LOHR RD.)  
 166' EXISTING  
 117' PROPOSED EXTENSION

**TYPICAL CLIMB PERFORMANCE BY AIRCRAFT TYPE**

AIRCRAFT TYPE	TYPICAL CLIMB ANGLE	TYPICAL CLIMB RATES
SINGLE ENGINE PISTON	4°-7°	500-1,000 FT/MIN
TWIN ENGINE PISTON	7°-9°	1,00-1,500 FT/MIN
TWIN ENGINE TURBOPROP	10°-11°	2,000-2,500 FT/MIN
JET	12°-16°	3,000-4,000 FT/MIN

**DEPARTURES**

DEPARTURE SLOPES ARE SHOWN FOR 3 AIRCRAFT TYPES FOR THE 839' AIRPORT ELEVATION AT 83°F. CROSSING HEIGHTS SHOWN FOR CL OF RUNWAY OVER LOHR RD.

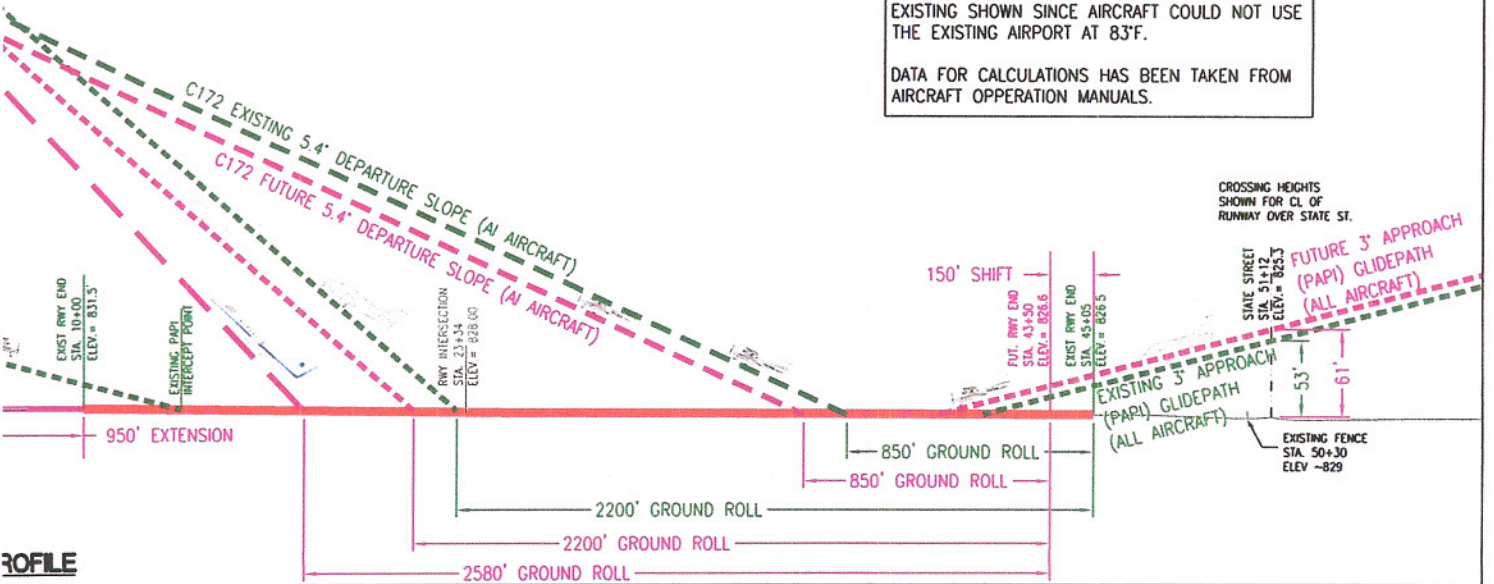
CESSNA 172 - A1 SMALL AIRCRAFT  
 MAX. GROSS LOAD: 2,300 LBS  
 CLIMB RATE: 700 FT. PER MINUTE  
 CLIMB AIRSPEED: 73 KNOTS  
 CLIMB ANGLE: 5.4°  
 GROUND ROLL: 850 FT.  
DEPARTURE CLEARANCE (LOHR RD.)  
 255' EXISTING  
 248' PROPOSED EXTENSION

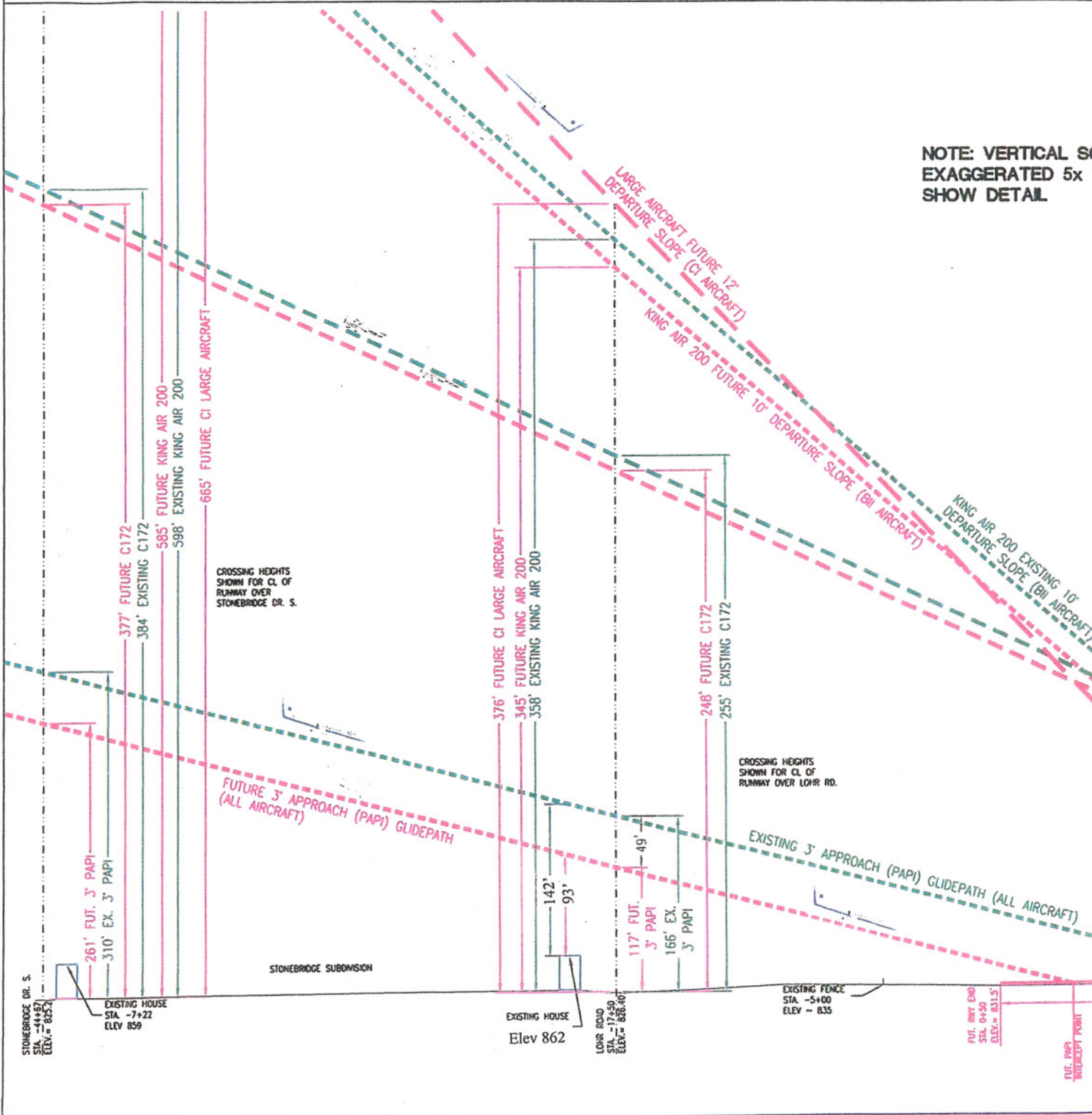
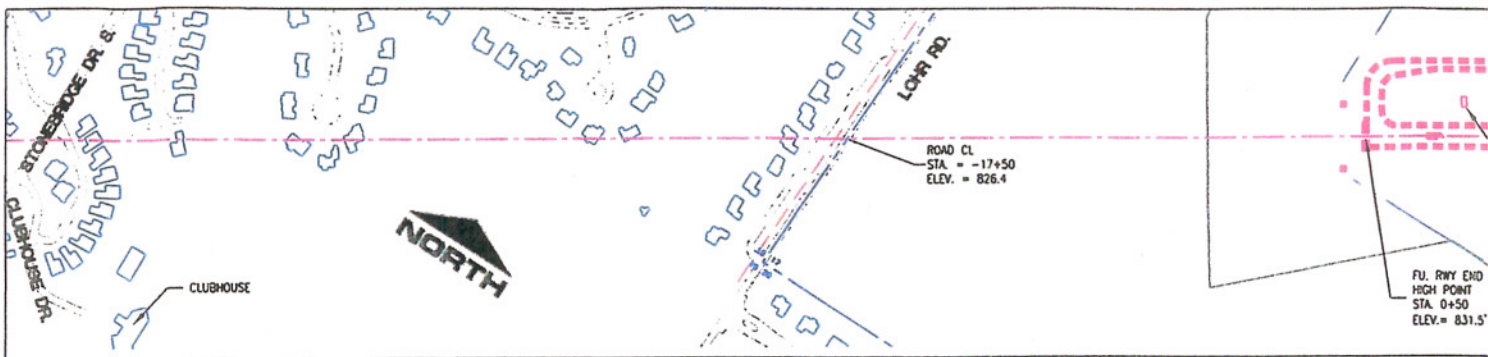
KING AIR 200 - BII SMALL AIRCRAFT  
 MAX. GROSS LOAD: 12,500 LBS  
 CLIMB RATE: 2,400 FT. PER MINUTE  
 CLIMB AIRSPEED: 125 KNOTS  
 CLIMB ANGLE: 10°  
 GROUND ROLL: 2200 FT.  
DEPARTURE CLEARANCE (LOHR RD.)  
 358' EXISTING  
 345' PROPOSED EXTENSION

HAWKER 700A - C1 LARGE AIRCRAFT  
 MAX. GROSS LOAD: 24,800 LBS\*  
 CLIMB RATE: 3,000 FT. PER MINUTE  
 CLIMB AIRSPEED: 135 KNOTS  
 CLIMB ANGLE: 12°  
 GROUND ROLL: 2850 FT.  
DEPARTURE CLEARANCE (LOHR RD.)  
 376' PROPOSED EXTENSION

\* FOR FUTURE RUNWAY LENGTH AIRCRAFT COULD ONLY USE AIRPORT AT 60% LOAD AT 83°F. NO EXISTING SHOWN SINCE AIRCRAFT COULD NOT USE THE EXISTING AIRPORT AT 83°F.

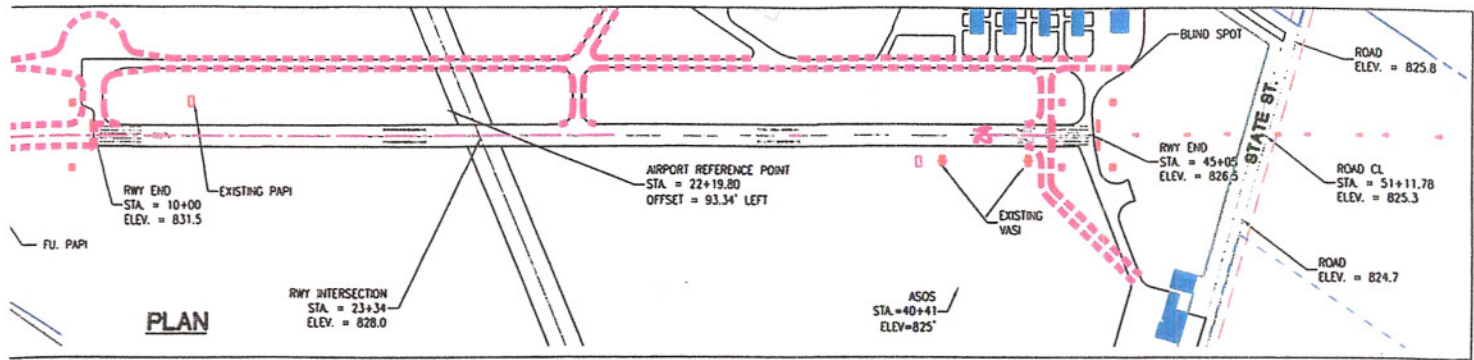
DATA FOR CALCULATIONS HAS BEEN TAKEN FROM AIRCRAFT OPERATION MANUALS.





NOTE: VERTICAL SLOPE  
EXAGGERATED 5x  
SHOW DETAIL

# Corrected APPROACH AND DEPARTURE



**APPROACHES**

APPROACH SLOPE FOR ALL AIRCRAFT WOULD BE AT 3° ALONG THE PRECISION APPROACH PATH INDICATOR (PAPI).  
**APPROACH CLEARANCE (LOHR RD.)**  
 166' EXISTING  
 117' PROPOSED EXTENSION

**TYPICAL CLIMB PERFORMANCE BY AIRCRAFT TYPE**

AIRCRAFT TYPE	TYPICAL CLIMB ANGLE	TYPICAL CLIMB RATES
SINGLE ENGINE PISTON	4°-7°	500-1,000 FT/MIN
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TWIN ENGINE TURBOPROP	10°-11°	2,000-2,500 FT/MIN
JET	12°-16°	3,000-4,000 FT/MIN

**DEPARTURES**

DEPARTURE SLOPES ARE SHOWN FOR 3 AIRCRAFT TYPES FOR THE 839' AIRPORT ELEVATION AT 83°F. CROSSING HEIGHTS SHOWN FOR CL OF RUNWAY OVER LOHR RD.

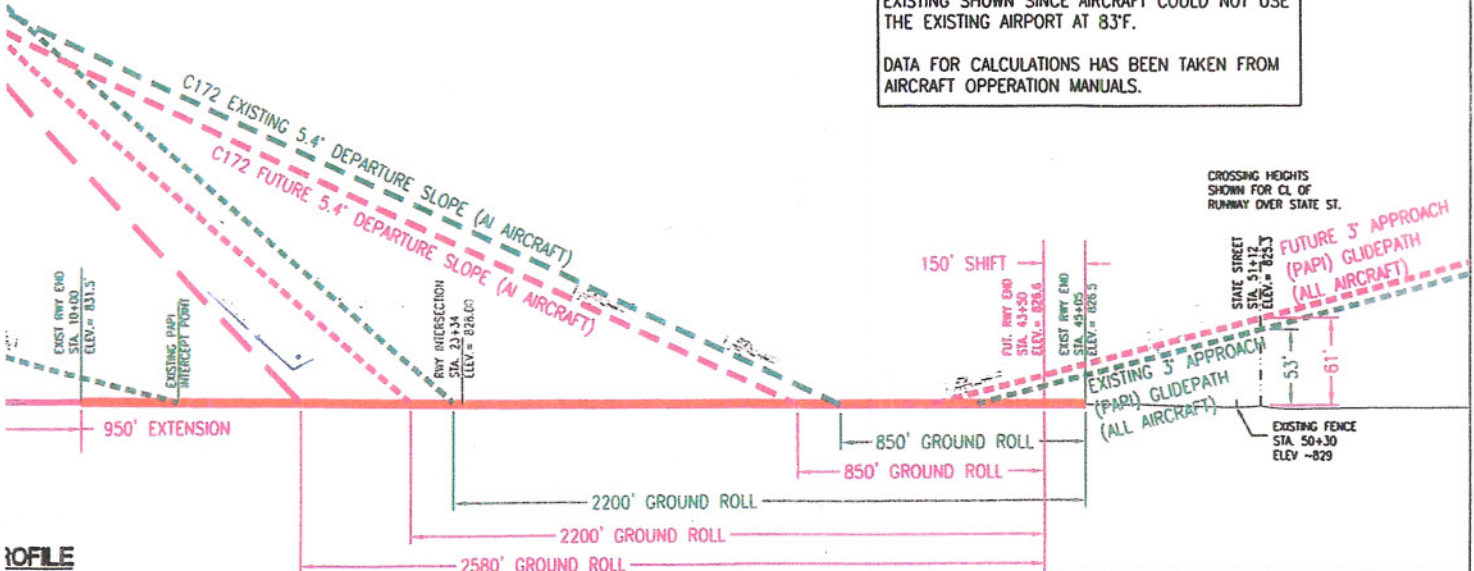
**CESSNA 172 - A1 SMALL AIRCRAFT**  
 MAX. GROSS LOAD: 2,300 LBS  
 CLIMB RATE: 700 FT. PER MINUTE  
 CLIMB AIRSPEED: 73 KNOTS  
 CLIMB ANGLE: 5.4°  
 GROUND ROLL: 850 FT.  
**DEPARTURE CLEARANCE (LOHR RD.)**  
 255' EXISTING  
 248' PROPOSED EXTENSION

**KING AIR 200 - B11 SMALL AIRCRAFT**  
 MAX. GROSS LOAD: 12,500 LBS  
 CLIMB RATE: 2,400 FT. PER MINUTE  
 CLIMB AIRSPEED: 125 KNOTS  
 CLIMB ANGLE: 10°  
 GROUND ROLL: 2200 FT.  
**DEPARTURE CLEARANCE (LOHR RD.)**  
 358' EXISTING  
 345' PROPOSED EXTENSION

**HAWKER 700A - C1 LARGE AIRCRAFT**  
 MAX. GROSS LOAD: 24,800 LBS\*  
 CLIMB RATE: 3,000 FT. PER MINUTE  
 CLIMB AIRSPEED: 135 KNOTS  
 CLIMB ANGLE: 12°  
 GROUND ROLL: 2850 FT.  
**DEPARTURE CLEARANCE (LOHR RD.)**  
 376' PROPOSED EXTENSION

\* FOR FUTURE RUNWAY LENGTH AIRCRAFT COULD ONLY USE AIRPORT AT 60% LOAD AT 83°F. NO EXISTING SHOWN SINCE AIRCRAFT COULD NOT USE THE EXISTING AIRPORT AT 83°F.

DATA FOR CALCULATIONS HAS BEEN TAKEN FROM AIRCRAFT OPERATION MANUALS.



**CLEARANCES**

Base Map by:

**URS** GRAND RAPIDS, MI. 3524 SPANES DR. S.E. PROJECT NO. 125-0723  
 815 574-3800

**ANN ARBOR MUNICIPAL AIRPORT**



# Exhibit 24

# Aircraft Emergency Landing: Stonebridge Golf Course – June 2009



# Exhibit 25

	NTSB ID: <b>CHI01LA181</b>	Aircraft Registration Number: <b>N24898</b>
	Occurrence Date: <b>06/21/2001</b>	Most Critical Injury: <b>Fatal</b>
	Occurrence Type: <b>Accident</b>	Investigated By: <b>NTSB</b>

**Location/Time**

Nearest City/Place <b>Ann Arbor</b>	State <b>MI</b>	Zip Code <b>48103</b>	Local Time <b>1405</b>	Time Zone <b>EDT</b>	
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Airport Proximity: <b>On Airport/Airstrip</b>	Distance From Landing Facility:
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**Aircraft Information Summary**

Aircraft Manufacturer <b>Masko</b>	Model/Series <b>Mustang MII</b>	Type of Aircraft <b>Airplane</b>
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Revenue Sightseeing Flight: **No**Air Medical Transport Flight: **No****Narrative**

Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:

\*\*\* Note: NTSB investigators may have traveled in support of this investigation and used data provided by various sources to prepare this aircraft accident report. \*\*\*

On June 21, 2001, at 1405 eastern daylight time, an amateur-built Masko Mustang MII, N24898, piloted by a commercial pilot, was destroyed when it impacted terrain following a loss of control while maneuvering in the traffic pattern at the Ann Arbor Municipal Airport (ARB), Ann Arbor, Michigan. The aircraft had just completed a touch and go and was turning from the upwind to the crosswind leg of the traffic pattern for runway 06 (3,500 feet by 75 feet, concrete). The local flight was being operated under the provisions of 14 CFR Part 91 and was not on a flight plan. Visual meteorological conditions prevailed at the time of the accident. The pilot and the pilot rated passenger received fatal injuries. The flight originated from ARB at 1353.

Witnesses to the accident saw the airplane make a steep right turn prior to spiraling to the ground.


A postaccident examination of the airplane revealed no anomalies that could be associated with a pre-impact condition.

The pilot held commercial and certified flight instructor certificates with airplane single engine land and instrument airplane ratings. The pilot also held a ground instructor certificate with advanced and instrument ratings. According to Federal Aviation Administration records, the pilot reported having 398 hours of flight time as of March 15, 2001. The pilot's logbook was not recovered.

The pilot rated passenger held a commercial pilot certificate with airplane single engine land and instrument airplane ratings. He held a certified flight instructor certificate with an airplane single engine land rating. The pilot rated passenger also held a ground instructor certificate with an advanced rating. According to Federal Aviation Administration records, the pilot rated passenger reported having 307 hours of flight time as of May 10, 2001. The pilot rated passenger's logbook was not recovered.

Toxicology tests performed on the pilot and pilot rated passenger were negative for all tests performed. Autopsies were performed on the pilot and pilot rated passenger by Washtenaw County on June 22, 2001.

It was reported that the airplane was purchased on June 16, 2001. The pilot was the flight instructor of the new owner. The owner was not aboard the airplane when the accident occurred.

		NTSB ID: <b>CHI01LA181</b>				
		Occurrence Date: <b>06/21/2001</b>				
		Occurrence Type: <b>Accident</b>				
<b>Landing Facility/Approach Information</b>						
Airport Name <b>ANN ARBOR MUNI</b>		Airport ID: <b>ARB</b>	Airport Elevation <b>839 Ft. MSL</b>	Runway Used <b>06</b>	Runway Length <b>3500</b>	Runway Width <b>75</b>
Runway Surface Type: <b>Concrete</b>						
Runway Surface Condition: <b>Dry</b>						
Approach/Arrival Flown: <b>NONE</b>						
VFR Approach/Landing: <b>Touch and Go</b>						
<b>Aircraft Information</b>						
Aircraft Manufacturer <b>Masko</b>		Model/Series <b>Mustang MII</b>		Serial Number <b>8</b>		
Airworthiness Certificate(s): <b>Experimental (Special)</b>						
Landing Gear Type: <b>Tailwheel</b>						
Amateur Built Acft? <b>Yes</b>		Number of Seats: <b>2</b>	Certified Max Gross Wt.: <b>1500 LBS</b>		Number of Engines: <b>1</b>	
Engine Type: <b>Reciprocating</b>		Engine Manufacturer: <b>Lycoming</b>		Model/Series: <b>O-320</b>	Rated Power: <b>150 HP</b>	
- Aircraft Inspection Information						
Type of Last Inspection		Date of Last Inspection	Time Since Last Inspection Hours		Airframe Total Time Hours	
- Emergency Locator Transmitter (ELT) Information						
ELT Installed?/Type <b>Yes /</b>		ELT Operated? <b>No</b>		ELT Aided in Locating Accident Site? <b>No</b>		
<b>Owner/Operator Information</b>						
Registered Aircraft Owner <b>Craig W. Peterson</b>		Street Address <b>1841 Hiller Rd.</b>				
		City <b>West Bloomfield</b>		State <b>MI</b>	Zip Code <b>48324</b>	
Operator of Aircraft <b>Craig W. Peterson</b>		Street Address <b>1841 Hiller Rd.</b>				
		City <b>West Bloomfield</b>		State <b>MI</b>	Zip Code <b>48324</b>	
Operator Does Business As:			Operator Designator Code:			
- Type of U.S. Certificate(s) Held: <b>None</b>						
Air Carrier Operating Certificate(s):						
Operating Certificate:			Operator Certificate:			
Regulation Flight Conducted Under: <b>Part 91: General Aviation</b>						
Type of Flight Operation Conducted: <b>Personal</b>						
FACTUAL REPORT - AVIATION						
Page 2						

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: <b>CHI01LA181</b>
	Occurrence Date: <b>06/21/2001</b>
	Occurrence Type: <b>Accident</b>

**First Pilot Information**

Name <b>On File</b>	City <b>On File</b>	State <b>On File</b>	Date of Birth	Age <b>25</b>
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Sex: <b>M</b>	Seat Occupied: <b>Left</b>	Occupational Pilot? <b>Civilian Pilot</b>	Certificate Number:
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Certificate(s): **Flight Instructor; Commercial**

Airplane Rating(s): **Single-engine Land**

Rotorcraft/Glider/LTA: **None**

Instrument Rating(s): **Airplane**

Instructor Rating(s): **Airplane Single-engine; Instrument Airplane**

Current Biennial Flight Review?

Medical Cert.: <b>Class 2</b>	Medical Cert. Status: <b>Valid Medical--no waivers/lim.</b>	Date of Last Medical Exam: <b>10/2000</b>
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- Flight Time Matrix	All AC	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	<b>398</b>									
Pilot In Command(PIC)										
Instructor										
Instruction Received										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used? <b>Yes</b>	Shoulder Harness Used? <b>Yes</b>	Toxicology Performed? <b>Yes</b>	Second Pilot? <b>Yes</b>
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**Flight Plan/Itinerary**

Type of Flight Plan Filed: **None**

Departure Point <b>Same as Accident/Incident Location</b>	State	Airport Identifier <b>ARB</b>	Departure Time <b>1353</b>	Time Zone <b>EDT</b>
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Destination <b>Local Flight</b>	State <b>MI</b>	Airport Identifier <b>ARB</b>	
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Type of Clearance: **VFR**

Type of Airspace: **Class D**

**Weather Information**

Source of WX Information:  
  
**No record of briefing**

 <p>National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION</p>	NTSB ID: <b>CHI01LA181</b>
	Occurrence Date: <b>06/21/2001</b>
	Occurrence Type: <b>Accident</b>

**Weather Information**

WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
ARB	1353	EDT	839 Ft. MSL	0 NM	0 Deg. Mag.

Sky/Lowest Cloud Condition: **Clear** Ft. AGL Condition of Light: **Day**

Lowest Ceiling: **Broken** 8500 Ft. AGL Visibility: **10** SM Altimeter: **30.03** "Hg

Temperature: **19 °C** Dew Point: **15 °C** Weather Conditions at Accident Site: **Visual Conditions**

Wind Direction: **60** Wind Speed: **5** Wind Gusts:

Visibility (RVR): Ft. Visibility (RVV) SM

Precip and/or Obscuration:

**Accident Information**

Aircraft Damage: **Destroyed** Aircraft Fire: **None** Aircraft Explosion: **None**

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers	1				1
- TOTAL ABOARD -	2				2
Other Ground					
- GRAND TOTAL -	2				2

 National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION	NTSB ID: <b>CHI01LA181</b>	
	Occurrence Date: <b>06/21/2001</b>	
	Occurrence Type: <b>Accident</b>	

**Administrative Information**


Investigator-In-Charge (IIC)

**John M. Brannen**

Additional Persons Participating in This Accident/Incident Investigation:

Lorenzo Rodney  
FAA-Detroit, Michigan - FSDO  
Belleville, MI



 National Transportation Safety Board <b>FACTUAL REPORT</b> <b>AVIATION</b>		NTSB ID: <b>CHI95FA050</b>		Aircraft Registration Number: <b>N1QF</b>	
		Occurrence Date: <b>12/01/1994</b>		Most Critical Injury: <b>Fatal</b>	
		Occurrence Type: <b>Accident</b>		Investigated By: <b>NTSB</b>	
<b>Location/Time</b>					
Nearest City/Place <b>ANN ARBOR</b>		State <b>MI</b>	Zip Code <b>48105</b>	Local Time <b>1007</b>	Time Zone <b>CST</b>
Airport Proximity: <b>Off Airport/Airstrip</b>		Distance From Landing Facility:			
<b>Aircraft Information Summary</b>					
Aircraft Manufacturer <b>Agusta</b>		Model/Series <b>A109A II /A109A II</b>		Type of Aircraft <b>Helicopter</b>	
Revenue Sightseeing Flight: <b>No</b>			Air Medical Transport Flight:		
<b>Narrative</b>					
Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:					
<p>*** Note: NTSB investigators either traveled in support of this investigation or conducted a significant amount of investigative work without any travel, and used data obtained from various sources to prepare this aircraft accident report. ***</p>					
<p>HISTORY OF FLIGHT</p> <p>On December 1, 1994, about 1007 central standard time, an Agusta SPA A109A II, N1QF, operated by Metro Aviation, Inc., was destroyed when it collided with the terrain near Ann Arbor, Michigan. The commercial pilot and two passengers (medical evacuation crew members) were fatally injured. The 14 CFR Part 91 positioning flight departed the St. Joseph Hospital in visual meteorological conditions about 1003, en route to Howell, Michigan. The purpose of the flight was to pick up a patient at Howell, and return to St. Joseph's Hospital.</p> <p>Prior to the morning of the accident N1QF was designated as the standby helicopter; however, the primary helicopter was scheduled for maintenance on the day of the accident, therefore essential equipment had to be moved from the primary craft to N1QF. Before the transfer could be accomplished, N1QF was required to prepare for dispatch on the accident flight. What was later described by a witness as a "hasty dispatch," necessitated a hurried departure to accomplish the transfer of equipment, complete a preflight, and other items necessary for a medical evacuation flight. The witness to the departure stated that a complete preflight was accomplished by the crew; although this witness did not actually have an opportunity to watch the entire preparation. The witness indicated that the start of the engines was "normal," with no delay in the engine start up. The flight departed at 1003.</p> <p>At 1005 N1QF contacted the Ann Arbor, Federal Aviation Administration (FAA) Control Tower (ATCT), giving its position as one and one half miles east of St. Joseph's Hospital and requesting landing permission stating, in part, "I'd like to proceed inbound.. single engine landing, please." Six seconds later the flight was cleared into the class D surface area. Seven seconds later, N1QF responded stating, "Ah, disregard, I'm going down at this time." No additional information was transmitted, nor was the reason for the single engine landing stated. The pilot did not declare an emergency nor did he request assistance.</p> <p>The pilot then contacted the dispatcher, at St. Joseph's Hospital and stated that he was going to land, "north of the university." The dispatcher requested the information be repeated and the pilot did so. There was no indication of any need for assistance, the nature of any emergency situation, nor was there any discussion of difficulties being experienced by the flight. Twenty-six seconds after the pilot's repeating the location to the dispatcher, he made a final transmission, indicating a crash was imminent.</p> <p>Eyewitnesses observed the accident helicopter during the final few seconds of the flight. Two</p>					
FACTUAL REPORT - AVIATION					
					Page 1

 <p>National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION</p>	NTSB ID: CHI95FA050
	Occurrence Date: 12/01/1994
	Occurrence Type: Accident

**Narrative** (Continued)

witnesses stated that the helicopter was trailing smoke from the area of the engines. One witness indicated that the helicopter was maneuvering just prior to the impact and that during the final descent which he described as "dropped like a stone," it appeared the rotor blades were "not turning hardly at all." Witnesses reported that the helicopter was nearly silent just prior to ground impact and that there was no engine noise at all after impact.

## OTHER DAMAGE

One small tree was damaged during the impact with the terrain.

## PERSONAL INFORMATION

The pilot was born May 27, 1952, and was the holder of a commercial helicopter certificate number 2157108, with instrument helicopter privileges. At the time of the accident he had 5,000 hours flight time, with 3,500 hours of pilot in command time and 300 hours in the make and model of helicopter involved in the accident. He held a second class medical certificate issued June 9, 1994. His most recent biennial flight review was accomplished in an Agusta A109 on October 23, 1994.

## AIRCRAFT INFORMATION

The helicopter was an Agusta SPA A109A II, serial number 7311, N1QF. The helicopter was maintained on an Approved Inspection Program. The most recent inspection occurred on June 13, 1994, with a total time in service of 1,870 hours. The helicopter had accumulated 57 hours since the inspection, at the time of the accident. The helicopter was last fueled on November 22, 1994.

## WRECKAGE AND IMPACT INFORMATION

The helicopter impacted flat terrain in a commercial area, on a northeast heading. Ground scars and eyewitness reports indicated that the helicopter impacted in a near vertical direction with little forward motion. The landing gear was found in the extended (gear down) position. The helicopter was lying on its left side. The fuselage was crushed to about one-half the original height. The tail boom was partially separated from the fuselage from ground impact and impact with a small tree. Three of the main rotor blades were intact with little bending. The tail rotor assembly had impact damage only with no rotational damage evident. The main rotor head exhibited marks and damage consistent with blade coning impact.

The rotor system was inspected during the on scene phase of the investigation including the main and tail rotors, transmission and gearbox. No discrepancies were noted.

Both engines and the transmission exhibited little impact damage and were removed for further study. During the on-scene investigation both engines rotated and there was continuity throughout the gear train. No damage was visible in the output drive shafts on either engine. The fuel control pointer on the number 1 engine was at 30 degrees with the throttle handle at idle. The fuel control pointer on the number 2 engine was at 85 degrees with the throttle handle about mid-range. Fuel vacuum checks were done with engine number 1 having no leaks and engine number 2 having a leak traced to the fuel pump assembly.

## MEDICAL AND PATHOLOGICAL INFORMATION

A post mortem examination of the pilot was conducted by the Washtenaw County (Michigan) Medical Examiner, on December 2, 1994. No contributing pre-existing pathology was found.

A toxicological examination of specimens from the pilot proved negative for those drugs screen.

National Transportation Safety Board

## FACTUAL REPORT

AVIATION

NTSB ID: CHI95FA050

Occurrence Date: 12/01/1994

Occurrence Type: Accident

## Narrative (Continued)

## TESTS AND RESEARCH

Fuel samples from the fueling source were found to be free of water and within limits for Jet-A1.

Fuel and oil samples from the helicopter were tested at the Allison lab and were found to be within limits for Jet-A1 fuel and MIL-L-23699E oil.

An examination of light bulb filaments revealed stretched filaments in the "Master Warning," "Master Caution," "Engine #1 Low RPM," "Engine #2 Low RPM." and "Low Rotor RPM" panels.

Both engines were test run at Allison on a production test stand on January 11, 1995. Number 1 engine was found to be within limits. Number 2 engine experienced excessive compressor vibration, therefore, the control components from that engine were tested on the number 1 engine which had been successfully run. The engine operation did not reach the limits falling about 2% below top limits.

The compressor for engine number 2 was disassembled and inspected. A visual inspection revealed unusual balance marks. The rotor was check balanced and it measured at 0.006 oz-in of unbalance. The limit should have been 0.001 oz-in. Although the exact mode of unbalance was not determined, experienced sources indicated that the unusual marks could not be associated with normal operation of the engine; however could be associated with impact artifact.

The individual components (originally) from engine number 2 were tested on October 11, 1995, and the fuel control was found to fall about 2% below the top limit. There was nothing found that would have prevented the engine from operating normally at the cruise setting.


Throughout the on-scene investigation and during the testing of components, nothing was found to indicate any reason that an engine should stop running inflight. Nothing was found in either engine to indicate an indication necessitating a need to manually shut down an engine inflight.

## ADDITIONAL DATA/INFORMATION

Parties to the investigation were the FAA Flight Standards District Office, Belleville, Michigan; Agusta Aerospace Corporation, Philadelphia, Pennsylvania; Allison, Indianapolis, Indiana; Allied Signal Aerospace, South Bend, Indiana; and Metro Aviation Inc., Shreveport, Louisiana.

The helicopter wreckage was released to representatives of the owner on December 16, and December 22, 1994 and January 9, 1996.

Updated on Feb 2 2009 2:42PM

 <p>National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION</p>	NTSB ID: <b>CHI95FA050</b>				
	Occurrence Date: <b>12/01/1994</b>				
	Occurrence Type: <b>Accident</b>				
<b>Landing Facility/Approach Information</b>					
Airport Name	Airport ID:	Airport Elevation Ft. MSL	Runway Used <b>0</b>	Runway Length	Runway Width
Runway Surface Type:					
Runway Surface Condition:					
Approach/Arrival Flown:					
VFR Approach/Landing: <b>Forced Landing</b>					
<b>Aircraft Information</b>					
Aircraft Manufacturer <b>Agusta</b>		Model/Series <b>A109A II /A109A II</b>		Serial Number <b>7311</b>	
Airworthiness Certificate(s): <b>Normal</b>					
Landing Gear Type: <b>Retractable - Tricycle</b>					
Amateur Built Acft? <b>No</b>		Number of Seats: <b>4</b>		Certified Max Gross Wt. <b>5730 LBS</b>	
Number of Engines: <b>2</b>		Engine Type: <b>Turbo Shaft</b>		Engine Manufacturer: <b>ALLISON</b>	
Model/Series: <b>250-C20B</b>		Rated Power: <b>420 HP</b>			
- Aircraft Inspection Information					
Type of Last Inspection <b>AAIP</b>		Date of Last Inspection <b>06/1994</b>		Time Since Last Inspection <b>57 Hours</b>	
Airframe Total Time <b>1890 Hours</b>					
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type <b>No</b>		ELT Operated?		ELT Aided in Locating Accident Site?	
<b>Owner/Operator Information</b>					
Registered Aircraft Owner <b>AGUSTA AEROSPACE CORP.</b>		Street Address <b>3050 RED LION RD.</b>			
		City <b>PHILADELPHIA</b>		State <b>PA</b>	Zip Code <b>19114</b>
Operator of Aircraft <b>METRO AVIATION, INC.</b>		Street Address <b>P. O. BOX 7008</b>			
		City <b>SHREVEPORT</b>		State <b>LA</b>	Zip Code <b>71137</b>
Operator Does Business As: <b>MIDWEST MED FLIGHT</b>				Operator Designator Code: <b>HDNA</b>	
- Type of U.S. Certificate(s) Held:					
Air Carrier Operating Certificate(s): <b>On-demand Air Taxi</b>					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: <b>Part 91: General Aviation</b>					
Type of Flight Operation Conducted: <b>Positioning</b>					
<b>FACTUAL REPORT - AVIATION</b>					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: <b>CHI95FA050</b>
	Occurrence Date: <b>12/01/1994</b>
	Occurrence Type: <b>Accident</b>

**First Pilot Information**

Name <b>On File</b>	City <b>On File</b>	State <b>On File</b>	Date of Birth <b>On File</b>	Age <b>42</b>
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Sex: <b>M</b>	Seat Occupied: <b>Right</b>	Occupational Pilot? <b>Yes</b>	Certificate Number: <b>On File</b>
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Certificate(s): **Commercial**

Airplane Rating(s): **None**

Rotorcraft/Glider/LTA: **Helicopter**

Instrument Rating(s): **Helicopter**

Instructor Rating(s): **None**

Current Biennial Flight Review?

Medical Cert.: <b>Class 2</b>	Medical Cert. Status: <b>Valid Medical--no waivers/lim.</b>	Date of Last Medical Exam: <b>06/1994</b>
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- Flight Time Matrix	All AC	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	5000	300			500	150	160	5000		
Pilot In Command(PIC)	3500	300						3500		
Instructor										
Instruction Received										
Last 90 Days	32	32			11		3	32		
Last 30 Days	10	10			4		1	10		
Last 24 Hours	1	1					1	1		

Seatbelt Used? <b>Yes</b>	Shoulder Harness Used? <b>Yes</b>	Toxicology Performed? <b>Yes</b>	Second Pilot? <b>No</b>
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**Flight Plan/Itinerary**

Type of Flight Plan Filed: **Company VFR**

Departure Point <b>Same as Accident/Incident Location</b>	State	Airport Identifier <b>NONE</b>	Departure Time <b>1003</b>	Time Zone <b>EST</b>
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Destination <b>HOWELL</b>	State <b>MI</b>	Airport Identifier <b>NONE</b>	
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Type of Clearance: **None**

Type of Airspace: **Class D**

**Weather Information**

Source of WX Information:  
  
**No record of briefing**

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: <b>CHI95FA050</b>	
	Occurrence Date: <b>12/01/1994</b>	
	Occurrence Type: <b>Accident</b>	

Weather Information					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
	<b>0000</b>		<b>0 Ft. MSL</b>	<b>0 NM</b>	<b>0 Deg. Mag.</b>
Sky/Lowest Cloud Condition: <b>Unknown</b>			<b>0 Ft. AGL</b>	Condition of Light: <b>Day</b>	
Lowest Ceiling: <b>Broken</b>		<b>12000 Ft. AGL</b>	Visibility: <b>10</b>	SM	Altimeter: "Hg
Temperature: <b>-1 °C</b>	Dew Point: °C	Weather Conditions at Accident Site: <b>Visual Conditions</b>			
Wind Direction: <b>180</b>	Wind Speed: <b>12</b>	Wind Gusts: <b>16</b>			
Visibility (RVR): <b>0</b> Ft.	Visibility (RVV) <b>0</b> SM				
Precip and/or Obscuration: <b>No Obscuration; No Precipitation</b>					

Accident Information		
Aircraft Damage: <b>Destroyed</b>	Aircraft Fire: <b>None</b>	Aircraft Explosion: <b>None</b>

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers	2				2
- TOTAL ABOARD -	3				3
Other Ground	0	0	0		0
- GRAND TOTAL -	3	0	0		3

 National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION	NTSB ID: <b>CHI95FA050</b>	
	Occurrence Date: <b>12/01/1994</b>	
	Occurrence Type: <b>Accident</b>	

**Administrative Information**

Investigator-In-Charge (IIC)

**STEPHEN A. WILSON**

Additional Persons Participating in This Accident/Incident Investigation:

**RICHARD G GASTRICH**  
BELLEVILLE, MI

**PAOLO FERRERI**  
PHILADELPHIA, PA

**SCOTT S SCHEURICH**  
INDIANAPOLIS, IN

**MILTON K GELTZ**  
SHREVEPORT, LA

 National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION	NTSB ID: CHI90FA003	Aircraft Registration Number: N9704J
	Occurrence Date: 10/07/1989	Most Critical Injury: Fatal
	Occurrence Type: Accident	Investigated By: NTSB

**Location/Time**

Nearest City/Place ANN ARBOR	State MI	Zip Code 48108	Local Time 1201	Time Zone EDT	
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Airport Proximity: On Airport/Airstrip	Distance From Landing Facility: 0
--	-----------------------------------

**Aircraft Information Summary**

Aircraft Manufacturer PIPER	Model/Series PA-28-180 /PA-28-180	Type of Aircraft Airplane
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Revenue Sightseeing Flight: No


Air Medical Transport Flight: No

**Narrative**

Brief narrative statement of facts, conditions and circumstances pertinent to the accident/incident:

\*\*\* Note: NTSB investigators either traveled in support of this investigation or conducted a significant amount of investigative work without any travel, and used data obtained from various sources to prepare this aircraft accident report. \*\*\*



 National Transportation Safety Board <b>FACTUAL REPORT</b> <b>AVIATION</b>	NTSB ID: <b>CHI90FA003</b>				
	Occurrence Date: <b>10/07/1989</b>				
	Occurrence Type: <b>Accident</b>				
<b>Landing Facility/Approach Information</b>					
Airport Name <b>ANN ARBOR</b>	Airport ID: <b>ARB</b>	Airport Elevation <b>839 Ft. MSL</b>	Runway Used <b>24</b>	Runway Length <b>3500</b>	Runway Width <b>75</b>
Runway Surface Type: <b>Asphalt</b>					
Runway Surface Condition: <b>Dry</b>					
Approach/Arrival Flown: <b>NONE</b>					
VFR Approach/Landing: <b>Full Stop; Traffic Pattern</b>					
<b>Aircraft Information</b>					
Aircraft Manufacturer <b>PIPER</b>	Model/Series <b>PA-28-180 /PA-28-180</b>		Serial Number <b>28-3894</b>		
Airworthiness Certificate(s):					
Landing Gear Type: <b>Tricycle</b>					
Amateur Built Acft? <b>No</b>	Number of Seats: <b>4</b>	Certified Max Gross Wt.: <b>2400 LBS</b>	Number of Engines: <b>1</b>		
Engine Type: <b>Reciprocating</b>	Engine Manufacturer: <b>LYCOMING</b>	Model/Series: <b>O-360-A4A</b>	Rated Power: <b>180 HP</b>		
- Aircraft Inspection Information					
Type of Last Inspection <b>Unknown</b>	Date of Last Inspection	Time Since Last Inspection <b>0 Hours</b>	Airframe Total Time Hours		
- Emergency Locator Transmitter (ELT) Information					
ELT Installed?/Type <b>Yes /</b>	ELT Operated? <b>Yes</b>	ELT Aided in Locating Accident Site?			
<b>Owner/Operator Information</b>					
Registered Aircraft Owner <b>DAVID B. ESTEP</b>	Street Address <b>952 E. 163RD PLACE</b>				
	City <b>SOUTH HOLLAND</b>	State <b>IL</b>	Zip Code <b>60473</b>		
Operator of Aircraft <b>DAVID B. ESTEP</b>	Street Address <b>952 E. 163RD PLACE</b>				
	City <b>SOUTH HOLLAND</b>	State <b>IL</b>	Zip Code <b>60473</b>		
Operator Does Business As:			Operator Designator Code:		
- Type of U.S. Certificate(s) Held: <b>None</b>					
Air Carrier Operating Certificate(s):					
Operating Certificate:			Operator Certificate:		
Regulation Flight Conducted Under: <b>Part 91: General Aviation</b>					
Type of Flight Operation Conducted: <b>Personal</b>					
FACTUAL REPORT - AVIATION					
Page 2					

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: <b>CHI90FA003</b>
	Occurrence Date: <b>10/07/1989</b>
	Occurrence Type: <b>Accident</b>

**First Pilot Information**

Name <b>On File</b>	City <b>On File</b>	State <b>On File</b>	Date of Birth	Age <b>34</b>
------------------------	------------------------	-------------------------	---------------	------------------

Sex: <b>M</b>	Seat Occupied: <b>Unknown</b>	Occupational Pilot? <b>Unknown</b>	Certificate Number: <b>On File</b>
---------------	-------------------------------	------------------------------------	------------------------------------

Certificate(s): **Private**

Airplane Rating(s): **Single-engine Land**

Rotorcraft/Glider/LTA: **None**

Instrument Rating(s): **None**

Instructor Rating(s):

Current Biennial Flight Review?

Medical Cert.: <b>Class 3</b>	Medical Cert. Status: <b>Valid Medical--no waivers/lim.</b>	Date of Last Medical Exam: <b>05/1989</b>
-------------------------------	---	---

- Flight Time Matrix	All AC	This Make and Model	Airplane Single Engine	Airplane Multi-Engine	Night	Instrument		Rotorcraft	Glider	Lighter Than Air
						Actual	Simulated			
Total Time	<b>72</b>	<b>7</b>								
Pilot In Command(PIC)										
Instructor										
Instruction Received										
Last 90 Days										
Last 30 Days										
Last 24 Hours										

Seatbelt Used? <b>Yes</b>	Shoulder Harness Used? <b>No</b>	Toxicology Performed? <b>Yes</b>	Second Pilot? <b>No</b>
---------------------------	----------------------------------	----------------------------------	-------------------------

**Flight Plan/Itinerary**

Type of Flight Plan Filed: **None**

Departure Point <b>CHICAGO</b>	State <b>IL</b>	Airport Identifier <b>3HA</b>	Departure Time <b>0900</b>	Time Zone <b>CDT</b>
-----------------------------------	--------------------	----------------------------------	-------------------------------	-------------------------

Destination <b>Same as Accident/Incident Location</b>	State	Airport Identifier <b>ARB</b>	
--	-------	----------------------------------	--

Type of Clearance: **None**

Type of Airspace:

**Weather Information**


Source of WX Information:  
**Flight Service Station**

 <p><b>National Transportation Safety Board</b> <b>FACTUAL REPORT</b> <b>AVIATION</b></p>	NTSB ID: <b>CHI90FA003</b>
	Occurrence Date: <b>10/07/1989</b>
	Occurrence Type: <b>Accident</b>

<b>Weather Information</b>					
WOF ID	Observation Time	Time Zone	WOF Elevation	WOF Distance From Accident Site	Direction From Accident Site
ARB	1204	EDT	839 Ft. MSL	0 NM	0 Deg. Mag.
Sky/Lowest Cloud Condition: <b>Unknown</b>			0 Ft. AGL	Condition of Light: <b>Day</b>	
Lowest Ceiling: <b>Overcast</b>		3000 Ft. AGL	Visibility: <b>20</b>	SM	Altimeter: <b>30.00</b> "Hg
Temperature: <b>-18 °C</b>	Dew Point: <b>-18 °C</b>	Weather Conditions at Accident Site: <b>Visual Conditions</b>			
Wind Direction: <b>300</b>	Wind Speed: <b>8</b>	Wind Gusts:			
Visibility (RVR): <b>0</b> Ft.	Visibility (RVV) <b>0</b>	SM			
Precip and/or Obscuration:					

<b>Accident Information</b>		
Aircraft Damage: <b>Destroyed</b>	Aircraft Fire: <b>None</b>	Aircraft Explosion: <b>None</b>

- Injury Summary Matrix	Fatal	Serious	Minor	None	TOTAL
First Pilot	1				1
Second Pilot					
Student Pilot					
Flight Instructor					
Check Pilot					
Flight Engineer					
Cabin Attendants					
Other Crew					
Passengers	2				2
- TOTAL ABOARD -	3				3
Other Ground	0	0	0		0
- GRAND TOTAL -	3	0	0		3

 National Transportation Safety Board <b>FACTUAL REPORT</b> AVIATION	NTSB ID: <b>CHI90FA003</b>	
	Occurrence Date: <b>10/07/1989</b>	
	Occurrence Type: <b>Accident</b>	

**Administrative Information**

Investigator-In-Charge (IIC)

**WILLIAM C. BRUCE**

Additional Persons Participating in This Accident/Incident Investigation:

**G. ERIKSON**  
**WILLIAMSPORT, PA**

**J. CHADWELL**  
**VERO BEACH, FL**

**R. JOHNSON**

# Exhibit 26

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# Ann Arbor Municipal Airport Environmental Assessment



Prepared for:  
Federal Aviation Administration, Michigan Department of Transportation  
Bureau of Aeronautics and Freight Services  
and City of Ann Arbor

February 2010

**JJR** landscape architecture  
planning  
urban design  
civil engineering  
environmental science

---



**Environmental Assessment**  
**for**  
**Ann Arbor Municipal Airport**  
**Ann Arbor, Michigan**

Prepared for:

Michigan Department of Transportation  
Bureau of Aeronautics and Freight Services  
and  
City of Ann Arbor

Prepared by:

JJR, LLC

This environmental assessment becomes a State of Michigan document when evaluated and signed by the responsible state official.

\_\_\_\_\_  
Responsible State Official

\_\_\_\_\_  
Date of Approval

\_\_\_\_\_  
Responsible Federal Official

\_\_\_\_\_  
Date of Approval

This Environmental Assessment describes the social, economic, and environmental impacts associated with the Preferred Alternative for implementing proposed improvements at the Ann Arbor Municipal Airport. The alternatives considered were: (1) No Build, (2) Use other airports, (3) Construct new airport, (4) Develop alternative modes of transportation, and (5) Runway 6/24 alternatives.

Comments on this Environmental Assessment should be received within 30 days of the date of publication and should be sent to Ms. Molly Lamrouex, Airports Division, MDOT Bureau of Aeronautics and Freight Services, 2700 Port Lansing Road, Lansing, Michigan 48906-2160.





**ANN ARBOR MUNICIPAL AIRPORT  
ENVIRONMENTAL ASSESSMENT**

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- Appendix F. Audubon Society Bird Species Observed List
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## *Section 1.*

### *Executive Summary*

The Ann Arbor Municipal Airport (ARB), owned and operated by the City of Ann Arbor, is located in Pittsfield Township, Washtenaw County, Michigan. ARB initiated preparation of an Environmental Assessment (EA) in 2009 to evaluate the potential impacts of implementing portions of proposed developments shown on the Federal Aviation Administration (FAA) approved Airport Layout Plan (ALP).

The proposed developments focus on extending and improving Runway 6/24, the primary runway, to address the needs of the existing critical aircraft that use the airport. Alternatives were developed to provide options for extending the existing 3,505-foot runway to 4,300-feet, while extending the existing parallel taxiway to the same length. Alternatives considered in this study included no build, use other airports, construct new airport, develop alternative modes of transportation, and Runway 6/24 alternatives.

The alternatives were evaluated based on their ability to meet the purpose and need of the project, the impact the alternative would have on the community and environment, and other limiting factors, such as cost. Based on this evaluation, a build alternative that involves shifting and extending the existing runway was selected as the Preferred Alternative.

Implementation of the Preferred Alternative would not require the acquisition of land, and no homes or businesses would be displaced. The Preferred Alternative would not impact wetlands, county drains, or floodplains. The proposed project would have a positive impact on interstate commerce to the immediate Ann Arbor area, as well as enhance the safety of airport operations.



## ***Section 2.***

### ***Purpose and Need***

#### **2.1 PROJECT LOCATION AND DESCRIPTION**

*Note: The following information contains a large number of aviation-related acronyms. A glossary with definitions is included in Section 10 of this document.*

Ann Arbor Municipal Airport (ARB) is a public-use, general aviation airport located in Washtenaw County, Michigan. The airport is located in Pittsfield Township and consists of approximately 837 acres. ARB is generally bound by Ellsworth Road to the north, State Road to the east, and Lohr Road to the west (Figure 2-1).

ARB is in close proximity to state highways including US-23, M-14, US-12, and I-94. Direct access to the airport is from Ellsworth and State Roads. The closest public-use airport is Willow Run Airport in Ypsilanti, which is approximately 12 miles to the east (approximately a 20 minute drive by automobile). The southeastern region of Michigan has a high level of commerce, and high levels of commercial, corporate, and general aviation air traffic.

The City of Ann Arbor owns and operates ARB. The city is responsible for contracting with the Fixed Base Operators (FBO), which are Solo Aviation, Ann Arbor Aviation Center, and Bijan Air. ARB's operating budget is an enterprise fund comprised solely of revenue generated by airport operations.

The primary runway, Runway 6/24, is 3,505-feet long by 75-feet wide and is oriented in a northeast/southwest direction. ARB has 22 permanent aviation service buildings, including the administration building, the FBOs, maintenance facilities, conventional box hangars, a privately owned hangar, and the FAA Air Traffic Control Tower (ATCT). The airport also provides 150 T-hangar spaces in an additional 13 T-hangar structures.

The current FAA-approved Airport Layout Plan (ALP) was updated in 2008 (Figure 2-2), and it incorporates the future development proposed in the Airport Capital Improvement Plan for ARB.

The proposed improvements from the ALP that are documented in this EA include:

- Shift and extend existing Runway 6/24, resulting in a runway that would be 4,300-feet long by 75-feet wide.
- Shift and extend the parallel taxiway to coincide with the revised Runway 6/24.
- Provide a new taxiway connector to the extended Runway 6 end.
- Provide a new taxiway connector and holding bay to the shifted Runway 24 end.



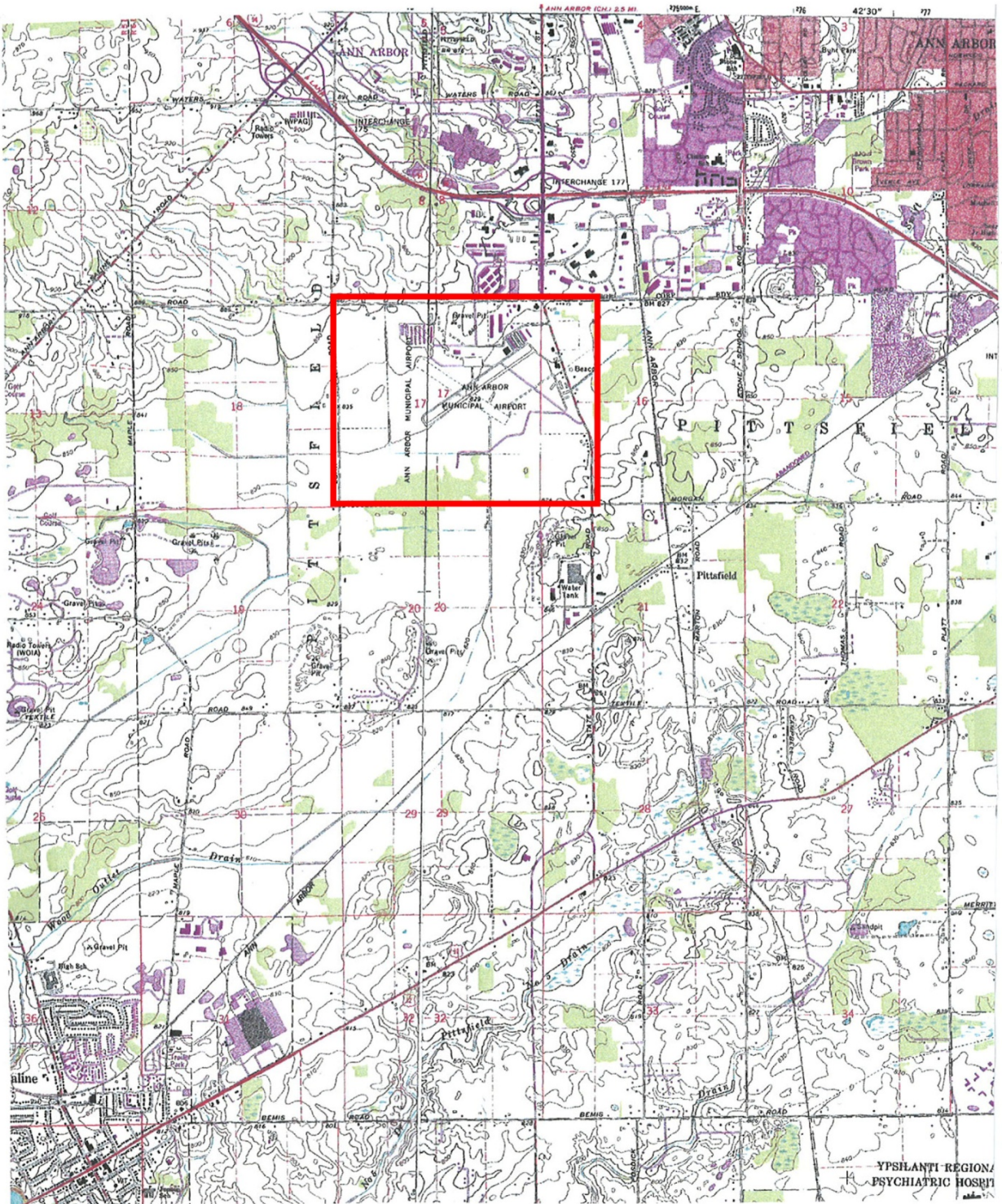


Figure 2.1: Location Map  
Ann Arbor Municipal Airport Environmental Assessment





## 2.2 PURPOSE AND NEED

The purpose of the proposed improvements at ARB 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.

The 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. In cases where the critical aircraft weigh less than 60,000 lbs, a classification of aircraft is used rather than a specific individual aircraft model.

A recent Airport User Survey has confirmed that the critical aircraft classification for ARB is “B-II Small Aircraft” (MDOT, 2009). Aircrafts in this category have runway approach speeds between 91 and 120 knots, wingspans between 49- and 79-feet, and maximum certificated takeoff weights of 12,500 lbs or less. A representative aircraft of this classification is the Beechcraft King Air 200, a twin-engine turboprop aircraft that typically seats 10-12 people, including the flight crew.

As stated in FAA Advisory Circular 150/5325-4B, “*The design objective for the main primary runway is to provide a runway length for all airplanes that will regularly use it without causing operational weight restrictions.*” Airplanes that are classified within an airport’s critical aircraft classification are considered by the FAA to be the regular use aircrafts of the primary runway.

Development of the primary runway at ARB to the recommended length of 4,300-feet would allow the majority of B-II Small classification aircraft to operate at their optimum capabilities (without weight restrictions). Interstate commerce into and out of a community can be negatively impacted if business aircraft are forced to operate with load restrictions (i.e. reductions in passengers, cargo, and fuel associated with aircraft range) due to lack of suitable runway length.

An origin-destination analysis was conducted on Instrument Flight Rules (IFR) flight plan records associated with ARB as part of the user survey process. Although the data analyzed did not include records of all operations conducted at ARB, it did confirm that there are a significant number of operations between ARB and distant locations throughout the country.

Flight operations were verified between ARB and at least 31 other states (approximately 63 percent of the continental US). Also, approximately 67 percent of the IFR flight plan records examined were between ARB and out-of-state locations. These factors are strong indicators of corporate flight activity associated with interstate commerce, as opposed to local pleasure flying by general aviation pilots. The large number of states that were linked to ARB is also a strong indicator of use of the airport by many corporations, as opposed to a single or few corporate users. Some of the larger corporations that were confirmed by the user survey as being users of ARB are Synergy International, Wells Fargo, Polaris Industries, Bombardier Aerospace, Avis Industrial Corporation, Thumb

Energy, NetJets, and AvFuel. NetJets provides on-demand air charter service and corporate aircraft fractional ownership opportunities to a large number of businesses located throughout the country. AvFuel Corporation, a nationwide supplier of aviation fuels and aviation support services, is headquartered in Ann Arbor and bases their Cessna 560 Excel Jet at ARB.

The City of Ann Arbor proposes to extend the existing 3,505-foot primary runway to 4,300-feet in total length in order to more effectively accommodate the critical aircraft that currently use the airport. The runway extension would enhance interstate commerce associated with business aviation, and the other proposed modifications would enhance the operational safety of ARB.

The objectives of the proposed project are to:

- Enhance interstate commerce by providing sufficient runway length to allow the majority of critical aircraft to operate without weight restrictions.
- Enhance operational safety by improving the FAA ATCT line-of-sight issues.
- Enhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24, over State Road.
- Reduce the occurrence of runway overrun incidents by small category A-I aircraft (local objective).
- Relocate and potentially upgrade the Runway 24 Approach Light System.

### ***2.2.1 Safety Enhancement***

The proposed 150-foot shift of the Runway 24 threshold to the west would enhance the safety of ground operations by taxiing aircraft. Currently, a hangar structure blocks the line-of-sight from the FAA ATCT to a portion of the parallel taxiway at the east end of the runway, including most of the taxiway hold area for departing aircrafts. While this situation is not considered hazardous, the proposed shift would enhance operational safety, and possibly prevent a runway incursion, by expanding the view of the hold area and parallel taxiway to ATCT personnel.

The proposed shift of the Runway 24 threshold would also allow for a clear 34:1 approach surface to the east end of the runway (the current approach surface is the steeper 20:1). By keeping obstructions below the flatter 34:1 approach surface, an additional margin of safety is provided between approaching aircraft and any ground-based obstacles. This is particularly beneficial when aircraft are operating in low-visibility conditions. Provision of a clear 34:1 approach surface would also potentially allow visibility minimums to the Instrument Approach Procedure to Runway 24 to be lowered to 3/4 of a mile, as opposed to the current 1-mile visibility minimum. This would enhance the all-weather capability of the airport (and also interstate commerce) by allowing aircraft to continue to access the airport when weather conditions resulted in visibility dropping below the current 1-mile minimum.

Due to the proposed relocation of the Runway 24 threshold, it is also proposed that the existing runway approach light system be relocated accordingly. The airport currently uses an Omni-Directional Approach Lighting System (ODALS) to identify the approach end of Runway 24. The sequentially-flashing strobe lights assist pilots in identifying the runway threshold location and runway centerline alignment in low-visibility conditions. Since the FAA no longer installs ODALS, the current approach light system would potentially be upgraded and replaced with the newer Medium Intensity Approach Lighting System with Sequenced Flashers (MALSF) as part of the relocation. The MALSF would serve the same function as the ODALS, and is structurally very similar.

### ***2.2.2 Role of the Airport***

ARB is a public-use facility that serves the local community by supporting economic development and public services. The following businesses and organizations are located at and operate from the airport and employ staff that supports the operations of the airport:

- Two fixed-wing FBOs;
- A helicopter FBO;
- Three national rental car agencies;
- Two flying clubs;
- Four flight schools and pilot training centers;
- FAA ATCT; and,
- Air taxi, aircraft sales, aviation insurance and aviation fueling businesses.

ARB serves the Ann Arbor medical and biomedical industries with professional air ambulance services, transporting patients, human organs, radio isotopes, and other biomedical products and services.

Community pilots and aircraft owners are members of nonprofit organizations providing “no charge” charitable gifts of flight time to citizens in need. Some of these organizations include Wings of Mercy, Angel Flight, and Dreams and Wings. Wings of Mercy has documented 292 flights into or out of ARB since 1992 including 51 flights in 2009.

ARB is included in the FAA’s National Plan of Integrated Airport Systems (NPIAS) as a general aviation airport. Not all public-use airports are included in this nationwide airport system plan. Inclusion in the NPIAS signifies that the FAA considers this airport an important part of the nation’s air transportation system, and it makes ARB eligible to receive federal grants as part of the FAA’s Airport Improvement Program.

ARB is also included in MDOT’s Michigan Airport System Plan (MASP) (MDOT, 2008). The MASP presents the results of an airport system planning process that has been aligned with the goals and objectives of MDOT’s State Long Range Plan. The MASP supports programming decisions and is useful in evaluating programming actions related to airport system and airport facility deficiencies.

As part of the MASP development, each of Michigan's public-use airports were assigned to one of three tiers based on their contribution to the state system goals. Tier 1 airports respond to essential/critical airport system goals. These airports should be developed to their full and appropriate level. Tier 2 airports complement the essential/critical airport system and/or respond to local community needs. Focus at these airports should be on maintaining infrastructure with a lesser emphasis on facility expansion. Tier 3 airports duplicate services provided by other airports and/or respond to specific needs of individuals and small business.

The MASP identifies ARB as a Tier 1 airport, with a current MASP classification of B-II. Basic standard developmental items for B-II category airports, as outlined in Table 40 of the MASP, are a paved primary runway of 4,300-feet in length by 75-feet wide, a paved parallel taxiway, appropriate runway lighting and visual aids, a runway approach protection plan, basic pilot and aircraft services, all-weather access, year-round access, and landside access. Although it is not a requirement, MDOT encourages all of Michigan's Tier 1 airport sponsors to consider development of their airports to comply with the basic development standards outlined in the MASP.

ARB currently meets all MASP basic development standards for category B-II airports, with the exception of runway length. The current primary runway is only 3,505-feet in length by 75-feet wide. An extension of the primary runway to 4,300-feet in length would result in the airport meeting all state-recommended standards for B-II category airports.

### ***2.2.3 Aircraft Operations and Runway Length Recommendations***

The Airport Reference Code (ARC) is a coding system developed by the FAA to correlate airport design criteria with the operational and physical characteristics of the airplane types that regularly use a particular airport. The critical aircraft, or grouping of aircraft, are generally the largest, most demanding types that conduct at least 500 operations per year at the airport. The ARC for each particular airport is determined based on two characteristics of the critical aircraft: the approach speed to the runway and the wingspan of the aircraft.

The first component, designated by letter A through E, is the critical aircraft's Approach Category. This is determined by the approach speed to the runway:

- Category A: Approach speed less than 91 knots.
- Category B: Approach speed 91 knots or more, but less than 121 knots.
- Category C: Approach speed 121 knots or more, but less than 141 knots.
- Category D: Approach speed 141 knots or more, but less than 166 knots.
- Category E: Approach speed 166 knots or more.

The second component, designated by Roman numeral I through VI, is the critical aircraft's Design Group. This is determined by the wingspan of the aircraft:

- Group I: Wingspan less than 49-feet.
- Group II: Wingspan 49-feet or more, but less than 79-feet.
- Group III: Wingspan 79-feet or more, but less than 118-feet.
- Group IV: Wingspan 118-feet or more, but less than 171-feet.
- Group V: Wingspan 171-feet or more, but less than 214-feet.
- Group VI: Wingspan 214-feet or more, but less than 261-feet.

The FAA has also established categories for aircraft based on their certificated Maximum Takeoff Weights (MTOW), which are determined by each specific aircraft’s manufacturer. *Small Aircraft* are those with MTOWs of 12,500 lbs. or less. *Large Aircraft* are those with MTOWs greater than 12,500 lbs.

As previously mentioned, the airport user survey confirmed that the current critical aircraft category (and ARC) for ARB is “**B-II Small Aircraft**”. Based on the findings of the user survey analysis, the primary runway length recommendations by MDOT and FAA are as follows:

**MDOT** – Source: *Michigan Airport System Plan (MASP 2008)* **4,300-feet**  
*Table 40 (statewide standard for all ARC B-II airports)*

**FAA** – Source: *FAA Advisory Circular 150/5325-4B,* **4,200-feet\***  
*“Runway Length Requirements for Airport Design”*  
*Figure 2-2 (airport-specific standard for ARB)*

\* Note: The FAA runway length recommendation was obtained from Figure 2-2 in *Advisory Circular 150/5325-4B*. The following specifics for ARB were used in the determination:

Airport Elevation: 839-feet above mean sea level

Temperature: 83 degrees F mean daily maximum temp, hottest month of year (July)

The FAA recommended runway length of 4,200-feet at ARB was obtained by calculation from FAA Advisory Circular 150/5325-4B, “*Runway Length Requirements for Airport Design*”, a publication that is used nationally by the agency. The resulting recommended runway lengths are airport-specific, and can vary by hundreds of-feet from site to site, depending on the specific airport elevations and mean daily maximum temperatures used in the calculations.

The MDOT recommendation of 4,300-feet is a statewide standard for all airports in the state with category B-II critical aircraft classifications. Since airport elevations and mean maximum temperatures do not vary significantly from airport to airport in Michigan, as opposed to many other states, MDOT uses a single runway length recommendation for all airports of the same critical aircraft classification.

The existing ARC shown on the current ALP for the airport is category B-II. This classification has been confirmed correct by the recent airport user survey. Even if the

proposed extension to 4,300-feet is constructed, the ALP shows that the future ARC for the airport will remain category B-II.

#### ***2.2.4 Airport Operational Forecasts***

Year 2007 was the onset year of planning activities associated with the potential extension of Runway 6/24, and the year in which the airport manager and FBOs were requested to collect based and itinerant aircraft operational data for the purpose of determining project justification. In order to maintain consistency, FlightAware operational records from target year 2007 were also examined during the user survey analytical process.

Actual total operations for year 2009 were recently published (January 2010) by the FAA for airports with ATCT. From the user survey operational data year 2007 through the most recent operational data year 2009, total annual operations at ARB have decreased approximately 21.8% (from 72,853 actual in 2007 to 57,004 actual in 2009). Since the operational totals were obtained from actual ATCT records, rather than estimates, they are considered very accurate.

By applying the 21.8% decrease in total annual operations at ARB from 2007 to 2009 to the user survey results, a very accurate estimate can be obtained for the current level of operations by B-II category critical aircraft. The user survey report documents a total of 750 actual annual operations by B-II category critical aircraft from survey data year 2007. A 21.8% decrease in this number is 586 - still well above the FAA's substantial use threshold of 500. Therefore, even with the current decrease in annual operations due to the economic recession, there is still justification at the present time for the runway extension.

The FAA's Terminal Area Forecast (TAF) shows year 2009 to be a low-point in total annual operations at ARB. The TAF projects total annual operations to continually increase every single year, from year 2010 through year 2030. Since the estimated 586 annual operations by B-II category aircraft in year 2009 confirm present justification for the runway extension, the continual increase in operations that are forecasted by the TAF confirm that justification for the runway extension is substantiated through year 2030.

The following actual and forecasted Total Operations at ARB, from year 2000 through year 2030, are from the FAA data sources listed below. The Estimated Category B-II Operations for each year have been calculated based on the percentage of actual B-II operations to actual total operations in survey data year 2007.



**Table 2-1  
Actual and Forecasted Total Operations at ARB**

<b>Year</b>	<b>Total Operations</b>	<b>Estimated Category B-II Operations</b>
2000	104,342 *	1,074
2001	102,321 *	1,053
2002	91,414 *	941
2003	77,051 *	793
2004	65,516 *	674
2005	67,940 *	699
2006	71,785 *	739
2007	72,853 *	750***
2008	64,910 *	668
2009	57,004 *	586
2010	56,986 **	586
2011	57,514 **	592
2012	58,073 **	598
2013	58,639 **	604
2014	59,212 **	610
2015	59,791 **	616
2016	60,376 **	622
2017	60,968 **	628
2018	61,567 **	634
2019	62,173 **	640
2020	62,786 **	646
2021	63,405 **	653
2022	64,032 **	659
2023	64,666 **	666
2024	65,307 **	672
2025	65,956 **	679
2026	66,613 **	686
2027	67,277 **	693
2028	67,948 **	700
2029	68,627 **	706
2030	69,314 **	714

- \* = Actual Total Operations from FAA ATCT records
- \*\* = Forecasted Total Operations from FAA TAF
- \*\*\* = Actual (from User Survey)

Forecasts from the MDOT MASP also project increasing total operations at ARB from years 2010 through 2030. The MDOT forecasts, which are independent of the FAA forecasts, further substantiate the mid-term and long-term FAA projections of a rebound in activity at ARB to near survey year 2007 operational levels.

AvFuel Corporation, which bases a B-II Large category Citation 560 Excel jet at ARB, has confirmed in writing that their operations at ARB increased from 211 actual operations in 2007 to 223 actual operations in 2008. Their Chief Pilot has also submitted written documentation that forecasts their future operational levels potentially increasing to 350 to 450 operations per year at ARB.

The FAA TAF forecast, MDOT MASP forecast, and AvFuel's operational forecast all provide support to the fact that survey year 2007 operational data that was analyzed in the user survey process is a very pertinent representation of estimated future operational levels at ARB.

### **2.2.5 Surrounding Land Uses**

ARB is bordered by Ellsworth Road to the north, Lohr Road to the west, and State Road to the east. The primary runway is situated in a northeast/southwest direction. Residential, business, industrial, recreational, agricultural, and forested areas are located adjacent to the airport, and efforts were made during the analysis of alternatives to minimize impacts to these resources. Residential properties are located along Lohr Road and business properties are located along State and Ellsworth Roads. A perennial stream crosses through the airport property and flows to the south connecting to a county drain (Wood Outlet). A portion of the stream near the southwest end of the runway is enclosed in a concrete culvert.

### **2.2.6 Other Considerations**

Aircraft performance information and runway length requirements for each airplane are contained in the individual airplane flight operating manual. As quoted from FAA Advisory Circular 150/5325-4B, Paragraph 206, *"This information is provided to assist the airplane operator in determining the runway length necessary to operate safely. Performance information from those manuals was selectively grouped and used to develop the runway length curves in Figures 2-1 and 2-2. The major parameters utilized for the development of these curves were the takeoff and landing distances for Figure 2-1 and the takeoff, landing, and accelerate-stop distances for Figure 2-2."* As stated earlier in this section, Figure 2-2 of the Advisory Circular was used to determine the FAA-recommended runway length for ARB.

The *accelerate-stop distance* concept referred to above is an important operating consideration. In this concept, the pilot not only considers the amount of runway needed for takeoff, but also the amount of runway needed to abort the takeoff while on the takeoff roll and bring the aircraft to a stop. In situations where pilots detect a problem with the aircraft while on the takeoff roll, they are forced to continue the takeoff and contend with the problem in the air if there is not enough runway remaining to bring the aircraft to a stop. By having enough remaining runway to safely abort a takeoff and stop the aircraft while still on the ground, a pilot would be able to avoid a potentially hazardous situation of taking to the air with a mechanically-deficient aircraft.

A local objective is to reduce the occurrence of runway overrun incidents. While overrun incidents are not officially recognized by the FAA or MDOT as justification for extending runways, there is merit to this local objective. The 11 overrun incident reports that were analyzed showed that most runway overruns at ARB involved small single-engine category A-I aircraft. These types of incidents often involve student pilots or low-time, relatively inexperienced pilots. There is no evidence in the incident reports that any of the aircraft which overran the end of the existing 3,505-foot runway exceeded the limits of the 300-foot long turf Runway Safety Area. Therefore, in each of these cases, the proposed 4,300-foot long runway would have provided sufficient length for the small category A-I aircraft to safely come to a stop while still on the runway pavement, without running off the runway end.

The considerations mentioned above do not imply that the existing 3,505-foot runway is unsafe in any regard. Accelerate-stop distance requirements can be accommodated on the existing runway if pilots of critical category aircraft operate at reduced load capacities. In the cases of the previous runway overrun incidents, the turf Runway Safety Areas to the existing runway performed as designed and provided a clear area for the overrunning aircraft to come to a stop. There were no reports of personal injuries, although there were reports of aircraft damage in several of the incidents.

### **2.2.7 Summary**

The proposed shift and extension of primary Runway 6/24 at ARB would provide a runway configuration that more effectively accommodates the critical aircraft that presently use the facility. The proposed project would satisfy the FAA design objective of providing sufficient runway length to allow airplanes that regularly use it to operate without weight restrictions. The proposed project would also result in ARB achieving full compliance with all MDOT basic developmental standards outlined in the MASP 2008 for category B-II airports.

In particular, the proposed project would provide the following benefits:

- Enhance business aviation and interstate commerce by providing sufficient runway length to allow the majority of category B-II Small critical aircraft that currently use ARB to operate without load restrictions (i.e. reduction in passengers, cargo, and fuel associated with aircraft range).
- Enhance the safety of ground operations, and lessen the chances of a runway incursion, by expanding the view of the parallel taxiway and aircraft hold area to ATCT personnel.
- Improve the all-weather capability of ARB and enhance operational safety in low-visibility conditions by providing a clear 34:1 approach surface to Runway 24.
- Address the local objective of decreasing the number of runway overruns by small category A-I aircraft by providing approximately 800-feet of additional runway pavement.

## ***Section 3.***

### ***Description of Alternatives***

Alternatives have been developed to meet the goals of ARB, improve safety and efficiency, and serve current users. The existing airport facilities include the primary runway, Runway 6/24, which is 3,505-feet long and 75-feet wide, a taxiway system, FAA ATCT, and the terminal and hangar buildings. The terminal and hangar buildings are located north of the runway. The taxiway is a full parallel taxiway and there is a turf crosswind runway. See Figure 3-1 for an illustration of existing airport conditions.

The alternatives considered include: No Build (e.g., No Action), use other airports, construct new airport, and four build alternatives for Runway 6/24. The impacts of each alternative were considered along with the ability to meet the purpose and need. An analysis and illustrations of the alternatives follow, along with a summary of their associated impacts.

#### **3.1 ALTERNATIVES CONSIDERED AND DISMISSED**

During the evaluation of ARB and its future needs, several alternatives were evaluated. The following alternatives were not considered feasible and were dismissed from further study.

##### ***3.1.1 Use Other Airports***

The closest public-use airport to ARB is Willow Run Airport, approximately 12 miles east, near the City of Ypsilanti. Runway lengths at Willow Run range from 5,995-feet to 7,526-feet. Surface travel time to this airport is approximately 20 minutes. Willow Run Airport is one of the largest cargo airports in the country, transferring approximately 400 million pounds of freight through the airport annually.

Other airports within 25 miles of ARB include New Hudson-Oakland Southwest Airport (approximately 21 miles north, 3,128-foot runway), Canton-Plymouth-Mettetal Airport (approximately 22 miles northeast, 2,303-foot runway), and Tecumseh-Myers-Divers Airport (approximately 23 miles southwest, 2,660-foot runway). All three of these airports have primary runways that are shorter than the existing 3,505-foot runway at ARB.

From an operational standpoint, Willow Run Airport is capable of accommodating any of the aircraft that currently fly into ARB. Although Willow Run offers longer runway lengths, and a precision Instrument Landing System (ILS) approach procedure, many corporate users still elect to fly into ARB instead of Willow Run. This demonstrates that a large number of operators of business aircraft value the close proximity of ARB to their corporate offices and business contacts over the larger facility at Willow Run. Use of ARB over Willow Run also provides increased economic benefits to the Ann Arbor-based FBOs, as well as nearby hotels, restaurants, and other businesses.

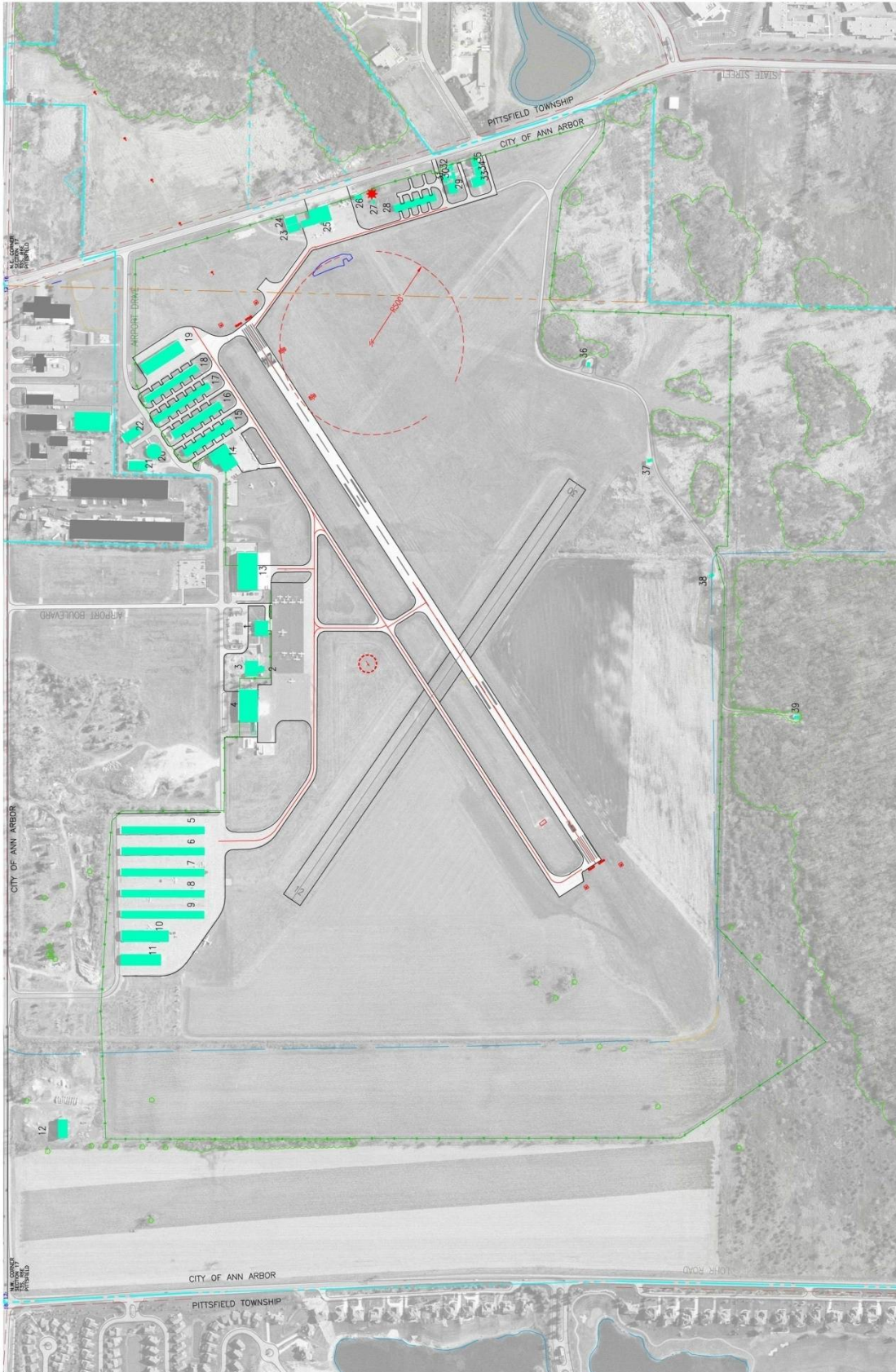


Figure 3.1: Existing Conditions  
Ann Arbor Municipal Airport Environmental Assessment

Neither MDOT, nor the FAA, dictate to pilots which airports they can and cannot use. The decision on whether or not to use a particular airport is entirely up to the discretion of the pilot. Even with the availability of Willow Run, the recent airport user survey confirmed substantial use of ARB by B-II category aircrafts that are operated by many of the corporations listed in Section 2.2 of this document. The FAA design standards that are used nationally, as well as the MDOT basic development standards outlined in the MASP, are based on accommodating the existing critical aircraft that operate at each particular airport.

### ***3.1.2 Construct New Airport***

The existing airport is located in proximity to I-94, US-23, and M-14. ARB has been located at its current location since the 1920s. Many businesses have chosen their location to be in close proximity to ARB.

Relocating the operations of ARB to a new site would initially require acquisition of property comparable to, or larger than, the existing facility. While there may be sites that would physically accommodate the needs of a new airport, the costs associated with the relocation and the environmental consequences of a new airport would be greater than those expected with the expansion of ARB in its current location. It is anticipated that any site for relocation of the airport may require road closures, loss of farmlands, habitat disruption and displacement, residential relocations, and significant infrastructure improvements to provide a facility comparable to the existing airport.

It was determined that constructing a new airport would be a disruption to local businesses, considerably more expensive, and more environmentally damaging than the proposed project at the existing site. Consequently, this alternative was removed from further consideration.

### ***3.1.3 Extend Runway to the East***

This build alternative would involve extending Runway 6/24 to the east, holding the west end in its current location. The new runway would be 4,300-feet long and 75-feet wide. The parallel taxiway would also be extended to the east.

Extension of the runway pavement to the east would require the relocation of a considerable portion of State Road. Due to the FAA requirement of providing a clear Runway Safety Area, Object Free Area, and Runway Protection Zone in the approach area to the extended runway, there would also be a need to relocate a portion of Ellsworth Road, as well as the entire intersection of State Road and Ellsworth Road.

State Road and Ellsworth Road are highly traveled corridors. Any relocation would result in an impact to vehicular circulation, businesses, and residents in the area. A considerable amount of right-of-way would also have to be acquired in order to accommodate the relocated roadways, which would result in high costs and further impacts to the nearby businesses. In addition to these impacts, the relocation of State

Road would also severely impact the large wetland complex that is located on its east side.

## **3.2 ALTERNATIVES CARRIED FORWARD**

The following alternatives were considered feasible and were carried forward for further evaluation.

### **3.2.1 No Build Alternative**

The No Build Alternative assumes that no development would occur at ARB other than to maintain the existing facilities. The runway and taxiway would not be altered and no improvements to hangars or hangar access would occur beyond regularly scheduled maintenance.

### **3.2.2 Build Alternatives**

When it was determined that extension of the primary runway was justified based on a determination of the airport's critical aircraft, several build alternatives were developed.

#### Build Alternative 1 – Extend and Realign the Existing Runway

The existing runway, Runway 6/24, would be realigned and extended to the southwest, holding the east end in its current location (Figure 3-2). The west end would be rotated five degrees counterclockwise. This alignment would maintain wind coverage needs, while moving the west approach away from some residential areas. The runway would be extended 800-feet to the southwest, resulting in a primary runway length of 4,300-feet with a width of 75-feet. The taxiway to the north would be extended to 4,300-feet, creating a full parallel taxiway. The taxiway and runway would have a 240-foot separation.

#### Build Alternative 2 – Extend the Existing Runway to the West

The existing runway, Runway 6/24, would be extended 800-feet to the west (Figure 3-3), holding the east end in its current location. The primary runway would be lengthened to 4,300-feet, maintaining the existing 75-foot width. As with Build Alternative 1, the existing taxiway would be extended, creating a full parallel taxiway. The taxiway and runway would have a 240-foot separation.

#### Build Alternative 3 – Shift and Extend the Existing Runway to the West

The east end of the runway would be shortened 150-feet to the west and the west end extended 950-feet to the west. The new runway would be extended a total of 800-feet, resulting in an overall runway length of 4,300-feet long and 75-feet wide (Figure 3-4). The parallel taxiway would be the same length as the runway, with a 240-foot separation.

Changes to the alignment of the primary runway are limited due to the layout of existing surface features and also by wind coverage. Desired wind coverage by FAA is 95 percent. Currently, Runways 6/24 and 13/31 provide 96.9 percent coverage with a maximum 10.5 knot cross wind component. Any change in runway alignment would need to be analyzed to determine the wind coverage.

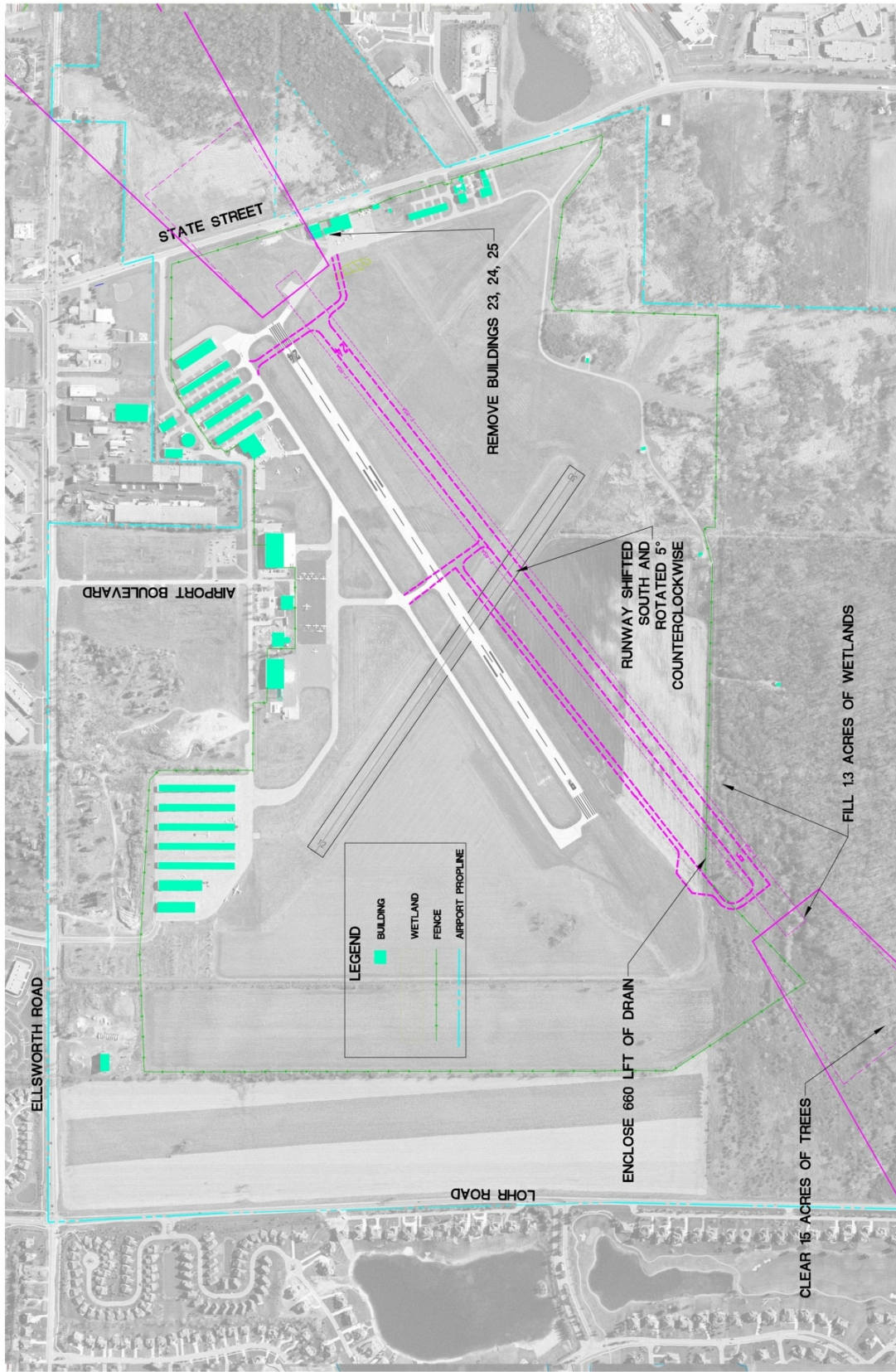


Figure 3.2: Build Alternative 1 - Extend and Realign the Existing Runway  
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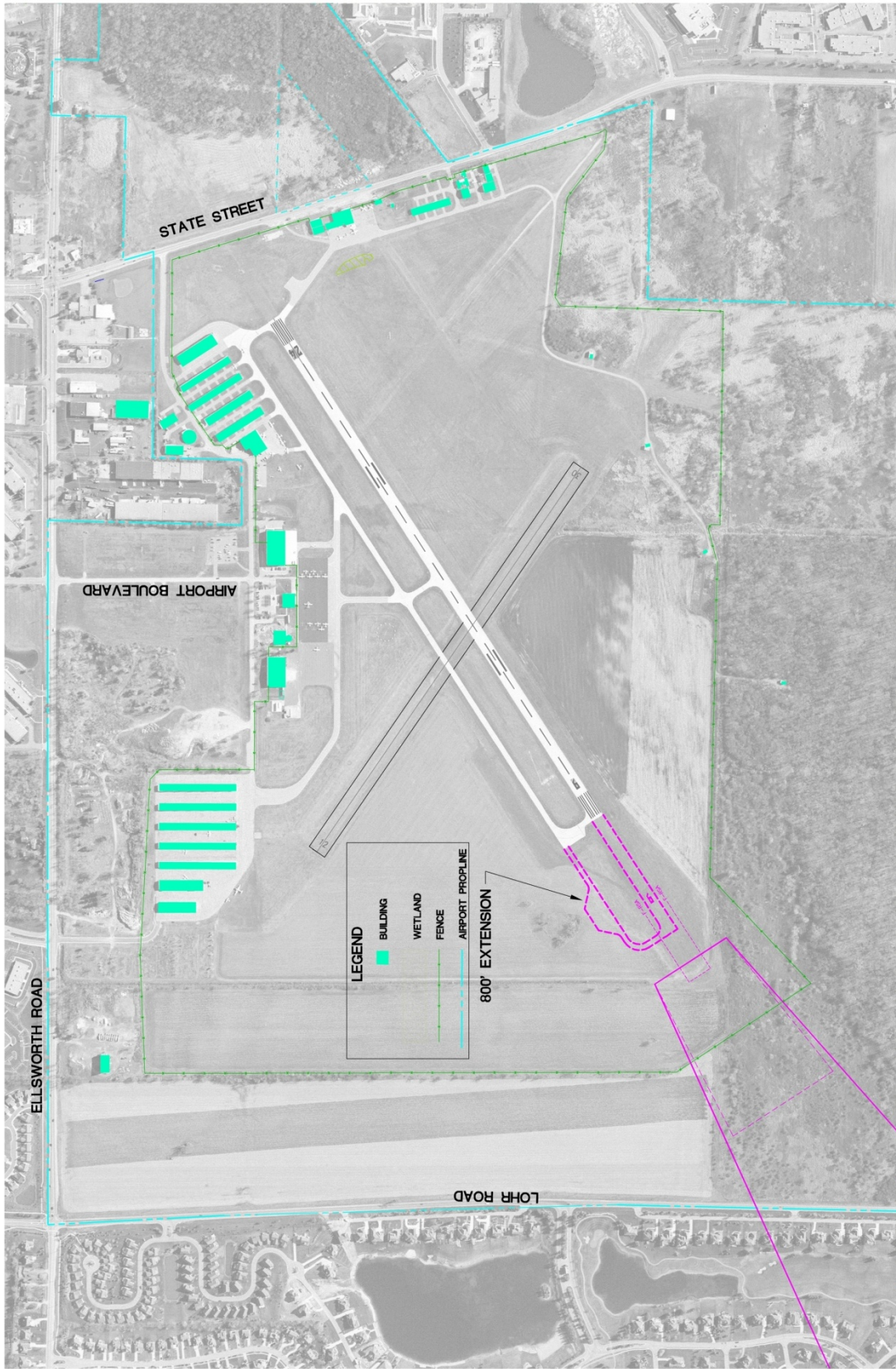


Figure 3.3: Build Alternative 2 - Extend the Existing Runway to the West  
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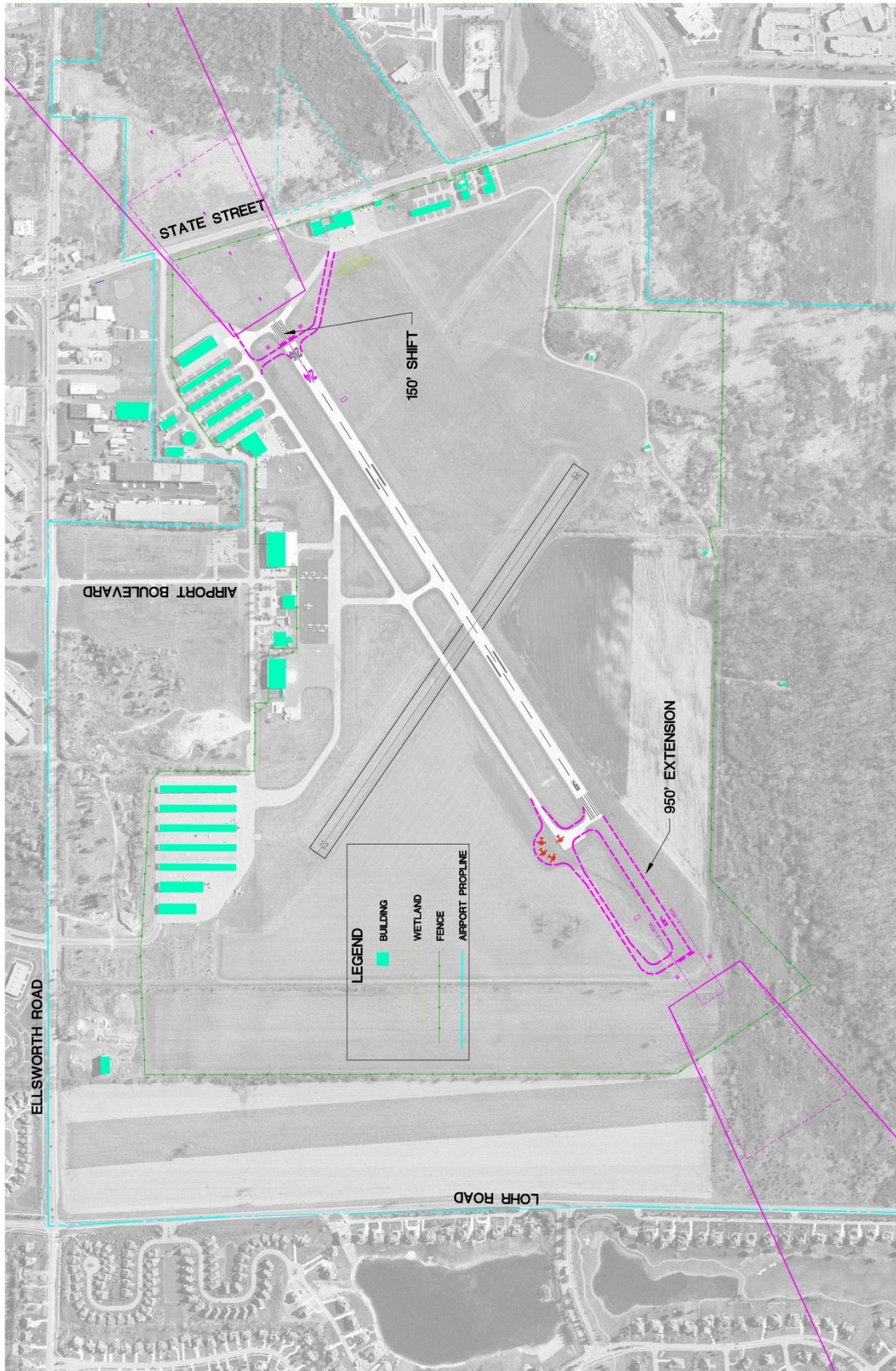


Figure 3.4: Build Alternative 3 - Shift and Extend Existing Runway to the West (Preferred Alternative)  
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### 3.3 ALTERNATIVES EVALUATION

The alternatives were evaluated for: 1) ability to meet the purpose and need, and 2) extent of impacts to resources (Table 3-1). An alternative was rejected if it did not meet purpose and need, or had a high degree of impacts. The alternatives rejected and reasons for not being further considered follow.

**Table 3-1  
Summary of Alternatives Carried Forward**

Evaluation Factors	Alternatives			
	No Build	1	2	3
Runway Length	3,500 ft.	4,300 ft.	4,300 ft.	4,300 ft.
Full Safety Areas	Yes	Yes	Yes	Yes
Stream Impact – length in feet	None	660	None	None
Direct Wetland Impacts	0 acres	1.3 acres	0 acres	0 acres
Tree clearing	0 acres	15 acres	0 acres	0 acres
Residential Displacements	0	0	0	0
Land Acquisition	0	8 acres	0	0
Airport Buildings Removed	None	3	None	None
Meets Purpose and Need	No	No	No	Yes

#### 3.3.1 No Build Alternative

The No Build Alternative would be the least expensive alternative in the near future; however, it does not meet the objective of ARB to better serve current users, and to increase safety and efficiency. The existing runway length does not allow for the critical aircraft (B-II) to operate at their design capabilities without weight restrictions.

#### 3.3.2 Build Alternative 1 – Extend and Realign the Existing Runway

Implementation of Build Alternative 1 would impact 1.3 acres of wetlands and extend the existing culvert of the stream by additional 660-feet. Fifteen acres of trees would need to be cleared at the west end of the new realigned runway. Three buildings at the east end of the runway would need to be removed. The property line would be 1,000-feet from the start of this approach. This would provide 50-feet of clearance at the 20:1 approach slope on this approach. Approximately 8 acres of land southwest of the runway would require an easement to clear the 20:1 approach in this area. This alternative was rejected due to

the impacts to the natural resources and required land acquisition. In addition, this alternative would not allow for the future expansion of State Road, as recommended in the 2006 State Road Corridor Study.

### ***3.3.3 Build Alternative 2 – Extend the Existing Runway to the West***

Build Alternative 2 would not result in impacts to wetlands or the stream. No buildings at ARB would be removed. This alternative was rejected because it would not meet the purpose and need of the project. Keeping the east runway end in its current location would not address the tower line of sight issue or the need for a 34:1 approach on the east end. In addition, this would not allow for the future expansion of State Road, as recommended in the 2006 State Road Corridor Study.

### ***3.3.4 Build Alternative 3 – Shift and Extend the Existing Runway to the West***

Build Alternative 3 would avoid impacts to wetlands, the stream, and the buildings at ARB. This alternative would fully meet the project purpose and need. By both shifting and extending the runway, this would accommodate the existing users, improve the tower line of sight issue, and the 34:1 approach surface to Runway 24. This alternative would accommodate future widening of State Road, as recommended in the 2006 State Road Corridor Study.

## **3.4 PREFERRED ALTERNATIVE**

Build Alternative 3 was selected as the Preferred Alternative. This alternative involves shifting and extending Runway 6/24 and the parallel taxiway (Figure 3-4). This alternative would have no significant impacts while meeting the objectives of the project's purpose and need.

This alternative would not impact wetlands or the stream. There would be no displacements, either residential or business, and no removal of buildings at ARB. A noise analysis was conducted to determine if there would be a change in the noise levels as a result of the proposed improvements. According to the noise impact analysis, the 65 Day-Night Average Sound Level (DNL) contour for the proposed runway does not extend beyond airport property and is not within 1000-feet of any residential structure. Therefore, no residents are living within areas exposed to noise levels above the 65 DNL. For more information regarding the noise analysis for this project, please refer to Section 4.1.

Of the alternatives analyzed, Build Alternative 3 is the one that best achieves the goals of the study, while providing the fewest impacts to the surrounding area. The goals include a more efficient accommodation of the critical aircraft that currently use the facility, as well as enhancement of airport operational safety. Operational safety would be enhanced by improving the line-of-sight from the FAA ATCT to the Runway 24 hold area, and by providing a clear 34:1 approach surface to the Runway 24 threshold.



## ***Section 4.***

# ***Affected Environment and Environmental Consequences***

This section describes existing conditions within ARB and the immediate surrounding areas. Potential environmental impacts associated with the Preferred Alternative are presented and described with regard to the following categories: noise analysis; compatible land use; socio-economics; air quality; historic resources; contaminated sites; and the physical and ecological environment.

There would be unavoidable short-term impacts associated with the Preferred Alternative; however, the project would have a positive impact on the operation and safety of ARB and its role in the community. The project would comply with all federal, state, and local laws and regulations.

### **4.1. NOISE ANALYSIS**

An assessment of the project aircraft noise exposure in the areas surrounding the ARB is provided in this section. A more detailed and technical analysis is provided in Appendix B. Section 4.1.1 provides an overview of the methods used to develop noise exposure maps, and Section 4.1.2 presents the noise exposure maps, which identify the areas affected by aircraft noise.

#### ***4.1.1 Methodology***

The evaluation of the ARB noise environment, and land use compatibility associated with airport noise, was conducted using the methodologies developed by the FAA and published in FAA Order 5050.4B, FAA Order 1050.1E, and title 14 Code of Federal Regulations (CFR) part 150.

For aviation noise analysis, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of yearly DNL. DNL is a 24-hour time-weighted-average noise metric expressed in A-weighted decibels (dBA) that accounts for the noise levels of all individual aircraft events, the number of times those events occur, and the time of day which they occur. In order to represent the added intrusiveness of sounds occurring during nighttime hours (10:00 p.m. to 7:00 a.m.), DNL penalizes, or weights, events occurring during the nighttime periods by 10 dBA. This is due to the increased sensitivity to noise during normal sleeping hours and because ambient (without aircraft) sound levels during nighttime are typically about 10 dB lower than during daytime hours.

The FAA's Integrated Noise Model (INM) Version 7.0a was used to develop noise exposure contours in order to assess the noise impacts associated with the proposed extension of Runway 6/24. The INM has been FAA's standard tool since 1978 for determining the predicted noise impact in the vicinity of airports.

The INM incorporates the number of annual average daily daytime and nighttime flight and run-up operations, flight paths, run-up locations, and flight profiles of the aircraft along with its extensive internal database of aircraft noise and performance information, to calculate the DNL at many points on the ground around an airport. The noise exposure contours represent computer-generated lines connecting these points of equal noise levels resulting from aircraft operations.

The input data required in the INM to develop noise exposure contours includes:

- Aircraft operations
- Aircraft fleet
- Runway end utilization
- Ratio of daytime and nighttime aircraft operations
- Flight tracks

Aircraft operation data was collected from multiple sources, including:

- Flight Explorer®, computer software which obtains N-number (registration number), aircraft type, arrival and departure airport, and time of day from Air Traffic Control Tower radar data;
- USDOT, FAA Airport Master Record, Form 5010 July 2009;
- FAA Terminal Area Forecast (TAF) December 2008;
- FAA Air Traffic Activity Data System (ATADS) May 2009; and,
- Michigan Department of Transportation Airport User's Survey Report 2009.

INM-modeled annual operations for the 2009 existing condition, consisting of operations from April 2008 through March 2009, totaled 61,969 operations, which is approximately 169 daily operations. Jet operations accounted for approximately 2 percent of the total operations. Nighttime operations accounted for 4.2 percent of the total operations.

2014 future condition aircraft operations were obtained from the 2008 FAA TAF for ARB. Modeled annual operations for the 2014 future condition totaled 69,717 operations, or approximately 191 daily operations. The percent of night and jet operations would remain constant between the existing condition and the future years. In addition, fleet mix between the 2009 Existing Condition and the 2014 Future Alternatives would remain static. The existing and future fleet mix with annual operations is shown in Appendix B as Table B-2.

Runway end utilization was based on discussions with the ATCT staff. Runway utilization is approximately 30 percent on Runway 6 (west end) and 70 percent on Runway 24 (east end). Discussions with ATCT staff also indicate that approximately 5 percent of single engine piston aircraft operations occur on Runway 12/30 with a 50/50 split (north end versus south end). Helicopters operate to and from the east edge of the terminal apron. Table B-3 in Appendix B provides runway utilization by aircraft category. The 2014 No-Action and Proposed Project Alternatives would maintain the same runway utilization.

Flight tracks are the aircraft's actual path through the air projected vertically onto the ground. Due to the level of operations occurring at ARB, a single arrival and departure track for each runway end was appropriate for the noise modeling. Straight out departures tracks were modeled for all runways. Straight in arrivals to Runway 12/30 were modeled and arrivals to Runway 6/24 followed the published instrument approach (Very High Frequency Omni Range (VOR)) procedures.

Unique helicopter and touch-and-go flight tracks were also modeled based on ATCT interviews. Eighty percent of the helicopter operations arrive from or depart to the north, with the remaining 20 percent distributed evenly between arrivals from and departures to the east, south, and west.

#### **4.1.2 Aircraft Noise Exposure**

The INM was used to develop 65, 70, and 75 DNL noise contours for the following scenarios:

- Existing conditions (Year 2009) – 6/24 Runway length 3,500 feet.
- No Action future conditions (Year 2014) – 6/24 Runway length 3,500 feet.
- Preferred Alternative future conditions (Year 2014) – 6/24 Runway length 4,300 feet.

DNL contours are a graphical representation of how the noise from the airport's average annual daily aircraft operations is distributed over the surrounding area. The INM can calculate sound levels at any specified point so that noise exposure at representative locations around an airport can be obtained.

The noise exposure maps developed by the INM program for the three scenarios are presented in Figure 4-1 through Figure 4-3. The noise contours (65, 70, and 75) for each scenario are super-imposed over an aerial. For the purposes of assessing the impacts related to aircraft noise, the contour maps were evaluated with respect to the number of dwelling units and number of people located within the 65 DNL contours. As stated in the FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, "*A significant noise impact would occur if analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe.*"

#### **Existing Conditions**

No homes or noise sensitive land uses are located within the 65 DNL contour for the existing conditions (Figure 4-1). The existing condition 65 DNL contour does not extend beyond airport property.

#### **No Build Alternative (2014)**

Noise exposure resulting from aircraft operations for the 2014 No Build Alternative does not impact homes or noise sensitive land uses (Figure 4-2). The 2014 No Build Alternative DNL 65 dBA noise contour does not extend beyond airport property.



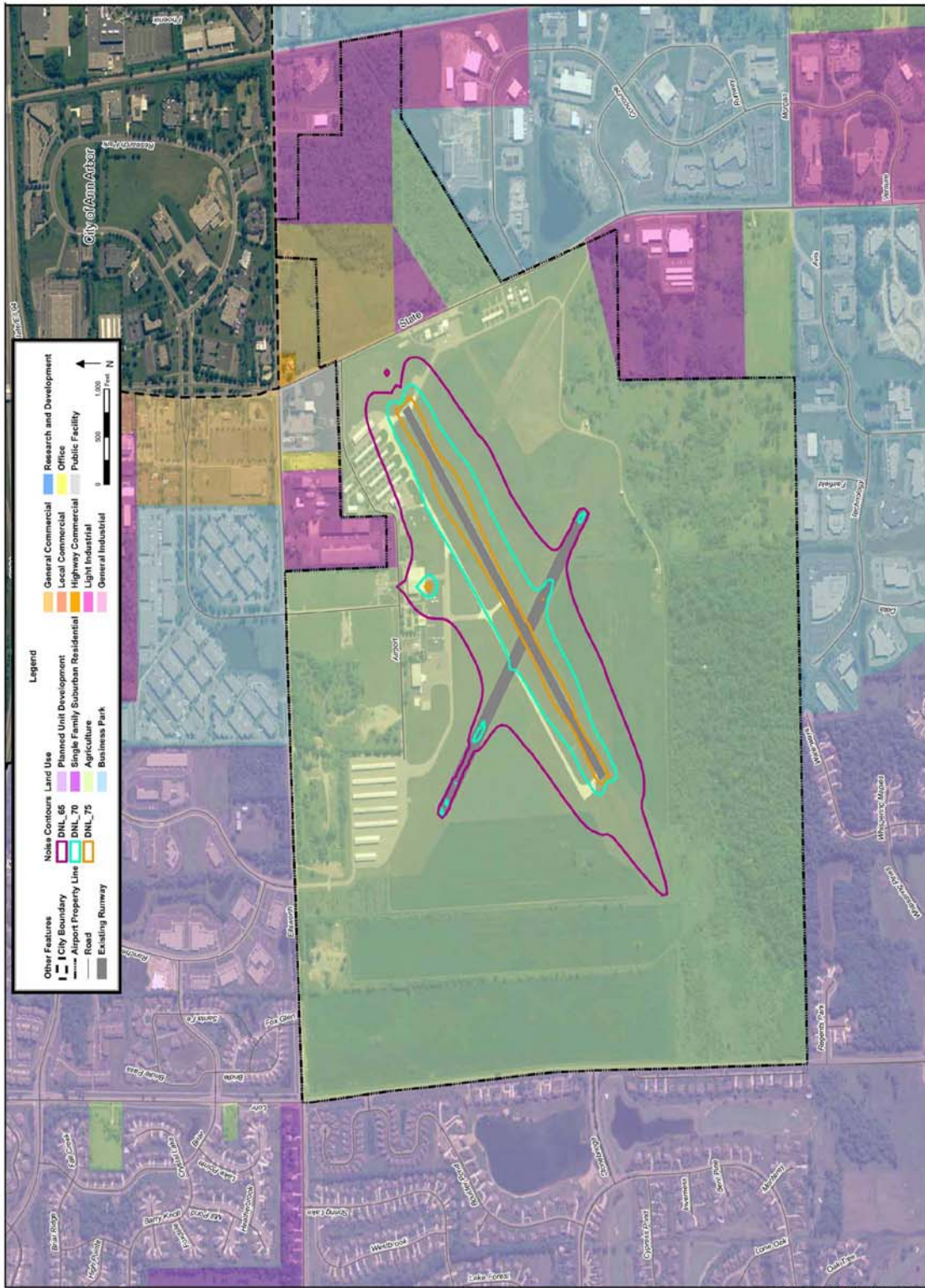


Figure 4.1: Noise Contour Map - Existing Conditions  
Ann Arbor Municipal Airport Environmental Assessment

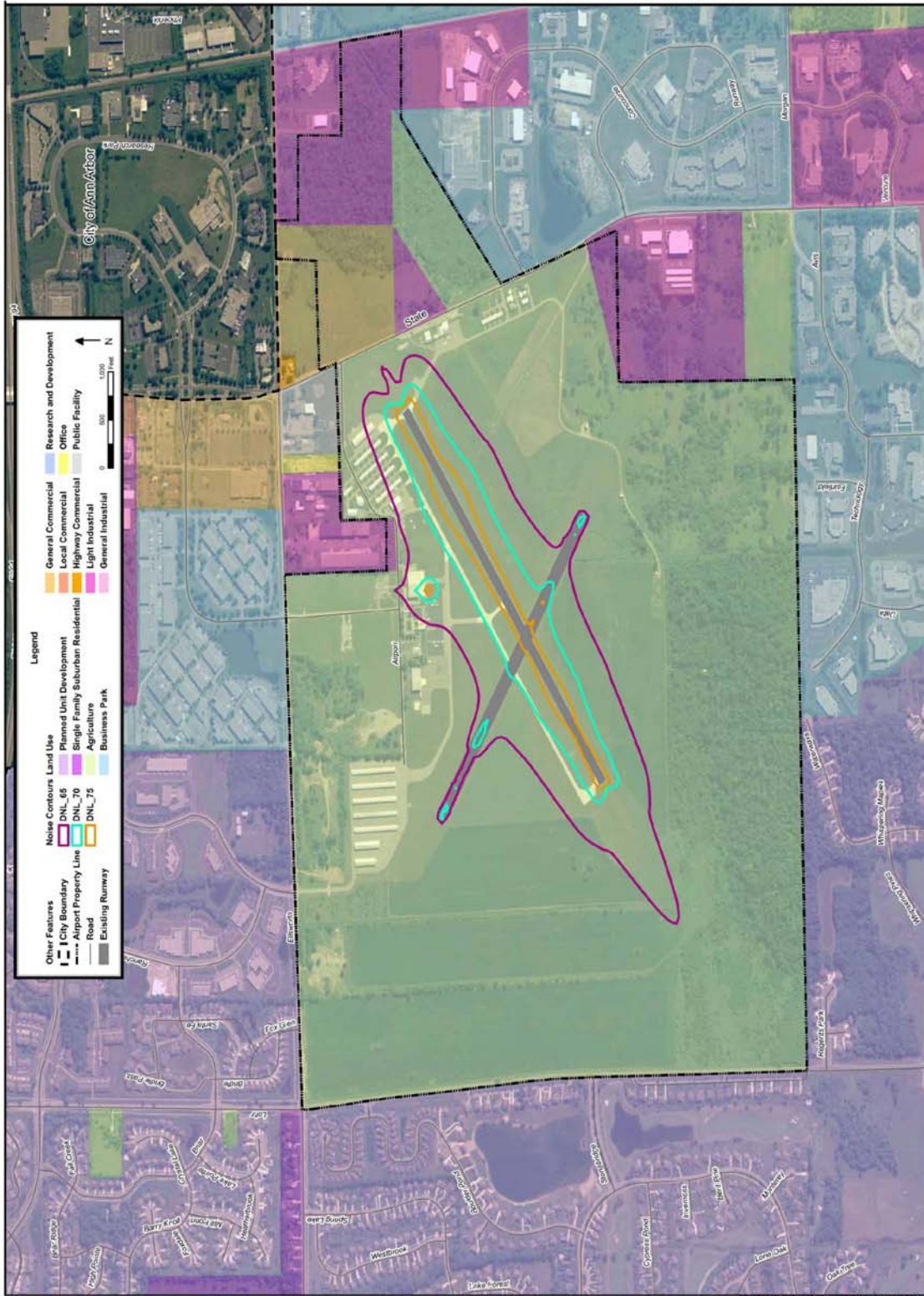


Figure 4.2: Noise Contour Map - No Build Alternative (2014)  
Ann Arbor Municipal Airport Environmental Assessment

### **Consequences of the Preferred Alternative**

No homes or noise sensitive land uses are located within the 65 DNL contour for the Preferred Alternative future conditions (Figure 4-3). This 65 DNL noise contour does not extend beyond airport property. Therefore, no people are living within areas exposed to noise levels above the 65 DNL. The Preferred Alternative is not expected to have any significant aircraft noise impacts as defined in FAA Order 5050.4B.

### **Proposed Mitigation Measures**

The proposed Runway 6/24 extension would not result in exposure of noise levels greater than 65 DNL to residents or noise sensitive land uses. Therefore, mitigation measures are not necessary or planned in association with the proposed runway extension.

## **4.2 COMPATIBLE LAND USE**

### **Existing Conditions**

Land use immediately surrounding ARB includes residential, commercial, industrial, recreational, undeveloped, and agricultural areas. Access to the airport is from either Ellsworth Road to the north or State Road to the east. Along Ellsworth Road, between Lohr Road and State Road, the land use is a mix of residential (Fox Glen) and commercial, including two research and business parks (Valley Ranch, Airport Plaza). The land use along Lohr Road is residential (Stonebridge) and agricultural. Along State Road south of Ellsworth Road is either undeveloped or commercial, including a research and business park: Runway Plaza. Residential areas (St. James Woods and Waterways) and a research and business park (Avis Farms) are located immediately to the south of ARB. Existing land use and zoning is illustrated in Figure 4-4 and 4-5, respectively.

The land surrounding ARB in Pittsfield Township is predominately zoned as planned unit development (PUD), business park, and light industrial (Pittsfield Township, 2009). Immediately to the west of ARB, along Lohr Road, these areas are zoned as PUD (Figure 4-5). The land east of ARB, along State Road, is zoned as either business park or light industrial (Figure 4-5). Lohr Road is a mix of residential and public facilities and public and private recreation/open space. Residential is also identified immediately south of ARB. There is also a small area identified as office south of Ellsworth Road near the northeastern airport boundary. The land adjacent to ARB, within the city limits, (north of Ellsworth Road and east of State Road) is zoned as either fringe commercial, research, or industrial (City of Ann Arbor, 2008) (Figure 4-6).

As illustrated in Figure 4-7, Pittsfield Township's future land use plan identifies the area along State Road, along most of Ellsworth Road, and immediately south of ARB as research and development (Pittsfield Township, 2008). At the corner of State Road and Ellsworth Road the area is identified as community commercial and local commercial. There is also a small area identified as office south of Ellsworth Road near the northeastern airport boundary.

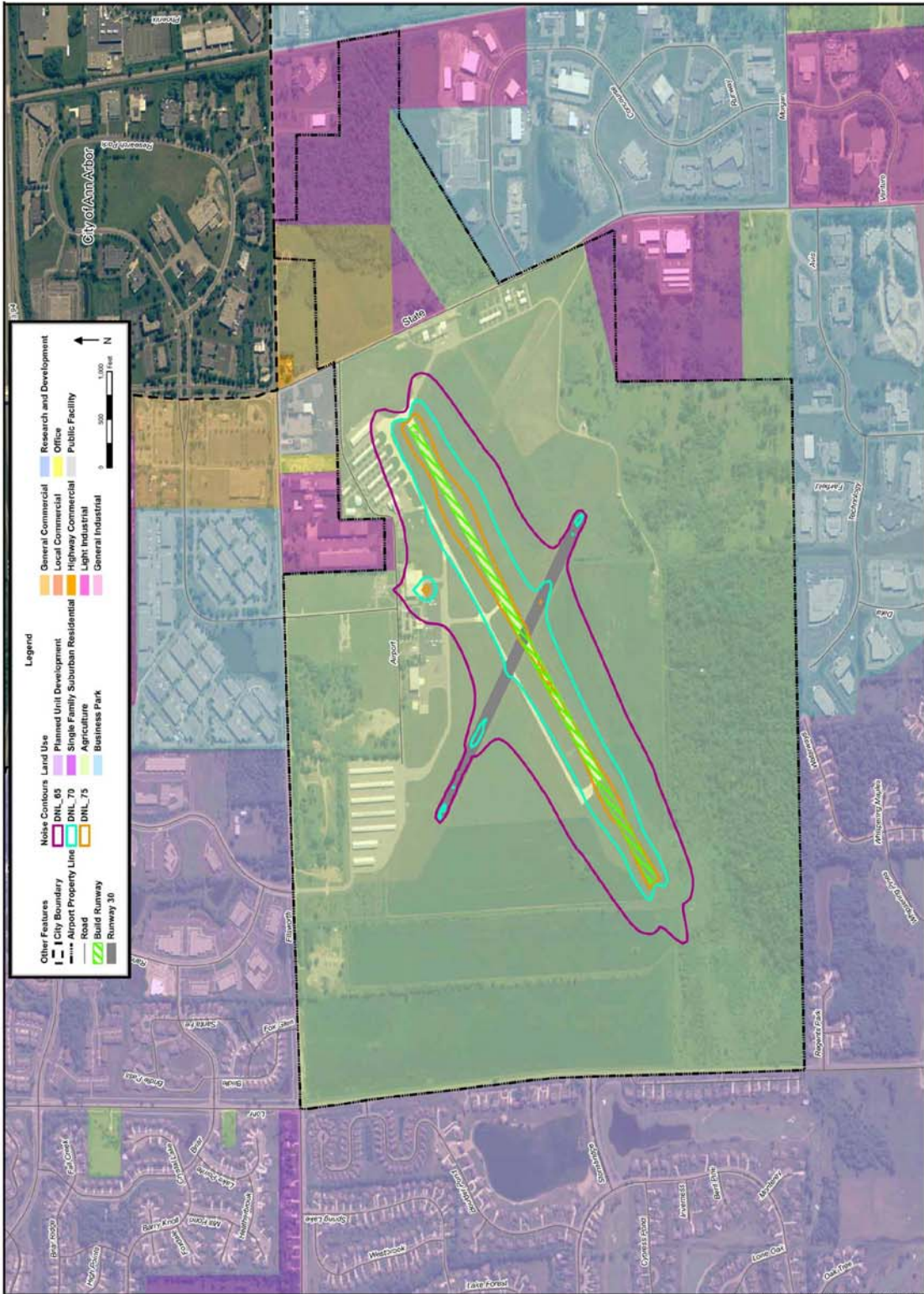


Figure 4.3: Noise Contour Map - Preferred Alternative (2014)  
Ann Arbor Municipal Airport Environmental Assessment

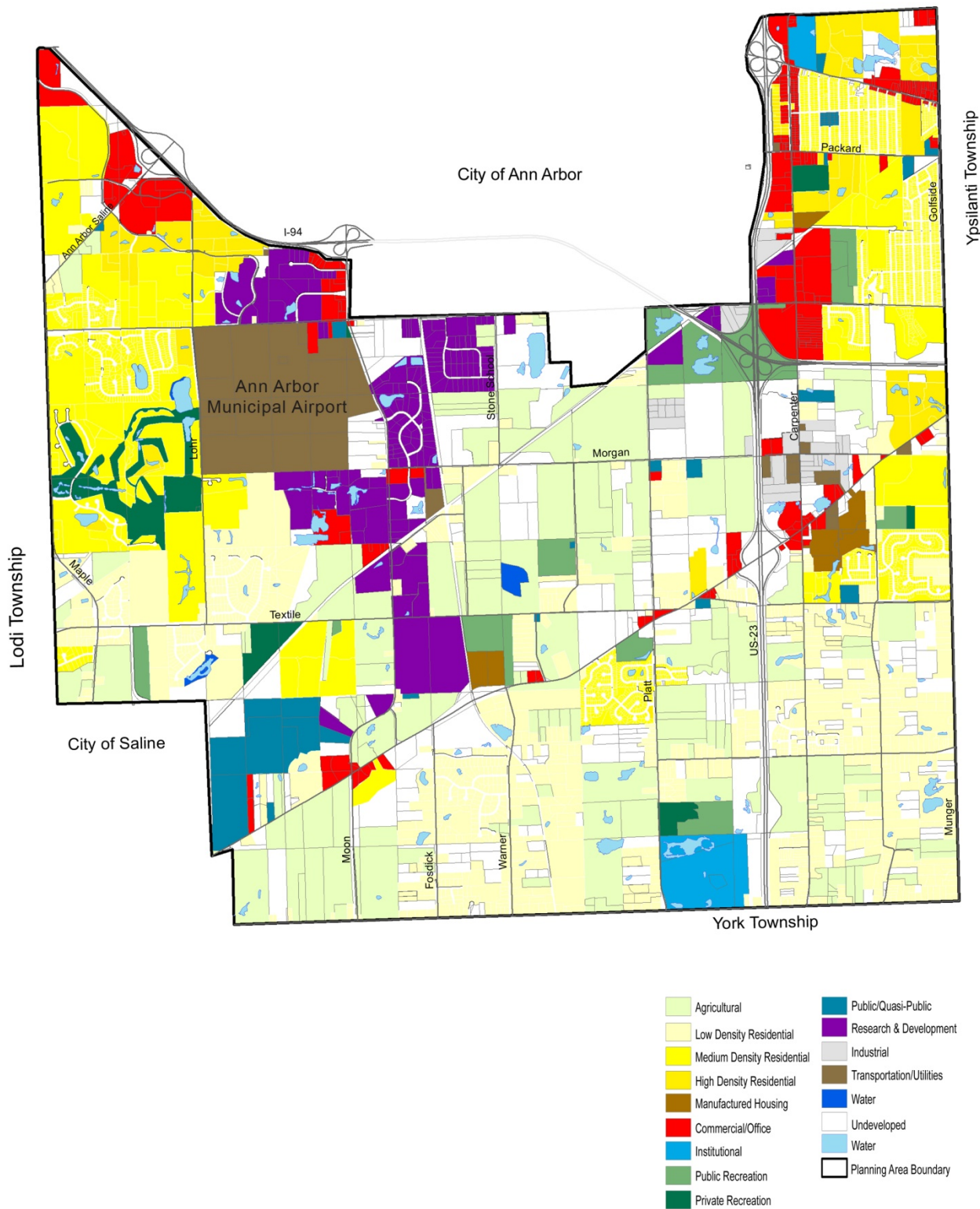
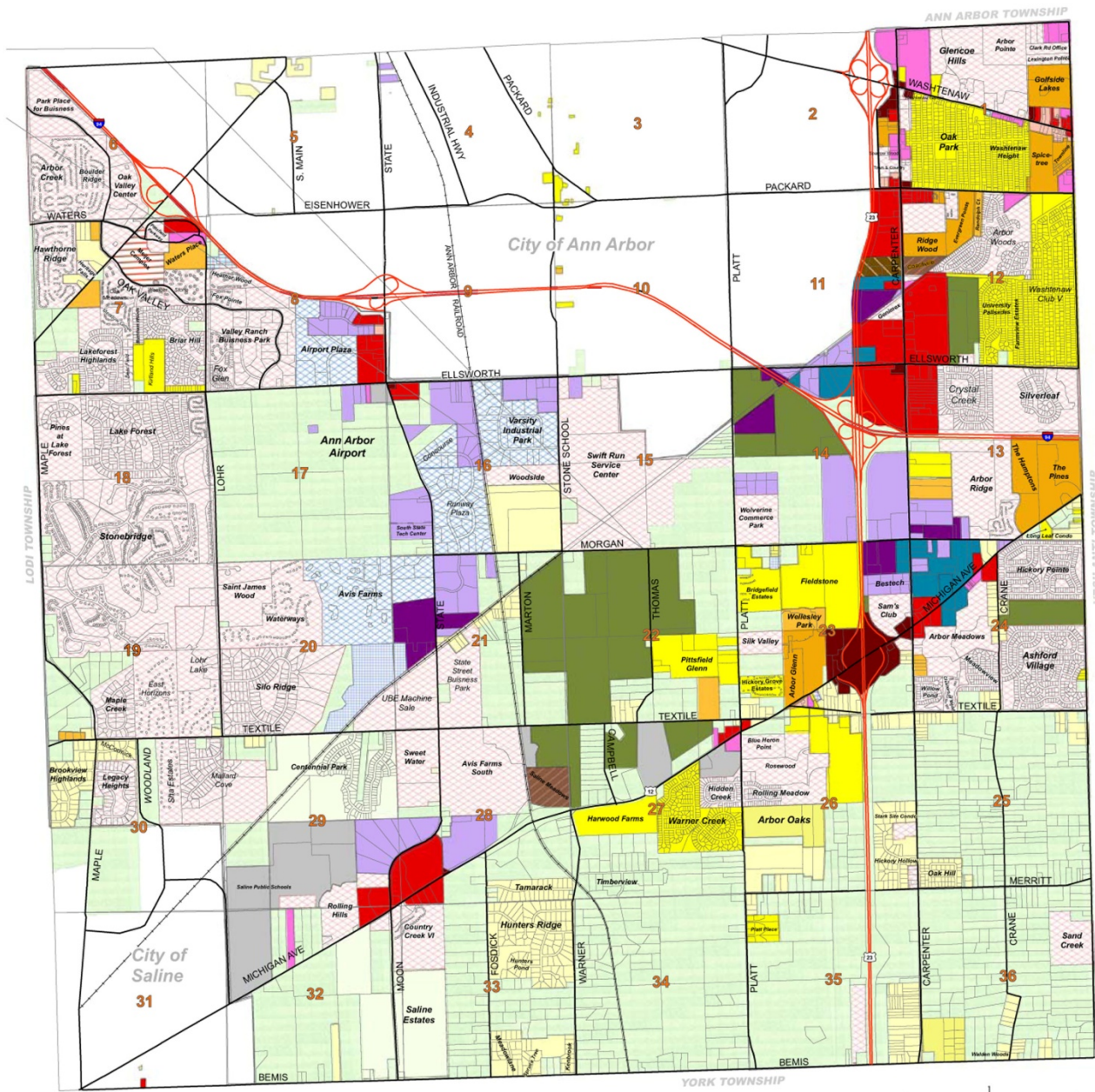


Figure 4.4: Pittsfield Township Existing Land Use  
Ann Arbor Municipal Airport Environmental Assessment





**ZONING DISTRICTS**

- |   |   |                              |
|---|---|------------------------------|
| RC Recreation Conservation                    | RO Residential Office                     | I-1 Light Industrial         |
| AG Agriculture                                | R-4 High Density Multi Family Residential | I-2 General Industrial       |
| AGCM Ag. Court Modified                       | C-1 Local Commercial                      | PUD Planned Unit Development |
| R-1A Single Family Rural Non-Farm Residential | C-2 General Commercial                    | PF Public Facility           |
| R-1A-1 Low Density Urban Residential          | C-3 Highway Commercial                    | CITY                         |
| R-1B Single Family Suburban Residential       | O-1 Office                                |                              |
| R-2A Two Family Residential                   | W-1 Wholesale and Warehousing             |                              |
| R-2B Low Density Multi-Family Residential     | PSC Planned Shopping Center               |                              |
| R-3 Moderate Density Multi Family Residential | BP Business Park                          |                              |
| MHP Mobile Home Park                          | R-D Research and Development              |                              |

Figure 4.5: Pittsfield Township Zoning Map  
Ann Arbor Municipal Airport Environmental Assessment



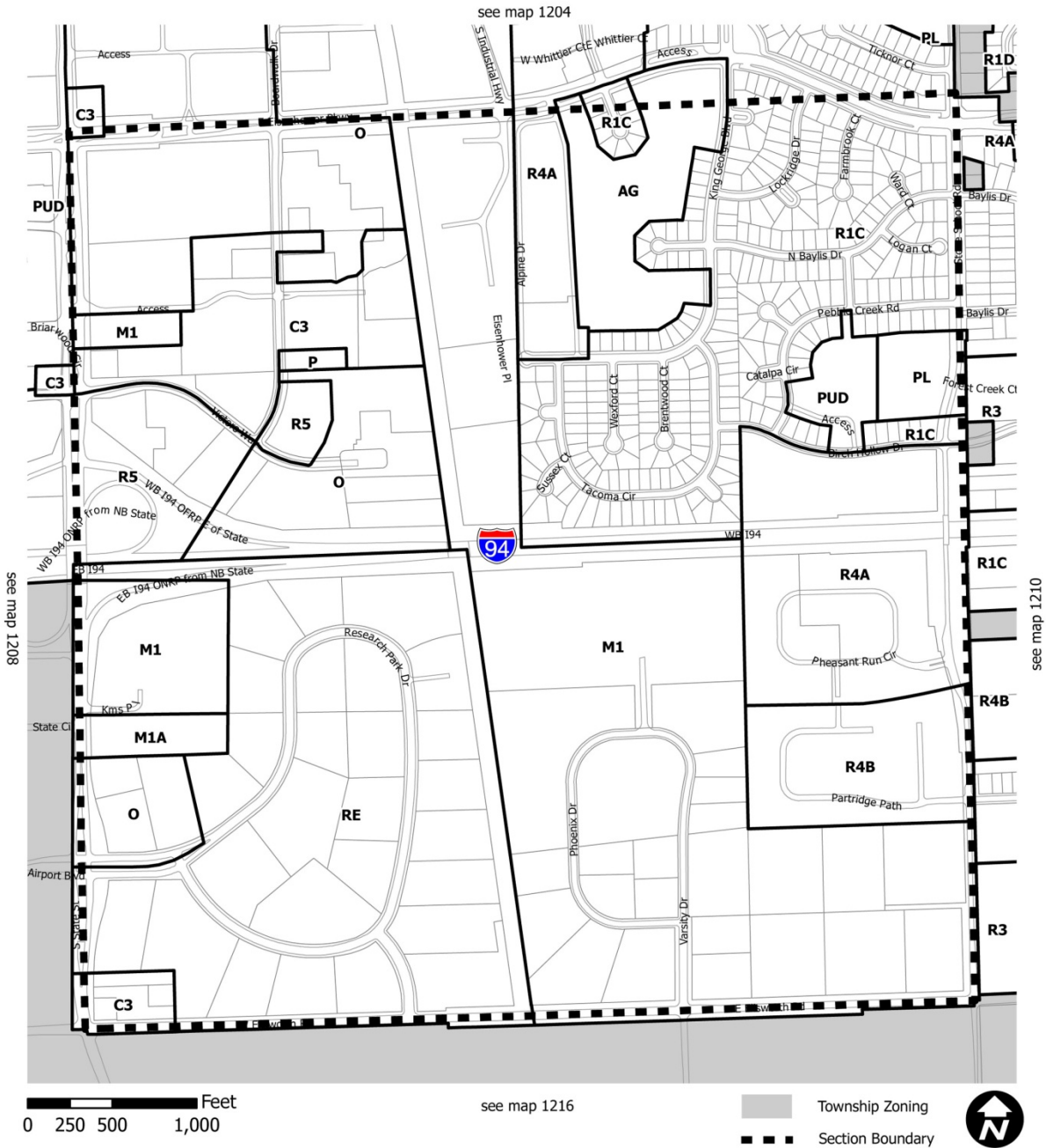
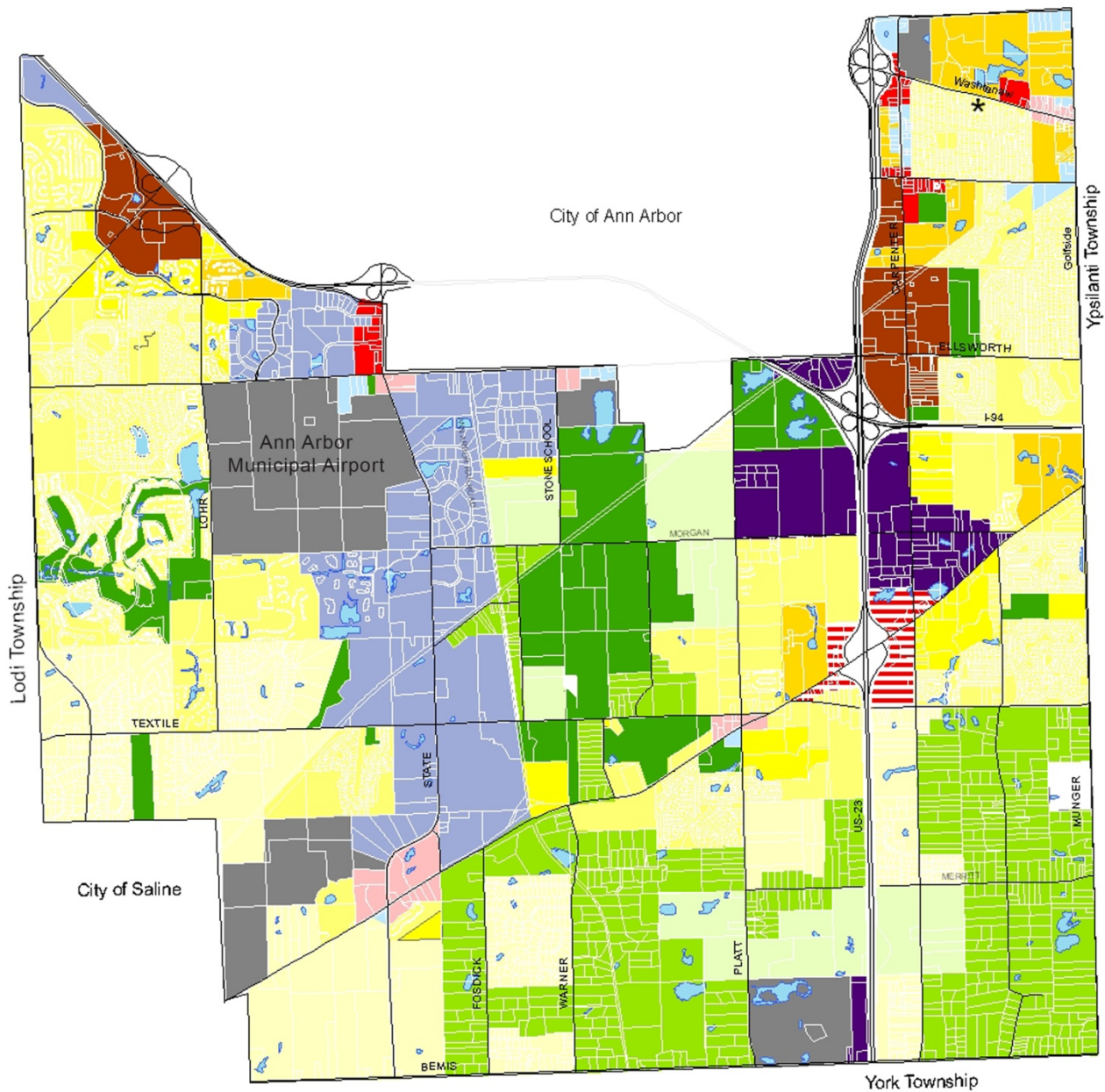



Figure 4.6: Ann Arbor Zoning Map  
Ann Arbor Municipal Airport Environmental Assessment





- |  |  |  |                                  |               |                         |                             |                            |   |                                   |                         |   |                               |              |                               |
|--|--|--|----------------------------------|---------------|-------------------------|-----------------------------|----------------------------|---|-----------------------------------|-------------------------|---|-------------------------------|--------------|-------------------------------|
| <b>Rural Residential</b>                     | <b>Suburban Residential</b>            | <b>Urban Residential</b>               | <b>Agricultural Preservation</b> | <b>Office</b> | <b>Local Commercial</b> | <b>Community Commercial</b> | <b>Regional Commercial</b> | <b>Michigan Avenue/US-23 Planned Development Area</b> | <b>Research &amp; Development</b> | <b>Light Industrial</b> | <b>Public Facilities and Public &amp; Private Recreation/Open Space</b> | <b>Regional Institutional</b> | <b>Water</b> | <b>Planning Area Boundary</b> |
| Residential Agriculture<br>0.4 unit per acre | Low Density<br>1 unit per acre         | Moderate Density<br>2.5 units per acre | Agricultural Preservation        | Office        | Local Commercial        | Community Commercial        | Regional Commercial        | Michigan Avenue/US-23 Planned Development Area        | Research & Development            | Light Industrial        | Public Facilities and Public & Private Recreation/Open Space            | Regional Institutional        | Water        | Planning Area Boundary        |
| High Density<br>9 units per acre             | Moderate Density<br>2.5 units per acre | Medium Density<br>6 units per acre     |                                  |               |                         |                             |                            |   |                                   |                         |   |                               |              |                               |
- \* Lots fronting off Washington are designated as moderate density with provisions for some office uses. (See text for more information)

Figure 4.7: Pittsfield Township Future Land Use  
Ann Arbor Municipal Airport Environmental Assessment





### **Consequences of the Preferred Alternative**

Aircraft noise is one of the major concerns of both airport operators and airport neighbors when evaluating impacts of a proposed airport development project. Estimates of noise effects resulting from aircraft operations can be interpreted in terms of the probable effect on human activities characteristic of specific land uses. Guidelines for evaluation of land use compatibility in aircraft noise exposure areas were developed by the FAA and are presented in Table B-1 in Appendix B. The guidelines reflect the average response of large groups of people to noise and might not reflect an individual's perception of an actual noise environment. Compatible or incompatible land use is determined by comparing the predicted or measured daily noise level at a specific site with the compatibility guidelines. According to FAA, all land uses are normally compatible with aircraft noise levels below 65 DNL. For noise exposure levels greater than 65 DNL, compatibility is dependent on land use. For example, commercial and manufacturing land uses are more tolerant of higher noise levels than a hospital or church. In general, most land uses are considered incompatible when noise levels exceed 75 DNL.

If the Preferred Alternative is implemented, the 65, 70, and 75 DNL contours would all still remain within airport property. As a result, the land use within the vicinity of ARB would remain compatible with the airport under the Preferred Alternative, which involves the extension of Runway 6/24.

The FAA and MDOT have reviewed the Runway Safety Area (RSA), Object Free Area (OFA), and Runway Protection Zone (RPZ) requirements for the approach areas of Runway 6/24. Even with the implementation of the Preferred Alternative, and the shift and extension of the runway to the southwest, the RSA, OFA, and RPZ in the southwest approach area will continue to remain totally clear of obstruction and entirely on airport property. Since the runway approach areas will continue to meet all FAA and MDOT safety standards, there is no indication that the development of the Preferred Alternative will result in increased hazards to people or structures on the ground. Existing and proposed land use adjacent to and in the immediate vicinity of ARB is compatible with normal airport operations.

## **4.3 INDUCED SOCIOECONOMIC IMPACTS**

### **4.3.1 *Community Displacement***

No land would be acquired as either fee or easement acquisition and no displacements would occur as a result of the Preferred Alternative.

### **Consequences of the Preferred Alternative**

There would be no community displacement impacts, no residential or business displacements, and no land acquisition resulting from the Preferred Alternatives.

### 4.3.2 Environmental Justice

#### Existing Conditions

The federal government's policy on nondiscrimination in all federally funded activities formally began with Title VI of the 1964 Civil Rights Act. Title VI requires all federal agencies to ensure that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

Further guidance was provided in 1994 with *Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The intent of the Executive Order is to identify and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations.

The presence of minority or low-income populations in the project area was determined by an evaluation of U.S. Census data, and Michigan State Housing Development Authority (MSHDA) data. ARB is owned and operated by Ann Arbor, yet is located in Pittsfield Township. Census data for the city and township was compared to Washtenaw County to make a determination regarding the presence of an environmental justice population.

#### Minority Populations

Race data from the 2000 U.S. Census (U.S. Census Bureau, 2009) was used to determine the presence of minority populations within the immediate area surrounding ARB. According to the Council on Environmental Quality (CEQ), minorities are defined as individuals who are members of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic (1997).

An analysis of the U.S. Census data indicates that minority populations are present near ARB, totaling 28 percent of the total population within the Pittsfield Township and 24 percent in the City of Ann Arbor. The percentage of minorities present in Washtenaw County totals 22 percent.

#### Low-Income Populations

U.S. Census economic data from the 2000 U.S. Census was used to determine the presence of low-income populations in the project area. The economic data identifies the income required to be below the poverty level and the number of people that are below that level. The U.S. Census Bureau measures poverty according to poverty thresholds, which is most simply defined as a measure of income inadequacy. This method of defining poverty thresholds was developed based on the income level that would cause a family to cut back on food expenditures sharply, assuming food expenses and non-food expenses would be cut at the same rate (Fisher, 1997).

According to the 2000 economic data, there is a percentage of the population below the poverty level near ARB, accounting for 9 percent of the total population in Pittsfield

Township and 17 percent in the City of Ann Arbor. These percentages are similar to 11 percent in Washtenaw County. Reviewing economic data at the block level indicates that in the immediate area surrounding ARB, there is a lower percentage of low-income populations, ranging from a high of 8 percent to a low of 0.7 percent.

### **Consequences of the Preferred Alternative**

In conclusion, this project would not have a disproportionately high or adverse effect on either minority or low-income populations. All improvements at ARB would occur within the airport property. There would be no noise impacts or residential displacements. No property acquisition would occur as a result of the Preferred Alternative.

While there are not any environmental justice issues associated with the proposed improvements identified at this time, a continuing effort would be made to identify disproportionately high and adverse impacts to minority and low-income populations as this project advances. If such impacts are identified, every effort would be made to involve impacted groups in the project development process and to avoid or mitigate these impacts. A public hearing would be held to allow the public, local officials, and agencies to comment on the proposed improvements. The hearing would be advertised according to FAA guidelines. Section 5 provides a detailed discussion of all public involvement activities.

### **4.3.3 Community Cohesion and Community Facilities**

#### **Existing Conditions**

As noted in Section 4.2, residential, commercial, industrial, recreational, undeveloped, and agricultural areas immediately surround ARB. The closest community facility is the Pittsfield Township Fire Station 3, which is located at 705 W. Ellsworth Road, just west of State Street. East of Fire Station 3 is the Pittsfield Community Center at 701 W. Ellsworth Road. This facility houses the Pittsfield Senior Center. Pittsfield Township Park, located south of the Senior Center, is a 7-acre park with an accessible pathway, a softball field, three t-ball fields, a playground, and picnic tables and grills. The Ann Arbor United Soccer Club operates seven soccer fields on city-owned land located at 801 Airport Road between the ARB entrance and Ellsworth Road.

#### **Consequences of the Preferred Alternative**

There would be no displacements as a result of the Preferred Alternative. All of the surrounding roads would remain open during and after construction, and there are no anticipated impacts to circulation. Noise levels would not be significantly increased and flight paths would not change. Therefore, the Preferred Alternative would not result in impacts to community cohesion or facilities.

### **4.3.4 Demographics**

#### **Existing Conditions**

Population data for 1990 and 2000 were obtained from the U.S. Census Bureau. Historical data and the population projections for 2015 and 2025 were obtained from the

Southeast Michigan Council of Governments (SEMCOG) (SEMCOG, 2009). This information indicates that since 1970, overall, the population has grown in the Ann Arbor area (Table 4-1). Pittsfield Township has experienced the highest growth trend from 1970 through 2000 (Table 4-1). As shown, these growth trends are projected to continue through 2025 (SEMCOG, 2009).

**Table 4-1  
Ann Arbor Area Population (1970 – 2000) and Projections**

<b>Community</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2015</b>	<b>2025</b>
City of Ann Arbor	100,035	107,969	109,592	114,024	114,081	114,810
Pittsfield Township	8,073	12,986	17,668	30,167	34,969	35,750
Washtenaw County	234,103	264,740	282,937	322,895	353,327	361,715

*Source: U.S. Census Bureau and SEMCOG*

According to the U.S. Census, the total number of housing units has been increasing in the Ann Arbor area. In 1990, the City of Ann Arbor had 44,010 total housing units, which increased to 47,218 in 2000. Pittsfield Township had 7,794 total housing units in 1990, with an increase to 12,337 units in 2000 (Table 4-2).

**Table 4-2  
Summary of Demographic Data**

	<b>1990 Census</b>		<b>2000 Census</b>	
	<b>City of Ann Arbor</b>	<b>Pittsfield Township</b>	<b>City of Ann Arbor</b>	<b>Pittsfield Township</b>
U.S. Census Population	109,592	17,668	114,042	30,167
Total Housing	44,010	7,794	47,218	12,337
Total Vacant Housing Units	2,353	774	1,525	520
Percent Vacant Housing Units	5%	10%	3%	4%
Total Owner Occupied Housing Units	17,996	2,791	20,685	6,620
Percent Owner Occupied Housing Units	41%	36%	44%	54%
Total Renter Occupied Housing Units	23,661	4,229	25,008	5,197
Percent Renter Occupied Housing Units	54%	54%	53%	42%
Average Household Income	\$33,344	\$34,639	\$46,299	\$61,292
Average Family Income	\$50,192	\$45,597	\$71,293	\$82,600
Per Capita Income	\$17,786	\$16,936	\$26,419	\$29,645

*Source: U.S. Census Bureau*

U.S. Census data indicate renter occupied housing dominates the housing stock in the City of Ann Arbor at 53 percent and owner occupied housing accounts for 44 percent. In Pittsfield Township, owner occupied housing dominates at 54 percent and renter occupied housing accounts for 42 percent.

According to U.S. Census data, average household, family, and per capita incomes within the Ann Arbor area exhibited substantial increases between 1990 and 2000 (Table 4-2). In 1990, the average household income was \$33,344 in the City of Ann Arbor and \$34,639 in Pittsfield Township. This increased to \$46,299 in the City of Ann Arbor and \$61,292 in Pittsfield Township in 2000, a change of 39 percent and 77 percent, respectively.

The per capita income showed similar trends with increases of 49 percent in the City of Ann Arbor, increasing from \$17,786 in 1990 to \$26,419 in 2000. Pittsfield Township increased 75 percent, from \$16,936 in 1990 to \$29,645 in 2000 (Table 4-2).

The racial composition of the area surrounding the airport is described in Section 4.3.2, Environmental Justice.

### **Consequences of the Preferred Alternative**

Impacts to demographics associated with the Preferred Alternative are not expected. There would be no displacements as a result of the Preferred Alternative; therefore, little impact to the local area population, number of households, or racial make-up is anticipated. In addition, no impact to average incomes within the local area would be anticipated as a result of the Preferred Alternative.

### **4.3.5 Economics**

#### **Existing Conditions**

Businesses within the area surrounding ARB are primarily industrial and commercial. Research and business parks that are located around the airport include:

- Valley Ranch
- Airport Plaza
- Ann Arbor Commerce Park
- Runway Plaza
- Columbia Center
- Avis Farms
- State Street Executive Park

These types of businesses often locate near airports and are dependent, or may be dependent, on the airport for transportation services.

At the airport, there are fixed-wing FBOs, a helicopter FBO, three 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.

### **Consequences of the Preferred Alternative**

No businesses would be displaced as a result of the Preferred Alternative. Access would not be affected during airport construction. As a result, no negative economic impacts are anticipated to the surrounding businesses and the airport businesses. A positive result of the improvements is the ability for business owners to achieve improved fleet efficiency for critical aircraft by maximizing their passenger and/or cargo loads.

## **4.4 AIR QUALITY**

### **Existing Conditions**

Air pollutants are contaminants in the atmosphere. Many man-made pollutants are a direct result of the incomplete combustion of fuels including coal, oil, natural gas, and gasoline. The establishment of the National Ambient Air Quality Standards (NAAQS) by the Environmental Protection Agency (EPA) was directed in the Clean Air Act (CAA), and attainment and maintenance of the NAAQS was reinforced in later amendments. The goal of air quality monitoring and actions is to ensure that the air quality levels of the various pollutants do not exceed the set standards.

Under the 1990 CAA Amendments, the U.S. Department of Transportation cannot fund, authorize, or approve federal actions to support programs or projects that are not first found to conform to CAA requirements. The air quality provisions of the CAA, as amended, are intended to ensure the integration of air quality planning in all transportation-related projects.

The Air Quality Division of the Michigan Department of Environmental Quality (MDEQ) produces an Annual Air Quality Report, which outlines the attainment status of the state. According to the 2006 Air Quality Report the project study area is in attainment with the NAAQS for ambient concentrations of carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and coarse particulate matter (PM<sub>10</sub>) (MDEQ, 2008).

Of growing concern is the impact of proposed projects on climate change. Greenhouse gases are those that trap heat in the earth's atmosphere. Both naturally occurring and anthropogenic (man-made) greenhouse gases include water vapor (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and ozone (O<sub>3</sub>). Research has shown that there is a direct link between fuel combustion and greenhouse gas emissions. A detailed air quality report can be found in Appendix C.

### **Consequences of the Preferred Alternative**

MDOT Bureau of Aeronautics conducted an Air Quality Study (Landrum and Brown, 1996) of general aviation airports. Seven airports were selected as case study airports. The results of the case study were used to draw conclusions for all general aviation airports. Key findings of the study revealed that typical general aviation airports generate a low level of air pollutants. Comparisons of existing conditions at various airports with future build out conditions indicate that the net change in air emissions is still below standards. The report states that proposed projects at general aviation airports are not expected to cause or contribute to any new violations of the NAAQS.

There would be no revisions to the existing roadway system as a result of the Preferred Alternative. Consequently, the air model results for the Preferred Alternative would be identical to those for the No Build Condition. Since the No Build Condition analysis shows that no sites would exceed the one-hour or eight-hour NAAQS standard, the Preferred Alternative would also have no sites exceeding the NAAQS standard.

During construction, appropriate mitigation measures, such as covering and spraying stock piles with water, should be utilized to minimize potential short term negative impacts which may be experienced locally due to fugitive dust, construction vehicle exhaust, or other fumes related to construction materials and equipment.

Based on FAA data, operations activity at the ARB represents less than one (0.1) percent of U.S. aviation activity. Therefore, assuming that greenhouse gases occur in proportion to the level of activity, greenhouse gas emissions associated with existing and future aviation activity at ARB would be expected to represent less than 1 percent of U.S.-based greenhouse gases. Therefore, we would not expect the emissions of greenhouse gases from this project to be significant.

## **4.5 WATER RESOURCES**

### **4.5.1 *Surface Hydrology***

#### **Existing Conditions**

An unnamed stream located on the ARB property (Figure 4-8) flows south through an open ditch. It is enclosed in a concrete culvert south and west of the existing runway. It then flows east through an open ditch ultimately to the Wood Outlet Drain to the south. The upstream drainage area of approximately 0.5 square miles north and west of the airport flows through multiple subdivisions and business parks prior to entering the airport property. The stream appears to be perennial in nature with low flow water levels 8 to 10 inches deep. The streambed is 2- to 3-feet wide and is composed mostly of silty clay. While the channel is deeply incised in some locations, flows are expected to be variable as indicated by eroded banks 2- to 3-feet high throughout the corridor. Water quality is likely degraded as surface water contributions from runoff over turf and numerous storm outlets draining adjacent parking lots and streets are common.

#### **Consequences of the Preferred Alternative**

The stream would not be altered as a result of the improvements at ARB. The enclosure would not be extended.

The amount of impervious surface on site would increase slightly due to the extension of the runway and the taxiway from the existing 7 percent of the 837 acres site to 7.4 percent. An approved Storm Water Pollution Prevention Program is in place for ARB. Implementation of appropriate best management practices (BMPs) would continue to control the rate of stormwater runoff and maintain water quality standards.



NOT TO SCALE

Figure 4.8: Existing Water Resources and Land Cover  
Ann Arbor Municipal Airport Environmental Assessment



## **4.5.2 Geology, Groundwater, and Soils**

### **Existing Conditions**

Millstein (1987) identified nine bedrock formations in Washtenaw County. Coldwater Shale is the primary bedrock in central Washtenaw County, composed primarily of shale, with some limestone, dolomite, sandstone, and siltstone.

There are 14 soil mapping units in the project area (USDA, 1997). The soils south of the runway are predominately hydric soils, either Palms muck, Adrian muck, or Edwards muck. Matherton sandy loam, Fox sandy loam, and Wasepi sandy loam are the soils located in the area of the runway and to the north of the runway. The muck soils have a high water table with water often at the surface. The Fox soils have a water table at a depth of greater than 6-feet, and the Matherton and Wasepi soils have a water table at 1- to 2-feet below the surface (USDA, 1997).

ARB is located in a wellhead protection area known as the Three Fires Aquifer Wellhead Protection Area. The Three Fires Aquifer supplies the City of Ann Arbor with a portion of their public drinking water supply. Three of the City's municipal wells are located at ARB. The purpose of the protection area is to prevent contamination of the aquifer.

The City of Ann Arbor has plans to construct a new water supply line from the wells. No new wells are planned at this time.

### **Consequences of the Preferred Alternative**

Surface and subsurface geological conditions do not represent a constraint to implementation of the Preferred Alternative and, consequently, would not be impacted. Based on coordination with the City of Ann Arbor, the proposed runway extension would not impact the water supply wells or the new water supply line (Bahl, 2009).

## **4.6 SECTION 4(f) RESOURCES**

### **Existing Conditions**

Section 4(f) of the Department of Transportation Act (1966) specifies that publicly-owned land, such as a park, recreational area, or wildlife and waterfowl refuge, of national, state, or local significance, or any land from a historic site of national, state, or local significance, may not be used for transportation projects unless there is no other prudent and feasible alternative. If there are no other prudent and feasible alternatives, the proposed project must include all possible efforts to minimize impacts to Section 4(f) properties.

A Pittsfield Township park is located along the northern airport property line. There are no historic resources within ARB and its surrounding areas that are considered Section 4(f) resources. The review process that has been used for evaluating the Section 4(f) properties has included coordination with the Michigan State Historic Preservation Office (SHPO) (Appendix D), and an archaeological resource survey (CCRG, 2009) that

identified historic resources either currently listed on, or potentially eligible for listing on, the National Register of Historic Places (NRHP).

### **Consequences of the Preferred Alternative**

The Preferred Alternative would not result in impacts to a publicly owned park, recreation area, or refuge, and ARB has coordinated with the SHPO to determine that there are no historic, archeological or architectural resources within the airport and its surrounding areas (Appendix D). The Pittsfield Township park would not be impacted and would not be acquired. No impacts to Section 4(f) resources are anticipated from the Preferred Alternative.

## **4.7 HISTORIC, ARCHEOLOGICAL, AND ARCHITECTURAL RESOURCES**

### **Existing Conditions**

An evaluation was conducted to determine the need for archaeological and/or above-ground surveys at ARB (CCRG, 2009). The evaluation included a field review of the area of the proposed improvements, a review of state archaeological files and above-ground resource files, and shovel tests at the site.

### **Consequences of the Preferred Alternative**

ARB has coordinated with the SHPO to determine the presence of any historic, archeological, or architectural resources within the airport and its surrounding areas (Appendix D). Based on the file review and state files, no impact to historic, archeological or architectural resources is anticipated.

## **4.8 BIOTIC COMMUNITIES**

### **Existing Conditions**

Botanical communities within ARB and its immediately surrounding areas include active agricultural fields, unmown grassy meadows, a perennial stream, wet meadow, and a forested wetland. The developed portions of the airport property consist of structures, paved surfaces, a runway, access roads and parking lots, and maintained grassy areas.

Three predominant communities were observed on the property: upland, wet meadow, and forest (Figure 4-8). Plant species lists for these areas are shown in Appendix E. Most of the airport property and surrounding land has been altered by human activities. The least altered biotic communities are the grassy meadows surrounding the runway and the forested wetland to the south. The grassy meadow areas are only mowed periodically because of an agreement with the local Audubon Society.

The area at the end of the runway, where proposed expansion would occur, is kept mowed and the dominant plants in this area consisted of old field weeds and grassy species, with disturbed areas of bare dirt. Plants include rough-fruited cinquefoil (*Potentilla recta*), Canada thistle (*Cirsium arvense*), and an unidentified grass.

The sides of the stream contained upland weedy herbaceous species such as sweet clover (*Melilotus officinalis*), smooth brome (*Bromus inermis*), giant ragweed (*Ambrosia trifida*), Virginia creeper (*Parthenocissus quinquefolia*), lamb's quarters (*Chenopodium album*), riverbank grape (*Vitis riparia*), dame's rocket (*Hesperis matronalis*), teasel (*Dipsacus fullonum*), cow parsnip (*Heracleum maximum*), yellow goatsbeard (*Tragopogon pratensis*), yarrow (*Achillea millifolium*), a few reed canary grass, wheat or rye (*Triticum* or *Secale* spp), and mixed upland and wetland trees such as American elm (*Ulmus americana*), box elder (*Acer negundo*), staghorn sumac (*Rhus typhina*), Russian olive (*Eleagnus angustifolia*), buckthorn (*Rhamnus catharticus*) cottonwood (*Populus deltoides*), bur oak (*Quercus macrocarpa*), and American linden (*Tilia americana*).

Several examples of wildlife were observed, including robins (*Turdus migratorius*), goldfinch (*Carduelis tistis*), purple martins (*Procyne subis*), killdeer (*Charadrius viciferus*), and a mating pair of redtail hawks (*Buteo jamaicensis*). Other observations include evidence of rodent tunneling (field mice or voles) and pheasants (*Phasianus colchicus*) that were heard calling. Airport staff stated that coyote (*Canis latrans*) and white tail deer (*Odocoileus virginianus*) have been observed on the airport property as well as wild turkeys (*Meleagris gallopavo*). A comprehensive list of all the bird species observed by the Audubon Society at ARB is included in Appendix F.

### **Consequences of the Preferred Alternative**

Implementation of the Preferred Alternative would require grading and construction of the extended runway. The areas to be impacted by grading are currently maintained and mowed for ARB or leased as agricultural land. A portion of the grading for the new taxiway near State Road would be in an area currently under restricted mowing per the agreement with the Audubon Society. The remaining areas would continue to be maintained with limited mowing as agreed by ARB and the Audubon Society. No trees would be cut or directly impacted by construction due to height obstructions.

The overall populations of wildlife species utilizing the area are not anticipated to be impacted as the maintenance of open grassy areas would continue. Wildlife may be temporarily impacted due to the presence of construction equipment in the vicinity.

## **4.9 THREATENED AND ENDANGERED SPECIES**

### **Existing Conditions**

Coordination with the US Fish and Wildlife Service (USFWS) (Appendix D) indicated that this agency has no records of federal-listed endangered, threatened, or otherwise significant species, natural plant communities, or natural features in the vicinity of ARB. The Michigan Department of Natural Resources (MDNR) indicated that Henslow's sparrow, state endangered, (*Ammodramus henslowii*) and Grasshopper sparrow, state special concern, (*Ammodramus savannarum*) are known to occur on or in the vicinity of the area. The presence of these species has been confirmed by the Audubon Society during their annual counts at ARB over the last three years.

All habitats within the project area have been impacted to varying degrees by human activities. No plant species listed as threatened or endangered by the MDNR or USFWS were found during the botanical survey conducted in June 2009.

### **Consequences of the Preferred Alternative**

No known legally protected plants were observed within the project area. Grading for the new taxiway near State Road would be in an area currently under restricted mowing per the agreement with the Audubon Society. ARB revises the boundaries of this mowing agreement annually, with the Audubon Society, based on their most current bird count data. There would be no grading within agreed upon restricted mowing areas during the breeding season for either species which extends through late August for Henslow's sparrow and mid-July for Grasshopper sparrow.

## **4.10 WETLAND RESOURCES**

### **Existing Conditions**

Field surveys conducted in June 2009 revealed the presence of wetland vegetation at the east end of the runway. The MDEQ conducted a field visit in July 2009 to confirm whether the area would be classified as a wetland (Appendix D). A 5-acre area was reviewed for dominant vegetation, hydrology, and soils. A wetland was identified; however, the wetland does not constitute a wetland that is regulated by the state. The wetland is further than 500-feet from an inland lake, river, or stream, is less than 5 acres in size, and there is no surface connection with other wetlands in the area (MDEQ, 2009).

This area was a mix of mostly wetland species and scattered upland species, including reed canary grass (*Phalaris arundinacea*), sedge (*Carex granularis*), swamp milkweed (*Asclepias incarnata*), dandelion (*Taraxicum officinale*), sowthistle species (*Sonchus* sp.), buckthorn (*Rhamnus cathartica*), curly dock (*Rumex crispus*), and either goldenrod or aster species (*Solidago* or *Aster* sp.).

### **Consequences of the Preferred Alternative**

The wetland at the east end of the runway would not be impacted by the proposed improvements, but it would be adjacent to the taxiway. This area would be protected with silt fence during construction and the 25-foot wetland buffer would be restored following construction.

## **4.11 FLOODPLAINS**

### **Existing Conditions**

An unnamed perennial stream is located within ARB, flowing to the south and ultimately connecting to the Wood Outlet Drain south of the airport. In accordance with FAA Order 5050.4B *Airport Environmental Handbook*, a review of the floodplains in the area and the impacts that may occur as a result of the development was undertaken.

### **Consequences of the Preferred Alternative**

Review of the Federal Emergency Management Agencies (FEMA) flood boundary maps identified a floodplain boundary for the stream. The proposed grading for the expansion would not occur within the designated floodplain boundary and no fill would be placed in the floodplain. Therefore, there would be no impacts to the floodplain located within ARB.

## **4.12 COASTAL ZONE MANAGEMENT PROGRAM**

The area surrounding ARB is not located within a coastal zone management area and, thus, the Preferred Alternative would have no impact on the Coastal Zone Management Program.

## **4.13 COASTAL BARRIERS**

The area surrounding ARB is not located within a coastal zone management area, and the Preferred Alternative would have no impact on coastal barriers.

## **4.14 WILD AND SCENIC RIVERS**

There are no waterbodies within the immediate vicinity of ARB that are designated as state or federal Wild and Scenic Rivers; therefore, the Preferred Alternative would have no impact on Wild and Scenic Rivers.

## **4.15 FARMLAND**

ARB currently leases 168 acres of its property to a local farmer. If the Preferred Alternative is implemented, 18 acres of land would no longer be farmed. U.S. Department of Agriculture (USDA) requires a form, AD 1006, to be filed when agricultural land would be impacted. This agency estimates the total acres of prime and unique farmland, the total acres of statewide and local important farmland, and the percentage of farmland in the county to be converted. The relative overall value of farmland to be converted is also provided.

Prime farmlands are identified as land that has the best combination of physical and chemical characteristics for producing food, forage, fiber, and oilseed crops (USDA, 1983). Unique farmland is land, other than prime farmland, that has special characteristics, such as unique soil types and topographic features, which make it suitable for the production of specific high value crops. Land classified as prime or unique farmland is not necessarily actively farmed, it also may include other vegetated lands such as fallow fields and woodlands. Farmland of local importance includes those lands with nearly prime farmland characteristics that could economically produce high yields when treated and managed according to modern farming methods (USDA, 1983).

### **Consequences of the Preferred Alternative**

ARB would not be acquiring any farmland for the proposed project. Based on coordination with the Washtenaw County Natural Resources Conservation Service (NRCS) (Appendix D), some prime farmland and farmland of local importance would be impacted by this project. The limits of grading have been minimized to the extent possible. The land outside of these limits would continue to be leased as farmland.

## **4.16 ENERGY SUPPLY AND NATURAL RESOURCES**

Development of the Preferred Alternative would have the potential to increase the amount of air traffic utilizing ARB, which can potentially result in an increase in the amount of airplane fuel distributed by the airport and used by aircraft at the facility. A small amount of additional fuel would be used during construction of the runway and taxiway. However, these minimal increases in gas/fuel consumption are not considered significant.

ARB is installing approximately 250 LED taxiway lights which would decrease facility energy usage.

## **4.17 LIGHT EMISSIONS**

The Preferred Alternative includes the addition of edge lights and the relocation of runway end identifier lights (REILS) to the end of the newly extended runway. Light emission impacts to adjacent homes would be minimized because lights within the light lane would be directed upwards. The REILS would be closer to Lohr Road and the adjacent homes; however, the existing lights would be replaced with a smaller LED unit.

Light emissions created by the Preferred Alternative are not considered significant. However, if impacts are noted, appropriate mitigation for the impacts would occur. Examples of mitigation include shielding the lights from below so that the light is reflected up to the sky or reducing light intensities, if the FAA makes a determination that a reduction would not affect the safety of the aircraft.

## **4.18 SOLID WASTE IMPACTS**

Minimal waste would be generated during construction of the Preferred Alternative. No building demolition would occur. The existing runway and taxiway would remain and new material would be used for the extended portions of the runway and taxiway. The portions of the runway that would no longer be used would still exist, but marked accordingly. The nearest operational landfill is the Arbor Hills Landfill in Salem Township on 6 Mile Road in Northville, which is a Type II landfill that accepts household, commercial, and non-hazardous industrial waste. The Preferred Alternative would have minimal anticipated impact on nearby landfill facilities. In addition, these facilities have no impact on the Preferred Alternative given the distance separating them from ARB.

## **4.19 EXISTING AND FUTURE TRAFFIC CONDITIONS**

The Preferred Alternative would not require either temporary or permanent closure of local roads surrounding ARB. During construction, it is expected that minor increases in traffic would occur from the construction crews traveling to and from ARB. Overall, the Preferred Alternative would have no significant impact on existing or future traffic volumes in the surrounding area.

## **4.20 CONSTRUCTION IMPACTS**

The Preferred Alternative may result in temporary, localized air, water, and noise quality impacts during construction. Construction documents would identify specific environmental control methods to minimize air and water quality impacts. Air quality impacts, such as fugitive dust and exhaust from construction equipment, may be minimized by seeding disturbed areas, covering haul trucks, and wetting down construction areas. Sediment and erosion control measures would be used to minimize any water quality impacts during construction. Construction would comply with FAA specifications (FAA Advisory Circulars 150/5370-2C – Operational Safety on Airports During Construction, and 150/5370-10A Changes 1-12 – Standards for Specifying Construction of Airports), and State of Michigan regulations would be followed as required to prevent air pollution.

## **4.21 CONTAMINATED SITES REVIEW**

### **Existing Conditions**

A review of federal and state records was completed to identify known properties listed by state and/or federal agencies as either contaminated or sites of environmental concern (EDR, 2009). The intent of this review was to assist in the evaluation of study alternatives; the review was not a Phase I Environmental Site Assessment in accordance with American Society of Testing and Materials (ASTM) (Standard E1527-94). Several mapped sites were found on ARB or within the immediate area (within a one mile radius of the airport). These mostly include underground and above-ground storage tanks and small quantity generators.

There are no underground storage tanks on the airport property. ARB has two small (approximately 250 gallon) tanks that are used for maintenance operations. The City of Ann Arbor does not store or sell aviation fuel products.

The University of Michigan Flyers have an aboveground tank (approximately 3,000 gallons) with avgas (100LL fuel). Avfuel has three large aboveground tanks at ARB (approximately 20,000 gallons each) with avgas (100LL fuel) and Jet A fuel. Avfuel stores the aviation fuel and the FBO's sell it.

All fuel near the airport property is stored in tanks in accordance with MDEQ licensure guidelines and all tanks currently meet regulations.

### **Consequences of the Preferred Alternative**

The Preferred Alternative is not anticipated to have an impact on known properties listed by state and/or federal agencies as either contaminated or sites of environmental concern. There would be no impacts to the fuel storage tanks during construction. Further, if contaminated soil is encountered during construction, proper disposal methods and construction procedures that minimize disturbance of contaminated soils would be utilized.





## ***Section 5.***

# ***Environmental Consequences - Other Considerations***

## **5.1 MITIGATION MEASURES**

### **General Area and Project Information**

ARB is planning to shift and extend Runway 6/24 and the parallel taxiway by approximately 800-feet.

### Noise

The FAA's INM Version 7.0a was used to develop noise exposure contours in order to assess the noise impacts associated with the proposed extension of Runway 6/24. No homes or noise sensitive land uses are located within the 65 DNL contour for the Preferred Alternative future conditions. The Preferred Alternative is not expected to have any significant aircraft noise impacts; therefore, no mitigation is proposed.

### Social Impacts and Community Disruption

There would be no land acquisition and no displacements as part of this project. If acquisition was required, it would follow the Uniform Relocation Assistance Act of 1970, as amended, and FAA AC 150/5100-17.

### Wetland Impacts

Impacts to affected wetlands would require mitigation under Section 404 of the Clean Water Act, Executive Order 11990, and Part 303 of the Natural Resources and Environmental Protection Act (P. A. 451). When unavoidable impacts occur to regulated wetlands, both state and federal regulations require compensatory mitigation. The intent of the mitigation is the replacement of the lost functions of the wetland areas to be displaced. There would be no wetland impacts as a result of this project; therefore, no mitigation is required.

### Threatened and Endangered Species

No known threatened or endangered species were identified within the project site; therefore, no mitigation is required.

## **5.2 DEGREE OF CONTROVERSY**

During the course of this project, there has been input by local citizens regarding the need for the project and the potential impacts. Most of the input received focused on the need for the project and how it potentially would impact adjacent homes. A Citizen's Advisory Committee (CAC) was formed (see Section 6.2). These topics were presented and discussed during the CAC meetings. A public hearing would be held during the public comment period to allow the public an opportunity to comment on the proposed improvements and the EA. A more detailed discussion of public involvement activities can be found in Section 6.2.



## ***Section 6.***

### ***Agency Coordination and Public Participation***

Agency coordination was initiated early in this study. Input and feedback from agency representatives for this project was solicited via consultation and coordination with local, state, and federal regulatory and resource agencies, and the CAC. The public would be asked to provide feedback at a public hearing that would be held in early 2010.

#### **6.1 AGENCY COORDINATION**

Early agency coordination for the project began in 2009 with local, state, and federal agencies regarding issues such as threatened and endangered species, wetlands, farmland, and archeological and architectural resources. This has included consultation with the U.S. Fish and Wildlife Service (USFWS); U.S. Department of Agriculture (USDA); Natural Resources Conservation Service (NRCS); State Historic Preservation Office (SHPO); Michigan Department of Natural Resources (MDNR); U.S. Environmental Protection Agency (USEPA); and the Michigan Department of Environmental Quality (MDEQ) (Appendix D). Staff from MDOT – Airports Division and FAA – Detroit Airports District Office have also been consulted throughout the project.

In the project planning phase, coordination and correspondence has occurred with MDEQ. MDEQ conducted a site visit and a wetland delineation at ARB and provided a letter and wetland report documenting their findings (Appendix D).

Local tribes were also contacted. Response letters are provided in Appendix D.

#### **6.2 PUBLIC PARTICIPATION**

##### ***6.2.1 Citizen's Advisory Committee***

The CAC was formed in spring 2009 and is comprised of 14 individuals representing a variety of affiliations including: local residents, local commercial and business establishments, pilots, and representatives from the City of Ann Arbor, and Pittsfield Townships. The CAC was formed to receive input from CAC members on project issues, to inform them of project activities and events, and to assist CAC members in communicating project activities to each member's constituents (affiliated organizations). Public participation was formally initiated with the first CAC meeting held in May 2009. This meeting focused on the proposed improvements to ARB, the purpose and need for these changes, and project history. At that meeting, questions and comments from CAC members included primarily on project justification and the history of the project.

The second CAC meeting was held in July 2009, and provided an update on the noise analysis, historic resources, plant communities, and wetlands. An overview of the User Survey Report was also provided. During this meeting, each CAC member was asked to provide an update on what they have been hearing from their constituency.

A third CAC meeting will be held in early 2010. This meeting will provide an update on the environmental studies along with a preview of the public hearing. Meeting summaries and a list of invitees and attendees for each CAC meeting were mailed to all meeting participants. A list of CAC members is provided in Appendix G.

### ***6.2.2 Public Hearing***

The Draft EA will be published and available for review for 30 days prior to the public hearing. The public comment period closes 10 days after the public hearing date. A legal notice will be published in the local Ann Arbor newspaper to announce the availability of the Draft EA and the date, time, and location of the public hearing.

Copies of the Draft EA will be forwarded to appropriate local, state, and federal regulatory and resource agencies and will be available for public review at ARB, Ann Arbor City Hall, Pittsfield Township Municipal office, and the Ann Arbor Public Library.

A public hearing on this study will be held in early 2010. The format of the public hearing will be an informal open house. The purpose of this hearing will be to provide the general public with information regarding the study purpose and need, alternatives considered, and selection of a Preferred Alternative. Exhibits and display stations will be set up to cover each aspect of the project, and the study team will be available to personally respond to questions regarding the proposed project. A public hearing handout will also be provided to attendees. Opportunities will be provided to submit both written and oral comments. All of the public and agency comments received will be reviewed and summarized in the Final EA.

## ***Section 7.***

### ***Conclusion***

Based on the information in this EA and coordination with local, state, and federal regulatory agencies and the public, it is anticipated that this project will have no significant impact on the natural or human environment. If review and comment by the public and interested agencies support this determination, this EA will be forwarded to the Michigan Department of Transportation's Bureau of Aeronautics and Freight Services and the Federal Aviation Administration with a request that a Finding of No Significant Impact (FONSI) be prepared and location/design approval be granted.



## ***Section 8.***

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## ***Section 9.***

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## ***Section 10.***

### ***Glossary***

**ACIP** – Airport Capital Improvement Plan – The ACIP is a document that serves as the primary planning tool for identifying and prioritizing critical airport development and associated capital needs.

**ADG** – Airplane Design Group

**ALP** – Airport Layout Plan – The ALP is a set of drawings or an individual drawing that identifies future development at the airport. The ALP is part of the airport Master Plan.

**ARB** – Ann Arbor Municipal Airport

**ARC** – Airport Reference Code– The ARC is a coding system developed by the FAA to relate airport design criteria to the operational and physical characteristics of the airplane types that will operate at a particular airport.

**ATCT** – Air Traffic Control Tower

**DNL** – Day/Night Level (Noise)

**EA** – Environmental Assessment

**EJ** – Environmental Justice– An EJ is an Executive Order intended to identify and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations.

**FAA** – Federal Aviation Administration

**Farmlands of State or Local Importance** – The Natural Resources Conservation Service (NRCS) defines these farmlands as: “Those lands that are nearly prime and that economically produce high yields when treated and managed according to modern farming methods. Some may produce as high a yield as prime farmlands, if conditions are favorable.” (USDA, 1983.)

**FBO** – Fixed Base Operator

**FEMA** – Flood Emergency Management Administration

**FONSI** – Finding of No Significant Impact

**IFR** – Instrument Flight Rules

**ILS** – Instrument Landing System

**INM** – Integrated Noise Model

**MALSF** - Medium Intensity Approach Lighting System with Sequenced Flashers

**MASP** – Michigan Airport System Plan

**Master Plan** – The airport Master Plan is a long-range planning (i.e., generally good for 20 years) document that inventories airport conditions, identifies facility requirements, and recommends future development. The Master Plan includes written text, as well as the ALP drawing(s) (see Airport Layout Plan above).

**MDEQ** – Michigan Department of Environmental Quality

**MDNR** – Michigan Department of Natural Resources

**MDOT** – Michigan Department of Transportation - Airports Division

**Mitigation** – Compensatory measures for impacts occurring as a result of an activity

**MNFI** – Michigan Natural Features Inventory

**MSHDA** – Michigan State Housing Development Authority

**MTOW** – Maximum Takeoff Weight

**NAAQS** – National Ambient Air Quality Standards

**NEPA** – National Environmental Policy Act

**NPIAS** – National Plan of Integrated Airport Systems

**NRCS** – Natural Resources Conservation Service (formerly the Soil Conservation Service)

**ODALS** - Omni-Directional Approach Lighting System

**Prime Farmland** – The NRCS has designated prime farmland as: “Land that has the best combination of physical and chemical characteristics for producing food, forage, fiber, and oilseed crops. The land could be crop, pasture, range, forest, or other uses, but does not include urban built-up land or water bodies, since these two are considered irreversible uses. It has soil quality, growing season, and moisture supply needed to economically produce/sustain high yields when treated and managed according to modern farming methods, including water management.” (USDA, 1983.)

**REILS** – Runway End Identifier Lights.

**RPZ** – Runway Protection Zone – The RPZ is a three dimensional trapezoid, which controls the height of objects within the boundaries of this surface. These areas vary in size, depending on the type of approach category of a particular runway. The RPZ does not have to be cleared or graded, but does require air rights.

**RSA** – Runway Safety Area – The RSA is a prepared or suitable surface area that surrounds the runway in order to reduce the risk of damage to airplanes and injury to pilots and passengers in the event of an undershoot, overshoot, or excursion from the runway. This area, which parallels the runway, is 500 feet wide and preferably extends 1000 feet from the end of runway. The RSA must be clear of all objects and graded for aircraft and emergency vehicle use.

**SHPO** – State Historic Preservation Office

**Site of Environmental Concern** – An identified site of potential contamination due to the presence or handling of hazardous materials on site (e.g., site containing underground storage tanks).

**Site of Environmental Contamination** – Site of known contamination which falls under Michigan’s Natural Resources and Environmental Protection Act 451, Part 201 (formerly Part 307) PA of 1994.

**TAF** – Terminal Area Forecast

**Unique Farmlands** – The NRCS has defined unique farmlands as: “Land other than prime farmland that is used for the production of specific high value food and fiber crops. These lands have a special combination of factors needed to economically produce sustained high quality yields of a specific crop when treated and managed according to modern farm methods. The special factors that make the land unique include soil quality, growing season, temperature, humidity, elevation, aspect, moisture supply, or other conditions such as nearness to market that favor growth of a specific crop. Moisture supply is the form of stored moisture, precipitation, or a developed irrigation system.” (USDA, 1983.)

**USEPA** – United States Environmental Protection Agency

**USFWS** – United States Fish and Wildlife Service

**VFR** – Visual Flight Rules



# Appendices

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**Appendix A. User Survey Report**

**Appendix B. Noise Analysis Report**

**Appendix C. Air Quality Analysis Report**

**Appendix D. Agency Coordination**

**Appendix E. Field Observation Report**

**Appendix F. Audubon Society Bird Species Observed List**

**Appendix G. Citizens Advisory Committee Member List**

**Appendix H. Public Notices**





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## **Appendix A. User Survey Report**

- A-1. Airport User Survey Report  
Ann Arbor Municipal Airport (ARB)  
Ann Arbor, Michigan  
July, 2009**
- A-2. Supplemental Report  
Airport User Survey  
Ann Arbor Municipal Airport (ARB)  
Ann Arbor, Michigan  
December, 2009**



**Appendix A-1.      Airport User Survey Report  
Ann Arbor Municipal Airport (ARB)  
Ann Arbor, Michigan  
July, 2009**



## AIRPORT USER SURVEY REPORT

### ANN ARBOR MUNICIPAL AIRPORT (ARB) ANN ARBOR, MICHIGAN

July 2009

An airport user survey for Ann Arbor Municipal Airport (ARB) has been conducted by the Michigan Department of Transportation - Airports Division (MDOT). The purpose of the survey was to determine if there is justification of need for a proposed extension of primary Runway 6/24, based on current MDOT and Federal Aviation Administration (FAA) standards.

Runway 6/24 is presently 3,505 feet in length and 75 feet wide. The current Airport Layout Plan shows a proposed extension of this runway to an ultimate length of 4,300 feet.

Planning activities associated with the potential development of the extension began in 2007, and in that year the airport manager was requested to collect supporting aircraft operational data. Other data sources listed below were also examined as part of the survey analysis. In order to maintain consistency among the various data sources, only operational data from year 2007 was analyzed.

Based aircraft operational information was collected by Mr. Matthew Kulhanek, airport manager at ARB. The information provided was accurate as of October 18, 2007.

Itinerant (visiting) aircraft operational data was collected by the two Fixed Base Operators (FBOs) that are located on the airport. The FBOs are Solo Aviation and Ann Arbor Aviation Center. Their data collection processes were conducted over a six-month time frame, ranging from April 1, 2007 to September 30, 2007.

Records of operational activity at ARB for the entire calendar year 2007 were also obtained from the FlightAware flight tracking resource agency. FlightAware is a company that records and offers flight tracking information for both private and commercial air traffic in the United States.

During the user survey analysis, every aircraft-type listed in the various data sources was categorized according to FAA approach category, design group, and weight classifications. The various aircraft classifications and associated dimensional standards are shown on the next page. All of the operational records were carefully screened, counted, and cross-checked in order to eliminate the possibility of counting the same aircraft twice, if it was listed in more than one data source.

AIRCRAFT CLASSIFICATIONS (FAA):

APPROACH CATEGORY:

- Category A: Approach speed less than 91 knots.
- Category B: Approach speed 91 to 120 knots.
- Category C: Approach speed 121 to 140 knots.
- Category D: Approach speed 141 to 165 knots.
- Category E: Approach speed 166 knots +

DESIGN GROUP:

- Group I: Wingspan up to but not including 49 feet, tail height up to 20 feet.
- Group II: Wingspan 49 feet up to but not including 79 feet, tail heights 20 to 30 feet.
- Group III: Wingspan 79 feet up to but not including 118 feet, tail heights 30 to 45 ft.
- Group IV: Wingspan 118 feet up to but not including 171 feet, tail heights 45 to 60 ft.
- Group V: Wingspan 171 feet up to but not including 214 feet, tail heights 60 to 66 ft.
- Group VI: Wingspan 214 feet up to but not including 262 feet, tail heights 66 to 80 ft.

SMALL AIRPLANE:

An airplane of 12,500 lbs. or less maximum certificated takeoff weight.

LARGE AIRPLANE:

An airplane of more than 12,500 lbs. maximum certificated takeoff weight.

**BASED AIRCRAFT ANALYSIS:**

According to the Based Aircraft survey data compiled on October 18, 2007, there were 166 aircraft based at ARB. Five were helicopters, 152 were of the A-I classification, eight were of the B-I classification, and one (the only jet based at the airport) was of the B-II Large (greater than 12,500 lbs. maximum certificated takeoff weight) classification. An estimated 200 annual operations were performed by the jet aircraft.

An operation can be either a takeoff or a landing. Therefore, if a based aircraft departs the airport, and later returns, this equals a total of two operations even though it may have only been one actual flight.

Aircraft by FAA Classification:

Estimated Annual Operations:

Helicopter:	5	N/A
A-I:	152	*
A-II:	0	*
B-I:	8	*
B-II Small (<12,500 lbs.):	0	0
B-II Large (>12,500 lbs.):	1	200
C-I Large:	0	0
C-II Large:	<u>0</u>	0
Total:	166	

\* Note: Estimated Annual Operations for A-I, A-II, and B-I classifications were not calculated as part of this analysis, as they are not a factor to the Critical Aircraft determination, nor do they provide justification for the proposed extension of the runway.



## ITINERANT AIRCRAFT ANALYSIS:

Itinerant (visiting) aircraft are those that perform operations at a particular airport, but are actually based somewhere else. Itinerant aircraft information for ARB was compiled by the two FBOs that are located on the airport - Solo Aviation and Ann Arbor Aviation Center. The data sources were the pilot registration logs (airport registers) from each of their businesses. Since pilot sign-in is strictly voluntary, the registers do not account for all itinerant activity at ARB.

During the user survey analysis, two operations were awarded to each aircraft listed on the FBO airport registers. This is due to the FAA standard of considering each landing and subsequent takeoff by each visiting aircraft, two separate operations. Also, since the data was collected over a six-month time frame (April 1, 2007 to September 30, 2007) instead of a full year, operations were again multiplied by two in order to achieve an equivalent annual operational rate for the full calendar year 2007. This resulted in a total multiplier factor of four for each aircraft listed on the registers. This method is standard procedure during the analysis phase of all airport user surveys.

Data collected from the two FBOs is shown in the following tables. Note that aircraft operations that are already accounted for in the FlightAware database have not been included in the number of estimated annual operations listed in these tables. None of the estimated annual operations listed by the Solo Aviation FBO were performed by jet aircraft. Thirty-six of the operations listed by the Ann Arbor Aviation Center FBO were performed by jets.

### FBO – Solo Aviation

#### Aircraft by FAA Classification:

#### Estimated Annual Operations:

Helicopter:	1	N/A
A-I:	183	*
A-II:	3	*
B-I:	40	*
B-II Small (<12,500 lbs.):	2 **	8 **
B-II Large (>12,500 lbs.):	2 **	8 **
C-I Large:	0	0
C-II Large:	<u>0</u>	0
Total:	231 **	

**ITINERANT AIRCRAFT ANALYSIS (continued):**

**FBO – Ann Arbor Aviation Center**

Aircraft by FAA Classification:

Estimated Annual Operations:

Helicopter:	3	N/A
A-I:	205	*
A-II:	13	*
B-I:	59	*
B-II Small (<12,500 lbs.):	5 **	20 **
B-II Large (>12,500 lbs.):	7 **	28 **
C-I Large:	3 **	12 **
C-II Large:	<u>1 **</u>	4 **
Total:	296 **	

\* Note: Estimated Annual Operations for A-I, A-II, and B-I classifications were not calculated as part of this analysis, as they are not a factor to the Critical Aircraft determination, nor do they provide justification for the proposed extension of the runway.

\*\* Note: Aircraft numbers and Estimated Annual Operations shown have been corrected to avoid duplication of records already included in the FlightAware database.

**FLIGHTAWARE DATABASE ANALYSIS:**

As stated earlier, FlightAware is a company that records and offers flight tracking information for both private and commercial air traffic in the United States. The company maintains records of all flight activity for which Instrument Flight Rule (IFR) flight plans have been filed by pilots. The company does not keep records of flight activity that is conducted without flight plans under Visual Flight Rule (VFR) conditions.

Aircraft owners are allowed the opportunity to block specific information from the FlightAware database for security and/or privacy reasons. Unfortunately, the aircraft-types, owner or corporate names, and aircraft registration numbers are not listed in the database when aircraft owners elect to block their information. Origin and destination airport locations and dates of flights are still listed in the database for the blocked operations.

FlightAware provided records that were associated with flight activity to and from ARB during the entire calendar year 2007. Out of over 4,300 records of flight operations, 274 had blocked information. Since the FlightAware records do not include VFR flight activity, and do not include specific aircraft information for the blocked operations, they do not provide a complete history of all activity at the airport.

Judging by the distant locations associated with many of the blocked operations, some of the aircraft flown were likely of the larger categories. However, since the aircraft-type was not provided for these operations, none of them are included in the annual operations listed below. Had aircraft-type information been available for the blocked operations, the resulting operational numbers would likely have been higher.

Annual operations for all classifications of B-II and greater were calculated and are listed in the table shown below. Sixty-nine of the annual operations listed in the FlightAware database were performed by jet aircraft.

FAA Classification:

Annual Operations Included in Database:

B-II Small (<12,500 lbs.):	265
B-II Large (>12,500 lbs.):	85
C-I Large:	0
C-II Large:	0

**COMBINED TOTALS OF ALL DATA SOURCES FOR YEAR 2007:**

<u>FAA Classification:</u>	<u>Estimated Annual Operations:</u>
B-II Small (<12,500 lbs.):	293
B-II Large (>12,500 lbs.):	321
C-I Large:	12
C-II Large:	4

**TOTAL ESTIMATED ANNUAL OPERATIONS USED IN DETERMINATION OF CRITICAL AIRCRAFT CLASSIFICATION:**

<b>Total Annual Operations, "B-II Small and Greater":</b>	<b>630</b> (293+321+12+4)
<b>Total Annual Operations, "B-II Large and Greater":</b>	<b>337</b> (321+12+4)
<b>Total Annual Operations, "C-I Large and Greater":</b>	<b>16</b> (12+4)
<b>Total Annual Operations, "C-II Large":</b>	<b>4</b>

<u>JET AIRCRAFT:</u>	<u>Estimated Annual Operations</u>
Combined total from all classifications, including B-I:	<b>305</b>

## CRITICAL AIRCRAFT DETERMINATION:

The 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. In cases where the Critical Aircraft weigh less than 60,000 lbs, a classification of aircraft is used rather than a specific individual aircraft model.

As shown on the previous page, a total of 630 estimated annual operations were documented by aircraft in the “B-II Small and Greater” classification, which also includes some B-II Large, C-I Large, and C-II Large category aircraft. Since none of the greater categories had operational levels in excess of 500 at ARB, the current Critical Aircraft classification has been determined to be **B-II Small Aircraft**. Note that in establishing the 500-minimum annual operational threshold, it is standard procedure to also include operations from the greater categories in the determination of the Critical Aircraft classification.

Aircraft in the “B-II Small Aircraft” classification have approach speeds between 91 and 120 knots, wingspans between 49 and 79 feet, and maximum certificated takeoff weights of 12,500 lbs. or less. A representative aircraft of this class is the Beechcraft King Air 200, a twin-engine turboprop aircraft that typically seats 10-12 people, including the flight crew.

## RUNWAY LENGTH RECOMMENDATIONS:

For airports with “B-II Small Aircraft” Critical Aircraft classifications, primary runway length recommendations by MDOT and FAA are as follows:

**MDOT** – Source: *Michigan Airport System Plan (MASP 2008)*: 4,300 feet  
(statewide standard)

**FAA** – Source: *FAA Advisory Circular 150/5325-4B*, 4,200 feet \*  
“Runway Length Requirements for Airport Design”  
(airport-specific standard)

\* Note: The FAA runway length recommendation was obtained from Figure 2-2 in Advisory Circular 150/5325-4B. The following specifics for ARB were used in the determination: Airport Elevation: 839 feet above mean sea level  
Temperature: 83 degrees F mean daily maximum temp of hottest month of year (July)

## RUNWAY LENGTH RECOMMENDATIONS (continued):

The FAA recommended runway length of 4,200 feet at ARB was obtained by calculation from FAA Advisory Circular 150/5325-4B, "*Runway Length Requirements for Airport Design*", a publication that is used nationally by the agency. The resulting recommended runway lengths are airport-specific, and can vary by hundreds of feet from site to site, depending on the specific airport elevations and mean daily maximum temperatures used in the calculations.

The MDOT recommendation of 4,300 feet is a statewide standard for all airports in the state with B-II Small Critical Aircraft classifications. Since airport elevations and mean maximum temperatures do not vary significantly from airport to airport in Michigan, as opposed to many other states, MDOT uses a single runway length recommendation for all airports of the same Critical Aircraft classification. The FAA-Airports District Office that oversees the state of Michigan supports our statewide runway length recommendation of 4,300 feet for all airports classified with a B-II Small Aircraft reference code.

As stated in FAA Advisory Circular 150/5325-4B, "*The design objective for the main primary runway is to provide a runway length for all airplanes that will regularly use it without causing operational weight restrictions.*" Airplanes that are classified within an airport's Critical Aircraft category are considered by the FAA to be the "regular use" aircraft of the main primary runway.

Development of the primary runway at ARB to the recommended length of 4,300 feet would allow the majority of B-II Small classification aircraft to operate at their optimum capabilities (without weight restrictions). Interstate commerce into and out of a community can be negatively impacted if business aircraft are forced to operate with load restrictions (i.e. reductions in passengers, cargo, and fuel associated with aircraft range) due to lack of suitable runway length.

Extension of the runway to the recommended length would also enhance airport operational safety. A 4,300-foot long runway would not only provide enough runway for takeoff by most regular use (Critical Aircraft category) airplanes operating at optimum capabilities, but also provide additional runway for the purpose of bringing the aircraft to a stop in an aborted-takeoff situation. In situations where pilots detect a problem with the aircraft while on the takeoff roll, they are forced to continue the takeoff and contend with the problem in the air if there is not enough runway remaining to bring the aircraft to a stop. By having enough remaining runway to safely abort a takeoff and stop the aircraft while still on the ground, a pilot would be able to avoid a potentially hazardous situation of taking to the air with a mechanically-deficient aircraft.

**CONCLUSION:**

This user survey analysis has shown that justification of need for the proposed extension of Runway 6/24, based on a determination of the Critical Aircraft, has been substantiated according to MDOT and FAA standards. Even though records that were analyzed likely did not include all operations performed at ARB in 2007 by category B-II and greater aircraft, the operations that were substantiated with available information were more than sufficient to make the determination that the Critical Aircraft is of the "B-II Small Aircraft" classification. With this confirmation, we find the proposed project eligible to receive state and federal funding, and recommend that the airport sponsor proceed with the planning and environmental processes associated with the proposed extension of the primary runway to an overall length of 4,300 feet.



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***NOTE:** A Supplemental Report to this July 2009 Airport User Survey Report was issued in December 2009. The Supplemental Report provides additional details and updates to the information contained in this original report. The information published in the Supplemental Report provides additional justification to further support the findings and recommendations of this original July 2009 Airport User Survey Report.*

**Appendix**

**A-2. Supplemental Report  
Airport User Survey  
Ann Arbor Municipal Airport (ARB)  
Ann Arbor, Michigan  
December, 2009**





**SUPPLEMENTAL REPORT  
AIRPORT USER SURVEY**

**ANN ARBOR MUNICIPAL AIRPORT (ARB)  
ANN ARBOR, MICHIGAN**

**December 2009**

This Supplemental Report is associated with the original Airport User Survey Report for Ann Arbor Municipal Airport (ARB), dated July 2009. The information contained in this supplement provides additional details and updates to the information contained in the original report.

Additional analysis of the aircraft operational data has resulted in the generation of supplemental information, three new exhibits, and updates to the numbers of annual operations performed by category B-II critical aircraft. The following paragraphs explain in detail the information provided in the new exhibits, as well as the supplemental information and updates to the operational numbers listed in the original user survey report.

**EXHIBIT No. 1: *Annual Operations Analysis by Specific Aircraft Model***

This exhibit shows annual operations at ARB by specific aircraft model, rather than only by their FAA aircraft classification as shown in the original user survey report. The various aircraft models are listed in three separate tables, based upon groupings of their FAA classifications (B-II, C-I, and C-II).

Supplemental data associated with annual operations by the Beechcraft King Air C90 has been included in the B-II category table of this exhibit. Operations by this particular model of aircraft were not included in the original July 2009 Airport User Survey Report.

**EXHIBIT No. 2: *Origin / Destination Analysis by State***

Exhibit No. 2 shows the results of an origin and destination analysis of aircraft operations conducted at ARB, based on examination of the FlightAware database from survey year 2007. Although 274 of the operations had aircraft model and ownership information blocked from the database at the aircraft owner's request, the origin and destination cities of each flight were still included.

The first column of the table shown in this exhibit lists 31 states (and Washington DC) from which operations into ARB originated, or operations out of ARB were going to as a destination. The second column lists operations attributed to each state by the 274 total operations with blocked aircraft and ownership records. The third and fourth columns list operations attributed to each state by B-II Small and B-II Large category aircraft. The last column lists the total number of operations attributed to each state.

The numbers of operations associated with each state are from the FlightAware Instrument Flight Rule (IFR) flight plan database only, and do not include records of all itinerant operations between ARB and other states. Nonetheless, the numbers shown in this exhibit confirm that in 2007, flight operations were conducted between ARB and at least 31 other states (approximately 63% of the continental US). Also, approximately 67% of the IFR flight records for the category B-II critical aircraft were between ARB and out-of-state locations. These factors confirm that there is a significant amount of flight operations being conducted at ARB that are either going to, or coming from, distant locations in other states.

### **EXHIBIT No. 3: *Small 10-Seat Aircraft Analysis***

The table in this exhibit lists *Small* aircraft models (less than or equal to 12,500 lbs. maximum certificated takeoff weight) that have 10 or more passenger seats, and that conducted operations at ARB in survey year 2007. The numbers of annual operations listed in the table are from the FlightAware IFR flight plan database only, and do not include records of all operations by aircraft of this type. The FlightAware records show that there were 425 annual operations by Small 10-seat or higher aircraft.

Exhibit No. 3 also shows that there were 211 annual operations by *Large* category (greater than 12,500 lbs. maximum certificated takeoff weight) B-II aircraft from the Based Aircraft data source and another 85 annual operations by Large category B-II aircraft from the FlightAware data source. The number of annual operations performed by the Small 10-seat or higher aircraft and the Large category aircraft combined is shown as 721.

The operational numbers listed in Exhibit No. 3 do not include blocked FlightAware operations, Visual Flight Rule (VFR) operations, or operations logged by pilots on the Fixed Base Operator (FBO) airport registers. Although the information shown is only a partial representation of all applicable aircraft, the 721 annual operations that were substantiated significantly confirm that Figure 2-2 in FAA Advisory Circular 150/5325-4B is the appropriate chart to reference in the determination of the FAA-recommended runway length of 4,200 feet at ARB.

### **UPDATED BASED AIRCRAFT ANALYSIS:**

The Based Aircraft Analysis of the original user survey report listed 200 estimated annual operations by AvFuel's B-II Large category aircraft (see page 3 of the original report). AvFuel's Chief Pilot has since confirmed in writing that the actual number of operations by their Cessna Citation XL 560 aircraft at ARB over the past three calendar years has been 224 operations in 2006, 211 operations in 2007, and 223 operations in 2008.

In order to maintain consistency with the other survey year 2007 operational records analyzed, Exhibit No. 1 of this Supplemental Report shows the 211 actual annual operations by this aircraft in the "Based Aircraft Data Source" column of the category B-II table, instead of the original estimate of 200.

### **UPDATED ITINERANT AIRCRAFT ANALYSIS: (FBO Data Sources)**

Itinerant (visiting) aircraft operational data that was evaluated as part of the original user survey analysis was obtained from the pilot registration logs (airport registers) of two of the airport's FBOs - Solo Aviation and Ann Arbor Aviation Center. Data was examined for a six-month survey time frame, and cross-checked against FlightAware records in order to prevent counting the same aircraft twice. Any operations that were already included in the FlightAware records were not included in the operational totals that were generated from the FBO records.

The FBO records provided 40 additional operations by B-II and greater category aircraft (32 by category B-II aircraft, 6 by category C-I aircraft, and 2 by category C-II aircraft). Since this data was based on a six-month time frame instead of the full calendar year 2007, these 40 actual operations were prorated into an estimated equivalent annual rate of 80 operations. The additional 40 estimated operations were the only operations in the original user survey analysis that were obtained by prorating actual partial-year data into an estimated equivalent annual rate.

As part of the supplemental analysis, estimated operations that were originally generated as a result of prorating partial-year data were not considered in the determination of the annual operations at ARB. This eliminates the potential effect of seasonal variation in flight activity levels negatively influencing annual operational estimates. Only the 40 actual operations that were documented by the FBOs as having occurred within the six-month survey period were counted as valid operations, since they did in fact occur in 2007. No operations were attributed to the remaining six months.

Exhibit No. 1 of this supplemental report shows only the 40 actual documented operations (32 by category B-II aircraft, 6 by category C-I aircraft, and 2 by category C-II aircraft) in the column that is labeled "2 FBO Register Data Sources".

## UPDATED FLIGHTAWARE DATABASE ANALYSIS:

The FlightAware database analysis that was performed for the original July 2009 Airport User Survey Report resulted in the determination of 265 actual annual operations by B-II Small aircraft, and another 85 actual annual operations by B-II Large aircraft (see page 6 of the original report). However, the resulting numbers did not include operations by the Beechcraft King Air C90 model.

The King Air C90 is a B-II Small category aircraft, with a wingspan of 50'3". Earlier versions of the King Air 90 models (A90 and B90) have wingspans of less than 49', and are therefore category B-I Small aircraft. Since the FlightAware records that were originally analyzed for ARB did not include information which identified the specific model of each King Air 90 operation, no operations by King Air 90s were included in the original user survey analysis and report.

Although the FlightAware records do not provide information regarding the specific model of each King Air 90 operation listed, they do provide the aircraft registration N-number of each aircraft. By entering the N-number into the computerized FAA aircraft registration database, the specific model of each King Air 90 operation was able to be determined. A total of 157 operations by the B-II Small category King Air C90 model have been identified, out of 220 operations by King Air 90 models of all types.

Exhibit No. 1 of this supplemental report shows the 157 King Air C90 operations included in the "Flight Aware Data Source" column of the category B-II table. By adding these operations to the 265 operations by B-II Small aircraft and 85 operations by B-II Large aircraft that were previously identified in the original user survey report, the updated total number of actual annual operations by B-II category aircraft obtained from the FlightAware data source is 507.

The FlightAware database also confirmed usage of the airport by many large corporations, in addition to AvFuel, which is the only one actually based at ARB. Some of the other corporate users of ARB include Synergy International, Wells Fargo, Polaris Industries, Bombardier Aerospace, Avis Industrial Corporation, Thumb Energy, and NetJets. NetJets provides on-demand air charter services and corporate aircraft fractional ownership opportunities to a large number of other corporations that are located throughout the country.

## AIRCRAFT OPERATIONAL FORECASTS:

Year 2007 was the onset year of the current planning activities associated with the potential extension of Runway 6/24. At that time, the airport manager and FBOs were requested to collect based and itinerant aircraft operational data over the course of year 2007 for the purpose of determining project justification. This data was reviewed during the user survey analysis, which was conducted in early 2009.

FlightAware records for any given year are not published until that particular calendar year has ended, and all operations that took place during the course of that year counted. Since the user survey analysis was conducted in early 2009, the most current operational records available at the time from FlightAware were associated with calendar year 2008. Although year 2008 records were available, year 2007 records from FlightAware were used in the user survey analytical process. This was due to the importance of maintaining consistency of year of operational records in the analysis, and not combining operational data collected by the airport manager and FBOs over year 2007 with the more recent FlightAware records from year 2008. The FlightAware records, airport manager records, and FBO records from calendar year 2007 that were used in the user survey analysis were all only one-year old at the time, and still considered valid for use in determining project justification.

The FAA Terminal Area Forecast (TAF) does project a short-term approximate 22% decrease in total annual operations at ARB from user survey year 2007 through year 2009 (from 72,895 actual in 2007 to 56,956 estimated for 2009). However, beginning in year 2010, the TAF projects continuously increasing annual operations at ARB, from the year 2009 low-point through year 2030. Itinerant annual operations are even projected to surpass survey year 2007 levels prior to the end of the 2030 forecast period.

Even if the worst case short-term projected 22% decrease in total annual operations is applied to the user survey results, there is still significant justification for the runway extension. The user survey report documents a total of 750 actual annual operations by B-II category critical aircraft that justify the runway extension. A 22% decrease in this number is 585 - still well above the FAA's substantial use threshold of 500. And again, beginning in 2010, operations at ARB are projected by the FAA to begin increasing every single year from that point forward, through year 2030.

Forecasts from the MDOT Michigan Airport System Plan (MASP 2008) also project increasing itinerant and total operations at ARB from years 2010 through 2030. The MDOT forecasts further substantiate the mid-term and long-term FAA projections of a rebound in current operational activity at ARB to survey year 2007 levels.

AvFuel Corporation, which bases a B-II Large category Citation 560 Excel jet at ARB, has confirmed that their operations at ARB actually increased from 211 operations in 2007 to 223 operations in 2008. Their Chief Pilot estimates that their future operational levels could potentially increase to 350 to 450 operations per year at ARB.

The FAA TAF forecast, MDOT MASP forecast, and AvFuel's operational forecasts all provide support to the fact that survey year 2007 operational data is a very pertinent representation of estimated future operational levels at ARB.

### SUMMARY:

The supplemental analysis that was conducted after publication of the July 2009 Airport User Survey Report has resulted in additional justification in support of extension of Runway 6/24 to 4,300' in length.

Further analysis of the FlightAware IFR flight plan database has confirmed 507 actual operations at ARB in survey year 2007 by B-II category aircraft. This number does not include operations in the FlightAware records with aircraft information blocked at the owner's request, or VFR operations that were conducted without flight plans. Judging by the high number of out-of-state origin and destination locations of operations listed in the blocked category (see Exhibit No. 2), it is very likely that many of the associated aircraft were of the B-II or greater categories. Therefore, actual operations at ARB by aircraft of these categories are likely considerably higher than the 507 substantiated operations obtained from the FlightAware database.

The 507 actual operations by B-II category aircraft that were obtained from the FlightAware database also do not include operations conducted by AvFuel's based Cessna Citation XL 560, or operations obtained from the two FBO airport registers. AvFuel has confirmed 211 actual operations at ARB in 2007 with their B-II category aircraft, and data provided by the FBOs has confirmed 32 actual operations in 2007 by B-II category aircraft.

In summary, the supplemental analysis of this user survey has confirmed a total of 750 actual annual operations at ARB by category B-II aircraft. FlightAware records also confirmed that operations by aircraft in this critical aircraft category were performed by many large corporations, some of which are listed on page 4 of this report.

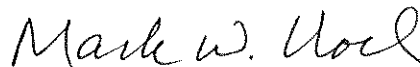
## CONCLUSION:

In the majority of airport user survey processes, determinations and recommendations are issued based on analysis of estimated annual operations obtained from various airport users. In conducting the user survey at ARB, the analysis focused on evaluation of actual annual operations performed at the airport. This is obviously a much more accurate method of calculating the total number of annual operations associated with the determination of the critical aircraft and Airport Reference Code. It also eliminates the possibility of an airport user inflating their estimated operational numbers, in the hopes of obtaining a longer runway that is not truly justified.

While the numbers listed in this report do not include every operation that occurred at ARB in survey year 2007 with B-II category aircraft, they do confirm substantial usage of the airport by aircraft of this critical aircraft category. The Origin/Destination Analysis has shown a significant number of operations between ARB and distant out-of-state locations, which is a very good indicator of corporate activity associated with interstate commerce, as opposed to pleasure flying by general aviation pilots. FlightAware records also confirmed usage of the airport by many large corporations.

The information contained in this Supplemental Report provides additional justification in support of the findings and recommendations of the original July 2009 Airport User Survey Report. The user survey analysis has shown that justification for the proposed extension of primary Runway 6/24 to 4,300-feet has been confirmed, and the proposed project has been determined to be eligible to receive state and federal funding.

Although justification for the proposed project has been substantiated according to current MDOT and FAA standards associated with runway length recommendations, neither agency requires that the runway be extended. It is ultimately – and entirely – the decision of the city of Ann Arbor whether or not to proceed with the development of the project.



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ANN ARBOR MUNICIPAL AIRPORT USER SURVEY - SUPPLEMENTAL REPORT - DECEMBER 2009

EXHIBIT NO. 1

ANNUAL OPERATIONS ANALYSIS BY SPECIFIC AIRCRAFT MODEL

Aircraft Model	FAA Approach Category	FAA Design Group	FAA Weight Class	Seating	Maximum Takeoff Weight (lbs.)	Aircraft Engine Type	Flight-Aware Data Source	Based Aircraft Data Source	2 FBO Register Data Sources	Total Annual Operations by Model
Aero Commander 695	B	II	Small	<10	<12,500	Multi-Eng	4	0	0	4
Beechcraft King Air C90	B	II	Small	10+	<12,500	Multi-Eng	157	0	0	157
Beechcraft King Air 100	B	II	Small	10+	<12,500	Multi-Eng	39	0	2	41
Beechcraft King Air 200	B	II	Small	10+	<12,500	Multi-Eng	215	0	8	223
Cessna 441 Conquest II	B	II	Small	<10	<12,500	Multi-Eng	7	0	4	11
Beechcraft King Air 300	B	II	Large	10+	12,500+	Multi-Eng	11	0	8	19
Beechcraft King Air 350	B	II	Large	10+	12,500+	Multi-Eng	43	0	4	47
Cessna Citation II 550	B	II	Large	<10	12,500+	Jet	6	0	2	8
Cessna Citation XL 560	B	II	Large	<10	12,500+	Jet	25	211	2	238
Cessna Citation 680	B	II	Large	<10	12,500+	Jet	0	0	2	2

Total B-II Category Annual Operations 507 211 32 750

Learjet 25	C	I	Large	<10	12,500+	Jet	0	0	2	2
Learjet 31	C	I	Large	<10	12,500+	Jet	0	0	2	2
Learjet 45	C	I	Large	<10	12,500+	Jet	0	0	2	2

Total C-I Category Annual Operations 0 0 6 6

IAI Westwind 1125	C	II	Large	<10	12,500+	Jet	0	0	2	4
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Total C-II Category Annual Operations 0 0 2 4

**CRITICAL AIRCRAFT CATEGORY DETERMINATION: B-II** (Based on 750 Total Annual Operations by Aircraft of this Category)

NOTE: The annual operations listed in the above tables are ACTUAL documented operations from calendar year 2007. The numbers do NOT include any ESTIMATED operations obtained through proration of partial-year data, or other methods. Operations recorded by the FBOs and listed above represent only a partial-year (six-month) time frame.

A total of 274 operations in the FlightAware database had aircraft model and ownership information blocked at the owner's request. As a result, their operational numbers are NOT included in the information shown above. Judging by the high number of out-of-state origin and destination locations of aircraft in the blocked category (see Exhibit No. 2), it is very likely that many of the associated aircraft were of the B-II and greater categories. Therefore, actual operations at ARB by aircraft of these categories are likely considerably higher than the numbers shown above.

EXHIBIT NO. 2 ORIGIN / DESTINATION ANALYSIS BY STATE

Origin / Destination Analysis of IFR Aircraft Operations Between ARB and Other States (Records from FlightAware 2007 Database)				
STATE	Aircraft Type & Category Blocked	B-II Small Category	B-II Large Category	Totals by State
1 Alabama	0	1	0	1
2 Arizona	1	0	0	1
3 Arkansas	2	1	0	3
4 Connecticut	5	2	0	7
5 Florida	29	3	3	35
6 Georgia	5	6	12	23
7 Illinois	25	64	5	94
8 Indiana	6	21	1	28
9 Iowa	1	20	3	24
10 Kansas	3	0	0	3
11 Kentucky	2	13	0	15
12 Maine	2	0	0	2
13 Maryland	1	3	7	11
14 Massachusetts	5	0	1	6
15 Michigan	79	162	20	261
16 Minnesota	2	3	2	7
17 Missouri	0	5	0	5
18 Nebraska	3	0	1	4
19 New Hampshire	1	2	0	3
20 New Jersey	9	2	4	15
21 New York	6	5	1	12
22 North Carolina	4	1	1	6
23 Ohio	16	38	13	67
24 Pennsylvania	14	23	4	41
25 South Carolina	0	4	0	4
26 South Dakota	4	18	0	22
27 Tennessee	2	5	0	7
28 Texas	30	0	0	30
29 Virginia	1	3	0	4
30 Washington DC	5	1	2	8
31 West Virginia	1	7	0	8
32 Wisconsin	10	9	4	23
No Record	0	0	1	1

Totals by Category                    274                    422                    85                    781

IFR Aircraft Operation Totals by Category:

Within Michigan	79	162	20	261
Outside of Michigan	195	260	64	519
No Record	0	0	1	1

NOTE: The numbers of operations listed above are ACTUAL documented operations from calendar year 2007. The numbers do NOT include any ESTIMATED operations obtained through proration of partial-year data, or other methods.

The numbers shown above are from the FlightAware IFR Flight Plan Database only, and do NOT include records of all itinerant operations between ARB and other states. Nonetheless, the numbers shown above confirm that in 2007, flight operations were conducted between ARB and at least 31 other states and Washington DC (approx 63% of the continental US). Approximately 67% of these IFR flight records were between ARB and out-of-state locations.

EXHIBIT NO. 3

SMALL 10-SEAT AIRCRAFT ANALYSIS

Small Airplanes Having 10 or More Passenger Seats (Records from FlightAware 2007 Database)							
Aircraft Model	FAA Approach Category	FAA Design Group	FAA Weight Class	Seating	Maximum Takeoff Weight	Aircraft Engine Type	Annual Operations
Cessna Caravan 208	A	II	Small	10+	<12,500	Single-Eng	11
Swearingen Merlin III	B	I	Small	10+	<12,500	Multi-Eng	3
Beechcraft King Air C90	B	II	Small	10+	<12,500	Multi-Eng	157
Beechcraft King Air 100	B	II	Small	10+	<12,500	Multi-Eng	39
Beechcraft King Air 200	B	II	Small	10+	<12,500	Multi-Eng	215

Total Small 10-Seat Aircraft Annual Operations

425

Total B-II Large Category Aircraft Annual Operations

Based Aircraft Data Source (B-II Large):  
FlightAware Data Source (B-II Large):

211  
85

Grand Total Annual Operations at ARB Applicable to Figure 2-2 in FAA Advisory Circular 150/5325-4B:

721

**NOTE:** The annual operations listed above are ACTUAL documented operations from calendar year 2007. The numbers do NOT include any ESTIMATED operations obtained through proration of partial-year data, or other methods.

The numbers shown in the table above are from the FlightAware IFR Flight Plan Database only, and do NOT include records of all small aircraft operations at ARB with 10-seat or greater aircraft models. Nonetheless, the above analysis confirms that Figure 2-2 in FAA AC 150/5325-4B is the appropriate chart to reference in the determination of the FAA-recommended runway length for Ann Arbor Municipal Airport.

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## **Appendix B. Noise Analysis Report**

(prepared by URS/July, 2009)

- B-1. Noise Impact Analysis**
- B-2. Aircraft Noise, Noise Metrics & the Integrated Noise Model**



## APPENDIX B-1

### NOISE IMPACT ANALYSIS

#### B.1 AIRCRAFT NOISE

The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts. Airport development actions to accommodate fleet mix changes, the number of aircraft operations, or air traffic changes are examples of activities that can alter aviation-related noise impacts and affected land uses subjected to those impacts. This section describes the baseline noise environment and the associated land use compatibility.

##### B.1.1 APPLICABLE REGULATIONS

The evaluation of the Ann Arbor Municipal Airport (ARB) noise environment, and land use compatibility associated with airport noise, was conducted using the methodologies developed by the Federal Aviation Administration (FAA) and published in FAA Order 5050.4B, FAA Order 1050.1E, and title 14 Code of Federal Regulations (CFR) part 150.

For aviation noise analysis, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of yearly day/night average sound level (DNL); this is FAA's primary metric. Title 14 CFR part 150 provides Federal compatible land use guidelines for several land uses as a function of DNL values. The ranges of DNL values in Table B-1 reflect the statistical variability for the responses of large groups of people to noise. Compatible or non-compatible land use is determined by comparing the predicted or measured DNL values at a site to the values listed in Table B-1. Land use compatibility with yearly day-night average sound levels is shown in Table B-1.

##### B.1.2 METHODOLOGY

###### **Aircraft Noise Descriptors and Effects**

The terms and metrics associated with aircraft noise relative to this analysis are complex and are discussed in detail in Appendix B-2 along with potential effects of aircraft noise. In general and in this document, noise or sound levels are expressed in terms of A-weighted decibels (dBA).

DNL is a 24-hour time-weighted-average noise metric expressed in dBA which accounts for the noise levels of all individual aircraft events, the number of times those events occur, and the time of day which they occur. DNL has two time periods: daytime (7:00 a.m. to 9:59 p.m.) and nighttime (10:00 p.m. to 6:59 a.m.). In order to represent the added intrusiveness of sounds occurring during nighttime hours, DNL penalizes, or weights, events occurring during the nighttime periods by 10 dBA.

###### **Noise and Compatible Land Use Prediction Methodology**

The Integrated Noise Model (INM) has been FAA's standard tool since 1978 for determining the predicted noise impact in the vicinity of airports. Statutory requirements for INM use are defined in FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*; Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*; and title 14 CFR part 150, *Airport Noise Compatibility Planning*. INM Version 7.0a, released September 17, 2008, was the version used for this document ([http://www.faa.gov/about/office\\_org/headquarters\\_offices/aep/models/inm\\_model/](http://www.faa.gov/about/office_org/headquarters_offices/aep/models/inm_model/)).

The INM incorporates the number of annual average daily daytime and nighttime flight and run-up operations, flight paths, run-up locations, and flight profiles of the aircraft along with its extensive internal database of aircraft noise and performance information, to calculate the DNL at many points on the ground around an airport. From a grid of points, the INM contouring program draws contours of equal DNL to be superimposed onto land use maps. For this document, DNL contours of 65, 70, and 75 dBA were developed. DNL contours are a graphical representation of how the noise from the airport's average annual daily aircraft operations is distributed over the surrounding area. The INM can calculate sound levels at any specified point so that noise exposure at representative locations around an airport can be obtained.

**TABLE B-1  
LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVELS**

**Yearly Day-Night Average Sound Level (DNL)**

	<b>Below 65 Decibels</b>	<b>65-70 Decibels</b>	<b>70-75 Decibels</b>	<b>75-80 Decibels</b>	<b>80-85 Decibels</b>	<b>Over 85 Decibels</b>
<b><u>Residential</u></b>						
Residential (Other than mobile homes & transient lodges)	Y	N <sup>1</sup>	N <sup>1</sup>	N	N	N
Mobile Home Parks	Y	N	N	N	N	N
Transient Lodging	Y	N <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N
<b><u>Public Use</u></b>						
Schools	Y	N <sup>1</sup>	N <sup>1</sup>	N	N	N
Hospitals, Nursing Homes	Y	25	30	N	N	N
Churches, Auditoriums, Concert Halls	Y	25	30	N	N	N
Governmental Services	Y	Y	25	30	N	N
Transportation	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	Y <sup>4</sup>
Parking	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
<b><u>Commercial Use</u></b>						
Offices, Business & Professional	Y	Y	25	30	N	N
Wholesale & Retail Building Materials, Hardware & Farm Equipment	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
Retail Trade - General	Y	Y	25	30	N	N
Utilities	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
Communications	Y	Y	25	30	N	N
<b><u>Manufacturing &amp; Production</u></b>						
Manufacturing, General	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
Photographic and Optical	Y	Y	25	30	N	N
Agriculture (Except Livestock) & Forestry	Y	Y <sup>6</sup>	Y <sup>7</sup>	Y <sup>8</sup>	Y <sup>8</sup>	Y <sup>8</sup>
Livestock Farming & Breeding	Y	Y <sup>6</sup>	Y <sup>7</sup>	N	N	N
Mining & Fishing, Resource Production & Extraction	Y	Y	Y	Y	Y	Y
<b><u>Recreational</u></b>						
Outdoor Sports Arenas, Spectator Sports	Y	Y <sup>5</sup>	Y <sup>5</sup>	N	N	N
Outdoor Music Shells, Amphitheaters	Y	N	N	N	N	N
Nature Exhibits & Zoos	Y	Y	N	N	N	N
Amusement, Parks, Resorts, Camps	Y	Y	Y	N	N	N
Golf Courses, Riding Stables, Water Recreation	Y	Y	25	30	N	N

**NOTE:** The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties remains with the local authorities. FAA determinations under Part 150 are not intended to substitute Federally determined land use for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise-compatible land uses.

## **KEY TO TABLE:**

SLUCM	Standard Land Use Coding Manual.
Y (Yes)	Land Use and related structures are compatible without restrictions.
N (No)	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) are to be achieved through incorporation of noise attenuation into the design and construction of structure.
25,30, or 35	Land use and related structures are generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated in design and construction of structure.

<sup>1</sup> Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems

<sup>2</sup> Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of the buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

<sup>3</sup> Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of the buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

<sup>4</sup> Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of the buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

<sup>5</sup> Land use compatible provided special sound reinforcement systems are installed.

<sup>6</sup> Residential buildings require an NLR of 25 dB.

<sup>7</sup> Residential buildings require an NLR of 30 dB.

<sup>8</sup> Residential buildings not permitted.

 Noncompatible land use.

Source: Title 14 CFR part 150, Appendix A, Table 1, January 1998.

The INM is an average-value-model and is designed to estimate long-term average effects using average annual input conditions. Because of this, differences between predicated and measured values can occur because certain local acoustical variables are not averaged, or because they may not be explicitly modeled in INM. Difference may also occur due to errors or improper procedures employed during the collection of the measured data.

Examples of detailed local acoustical variables include:

- Temperature profiles;
- Wind gradients;
- Humidity effects;
- Ground absorption;
- Individual aircraft directivity patterns; and
- Sound diffraction caused by water, buildings, barriers, etc.

The results of the INM analysis provide a relative measure of noise levels around airfield facilities. When the calculations are made in a consistent manner, the INM is most accurate for comparing before and after noise effects resulting from forecast changes or alternative noise control actions. It allows noise levels to be predicted for such proposed projects without the actual implementation and noise monitoring of those actions.



### **B.1.3 DATA**

#### **Sources**

Data was collected from multiple sources, examined, and utilized to ensure that this aircraft noise analysis provides an accurate depiction of the existing ARB aircraft noise environment. The data sources utilized for this analysis included:

- Flight Explorer®, computer software which obtains N-number (registration number), aircraft type, arrival and departure airport, and time of day from Air Traffic Control Tower radar data,
- USDOT, FAA Airport Master Record, Form 5010 July 2009;
- FAA Terminal Area Forecast (TAF) December 2008;
- FAA Air Traffic Activity Data System (ATADS) May 2009;
- Michigan Department of Transportation (MDOT) Airport User Survey Report 2009;
- National Oceanic and Atmospheric Administration, Climatology of the United States No. 81, 2002; and
- Ann Arbor Municipal Airport, Airport Layout Plan.

#### **Modeled Aircraft Operations**

This section describes the sources and derivation of the INM input data for the existing conditions, which are based on aircraft operations occurring from April 2008 through March 2009, and 2014 future conditions. Items also discussed includes the airport layout, weather, flight operations, fleet mix, runway use, flight tracks, and track use.

#### **Airport Layout**

ARB has a single paved runway, which is designated as Runway 06/24. It is 3,505 feet long by 75 feet wide. A full parallel taxiway system, 30 feet wide, supports this runway. The Proposed Project consists of extending Runway 06/24 795 feet to a length of 4,300 feet. There is a secondary turf runway, designated Runway 12/30. Runway 12/30 is 2,750 feet long by 110 feet wide with a 25 foot wide full length turf taxiway. The field elevation at ARB is approximately 829 feet above sea level. Apron and hangar facilities are available for based and transient aircraft.

#### **Weather and Climate**

The INM default for pressure, humidity, and headwind was not changed in the model. INM uses temperature, pressure, and headwind when computing procedural profiles. Humidity is only used in calculating atmospheric absorption. The average temperature at Ann Arbor, the University of Michigan, the closest monitoring station, is 49 degrees Fahrenheit (NOAA Climatology of the United States No. 81, 2002). The INM default airport pressure is 29.92 inches of mercury and the default humidity is 70% and the default average headwind is 8 knots.

#### **Flight Operations**

INM-modeled annual operations for the 2009 existing condition, consisting of operations from April 2008 through March 2009, totaled 61,969 operations, which is approximately 169 daily operations. Jet operations accounted for approximately 2 percent of the total operations. Nighttime operations accounted for 4.2 percent of the total operations. The total number of operations were obtained from the FAA's ATADS. Air taxi / commuter operations fleet mix was obtained from Flight Explorer® data and general aviation aircraft fleet mix was obtained from the MDOT Airport User's Survey.

2014 future condition aircraft operations were obtained from the 2008 FAA TAF for ARB. Modeled annual operations for the 2014 condition totaled 69,717 operations, or approximately 191 daily operations. It is assumed that the percent of night and jet operations will remain constant between the existing condition and the future years. In addition, it is also assumed that the fleet mix between the 2009 Existing Condition and the 2014 Future Alternatives will remain static. The existing and future fleet mix with annual operations is shown in Table B-2.

**Table B-2  
Fleet Mix and Annual Operations  
Ann Arbor Municipal Airport  
Runway Extension EA**

Aircraft Category	INM Aircraft	Aircraft Name	Aircraft Type	Fleet Mix Percentage (%)		Annual			
				Itinerant	Local	Itinerant		Local	
						2009	2014	2009	2014
Air Taxi / Commuter	BEC58P	Beech 58 Baron	MEP	48.6	---	439	745	---	---
	CNA172	Cessna 172 Skyhawk	SEP	3.4	---	31	52	---	---
	CNA206	Cessna 206 Super Skywagon/Stationair	SEP	1.4	---	12	21	---	---
	CNA441	Cessna 441 Conquest II	TP	14.4	---	130	220	---	---
	CNA500	Cessna 500 / Citation II	Jet	1.4	---	12	21	---	---
	DC910	Douglas DC 9-10	Jet	0.7	---	6	10	---	---
	DHC6	de Havilland Dash 6*	TP	8.2	---	74	126	---	---
	GASEPF	Composite - Single Engine Fixed Pitch Prop	SEP	0.7	---	6	10	---	---
	GASEPV	Composite - Single Engine Variable Pitch Prop	SEP	4.1	---	37	63	---	---
	LEAR35	Lear 35	Jet	2.7	---	25	42	---	---
	MU3001	Mitsubishi 300-10 Diamond	Jet	2.7	---	25	42	---	---
	PA28	Piper 28 Cherokee	SEP	7.5	---	68	115	---	---
PA31	Piper 31 Navajo	MEP	4.1	---	37	63	---	---	
<b>Total</b>				<b>100</b>	<b>---</b>	<b>902</b>	<b>1,532</b>	<b>---</b>	<b>---</b>
General Aviation	B206L	Bell 206L LongRanger	Helo	13.5	---	3,039	3,255	---	---
	BEC58P	Beech 58 Baron	MEP	5.6	6.8	1,269	1,360	2,585	2,954
	CIT3	Cessna Citation III	Jet	0.01	---	2	2	---	---
	CNA172	Cessna 172 Skyhawk	SEP	32.6	42.0	7,326	7,848	16,219	18,536
	CNA206	Cessna 206 Super Skywagon/Stationair	SEP	3.8	4.5	863	925	1,732	1,980
	CNA441	Cessna 441 Conquest II	Tp	0.6	0.3	126	135	113	129
	CNA500	Cessna 500 / Citation II	Jet	0.05	---	12	12	---	---
	CNA510	Cessna 510 Mustang	Jet	0.01	---	2	2	---	---
	DHC6	de Havilland Dash 6*	Tp	0.2	---	40	42	---	---
	GASEPF	Composite - Single Engine Fixed Pitch Prop	SEP	3.9	4.8	887	950	1,845	2,109
	GASEPV	Composite - Single Engine Variable Pitch Prop	SEP	10.3	11.9	2,315	2,480	4,613	5,272
	H500D	Hughes 500D	Helo	4.4	---	990	1,060	---	---
	IA1125	IAI Astra	Jet	0.01	---	2	2	---	---
	LEAR25	Lear 25	Jet	0.01	---	2	2	---	---
	LEAR35	Lear 35	Jet	0.01	---	3	4	---	---
	MU3001	Mitsubishi 300-10 Diamond	Jet	1.5	---	338	362	---	---
	PA28	Piper 28 Cherokee	SEP	23.1	29.7	5,180	5,550	11,472	13,111
	PA30	Piper 30 Twin Comanche	MEP	0.1	0.1	22	24	42	48
	PA31	Piper 31 Navajo	MEp	0.1	---	25	27	---	---
R22	Robinson R22B	Helo	0.01	---	3	4	---	---	
SA365N	Aerospatiale (Eurocopter) SA-365N Dauphin	Helo	0.01	---	2	2	---	---	
<b>Total</b>				<b>100</b>	<b>100</b>	<b>22,446</b>	<b>24,047</b>	<b>38,621</b>	<b>44,138</b>
<b>TOTAL</b>				<b>---</b>	<b>---</b>	<b>23,348</b>	<b>25,579</b>	<b>38,621</b>	<b>44,138</b>

Source: Flight Explorer®, 2009  
Michigan DOT ARB User's Survey, 2009,  
URS Corporation 2009.

Note: Numbers may not add due to rounding  
SEP – Single Engine Piston  
MEP – Multi Engine Piston  
Jet – Turbofan/Turbo Jet  
TP – Turbo Prop

\* de Havilland Dash 6 is INM substitution for the King Air 200, 300, and 350

## Runway Use

Runway use at ARB was determined through discussions with the Air Traffic Control Tower (ATCT) staff. Runway utilization is approximately 30/70 percent on Runway 06/24, respectively. Discussions with ATCT staff also indicate that approximately 5 percent of single engine piston aircraft operations occur on Runway 12/30 with a 50/50 split. Helicopters operate to and from the east edge of the terminal apron. Table B-3 provides runway utilization by aircraft category. The 2014 No Action and Proposed Project Alternatives will maintain the same runway utilization.

**Table B-3  
Runway Utilization  
Ann Arbor Municipal Airport  
Runway Extension EA**

Aircraft Type	Runway Utilization <sup>1</sup>			
	06	24	12	30
Jet	30 %	70 %	---	---
Turboprop	30 %	70 %	---	---
Multi-Engine Piston	30 %	70 %	---	---
Single Engine Piston	27.5 %	67.5 %	2.5 %	2.5 %

Source: ARB Air Traffic Control Tower

Note: 1. Utilization applies to arrival, departure, and touch-and-go operations.

## Flight Tracks and Utilization

Flight tracks are the aircraft's actual path through the air projected vertically onto the ground. Due to the level of operations occurring at ARB, a single arrival and departure track for each runway end was appropriate for the noise modeling. Straight out departures tracks were modeled for all runways. Straight in arrivals to Runway 12/30 were modeled and arrivals to Runway 6/24 followed the published VOR procedures.

Unique helicopter and touch-and-go flight tracks were also modeled based on ATCT interviews. 80 percent of the helicopter operations arrive from or depart to the north, with the remaining 20 percent distributed evenly between arrivals from and departures to the east, south, and west.

### B.1.4 IMPACT ANALYSIS

#### Existing Conditions

Noise exposure resulting from aircraft operations in 2009 at ARB is depicted as DNL 65, 70, and 75 dBA contours, superimposed over the local aerial map of Ann Arbor, on Figure 4-1. The ARB 2009 existing condition DNL 65 dBA noise contour does not extend beyond airport property.

#### No Action Alternative

Noise exposure resulting from aircraft operations for the 2014 No Action Alternative ARB is depicted as DNL 65, 70, and 75 dBA contours, superimposed over the local aerial map of Ann Arbor, on Figure 4-2. The ARB 2014 No Action Alternative DNL 65 dBA noise contour does not extend beyond airport property.

#### Proposed Project

Noise exposure resulting from aircraft operations for the 2014 Proposed Project Alternative at ARB is depicted as DNL 65, 70, and 75 dBA contours, superimposed over the local aerial map of Ann Arbor, on Figure 4-3. The ARB 2014 Proposed Project Alternative DNL 65 dBA noise contour does not extend beyond airport property.

## APPENDIX B-2

### **AIRCRAFT NOISE, NOISE METRICS & THE INTEGRATED NOISE MODEL**

Appendix B-2 describes the various common noise metrics and human perceptions. It also describes the Integrated Noise Model (INM), and its required inputs.

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## APPENDIX B-2

### AIRCRAFT NOISE, NOISE METRICS & THE INTEGRATED NOISE MODEL

#### 1.1 AIRCRAFT NOISE

Aircraft noise originates from the engines as well as the airframe or structure of aircraft. The engines are generally the most significant source of noise. While noise generated by propeller-driven aircraft can be annoying, jet aircraft are commonly the source of disturbing noise at airports. Two basic types of jet aircraft are operated today equipped with turbofan or turbojet engines. Aircraft flying faster than the speed of sound generate an intense pressure wave called a sonic boom, in addition to the propulsion and airframe noise.

Turbofan engines produce thrust as reaction to the rate at which high-velocity gas is exhausted from nozzles. The engine core consists of a compressor, combustion chambers, a turbine and a front fan. The major sources of noise include the core engine fan streams, the compressor, turbine blades and exhaust nozzles. In comparison, turbojet aircraft do not have the front fan component. It has been found in several cases that the sound energy produced by a turbojet engine is greater than that of a turbofan engine with an equivalent thrust rating.

The noise produced by jet aircraft flyovers is characterized by an increase in sound energy as the aircraft approaches, up to a maximum level. This sound level begins to lessen as the aircraft passes overhead and then decreases in a series of lesser peaks as the aircraft departs the area.

Noise produced by propeller driven aircraft and helicopters emanates from the blades and rotors. There are two components of this noise, namely vortex and periodic. Vortex noise is generated by the formation and shedding of vortices in the airflow past the blade. Periodic noise is produced by the oscillating pressure field in the air that results from the passage of air past the blade. Blade slap is an additional source of noise in helicopters. This is high-amplitude periodic noise and highly modulated vortex noise caused by fluctuating forces as one blade cuts through the tip vortices of another.

## 1.2 AIRCRAFT NOISE TERMINOLOGY

The Federal Aviation Administration (FAA) uses a variety of noise metrics to assess potential airport noise impacts. Different noise metrics can be used to describe individual noise events (e.g., a single operation of an aircraft taking off overhead) or groups of events (e.g., the cumulative effect of numerous aircraft operations, the collection of which creates a general noise environment or overall exposure level). Both types of descriptors are helpful in explaining how people tend to respond to a given noise condition. Descriptions of the metrics used in this Part 150 Study are provided in the following text.

**Decibel, dB** – Sound is a complex physical phenomenon consisting of many minute vibrations traveling through a medium, such as air. The human ear senses these vibrations as sound pressure. Because of the vast range of sound pressure or intensity detectable by the human ear, sound pressure level (SPL) is represented on a logarithmic scale known as decibels (dB). A SPL of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet (laboratory-type) listening conditions. A person begins to feel a SPL of 120 dB inside the ear as discomfort, and pain begins at approximately 140 dB. Most environmental sounds have SPLs ranging from 30 to 100 dB.

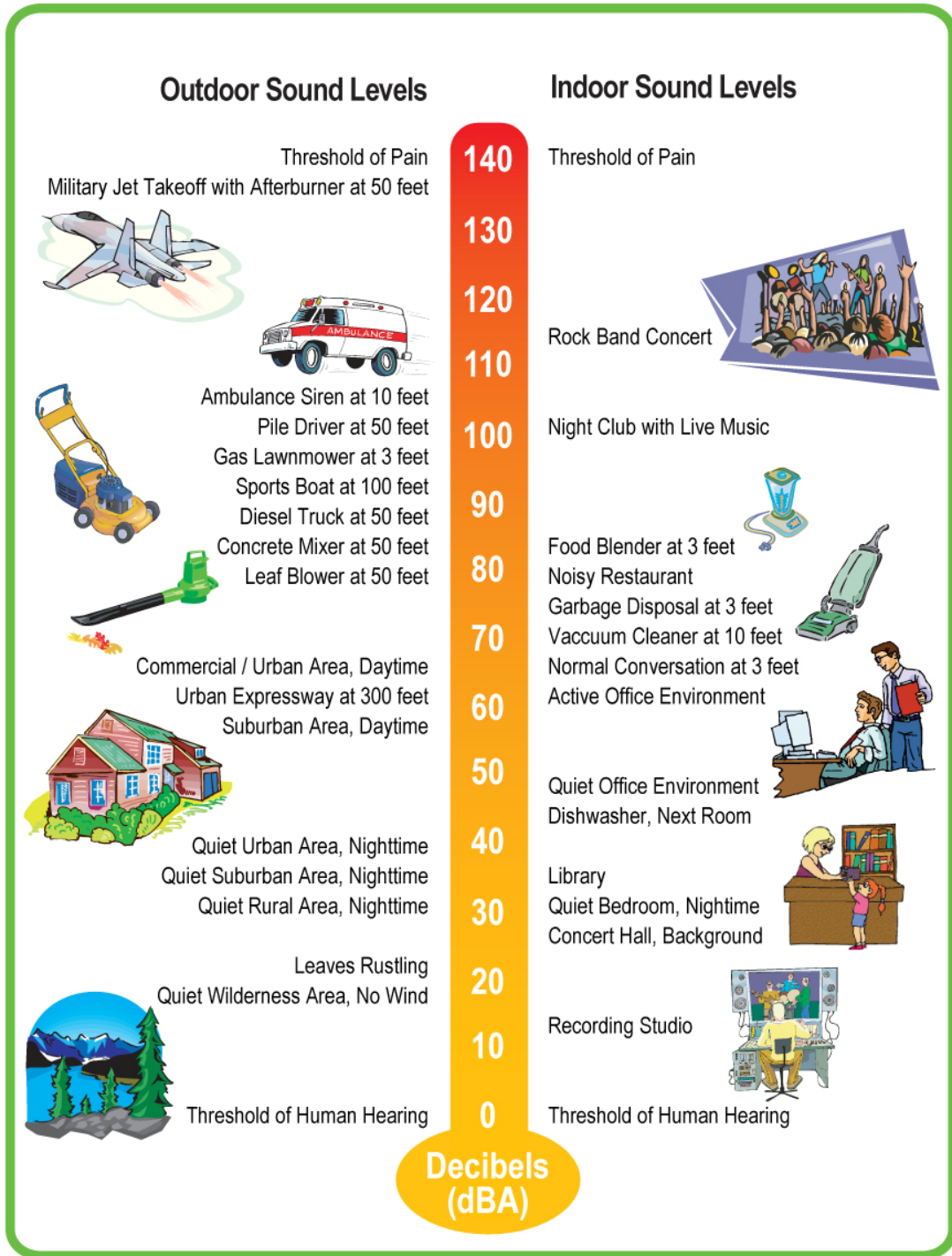
Because decibels are logarithmic, they cannot be added or subtracted directly like other (linear) numbers. For example, if two sound sources each produce 100 dB, when they are operated together they will produce 103 dB, not 200 dB. Four 100 dB sources operating together again double the sound energy, resulting in a total SPL of 106 dB, and so on. In addition, if one source is much louder than another, the two sources operating together will produce the same SPL as if the louder source were operating alone. For example, a 100 dB source plus an 80 dB source produces 100 dB when operating together. The louder source masks the quieter one.

Two useful rules to remember when comparing SPLs are: (1) most people perceive a 6 to 10 dB increase in SPL between two noise events to be about a doubling of loudness, and (2) changes in SPL of less than about 3 dB between two events are not easily detected outside of a laboratory.

**A-Weighted Decibel, dBA** – Frequency, or pitch, is a basic physical characteristic of sound and is expressed in units of cycles per second or hertz (Hz). The normal frequency range of hearing for most people extends from about 20 to 15,000 Hz. Because the human ear is more sensitive to middle and high frequencies (i.e., 1000 to 4000 Hz), a frequency weighting called “A” weighting is applied to the measurement of sound. The internationally standardized “A” filter approximates the sensitivity of the human ear and helps in assessing the perceived loudness of various sounds. For this Part 150 Study, all sound levels are A-weighted sound levels and the text typically omits the adjective “A-weighted”.

**Figure 1** charts common indoor and outdoor sound levels. A quiet rural area at nighttime may be 30 dBA or lower, while the operator of a typical gas lawn mower may experience a level of 90 dBA. Similarly, the level in a library may be 30 dBA or lower, while the listener at a rock band concert may experience levels near 110 dBA.

**FIGURE 1  
COMMON OUTDOOR AND INDOOR SOUND LEVELS**



Source: URS Corp, 2008.

**Maximum A-Weighted Noise Level,  $L_{max}$**  – Sound levels vary with time. For example, the sound increases as an aircraft approaches, then falls and blends into the ambient, or background, as the aircraft recedes into the distance. Because of this variation, it is often convenient to describe a particular noise



"event" by its highest or maximum sound level ( $L_{max}$ ). It should be noted that  $L_{max}$  describes only one dimension of an event; it provides no information on the cumulative noise exposure generated by a sound source. In fact, two events with identical  $L_{max}$  levels may produce very different total noise exposures. One may be of very short duration, while the other may last much longer.

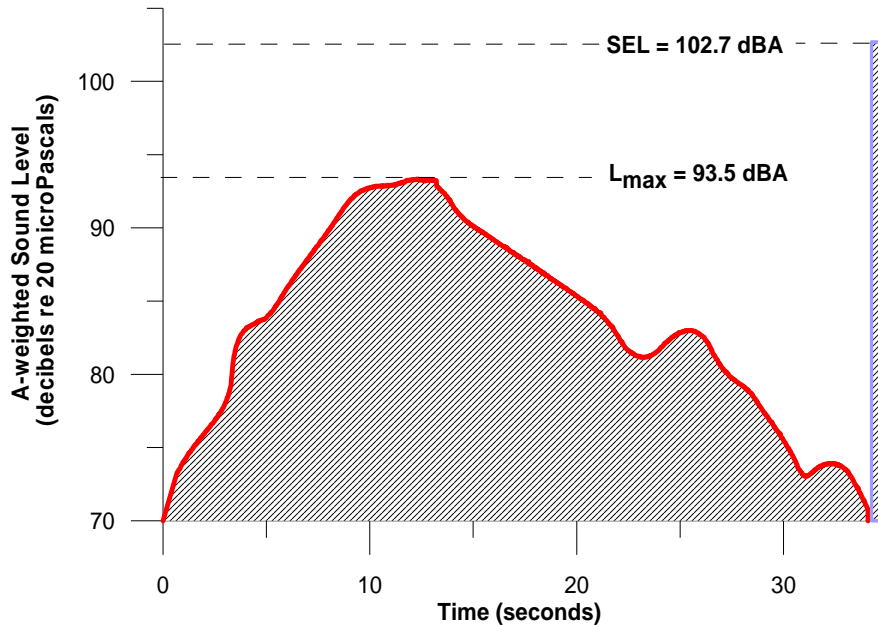
**Sound Exposure Level, SEL** – The most common measure of noise exposure for a single aircraft flyover event is the SEL. SEL is a summation of the A-weighted sound energy at a particular location over the true duration of a noise event, normalized to a fictional duration of one second. The true noise event duration is defined as the amount of time the noise event exceeds a specified level (that is at least 10 dB below the maximum value measured during the noise event). For noise events lasting more than one second, SEL does not directly represent the sound level heard at any given time, but rather provides a measure of the net impact of the entire acoustic event.

The normalization to the fictional duration of one second enables the comparison of noise events with differing true duration and/or maximum level. Because the SEL is normalized to one second, it will almost always be larger in magnitude than the  $L_{max}$  for the event. In fact, for most aircraft events, the SEL is about 7 to 12 dB higher than the  $L_{max}$ . Additionally, since it is a cumulative measure, a higher SEL can result from either a louder or longer event, or a combination thereof.

Since SEL combines an event's overall sound level along with its duration, SEL provides a comprehensive way to describe noise events for use in modeling and comparing noise environments. Computer noise models, such as the Integrated Noise Model (INM) that the FAA used for this PART 150 STUDY, base their computations on these SELs.

**Figure 2** shows an event's "time history", or the variation of sound level with time. For typical sound events experienced by a stationary listener, like a person experiencing an aircraft flyover, the sound level rises as the source (or aircraft) approaches the listener, peaks and then diminishes as the aircraft flies away from the listener. The area under the time history curve represents the overall sound energy of the noise event. The  $L_{max}$  for the event shown in **Figure 2** was 93.5 dBA. Compressing the event's total sound energy into one second yields an SEL of 102.7 dBA.

**FIGURE 2  
COMPARISON OF MAXIMUM SOUND LEVEL ( $L_{MAX}$ ) AND SOUND EXPOSURE LEVEL (SEL)**



Source: URS Corporation, 2008.

**Equivalent Sound Level,  $L_{eq}$**  – Equivalent sound level ( $L_{eq}$ ) is a measure of the noise exposure resulting from the accumulation of A-weighted sound levels over a particular period of interest (e.g., an hour, an 8-hour school day, nighttime, or a full 24-hour day). However, because the length of the period can be different depending on the period of interest, the applicable period should always be identified or clearly understood when discussing this metric. Such durations are often identified through a subscript. For example, for an 8 hour or 24 hour day,  $L_{eq(8)}$  or  $L_{eq(24)}$  is used, respectively.

Conceptually,  $L_{eq}$  may be thought of as a constant sound level over the period of interest that contains as much sound energy as the actual time-varying sound level with its normal “peaks” and “dips”. In the context of noise from typical aircraft flight events, and as noted earlier for SEL,  $L_{eq}$  does not represent the sound level heard at any particular time, but rather represents the total sound exposure for the period of interest. Also, it should be noted that the “average” sound level suggested by  $L_{eq}$  is not an arithmetic value, but a logarithmic, or “energy-averaged,” sound level. Thus, loud events tend to dominate the noise environment described by the  $L_{eq}$  metric.

**Day-Night Average Sound Level, DNL** – Time-average sound levels are measurements of sound averaged over a specified length of time. These levels provide a measure of the average sound energy during the measurement period. For the evaluation of community noise effects, and particularly aircraft

noise effects, the Day-Night Average Sound Level (abbreviated DNL) is used. DNL logarithmically averages aircraft sound levels at a location over a complete 24-hour period, with a 10-decibel adjustment added to those noise events occurring between 10:00 p.m. and 7:00 a.m. (local time) the following morning. The FAA defines the 10:00 p.m. to 7:00 a.m. period as nighttime (or night) and the 7:00 a.m. to 10:00 p.m. period as daytime (or day). Because of the increased sensitivity to noise during normal sleeping hours and because ambient (without aircraft) sound levels during nighttime are typically about 10 dB lower than during daytime hours, the 10-decibel adjustment, or "penalty," represents the added intrusiveness of sounds occurring during nighttime hours.

DNL accounts for the noise levels (in terms of SEL) of all individual aircraft events, the number of times those events occur and the period of day/night in which they occur. Values of DNL can be measured with standard monitoring equipment or predicted with computer models such as the INM.

Typical DNL values for a variety of noise environments are shown in **Figure 3**. DNL values can be approximately 85 dBA outdoors under an aircraft flight path within a mile of a major airport and 40 dBA or less outdoors in a rural residential area.

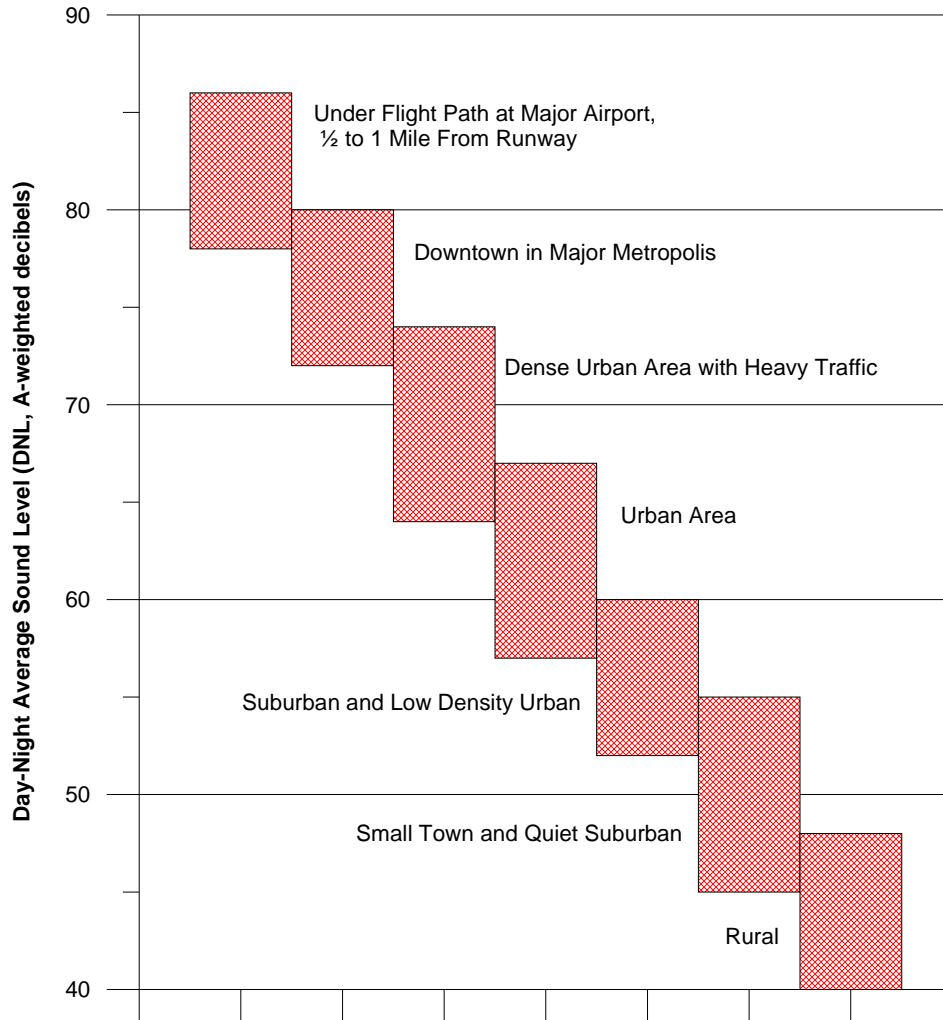
Due to the DNL descriptor's close correlation with the degree of community annoyance from aircraft noise, most federal agencies have formally adopted DNL for measuring and evaluating aircraft noise for land use planning and noise impact assessment. Federal committees such as the Federal Interagency Committee on Urban Noise (FICUN) and the Federal Interagency Committee on Noise (FICON), which include the Environmental Protection Agency (EPA), the FAA, Department of Defense, Department of Housing and Urban Development, and the Veterans Administration, found DNL to be the best metric for land use planning. They also found no new cumulative sound descriptors or metrics of sufficient scientific standing to substitute for DNL. Other cumulative metrics are used only to supplement, not replace, DNL. Furthermore, FAA Order 1050.1E, *Policies and Procedures for Considering Environmental Impacts*, requires DNL be used in describing cumulative noise exposure and in identifying aircraft noise/land use compatibility issues (EPA, 1974; FICUN, 1980; FICON, 1992; title 14 CFR part 150, 2004; FAA, 2006).

The accuracy and validity of DNL calculations depend on the basic information used in the calculations. At airports, the reliability of DNL calculations is affected by a number of uncertainties:

- The noise descriptions used in the DNL procedure represent the typical human response to aircraft noise. Since people vary in their response to noise and because the physical measure of noise accounts for only a portion of an individual's reaction to that noise, the DNL scale can show only an average response to aircraft noise that may be expected from a community.
- Future aviation activity levels such as the forecast number of operations, the operational fleet mix, the times of operation (day versus night) and flight tracks are estimates. Achievement of forecasted levels of activity cannot be assured.
- Aircraft acoustical and performance characteristics for new aircraft designs are estimates.

**Outdoor vs. Indoor Noise Levels** – INM calculates outdoor noise levels, while some of the supplemental noise analysis effects are based on noise levels experienced indoors. In order to convert outdoor noise levels to indoor noise levels, an Outdoor-to-Indoor Noise Level Reduction (OILR) is identified. The indoor noise level is equal to the outdoor noise level minus the OILR. Based on accepted research, typical OILR values range between 15 dBA to 25 dBA, depending on the structure and whether windows are open or closed (Wyle, 1989).

**FIGURE 3  
TYPICAL RANGE OF OUTDOOR COMMUNITY DAY-NIGHT AVERAGE SOUND LEVELS**



Source: U.S. Department of Defense. Departments of the Air Force, the Army, and the Navy, 1978. *Planning in the Noise Environment*. AFM 19-10. TM 5-803-2, and NAVFAC P-970. Washington, D.C.; U.S. DoD.

### 1.3 EFFECTS OF AIRCRAFT NOISE ON PEOPLE

The most common effects regarding aircraft noise are related to annoyance and activity interference (e.g., speech disruption and sleep interference). These effects have been studied extensively and relationships

between various noise metrics and effects have been established. The following sections summarize these effects, and the noise metrics that are used to describe them.

### 1.3.1 Speech Interference

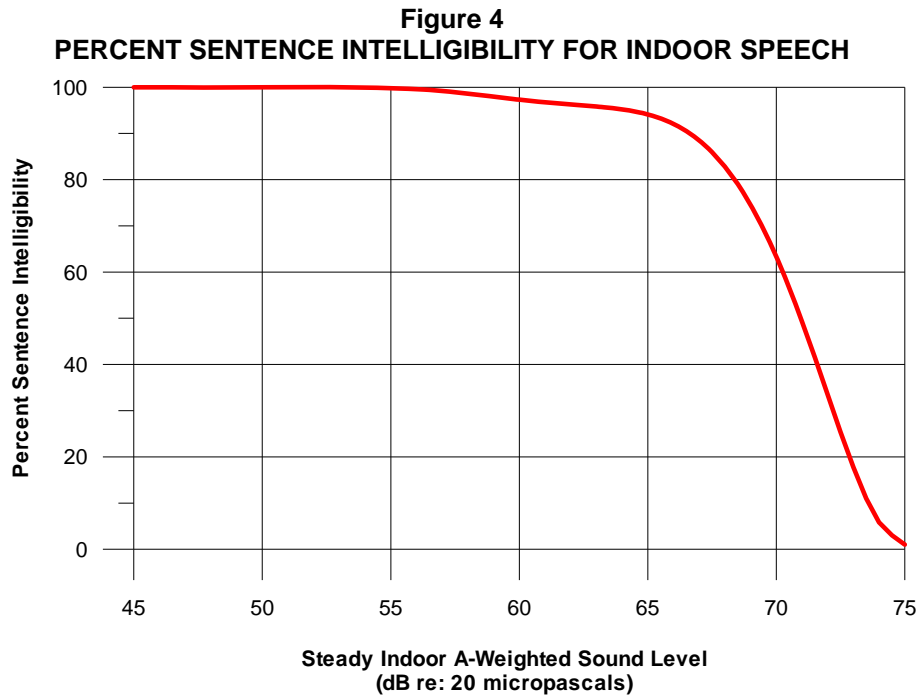
Speech interference is the most readily quantified adverse effect of noise, and speech is the activity most often affected by environmental noise. The levels of noise that interfere with listening to a desired sound, such as speech, music, or television, can be defined in terms of the level of noise required to mask the desired sound. Such levels have been quantified for speech communications by directly measuring the interference with speech. Several studies have been conducted over the last 30 years resulting in various noise level criteria for speech interference.

As an aircraft approaches and its sound level increases, speech becomes harder to hear. As the ambient level increases, the speaker must raise his/her voice, or the individuals must get closer together to continue talking. For typical communication distances of 3 or 4 feet (1 to 1.5 meters), acceptable outdoor conversations can be carried on in a normal voice as long as the ambient noise outdoors is less than about 65 dBA (FICON, 1992). If the noise exceeds this level, intelligibility would be lost unless vocal effort was increased or communication distance was decreased.

Indoor speech interference can be expressed as a percentage of sentence intelligibility between two average adults with normal hearing, speaking fluently in relaxed conversation approximately one meter apart in a typical living room or bedroom (EPA, 1974). Intelligibility pertains to the percentage of speech units correctly understood out of those transmitted, and specifies the type of speech material used, i.e. sentence or word intelligibility (ANSI, 1994). As shown in Figure 4, the percentage of sentence intelligibility is a non-linear function of the (steady) indoor ambient or background sound level (energy-average equivalent sound level ( $L_{eq}$ )). For an average adult with normal hearing and fluency in the language, steady ambient indoor sound levels of up to 45 dBA  $L_{eq}$  are expected to allow 100 percent intelligibility of sentences. The curve shows 99 percent sentence intelligibility for  $L_{eq}$  at or below 54 dBA and less than 10 percent intelligibility for  $L_{eq}$  greater than 73 dBA. It should be noted that the function is especially sensitive to changes in sound level between 65 dBA and 75 dBA. As an example of the sensitivity, a 1 dBA increase in background sound level from 70 dBA to 71 dBA results in a 14 percent decrease in sentence intelligibility. In contrast, a 1 dBA increase in background sound level from 60 dBA to 61 dBA results in less than 1 percent decrease in sentence intelligibility.

The noise from aircraft events is not continuous, but consists of individual events where the noise level can greatly exceed the background level for a limited period as the aircraft flies over. Since speech interference in the presence of aircraft noise is essentially determined by the magnitude and frequency of individual aircraft flyover events, a time-averaged metric (such as  $L_{eq}$ ) alone, is not necessarily appropriate when setting standards regarding acceptable levels. In addition to the background levels described above, single event criteria, which account for those sporadic intermittent noisy events, are also essential to specifying speech interference criteria. In order for two people to communicate reasonably using normal voice levels indoors, the background noise level should not exceed 60 dBA

(EPA, 1974). In other words, an indoor noise event that exceeds 60 dBA has the potential to cause speech and communication disruption (Eagan, 2007).



Source: U.S. Environmental Protection Agency, 1974.

### 1.3.2 Effect on Children’s Learning

An important application of speech interference criteria is in the classroom where the percent of words (rather than whole sentences) transmitted and received, commonly referred to as ‘word intelligibility,’ is critical. For teachers to be clearly understood by their students, it is important that regular voice communication is clear and uninterrupted. Not only does the steady background sound level have to be low enough for the teacher to be clearly heard, but intermittent outdoor noise events also need to be unobtrusive. The steady ambient level, the level of voice communication, and the single event level (e.g., aircraft over-flights) that might interfere with speech in the classroom are measures that can be evaluated to quantify the potential for speech interference in the classroom.

Accounting for the typically intermittent nature of aircraft noise where speech is impaired only for the short time when the aircraft noise is close to its maximum value, different researchers and regulatory organizations have recommended maximum allowable indoor noise levels ranging between 40 and 60 dBA  $L_{max}$ . (Lind, et. al., 1998; Sharp and Plotkin, 1984; Wesler, 1986; WHO, 1999; ASLHA, 1995; ANSI, 2002). A single event noise level of 50 dBA  $L_{max}$  correlates to 90 percent of the words being understood by students with normal hearing and no special needs seated throughout a classroom (Lind, et. al., 1998). At-risk students may be adversely affected at lower sound levels.

ANSI has developed a standard for classrooms that states that the sound level during the noisiest hour should not exceed a one-hour average  $L_{eq}$  of 40 dBA for schools exposed to intermittent noise sources such as aircraft noise (ANSI, 2002). The standard further states that the hourly  $L_{eq}$  should not be exceeded for more than 10 percent of the noisiest hour (i.e.,  $L_{eq}$  should not exceed  $L_{10}$ ). FAA Order 5100.38C, Airport Improvement Program Handbook, Chapter 7, Section 2, Paragraph 812c(1) indicates that schools should have an A-weighted  $L_{eq}$  of 45 dB, or less, during school hours, in the classroom environment. Facilities not typically disrupted by aircraft, such as gymnasiums, cafeterias, or hallways, are not usually eligible for noise insulation. However, ANSI recommends that schools have a maximum one-hour average A-weighted unsteady background noise level of  $L_{eq}$  of 40 dB, or less, during school hours. Ancillary spaces, such as gymnasiums and cafeterias are recommended to have a maximum  $L_{eq}$  of 45 dB.

### 1.3.3 Sleep Disturbance

The EPA identified an indoor DNL of 45 dB as necessary to protect against sleep interference (EPA, 1974). Prior to and after the EPA's 1974 guidelines, research on sleep disruption from noise has led to widely varying observations. In part, this is because: (1) sleep can be disturbed without causing awakening, (2) the deeper the sleep the more noise it takes to cause arousal, (3) the tendency to awaken increases with age, and (4) the person's previous exposure to the intruding noise and other physiological, psychological, and situational factors. The most readily measurable effect of noise on a sleeping person is the number of arousals or awakenings.

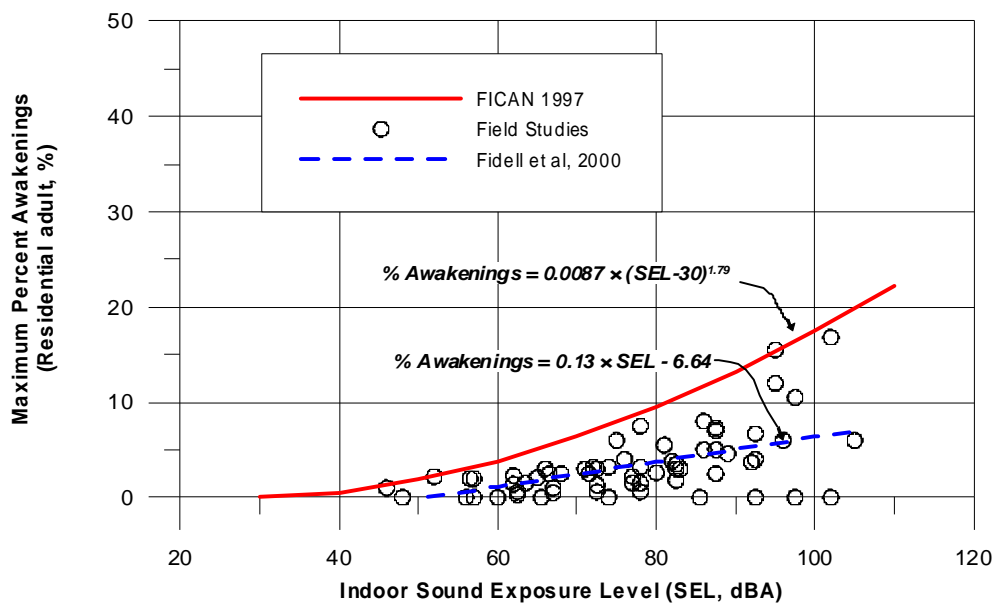
A study performed in 1992 by the Civil Aviation Policy Directorate of the Department of Transportation in the United Kingdom concluded that average sleep disturbance rates (those that are unrelated to outdoor noise) are unlikely to be affected by aircraft noise at outdoor levels below an  $L_{max}$  of 80 dBA (Ollerhead, 1992). At higher levels of 80-95 dBA  $L_{max}$  the chance of the average person being awakened is about 1 in 75. The study concludes that there is no evidence to suggest that aircraft noise at these levels is likely to increase the overall rates of sleep disturbance experienced during normal sleep. However, the authors emphasize that these conclusions are based on 'average' effects, and that there are more susceptible individuals and there are periods during the night when people are more sensitive to noise, especially during the lighter stages of sleep.

In June 1997, the U.S. Federal Interagency Committee on Aviation Noise (FICAN) reviewed the sleep disturbance issue along with data from the 1992 FICAN recommendations (which was primarily the result of many laboratory studies) and presented a new sleep disturbance dose-response prediction curve (FICAN, 1997) as the recommended tool for analysis of potential sleep disturbance for residential areas. The FICAN curve, shown in Figure A-5, was based on data from field studies of major civilian and military airports. For an indoor SEL of 60 dBA, Figure 5 predicts a maximum of approximately 5 percent of the exposed residential population would be behaviorally awakened. FICAN cautions that this curve should only be applied to long-term adult residents.

The focus of this research was the human response to individual SELs rather than the response to multiple events in the same night. The relationship of SEL and percent awakenings presented in the figure is for each event, not a cumulative percent awakening for all events during a sleep period.

Other studies indicate that for a good night's sleep, the number of noise occurrences plays a role as important as the level of the noise. Vallet & Vernet (1991) recommend that, to avoid any adverse effects on sleep, indoor noise levels should not exceed approximately 45 dBA  $L_{max}$  more than 10-15 times per night and that lower levels might be appropriate to provide protection for sensitive people. This  $L_{max}$  level is equivalent to an SEL of approximately 55 dBA indoors.

**FIGURE 5  
SLEEP DISTURBANCE DOSE-RESPONSE RELATIONSHIP**

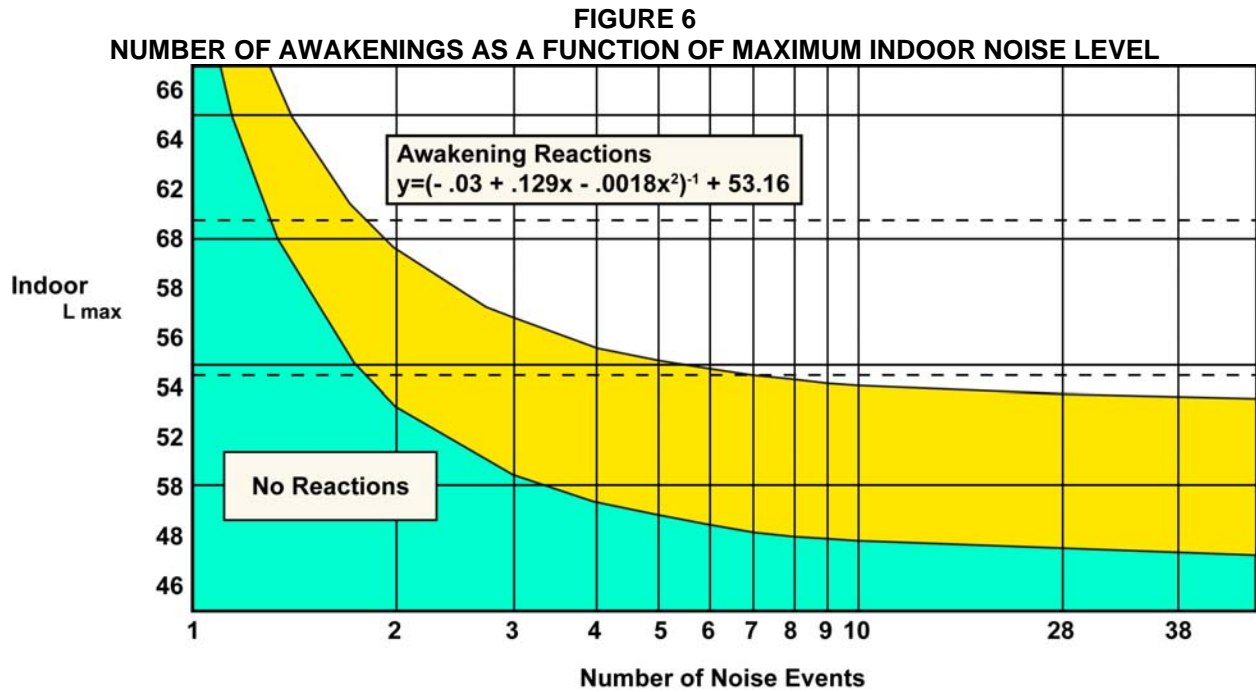


Source: FICAN, 1997; Fidell, et. al., 2000;

Griefahn (1978) suggests that awakenings from aircraft overflights are dependent upon the number of events and their sound levels. Figure 6 illustrates Griefahn's compilation of data indicating the number of events and noise level that constitute a threshold for sleep. The data in her research were based on levels at which the most sensitive 10 percent of the population would be disturbed, and includes a correction to these levels to represent the most sensitive sleep state and age group. The lower curve represents the indoor noise level (expressed in terms of  $L_{max}$ ) and number of noise event combinations at which fewer than 10 percent of the population will show signs of sleep interference. The upper curve indicates the level at which more than 90 percent of the population will be awakened for the given combination of noise levels and noise events. Griefahn suggests that, to avoid any long-term health effects, the upper curve should not be exceeded. The bottom curve represents a preferred, preventative



goal. The curves indicate that nearly 90 percent of people will show signs of sleep interference in the presence of 10 to 30 flights per night at an approximate indoor  $L_{max}$  of 54 dB. They also show that for the same number of flights but at an indoor  $L_{max}$  of 48 dB, the percentage of the most sensitive population affected is much lower, at less than 10 percent, (with 'no reaction' for the less sensitive population).



Source: Griefahn, B. (1990). "Critical Loads for Noise Exposure During the Night," InterNoise 90, pg. 1165.

### 1.3.4 Vibration from Aircraft Operations

The effects of vibration in a residence are observed in two ways; it is felt by the occupant, or it causes physical damage to the structure. Subjective detection can be one of direct perception from rattling of windows and ornaments, or dislodgement of hanging pictures and other loose objects. Structural damage may be either architectural (cosmetic or minor effects) such as plaster cracking, movement or dislodgements of wall tiles, cracked glass, etc., or major, such as cracking walls, complete collapsing of ceilings, etc., which is generally considered to impair the function or use of the dwelling.

Research has shown that vibration can be felt at levels well below those considered to cause structural damage. Complaints from occupants are usually due to the belief that if vibration can be felt, then it is likely to cause damage. Residents living in proximity to airports often complain that aircraft operations cause vibration induced damage to their homes. Research has also shown however, that the slamming of doors or footfalls within a building can produce vibration levels above those produced by aircraft activities (Reverb Acoustics Noise and Vibration Consultants, 2005).

Since people spend the majority of time indoors, the perceptions of aircraft noise leading to annoyance or complaint response and potentially to structural/architectural effects are directly and indirectly affected by the building structure. The acoustic loads resulting from aircraft noise can induce vibration in the structure, which can in turn, result in radiation of noise into its interior, rattling of items in contact with the structure, the perception of the occupants that the structure is vibrating, and the assumption that the vibration is causing structural/architectural effects. Consequently, the response of buildings, particularly older residential structures, to aircraft noise and the resulting effects on human and structural response has been the subject of considerable research.

C-weighted metrics appear to correlate well with subjective evaluations of low frequency noise from aircraft operations (Fidell, et al, 2002; Eagan, 2006). Perceptible wall vibrations in homes are likely to occur for C-weighted levels between 75 and 80 dB (Eagan, 2006). The likelihood of rattle due to low frequency noise increases notably for C-weighted levels within the range of 75 to 80 dB (Hubbard, 1982, Fidell, et. al, 2002). Rattle always occurs above a threshold of roughly 97 dB  $L_{max}$  (Hodgdon, 2007). In addition, C-weighting is the only weighting scale currently in the Integrated Noise Model (INM) that addresses low-frequency noise. However, it should be noted that INM predictions are based on extrapolation of A-weighted aircraft sound levels. The same data are used in C-weighted predictions by simply reverse filtering the A-weighted levels. The predictions do not extend to frequencies less than 50 Hz where much of rattle and structural response can be attributed. This is a major limitation of INM C-weighted predictions for vibration assessment.

Generally, fixed-wing subsonic aircraft do not generate vibration levels of a frequency or intensity high enough to result in damage to structures. It has been found that exposure to normal weather conditions, such as thunder and wind, usually have more potential to result in significant structural vibration than aircraft (FAA, 1985). Two studies involving the measurement of vibration levels resulting from aircraft operations upon sensitive historic structures concluded that aircraft operations did not result in significant structural vibration.

## **1.4 FAA METHODOLOGY FOR EVALUATING AIRCRAFT NOISE**

### **1.4.1 Impact Analysis Criteria and Thresholds**

The evaluation of the Key West International Airport (KWIA) airport noise environment was completed using the methodologies and standards specified in title 14 CFR Part 150 (Part 150, 2004). The following paragraphs summarize the pertinent requirements of these documents applicable to conducting a noise analysis and how they were applied in this NEM.

The regulations and guidance documents require that the cumulative noise energy exposure of individuals to noise resulting from aviation activities be established in terms of yearly day/night average sound level (DNL) as the FAA's primary metric. All detailed noise analyses must be performed using the most current version of the FAA's Integrated Noise Model (INM). For this analysis, INM, Version 7.0a, was used to model aircraft noise exposure.

The noise analysis was conducted to reflect current conditions (2008) and forecast conditions (2013). This analysis includes maps and other means to depict land uses within the noise impact area. The addition of flight tracks is helpful in illustrating where aircraft normally fly.

The following information was disclosed for the current conditions (2008) and forecast conditions (2013).

1. The number of people living or residences within each noise contour above DNL 65 for both the Existing and Future Noise Exposure Map (NEM).
2. The location and number of noise sensitive uses (e.g., schools, churches, hospitals, parks, recreation areas) exposed to DNL 65 or greater for both the Existing and Future NEM.
3. Mitigation measures in effect or proposed and their relationship to the Existing and Future NEM.

### **1.4.2 The Integrated Noise Model**

Noise contours generated by the FAA's INM do not depict a strict demarcation of where the noise levels end or begin. Their purpose is to describe the generally expected noise exposure. It must be recognized that although the INM is the current state-of-the-art aircraft noise modeling software, input variables to the INM require several simplifying assumptions to be made, such as: aircraft types flown, flight track utilization, day/night operational patterns, and arrival/departures profiles flown. Further, the noise contours represent average annual conditions rather than single event occurrences. Noise exposure on any one day may be greater or less than the average day. The noise model is useful for comparison of noise impacts between scenarios and provides a consistent and reasonable method to conduct airport noise compatibility planning.

The INM has been the FAA's standard tool since 1978 for determining the predicted noise impact near airports. The FAA developed the INM computer model and it is the required method to predict airport noise contours. The FAA continually enhances the INM to take advantage of increased computer speed, to incorporate new aircraft types into the aircraft noise database, and to improve its noise computation

algorithms. INM Version 7.0a was used to produce the noise contours and to analyze noise levels at sensitive sites.

INM includes the capability to turn off lateral attenuation for helicopters and propeller aircraft, in order to simulate propagation over acoustically hard surfaces such as water or rocks. This capability was utilized to take into account the effect of the water surrounding the airport.

The model produces noise exposure contours that are used for land use compatibility maps. Its program includes built in tools for comparing contours and utilities that facilitate easy export to Geographic Information Systems (GIS). The model can also calculate predicted noise at specific sites such as hospitals, schools, or other sensitive locations. For these grid points, the model reports detailed information for the analyst to determine which events contribute most significantly to the noise at that location.

The INM is a computer model that, during an average 24-hour period, accounts for each aircraft flight along flight tracks leading to or from the airport, or overflying the area of interest. Flight track definitions are coupled with information in the program database relating to noise levels at varying distances and flight performance data for each distinct type of aircraft selected. In general, the model computes noise levels at regular grid locations at ground level around the airport and within the area of interest. The distance to each aircraft in flight is computed, and the associated noise exposure of each aircraft flying along each flight track within the vicinity of the grid location is determined. The logarithmic acoustical energy levels for each individual aircraft are then summed for each grid location. The model can create contours of specific noise levels based on the acoustical energy summed at each of the grid points. The cumulative values of noise exposure at each grid location are used to interpolate contours of equal noise exposure. The model can also compute noise levels at user-defined points on the ground.

The noise analyses must be performed using the INM standard and default data, unless there is sufficient justification for modification. Modification to standard or default data requires written approval from the FAA's Office of Environment and Energy (AEE). Standard INM modeling of departure operations begins at the start of takeoff roll and ends when aircraft reach an altitude of 10,000 feet above field elevation (AFE). Standard modeling of arrival operations begins when the aircraft is at an altitude of 6,000 feet and ends when the aircraft land and completes the application of reverse thrust.

All computer model input data should reasonably reflect current and forecasted conditions. User-supplied information required to run the model includes:

- A physical description of the airport layout, including location, length and orientation of all runways, and airport elevation,
- The aircraft fleet mix for the average day,
- The number of daytime flight and run-up operations (7 a.m. to 9:59 p.m.),
- The number of nighttime flight and run-up operations (10 p.m. to 6:59 a.m.),
- Runway utilization rates,
- Primary departure and arrival flight tracks, and

- Flight track utilization rates.

#### **1.4.2.1 Aircraft Operations and Fleet Mix**

Fleet mix defines the various types of aircraft and allows development of very specific input data, such as engine type, title 14 CFR part 36 Noise Stage Certification, gross weight, and departure stage length. The INM aircraft database contains actual noise and performance data for 253 types of aircraft. Although the INM aircraft database provides a large selection of aircraft to model, it does not contain every known aircraft. For this reason, the FAA has developed an official aircraft substitution list, containing 259 types of aircraft, which allows the modeler to substitute similar aircraft when necessary for modeling purposes. These substitutions represent a very close estimate of the noise produced by the actual aircraft. All modeled aircraft in this study are either a true representative of an aircraft type or an FAA approved substitution.

#### **1.4.2.2 Time of Day**

The time of day that aircraft operations occur is a very important factor in the calculation of cumulative noise exposure. The DNL treats nighttime (10:00 p.m. to 6:59 a.m.) noise differently from daytime (7:00 a.m. to 9:59 p.m.) noise. DNL multiplies each nighttime operation by 10. This weighting of the operations effectively adds 10 dB to the A-weighted levels of each nighttime operation. This weighting factor is applied to account for people's greater sensitivity to nighttime noise. In addition, events during the night are often more intrusive because the ambient sound levels during this time are usually lower than daytime ambient sound levels.

#### **1.4.2.3 Runway Utilization**

Runway use refers to the frequency with which aircraft utilize each runway during the course of a year as dictated or permitted by wind, weather, aircraft weight, and noise considerations. The more often a runway is used throughout the year, the more noise is created in areas located off each end of that runway.

#### **1.4.2.4 Flight Tracks and Flight Track Utilization**

Flight tracks depict the actual path of aircraft over the ground for aircraft arrival, departure, closed pattern (touch-and-go), and overflight operations. In order to calculate the annual average noise exposure, it is necessary to identify the predominant arrival, departure and pattern flight tracks for each runway, and the number of aircraft that used each runway and flight track. These are significant factors in determining the extent and shape of the noise contours and noise levels at noise-sensitive receptors.

The use of individual flight tracks is dependent on a variety of factors including Air Traffic Control procedures, the aircraft's origin or destination, aircraft performance, weather conditions, and any noise abatement policies.

INM representative flight tracks at KWIA were developed by analyzing radar data, and by field observation. These tracks are meant to be representative of the highest concentration of actual flight tracks at KWIA. Modeled flight tracks do not represent the precise paths flown by all aircraft utilizing KWIA. Instead, they represent the primary flight corridors for the aircraft using the airport.

#### **1.4.2.5 Aircraft Profiles**

The INM default database includes profiles modeling aircraft departures up to 10,000 feet above field elevation (AFE) and arrivals from 6,000 feet AFE.

##### **Arrival Profiles**

The INM contains one approach profile for most standard aircraft, which represents a 3-degree descent from an altitude of 6,000 feet above field elevation. Some standard general aviation aircraft also have an approach profile representing a 5-degree descent. The assumptions used in the INM are based upon “average” operational data; flight procedures etc. and standard practice is to assign standard 3-degree INM approach profiles. All arrival profiles used in this study are INM default profiles.

##### **Departure Profiles**

The INM relies on the trip length of a given flight to determine the departure weight and associated departure profile. Default procedural profiles are assumed. Three default procedural profiles are available, these are the “Standard,” “ICAO-A,” and “ICAO-B” departure profiles. The assumptions used in the INM are based upon “average” operational data; aircraft passenger load factors, fuel reserves, flight procedures etc. and standard practice is to assign INM profiles based on trip length. In some cases, the analysis of aircraft departure weight is also used. All departure profiles used in this study are INM default profiles, and stage length is based on trip length.

#### **1.4.2.6 Departure Stage Length**

The INM database contains several departure profiles for each fixed-wing aircraft type representing the varying performance characteristics for that aircraft at a particular takeoff weight. Use of appropriate departure profiles is an important component of calculating DNL noise exposure contours. Historically, it has been easier to obtain trip length data than average weight data, so the INM uses “departure stage length” to best represent typical aircraft takeoff weight.

Departure stage length is the distance between the departure airport and the destination airport. As the departure stage length increases, the aircraft’s required fuel load and takeoff weight also increase. The increase in takeoff weight equates to a decrease in aircraft takeoff and climb performance. A decrease in aircraft performance results in a longer takeoff departure roll and decreased climb rates. These performance characteristics produce increased noise exposure impacts. The aircraft’s noise impacts are greater because the aircraft is producing noise closer to the ground longer. The departure stage lengths are defined in Table 1.

**TABLE 1  
INM 7.0 STAGE LENGTH DISTANCES**

Stage Number	Distance (nm)
1	0-500
2	501-1,000
3	1,001-1,500
4	1,501-2,500
5	2,501-3,500
6	3,501-4,500
7	4,501-5,500
8	5,501-6,500
9	> 6,500

Source: FAA INM Version 7.0 User's Guide

**1.4.2.7 Noise Model Outputs**

INM has many output capabilities. Charts, graphics, and tables can be viewed, exported, or printed. The most common outputs are the noise contours that INM produces. Additionally, there are many other outputs, such as aircraft performance characteristics, grid point analyses for several noise metrics, and input characteristics such as runways and flight tracks. A complete description of model outputs can be found in the INM Users Guide (FAA, 2007).

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**Appendix C. Air Quality Analysis Report**  
(prepared by JJR/April 2009)



# Technical Memorandum: Air Quality Analysis

## Ann Arbor Municipal Airport Environmental Assessment

April 9, 2009  
JJR No. 50178.000

### Pollutant Health Effects

Air pollutants are contaminants in the atmosphere. Many man-made pollutants are a direct result of the incomplete combustion of fuels including coal, oil, natural gas, and gasoline. The principal factors affecting air pollution concentrations with respect to transportation projects are traffic, emissions factors, roadway type, terrain, meteorological parameters, and ambient air quality. The air pollutants listed here are the most common when dealing with transportation projects.

#### Carbon Monoxide (2006 Annual Air Quality Report for Michigan, MDEQ, page 4)

Carbon monoxide (CO) is a colorless, odorless, and poisonous gas created when fuel does not burn completely. The primary sources for outdoor exposure to CO are the exhaust from automobiles, industrial processes, non-transportation fuel combustion, and natural sources such as forest fires. Elevated levels of CO can cause visual impairment, interfere with mental acuity, and decrease work performance in the completion of complex tasks. High CO pollution levels can affect anyone; however, people who suffer from cardiovascular disease are most at risk.

#### Ozone (2006 Annual Air Quality Report for Michigan, MDEQ, page 5)

Ozone (O<sub>3</sub>), a key ingredient in urban smog is created at ground-level by photochemical reactions involving nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs) in the presence of sunlight. Major sources of NO<sub>x</sub> and VOCs are engine exhaust, emissions from industrial facilities, combustion from power plants, gasoline vapors, chemical solvents, and biogenic emissions from natural sources. Elevated O<sub>3</sub> exposure can irritate a person's airways, reduce lung function, aggravate asthma and chronic lung diseases, and inflame and damage the cells lining the lungs. O<sub>3</sub> may also reduce the immune system's ability to fight off bacterial infections in the respiratory system, and long-term, repeated exposure may cause permanent lung damage.

#### Nitrogen Dioxide (2006 Annual Air Quality Report for Michigan, MDEQ, page 5)

Nitrogen dioxide (NO<sub>2</sub>) is a highly reactive gas that is formed through the oxidation of nitric oxide. The major sources of man-made NO<sub>2</sub> emissions come from high-temperature combustion processes. Evidence suggests that long-term exposures to NO<sub>2</sub> may lead to increased susceptibility to respiratory infection and may cause structural alterations in the lungs.

#### Particulate Matter (2006 Annual Air Quality Report for Michigan, MDEQ, page 6)

Particulate Matter (PM) is a general term used for a mixture of solid particles and liquid droplets found in the air which is further categorized according to size. PM<sub>10</sub> are "coarse particles" less than 10 μm in diameter and PM<sub>2.5</sub> are much smaller "fine particles" equal to or less than 2.5 μm in diameter. PM<sub>10</sub> consists of primary particles that can originate from power plants, various manufacturing processes, wood stoves and fireplaces, fugitive dust sources, and forest fires. PM<sub>2.5</sub> can come directly from primary particle emissions or through secondary reactions that include VOCs, SO<sub>2</sub>, and NO<sub>x</sub> emissions originating from power plants, motor vehicles, industrial facilities, and other types of combustion sources. Exposure to PM affects breathing and the cellular defenses of the lungs, aggravates existing respiratory and cardiovascular ailments, and has been linked with heart and lung disease.

Sulfur Dioxide (2006 Annual Air Quality Report for Michigan, MDEQ, page 6)

Sulfur dioxide (SO<sub>2</sub>) is formed by the burning of sulfur-containing material and can react with other atmospheric chemicals to form sulfuric acid. In liquid form, it is found in clouds, fog, rain, aerosol particles, and in surface films on these particles. Coal burning power plants are the largest source of SO<sub>2</sub> emissions. SO<sub>2</sub> is also emitted from smelters, petroleum refineries, pulp and paper mills, transportation sources, and steel mills. Where SO<sub>2</sub> is emitted, PM is often emitted too. Exposure to elevated levels of SO<sub>2</sub> aggravates existing cardiovascular and pulmonary disease. SO<sub>2</sub> and PM together may cause respiratory illness, alteration in the body's defense and clearance mechanisms, and aggravation of existing cardiovascular disease. SO<sub>2</sub> and NO<sub>x</sub> together are the major precursors to acid rain, which is associated with the acidification of soils, lakes, and streams and accelerated corrosion of buildings and monuments.

Lead (2006 Annual Air Quality Report for Michigan, MDEQ, page 4)

Lead (Pb) is a highly toxic metal found in coal, oil, and waste oil. It is also found in municipal solid waste and sewage sludge incineration and may be released to the atmosphere during their combustion. The highest air concentrations of Pb are found in the vicinity of smelters and battery manufacturers. Other industrial sources include Pb glass, Portland cement, and solder production. Pb primarily accumulates in the blood, bones, and soft tissues of the body, and can adversely affect the kidneys, liver, nervous system, and other organs.

### **Regulatory Standards**

The Clean Air Act of 1970, the 1977 Clean Air Act Amendments and the 1990 Clean Air Act Amendments (CAAA) are the applicable regulations that govern air quality for the project area. Under the CAAA, the U. S. Department of Transportation cannot fund, authorize, or approve Federal actions to support programs or projects that are not first found to conform to the Clean Air Act requirements. The air quality provisions of the Clean Air Act (CAA), as amended, are intended to ensure the integration of air quality planning in all transportation-related projects.

The establishment of the National Ambient Air Quality Standards (NAAQS) by the Environmental Protection Agency (EPA) was directed in the Clean Air Act, and their attainment and maintenance was reinforced in later amendments. The goal of air quality monitoring and actions is to ensure that the air quality levels of the various pollutants do not exceed the set standards. These standards are summarized in Table 1.

**Table 1: National Ambient Air Quality Standards (NAAQS)**

Criteria Pollutant	Primary (Health Related)		Secondary (Welfare Related)	
	Type of Average	Standard Level Concentration	Type of Average	Standard Level Concentration
Carbon Monoxide, CO	8-hour	9 ppm (10 mg/m <sup>3</sup> )	No Secondary Standard	
	1-hour	35 ppm (40 mg/m <sup>3</sup> )		
Lead, Pb	Maximum Quarterly Average	1.5 µg/m <sup>3</sup>	Same as Primary Standard	
Nitrogen Dioxide, NO <sub>2</sub>	Annual Arithmetic Mean	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	
Ozone, O <sub>3</sub>	4 <sup>th</sup> Highest 8-Hour Daily Maximum	0.085 ppm (157 µg/m <sup>3</sup> )	Same as Primary Standard	
Particulate Matter, PM <sub>10</sub>	24-Hour	150 µg/m <sup>3</sup>	Same as Primary Standard	
Particulate Matter, PM <sub>2.5</sub>	Annual Arithmetic Mean	15 µg/m <sup>3</sup>	Same as Primary Standard	
	98 <sup>th</sup> percentile 24-hour	35 µg/m <sup>3</sup>		
Sulfur Dioxide, SO <sub>2</sub>	Annual Arithmetic Mean	0.03 ppm (80 µg/m <sup>3</sup> )	3-Hour	0.5 ppm (1300 µg/m <sup>3</sup> )
	24-Hour	0.14 ppm (365 µg/m <sup>3</sup> )		

**Attainment Status**

The Air Quality Division of the Michigan Department of Environmental Quality (MDEQ) produces an Annual Air Quality Report, which outlines the attainment status of the state. According to the 2006 Air Quality Report the project study area is in attainment with the NAAQS for ambient concentrations of carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), and coarse particulate matter (PM<sub>10</sub>).

Ozone

All Michigan counties are now designated as attainment for the 1-hour O<sub>3</sub> NAAQS. The 1-hour standard has since been revoked by the EPA. In 1997, EPA issued the average-based 8-hour ozone NAAQS (attained when the 3-year average of the 4<sup>th</sup> highest value is below 0.085 ppm). In 2004, utilizing 2001-2003 monitoring data, EPA designated 25 counties in Michigan as nonattainment for the 8-hour O<sub>3</sub> NAAQS, of which Washtenaw County was included. A nonattainment designation indicates that the area does not meet the national health-based standard, or contributes to violations of the standard in another area. Upon review of the O<sub>3</sub> data collected for the period of 2004-2006, Washtenaw County is now meeting the 8-hour O<sub>3</sub> NAAQS and is designated as marginal nonattainment. The MDEQ Air Quality Division has requested re-designation of Washtenaw County to attainment

## Particulate Matter

EPA promulgated the PM<sub>2.5</sub> NAAQS on July 18, 1997. In the January 5, 2005 Federal Register (FR), EPA announced their PM<sub>2.5</sub> designations, effective April 5, 2005, utilizing the 2001-2003 three year annual average data. Based upon this data, Washtenaw County was designated as nonattainment for PM<sub>2.5</sub>. As stated in the FR notice, States were allowed to submit 2004 PM<sub>2.5</sub> quality-assured monitoring data, calculate the 2002-2004 three-year annual average, and request changes in attainment status if this data and supporting rationale showed an area should instead be designated attainment.

On February 22, 2005, MDEQ submitted documentation demonstrating that monitors in the counties surrounding Wayne County (Livingston, Oakland, Macomb, Monroe, St. Clair, and Washtenaw Counties) are not violating the standard and that Wayne County is the only county showing nonattainment. The MDEQ submittal also included information supporting the conclusion that air pollution emissions in the surrounding six counties do not cause the nonattainment levels in Wayne County. However, the EPA denied Michigan's request for reconsideration as they believe the surrounding counties contribute to the overall air quality violations at the Wayne County monitors. The Southeast Michigan Council of Governments (SEMCOG) and the MDEQ are currently developing an emissions control strategy to bring the region into attainment by 2010 as required by the EPA.

## **Air Traffic Modeling Parameters**

The Federal Aviation Administration (FAA) created the Air Quality Procedures for Civilian Airports & Air Force Bases in an effort to aid in assessing the impacts at airports and air bases. Included in the procedures is a flow chart that can be used to determine whether a NAAQS analysis is required. The first step in the flow chart is to determine whether the proposed action is located in a nonattainment or maintenance area. As stated previously, the project area is currently designated as marginal nonattainment for ozone and nonattainment for particulate matter.

Since the project area is in a nonattainment area the next step is to determine whether the proposed project is exempt or presumed to conform. For this analysis, it will be assumed that the project is neither exempt nor presumed to conform.

The next step is to determine whether direct emissions will occur as a result of the proposed project. The FAA defines a direct emission as "an effect that is caused by the implementation and/or operation of an action that occurs at the same time and place" (Air Quality Procedures for Civilian Airports & Air Force Bases, 1997, page xvi). The proposed project is the extension of an existing runway. It can be assumed that direct emissions are already occurring and will increase as a result of increased usage of the airport.

Once it is determined whether direct emissions are occurring, it needs to be determined whether indirect emissions are reasonably feasible as a result of the proposed project. The FAA defines an indirect emission as "those caused by the implementation and/or operation of an action, are reasonably foreseeable, but which occur later in time and/or are farther removed in distance from the action itself" (Air Quality Procedures for Civilian Airports & Air Force Bases, 1997, page xviii). For this project, it can be assumed that no indirect emissions will occur. Therefore, the total emissions are equal to the direct emissions.

After determining whether any indirect emissions occur, an analysis of the airport activity is examined. The Ann Arbor Municipal Airport is considered to be a general aviation airport. For this type of airport, if the activity is forecasted to be 180,000 yearly operations, an NAAQS assessment is

required. The yearly activity for the AAMA is expected to be approximately 70,000 operations per year. Consequently, an NAAQS assessment will not be required.

After examining the direct and indirect emissions, a conformity assessment may also need to be performed based on whether the net emissions exceed general conformity threshold levels and are regionally significant. The Michigan Department of Transportation Bureau of Aeronautics completed the Michigan Airports Air Quality Study in May 1996. In this study, an air pollutant emission inventory was created for seven general aviation airports based on their proposed development. The air pollutant emission inventory indicates that the emissions from all of the airports studied would be well below the general conformity threshold rates. Since the AAMA is comparable in size and activity to the seven airports studied, it can be assumed that the emissions resulting from the proposed project will not exceed the general conformity threshold levels and will not be regionally significant. Therefore, a conformity determination is not required and the proposed project is presumed to conform to the state implementation plan.

### **Automobile Modeling Parameters**

As stated previously, Washtenaw County is designated as being in attainment with the NAAQS for carbon monoxide. The primary NAAQS for CO are 35 parts per million (ppm) for the maximum one-hour concentration, and nine ppm for the maximum eight-hour concentration. To be in attainment with the NAAQS, these concentrations may not be exceeded more than once annually at a given site. In order to determine whether the proposed project will be in attainment with the NAAQS, a micro-scale air quality analysis was conducted. Through this analysis, maximum one-hour CO concentrations for the Existing Condition (2008) and the No Build Condition and Proposed Alternative in the design year (2030) were estimated.

The calculation of CO concentrations was performed through the use of two computer models. The first model, MOBILE6.2.03, developed by the Environmental Protection Agency (EPA), provided the means for calculating vehicular emission factors for the range of expected vehicle types. The second model CAL3QHC, which is also known as the California Line Source Dispersion Model is used to calculate CO concentrations at receptor sites. The EPA has improved upon this program in order to allow analysis of air quality conditions at road intersections, where highest concentrations of pollutants are typically found.

The emission factors determined through MOBILE6.2, in addition to receptor locations, peak hourly traffic volumes, meteorological conditions and roadway geometry constituted the input data for CAL3QHC. The aforementioned parameters were conservatively selected in order to represent a worst-case scenario for each of the conditions. Background CO concentrations were obtained from the MDEQ's 2006 Air Quality Report. Since there is not a single monitoring site near the project site, the average of the highest recorded value for all nine sites was used for the background concentrations. The resulting one-hour background concentration used in the model was 3.0 ppm.

Locations along the various road corridors were selected for analysis of air quality conditions. Locations were chosen based upon existing traffic volumes and future projections, nearby proximity of sensitive receptors, and representative location within the overall project vicinity. Layout plans, air photos, and site observations were used to determine the locations of sensitive receptors near the studied intersections. The sensitive receptors included residential properties and open spaces (see Figure X).

Traffic volumes were obtained from the SEMCOG website and the Washtenaw Area Transportation Study (WATS) website for the existing condition. WATS also determined the increase in the traffic volumes for the future conditions. According to their models, State Street and Lohr Road will experience a cumulative increase in traffic volume of 3.3% for the future condition. Similarly, Ellsworth Road will experience a cumulative increase in traffic volume of 3.7% for the future condition.



A persistence factor is the ratio between the 8-hour and 1-hour CO concentration and is used to estimate the 8-hour CO concentration based on the 1-hour CO concentration. Three seasons of monitoring data were obtained from the MDEQ's Air Quality Reports and are tabulated in Table 2. The persistence factor for each station and each year was calculated by dividing the 8-hour CO concentration by the 1-hour CO concentration. The average of all of the persistence factors was calculated to be 0.70, which compares well with tabulated values for urban locations. Therefore, the 8-hour CO concentrations were determined by multiplying the persistence factor of 0.70 by the 1-hour CO concentrations as calculated by CAL3QHC.

**Table 2: Persistence Factor**

Station	One-Hour CO Concentration (ppm)			Eight-Hour Concentration (ppm)			Persistence Factor		
	2004	2005	2006	2004	2005	2006	2004	2005	2006
Otisville	1.1	--	--	0.6	--	--	0.55	--	--
Grand Rapids	3.0	2.8	2.7	2.2	2.0	2.0	0.73	0.71	0.74
Warren	3.3	4.8	3.5	2.1	2.5	3.0	0.64	0.52	0.86
Oak Park	4.1	3.7	3.1	2.4	2.2	2.6	0.59	0.59	0.84
Seney	--	0.8	--	--	0.7	--	--	0.88	--
Allen Park	3.6	2.5	3.9	3.1	1.8	3.2	0.86	0.72	0.82
Detroit-Linwood	4.1	3.7	3.7	2.6	2.6	2.8	0.63	0.70	0.76
Livonia	1.4	2.1	2.9	1.2	1.7	1.3	0.86	0.81	0.45
Detroit-Newberry	--	2.9	--	--	1.8	--	--	0.62	--
Detroit-W. Lafayette	--	2.8	1.5	--	1.8	1.0	--	0.64	0.67
Yearly Average	2.9	2.9	3.0	2.0	1.9	2.3	0.69	0.69	0.73
Category Average	3.0			2.1			0.70		

## Automobile Modeling Results

### Existing Condition

CAL3QHC was used with the existing road centerlines and traffic volumes to determine one-hour CO levels. The maximum one-hour CO concentration is 5.2 ppm and the average concentration is 3.6 ppm. No receptors exceed the NAAQS one-hour standard of 35 ppm. The persistence factor calculated previously was used to determine the eight-hour CO concentrations from the one-hour concentrations. The resulting maximum eight-hour concentration is 3.6 ppm and the average concentration is 2.5 ppm. No receptors exceed the NAAQS eight hour standard of 9 ppm.

### No-Build Condition

The increased traffic volumes (as determined by WATS) were adjusted in the CAL3QHC model to the 2030 values to determine the future CO concentrations. With the increased traffic, the model shows that there will be no significant increase in the CO concentrations. The maximum one-hour concentration remains at 5.2 ppm, and the maximum eight-hour concentration remains at 3.6 ppm. No receptors exceed the NAAQS one-hour or eight-hour standards. The average one-hour CO

concentration is 3.6 ppm, the average eight-hour CO concentration is 2.5 ppm, both of which are identical to the averages for the Existing Condition. Twenty seven receptors experience an increase in one-hour and eight-hour concentrations with a maximum one-hour increase of 0.3 ppm and a maximum eight-hour increase of 0.2 ppm.

#### Consequences of the Preferred Alternative

There will be no revisions to the existing roadway system as a result of the Preferred Alternative. Consequently, the air model results for the Preferred Alternative will be identical to those for the No-Build Condition. Since the No-Build Condition analysis shows that no sites will exceed the one-hour or eight-hour NAAQS standard, the Preferred Alternative also will have no sites exceeding the NAAQS standard.

During construction, appropriate mitigation measures, such as covering and spraying stock piles with water, should be utilized to minimize potential short term negative impacts which may be experienced locally due to fugitive dust, construction vehicle exhaust, or other fumes related to construction materials and equipment.

### **Affected Environment**

#### Climate Change/Greenhouse Gases

Of growing concern is the impact of proposed projects on climate change. Greenhouse gases are those that trap heat in the earth's atmosphere. Both naturally occurring and anthropogenic (man-made) greenhouse gases include water vapor (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>),<sup>1</sup> methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and ozone (O<sub>3</sub>).<sup>2</sup>

Research has shown that there is a direct link between fuel combustion and greenhouse gas emissions. Therefore, sources that require fuel or power at an airport are the primary sources that would generate greenhouse gases. Aircraft are probably the most often cited air pollutant source, but they produce the same types of emissions as cars. Aircraft jet engines, like many other vehicle engines, produce carbon dioxide (CO<sub>2</sub>), water vapor (H<sub>2</sub>O), nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), oxides of sulfur (SO<sub>x</sub>), unburned or partially combusted hydrocarbons (also known as volatile organic compounds (VOCs)), particulates, and other trace compounds.

According to most international reviews, aviation emissions comprise a small but potentially important percentage of anthropogenic (human-made) greenhouse gases and other emissions that contribute to global warming. The Intergovernmental Panel on Climate Change (IPCC) estimates that global aircraft emissions account for about 3.5 percent of the total quantity of greenhouse gas from human activities.<sup>3</sup> In terms of U.S. contribution, the U.S. General Accounting Office (GAO) reports that aviation accounts "for about 3 percent of total U.S. greenhouse gas emissions from human sources" compared with other industrial sources, including the remainder of the transportation sector (23 percent) and industry (41 percent).<sup>4</sup>

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<sup>1</sup> All greenhouse gas inventories measure carbon dioxide emissions, but beyond carbon dioxide different inventories include different greenhouse gases (GHGs).

<sup>2</sup> Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. For example, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are halocarbons that contain chlorine, while halocarbons that contain bromine are referred to as bromofluorocarbons (i.e., halons) or sulfur (sulfur hexafluoride: SF<sub>6</sub>).

<sup>3</sup> IPCC Report as referenced in U.S. General Accounting Office (GAO) *Environment: Aviation's Effects on the Global Atmosphere Are Potentially Significant and Expected to Grow*; GAO/RCED-00-57, February 2000, p. 4.

<sup>4</sup> Ibid, p. 14; GAO cites available EPA data from 1997.

The scientific community is developing areas of further study to enable them to more precisely estimate aviation's effects on the global atmosphere. The FAA is currently leading or participating in several efforts intended to clarify the role that commercial aviation plays in greenhouse gases and climate change. The most comprehensive and multi-year program geared towards quantifying climate change effects of aviation is the Aviation Climate Change Research Initiative (ACCRI) funded by FAA and NASA. ACCRI will reduce key scientific uncertainties in quantifying aviation-related climate impacts and provide timely scientific input to inform policy-making decisions. FAA also funds Project 12 of the Partnership for Air Transportation Noise & Emissions Reduction (PARTNER) Center of Excellence research initiative to quantify the effects of aircraft exhaust and contrails on global and U.S. climate and atmospheric composition. Finally, the Transportation Research Board's (TRB) Airport Cooperative Research Program (ACRP) project 02-06 is preparing a guidebook on preparing airport greenhouse gas emission inventories. The results of this effort are expected to be out in late 2008.

#### Environmental Consequences

Based on FAA data, operations activity at the Ann Arbor Municipal Airport represents less than 0.1 percent of U.S. aviation activity. Therefore, assuming that greenhouse gases occur in proportion to the level of activity, greenhouse gas emissions associated with existing and future aviation activity at the Ann Arbor Municipal Airport would be expected to represent less than 0.1 percent of U.S.-based greenhouse gases. Therefore, we would not expect the emissions of greenhouse gases from this project to be significant.

#### Cumulative Effects

Because aviation activity at the Ann Arbor Municipal Airport represents such a small amount of U.S. and global emissions, and the related uncertainties involving the assessment of such emissions regionally and globally, the incremental contribution of this proposed action cannot be adequately assessed given the current state of the science and assessment.

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## **Appendix D. Agency Coordination**

- D-1. Michigan Department of Natural Resources,  
May 12, 2009**
- D-2. U.S. Department of the Interior Fish and Wildlife Service  
June 3, 2009**
- D-3. Michign Department of Agriculture  
April 7, 2009**
- D-4. Michigan Department of Environmental Quality,  
June 2, 2009**
- D-5. Michigan Department of Environmental Quality,  
July 22, 2009**
- D-6. U.S. Environmental Protection Agency  
May 20, 2009**
- D-7. USDA NRCS  
September 3, 2009**
- D-8. Michigan SHPO  
October 20, 2009**
- D-9. Saginaw Chippewa Indian Tribe of Michigan  
May 19, 2009**
- D-10. Little Traverse Bay Bands of Odawa Indians  
May 7, 2009**





DEPARTMENT OF NATURAL RESOURCES

JENNIFER M. GRANHOLM  
GOVERNOR

LANSING

REBECCA A. HUMPHRIES  
DIRECTOR

May 12, 2009

Ms. Amy Eckland  
JJR, LLC  
110 Miller Avenue  
Ann Arbor, MI 48104

**RE: Proposed Environmental Assessment for Ann Arbor Municipal Airport**

Dear Ms Eckland:

The location of the proposed project was checked against known localities for rare species and unique natural features, which are recorded in a statewide database. This continuously updated database is a comprehensive source of information on Michigan's endangered, threatened and special concern species, exemplary natural communities and other unique natural features. Records in the database indicate that a qualified observer has documented the presence of special natural features at a site. The absence of records may mean that a site has not been surveyed. The only way to obtain a definitive statement on the presence of rare species is to have a competent biologist perform a field survey.

Under Act 451 of 1994, the Natural Resources and Environmental Protection Act, Part 365, Endangered Species Protection, "a person shall not take, possess, transport, ...fish, plants, and wildlife indigenous to the state and determined to be endangered or threatened," unless first receiving an Endangered Species Permit from the Department of Natural Resources, Wildlife Division. *Responsibility to protect endangered and threatened species is not limited to the list below. Other species may be present that have not been recorded in the database.*

The presence of threatened or endangered species does not preclude activities or development, but may require alterations in the project plan. Special concern species are not protected under endangered species legislation, but recommendations regarding their protection may be provided. Protection of special concern species will help prevent them from declining to the point of being listed as threatened or endangered in the future.

The following is a summary of the results for the project in Washtenaw County, sections 16, 17, T3S R6E.

The following list includes unique features that are known to occur on or near the site(s) and may be impacted by the project.

<u>common name</u>	<u>status</u>	<u>scientific name</u>
Henslow's sparrow	state endangered	<i>Ammodramus henslowii</i>
Grasshopper sparrow	special concern	<i>Ammodramus savannarum</i>

The Henslow's sparrow has been known to occur in the area. Henslow's sparrow require grasslands to breed. Today, this means grassy fields, pastures, hayfields and meadows with

scattered shrubs. They are often found in damp/moist low-lying locations. Henslow's arrive in Michigan in early April and are on their breeding ground by late to early May. Two broods are common during the breeding season, which means nesting can last into August. Fall migration begins in late September to mid-October.

The **grasshopper sparrow** has been known to occur in the area. Grasshopper sparrow's can be found in native prairies, cultivated fields, old fields, hayfields, pastures and open savanna. The nest is generally well concealed on the ground by overhanging vegetation. Spring arrival occurs in April and May and by mid-May grasshopper sparrow's are on their breeding ground. Two broods are a possible during the breeding season, which means nesting can last into August. Fall migration is complete by late October.

In summary, the project site may include suitable habitat for the above listed species. Potential impacts might include direct destruction of species and disturbance of critical habitat.

Thank you for your advance coordination in addressing the protection of Michigan's natural resource heritage. If you have further questions, please call me at 517-373-1263 or e-mail at [SargentL@michigan.gov](mailto:SargentL@michigan.gov).

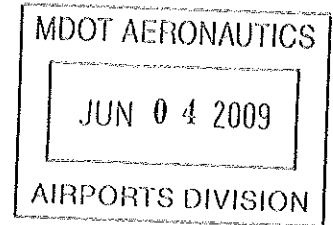
Sincerely,

  
Lori G. Sargent  
Endangered Species Specialist  
Wildlife Division



## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
East Lansing Field Office (ES)  
2651 Coolidge Road, Suite 101  
East Lansing, Michigan 48823-6316



IN REPLY REFER TO:

June 3, 2009

Ms. Molly Lamrouex, Environmental Specialist  
Aeronautics and Freight Services  
Michigan Department of Transportation  
2700 E. Airport Service Drive  
Lansing, Michigan 48906

Re: Early Coordination for Proposed Improvements at Ann Arbor Municipal Airport,  
Washtenaw County, Michigan

Dear Ms. Lamrouex:

We are responding to your May 4, 2009, request for early coordination regarding the subject project. We submit these comments in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act), and the National Environmental Policy Act (NEPA).

### Wetlands

For information on the location of wetlands, please visit the National Wetland Inventory (NWI) wetland map website (National Map Viewer) at <http://nmviewogc.cr.usgs.gov/viewer.htm>. Pursuant to state law and the federal Clean Water Act, the State of Michigan regulates certain activities in wetlands. Development that would impact wetlands may require a permit for which this office may have review authority. In the review of these permit applications, we may concur (with or without stipulations) or object to permit issuance depending upon whether the proposed work may impact public trust fish and wildlife resources.

### Migratory Birds

Under the Migratory Bird Treaty Act of 1918, as amended, it is unlawful to take, capture, kill, or possess migratory birds, their nests, eggs, and young. For proposed projects that may contain habitat suitable for nesting by migratory bird species, including song birds and/or raptors, we recommend you schedule construction activities or remove potential habitat or nesting structures before the initiation of spring nesting or after the breeding season has ended to avoid take of migratory birds, eggs, young, and/or active nests. Generally, we recommend that any habitat disturbance occur before April 15 or after August 1 to minimize potential impacts to migratory birds, but please be aware that some species may initiate nesting before April 15.

Scanned  
6-8-09



Endangered Species

For endangered and threatened species list requests and section 7 consultations with the U.S. Fish and Wildlife Service, please refer to our endangered species and technical assistance website, located at <http://www.fws.gov/midwest/endangered/section7/index.htm>. In some cases, you may be able to conclude the endangered species review process without contacting this office.

We appreciate the opportunity to provide comments at this early stage of project planning. Please direct any questions to Barbara Hosler of this office at 517/351-6326 or the above address.

Sincerely,



*for* Craig A. Czarnecki  
Field Supervisor



JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF AGRICULTURE  
LANSING

DON KOIVISTO  
DIRECTOR

April 7, 2009

Ms. Amy Eckland  
JJR, LLC  
110 Miller Avenue  
Ann Arbor, MI 48104

Dear Ms. Eckland:

RE: Ann Arbor Municipal Airport – JJR Project No. 50178.000

Our office has reviewed your request dated March 30, 2009 regarding the above-referenced project and finds that there are no Farmland Development Rights Agreements on any property within the project boundaries.

Therefore, we conclude that there will be no project impacts on land enrolled in this program.

Thank you for the opportunity to review this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Jarrod Thelen".

Jarrod Thelen, Resource Analyst  
Farmland & Open Space Preservation  
Environmental Stewardship Division  
517-373-3328

JT:lls





JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



STEVEN E. CHESTER  
DIRECTOR

June 2, 2009

Ms. Molly Lamrouex, Environmental Liaison  
Michigan Department of Transportation  
Aeronautics and Freight Services  
2700 Port Lansing Road  
Lansing, Michigan 48906

Dear Ms. Lamrouex:

**SUBJECT:** Michigan Department of Environmental Quality (MDEQ) File Number 09-81-5002  
Early Coordination – Ann Arbor Municipal Airport, Washtenaw County, Michigan

The MDEQ, Land and Water Management Division (LWMD) has completed review of your May 4, 2009, request for early coordination comments for the Ann Arbor Municipal Airport located in Section 17, T3S, R6E, of Washtenaw County, Michigan. Your letter indicates that you are in the process of preparing an Environmental Assessment (EA) for the proposed project, which includes determining the feasibility of shifting and extending the primary runway and parallel taxiway 950 feet to the southwest. Based on the general information provided, we have the following comments.

- 1) All natural resource features, including lakes, streams, and wetlands, should be identified as part of your investigation. Any alternatives that are developed need to evaluate the potential impact on these and other resources. Steps should be taken to identify feasible and prudent alternatives to avoid and/or minimize any potential impacts to the natural resources.
- 2) There appears to be a drain/stream located at the southwest corner of the airport property. Any impacts to this drain/stream would require a permit under Part 301, Inland Lakes and Streams, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). Under Part 301, we recommend that new structures fully span the bankfull channel when feasible. Our preference is for streams or drains to be relocated instead of enclosed where the impacts can not be avoided.
- 3) The drainage area of the small drain is less than 2 square miles; therefore, a permit would not be required under the State's Floodplain Regulatory Authority found in Part 31, Water Resources Protection, of the NREPA.
- 4) It is not clear if any wetlands would be impacted by the proposed project. Available maps do appear to indicate the presence of hydric soils near the airport. If there are wetlands impacts, they should be field verified, and their types, functions, and values properly described. Impacts to wetlands will require a permit under Part 303, Wetlands Protection, of the NREPA. Mitigation will be required for any unavoidable impacts to wetlands. We do not regulate the clearing of vegetation but would require a permit under Part 303, Wetlands Protection, of the NREPA for any grading, filling, draining, or

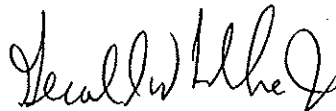
grubbing where stumps are removed. Cut vegetation should be removed from any wetland areas. Additional information on wetlands and the mitigation requirements can be found at [www.michigan.gov/deqwetlands](http://www.michigan.gov/deqwetlands).

- 5) A special interest search of our databases indicates that there is a potential State Threatened plant and Endangered animal in section 17, T3S, R6E. If these species are within your project area, you will be required to coordinate the potential impacts with Ms. Lori Sargent, Michigan Department of Natural Resources, at 517-373-9418.
- 6) Our database search also indicates potential Part 201 sites located in section 17, T3S, R6E. Please contact Mr. Mitch Adelman at 517-780-7690 of the Remediation and Redevelopment Division in the LWMD's Jackson District Office for further information.
- 7) A National Pollution Discharge Elimination System (NPDES) permit will be required for storm water discharges associated with construction activities in accordance with Rule 2190 promulgated in accordance with Part 31, Water Resources Protection, of the NREPA.
- 8) A permit will be required under Part 91, Soil Erosion and Sedimentation Control, of the NREPA. Part 91 permits are generally issued by the county or, in some instances, the local municipality. If the earth change involves two or more Part 91 permitting entities, the MDEQ issues the Part 91 permit.

As the project planning becomes better defined, we may have additional comments.

Thank you for the opportunity to review and provide comments. If you have any questions or need to schedule a field review, please contact Mr. Alex Sanchez at 517-335-3473, or you may contact me.

Sincerely,



Gerald W. Fulcher, Jr., P.E., Chief  
Transportation and Flood Hazard Unit  
Land and Water Management Division  
517-335-3172

cc: Ms. Sherry Kamke, USEPA  
Mr. Craig Czarnecki, USFWS  
Mr. John Konik, USACE  
Mr. Brad Davidson, FAA  
Ms. Lori Sargent, MDNR  
Mr. Mitch Adelman, MDEQ  
Ms Mary Vanderlaan, MDEQ  
Mr. Alex Sanchez, MDEQ



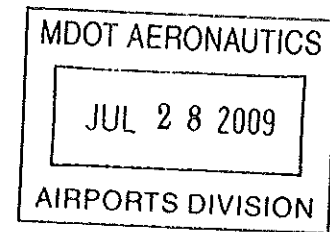
JENNIFER M. GRANHOLM  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



STEVEN E. CHESTER  
DIRECTOR

July 22, 2009



Michigan Department of Transportation  
Attn: Ms. Molly Lamrouex  
2700 Port Lansing Rd.  
Lansing, MI 48909

Dear Ms. Lamrouex:

SUBJECT: Express Wetland Identification Report  
Wetland Identification File Number: 09-81-0001-WA

The Department of Environmental Quality (DEQ) conducted a Level 2 Express Wetland Identification Review of 5 acres of an approximately 300-acre property (Property Tax Identification Number Ann Arbor Municipal Airport) located in Town 03S, Range 06E, Section 17, Pittsfield Township, Washtenaw County on July 21, 2009. The wetland review was conducted in accordance with Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA); and Rule 4 (1), Wetland Identification and Assessment (R 281.924) of the Administrative Rules for Part 303. This is a report of our findings in response to your Wetland Identification Application.

Based on our site review, which included a review of the dominant vegetation, hydrology, and soils, as well as an in-office review of pertinent information, the DEQ finds that the 5-acre review area does not contain wetland regulated by the state. The wetland within the review area is not regulated by the state since it is not within 500 feet of an inland lake or stream or within 1,000 feet of the Great Lakes or their connecting waters. The DEQ lacks jurisdiction under Part 303 for activities occurring within the Wetland Identification Review area.

Please be aware that this Wetland Identification Report does not constitute a determination of the presence of wetland that may be regulated under local ordinances or federal law. The U.S. Army Corps of Engineers (USACE) retains regulatory authority over certain wetlands pursuant to Section 404 of the Clean Water Act (CWA), and specifically those wetlands associated with navigable waters of the state. Navigable waters are generally the Great Lakes, their connecting waters, and portions of river systems and lakes connected to these waters. In other areas of the State, the DEQ is responsible for identification of wetland boundaries for purposes of compliance with the CWA under an agreement with the U.S. Environmental Protection Agency.

Your Wetland Identification Review area does not appear to be within those areas regulated by the USACE. However, should you desire more information, please contact the USACE at 313-226-2218.

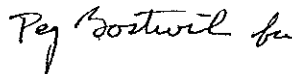
This Wetland Identification Report is limited to findings pursuant to Part 303 and does not constitute a determination of jurisdiction under other DEQ administered programs. Any land use activities undertaken within the review area may be subject to regulation pursuant to the NREPA under the following parts.

Floodplain Regulatory Authority found in Part 31, Water Resources Protection  
Part 91, Soil Erosion and Sedimentation Control  
Part 301, Inland Lakes and Streams

The findings contained in this report do not convey, provide, or otherwise imply approval of any governing act, ordinance, or regulation, nor does it waive the obligation to acquire any applicable state, county, local, or federal approvals. This Wetland Identification Report is not a permit for any activity that requires a permit from the DEQ.

The findings contained in this report are binding on the DEQ until July 21, 2012, a period of three years from the date of this Wetland Identification Report. Please contact me if you have any questions regarding this report.

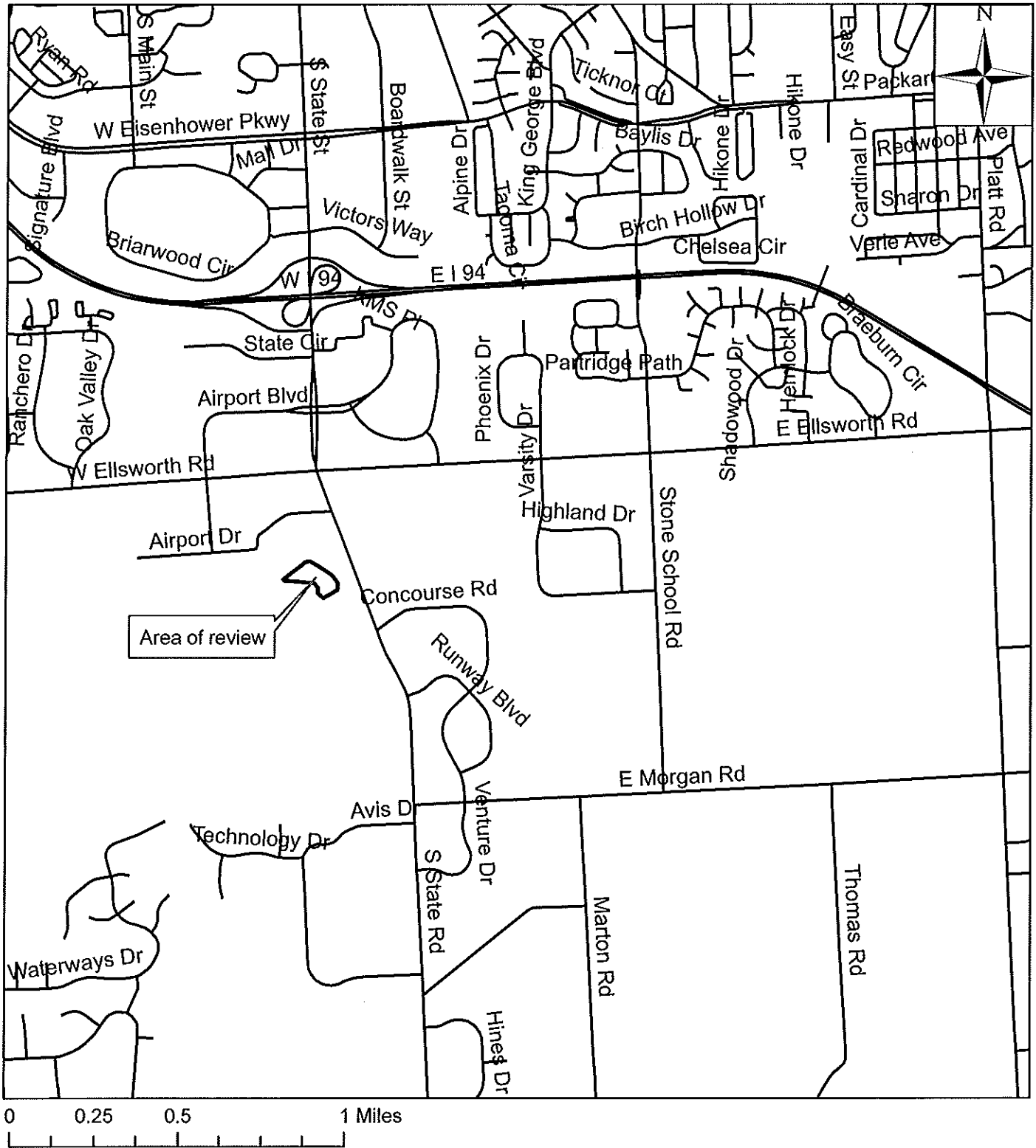
Sincerely,



Todd Losee  
Wetland Identification Program Coordinator  
Land and Water Management Division  
517-335-3457

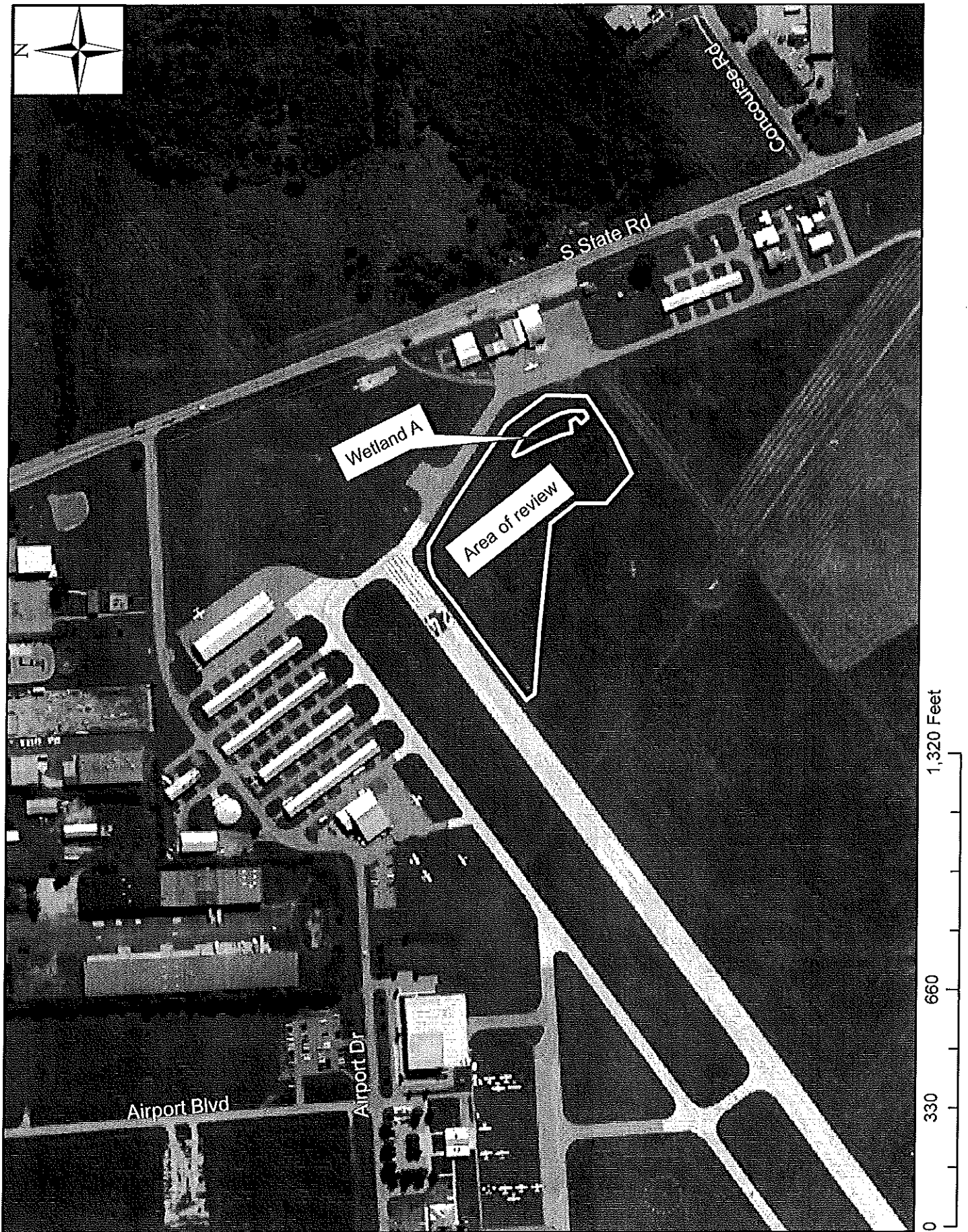
Enclosures

cc: Washtenaw County CEA  
Washtenaw County Health Department  
Pittsfield Township Clerk  
Mr. Matt Kulhanek, City of Ann Arbor  
Mr. Justin Pung, DEQ  
Mr. Todd Losee, DEQ

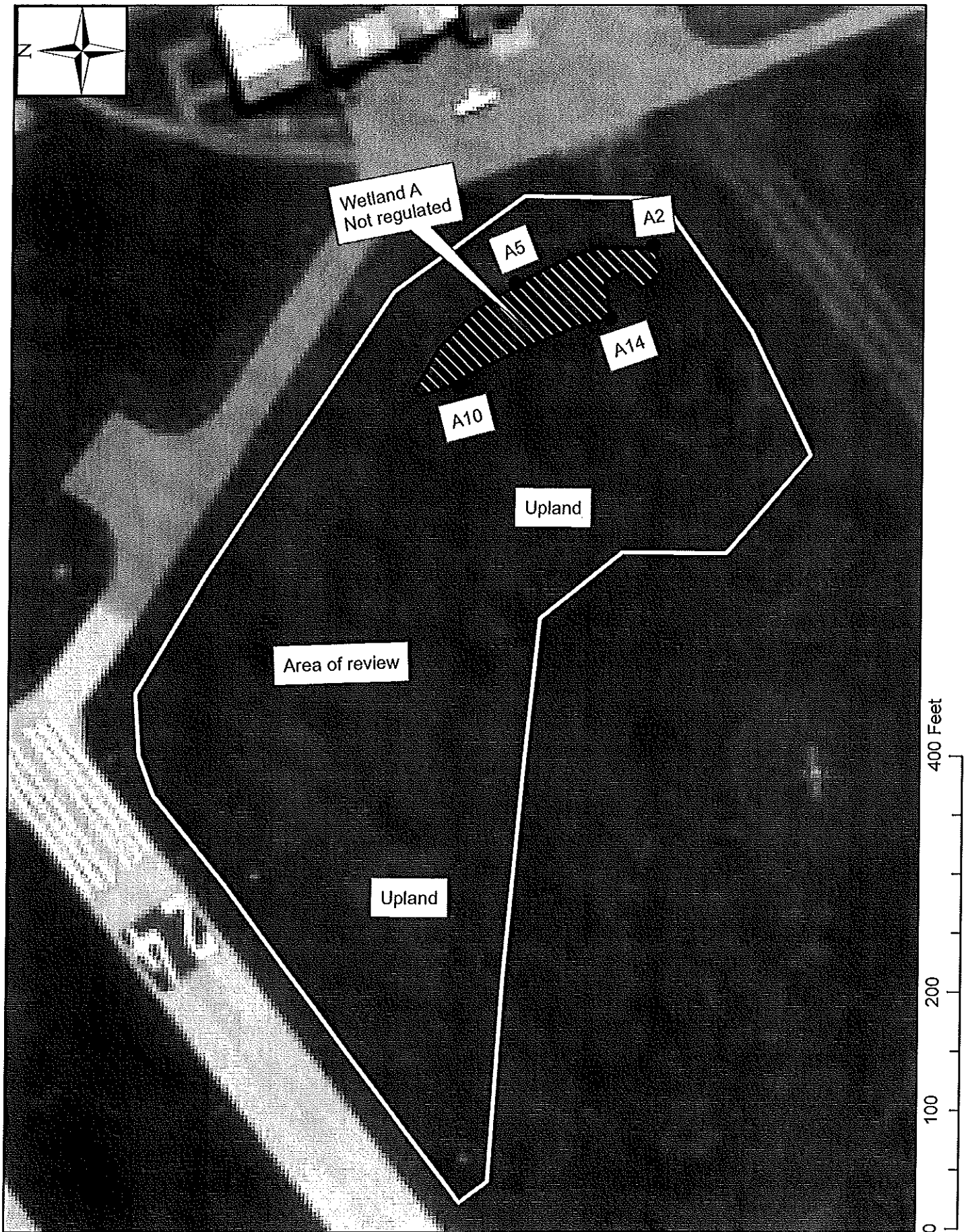


Site location map





Area of review in relation to the Ann Arbor Airport

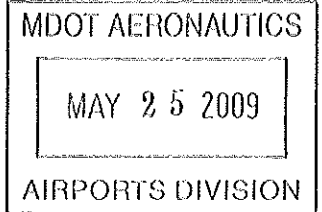


Wetland A, the only wetland within the area of review, is not regulated.





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590



MAY 20 2009

REPLY TO THE ATTENTION OF:  
E-19J

Ms. Molly Lamrouex  
Michigan Department of Transportation  
Bureau of Aeronautics and Freight Services  
2700 Port Lansing Road  
Lansing, MI 48906

Re: Request for Early Coordination Review of Proposed Improvements for the Ann Arbor Municipal Airport, Washtenaw County, Michigan

Dear Ms. Lamrouex:

The NEPA Implementation Section has received you May 4, 2009 letter requesting information for the Ann Arbor Municipal Airport, Washtenaw County, Michigan. Under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act; U.S. EPA reviews and comments on major federal actions and other actions with environmental impacts when resources permit.

We understand the project will likely include a shift and extension of the primary runway and the parallel taxiway 950 feet to the southwest. Based on the information that you provided to us it is likely that the project will impact wetlands and forested areas.

As with any project, it is important to avoid impacts to wetlands and other natural resources. EPA and other resource agencies will assume that there are other alternatives that reduce environmental impacts, especially if the project is likely to adversely impact high quality wetlands and other natural resources. Therefore, we encourage you to thoroughly explain the project's purpose and need and rigorously explore alternatives that either do not affect or otherwise minimizes impacts to sensitive resources such as wetlands, floodplains, and streams.

Please provide us with information about this project as it progresses. Please contact Ms. Sherry Kamke at 312-353-5794 if you have any questions.

Sincerely,

Kenneth A. Westlake, Supervisor  
NEPA Implementation  
Office of Enforcement and Compliance Assurance



United States Department of Agriculture



*Helping People Help the Land*

Natural Resources Conservation Service

7203 Jackson Road

Ann Arbor, MI 48103-9506

T (734) 761-6722 x3 F (734) 662-1686 [www.mi.nrcs.usda.gov](http://www.mi.nrcs.usda.gov)

---

September 3, 2009

Amy Eckland- Associate, JJR  
110 Miller Avenue  
Ann Arbor, MI 48104

RE: Ann Arbor Municipal Airport

Dear Eckland,

The Farmland Conversion Impact Rating form (AD-1006) for the proposed Ann Arbor Municipal Airport runway expansion is attached. The portions of the form to be filled out by NRCS are completed.

Some prime and farmland of local importance would be impacted by this project. If the project proceeds, I would urge you to utilize NRCS standards and specifications for conservation practices, as listed in the NRCS Electronic Field Office Technical Guide. This may be found at [www.mi.nrcs.usda.gov](http://www.mi.nrcs.usda.gov).

Please don't hesitate contacting me if you have any questions.

A handwritten signature in cursive script that reads "Steve Olds".

Steve Olds  
District Conservationist  
USDA NRCS  
Washtenaw and Wayne Counties

U.S. Department of Agriculture

# FARMLAND CONVERSION IMPACT RATING

<b>PART I (To be completed by Federal Agency)</b>		Date Of Land Evaluation Request 9/1/09	
Name Of Project Ann Arbor Municipal Airport		Federal Agency Involved Federal Aviation Administration	
Proposed Land Use Airport		County And State Washtenaw County, Michigan	

<b>PART II (To be completed by NRCS)</b>		Date Request Received By NRCS 9/1/09	
Does the site contain prime, unique, statewide or local important farmland? <i>(If no, the FPPA does not apply -- do not complete additional parts of this form).</i>			
		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Major Crop(s) corn, soybeans, wheat		Acres Irrigated 4181	Average Farm Size 179
Name Of Land Evaluation System Used LESA		Amount Of Farmland As Defined in FPPA Acres: 163,000 % 35	
Name Of Local Site Assessment System NA		Date Land Evaluation Returned By NRCS 9/3/09	

<b>PART III (To be completed by Federal Agency)</b>	Alternative Site Rating			
	Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	18.0			
B. Total Acres To Be Converted Indirectly	0.0			
C. Total Acres In Site	18.0	0.0	0.0	0.0

<b>PART IV (To be completed by NRCS) Land Evaluation Information</b>	Site A	Site B	Site C	Site D
A. Total Acres Prime And Unique Farmland	8.7			
B. Total Acres Statewide And Local Important Farmland	9.3			
C. Percentage Of Farmland In County Or Local Govt. Unit To Be Converted	0.01			
D. Percentage Of Farmland In Govt. Jurisdiction With Same Or Higher Relative Value	34.0			

<b>PART V (To be completed by NRCS) Land Evaluation Criterion</b>	Site A	Site B	Site C	Site D
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	84.2	0	0	0

<b>PART VI (To be completed by Federal Agency)</b>	Maximum Points	Site A	Site B	Site C	Site D
<i>Site Assessment Criteria (These criteria are explained in 7 CFR 658.5(b))</i>					
1. Area In Nonurban Use	15	0			
2. Perimeter In Nonurban Use	10	0			
3. Percent Of Site Being Farmed	20	1			
4. Protection Provided By State And Local Government	20	20			
5. Distance From Urban Builtup Area	15	0			
6. Distance To Urban Support Services	15	0			
7. Size Of Present Farm Unit Compared To Average	10	10			
8. Creation Of Nonfarmable Farmland	10	0			
9. Availability Of Farm Support Services	5	5			
10. On-Farm Investments	20	5			
11. Effects Of Conversion On Farm Support Services	10	0			
12. Compatibility With Existing Agricultural Use	10	0			
<b>TOTAL SITE ASSESSMENT POINTS</b>	<b>160</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>0</b>

<b>PART VII (To be completed by Federal Agency)</b>	Site A	Site B	Site C	Site D
Relative Value Of Farmland (From Part V)	100	84.2	0	0
Total Site Assessment (From Part VI above or a local site assessment)	160	41	0	0
<b>TOTAL POINTS (Total of above 2 lines)</b>	<b>260</b>	<b>125</b>	<b>0</b>	<b>0</b>

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? Yes <input type="checkbox"/> No <input type="checkbox"/>
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Reason For Selection:



Grading limits

Grading limits

W Elsworth Rd

S State Rd

S State Rd

S State Rd

Airport Dr

Avis Dr

Palis Dr

Fairfield Ct

Data Ct

Technology Dr

Airport F

Airport Dr

Ann Arbor Municipal Airport

Muskegon Dr

Regents Park Ct

Lohr Rd

Lohr Rd

Lohr Rd

Glenn Dr

Battle Pass

Lohr Rd







STATE OF MICHIGAN  
DEPARTMENT OF HISTORY, ARTS AND LIBRARIES  
LANSING

ENNIFER GRANHOLM  
GOVERNOR

MARK HOFFMAN  
ACTING DIRECTOR

October 20, 2009

BRAD DAVIDSON  
FEDERAL AVIATION ADMINISTRATION  
DETROIT AIRPORTS DISTRICT OFFICE  
11677 SOUTH WAYNE ROAD SUITE 107  
ROMULUS MI 48174

RECEIVED  
OCT 27 2009  
FAA, DETROIT ADO

RE: ER-5410 Ann Arbor Municipal Airport – Runway Extension, Section 17, T3S, R6E, Pittsfield Township,  
Washtenaw County (FAA)

Dear Mr. Davidson:

Under the authority of Section 106 of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited undertaking at the location noted above. Based on the information provided for our review, it is the opinion of the State Historic Preservation Officer (SHPO) that no historic properties are affected within the area of potential effects of this undertaking.

The views of the public are essential to informed decision making in the Section 106 process. Federal Agency Officials or their delegated authorities must plan to involve the public in a manner that reflects the nature and complexity of the undertaking, its effects on historic properties and other provisions per 36 CFR § 800.2(d). We remind you that Federal Agency Officials or their delegated authorities are required to consult with the appropriate Indian tribe and/or Tribal Historic Preservation Officer (THPO) when the undertaking may occur on or affect any historic properties on tribal lands. In all cases, whether the project occurs on tribal lands or not, Federal Agency Officials or their delegated authorities are also required to make a reasonable and good faith effort to identify any Indian tribes or Native Hawaiian organizations that might attach religious and cultural significance to historic properties in the area of potential effects and invite them to be consulting parties per 36 CFR § 800.2(c-f).

This letter evidences the FAA's compliance with 36 CFR § 800.4 "Identification of historic properties", and the fulfillment of the FAA's responsibility to notify the SHPO, as a consulting party in the Section 106 process, under 36 CFR § 800.4(d)(1) "No historic properties affected".

The State Historic Preservation Office is not the office of record for this undertaking. You are therefore asked to maintain a copy of this letter with your environmental review record for this undertaking. If the scope of work changes in any way, or if artifacts or bones are discovered, please notify this office immediately.

If you have any questions, please contact Brian Grennell, Environmental Review Specialist, at (517) 335-2721 or by-email at ER@michigan.gov. Please reference our project number in all communication with this office regarding this undertaking. Thank you for this opportunity to review and comment, and for your cooperation.

Sincerely,

  
Martha MacFarlane Innes  
Environmental Review Coordinator

for Brian D. Conway  
State Historic Preservation Officer

MMF: JRH: BGG: kam

Copy: Kent Taylor, CCRG



**From:** "Esther Helms" <EHelms@sagchip.org>  
**To:** LamrouexM@michigan.gov  
**Date:** 5/19/2009 9:38:42AM  
**Subject:** Section 17 Washtenaw County, Early Coordination Review of Proposed Improvements, Ann Arbor Municipal Airport, Washtenaw County, MI

May 19, 2009

Molly Lamrouex

Environmental Liaison

MDOT-Aeronautics and Freight Services

RE: Section 17 Washtenaw County, Early Coordination Review of Proposed Improvements, Ann Arbor Municipal Airport, Washtenaw County, MI

Dear Ms. Lamrouex;

This letter is in response to the above referenced project.

At this time we do not have any information concerning the presence of any Indian Traditional Cultural Properties, Sacred Sites or other Significant Properties to the projected project area(s). This is not to say that such a site may not exist, just that this office does not have any available information of the area(s) at this time.

This office would be willing to assist if in the future or during the construction there is an inadvertent discovery of Native American human remains or burial objects. Feel free to call my office if you have any questions or requests at 989-775-4730.

We thank you for including this Tribe in your plans.

Sincerely,

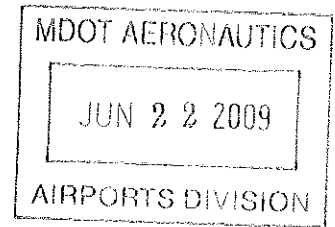
William Johnson /elh

Curator

Ziibiwing Center of Anishinabe Culture & Lifeways

Saginaw Chippewa Indian Tribe of Michigan

*Little Traverse Bay Bands of Odawa Indians  
Archives, Records and Cultural Preservation Department  
7500 Odawa Circle, Harbor Springs, Michigan 49740  
(231) 242-1450 phone (231) 242-1455 fax*



May 7, 2009

Ms. Molly Lamrouex  
MDOT  
Bureau of Aeronautics and Freight Services  
Airports Division  
2700 Port Lansing Rd.  
Lansing, MI 48906-2160

Re: Proposed Improvement Ann Arbor Municipal Airport, Washtenaw County, MI

Dear Ms. Lamrouex:

At this time, we do not have any information concerning the presence of any Indian Traditional Cultural Properties, Sacred Sites, or Other Significant Properties in the designated area of the proposed construction site in Ann Arbor, MI. This is not to say that such site does not exist, just this office does not have any available information indicating that a site is present using our current documentation of the area. If contact could be made with the closest tribe, that being the Huron Band of Potawatomi Indians, they could possibly provide more information.

However, this office would be more than willing to assist, if in the future or during construction, there is an inadvertent discovery of Native American human remains or burial objects. I have enclosed a Site Reference Form that our office uses in the event of a discovery in order to speed the process. Please contact me if you have any further question or requests. I can be reached at (231)242-1453.

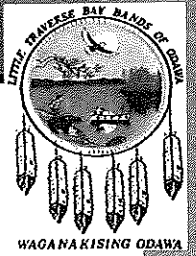
We thank you for including our tribe in your plans.

Miigwetch (thank you)

A handwritten signature in cursive script that reads "Winnay Wemigwase".

Winnay Wemigwase  
Director  
Archives/Records and Cultural Preservation  
Little Traverse Bay Band of Odawa Indians

# Site Reference Form



Date of Discovery: \_\_\_\_\_ Today's Date: \_\_\_\_\_

Owner/Site Representative: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Location: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

## Site Information:

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Location and Circumstance of Discovery: \_\_\_\_\_ Time of Discovery: \_\_\_\_\_ am/pm

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Contacts Made:

Law Enforcement Department: \_\_\_\_\_

Investigating Officer: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Date of police report: \_\_\_\_\_ Time on report: \_\_\_\_\_ am/pm

Other contacts (w/phone #): \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Native American Burial (please circle) yes \_\_\_\_\_ no \_\_\_\_\_

Confirmed by: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Release Status: \_\_\_\_\_

Little Traverse Bay Bands of Odawa Indians Tribal NAGPRA Contacts:

**Eric Hemenway**

Research & Repatriation Assistant

(231) 242-1527ph/ ehemenway@ltbbodawa-nsn.gov

**Winnay Wemigwase**

Director, Archives/Records & Cultural Preservation

(231) 242-1453ph/ wwemigwase@ltbbodawa-nsn.gov

7500 Odawa Circle, Harbor Springs, Michigan 49740

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**Appendix E. Field Observation Report**  
(June 2009)







Ann Arbor Airport, Ann Arbor, MI	6-10-09	6-19-09
SITE LOCATION	DATE	ISSUE DATE
Ann Arbor Airport Runway Expansion	50178.000	
PROJECT NAME	PROJECT NUMBER	
Carol Schulte	None	
ISSUED BY	SIGNATURE	
PARTICIPANTS	COMPANY	
Carol Schulte	JJR	
Tom Lee	Ann Arbor Airport	

The Ann Arbor Airport was visited to investigate presence of wetlands, wildlife habitat, threatened or endangered species, and general plant communities within the limits of grading of proposed expansion areas. The site is located south of Ellsworth Road, west of State Street in Ann Arbor, MI, Washtenaw County. Tom Lee of the Airport accompanied Carol to unlock gates and allow access to the site. Pictures were taken of the site and are available for reference. Figure 1 is attached that shows airport layout as well as pertinent areas referenced in this report.

The weather during the site visit was mostly cloudy and in the high 60's.

Most of the soil south of the runway consists of Palms muck, a hydric soil. These areas contain either unmown grassy meadows or are being farmed in corn. South of the cropped area is a large forested wetland complex that was not investigated at this time. The area northwest of the runway consists of Fox and Matherton sandy loam soils and is very rocky. This area is also being farmed in corn by the same farmer.

The first area reviewed was at the east end of Runway 24 where the runway is proposed to shift southwest approximately 150'. Tom stated that generally the airport mows approximately 100' from the runway, but in this area it may be less than that because of a pledge to the local Audobon Society to keep some areas unmown for nesting meadow birds. This area was a mix of mostly wetland species and scattered upland species, including: plots of reed canary grass (*Phalaris arundinacea*), half a dozen (+/-) sedge (*Carex granularis*) plants, a few swamp milkweed (*Asclepias incarnata*), dandelion (*Taraxicum officinale*), sowthistle species (*Sonchus* sp.), buckthorn (*Rhamnus cathartica*), curly dock (*Rumex crispus*), and either goldenrod or aster species (*Solidago* or *Aster* sp.).

A County drain runs north-south on the west side of the property, then makes a turn at the end of the runway to run toward the east. The ditch is open except at the end of the runway, where it runs underground in an L-shaped culvert. The sides of the ditch on the west side are steep are approximately 6' +/- deep, but the ditch was dry in this area with only small areas of standing water on the south side. The south side ditch does not appear to have been maintained and the ditch itself is almost undefined in some areas. The standing water was tinted blue, although it was not determined what caused the tinting. The sides of the ditches contained upland weedy herbaceous species such as sweet clover (*Melilotus officinalis*), smooth brome (*Bromus inermis*), giant ragweed (*Ambrosia trifida*), Virginia creeper (*Parthenocissus quinquefolia*), lamb's quarters (*Chenopodium album*), riverbank grape (*Vitis riparia*), dame's rocket (*Hesperis matronalis*), teasel (*Dipsacus fullonum*), cow parsnip (*Heracleum maximum*), yellow goatsbeard (*Tragopogon pratensis*), yarrow (*Achillea*



*millifolium*), a few reed canary grass, wheat or rye (*Triticum* or *Secale* spp), and mixed upland and wetland trees such as American elm (*Ulmus americana*), box elder (*Acer negundo*), staghorn sumac (*Rhus typhina*), Russian olive (*Eleagnus angustifolia*), buckthorn (*Rhamnus catharticus*) cottonwood (*Populus deltoides*), bur oak (*Quercus macrocarpa*), and American linden (*Tilia americana*).

The area at the end of the runway where proposed expansion will occur was investigated. This area is kept mowed and the dominant plants in this area consisted of old field weeds and grassy species, with disturbed areas of bare dirt. Plants include rough-fruited cinquefoil (*Potentilla recta*), Canada thistle (*Cirsium arvense*), and an unidentified grass.

Near the weather station northwest of the end of the existing runway is a gravel borrow pit, excavated, according to Tom, for a foundation for the north hangars. While this area is artificially low and the dominant tree is a large multi-trunked willow (*Salix* sp.), the area is not considered a wetland. The ground plain is covered with mostly burdock (*Arctium minus*) with a few dame's rocket garlic mustard (*Alliaria petiolata*), along with buckthorn, box elder, smooth brome, and one poison hemlock plant (*Conium maculatum*). Concrete rubble and other wood debris has been dumped in the low area. In an adjacent area that is higher in elevation than the borrow pit and could be a leftover spoil pile, the area is dominated by poison hemlock and stinging nettle (*Urtica dioica*), a dead ash (*Fraxinus pennsylvanica*), and several black walnuts (*Juglens nigra*).

Several examples of wildlife were observed during the short field visit; there was evidence of rodent tunneling (field mice or voles) in last year's duff at the take-off zone for Runway 24 (see Photo 2). Pheasants (*Phasianus colchicus*) were heard calling just west of the site and later in the southern portion of the site. Robins (*Turdus migratorius*), goldfinch (*Carduelis tristis*), purple martins (*Procygne subis*), and killdeer (*Charadrius viciferus*) were observed, and a mating pair of redtail hawks (*Buteo jamaicensis*) were seen flying out of the bur oak near the end of the runway. Tom stated that a pack of coyote (*Canis latrans*) have been observed on the airport property as well as wild turkeys (*Meleagris gallopavo*).

There are no regulated wetlands on the site. Although the roughly 1000 square foot area near the runway take-off zone is dominated by wetland plants and contains hydric soils, the MDEQ would likely decline jurisdiction because it is further than 500 feet from an inland lake, river, or stream, is less than 5 acres in size, and there is no surface connection with other wetlands in the area.

No threatened or endangered species or special wildlife habitat were found at the proposed impact sites.

Our summarization of this Field Observation Report is transcribed as above. Please notify the writer within five (5) business days of this transcription of any disagreement, as the foregoing becomes part of the project record and is the basis upon which we will proceed.



Photo 1. Plots of reed canary grass near east end of Runway 24. 6-10-09.



Photo 2. Evidence of rodent tunneling near east end of Runway 24. 6-10-09.



Photo 3. Drainage ditch on west end of project site where ditch goes into culvert. 6-10-09.



Photos 4 and 5. Drainage ditch on south end of project where it emerges from culvert. 6-10-09.



Photo 6. Gravel borrow pit near weather station. 6-10-09.

*P:/50178/000/Admin/Proj Mgmt/field reports/Field Report 6-10-09.docx*

cc:



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**Appendix F. Audubon Society Bird Species  
Observed List**







## Breeding Bird Survey - Airport Fields Maximum Breeding Status by Year

City of Ann Arbor, Natural Area Preservation

Common Name	Status	2006	2007	2008
Mallard	1	0	0	1
Great Blue Heron	1	0	0	1
Upland Sandpiper	1	1	1	0
Killdeer	2	2	2	2
Ring-necked Pheasant	2	0	0	2
Rock Pigeon	2	2	0	0
Mourning Dove	2	2	2	2
Red-tailed Hawk	1	0	0	1
American Kestrel	2	1	0	2
N. Flicker	1	0	1	1
Eastern Kingbird	1	0	0	1
Willow Flycatcher	2	0	0	2
Horned Lark	2	2	2	0
Blue Jay	1	0	0	1
American Crow	1	0	0	1
European Starling	3	0	0	3
Bobolink	3	0	3	3
Brown-headed Cowbird	2	0	0	2
Red-winged Blackbird	3	3	0	3
Eastern Meadowlark	3	3	3	3
American Goldfinch	2	0	2	2
Savannah Sparrow	3	3	3	2
SC Grasshopper Sparrow	2	0	0	2
T Henslows Sparrow	2	0	2	0
Song Sparrow	2	2	0	2
N. Cardinal	2	2	0	0
Rose-breasted Grosbeak	2	1	0	2
Indigo Bunting	2	0	0	2

	Status	2006	2007	2008
Cliff Swallow	1	0	1	0
Barn Swallow	2	0	2	2
Tree Swallow	1	0	0	1
Red-eyed Vireo	1	0	0	1
Warbling Vireo	1	0	0	1
Yellow Warbler	2	2	0	2
Common Yellowthroat	2	0	1	2
Gray Catbird	2	0	0	2
Wood Thrush	1	0	1	0
American Robin	2	2	2	2

**Total Number of Species**      38                      14      15      31

SC = special concern   T = threatened   E = endangered   **Status:** 1 = observed only   2 = probable breeding   3 = confirmed breeding



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**Appendix G. Citizens Advisory Council Member  
List**



# Citizens Advisory Committee

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## Ann Arbor Municipal Airport Environmental Assessment

<u>Name</u>	<u>Representing</u>
Matt Kulhanek, Manager	Ann Arbor Municipal Airport
Mark Perry	AA Airport Advisory Committee
Kristine Martin	5 <sup>th</sup> Ward Resident
Ray Hunter	4 <sup>th</sup> Ward Resident
Jack Moghadam	3 <sup>rd</sup> Ward Resident
Tony Derezinski	2 <sup>nd</sup> Ward Resident
Jad Donaldson	Pilot-Avfuel
Ray Stocking	Washtenaw Audubon Society
David Schrader	FAA Safety Team
Shlomo Castell	Stonebridge Community Association
Jan Godek, Supervisor	Lodi Township
Barb Fuller, Deputy Supervisor	Pittsfield Township
Kristin Judge	Washtenaw County Commissioner, 7 <sup>th</sup> District



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## **Appendix H. Public Notices**

- H-1. Press Release, City of Ann Arbor  
April 20, 2009**
- H-2. FAA Notice of Intent, Federal Register  
June 17, 2009**







## CITY OF ANN ARBOR, MICHIGAN

100 North Fifth Ave. P.O. Box 8647  
Ann Arbor, Michigan 48104-8647  
[www.a2gov.org](http://www.a2gov.org)

### PRESS RELEASE

For Immediate Release

**CONTACT: Matt Kulhanek,**  
Fleet and Facility Manager, (734)794-6312,  
[mjkulhanek@a2gov.org](mailto:mjkulhanek@a2gov.org), or  
**Amy Eckland, JJR,** (734) 669-2687,  
[amy.eckland@jir-us.com](mailto:amy.eckland@jir-us.com)

### ANN ARBOR AIRPORT LAUNCHES ENVIRONMENTAL ASSESSMENT PLANNING EFFORT

ANN ARBOR, Mich., April 20, 2009 — The City of Ann Arbor is initiating the preparation of an Environmental Assessment (EA) to determine the potential impacts of lengthening the primary runway at the Ann Arbor Airport at 801 Airport Drive from 3,500' to 4,300' and a shift of the runway 150' to the southwest. The assessment results will determine potential impacts to noise levels, air quality, water quality, wetlands, floodplains, plant and wildlife, light emissions, historical and cultural resources, social, and socioeconomic factors. No runway changes will be approved until this environmental clearance process is completed.

A 12 member volunteer Citizen Advisory Council (CAC) will kick-off a series of meetings in early May as part of the assessment team. The CAC members will serve as representatives for area residents, pilots, and local municipalities. The CAC will assist with the review and discussion of the airport studies. Interested members of the public also may follow the status of the airport study via online newsletter updates, press releases, meeting notices, and by attending the public hearing. To help address questions related to the process and the potential runway improvement, two Frequently Asked Questions (FAQ) handouts have been posted on the city's airport web page. The condensed FAQ version is geared more toward non-aviation individuals. The technical FAQ version is longer and contains more detail including the specific references to various aviation regulations and practices. To sign up for periodic updates on this project, visit the airport page on the city's Web site, [www.a2gov.org](http://www.a2gov.org): select "Airport" from the "Government" drop-down menu, and then click the red envelope to subscribe.

The EA is expected to take approximately eight months to complete. The scope of the EA is defined by state and federal regulations and, upon completion, must be approved by the Michigan Department of Transportation – Bureau of Aeronautics (MDOT-Aero) and the Federal Aviation Administration. A public hearing on the findings of the EA is required by law. Public comments received will be made part of the final EA document.



## CITY OF ANN ARBOR, MICHIGAN

100 North Fifth Ave. P.O. Box 8647

Ann Arbor, Michigan 48104-8647

[www.a2gov.org](http://www.a2gov.org)

The overall project consists of completing an EA documenting the potential impacts related to an 800' runway safety extension and a shift of the runway 150' to the southwest. These modifications were depicted on the Airport Layout Plan approved by city council in September 2008. The full scope of the EA will be completed by two consulting firms, JJR and URS Corporation Great Lakes. JJR, through their Ann Arbor office, will be the lead consulting firm for the EA, including the public involvement and coordination. URS Corporation, the airport's design engineer, will be preparing preliminary engineering on the runway extension and completing other technical tasks in support of the EA and JJR.

*Ann Arbor has 114,000 residents, spans 27.7 square miles, and was named the No. 1 Healthiest Hometown in the U.S. by AARP The Magazine in 2008. Other notable recognitions include: No. 27 of the top 100 U.S. cities to live in by CNN/Money Magazine in 2008, as well as the fourth smartest city in the U.S. by Forbes Magazine. The city's mission statement reads: The city of Ann Arbor is committed to providing excellent municipal services that enhance the quality of life for all through the intelligent use of resources while valuing an open environment that fosters, fair, sensitive and respectful treatment of all employees and the community we serve.*

#####

car owners relative to identification marks on railroad equipment. FRA, railroads, and the public refer to the stenciling to identify freight cars.

*Annual Estimated Burden Hours:* 18,750 hours.

*Title:* Rear-End Marking Devices.

*OMB Control Number:* 2130-0523.

*Type of Request:* Extension of a currently approved collection.

*Affected Public:* Railroads.

*Abstract:* The collection of information is set forth under 49 CFR Part 221 which requires railroads to furnish a detailed description of the type of marking device to be used for the trailing end of rear cars in order to ensure rear cars meet minimum standards for visibility and display. Railroads are required to furnish a certification that the device has been tested in accordance with current "Guidelines For Testing of Rear End Marking Devices." Additionally, railroads are required to furnish detailed test records which include the testing organizations, description of tests, number of samples tested, and the test results in order to demonstrate compliance with the performance standard.

*Annual Estimated Burden Hours:* 89 hours.

*Title:* Locomotive Certification (Noise Compliance Regulations).

*OMB Control Number:* 2130-0527.

*Type of Request:* Extension of a currently approved collection.

*Affected Public:* Railroads.

*Abstract:* Part 210 of title 49 of the United States Code of Federal Regulations (CFR) pertains to FRA's noise enforcement procedures which encompass rail yard noise source standards published by the Environmental Protection Agency (EPA). EPA has the authority to set these standards under the Noise Control Act of 1972. The information collected by FRA under Part 210 is necessary to ensure compliance with EPA noise standards for new locomotives.

*Annual Estimated Burden Hours:* 2,767 hours.

**ADDRESSES:** Send comments regarding these information collections to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 Seventeenth Street, NW., Washington, DC, 20503. *Attention:* FRA Desk Officer. Alternatively, comments may be sent via e-mail to the Office of Information and Regulatory Affairs (OIRA), Office of Management and Budget, at the following address: [oira\\_submissions@omb.eop.gov](mailto:oira_submissions@omb.eop.gov).

*Comments are invited on the following:* Whether the proposed

collections of information are necessary for the proper performance of the functions of the Department, including whether the information will have practical utility; the accuracy of the Department's estimates of the burden of the proposed information collections; ways to enhance the quality, utility, and clarity of the information to be collected; and ways to minimize the burden of the collections of information on respondents, including the use of automated collection techniques or other forms of information technology.

A comment to OMB is best assured of having its full effect if OMB receives it within 30 days of publication of this notice in the **Federal Register**.

**Authority:** 44 U.S.C. 3501-3520.

Issued in Washington, DC, on June 11, 2009.

**Donna M. Alwine,**

*Acting Director, Office of Financial Management, Federal Railroad Administration.*

[FR Doc. E9-14254 Filed 6-16-09; 8:45 am]

**BILLING CODE 4910-06-P**

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### FAA Notice of Intent to Prepare an Environmental Assessment; Ann Arbor Municipal Airport, Ann Arbor, MI

**AGENCY:** The Federal Aviation Administration, Department of Transportation.

**ACTION:** Notice of Intent to prepare an Environmental Assessment (EA) and conduct Citizen Advisory Meetings.

**SUMMARY:** The FAA has delegated selected responsibilities for compliance with the National Environmental Policy Act to the MDOT as part of the State Block Grant Program authorized under Title 49 U.S.C., Section 47128. This notice is to advise the public pursuant to the National Environmental Policy Act of 1969, as amended, (NEPA) 42 U.S.C. 4332(2)(c) that MDOT intends to prepare an EA for the proposed extension of runway 6/24 at the Ann Arbor Municipal Airport. While not required for an EA, the FAA and MDOT are issuing this Notice of Intent to facilitate public involvement. This EA will assess the potential environmental impacts resulting from the proposed extension of runway 6/24 from 3,500 feet to 4,300 feet. All reasonable alternatives will be considered including a no action alternative.

**FOR FURTHER INFORMATION CONTACT:** Ms. Molly Lamrouex, Environmental Specialist, Bureau of Aeronautics and

Freight Services, MDOT, 2700 Port Lansing Road, Lansing, Michigan (517) 335-9866.

**SUPPLEMENTARY INFORMATION:** The EA will include analysis which will be used to evaluate the potential environmental impacts in the study area. During scoping, and upon publication of a draft EA and a final EA, MDOT will be coordinating with federal, state and local agencies, as well as the public, to obtain comments and suggestions regarding the EA for the proposed project. The EA will assess potential impacts and reasonable alternatives including a no action alternative pursuant to NEPA; FAA Order 1050.1E, Policies and Procedures for Considering Environmental Impacts; FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions; and the President's Council on Environmental Quality (CEQ) Regulations implementing the provisions of NEPA, and other appropriate Agency guidance.

*Public Input Process:* During development of the draft EA, a series of meetings to provide for public input will be held to identify potentially significant issues or impacts related to the proposed action that should be analyzed in the EA. For more information regarding the meetings for public input contact Molly Lamrouex, MDOT Bureau of Aeronautics and Freight Services, (517) 335-9866.

Issued in Romulus, Michigan, June 4, 2009.

**Matthew J. Thys,**

*Manager, Detroit Airports District Office, Great Lakes Region.*

[FR Doc. E9-14167 Filed 6-16-09; 8:45 am]

**BILLING CODE 4910-13-P**

## DEPARTMENT OF TRANSPORTATION

### National Highway Traffic Safety Administration

#### Petition for Exemption From the Vehicle Theft Prevention Standard; Nissan

**AGENCY:** National Highway Traffic Safety Administration (NHTSA) Department of Transportation (DOT).

**ACTION:** Grant of petition for exemption.

**SUMMARY:** This document grants in full the Nissan North America, Inc.'s (Nissan) petition for an exemption of the Murano vehicle line in accordance with 49 CFR Part 543, *Exemption from the Theft Prevention Standard*. This petition is granted because the agency has determined that the antitheft device to be placed on the line as standard equipment is likely to be as effective in



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# **Exhibit 27**

**SUPPLEMENTAL REPORT  
AIRPORT USER SURVEY**

**ANN ARBOR MUNICIPAL AIRPORT (ARB)  
ANN ARBOR, MICHIGAN**

**December 2009**

This Supplemental Report is associated with the original Airport User Survey Report for Ann Arbor Municipal Airport (ARB), dated July 2009. The information contained in this supplement provides additional details and updates to the information contained in the original report.

Additional analysis of the aircraft operational data has resulted in the generation of supplemental information, three new exhibits, and updates to the numbers of annual operations performed by category B-II critical aircraft. The following paragraphs explain in detail the information provided in the new exhibits, as well as the supplemental information and updates to the operational numbers listed in the original user survey report.

**EXHIBIT No. 1: *Annual Operations Analysis by Specific Aircraft Model***

This exhibit shows annual operations at ARB by specific aircraft model, rather than only by their FAA aircraft classification as shown in the original user survey report. The various aircraft models are listed in three separate tables, based upon groupings of their FAA classifications (B-II, C-I, and C-II).

Supplemental data associated with annual operations by the Beechcraft King Air C90 has been included in the B-II category table of this exhibit. Operations by this particular model of aircraft were not included in the original July 2009 Airport User Survey Report.

**EXHIBIT No. 2: *Origin / Destination Analysis by State***

Exhibit No. 2 shows the results of an origin and destination analysis of aircraft operations conducted at ARB, based on examination of the FlightAware database from survey year 2007. Although 274 of the operations had aircraft model and ownership information blocked from the database at the aircraft owner's request, the origin and destination cities of each flight were still included.



The first column of the table shown in this exhibit lists 31 states (and Washington DC) from which operations into ARB originated, or operations out of ARB were going to as a destination. The second column lists operations attributed to each state by the 274 total operations with blocked aircraft and ownership records. The third and fourth columns list operations attributed to each state by B-II Small and B-II Large category aircraft. The last column lists the total number of operations attributed to each state.

The numbers of operations associated with each state are from the FlightAware Instrument Flight Rule (IFR) flight plan database only, and do not include records of all itinerant operations between ARB and other states. Nonetheless, the numbers shown in this exhibit confirm that in 2007, flight operations were conducted between ARB and at least 31 other states (approximately 63% of the continental US). Also, approximately 67% of the IFR flight records for the category B-II critical aircraft were between ARB and out-of-state locations. These factors confirm that there is a significant amount of flight operations being conducted at ARB that are either going to, or coming from, distant locations in other states.

### **EXHIBIT No. 3: *Small 10-Seat Aircraft Analysis***

The table in this exhibit lists *Small* aircraft models (less than or equal to 12,500 lbs. maximum certificated takeoff weight) that have 10 or more passenger seats, and that conducted operations at ARB in survey year 2007. The numbers of annual operations listed in the table are from the FlightAware IFR flight plan database only, and do not include records of all operations by aircraft of this type. The FlightAware records show that there were 425 annual operations by Small 10-seat or higher aircraft.

Exhibit No. 3 also shows that there were 211 annual operations by *Large* category (greater than 12,500 lbs. maximum certificated takeoff weight) B-II aircraft from the Based Aircraft data source and another 85 annual operations by Large category B-II aircraft from the FlightAware data source. The number of annual operations performed by the Small 10-seat or higher aircraft and the Large category aircraft combined is shown as 721.

The operational numbers listed in Exhibit No. 3 do not include blocked FlightAware operations, Visual Flight Rule (VFR) operations, or operations logged by pilots on the Fixed Base Operator (FBO) airport registers. Although the information shown is only a partial representation of all applicable aircraft, the 721 annual operations that were substantiated significantly confirm that Figure 2-2 in FAA Advisory Circular 150/5325-4B is the appropriate chart to reference in the determination of the FAA-recommended runway length of 4,200 feet at ARB.

### **UPDATED BASED AIRCRAFT ANALYSIS:**

The Based Aircraft Analysis of the original user survey report listed 200 estimated annual operations by AvFuel's B-II Large category aircraft (see page 3 of the original report). AvFuel's Chief Pilot has since confirmed in writing that the actual number of operations by their Cessna Citation XL 560 aircraft at ARB over the past three calendar years has been 224 operations in 2006, 211 operations in 2007, and 223 operations in 2008.

In order to maintain consistency with the other survey year 2007 operational records analyzed, Exhibit No. 1 of this Supplemental Report shows the 211 actual annual operations by this aircraft in the "Based Aircraft Data Source" column of the category B-II table, instead of the original estimate of 200.

### **UPDATED ITINERANT AIRCRAFT ANALYSIS: (FBO Data Sources)**

Itinerant (visiting) aircraft operational data that was evaluated as part of the original user survey analysis was obtained from the pilot registration logs (airport registers) of two of the airport's FBOs - Solo Aviation and Ann Arbor Aviation Center. Data was examined for a six-month survey time frame, and cross-checked against FlightAware records in order to prevent counting the same aircraft twice. Any operations that were already included in the FlightAware records were not included in the operational totals that were generated from the FBO records.

The FBO records provided 40 additional operations by B-II and greater category aircraft (32 by category B-II aircraft, 6 by category C-I aircraft, and 2 by category C-II aircraft). Since this data was based on a six-month time frame instead of the full calendar year 2007, these 40 actual operations were prorated into an estimated equivalent annual rate of 80 operations. The additional 40 estimated operations were the only operations in the original user survey analysis that were obtained by prorating actual partial-year data into an estimated equivalent annual rate.

As part of the supplemental analysis, estimated operations that were originally generated as a result of prorating partial-year data were not considered in the determination of the annual operations at ARB. This eliminates the potential effect of seasonal variation in flight activity levels negatively influencing annual operational estimates. Only the 40 actual operations that were documented by the FBOs as having occurred within the six-month survey period were counted as valid operations, since they did in fact occur in 2007. No operations were attributed to the remaining six months.

Exhibit No. 1 of this supplemental report shows only the 40 actual documented operations (32 by category B-II aircraft, 6 by category C-I aircraft, and 2 by category C-II aircraft) in the column that is labeled "2 FBO Register Data Sources".

## UPDATED FLIGHTAWARE DATABASE ANALYSIS:

The FlightAware database analysis that was performed for the original July 2009 Airport User Survey Report resulted in the determination of 265 actual annual operations by B-II Small aircraft, and another 85 actual annual operations by B-II Large aircraft (see page 6 of the original report). However, the resulting numbers did not include operations by the Beechcraft King Air C90 model.

The King Air C90 is a B-II Small category aircraft, with a wingspan of 50'3". Earlier versions of the King Air 90 models (A90 and B90) have wingspans of less than 49', and are therefore category B-I Small aircraft. Since the FlightAware records that were originally analyzed for ARB did not include information which identified the specific model of each King Air 90 operation, no operations by King Air 90s were included in the original user survey analysis and report.

Although the FlightAware records do not provide information regarding the specific model of each King Air 90 operation listed, they do provide the aircraft registration N-number of each aircraft. By entering the N-number into the computerized FAA aircraft registration database, the specific model of each King Air 90 operation was able to be determined. A total of 157 operations by the B-II Small category King Air C90 model have been identified, out of 220 operations by King Air 90 models of all types.

Exhibit No. 1 of this supplemental report shows the 157 King Air C90 operations included in the "Flight Aware Data Source" column of the category B-II table. By adding these operations to the 265 operations by B-II Small aircraft and 85 operations by B-II Large aircraft that were previously identified in the original user survey report, the updated total number of actual annual operations by B-II category aircraft obtained from the FlightAware data source is 507.

The FlightAware database also confirmed usage of the airport by many large corporations, in addition to AvFuel, which is the only one actually based at ARB. Some of the other corporate users of ARB include Synergy International, Wells Fargo, Polaris Industries, Bombardier Aerospace, Avis Industrial Corporation, Thumb Energy, and NetJets. NetJets provides on-demand air charter services and corporate aircraft fractional ownership opportunities to a large number of other corporations that are located throughout the country.

## AIRCRAFT OPERATIONAL FORECASTS:

Year 2007 was the onset year of the current planning activities associated with the potential extension of Runway 6/24. At that time, the airport manager and FBOs were requested to collect based and itinerant aircraft operational data over the course of year 2007 for the purpose of determining project justification. This data was reviewed during the user survey analysis, which was conducted in early 2009.

FlightAware records for any given year are not published until that particular calendar year has ended, and all operations that took place during the course of that year counted. Since the user survey analysis was conducted in early 2009, the most current operational records available at the time from FlightAware were associated with calendar year 2008. Although year 2008 records were available, year 2007 records from FlightAware were used in the user survey analytical process. This was due to the importance of maintaining consistency of year of operational records in the analysis, and not combining operational data collected by the airport manager and FBOs over year 2007 with the more recent FlightAware records from year 2008. The FlightAware records, airport manager records, and FBO records from calendar year 2007 that were used in the user survey analysis were all only one-year old at the time, and still considered valid for use in determining project justification.

The FAA Terminal Area Forecast (TAF) does project a short-term approximate 22% decrease in total annual operations at ARB from user survey year 2007 through year 2009 (from 72,895 actual in 2007 to 56,956 estimated for 2009). However, beginning in year 2010, the TAF projects continuously increasing annual operations at ARB, from the year 2009 low-point through year 2030. Itinerant annual operations are even projected to surpass survey year 2007 levels prior to the end of the 2030 forecast period.

Even if the worst case short-term projected 22% decrease in total annual operations is applied to the user survey results, there is still significant justification for the runway extension. The user survey report documents a total of 750 actual annual operations by B-II category critical aircraft that justify the runway extension. A 22% decrease in this number is 585 - still well above the FAA's substantial use threshold of 500. And again, beginning in 2010, operations at ARB are projected by the FAA to begin increasing every single year from that point forward, through year 2030.

Forecasts from the MDOT Michigan Airport System Plan (MASP 2008) also project increasing itinerant and total operations at ARB from years 2010 through 2030. The MDOT forecasts further substantiate the mid-term and long-term FAA projections of a rebound in current operational activity at ARB to survey year 2007 levels.

AvFuel Corporation, which bases a B-II Large category Citation 560 Excel jet at ARB, has confirmed that their operations at ARB actually increased from 211 operations in 2007 to 223 operations in 2008. Their Chief Pilot estimates that their future operational levels could potentially increase to 350 to 450 operations per year at ARB.

The FAA TAF forecast, MDOT MASP forecast, and AvFuel's operational forecasts all provide support to the fact that survey year 2007 operational data is a very pertinent representation of estimated future operational levels at ARB.

### SUMMARY:

The supplemental analysis that was conducted after publication of the July 2009 Airport User Survey Report has resulted in additional justification in support of extension of Runway 6/24 to 4,300' in length.

Further analysis of the FlightAware IFR flight plan database has confirmed 507 actual operations at ARB in survey year 2007 by B-II category aircraft. This number does not include operations in the FlightAware records with aircraft information blocked at the owner's request, or VFR operations that were conducted without flight plans. Judging by the high number of out-of-state origin and destination locations of operations listed in the blocked category (see Exhibit No. 2), it is very likely that many of the associated aircraft were of the B-II or greater categories. Therefore, actual operations at ARB by aircraft of these categories are likely considerably higher than the 507 substantiated operations obtained from the FlightAware database.

The 507 actual operations by B-II category aircraft that were obtained from the FlightAware database also do not include operations conducted by AvFuel's based Cessna Citation XL 560, or operations obtained from the two FBO airport registers. AvFuel has confirmed 211 actual operations at ARB in 2007 with their B-II category aircraft, and data provided by the FBOs has confirmed 32 actual operations in 2007 by B-II category aircraft.

In summary, the supplemental analysis of this user survey has confirmed a total of 750 actual annual operations at ARB by category B-II aircraft. FlightAware records also confirmed that operations by aircraft in this critical aircraft category were performed by many large corporations, some of which are listed on page 4 of this report.

## CONCLUSION:

In the majority of airport user survey processes, determinations and recommendations are issued based on analysis of estimated annual operations obtained from various airport users. In conducting the user survey at ARB, the analysis focused on evaluation of actual annual operations performed at the airport. This is obviously a much more accurate method of calculating the total number of annual operations associated with the determination of the critical aircraft and Airport Reference Code. It also eliminates the possibility of an airport user inflating their estimated operational numbers, in the hopes of obtaining a longer runway that is not truly justified.

While the numbers listed in this report do not include every operation that occurred at ARB in survey year 2007 with B-II category aircraft, they do confirm substantial usage of the airport by aircraft of this critical aircraft category. The Origin/Destination Analysis has shown a significant number of operations between ARB and distant out-of-state locations, which is a very good indicator of corporate activity associated with interstate commerce, as opposed to pleasure flying by general aviation pilots. FlightAware records also confirmed usage of the airport by many large corporations.

The information contained in this Supplemental Report provides additional justification in support of the findings and recommendations of the original July 2009 Airport User Survey Report. The user survey analysis has shown that justification for the proposed extension of primary Runway 6/24 to 4,300-feet has been confirmed, and the proposed project has been determined to be eligible to receive state and federal funding.

Although justification for the proposed project has been substantiated according to current MDOT and FAA standards associated with runway length recommendations, neither agency requires that the runway be extended. It is ultimately – and entirely – the decision of the city of Ann Arbor whether or not to proceed with the development of the project.



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Mark W. Noel, P.E., Manager  
Project Development Section  
MDOT – Airports Division

ANN ARBOR MUNICIPAL AIRPORT USER SURVEY - SUPPLEMENTAL REPORT - DECEMBER 2009

EXHIBIT NO. 1

ANNUAL OPERATIONS ANALYSIS BY SPECIFIC AIRCRAFT MODEL

Aircraft Model	FAA Approach Category	FAA Design Group	FAA Weight Class	Seating	Maximum Takeoff Weight (lbs.)	Aircraft Engine Type	Flight-Aware Data Source	Based Aircraft Data Source	2 FBO Register Data Sources	Total Annual Operations by Model
Aero Commander 695	B	II	Small	<10	<12,500	Multi-Eng	4	0	0	4
Beechcraft King Air C90	B	II	Small	10+	<12,500	Multi-Eng	157	0	0	157
Beechcraft King Air 100	B	II	Small	10+	<12,500	Multi-Eng	39	0	2	41
Beechcraft King Air 200	B	II	Small	10+	<12,500	Multi-Eng	215	0	8	223
Cessna 441 Conquest II	B	II	Small	<10	<12,500	Multi-Eng	7	0	4	11
Beechcraft King Air 300	B	II	Large	10+	12,500+	Multi-Eng	11	0	8	19
Beechcraft King Air 350	B	II	Large	10+	12,500+	Multi-Eng	43	0	4	47
Cessna Citation II 550	B	II	Large	<10	12,500+	Jet	6	0	2	8
Cessna Citation XL 560	B	II	Large	<10	12,500+	Jet	25	211	2	238
Cessna Citation 680	B	II	Large	<10	12,500+	Jet	0	0	2	2

Total B-II Category Annual Operations 507 211 32 750

Learjet 25	C	I	Large	<10	12,500+	Jet	0	0	2	2
Learjet 31	C	I	Large	<10	12,500+	Jet	0	0	2	2
Learjet 45	C	I	Large	<10	12,500+	Jet	0	0	2	2

Total C-I Category Annual Operations 0 0 6 6

IAI Westwind 1125	C	II	Large	<10	12,500+	Jet	0	0	2	4
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Total C-II Category Annual Operations 0 0 2 4

**CRITICAL AIRCRAFT CATEGORY DETERMINATION: B-II** (Based on 750 Total Annual Operations by Aircraft of this Category)

NOTE: The annual operations listed in the above tables are ACTUAL documented operations from calendar year 2007. The numbers do NOT include any ESTIMATED operations obtained through proration of partial-year data, or other methods. Operations recorded by the FBOs and listed above represent only a partial-year (six-month) time frame.

A total of 274 operations in the FlightAware database had aircraft model and ownership information blocked at the owner's request. As a result, their operational numbers are NOT included in the information shown above. Judging by the high number of out-of-state origin and destination locations of aircraft in the blocked category (see Exhibit No. 2), it is very likely that many of the associated aircraft were of the B-II and greater categories. Therefore, actual operations at ARB by aircraft of these categories are likely considerably higher than the numbers shown above.

## EXHIBIT NO. 2

ORIGIN / DESTINATION ANALYSIS BY STATE

Origin / Destination Analysis of IFR Aircraft Operations Between ARB and Other States (Records from FlightAware 2007 Database)				
STATE	Aircraft Type & Category Blocked	B-II Small Category	B-II Large Category	Totals by State
1 Alabama	0	1	0	1
2 Arizona	1	0	0	1
3 Arkansas	2	1	0	3
4 Connecticut	5	2	0	7
5 Florida	29	3	3	35
6 Georgia	5	6	12	23
7 Illinois	25	64	5	94
8 Indiana	6	21	1	28
9 Iowa	1	20	3	24
10 Kansas	3	0	0	3
11 Kentucky	2	13	0	15
12 Maine	2	0	0	2
13 Maryland	1	3	7	11
14 Massachusetts	5	0	1	6
15 Michigan	79	162	20	261
16 Minnesota	2	3	2	7
17 Missouri	0	5	0	5
18 Nebraska	3	0	1	4
19 New Hampshire	1	2	0	3
20 New Jersey	9	2	4	15
21 New York	6	5	1	12
22 North Carolina	4	1	1	6
23 Ohio	16	38	13	67
24 Pennsylvania	14	23	4	41
25 South Carolina	0	4	0	4
26 South Dakota	4	18	0	22
27 Tennessee	2	5	0	7
28 Texas	30	0	0	30
29 Virginia	1	3	0	4
30 Washington DC	5	1	2	8
31 West Virginia	1	7	0	8
32 Wisconsin	10	9	4	23
No Record	0	0	1	1

<b>Totals by Category</b>	<b>274</b>	<b>422</b>	<b>85</b>	<b>781</b>
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IFR Aircraft Operation Totals by Category:

Within Michigan	79	162	20	261
Outside of Michigan	195	260	64	519
No Record	0	0	1	1

NOTE: The numbers of operations listed above are ACTUAL documented operations from calendar year 2007. The numbers do NOT include any ESTIMATED operations obtained through proration of partial-year data, or other methods.

The numbers shown above are from the FlightAware IFR Flight Plan Database only, and do NOT include records of all itinerant operations between ARB and other states. Nonetheless, the numbers shown above confirm that in 2007, flight operations were conducted between ARB and at least 31 other states and Washington DC (approx 63% of the continental US). Approximately 67% of these IFR flight records were between ARB and out-of-state locations.



EXHIBIT NO. 3

SMALL 10-SEAT AIRCRAFT ANALYSIS

Small Airplanes Having 10 or More Passenger Seats (Records from FlightAware 2007 Database)							
Aircraft Model	FAA Approach Category	FAA Design Group	FAA Weight Class	Seating	Maximum Takeoff Weight	Aircraft Engine Type	Annual Operations
Cessna Caravan 208	A	II	Small	10+	<12,500	Single-Eng	11
Swearingen Merlin III	B	I	Small	10+	<12,500	Multi-Eng	3
Beechcraft King Air C90	B	II	Small	10+	<12,500	Multi-Eng	157
Beechcraft King Air 100	B	II	Small	10+	<12,500	Multi-Eng	39
Beechcraft King Air 200	B	II	Small	10+	<12,500	Multi-Eng	215

Total Small 10-Seat Aircraft Annual Operations

425

Total B-II Large Category Aircraft Annual Operations

Based Aircraft Data Source (B-II Large):  
FlightAware Data Source (B-II Large):

211  
85

Grand Total Annual Operations at ARB Applicable  
to Figure 2-2 in FAA Advisory Circular 150/5325-4B:

721

**NOTE:** The annual operations listed above are ACTUAL documented operations from calendar year 2007. The numbers do NOT include any ESTIMATED operations obtained through proration of partial-year data, or other methods.

The numbers shown in the table above are from the FlightAware IFR Flight Plan Database only, and do NOT include records of all small aircraft operations at ARB with 10-seat or greater aircraft models. Nonetheless, the above analysis confirms that Figure 2-2 in FAA AC 150/5325-4B is the appropriate chart to reference in the determination of the FAA-recommended runway length for Ann Arbor Municipal Airport.

# Exhibit 28



## Green Book

You are here: [EPA Home](#) [Green Book](#) Nonattainment Status for Each County by Year for Michigan
[http://www.epa.gov/airquality/greenbk/anay\\_mi.html](http://www.epa.gov/airquality/greenbk/anay_mi.html)  
 Last updated on 12/14/2012

## Nonattainment Status for Each County by Year for Michigan

As of December 14, 2012

Listed by County, Pollutant, then Area

 Select a State: [AK](#) | [AL](#) | [AR](#) | [AZ](#) | [CA](#) | [CO](#) | [CT](#) | [DC](#) | [DE](#) | [FL](#) | [GA](#) | [GU](#) | [IA](#) | [ID](#) | [IL](#) | [IN](#) | [KS](#) | [KY](#) | [LA](#) | [MA](#) | [MD](#) | [ME](#) | [MI](#) | [MN](#) | [MO](#) | [MS](#) | [MT](#) | [NC](#) | [NE](#) | [NH](#) | [NJ](#) | [NM](#) | [NV](#) | [NY](#) | [OH](#) | [OR](#) | [PA](#) | [PR](#) | [RI](#) | [SC](#) | [TN](#) | [TX](#) | [UT](#) | [VA](#) | [WA](#) | [WI](#) | [WV](#) | [WY](#) |

## Important Notes

County	Pollutant	AreaName	Nonattainment in Year	Redesignation to Maintenance	Classification	Cty NA Whole/Part	Population (2010)	FIPS State/Cnty
<b>MICHIGAN</b>								
Allegan Co	8-Hr Ozone 1997	Allegan Co, MI	040506070809	09/24/2010	Former Subpart 1	Whole	111,408	26/005
Benzie Co	8-Hr Ozone 1997	Benzie Co, MI	040506	05/16/2007	Former Subpart 1	Whole	17,525	26/019
Berrien Co	8-Hr Ozone 1997	Benton Harbor, MI	040506	05/16/2007	Former Subpart 1	Whole	156,813	26/021
Calhoun Co	8-Hr Ozone 1997	Kalamazoo-Battle Creek, MI	040506	05/16/2007	Former Subpart 1	Whole	136,146	26/025
Cass Co	8-Hr Ozone 1997	Cass Co, MI	040506	05/16/2007	Marginal	Whole	52,293	26/027
Clinton Co	8-Hr Ozone 1997	Lansing-East Lansing, MI	040506	05/16/2007	Former Subpart 1	Whole	75,382	26/037
Eaton Co	8-Hr Ozone 1997	Lansing-East Lansing, MI	040506	05/16/2007	Former Subpart 1	Whole	107,759	26/045
Genesee Co	8-Hr Ozone 1997	Flint, MI	040506	05/16/2007	Former Subpart 1	Whole	425,790	26/049
Huron Co	8-Hr Ozone 1997	Huron Co, MI	040506	05/16/2007	Former Subpart 1	Whole	33,118	26/063
Ingham Co	8-Hr Ozone 1997	Lansing-East Lansing, MI	040506	05/16/2007	Former Subpart 1	Whole	280,895	26/065
Ionia Co	Lead 2008	Belding, MI	1112 / /			Part	1,890	26/067
Kalamazoo Co	8-Hr Ozone 1997	Kalamazoo-Battle Creek, MI	040506	05/16/2007	Former Subpart 1	Whole	250,331	26/077
Kent Co	8-Hr Ozone 1997	Grand Rapids, MI	040506	05/16/2007	Former Subpart 1	Whole	602,622	26/081
Lapeer Co	8-Hr Ozone 1997	Flint, MI	040506	05/16/2007	Former Subpart 1	Whole	88,319	26/087
Lenawee Co	8-Hr Ozone 1997	Detroit-Ann Arbor, MI	0405060708	06/29/2009	Marginal	Whole	99,892	26/091
Livingston Co	8-Hr Ozone 1997	Detroit-Ann Arbor, MI	0405060708	06/29/2009	Marginal	Whole	180,967	26/093
Livingston Co	PM-2.5 1997	Detroit-Ann Arbor, MI	0506070809101112 / /			Whole	180,967	26/093
Livingston Co	PM-2.5 2006	Detroit-Ann Arbor, MI	09101112 / /			Whole	180,967	26/093
Macomb Co	8-Hr Ozone 1997	Detroit-Ann Arbor, MI	0405060708	06/29/2009	Marginal	Whole	840,978	26/099
Macomb Co	CO	Detroit, MI	92939495969798	08/30/1999	Not Classified	Part	295,428	26/099
Macomb Co	PM-2.5 1997	Detroit-Ann Arbor, MI	0506070809101112 / /			Whole	840,978	26/099
Macomb Co	PM-2.5 2006	Detroit-Ann Arbor, MI	09101112 / /			Whole	840,978	26/099
Mason Co	8-Hr Ozone 1997	Mason Co, MI	040506	05/16/2007	Former Subpart 1	Whole	28,705	26/105
Monroe Co	8-Hr Ozone 1997	Detroit-Ann Arbor, MI	0405060708	06/29/2009	Marginal	Whole	152,021	26/115
Monroe Co	PM-2.5 1997	Detroit-Ann Arbor, MI	0506070809101112 / /			Whole	152,021	26/115

Monroe Co	PM-2.5 2006	Detroit- Ann Arbor, MI		09101112 / /		Whole	152,021	26/115	
Muskegon Co	8-Hr Ozone 1997	Muskegon, MI		040506	05/16/2007	Marginal	Whole	172,188	26/121
Oakland Co	8-Hr Ozone 1997	Detroit- Ann Arbor, MI		0405060708	06/29/2009	Marginal	Whole	1,202,362	26/125
Oakland Co	CO	Detroit, MI	92939495969798		08/30/1999	Not Classified	Part	435,027	26/125
Oakland Co	PM-2.5 1997	Detroit- Ann Arbor, MI		0506070809101112 / /			Whole	1,202,362	26/125
Oakland Co	PM-2.5 2006	Detroit- Ann Arbor, MI		09101112 / /			Whole	1,202,362	26/125
Ottawa Co	8-Hr Ozone 1997	Grand Rapids, MI		040506	05/16/2007	Former Subpart 1	Whole	263,801	26/139
St Clair Co	8-Hr Ozone 1997	Detroit- Ann Arbor, MI		0405060708	06/29/2009	Marginal	Whole	163,040	26/147
St Clair Co	PM-2.5 1997	Detroit- Ann Arbor, MI		0506070809101112 / /			Whole	163,040	26/147
St Clair Co	PM-2.5 2006	Detroit- Ann Arbor, MI		09101112 / /			Whole	163,040	26/147
Van Buren Co	8-Hr Ozone 1997	Kalamazoo- Battle Creek, MI		040506	05/16/2007	Former Subpart 1	Whole	76,258	26/159
Washtenaw Co	8-Hr Ozone 1997	Detroit- Ann Arbor, MI		0405060708	06/29/2009	Marginal	Whole	344,791	26/161
Washtenaw Co	PM-2.5 1997	Detroit- Ann Arbor, MI		0506070809101112 / /			Whole	344,791	26/161
Washtenaw Co	PM-2.5 2006	Detroit- Ann Arbor, MI		09101112 / /			Whole	344,791	26/161
Wayne Co	8-Hr Ozone 1997	Detroit- Ann Arbor, MI		0405060708	06/29/2009	Marginal	Whole	1,820,584	26/163
Wayne Co	CO	Detroit, MI	92939495969798		08/30/1999	Not Classified	Part	651,784	26/163
Wayne Co	PM-10	Wayne Co, MI	92939495		10/04/1996	Moderate	Part	713,777	26/163
Wayne Co	PM-2.5 1997	Detroit- Ann Arbor, MI		0506070809101112 / /			Whole	1,820,584	26/163
Wayne Co	PM-2.5 2006	Detroit- Ann Arbor, MI		09101112 / /			Whole	1,820,584	26/163

Important Notes[Go Top](#)

# Exhibit 29

# 2008 DRINKING WATER QUALITY REPORT



## *Ann Arbor Public Services 2008 Annual Report on Drinking Water*



*Construction of Barton Dam - 1927*

***The staff of Ann Arbor Public Services is strongly committed to bringing you the best drinking water possible. We take pride in not only meeting all federal and state drinking water regulations, but in reaching higher goals. We participate in voluntary programs which improve our organization and establish more stringent water quality goals. Our monitoring programs far exceed those required to assure the quality of your drinking water. The USEPA requires water utilities provide the following information to their customers as part of their Annual Water Quality Report. This information is generic and may or may not apply to Ann Arbor drinking water. If you have any questions on this language, you may contact the USEPA Safe Drinking Water Hotline at (800) 426-4791.***

## **Water Supply and Treatment**

The Ann Arbor water supply is comprised of both surface and ground water sources. About 85% of the water supply comes from the Huron River. The remaining 15% comes from multiple wells located south of Ann Arbor. The water from both the sources is blended at the water treatment plant. Since we use a surface water supply, (Huron River water), the United States Environmental Protection Agency (USEPA) and the Michigan Department of Environmental Quality (MDEQ) regulations require it to be treated, filtered and disinfected to ensure that any harmful substances are removed. When treatment is complete, the water is pumped to homes, schools and businesses in Ann Arbor as well as to Ann Arbor and Scio townships for resale to their customers.

***The following is the official USEPA language on Cryptosporidium:*** *Cryptosporidium is a protozoan parasite that is too small to be seen without a microscope. It is sometimes found in some surface waters, especially when the waters contain a high amount of fecal waste from run-off or other activities. Those who are infected with this parasite can experience gastrointestinal illness.*

*USEPA and the Centers for Disease Control have published guidelines on ways to reduce the risk of Cryptosporidium infection. The guidelines are available from the Safe Drinking Water Hotline at (800) 426-4791.*

Samples have been collected from the source and no detectable levels of Cryptosporidium were found.

***The following is the official USEPA language on contaminants that may be in untreated water:*** *The sources of drinking water - both tap water and bottled water include: rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land and through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity.*

*Contaminants that might be expected to be in source water - untreated water - include: microbial contaminants, such as viruses and bacteria; inorganic contaminants, such as salts and metals; pesticides and herbicides; organic chemical contaminants; including synthetic and volatile organic chemicals; and radioactive contaminants, which can be naturally occurring.*

*In order to ensure tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.*

*Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at (800) 426-4791.*

***The following is the official USEPA language on low resistance to infection:*** *Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice from their health care providers. Environmental Protection Agency / Centers for Disease Control guidelines on appropriate means to lessen the risk of infection from Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.*

# Spotlight on Water Emergencies

## Q: How will I know if my water isn't safe to drink?

A: If there is a chance your water may not be safe to drink, you will be notified by newspaper, mail, radio, TV, or hand-delivery. The notice will describe any precautions you need to take, such as boiling your water. There are 4 possible types of emergency notifications: Boil Water Advisory, Boil Water Notice, Do Not Drink Notice and Do Not Use Notice.



To receive free emergency notifications from the City of Ann Arbor, sign up for the free CodeRed phone alert service, as posted on the city's front Web page at [www.a2gov.org](http://www.a2gov.org). You can also sign up for emergency e-mail updates through the "red envelope" option on the city's front Web page.

## Q: What is a Boil Water Advisory? Is it the same as a Boil Water Notice?

A: A Boil Water Advisory is a public statement advising customers to boil tap water before consuming it. Advisories are issued when an event occurs that may cause the water distribution system to become contaminated, such as a loss of pressure from a water main break or back siphonage event. An advisory does not mean that the water is contaminated, but that there is a chance contamination has occurred. Customers should take appropriate precautions until water quality can be determined. An advisory is different from a Boil Water Notice, which is issued when contamination is confirmed in the water system.

## Q: What should I do during a Boil Water Advisory or Notice?

A: You should boil tap water vigorously for at least one minute (the minute starts when the water begins to bubble). Wait for the water to cool before using it. This includes water used for brushing teeth, making ice, washing raw foods, preparation of drinks, and water for pets. If preferred, customers can use bottled water. You may store boiled water in the refrigerator in a clean container. Boiling removes harmful bacteria in the water that may cause illness. You should throw away ice made during the time the advisory or notice was issued, as freezing does not kill bacteria.

You should flush the piping inside your home once the advisory or notice has been lifted. Follow these guidelines for flushing:

- " Run all cold water faucets in your home for one minute
- " To flush automatic ice makers, make and discard several batches of ice
- " Run drinking water fountains for one minute

## Q: Do I still need to boil my water if I have a filter system on my faucet or refrigerator?

A: Most point-of-use filters are designed to improve the taste and odor of water and will not remove harmful bacteria. Thus, it is recommend that you boil your water or use bottled water even if you have a filtering system. You can learn about the capability of your filter by contacting the manufacturer or NSF International, an independent testing group located in Ann Arbor (734-769-8010).

## Q: Is the water safe for washing dishes, laundry , and bathing during a Boil Water Advisory or Notice?

A: The water is safe for washing dishes, but you should use hot, soapy water (you may add one tablespoon of bleach per gallon as a precaution) and rinse dishes in boiled water. There are no restrictions on doing laundry or bathing.



## Q: How long must a Boil Water Advisory or Notice be in effect?

A: An advisory or notice will remain in effect until test samples show the water is safe to drink. Testing for bacteria requires 24 hours to complete. As a result, advisories and notices will be in effect for at least 24 hours.

## Q: What are total coliform bacteria?

A: Total coliform bacteria are a collection of microorganisms that are naturally present in the environment. Coliform bacteria are found in soil, water and the intestines of warm blooded animals. Coliform bacteria are not harmful themselves, but are used as an indicator that other, potential disease causing organisms may be present. The water treatment process effectively kills coliform bacteria. However, events such as a water main break or a loss of pressure in the water distribution system may allow these bacteria to enter water lines through cracks in pipes or back-siphoning from a residential plumbing system. Boiling water vigorously for one minute will kill these bacteria and make water safe to drink.

## Q: What is a Do Not Drink Notice?

A: A Do Not Drink Notice will be issued when the water contains a chemical contaminant that cannot be removed by boiling. In this case, bottled water should be used for drinking or cooking.



## Q: What is a Do Not Use Notice?

A: A Do Not Use Notice will be issued if there is a contaminant in the water that may be inhaled or otherwise harmful on contact. In this case, bottled water should be used for all water consumption, including bathing, cooking and laundry.



## ***Pharmaceuticals in Drinking Water?***

**Q: Has the city of Ann Arbor ever tested our water for pharmaceuticals and personal care products (PPCP)?**

**A:** Yes. Through grants from the Michigan Department of Environmental Quality (MDEQ) in 2004 and 2005, the City completed studies to determine if these contaminants were present in our water. We tested both our source water and finished drinking water for the presence of 33 pharmaceutical and personal care products (PPCP). Of the 33 contaminants, 12 were detected in finished water. All results were in the parts per trillion range.

In 2008, the City of Ann Arbor tested the finished drinking for 8 endocrine disrupting compounds, including Bisphenol A (BPA). None of these compounds were found to be present in the drinking water.

To read the City's PPCP study reports or to see the 2008 endocrine disrupting chemical test results, please visit our webpage:

[http://www.a2gov.org/government/publicservices/water\\_treatment/Pages/default.aspx](http://www.a2gov.org/government/publicservices/water_treatment/Pages/default.aspx)

To help prevent PPCPs from entering the drinking water supply, never flush any drugs down the toilet. Take unused over the counter and prescription medications back to participating pharmacies for disposal, or wrap medication in in plastic bags, seal with duct tape and then dispose in the trash. For information about proper disposal, visit [www.dontflushdrugs.com](http://www.dontflushdrugs.com)



## ***Source Water Assessment and Protection Plan***

The City of Ann Arbor has completed a Source Water Assessment and Protection Plan. This plan determines the protection areas for all of our sources of supply, assesses the potential for contamination and develops plans for improving protection of those areas. The assessments for both the river and groundwater supplies included determining the susceptibility, or relative potential of contamination impacting each source of supply. A six-tiered scale was used to rate the potential for contamination. The scale ranges from “very low” to “high”. The susceptibility rating is based on the geologic sensitivity and the number and types of potential contaminant sources located within our source water protection areas. The susceptibility of the Huron River supply was rated “high” and the wells were rated “moderate”.

## ***New Process at the Ann Arbor Water Treatment Plant***

On June 8, 2001, the United States Environmental Protection Agency (USEPA) published the Filter Backwash Recycle Rule (FBRR). This rule regulates the point at which water can be reused and added to the treatment process at water treatment plants. The intent of this rule is to reduce the potential of passing *Cryptosporidium* oocysts and other biological pathogens such as bacteria and viruses into the finished drinking water.

The City of Ann Arbor uses filters in its treatment process to remove micron size contaminants from its raw water sources. These filters must be cleaned every few days by backwashing-or running water through the filters in reverse at a high rate to remove embedded particles and biological pathogens. This backwash water contains concentrated contaminants that, prior to this rule and the subsequent improvements made at the Ann Arbor Water Treatment Plant, were recycled to the front end of the plant and mixed with the water coming from the city's wells and the Huron River. This water is then treated with the raw water prior to distribution with the treated drinking water. Because the backwashing process is at such a high rate, this causes surges in the flow through the plant when filters are washed. These surges can create a situation of inconsistencies in the treatment process and potentially lead to contaminants making it through the treatment process into the finished drinking water.



The FBRR rule required Ann Arbor to add a new process to the Water Treatment Plant to address this surging of flow caused by backwashing filters. The city was required to add a 750,000 gallon concrete tank and associated pump station to hold the backwash water before it is pumped back into the plant for treatment at a low controlled rate. This new process was completed and put on line in the end of 2008. This process has resulted in more reliable treatment of the city's drinking water and better water quality.

# Water Quality Test Results

The following regulated substances were detected in some samples.

Please note that some substances, such as monochloramine and fluoride, are added to the water to improve health. All the detected substances are well within stringent Federal and State limits.

Definitions: The following tables contain scientific terms and measures, some of which may require explanation.

- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the Maximum Contaminant Level Goal as feasible using the best available treatment technology.
- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
- **mg/l:** milligrams per liter or parts per million - or one ounce in 7,350 gallons of water
- **µg/l:** micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water
- **na:** not applicable
- **Avg:** Regulatory compliance with some MCLs are based on running annual average of monthly or quarterly samples.
- **ND:** Non detectable

Regulated at the Water Treatment Plant					
Regulated Substance	Highest Level Detected	Range of Individual Samples	MCL	MCLG	Source of Contamination
Fluoride	1.26 mg/l	ND – 1.26 mg/l	4 mg/l	4 mg/l	Added to water to promote strong teeth. Erosion of natural deposits. Discharge from fertilizer factories.
Nitrate	0.5 mg/l	0.34 – 0.5 mg/l	10 mg/l	10 mg/l	Run-off from fertilizer use. Leaching from septic tanks and sewage. Erosion of natural deposits.
Bromate	2 µg/l avg	ND – 6 µg/l	10 µg/l	0 µg/l	By-product of ozone disinfection of drinking water.
Total Organic Carbon	30.1% Removal <sup>1</sup>	30.1–72.6% Removal	<25% Removal	na	Naturally occurring
Barium	19 µg/l	na	2000 µg/l	2000 µg/l	Erosion of natural deposits
Chromium	2.1 µg/l	na	100 µg/l	100 µg/l	Erosion of natural deposits

<sup>1</sup>Poorest removal corresponds to highest concentration

## Monochloramine - Regulated at the Distribution System

Definitions:

- **Maximum Residual Disinfectant Level (MRDL):** The highest level of disinfectant allowed in drinking water.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of disinfectant in drinking water below which there is no known or expected risk to health. MRDLG's allow for a margin of safety.

Regulated Substance	Highest Level Detected	Range of Individual Samples	MRDL	MRDLG	Source of Contamination
Monochloramine	2.7 mg/l avg	2.4 – 2.9 mg/l	4 mg/l	4 mg/l	Disinfectant added at Water Plant

## Turbidity - Regulated at the Water Treatment Plant

Definitions:

- **Turbidity:** A measure of cloudiness of water. The Ann Arbor Water Treatment staff monitors it because it is a good indicator of the effectiveness of the filtration system. Turbidity must be less than 0.3 NTU in at least 95% of the measurements taken throughout each month. It must never exceed 1.0 NTU.
- **Nephelometric Turbidity Unit (NTU):** A measure of light scattered from particles in the water.
- **Treatment Technique (TT):** A process intended to reduce the level of a contaminant in drinking water.

Regulated Element	95th Percentile TT achieved (max)	95th Percentile TT required	95th Percentile TT voluntary goal	Lowest % of samples within requirements	Single highest measurement	Source of Contamination
Turbidity	0.17 NTU	0.3 NTU	0.1 NTU	0	0.35 NTU	Soil Runoff

# Water Quality Test Results

The following regulated substances were detected in some samples.

**Copper and Lead - Regulated at the Customer's Tap** - All samples collected and analyzed were well within the strict Federal and State limits. The data is from the 2008 testing conducted in accordance with regulations. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Ann Arbor is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at: <http://www.epa.gov/safewater/lead>. The City of Ann Arbor sampled 54 homes and 2 of these homes exceeded the action level for lead.

**Definitions:**

- **Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Action Level Goal (ALG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

Regulated Substance	Detection Level at the 96th Percentile	AL	ALG	Source of Contamination
Lead - 2008 Customers plumbing	8 µg/l	15 µg/l	0 µg/l	Corrosion of household plumbing systems Erosion of natural deposits

<b>Regulated in the Distribution System</b>					
Regulated Substance	Highest Level Detected	Range of Individual Samples	MCL	MCLG	Source of Contamination
Total Coliform	Detected in 1.43% of all samples taken in August	ND – 1.43%	Detected in not more than 5% of samples taken monthly	0	Naturally occurring in the environment
Total Trihalomethanes	<sup>1</sup> 17.8 µg/l avg	0.76– 6.8 µg/l	80 µg/l	0 µg/l	By-product of drinking water disinfection
Total Haloacetic Acids	<sup>1</sup> 11 µg/l avg	1.1 – 9 µg/l	60 µg/l	0 µg/l	By-product of drinking water disinfection

<sup>1</sup> Highest running annual average of last four quarters include sample results from 2007

**These tests also showed the following characteristics in our water. Federal and State standards have yet to be established and all results are within limits accepted by most public health officials.**

Non-regulated Substance	Average	Range of Individual Samples	Source of Contamination
Hardness	142 mg/l	99 – 200 mg/l	Naturally occurring minerals; controlled by water treatment process
pH	9.3	9.1 – 9.5	Controlled by water treatment process
Aldehydes	8 µg/l	ND – 33 µg/l	By-product of drinking water ozonation
1,4-Dioxane	ND	ND	Groundwater contamination from manufacturing process and landfills
Perchlorate	0.08 µg/l	na	Groundwater contamination from manufacturing process
Sodium	55 mg/l	42–72 mg/l	Naturally occurring minerals; run-off of road salt into surface water; caustic soda used in water treatment process; bleach used in water treatment process

## Notice of Violations

We are required to monitor your drinking water for specific contaminants on a regular basis as required by USEPA and MDEQ. In addition to all required testing, we voluntarily monitor more frequently and for many additional potential contaminants. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During 2008 we did not monitor or test for Endothall during the required sampling period. Additionally, we did not monitor our wells in the first quarter for Volatile Organic chemicals (VOCs) and we also failed to monitor one of the four wells in the third quarter for VOCs. These violations **do not** pose a threat to the quality of the city's water. The table below lists the contaminants we did not properly test for during 2008:

Contaminant	Required sampling frequency	Number of taken samples	When all samples should have been taken	Date sample was taken
Endothall	1 / year	0	4/1/2008 - 9/30/2008	11/17/2008
VOCs	4 / quarter	0	1/1/2008 - 3/31/08	4/18/2008
VOCs	4 / quarter	3	7/31/2008 - 9/30/08	10/16/2008

On January 8, 2008, one of the 26 water filters unexpectedly discharged water with high turbidity into one of the water treatment plant's two filtered water chambers. Turbidity standards were exceeded at the water treatment plant for 42 minutes. Bacteriological testing of water samples indicated that the safety of the city's drinking water was not jeopardized during the event. A notice of the incidence was mailed to customers on January 28, 2008.

## Additional Information & Contacts

The City of Ann Arbor Water Treatment Plant conducts extensive routine monitoring of water quality. Our testing program far exceeds current regulatory requirements and we are vigilant against potential threats to our water system.

The Public Services Area Administrator attends the Ann Arbor City Council meetings to provide information on the water system. All Council general sessions, the first and third Monday of each month, are open to the public. Unless announced otherwise, the meetings are at 7:00 PM in Council Chambers at City Hall, 100 North Fifth Avenue. Council meetings are also broadcast on cable channel 16, CTN. In addition, targeted public meetings are periodically held to discuss improvements and to listen to our citizens' and customers' concerns.

### **Customer Service and Billing Information:**

Customer Service Center  
100 North Fifth Avenue  
Ann Arbor, Michigan 48107  
(734) 794-6320

### **Water Quality and Treatment:**

Water Treatment Services  
919 Sunset Road  
Ann Arbor, Michigan 48103  
(734) 794-6426

*email: [water@a2gov.org](mailto:water@a2gov.org)*

*<http://www.a2gov.org/government/publicservices>*

**AFTER HOURS EMERGENCY: (734) 994-2840**

The Water Treatment Services Unit is staffed 24 hours per day. In the event of emergencies such as water main breaks, emergency water turn-offs and sanitary or storm sewer back-ups, please call the City of Ann Arbor Water Treatment Services Unit.





***City of Ann Arbor  
Water Treatment Services***

***919 Sunset Rd.  
Ann Arbor, MI 48103  
(734) 794-6426***

Presorted  
Standard Mail  
U.S. Postage Paid  
Ann Arbor, MI  
Permit No. 178



*Plant overview photo provided at no charge courtesy of Dale Fischer © 2004*



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***<http://www.a2gov.org/government/publicservices>***

# **Exhibit 30**

## Commission OKs FY 2013 Parks Budget

Also: Windemere tennis court problems; drain project at Veterans

BY MARY MORGAN

APRIL 27, 2012 at 8 am

**Ann Arbor park advisory commission meeting (April 17, 2012):** The action items at this month's PAC meeting focused on the upcoming fiscal year, with parks-related budget recommendations for July 1, 2012 through June 30, 2013. Sam Offen, who chairs PAC's budget and finance committee, observed that the FY 2013 budget is in better shape than in recent years.



At left is city councilmember Christopher Taylor (Ward 3), who also serves as an ex officio member of the Ann Arbor park advisory commission. To the right is Sam Offen, chair of PAC's budget and finance committee. (Photos by the writer.)

This is the second year of a two-year budget cycle, and commissioners had recommended approval of budgets for both years at their April 2011 meeting. The recent recommendations for FY 2013 include: (1) increasing the frequency of the mowing cycle from every 19 days to every 14 days; (2) increasing seasonal staffing between April 15–October 15 to maintain active recreation areas better; (3) establishing three seasonal park steward/supervisor positions to improve park maintenance and enforcement; and (4) increasing seasonal staffing at the ice arenas to improve facility cleanliness.

Fee increases at several parks and rec facilities are also part of the budget recommendations, but most have already

been implemented in the current fiscal year.

The April 17 meeting included a public hearing on the renewal of the city's park maintenance and capital improvements millage, which will likely be on the November 2012 ballot. No one spoke at the hearing. In general, "there seems to be a great deal of relative silence" about the millage, parks and rec manager Colin Smith told commissioners. Few people have attended the recent public forums held by parks staff. The final forum is set for Thursday, April 26 from 6:30-7:30 p.m. at the Ann Arbor District Library's Traverwood branch, 3333 Traverwood Drive.

Parks staff gave an update on deteriorating conditions at Windemere Park's two tennis courts, and provided an initial estimate on costs to replace one or both courts at that location. No formal recommendation has been made, but options include moving the courts to another park. Commissioners discussed the need to assess the distribution and conditions of all of the city's public courts – including ones in the public school system – as well as their overall usage, to get a better idea of where the greatest needs are.

Another update came from an engineer at the Washtenaw County water resources commissioner's office, who described a drain replacement project that will affect Veterans Memorial Park later this year. Also related to Veterans Memorial, the request for proposals (RFP) for a skatepark there has been issued. [[.pdf of skatepark RFP](#)] The goal is to solicit proposals for a consultant to handle design and oversee construction of the skatepark, which will be located on city-owned property.

During public commentary, commissioners were given an update on the nonprofit Project Grow, which has several gardens located in city parks and is celebrating its 40th anniversary this year. Another speaker urged commissioners to take control of the parking lots in city parks, and possibly increase revenues by installing metered parking.

## **Parks & Rec Budget Recommendation**

Park commissioners considered two resolutions related to the city's fiscal year 2013 budget, for the year beginning July 1, 2012 through June 30, 2013. It's the second year of a two-year budget planning cycle. PAC had previously recommended approval of budgets for both years at its [April 2011 meeting](#). The parks budget is part of the city's overall budget, which city administrator Steve Powers [proposed at the April 16 meeting of the Ann Arbor city council](#).

Most of these changes have already been implemented, as part of the current year's budget. Colin Smith, the city's parks and rec manager, reminded commissioners that there will be no increase in budgeted expenses. These changes will be made within the budget plan that was discussed last year for FY 2013, when the FY 2012 budget was formally adopted. [[.pdf of budget resolution adopted by council for FY 2012, including parks-related items](#)]

The portion of the city budget relating to parks is separated into two parts: (1) park operations; and (2) parks and recreation.

Sam Offen, who chairs PAC's budget and finance committee, noted that the budget is in better shape than in recent years. He joked that it makes his job much easier.

### **Parks & Rec Budget Recommendation: Parks Operations Budget**

PAC was asked to approve recommendations for the FY 2013 parks operations budget, which includes the following proposed changes: (1) increasing the frequency of the mowing cycle from every 19 days to every 14 days; (2) increasing seasonal staffing between April 15–October 15 to maintain active recreation areas better; (3) establishing three seasonal park steward/supervisor positions to improve park maintenance and enforcement; and (4) increasing seasonal staffing at the ice arenas to improve facility cleanliness. [[.pdf of parks operations budget recommendation](#)]

There was considerable discussion about whether to change the wording on the recommendation for the mowing cycle. Tim Doyle initially felt it sounded too much like a dictate rather than an objective, and preferred deferring to staff's judgement on the exact number of days in the cycle. After some wordsmithing on a possible amendment, Christopher Taylor – PAC's ex officio member who also serves on city council – was asked whether his council colleagues would understand the intent. "Contextually, it's plain enough," he said.

Ultimately, PAC reached a consensus not to change wording on the recommendation.

*Outcome: Commissioners voted unanimously to recommend approval of the FY 2013 parks operations budget.*

### **Parks & Rec Budget Recommendation: Parks & Rec Budget**

In a separate resolution, PAC was asked to recommend approval of the FY 2013 parks and recreation budget. The resolution commended parks staff for its work, and made several general recommendations: (1) reduce energy expenses to reflect the benefit of infrastructure energy improvements at recreational facilities, including Cobblestone Farm and Mack Pool; (2) reduce materials and supplies used to maintain various facilities as a result of recent improvements; (3) reduce water usage expense to reflect actual usage better; (4) eliminate unnecessary software installations where appropriate; (5) increase revenue by initiating additional programming at the Argo Cascades; and (6) increase revenue by increasing fees for admission to swimming pools. [[.pdf of parks & rec budget recommendation](#)] [[.pdf of fee increases](#)]

Most of these items have been started in the current fiscal year, Offen noted, and will continue into FY 2013.

*Outcome: Commissioners unanimously recommended approval of the FY 2013 parks and recreation budget.*

## **Parks Millage Renewal: Public Hearing**

No one spoke during a public hearing on the renewal of the [city's park maintenance and capital improvements millage](#), which will likely be on the November ballot.

Park commissioners had been briefed by staff about the millage renewal at [PAC's March 20, 2012 meeting](#).

John Lawter, PAC's vice chair who was presiding over the meeting in the absence of chair Julie Grand, noted that two of the four public informational forums regarding the millage had been held.



[The third forum took place on Monday, April 23. The final one is set for Thursday, April 26 from 6:30-7:30 p.m. at the Ann Arbor District Library's Traverwood branch, 3333 Traverwood Drive.]

Colin Smith, parks and rec manager, noted that Grand had wanted to schedule some of the public forums prior to the public hearing at PAC, and prior to a vote by PAC on whether to recommend millage renewal. That way, PAC could respond if any issues arose. However, Smith added, "there seems to be a great deal of relative silence," and nothing has come up to indicate that the city is on the wrong track in seeking renewal. [At an April 11 forum held at Cobblestone Farm, several city parks staff, PAC commissioners, city councilmember Jane Lumm, and two members of the media – from The Chronicle and WEMU – showed up. But only one member of the public came: Eric Meves, a board member at Project Grow who also spoke during public commentary at the April 17 PAC meeting (see below).]

Gwen Nystuen observed that it's hard to get people excited now about a vote that won't happen until November. She said she hadn't heard anything unfavorable about the millage, and that people in Ann Arbor are very supportive of parks. "I'm optimistic," she said.

Sam Offen asked whether there were any significant comments or feedback from the first two forums. Lawter reported that the one person at the forum he attended was supportive. [That person was Meves.] Nystuen praised the staff – she said they had done a good job of answering questions at the first forum about how the budget was prepared.

Informational handouts are being distributed, and Smith pointed out that information about the millage renewal is also available on the city's website.

## Windemere Park Tennis Courts

Parks planner Amy Kuras gave a presentation on the tennis courts at Windemere Park, a nearly four-acre parcel on the city's northeast side, north of Glazier Way between Green and Earhart roads. There was no action requested of PAC at this meeting – the staff just wanted to update commissioners on the situation.

The courts were initially built in 1986, then color coated in 2007. Repairs to cracks in the court were attempted in 2009, Kuras said, but failed because of poor soil conditions. The city also attempted to install new net posts in 2009, but that also failed.

In 2010, the city took soil borings in five parts of the park. The borings revealed saturated organic soil and fill, particularly in areas located near the tennis courts in the west part of the park.

Part of the problem is a high water table, Kuras said. In fact, the parks staff have noted higher water tables throughout the city, she added. The only hard data that the city has collected on the water table is at the municipal airport, and there the water table measures between 2-7 feet below the surface now, compared to 15 feet below the surface 50 years ago. Jen Lawson, the city's water quality manager, attributed the change to a variety of factors, Kuras reported, including climate change and more impervious surfaces in the city.

Kuras presented a chart showing cost estimates to replace either one or both courts at the current location. She based her estimates on work done for tennis courts at Veterans Memorial Park and West Park. The total would be \$181,377 for two courts at Windemere, or \$107,408 for one court. [Link to chart of itemized replacement costs.]

The options to consider, Kuras said, include: (1) replacing both tennis courts at the current location, (2) replacing the courts in another part of Windemere Park, (3) replacing only one court, (4) removing



From left: Greg McDonald, assistant manager of city operations for Community Television Network (CTN), explains a camera problem to Colin Smith, the city's parks and recreation manager. The controller that allows CTN staff technicians to remotely control cameras in city council chambers wasn't working during the April 17 park advisory commission meeting. CTN staff instead adjusted the cameras manually prior to the meeting, to capture wide angle views of the proceedings.

the courts, or (5) possibly putting the courts in another park.

Matt Warba, the city's acting field operations manager, told commissioners that he's frustrated by the situation. The staff has attempted several repairs, but with water at just two feet below the surface, it's difficult. There's a likelihood that having tennis courts at that location isn't reasonable, he said. But he understands the value to the neighborhood, and the staff is still working on getting some firm numbers and options to consider. There's no easy or quick solution, he said, but they're working on it.

#### **Windemere Park Tennis Courts: Public Commentary**

**Jeff Alson** told commissioners that he has lived near the park since the late 1970s. He bought his home there in part because of the park. There are a lot of tennis players in the neighborhood, and there are a lot of young children in the area so

demand could grow. But because of water issues there's only one court that can be used. Last summer, he hardly played there at all. Alson said he understood that there are problems with water that make maintenance of the courts more expensive. But he emphasized that the courts have held up well for at least the last 10 years, and he would consider it a good investment. It would be disappointing to him if the courts were removed. Alson concluded by thanking commissioners for their service to the city.

#### **Windemere Park Tennis Courts: Commission Discussion**

David Barrett asked whether the water table is the same throughout the park. Yes, Kuras said, but the soil composition is different at certain locations in the park – that's a factor, too. She clarified that there are water table issues at other parks, but nothing to the degree they're seeing at Windemere.

Barrett recalled that when the city decided to put in rain gardens at Burns Park, they were slow to let the community know about it. He wondered what kind of outreach was happening for the tennis courts at Windemere. Colin Smith, parks and recreation manager, indicated that outreach would occur when the staff had more information to share. If it makes sense to move the tennis courts, the neighborhood would need to be engaged, he said.

Tim Doyle asked is there's evidence of this same kind of problem at other city tennis courts. He said he's encountered it on a similar project he's working on near Honey Creek, on the west side of town. Warba said that certainly there are areas in the parks that are wetter than they've been in the past. But the Windemere courts are the worst by far.

Sam Offen noted that there are a lot of city tennis courts on the west side of town, but he wondered how many there were on the northeast side. Kuras reported that there are three courts in Leslie Park and two in Sugarbush Park, and it might be possible to accommodate new tennis courts somewhere in Foxfire North Park. All of those parks are in northeast Ann Arbor.

Jeff Alston, a resident who'd spoken during public commentary, pointed out that the courts at Sugarbush are too short for adults to play – they hit the back fence with their rackets, he said.

Gwen Nystuen said she didn't know too much about tennis courts, but that it seemed like the city should assess the distribution and conditions of all of its courts, as well as their overall usage, to get a better idea of where the greatest needs are.

Commissioners and staff also discussed the availability of tennis courts at Ann Arbor public schools, noting that certain times of day and certain days of the week those courts are heavily used by students. Tim Berla noted that Ann Arbor Rec & Ed runs tennis leagues, as does the Ann Arbor Area Community Tennis Association. He pointed out that court conditions aren't just a concern for the city parks – a sinkhole developed at the relatively new tennis courts at Skyline High School, putting one of



Cracked pavement at the Windemere Park tennis court. (Image provided by city staff in a slide presentation to PAC.)

the courts out of commission. Berla suggested looking at other materials, such as clay, which he said required more maintenance but wouldn't crack.

Assuming there's need for more tennis courts on the northeast side of town, Berla wondered whether the former Pfizer property – now owned by the University of Michigan – could be a possible location for new courts. He noted that there's a lot of unused land there, as well as available parking.

## Drain Project at Veterans Memorial Park

Scott Miller, an engineer with the Washtenaw County water resources commissioner's office, was on hand to give a presentation about a drain project that would affect Veterans Memorial Park. He said the county had been petitioned by the city to do this project. It's referred to as the West Park Fairgrounds project, which is the name of the drain that runs through that section of town – on the west side of town, in the former fairgrounds area. Miller acknowledged that it was a bit confusing, given that a park in a different location is called West Park.



Scott Miller of the Washtenaw County water resources commissioner's office describes an upcoming drain project that will affect Veterans Memorial Park.

The upper end of the drain is located in the Maple Village Shopping Center, where Kmart and Plum Market are located. The drain starts out as a 30-inch pipe and quickly transitions to a 54-inch pipe and then a 66-inch corrugated metal pipe as it runs toward town. The pipe runs through Veterans Memorial Park, crosses under Dexter Road and heads east, eventually connecting to a pipe that contains another branch of the Allen Creek.

The city conducted video inspection of the pipe and found several sections that are cracked and corroded, resulting in leaks. Portions of the pipe were clogged with debris. [The city council voted at its [Sept. 20, 2010 meeting](#) to petition the county water resources commissioner for this project, estimated to cost roughly \$2

million. It will be repaid by the city in annual installments over 15 years.]

Miller said the county staff began work last fall, first clearing the debris and then conducting another video assessment. That revealed two sections of the pipe that have a significant sag, and result in water being held in those sections year-round. One sagging section is in the parking area in the shopping center. Another is in the north side of the park's parking lot that's accessed off of Dexter Road. The preliminary design is to dig up the two sections of sagging pipe and replace them. For the rest of the pipe, the plan calls for putting in a cast lining to reinforce the pipe structurally.

The project would cause minimal disruption, he said, but would include some impact to the parking lot and a small portion of the area west of one of the ballfields. The county is coordinating with the city, which is doing road work and water main replacement along Dexter Road, as well as upcoming work to renovate the ballfields in the park.

The project is in the design phase now, Miller said, with construction expected to begin in the fall.

### Drain Project at Veterans Memorial Park: Commission Discussion

Gwen Nystuen asked for more details about how much land would be dug up for the project. Miller reported that in the Maple Village lot, a section about 15 feet wide and 150 feet long would be excavated. In Veterans Memorial Park, the work would be about 15 feet wide and 190 feet long.

Nystuen also commented on the confusing name of the project, and Miller agreed: "It's raised confusion at a lot of levels," he said, but they don't have much latitude to change it.

David Barrett pointed out that there's already disruption to the park – a big pile of dirt has been dumped by the ballfield. He wondered if the county had also coordinated with Ann Arbor Rec & Ed, which runs softball leagues in the park. Miller said the drain work hasn't yet started, so the excavated dirt isn't from their project. Matt Warba, the city's acting field operations manager, clarified that it was likely related to road construction there. Parks and rec manager Colin Smith said the parks staff has been coordinating with Rec & Ed since last year regarding work in the park.

Sam Offen asked about the project's timeframe. It will likely take about two months, Miller replied, but more if there's a lot of rain. In response to another query from Offen, Miller said the county is mindful of the potential flooding impact downstream, but noted that this project isn't intended to increase capacity dramatically. There will be more efficient flow, however.

Tim Berla clarified that Rec & Ed has cancelled its fall season, which starts in August, because of renovation work on the ballfields at three parks, including Veterans. [PAC had recommended those renovations at their February 2012 meeting.] He asked whether it would be possible to do the park portion of the drain project first, to ensure it would be finished by the spring season. Miller said it probably wouldn't matter – the entire project is expected to be done by the spring of 2013 – but he would look into it.



Ann Arbor park advisory commissioner David Barrett.

Berla also asked whether the proposed skatepark – to be located in another part of Veterans Memorial Park – would affect the drain project, in terms of adding runoff. Miller said that although the addition of any impervious surfaces would affect runoff, the pipe is underutilized and has the capacity to handle it.

Smith noted that one of the elements of the skatepark design, as reflected in the request for proposals, will be to include stormwater management that meets or exceeds city standards.

## Communications & Commentary

Every meeting includes opportunities for public commentary and communications from commissioners and staff.

### Comm/Comm: Public Commentary – Parking in Parks

During public commentary, **George Gaston** told commissioners that he recently visited the University of Michigan's Matthaei Botanical Gardens – it's a lovely place, he said. He had noticed that UM now has metered parking there at \$1.20 per hour, between 8 a.m. and 8 p.m. Gaston noted that the city leases its Fuller Park parking lot to UM. It was supposed to be a temporary arrangement, but it's been going on for about 20 years. He wondered if the city has considered taking back control of that lot and making it a metered lot, too. UM hospital employees use it 24/7, Gaston said, but only pay for part of that time. It could be a great revenue source for the city.

Gaston noted that people park their vehicles all day at Island Park and West Park, as two examples. And with UM planning to build a parking structure on Wall Street that would add another 500 spaces to that area, it might be possible to forego leasing the 18 spaces at Riverside Park to UM and adding metered spaces instead. "You might gain real money out of this," Gaston said. There's precedent in the city for 24-hour metered lots – at the Amtrak station on Depot Street, for example. Right now, it seems the city is undercharging the university for parking. With meters, the lots would be available to anyone if they paid. It might make sense to look into this, he concluded.

### Comm/Comm: Project Grow – Public Commentary

**Eric Meves**, a board member of Project Grow, gave commissioners an overview of the nonprofit. He started by referring to Gaston's comments about parking, noting that Project Grow had to buy parking tags at Matthaei for its gardeners there this year. Meves told commissioners that Project Grow is celebrating its 40th anniversary this year, and he's gardened with the group for 39 of those years.

Several Project Grow gardens are in city parks, so he wanted PAC to become familiar with the organization. It's an educational organization, with assistance for low-income residents. Although the nonprofit has received city funding in the past, it no longer receives public money, he noted.

Project Grow doesn't own any land. About a third of the gardens are located in Washtenaw County parks, and a third on Ann Arbor public school property. The remaining third is evenly divided between

UM land, private property, and city of Ann Arbor parks. About 300-350 families have garden plots each year, Meves said. People do it to grow food, but also for outdoor exercise and to be in a pleasant environment, he said. There's also an element of community – being with your fellow gardeners.

The nonprofit grosses about \$40,000 to \$50,000 annually, Meves said. About 60% of that comes from plot fees – it costs about \$130 for a full plot. About 20% of revenues come from fundraising, primarily through an annual plant sale. The remaining 20% comes from an organic gardening class that Project Grow developed for Washtenaw Community College.

Roughly half of those revenues allow Project Grow to have one half-time employee who works out of his house, Meves said. The group relies on volunteers and a working board. The rest of the funds are used to pay for things like water, utilities, insurance and capital improvements. There are about 40 people on a waiting list for gardens now – demand for gardens is about two to three times what Project Grow can provide, he said.

Meves unfurled a map that he said was made with the help of Merle Johnson and Dan Rainey of the city's information technology department. It showed possible additional locations for gardens within the parks system.



Eric Meves, treasurer of the Project Grow board.

### **Comm/Comm: Project Grow – Manager's Report**

Later in the meeting, Colin Smith reported that parks planner Amy Kuras has been working with the Project Grow managing director [Kirk Jones] to draft an agreement that will outline the formal relationship between the city and the nonprofit. It's been a few years since the city funded Project Grow, he said, but because the group uses city parkland, there's still a relationship. The agreement will stipulate what the procedures are for putting gardens into parks. There have been varied reactions to having gardens in the parks, depending on the neighborhood, he noted. Parks staff will share the agreement with PAC when it's ready, he said.

Tim Berla asked if there's anything PAC or the city can do to help Project Grow identify potential locations for more gardens. Kuras said she works with the organization – sometimes she'll be contacted by someone in a neighborhood who's interested, and she'll in turn contact Project Grow, or sometimes Project Grow comes to her. There are certain requirements, she noted. The land needs to be in a sunny area, and have access to a water source. The city also needs to hold a public meeting if a park is being considered for gardens, and sometimes neighbors don't want it, she said.

Smith noted that the agreement with Project Grow will include details about how PAC can be involved in the process of selecting new locations.



From left: Park advisory commissioners Tim Berla and John Lawter. Lawter, who chaired the April 17 meeting in the absence of chair Julie Grand, was reviewing procedural rules with Berla before the meeting. Berla's advice: "No one ever did time" for flubbing Robert's Rules.

Gwen Nystuen said she appreciated that Eric Meves had spoken to PAC during public commentary. She hadn't realized how many people are involved, and how the city provides relatively little land for

the group. It's useful information, she said, especially given the growing interest in the local food movement.

Tim Doyle clarified with Smith that there is no relationship between Project Grow and the city's greenbelt program.

#### **Comm/Comm: Skatepark RFP**

Smith reported that the request for proposals (RFP) for a skatepark at Veterans Memorial Park would be issued the following day. [pdf of skatepark RFP] The goal is to solicit proposals for a consultant to handle design and oversee construction of the skatepark, which will be located on city-owned property.

Tim Doyle asked how the project would be funded. Smith replied that there are three sources for the roughly \$1 million cost of the project: (1) private donations – primarily solicited through the Friends of the Ann Arbor Skatepark; (2) a \$300,000 state grant; and (3) up to \$400,000 in matching funds from the Washtenaw County parks and recreation commission. The Ann Arbor Area Community Foundation is acting as fiduciary for the project.

The city's contribution will be the land and staff time to manage the process, Smith said, not money. It will be a city-owned asset, he said.

In terms of process, a selection committee – which will include members of the Friends of the Ann Arbor Skatepark, as well as city and county representatives – will be relied on to make a recommendation for the designer. That recommendation will be reviewed by PAC. PAC commissioner David Barrett will serve on the committee. Park planner Amy Kuras is the city's point person on the project.

Construction is expected to start in the spring of 2013.

Gwen Nystuen asked about the relocation of pathways that will be required because of the skatepark location. Kuras noted that some pathways in Veterans Memorial Park are being redone as part of the Dexter Avenue improvement project that's currently underway. Paths that connect to the skatepark will be designed as part of the overall skatepark design, she said.

#### **Comm/Comm: Manager's Report – Market Manager**

Smith reported that the field had been narrowed to two candidates to replace Molly Notarianni, who left the job of public market manager earlier this year. He said he hoped to have finalized a hire by PAC's May 15 meeting.

#### **Comm/Comm: Manager's Report – Argo Cascades**

The same day as the PAC meeting, the consultant who designed the new canoe/kayak bypass by Argo Dam – Gary Lacy of Boulder, Colo. – was testing the series of drop pools along with city staff. Smith said he had hoped that Lacy would have the time to give an update to PAC about the new Argo Cascades, but the morning had been chilly and Lacy had gotten a late start on the testing, so he wasn't able to attend the meeting.

A grand opening of the Argo Cascades is planned for June, but it will be open to the public before that. May 5 is the date for the first trips from the Argo Pond livery to Gallup Park, Smith said.

**Present:** David Barrett, Tim Berla, Doug Chapman, Tim Doyle, John Lawter, Karen Levin, Gwen Nystuen, Sam Offen, councilmember Christopher Taylor (ex-officio). Also Colin Smith, city parks and recreation manager.

**Absent:** Julie Grand, councilmember Mike Anglin (ex-officio).

**Next meeting:** PAC's meeting on Tuesday, May 15, 2012 begins at 4 p.m. in the city hall second-floor council chambers, 301 E. Huron St., Ann Arbor. [confirm date]

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The following terms describe the content of this article. Click on a term to see all articles described with that term:  
[Ann Arbor Parks & Recreation](#), [drains](#), [park maintenance and capital improvements millage](#), [parks budget](#),  
[Project Grow](#), [skatepark](#), [tennis courts](#)

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## One Comment

1.  BY TRACEY WENTZ & BLACKMER  
MAY 1, 2012 at 11:54 am | [PERMALINK](#)

We encourage action, soon. This problem has existed for a long time without solution. Just listen to the nearby neighborhoods say the demand is there and fix a community resource. Seems like a sunk cost without adequate maintenance.

Consider a local bond issue or ~ and do something.

# Exhibit 31



# STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION AIRPORTS DIVISION LANSING, MICHIGAN



# ANN ARBOR MUNICIPAL AIRPORT WASHTENAW COUNTY ANN ARBOR, MI AIRPORT LAYOUT PLAN

ANN ARBOR MUNICIPAL AIRPORT  
CITY OF ANN ARBOR

Mr. Matthew J. Kulhasek, Airport Manager  
Ann Arbor Municipal Airport  
301 Airport Road  
Ann Arbor, Michigan 48104

Dear Mr. Kulhasek:

Subject: Ann Arbor Municipal Airport

Enclosed is a conditionally approved copy of the Ann Arbor Municipal Airport, Airport Layout Plan (ALP), dated April 2008. This letter cannot be used for all ALP approvals. The ALP approval is based on recognition of and adherence to the following:

- The approval is not to be considered a commitment of Federal funding for the proposed development. The FAA has concurred with the proposed development for planning purposes only based on current safety, utility, and efficiency standards. Actual development should comply with approval standards applicable at the time of construction. The airport will need to provide the FAA justification of need before seeking FAA financial participation in the following projects:
  - Shift and extension of runway 6-24 with proposed approach improvements;
  - Associated parallel taxiway construction for the above referenced runway;
  - Identification of a future terminal development area;
  - Achieving the lowest possible minimums for the airport including the installation of additional NAV AIDs; and
  - Purchasing additional land and clearing all objects necessary to meet approach and Part 77 requirements necessary for development and protection of FAA design criteria.
- No design standard modifications have been granted.

3. We note the following:

- If any runways are to be shifted or extended, the shift/extension must be designed such that Standard Runway Safety Areas and Object Free Areas are maintained.
- If any design critical aircraft or aircraft group changes for the runway identified, this ALP must be reevaluated by the FAA.

4. Our approval does not infer or imply that the land in the airport vicinity is considered compatible with airport operations. Federal requirements stipulate:

- All development programs should be reasonably consistent with the plans of local and state planning agencies for the development in the airport vicinity.
- That fair consideration has been given to the interest of communities in or near the airport.
- That development programs provide for the protection and enhancement of the environment.

- The FAA offers no objections to the proposed ultimate airspace utilization as depicted on the ALP based on considerations of safe and efficient use of airspace. The ALP has the status of "Plan on File" for the purpose of 14 CFR 77, Obstruction Evaluations, and 14 CFR 152, Airport Aids Program. A review of the airspace landing area development was conducted according to the following 14 CFR: 77, 152, and 157, Notice of Construction, Activation, and Deactivation of Airports (reference Aeronautical Study Number 2008-AGL-533-NRA). It should be noted that FAA cannot prevent erection of any structure near an airport. Airport environs can only be protected through state and local zoning ordinances, building regulations, and like requirements. Please refer to the FAA Airspace Approval letter dated June 8, 2008 for additional detailed information.
- All development depicted on this ALP must comply with the National Environmental Policy Act (NEPA) of 1969. FAA environmental approval is required for all airport development actions depicted on this ALP. This would apply to development projects, even if there were no FAA funding involved in the project. Additional requirements concerning FAA NEPA approval can be found in FAA Order 5500.4b, "National Environmental Policy Act (NEPA) Implementing Instruction for Airport Actions."

safety/phasing plan for any project should be reviewed by the FAA no less than 60 days prior to beginning any project. The airport must take all measures necessary during construction to ensure there are no runway incursions.

- If development is planned without aviation trust fund investments that will change the status or geometry of runways, taxiways, aprons, or other operating airport surfaces, notice (FAA Form 7480-1) must be filed with this office consistent with 14 CFR 157.
- The planned runway developments will require new FAA flight procedures. If the FAA concurs with these developments there will need to be close coordination with different FAA offices. Development on new approaches will not begin until environmental approvals have been given and the sponsor requests the FAA Flight Procedures Office to initiate design of new approaches. Publication of revised Instrument Approach Procedures (IAP) could take from 18 months to two years, after runway data is submitted. Review of this ALP does not constitute an automatic request for amended procedures.


We trust this letter provides a clear explanation of the conditions and terms of our approval. If you desire further clarification, please contact John D. Pierce at 517-335-9857.

Sincerely,  
*D. L. Baker*  
David L. Baker, PE, Manager  
AIP Programs  
Airport Division  
Bureau of Aeronautics and Freight Services

cc: FTW-FPO  
JGL-AIW-C15A  
JGL-520  
DEE-ADD  
B. Malinowski, URS

HEADOFFICE/ALP/Ann Arbor/Ann

ANN ARBOR AIRPORT  
CITY OF ANN ARBOR



APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
MATTHEW KULHANEK - AIRPORT MANAGER

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
JOHN HIEFTJE - MAYOR

MICHIGAN AERONAUTICS  
COMMISSION


APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
RICK HAMMOND - AIRPORTS DIV. ADMINISTRATOR

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DAVID L. BAKER P.E. NO. 40936 - CHIEF ENGINEER

AIRPORT TYPE - GENERAL AVIATION

REVISION BLOCK		
DATE	MODIFICATIONS	INITIALS

DESIGNERS & CONSULTANTS



GRAND RAPIDS, MI.  
3650 SPARKS DR., S.E.  
616 574-8500

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
WILLIAM M. MALINOWSKI, P.E. NO. 17808

NOTE: SIGNATURE IN CONSULTANT BLOCK CERTIFIES ALP WAS PREPARED USING ALP CHECKLIST.

10	FAR PART 77 SURFACES	
9	AIRPORT PROPERTY PLAN	
8	TERMINAL AREA PLAN	
7	RUNWAY PROTECTION ZONE DRAWING (RWY 13/31)	
6	RUNWAY PROTECTION ZONE DRAWING (RWY 6/24)	
5	AIRPORT LAYOUT AERIAL	
4	AIRPORT LAYOUT PLAN (FUTURE)	
3	AIRPORT LAYOUT PLAN (EXISTING)	
2	AIRPORT DATA SUMMARY	
1	TITLE & SIGNATURE PAGE	

SHEET NUMBER INDEX OF SHEETS LATEST REVISION DATE

URS

ANN ARBOR MUNICIPAL AIRPORT  
AIRPORT LAYOUT PLAN  
TITLE & SIGNATURE PAGE

SITE NO.  
81-1

DRAWING  
1 OF 10

12940723

D/E	JW	PM	RIC	SQC	DR	OC	WMH	W. MALINOWSKI	IN	CHARGE	DATE	ISSUED FOR

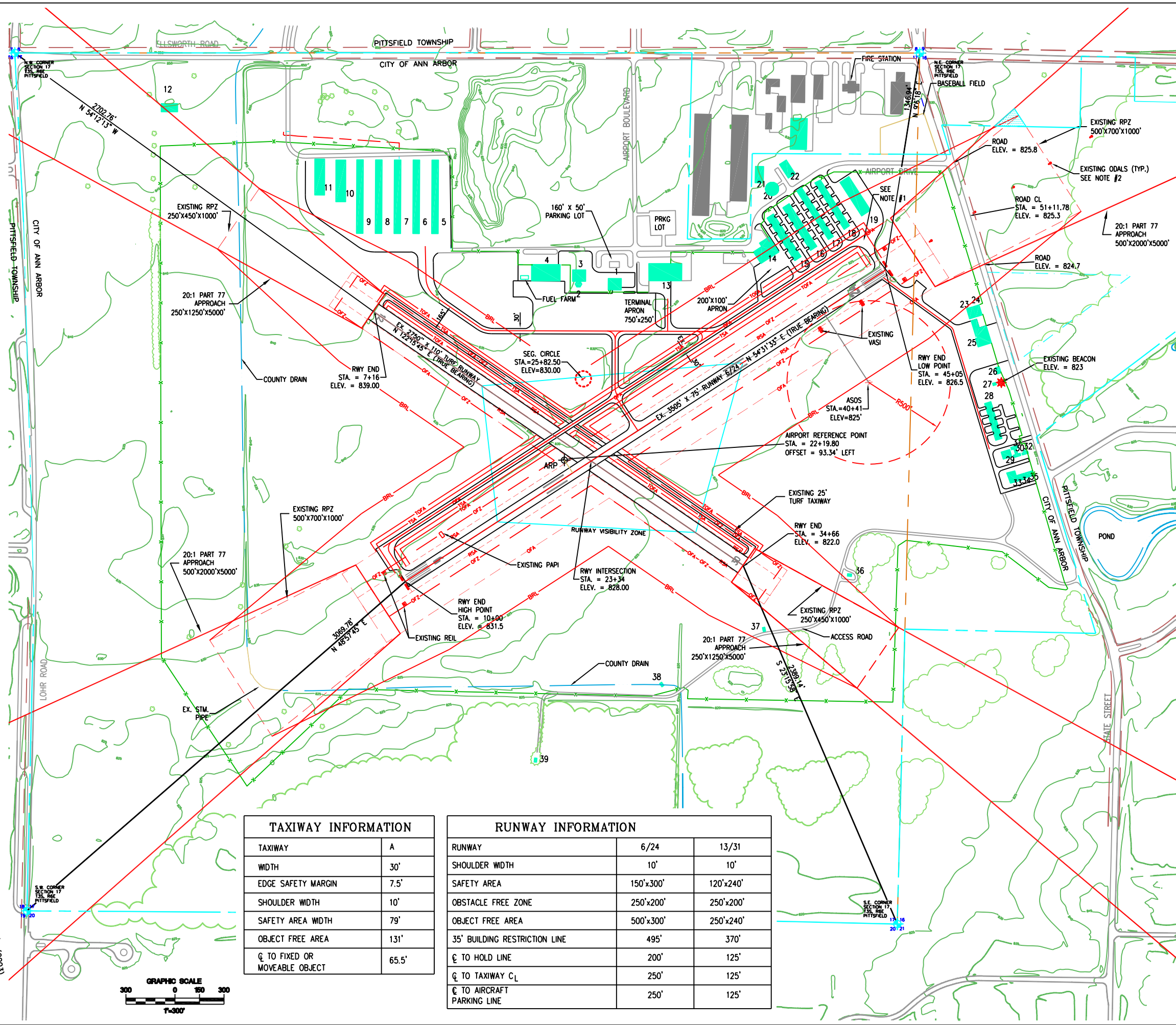


### BUILDING ELEVATION TABLE

NO.	DESCRIPTION	ELEVATION
1	ADMINISTRATION/TERMINAL BUILDING	849.56
2	AIR TRAFFIC CONTROL TOWER (ATCT)	893.29
3	AIR TRAFFIC ADMINISTRATION BUILDING	864.52
4	CORPORATE HANGAR (AV. GAS CO.)	866.72
5	T-HANGAR	858.03
6	T-HANGAR	857.98
7	T-HANGAR	857.12
8	T-HANGAR	857.95
9	T-HANGAR	858.01
10	T-HANGAR (NESTED)	863.58
11	T-HANGAR (NESTED)	863.56
12	BARN	894.80
13	CORPORATE HANGAR (MICHIGAN UNIVERSITY)	861.57
14	FIXED BASE OPERATION HANGAR	862.57
15	T-HANGAR	846.73
16	T-HANGAR	846.47
17	T-HANGAR	843.65
18	T-HANGAR	846.30
19	T-HANGAR (NESTED)	849.13
20	ROTATING FLOOR HANGAR	850.89
21	CONVENTIONAL HANGAR	851.15
22	CONVENTIONAL HANGAR	847.51
23	CONVENTIONAL HANGAR	838.92
24	CONVENTIONAL HANGAR	838.87
25	FIXED BASE OPERATION HANGAR	846.03
26	OFFICE BUILDING	837.91
27	CITY WATER FACILITY	823.35
28	T-HANGAR	836.39
29	CONVENTIONAL HANGAR	842.77
30	T-HANGAR	834.98
31	T-HANGAR	835.85
32	T-HANGAR	836.80
33	CONVENTIONAL HANGAR	843.80
34	CONVENTIONAL HANGAR	842.34
35	CONVENTIONAL HANGAR	841.81
36	CITY WATER FACILITY	837.20
37	CITY WATER FACILITY	837.60
38	CITY WATER FACILITY	834.09
39	CITY WATER FACILITY	836.12

**LEGEND**

- AIRPORT PROPERTY LINE
- EASEMENT
- SECTION LINES
- RUNWAYS, PARKING, TAXIWAYS
- FU. RUNWAYS, PARKING, TAXIWAYS
- RWY PROTECTION ZONES
- EXISTING BUILDINGS
- FUTURE BUILDINGS
- ROADS
- FUTURE AIRPORT PROPERTY LINE
- CENTERLINES
- EX. RUNWAY SAFETY AREA
- EX. TAXIWAY SAFETY AREA
- EX. OBJECT FREE AREA
- EX. OBJECT FREE ZONE
- EX. TAXIWAY OBJECT FREE AREA
- EX. BUILDING RESTRICTION LINE
- EXISTING TREES AND TREE LINES
- EXISTING FENCE LINE
- EX. REIL
- EX. VASI OR PAPI
- EX. SEGMENTED CIRCLE
- EXISTING POWER & TELEPHONE LINE
- RUNWAY VISIBILITY ZONE



**TAXIWAY INFORMATION**

TAXIWAY	A
WIDTH	30'
EDGE SAFETY MARGIN	7.5'
SHOULDER WIDTH	10'
SAFETY AREA WIDTH	79'
OBJECT FREE AREA	131'
Ø TO FIXED OR MOVEABLE OBJECT	65.5'

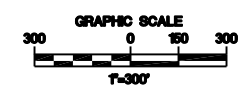
**RUNWAY INFORMATION**

RUNWAY	6/24	13/31
SHOULDER WIDTH	10'	10'
SAFETY AREA	150'x300'	120'x240'
OBSTACLE FREE ZONE	250'x200'	250'x200'
OBJECT FREE AREA	500'x300'	250'x240'
35' BUILDING RESTRICTION LINE	495'	370'
Ø TO HOLD LINE	200'	125'
Ø TO TAXIWAY CL	250'	125'
Ø TO AIRCRAFT PARKING LINE	250'	125'

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 info2: \\c:\info2.dwg  
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 PROP: \\c:\prop.dwg  
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**NOTE #1**  
 TWO T-HANGARS IN NORTHEAST CORNER OF AIRPORT AND NORTHEAST FBO HANGAR OBSCURE LINE OF SITE TO END OF PARALLEL TAXIWAY

**NOTE #2**  
 OADLS - OMNIDIRECTIONAL APPROACH LIGHTING SYSTEM



D/E	JW	X	X	X	X	X	X	X	X	DATE
PM	RUC	SOC	DR	OC	WMM	W	MLN	WNSKI	IN	ISSUED FOR

GRAND RAPIDS, MI.  
 2800 SPARKS DR. S.E.  
 616 974-8800

**ANN ARBOR MUNICIPAL AIRPORT**  
 AIRPORT LAYOUT PLAN  
 AIRPORT LAYOUT PLAN (EXISTING)

**SITE NO.**  
 81-1

**DRAWING**  
 3 OF 10

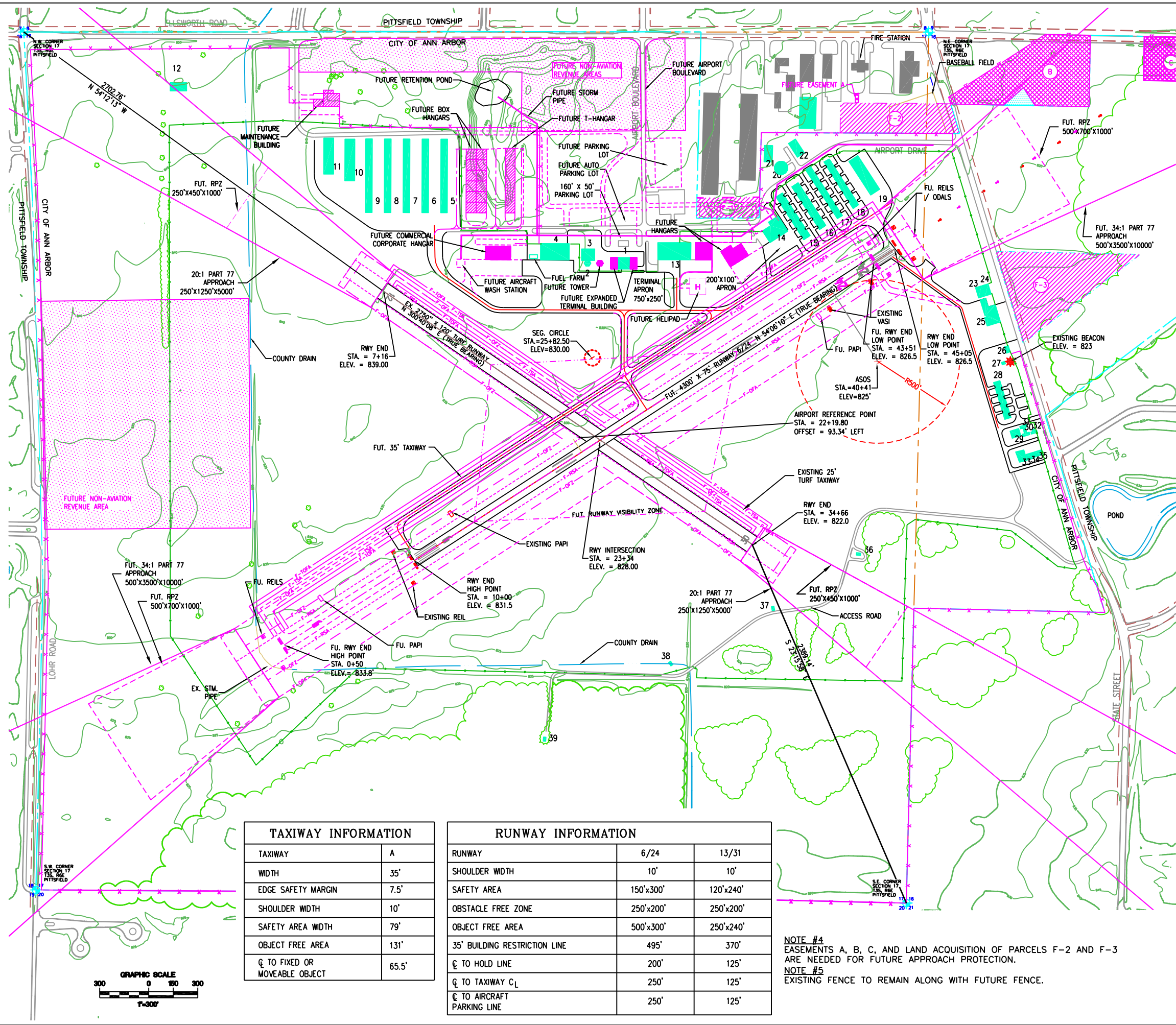
12940723

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**LEGEND**

- AIRPORT PROPERTY LINE
- SECTION LINES
- RUNWAYS, PARKING, TAXIWAYS
- FUTURE RUNWAYS, PARKING, TAXIWAYS
- RWY PROTECTION ZONES
- PROPERTY LIMITS
- AVIGATION EASEMENTS
- SPOT ELEVATIONS
- EXISTING BUILDINGS
- FUTURE BUILDINGS
- ROADS
- UTILITY EASEMENT
- FUTURE AIRPORT PROPERTY LINE
- FUTURE EASEMENT
- CENTERLINES
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- EX. TAXIWAY SAFETY AREA
- EX. OBJECT FREE AREA
- EX. TAXIWAY OBJECT FREE AREA
- EX. BUILDING RESTRICTION LINE
- EXISTING TREES AND TREE LINES
- EXISTING FENCE LINE
- EX. REIL
- EX. VASI OR PAPI
- EX. SEGMENTED CIRCLE
- FUTURE ROADS
- FUT. TAXIWAY SAFETY AREA
- FUT. TAXIWAY OBJECT FREE AREA
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- FUT. RUNWAY SAFETY AREA
- FUT. OBJECT FREE AREA
- FUTURE CENTERLINES
- EXISTING POWER & TELEPHONE LINE
- FUT. FENCE



**TAXIWAY INFORMATION**

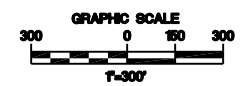
TAXIWAY	A
WIDTH	35'
EDGE SAFETY MARGIN	7.5'
SHOULDER WIDTH	10'
SAFETY AREA WIDTH	79'
OBJECT FREE AREA	131'
Q TO FIXED OR MOVEABLE OBJECT	65.5'

**RUNWAY INFORMATION**

RUNWAY	6/24	13/31
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Q TO HOLD LINE	200'	125'
Q TO TAXIWAY C <sub>L</sub>	250'	125'
Q TO AIRCRAFT PARKING LINE	250'	125'

**NOTE #3**  
 RUNWAY 24 END TO BE SHORTENED BY 154 LFT TO PROVIDE 15' CLEARANCE FOR THE FUTURE 34:1 APPROACH OVER STATE STREET. EXISTING 154' OF RUNWAY PAVEMENT AND CONNECTORS TO BE REMOVED AND REPLACED WITH NEW CONNECTORS AT THE END OF THE SHORTENED RUNWAY. EXISTING ODALS WILL BE RELOCATED FOR NEW RUNWAY END.

**NOTE #4**  
 EASEMENTS A, B, C, AND LAND ACQUISITION OF PARCELS F-2 AND F-3 ARE NEEDED FOR FUTURE APPROACH PROTECTION.  
**NOTE #5**  
 EXISTING FENCE TO REMAIN ALONG WITH FUTURE FENCE.



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**DRS**

ANN ARBOR, MICHIGAN  
 AIRPORT LAYOUT PLAN  
 AIRPORT LAYOUT PLAN (FUTURE)

**SITE NO. 81-1**

**DRAWING 4 OF 10**

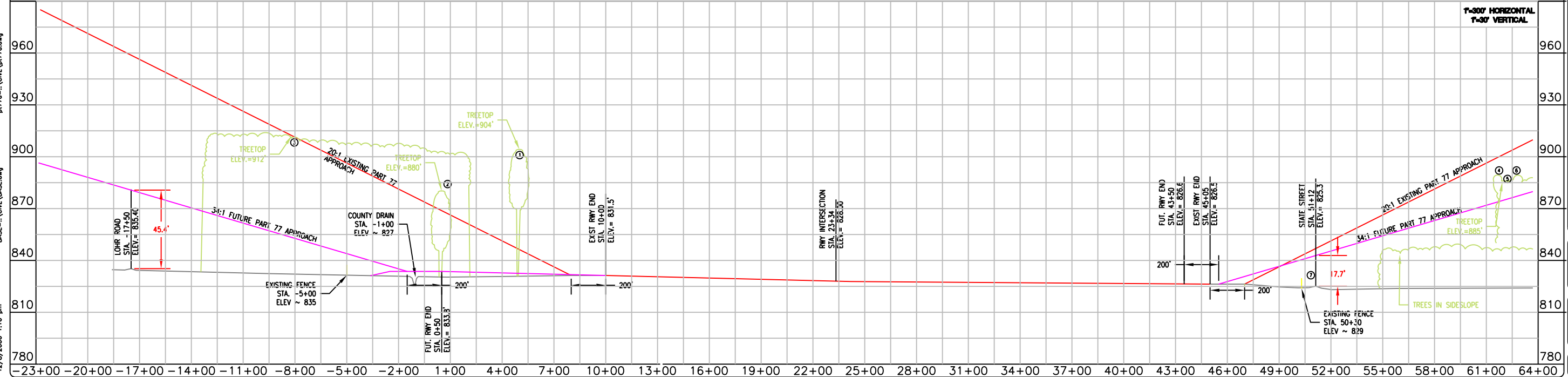
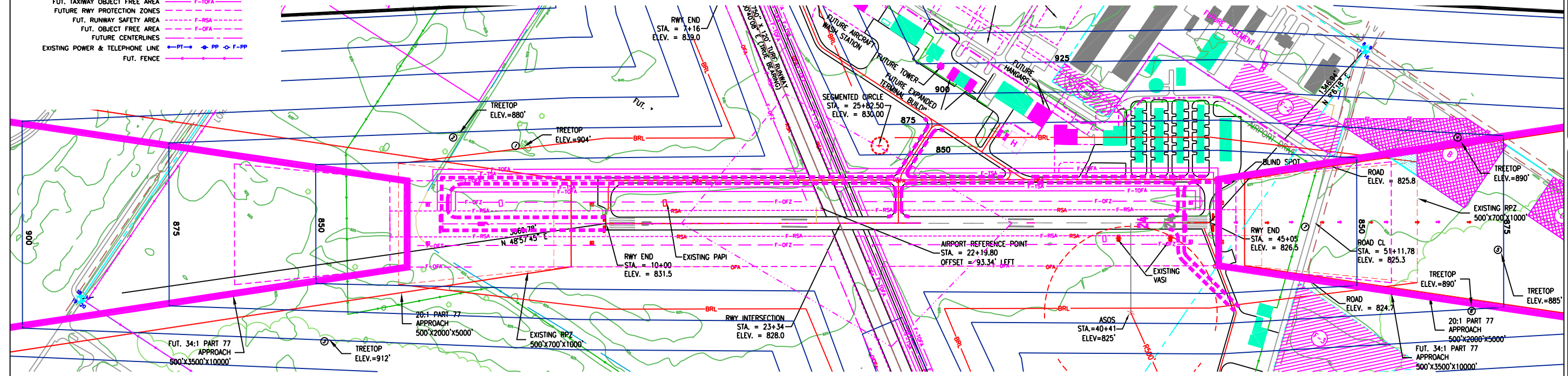
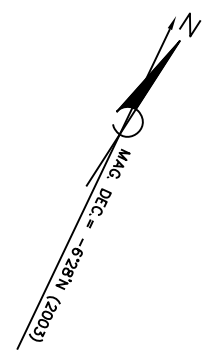
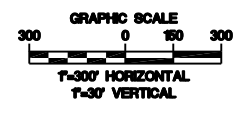
12940723

DATE: 12/17/07  
 ISSUED FOR: W. MALINOWSKI  
 IN CHARGE: W. MALINOWSKI  
 DATE: 06/27/08  
 PUBLICATION: 06/27/08  
 P. MALINOWSKI  
 W. MALINOWSKI  
 W. MALINOWSKI  
 W. MALINOWSKI

- LEGEND**
- AIRPORT PROPERTY LINE
  - SECTION LINES
  - RUNWAYS, PARKING, TAXIWAYS
  - FU. RUNWAYS, PARKING, TAXIWAYS
  - RWY PROTECTION ZONES
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  - FUT. TAXIWAY SAFETY AREA
  - FUT. TAXIWAY OBJECT FREE AREA
  - FUTURE RWY PROTECTION ZONES
  - FUT. RUNWAY SAFETY AREA
  - FUT. OBJECT FREE AREA
  - FUTURE CENTERLINES
  - EXISTING POWER & TELEPHONE LINE
  - FUT. FENCE

OBSTRUCTION TABLE										
NO	TYPE	TOP		MAX. ELEV.		PENETRATION		PROPOSED DISPOSITION		
		ELEV	EX.	FUT.	EX.	FUT.	EX.	FUT.		
1	TREES	904'	882'	**	862'	**	22'	42'		REMOVE
2	TREES	880'	900'	**	868'	**		12'		REMOVE
3	TREES	912'	933'	**	900'	**		12'		REMOVE
4	TREES	890'	896'	**	867'	**		23'		REMOVE
5	TREES	885'	900'	**	874'	**		11'		REMOVE
6	TREES	890'	902'	**	870'	**		20'		REMOVE

\*\* IN SIDE OR TRANSITIONAL SLOPE



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DATE	ISSUED FOR
12/17/07	MOO DRGT REVIEW
03/21/08	FAM INSPECTION REVIEW
06/27/08	A/P PUBLICATION

D/E	JW	X
PM	RC	X
SOC	DR	X
OC	WM	X

IN CHARGE

W. MALINOWSKI



ANN ARBOR, MICHIGAN

**ANN ARBOR MUNICIPAL AIRPORT**  
 AIRPORT LAYOUT PLAN  
 RUNWAY APPROACH ZONE DRAWING (RWY 6/24)

SITE NO.  
81-1

DRAWING  
6 OF 10

12940723

DATE	ISSUED FOR
12/17/07	MOU DRAFT REVIEW
03/21/08	FAA AIRSPACE REVIEW
06/27/08	AP PUBLICATION

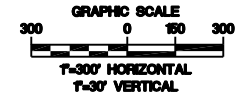
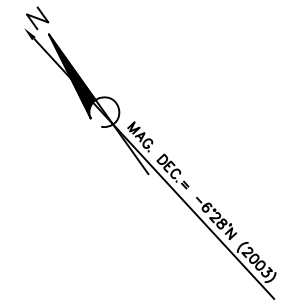
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PM	RJC	X
SOC	DR	X
QC	WMM	X
IN	CHARGE	W. MALINOWSKI

GRAND RAPIDS, MI.  
3650 SPARKS DR. S.E.  
616 974-6800



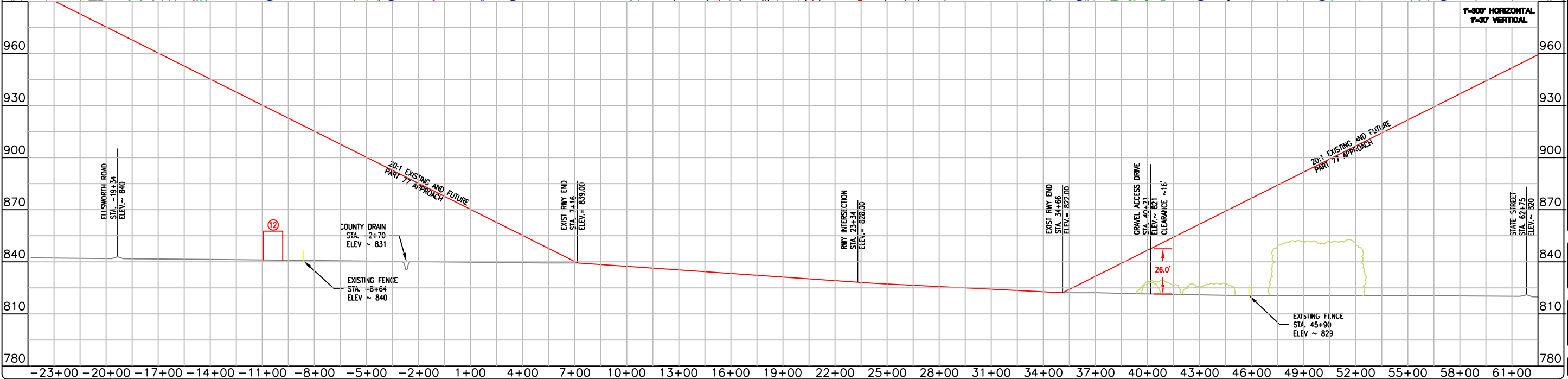
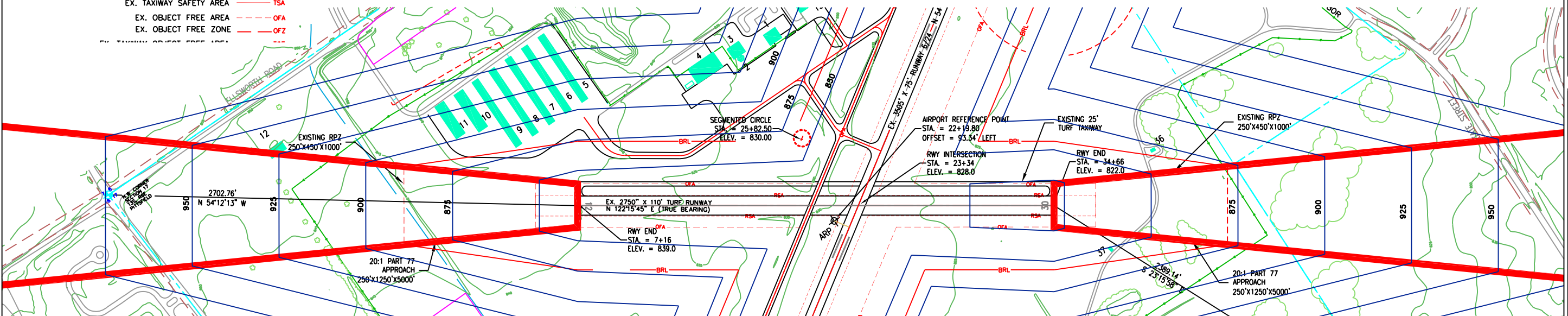
**ANN ARBOR MUNICIPAL AIRPORT**  
ANN ARBOR, MICHIGAN  
AIRPORT LAYOUT PLAN  
RUNWAY APPROACH ZONE DRAWING (RWY 13/31)

SITE NO.  
**81-1**  
DRAWING  
**7 OF 10**  
12940723



NOTE:  
RWY 13/31 APPROACHES WERE SURVEYED IN 2003, NO OBSTRUCTIONS OBSERVED.

- LEGEND**
- AIRPORT PROPERTY LINE
  - EASEMENT
  - SECTION LINES
  - RUNWAYS, PARKING, TAXIWAYS
  - FU. RUNWAYS, PARKING, TAXIWAYS
  - RWY PROTECTION ZONES
  - EXISTING BUILDINGS
  - FUTURE BUILDINGS
  - ROADS
  - FUTURE AIRPORT PROPERTY LINE
  - CENTERLINES
  - EX. RUNWAY SAFETY AREA
  - EX. TAXIWAY SAFETY AREA
  - EX. OBJECT FREE AREA
  - EX. OBJECT FREE ZONE

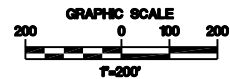


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BUILDING ELEVATION TABLE		
NO.	DESCRIPTION	ELEVATION
1	ADMINISTRATION/TERMINAL BUILDING	849.56
2	AIR TRAFFIC CONTROL TOWER (ATCT)	893.29
3	AIR TRAFFIC ADMINISTRATION BUILDING	864.52
4	CORPORATE HANGAR (AV. GAS CO.)	866.72
5	T-HANGAR	858.03
6	T-HANGAR	857.98
7	T-HANGAR	857.12
8	T-HANGAR	857.95
9	T-HANGAR	858.01
10	T-HANGAR (NESTED)	863.58
11	T-HANGAR (NESTED)	863.56
12	BARN	894.80
13	CORPORATE HANGAR (MICHIGAN UNIVERSITY)	861.57
14	FIXED BASE OPERATION HANGAR	862.57
15	T-HANGAR	846.73
16	T-HANGAR	846.47
17	T-HANGAR	843.65
18	T-HANGAR	846.30
19	T-HANGAR (NESTED)	849.13
20	ROTATING FLOOR HANGAR	850.89
21	CONVENTIONAL HANGAR	851.15
22	CONVENTIONAL HANGAR	847.51
23	CONVENTIONAL HANGAR	838.92
24	CONVENTIONAL HANGAR	838.87
25	FIXED BASE OPERATION HANGAR	846.03
26	OFFICE BUILDING	837.91
27	CITY WATER FACILITY	823.35
28	T-HANGAR	836.39
29	CONVENTIONAL HANGAR	842.77
30	T-HANGAR	834.98
31	T-HANGAR	835.85
32	T-HANGAR	836.80
33	CONVENTIONAL HANGAR	843.80
34	CONVENTIONAL HANGAR	842.34
35	CONVENTIONAL HANGAR	841.81
36	CITY WATER FACILITY	837.20
37	CITY WATER FACILITY	837.60
38	CITY WATER FACILITY	834.09
39	CITY WATER FACILITY	836.12

TAXIWAY INFORMATION	
TAXIWAY	A
WIDTH	30'
EDGE SAFETY MARGIN	7.5'
SHOULDER WIDTH	10'
SAFETY AREA WIDTH	79'
OBJECT FREE AREA	131'
CL TO FIXED OR MOVEABLE OBJECT	65.5'

RUNWAY INFORMATION		
RUNWAY	6/24	13/31
SHOULDER WIDTH	10'	10'
SAFETY AREA	150'x300'	120'x240'
OBSTACLE FREE ZONE	250'x200'	250'x200'
OBJECT FREE AREA	500'x300'	250'x240'
35' BUILDING RESTRICTION LINE	495'	370'
CL TO HOLD LINE	200'	125'
CL TO TAXIWAY CL	250'	125'
CL TO AIRCRAFT PARKING LINE	250'	125'



DATE	ISSUED FOR
06/27/08	AP PUBLICATION
03/21/08	FAA RESPONSE REVIEW
12/17/07	MOOT DRAFT REVIEW

D/E	JW	X	PM	RUC	X	SOC	DR	X	OC	WMM	X	W.	WALINOWSKI	IN	CHARGE

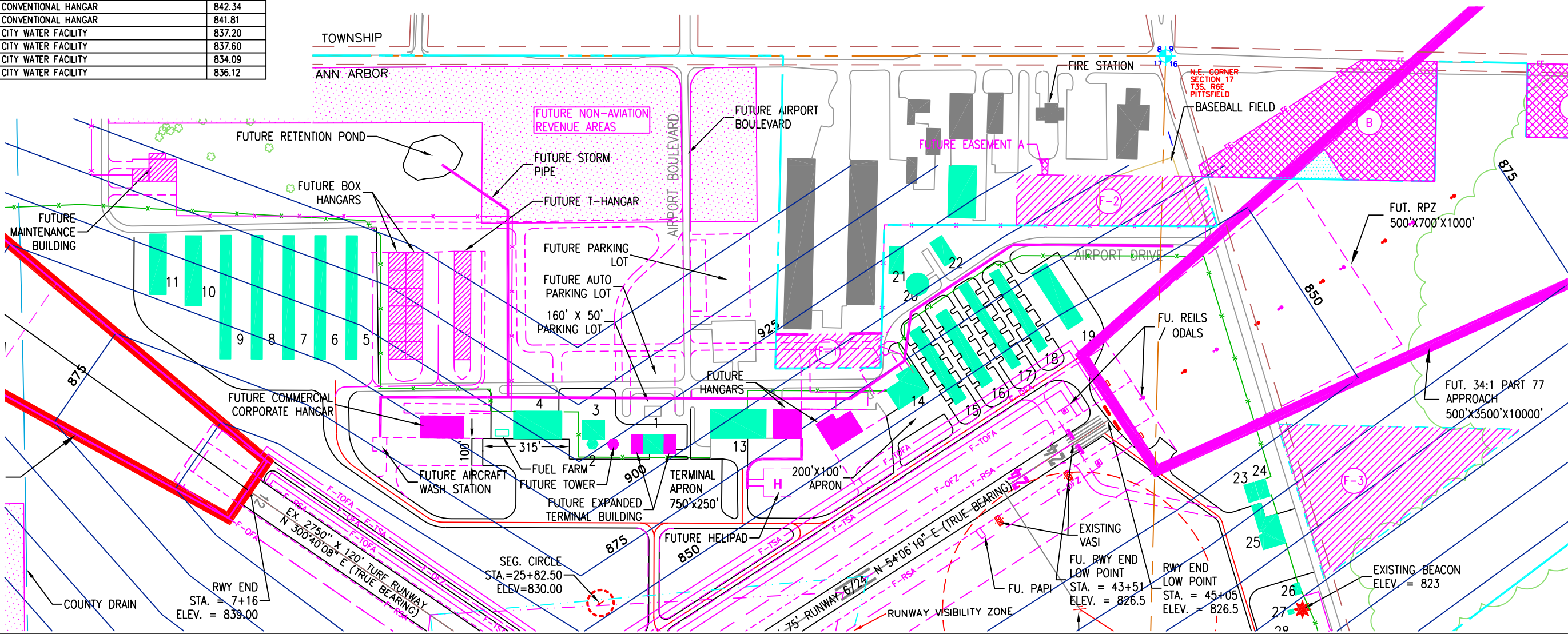
GRAND RAPIDS, MI.  
3600 SPANGLER DR. SE.  
616 974-8800

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**ANN ARBOR MUNICIPAL AIRPORT**

APPORT LAYOUT PLAN  
TERMINAL AREA PLAN

ANN ARBOR, MICHIGAN

SITE NO. <b>81-1</b>
DRAWING <b>8 OF 10</b>
12940723

FUTURE PARCEL ACQUISITIONS

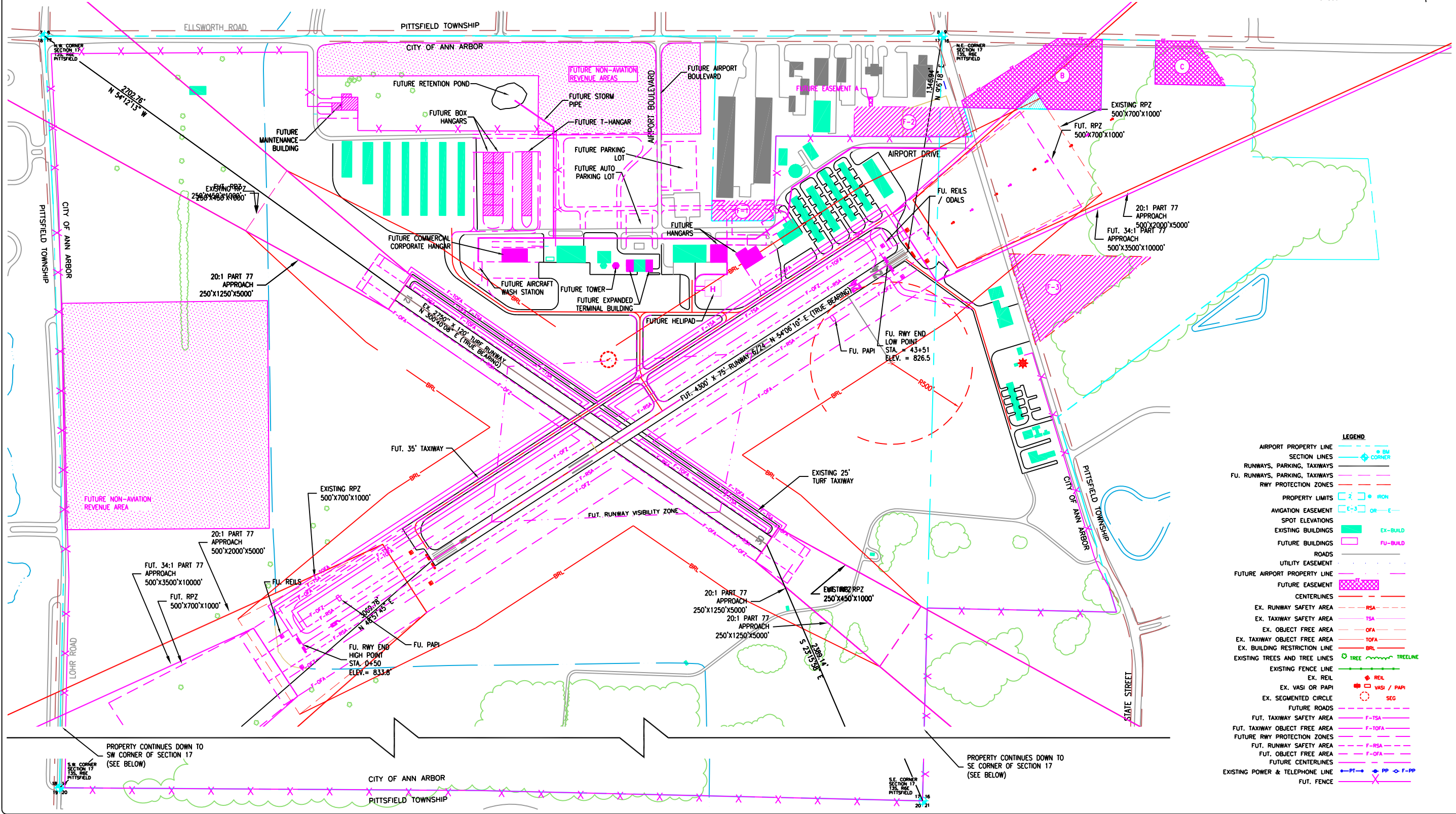
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-	F-1	DB WAREHOUSE LTD.	WD	00-00 00-00	00/00/00	1.09	-	-
-	F-2	PITTSFIELD TOWNSHIP	WD	00-00	00/00/00	2.94	-	-
-	F-3	CLARA SEYMOUR	WD	00-00	00/00/00	5.69	-	-
					FEE ACRES	9.72		

AE-AVIGATION EASEMENT  
CJ-CONSENT JUDGMENT  
E-EASEMENT  
GD-GUARDIAN DEED  
CE-CLEARING EASEMENT  
LE-LIGHT EASEMENT  
WD-WARRANTY DEED  
QC-QUIT CLAIM DEED

FUTURE EASEMENT INTERESTS

NO.	PARCEL	TYPE	GRANTEE	ACREAGE	LIBER-PAGE	RECORDED DATE	NOTES
A	-	EE EASEMENT	PITTSFIELD TOWNSHIP	0.028	00-00	00/00/00	FIRE STATION ACCESS
B	-	AE EASEMENT	PITTSFIELD TOWNSHIP	5.98	00-00	00/00/00	34:1 APPROACH EASEMENT
C	-	AE EASEMENT	PITTSFIELD TOWNSHIP	2.12	00-00	00/00/00	34:1 APPROACH EASEMENT
				8.128	TOTAL ACREAGE		

DE - DRAINAGE EASEMENT  
EE - ACCESS EASEMENT  
AE - AVIGATION EASEMENT



**LEGEND**

- AIRPORT PROPERTY LINE
- SECTION LINES
- RUNWAYS, PARKING, TAXIWAYS
- FUTURE RUNWAYS, PARKING, TAXIWAYS
- RWY PROTECTION ZONES
- PROPERTY LIMITS
- AVIGATION EASEMENT
- SPOT ELEVATIONS
- EXISTING BUILDINGS
- FUTURE BUILDINGS
- ROADS
- UTILITY EASEMENT
- FUTURE AIRPORT PROPERTY LINE
- FUTURE EASEMENT
- CENTERLINES
- EX. RUNWAY SAFETY AREA
- EX. TAXIWAY SAFETY AREA
- EX. OBJECT FREE AREA
- EX. TAXIWAY OBJECT FREE AREA
- EX. BUILDING RESTRICTION LINE
- EXISTING TREES AND TREE LINES
- EXISTING FENCE LINE
- EX. VASI OR PAPI
- EX. SEGMENTED CIRCLE
- FUTURE ROADS
- FUT. TAXIWAY SAFETY AREA
- FUT. TAXIWAY OBJECT FREE AREA
- FUTURE RWY PROTECTION ZONES
- FUT. RUNWAY SAFETY AREA
- FUT. OBJECT FREE AREA
- FUTURE CENTERLINES
- EXISTING POWER & TELEPHONE LINE
- FUT. FENCE

DATE	ISSUED FOR
12/17/07	MOO DRAFT REVIEW
03/27/08	FAM AIRSPACE REVIEW
06/27/08	A/P PUBLICATION

IN CHARGE	DATE
W. MALINOWSKI	

GRAND RAPIDS, MI.  
3600 SARGENT RD. S.E.  
616 574-6800

**ANN ARBOR MUNICIPAL AIRPORT**  
ANN ARBOR, MICHIGAN  
AIRPORT LAYOUT PLAN  
AIRPORT PROPERTY PLAN

SITE NO.  
**81-1**

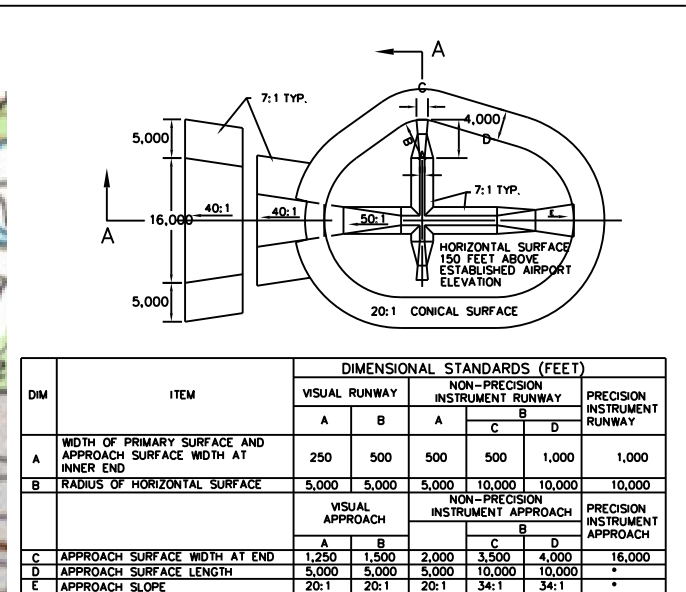
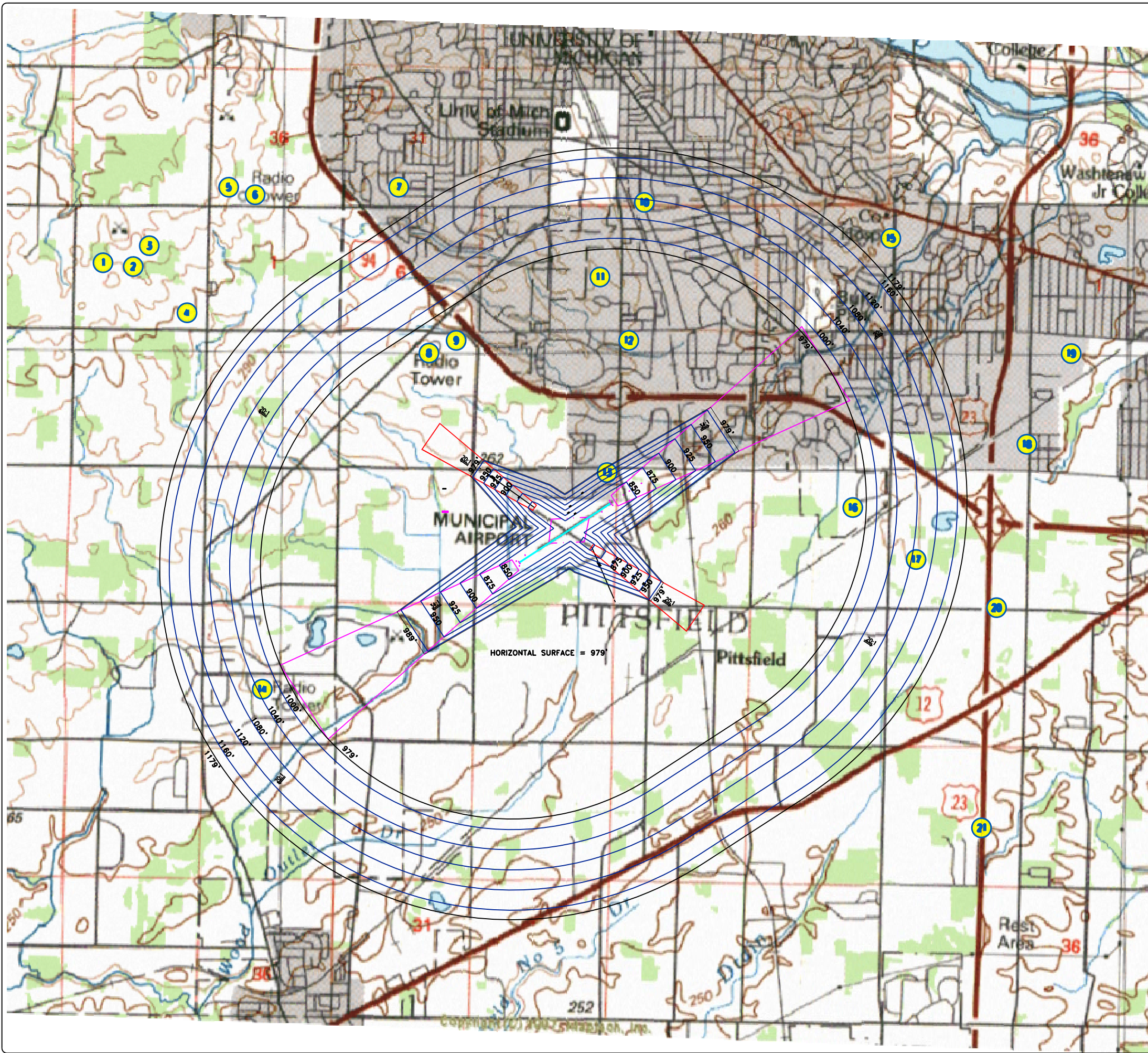
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12940723

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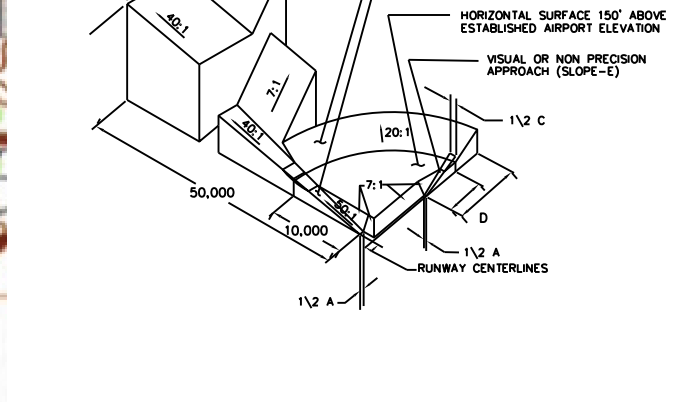


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DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY		PRECISION INSTRUMENT RUNWAY	
		A	B	A	B	C	D
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

- A- UTILITY RUNWAYS
- B- RUNWAYS LARGER THAN UTILITY
- C- VISIBILITY MINIMUMS GREATER THAN 3/4 MILE
- D- VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
- \* PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET



ESTABLISHED AIRPORT EL.= 829'  
 AIRPORT REFERENCE POINT  
 LAT: 42°13'20.67" N.  
 LONG: 83°44'47.82" W

TOWERS		
NO.	AGL	AMSL
1	210	1282
2	210	1282
3	299	1391
4	222	1222
5	118	1181
6	279	1319
7	274	1240
8	237	1147
9	185	1079
10	107	950
11	165	1062
12	100	939
13	70	900
14	174	1029
15	100	930
16	240	1090
17	197	1047
18	250	1088
19	190	1015
20	305	1149
21	189	1021

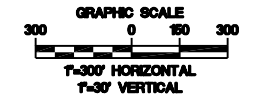
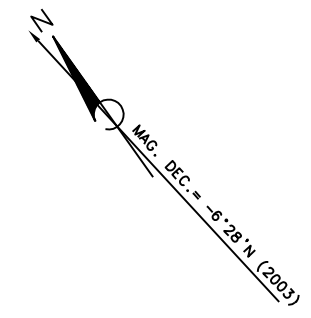
GRAPHIC SCALE  
 1"=2000'

	<p>ANN ARBOR, MICHIGAN</p> <p>ANN ARBOR MUNICIPAL AIRPORT</p> <p>AIRPORT LAYOUT PLAN</p> <p>FAR PART 77 APPROACH SURFACES DRAWING</p>
<p>SITE NO. <b>81-1</b></p>	<p>DRAWING <b>10 OF 10</b></p>
<p>12940723</p>	

D/E	JV	x							
PM	RIC	x							
SOC	DR	x							
QC	WMM	x							
			W. MALINOWSKI						
			IN CHARGE						
			DATE						
			ISSUED FOR						

- LEGEND**
- AIRPORT PROPERTY LINE
  - EASEMENT
  - SECTION LINES
  - RUNWAYS, PARKING, TAXIWAYS
  - FU. RUNWAYS, PARKING, TAXIWAYS
  - RWY PROTECTION ZONES
  - EXISTING BUILDINGS EX-BUILD
  - FUTURE BUILDINGS FU-BUILD
  - ROADS
  - FUTURE AIRPORT PROPERTY LINE
  - CENTERLINES
  - EX. RUNWAY SAFETY AREA RSA
  - EX. TAXIWAY SAFETY AREA TSA
  - EX. OBJECT FREE AREA OFA
  - EX. OBJECT FREE ZONE OFZ
  - EX. TAXIWAY OBJECT FREE AREA TOFA
  - EX. BUILDING RESTRICTION LINE BRL
  - EXISTING TREES AND TREE LINES
  - EXISTING FENCE LINE
  - EX. REIL REIL
  - EX. VASI OR PAPI VASI / PAPI
  - EX. SEGMENTED CIRCLE SEG
  - FUTURE ROADS
  - FUT. TAXIWAY SAFETY AREA F-TSA
  - FUT. TAXIWAY OBJECT FREE AREA F-TOFA
  - FUTURE RWY PROTECTION ZONES
  - FUT. RUNWAY SAFETY AREA F-RSA
  - FUT. OBJECT FREE AREA F-OFA
  - FUTURE CENTERLINES
  - FUTURE RWY PROTECTION ZONES
  - EXISTING POWER & TELEPHONE LINE

**NOTE:**  
RWY 13/31 APPROACHES WERE SURVEYED IN 2003, NO OBSTRUCTIONS OBSERVED.



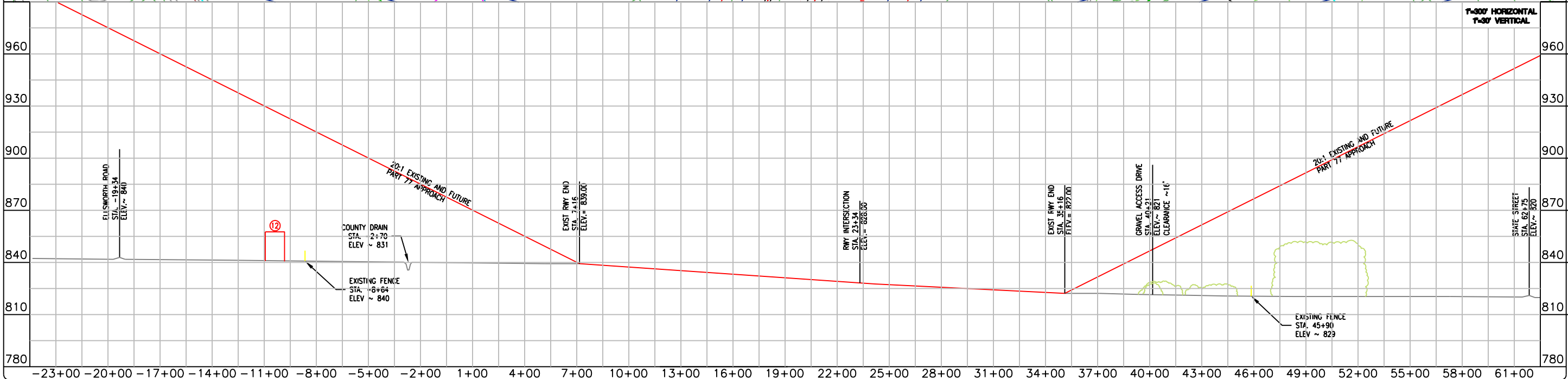
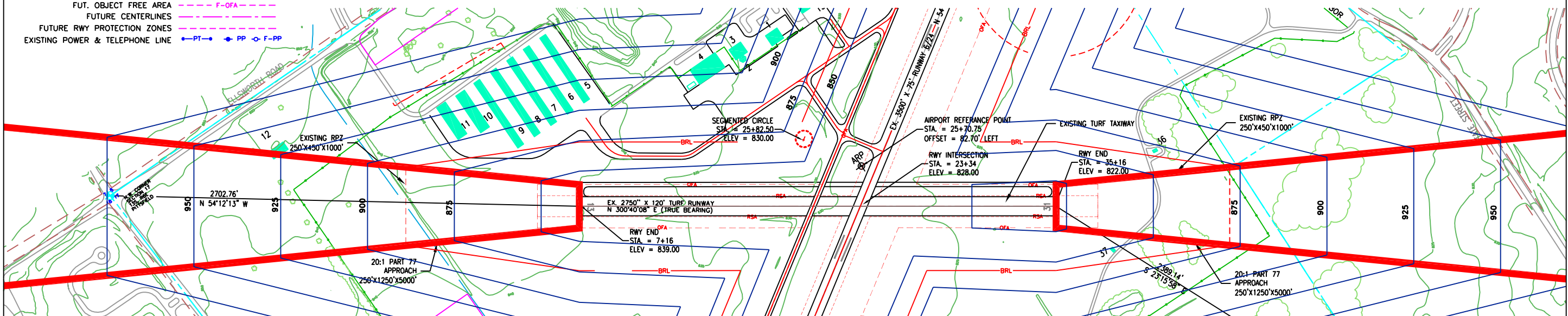
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07/07/06		
07/07/06		
07/08/05		
07/14/04		

D/E	JW	x	IN CHARGE
PM	RC	x	
SOC	KAU	x	
OC	WM	x	
	W. MALINOWSKI		

GRAND RAPIDS, MI.  
300 S. W. STATE ST.  
574-8506

**ANN ARBOR MUNICIPAL AIRPORT**  
ANN ARBOR, MICHIGAN  
AIRPORT LAYOUT PLAN  
RUNWAY APPROACH ZONE DRAWING (RWY 13/31)

**SITE NO.**  
81-1  
**DRAWING**  
7 OF 10  
12934808

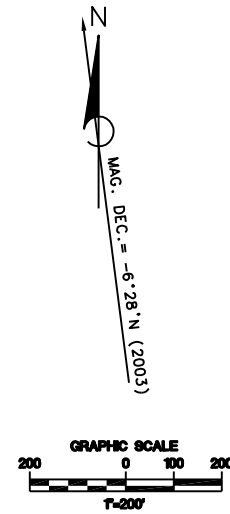


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BUILDING ELEVATION TABLE		
NO.	DESCRIPTION	ELEVATION
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2	AIR TRAFFIC CONTROL TOWER (ATCT)	893.29
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TAXIWAY INFORMATION	
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WIDTH	30'
EDGE SAFETY MARGIN	7.5'
SHOULDER WIDTH	10'
SAFETY AREA WIDTH	79'
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CL TO FIXED OR MOVEABLE OBJECT	65.5'

RUNWAY INFORMATION		
RUNWAY	6/24	13/31
SHOULDER WIDTH	10'	10'
SAFETY AREA	150'x300'	120'x240'
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OBJECT FREE AREA	500'x300'	250'x240'
35' BUILDING RESTRICTION LINE	495'	370'
CL TO HOLD LINE	200'	125'
CL TO TAXIWAY CL	250'	125'
CL TO AIRCRAFT PARKING LINE	250'	125'



LEGEND	
AIRPORT PROPERTY LINE	--- (dashed blue line)
EASEMENT	--- (dashed blue line)
SECTION LINES	--- (dashed blue line)
RUNWAYS, PARKING, TAXIWAYS	--- (dashed blue line)
FU. RUNWAYS, PARKING, TAXIWAYS	--- (dashed magenta line)
RWY PROTECTION ZONES	--- (dashed blue line)
EXISTING BUILDINGS	■ (solid green)
FUTURE BUILDINGS	■ (solid magenta)
ROADS	--- (dashed blue line)
FUTURE AIRPORT PROPERTY LINE	--- (dashed magenta line)
CENTERLINES	--- (dashed blue line)
EX. RUNWAY SAFETY AREA	--- (dashed red)
EX. TAXIWAY SAFETY AREA	--- (dashed red)
EX. OBJECT FREE AREA	--- (dashed red)
EX. OBJECT FREE ZONE	--- (dashed red)
EX. TAXIWAY OBJECT FREE AREA	--- (dashed red)
EX. BUILDING RESTRICTION LINE	--- (dashed red)
EXISTING TREES AND TREE LINES	--- (dashed green)
EXISTING FENCE LINE	--- (dashed green)
EX. REIL	--- (dashed red)
EX. VASI OR PAPI	--- (dashed red)
EX. SEGMENTED CIRCLE	--- (dashed red)
FUTURE ROADS	--- (dashed blue line)
FUT. TAXIWAY SAFETY AREA	--- (dashed magenta)
FUT. TAXIWAY OBJECT FREE AREA	--- (dashed magenta)
FUTURE RWY PROTECTION ZONES	--- (dashed magenta)
FUT. RUNWAY SAFETY AREA	--- (dashed magenta)
FUT. OBJECT FREE AREA	--- (dashed magenta)
FUTURE CENTERLINES	--- (dashed magenta)
FUTURE RWY PROTECTION ZONES	--- (dashed magenta)
EXISTING POWER & TELEPHONE LINE	--- (dashed blue line)
RUNWAY VISIBILITY ZONE	--- (dashed blue line)

D/E	JW	X	PM	RC	X	SOC	KAU	X	OC	WM	X	W. MALINOWSKI	DATE	ISSUED FOR

APPROVED BY	DATE	ISSUED FOR

GRAND RAPIDS, MI.  
3850 E. 57th St. SE

**ANN ARBOR MUNICIPAL AIRPORT**

ANN ARBOR, MICHIGAN

APPORT LAYOUT PLAN

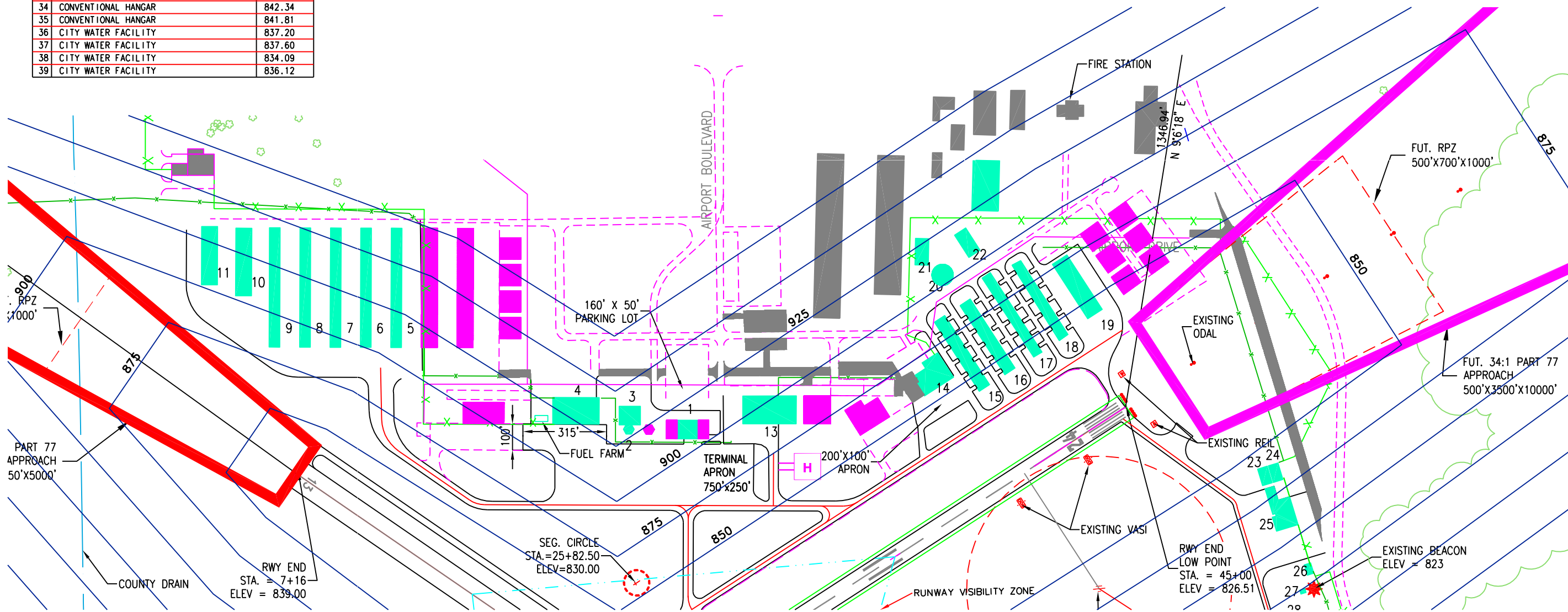
TERMINAL AREA PLAN

SITE NO.  
**81-1**

DRAWING  
**8 OF 10**

12934808

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FUTURE PARCEL ACQUISITIONS								
FEDERAL PROJECT NUMBER	PARCEL NUMBER	GRANTORS	DEED*	LIBER AND PAGE	RECORDED DATE	ACREAGE	NOTES *	CONTROLLING HEIGHT
-	F-1	DB WAREHOUSE LTD.	WD	00-00 00-00	00/00/00	1.09	-	-
-	F-2	PITTSFIELD TOWNSHIP	WD	00-00	00/00/00	2.94	-	-
-	F-3	CLARA SEYMOUR	WD	00-00	00/00/00	5.69	-	-
						FEE ACRES	9.72	

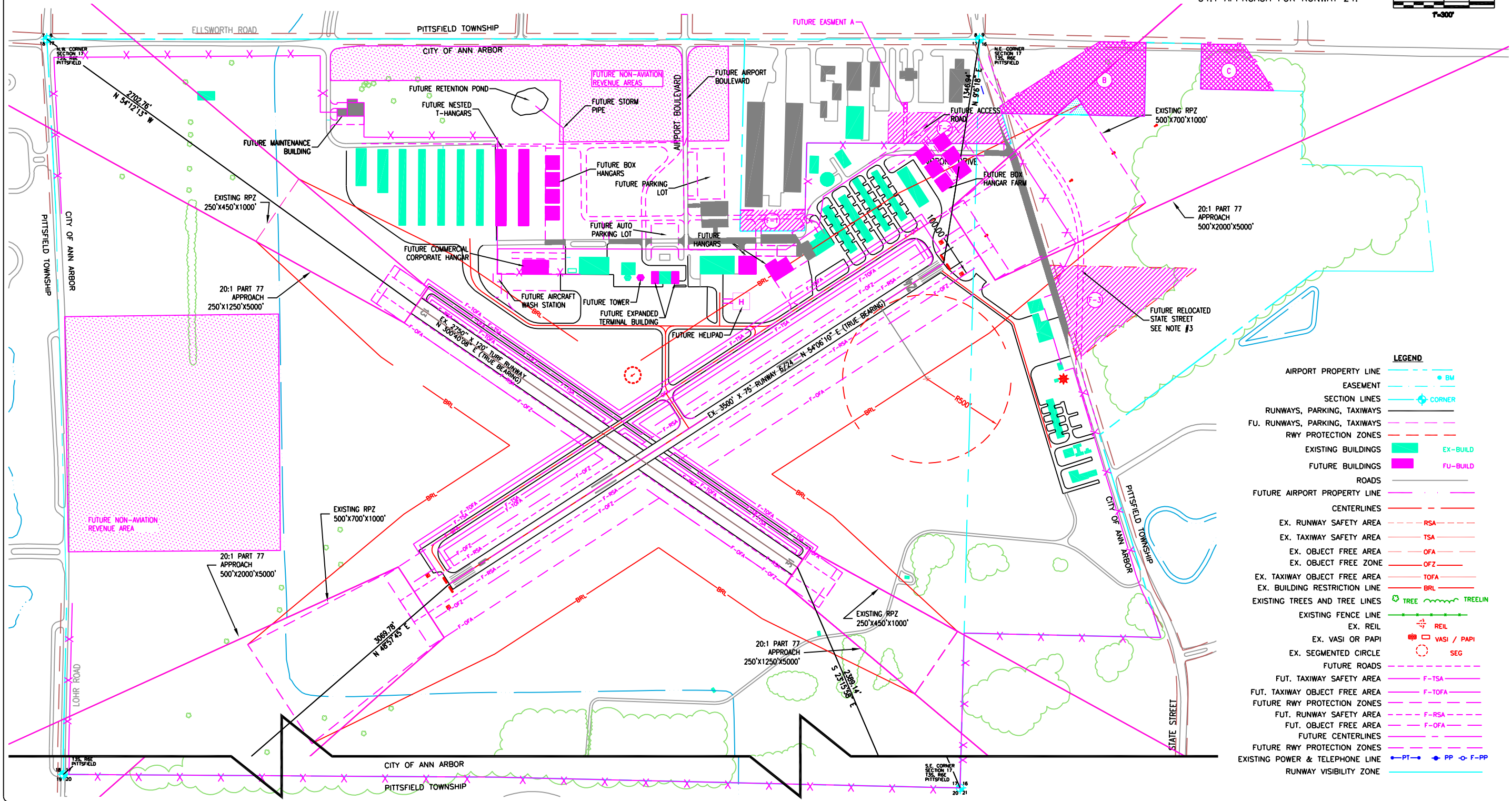
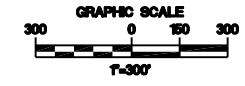
AE-AVIGATION EASEMENT  
CJ-CONSENT JUDGMENT  
E-EASEMENT  
GD-GUARDIAN DEED

CE-CLEARING EASEMENT  
LE-LIGHT EASEMENT  
WD-WARRANTY DEED  
QC-QUIT CLAIM DEED

FUTURE EASEMENT INTERESTS							
NO.	PARCEL	TYPE	GRANTEE	ACREAGE	LIBER-PAGE	RECORDED DATE	NOTES
A	-	EE EASEMENT	PITTSFIELD TOWNSHIP	0.028	00-00	00/00/00	FIRE STATION ACCESS
B	-	AE EASEMENT	PITTSFIELD TOWNSHIP	5.98	00-00	00/00/00	34:1 APPROACH EASEMENT
C	-	AE EASEMENT	PITTSFIELD TOWNSHIP	2.12	00-00	00/00/00	34:1 APPROACH EASEMENT
				8.128	TOTAL ACREAGE		

DE - DRAINAGE EASEMENT  
EE - ACCESS EASEMENT  
AE - AVIGATION EASEMENT

NOTE #3  
STATE STREET TO BE RELOCATED  
OR LOWERED TO PROVIDE 15'  
CLEARANCE FOR THE FUTURE  
34:1 APPROACH FOR RUNWAY 24.



LEGEND	
AIRPORT PROPERTY LINE	— (dashed blue)
EASEMENT	— (dashed red)
SECTION LINES	— (dashed green)
RUNWAYS, PARKING, TAXIWAYS	— (dashed black)
FU. RUNWAYS, PARKING, TAXIWAYS	— (dashed magenta)
RWY PROTECTION ZONES	— (dashed orange)
EXISTING BUILDINGS	■ (green)
FUTURE BUILDINGS	■ (magenta)
ROADS	— (solid black)
FUTURE AIRPORT PROPERTY LINE	— (dashed magenta)
CENTERLINES	— (dashed red)
EX. RUNWAY SAFETY AREA	— (dashed orange)
EX. TAXIWAY SAFETY AREA	— (dashed orange)
EX. OBJECT FREE AREA	— (dashed orange)
EX. OBJECT FREE ZONE	— (dashed orange)
EX. TAXIWAY OBJECT FREE AREA	— (dashed orange)
EX. BUILDING RESTRICTION LINE	— (dashed orange)
EXISTING TREES AND TREE LINES	● (green)
EXISTING FENCE LINE	— (dashed green)
EX. REIL	— (dashed green)
EX. VASI OR PAPI	— (dashed red)
EX. SEGMENTED CIRCLE	— (dashed red)
FUTURE ROADS	— (dashed magenta)
FUT. TAXIWAY SAFETY AREA	— (dashed magenta)
FUT. TAXIWAY OBJECT FREE AREA	— (dashed magenta)
FUTURE RWY PROTECTION ZONES	— (dashed magenta)
FUT. RUNWAY SAFETY AREA	— (dashed magenta)
FUT. OBJECT FREE AREA	— (dashed magenta)
FUTURE CENTERLINES	— (dashed magenta)
FUTURE RWY PROTECTION ZONES	— (dashed magenta)
EXISTING POWER & TELEPHONE LINE	— (dashed black)
RUNWAY VISIBILITY ZONE	— (dashed blue)

P:\M104513\PD5\B1-01-ALP09-PR0P.dwg  
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EXIST=P:\M104513\CIVIL\EXIST.dwg  
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5/5/2004 8:57 am  
Adeoun

DATE	ISSUED FOR
01/07/08	APPROVED RP
01/07/08	FINAL APPROVAL
01/08/08	MOD. FINAL DRAFT
01/14/08	MOD. REVIEW & APPROVAL

GRAND RAPIDS, MI.  
3850 E. S. 117  
574-8206

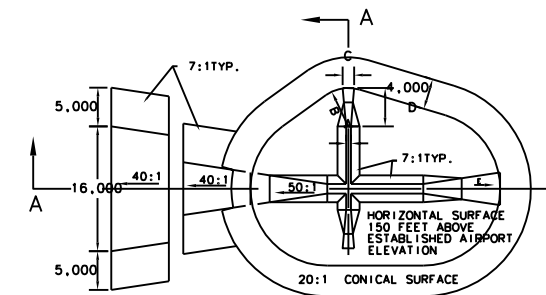
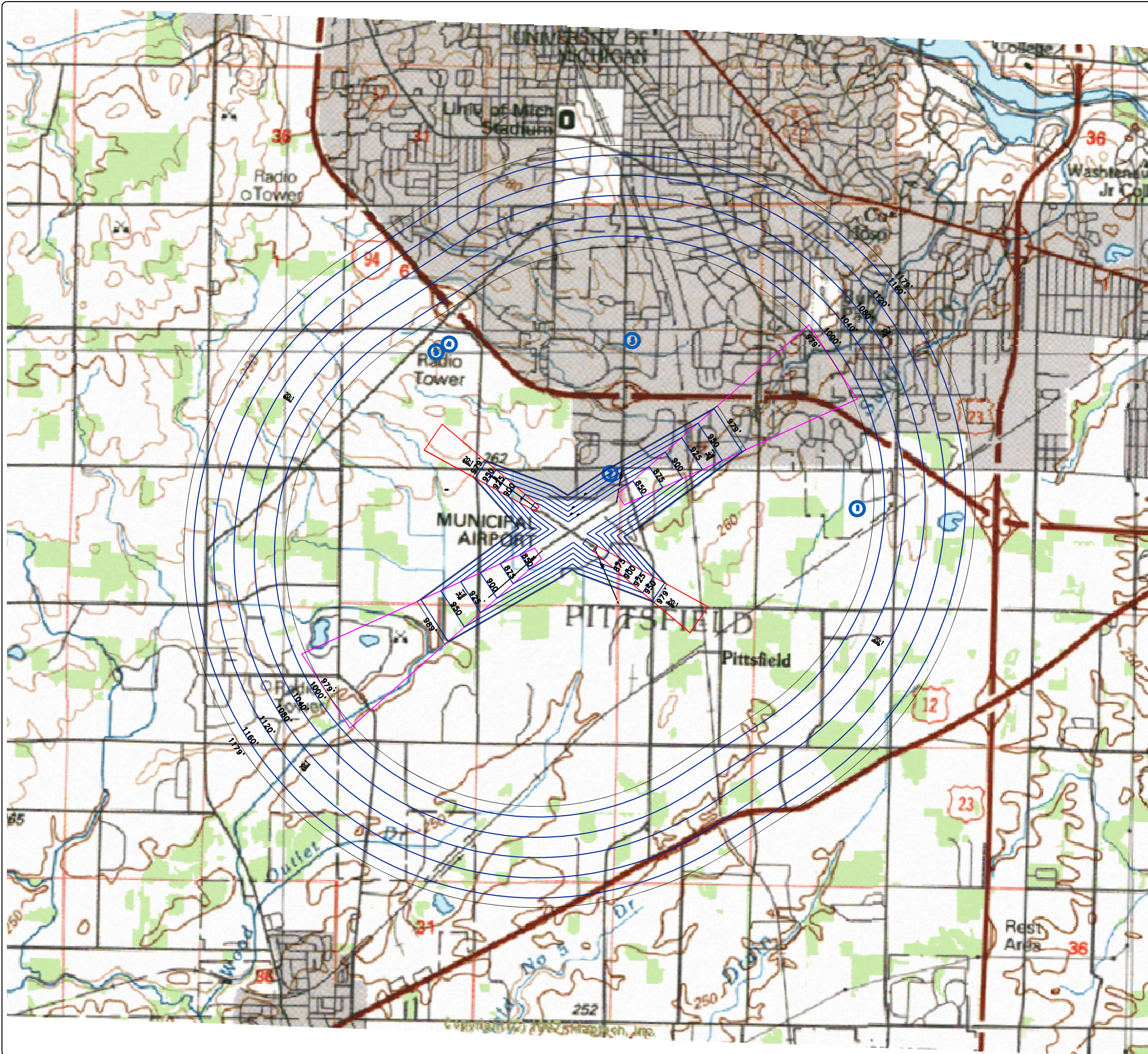
**ANN ARBOR MUNICIPAL AIRPORT**  
ANN ARBOR, MICHIGAN

AIRPORT LAYOUT PLAN  
AIRPORT PROPERTY PLAN

SITE NO.  
**81-1**

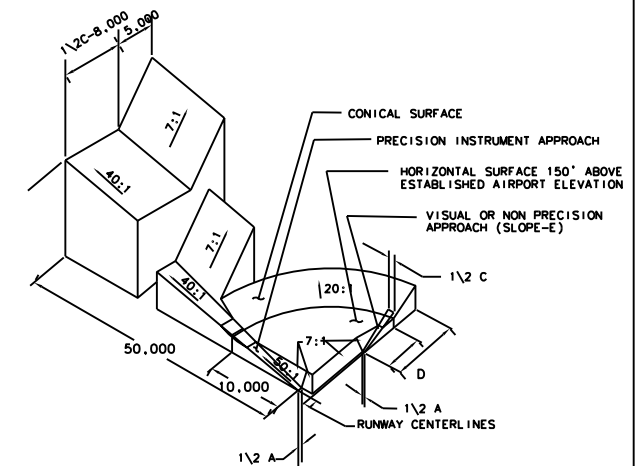
DRAWING  
**9 OF 10**

12934808



DIM	ITEM	DIMENSIONAL STANDARDS (FEET)					
		VISUAL RUNWAY		NON-PRECISION INSTRUMENT RUNWAY		PRECISION INSTRUMENT RUNWAY	
A	WIDTH OF PRIMARY SURFACE AND APPROACH SURFACE WIDTH AT INNER END	250	500	500	500	1,000	1,000
B	RADIUS OF HORIZONTAL SURFACE	5,000	5,000	5,000	10,000	10,000	10,000
C	APPROACH SURFACE WIDTH AT END	1,250	1,500	2,000	3,500	4,000	16,000
D	APPROACH SURFACE LENGTH	5,000	5,000	5,000	10,000	10,000	*
E	APPROACH SLOPE	20:1	20:1	20:1	34:1	34:1	*

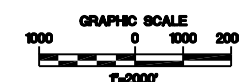
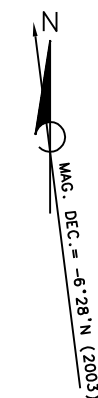
- A- UTILITY RUNWAYS
- B- RUNWAYS LARGER THAN UTILITY
- C- VISIBILITY MINIMUMS GREATER THAN 3/4 MILE
- D- VISIBILITY MINIMUMS AS LOW AS 3/4 MILE
- E- PRECISION INSTRUMENT APPROACH SLOPE IS 50:1 FOR INNER 10,000 FEET AND 40:1 FOR AN ADDITIONAL 40,000 FEET



ESTABLISHED AIRPORT EL. = 829'  
 AIRPORT REFERENCE POINT

EXISTING  
 LAT. 42°13'22.14" N.  
 LONG. 83°44'39.79" W.

TOWERS	AGL	AMSL
1	240'	1090'
2	70'	900'
3	100'	939'
4	185'	1079'
5	237'	1147'



D/E	JW	PM	R/C	X	SOC	KAU	X	OC	WM	X	W. MALINOWSKI	DATE	ISSUED FOR

**DRS**

GRAND RAPIDS, MI.  
 3850 N. 574-8206

**ANN ARBOR MUNICIPAL AIRPORT**  
 AIRPORT LAYOUT PLAN  
 FAR PART 77 APPROACH SURFACES DRAWING

ANN ARBOR, MICHIGAN

SITE NO.  
**81-1**

DRAWING  
**10 OF 10**

12934808

DATE	ISSUED FOR
11/17/2008	ANN ARBOR MUNICIPAL AIRPORT
02/10/09	REVISED PER PLAN
05/01/09	REVISED PER PLAN
09/01/09	REVISED PER PLAN
11/17/2008	ISSUED FOR
DATE	ISSUED FOR

ORANGE COUNTY, OH.  
515 571-0300

# ANN ARBOR MUNICIPAL AIRPORT

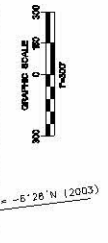
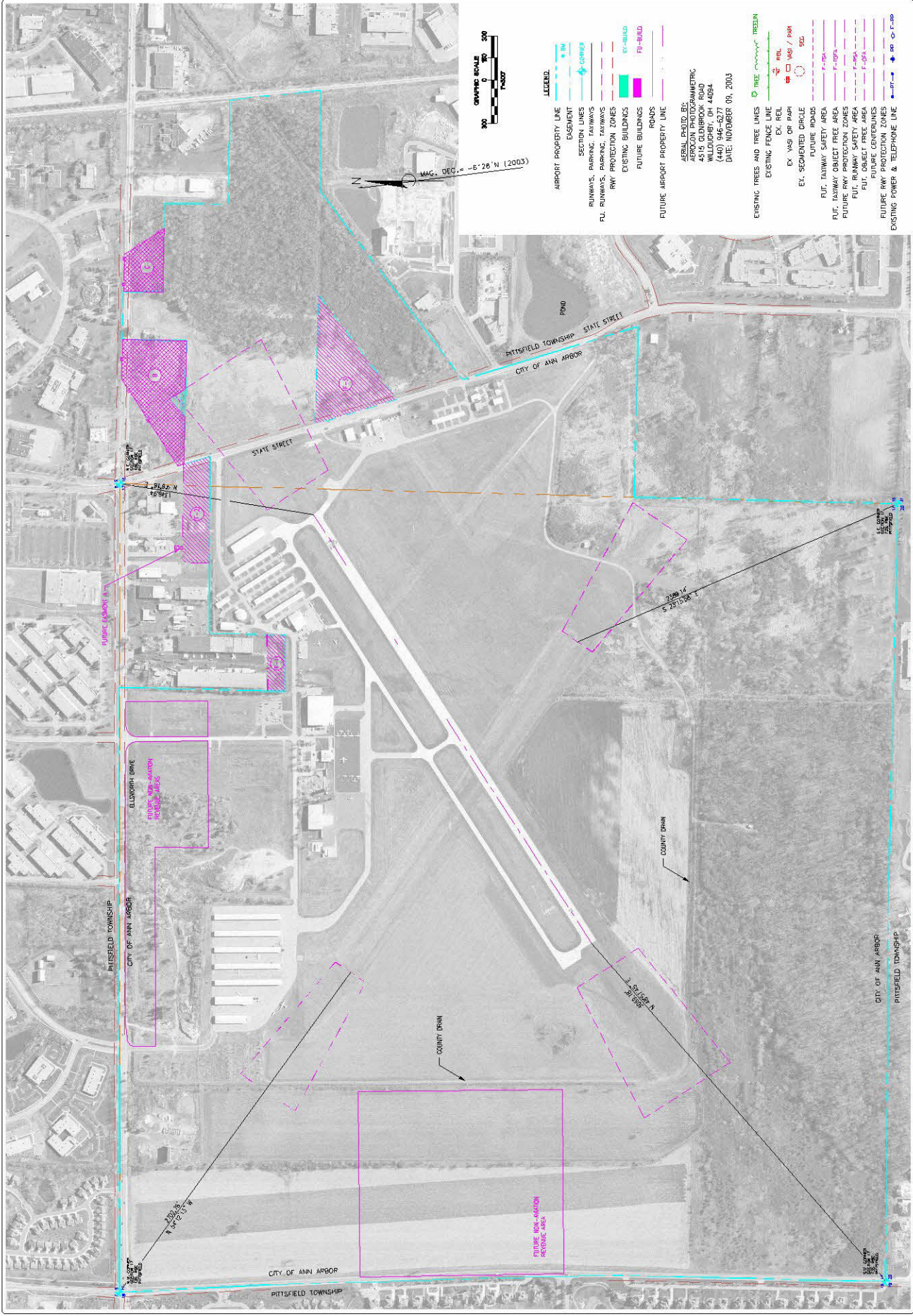
ANN ARBOR, MICHIGAN

APRPORT LAYOUT PLAN  
APRPORT LAYOUT AERIAL

SITE NO.  
**81-1**

DRAWING  
**5 OF 10**

12934808



- LEGEND**
- APRPORT PROPERTY LINE
  - EASEMENT
  - SECTION LINES
  - ROADWAYS, PARKING, TAXIWAYS
  - EXISTING BUILDINGS
  - EXISTING PROTECTION ZONES
  - FUTURE BUILDINGS
  - FUTURE PROTECTION ZONES
  - ROADS
  - FUTURE APRPORT PROPERTY LINE
- EXISTING TREES AND TREE LINES**
- EX. REL. (Red circle)
  - EX. WAS OF PAPE (Red square)
  - EX. SEQUOIA (Red triangle)
- EXISTING FENCE LINE**
- EX. FENCE (Blue dashed line)
- EXISTING TOWER & TELEPHONE LINE**
- EX. TOWER (Blue dashed line)
  - EX. TELEPHONE (Blue dashed line)
- EXISTING PROTECTION ZONES**
- EX. TAWAY SAFETY AREA (Yellow dashed line)
  - EX. RWY PROTECTION ZONES (Yellow dashed line)
  - EX. OBSTACLE FREE AREA (Yellow dashed line)
  - EX. DIRECT FREE AREA (Yellow dashed line)
  - EX. PROTECTION ZONES (Yellow dashed line)
  - EX. PROTECTION ZONES (Yellow dashed line)
- FUTURE PROTECTION ZONES**
- FUT. TAWAY SAFETY AREA (Green dashed line)
  - FUT. RWY PROTECTION ZONES (Green dashed line)
  - FUT. OBSTACLE FREE AREA (Green dashed line)
  - FUT. DIRECT FREE AREA (Green dashed line)
  - FUT. PROTECTION ZONES (Green dashed line)
  - FUT. PROTECTION ZONES (Green dashed line)
- PROTECTED AREAS**
- PROTECTED AREAS (Blue dashed line)
- ADDITIONAL INFO:**  
AERIAL PHOTO BY: AIRPHOTOGRAPHIC  
4515 CLEVERBROOK ROAD  
WILLOUGHBY, OH 44084  
(440) 946-6277  
DATE: NOVEMBER 09, 2003







JENNIFER M. GRANHAM  
VICE CHIEF

STATE OF MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
LANSING

MAY 11, 2006

MR. JAMES R. HAWLEY, Manager  
Ann Arbor Municipal Airport  
801 Airport Road  
Ann Arbor, Michigan 48104

Dear Mr. Hawley:

Subject: Ann Arbor Municipal Airport, Ann Arbor, Michigan  
Airport Layout Plan (ALP) Airspace Approval  
Airspace Case No. 06-AGL-0008-NRA

Enclosed is one approved copy of the Ann Arbor Municipal Airport Layout Plan (ALP), dated January 10, 2006. This ALP is being approved on behalf of the FAA under the authority of Section 314 of the Airport and Airway Improvement Act (AAIA) of 1982 as amended, pursuant to the State Block Grant program. This letter certifies or supersedes all prior ALP approvals. The ALP approval is based on recognition of and adherence to the following:

- The approval is not to be considered a commitment of Federal funding for the proposed development. The FAA has concurred with the proposed development for planning purposes only based on current safety, utility, and efficiency standards. Actual development should comply with approval standards applicable at the time of construction. No design standard modifications have been granted.
- If any of the design critical aircraft or aircraft groups change, this ALP must be reevaluated by the FAA.
- Our approval does not infer or imply that the land in the airport vicinity is considered compatible with airport operations. Federal requirements stipulate:
  - All development programs should be reasonably consistent with the plans of local and state planning agencies for the development in the airport vicinity.
  - That fair consideration has been given to the interest of communities in or near the airport.
  - That development programs provide for the protection and enhancement of the environment.
- The FAA offers no objections to the proposed ultimate airspace utilization as depicted on the ALP based on considerations of safe and efficient use of airspace. The ALP has the status of "Plan on File" for the purpose of 14 CFR 71, Obstruction Evaluations, and 14 CFR 75.

MICHIGAN AERONAUTICS COMMISSION

WWW.MICHIGAN.AIRPORTS.DOT.GOV

4. Approval is given subject to the condition that any proposed airport development requiring environmental processing shall not be undertaken without prior written environmental approval by the FAA. Any airport development action that falls within the scope of Paragraph 24 of FAA Order 5050.4A, or which involves any of the following:

- Runway End 24 currently has a NPI approach 20:1 with a displaced threshold.
- Purchase additional land in fee and easements for the approach to Runway End 24 to provide for a 15' clear access over State Road for a future 24:1 NPI approach. State Road is proposed to be relocated or lowered to provide this 15' clearance.
- Proposed new Air Traffic Control Tower (ATCT).
- Proposed new access road to the administration building area.
- Proposed additional hangars.
- Proposed new drainage system.
- Clear, lower or remove obstructions (refer to the Obstruction Table on Sheet 6).
- Land acquisition associated with any of the above items plus land acquisition which results in relocation of residential units where there is evidence of insufficient commensurate replacement dwellings, major disruption of business activities, or acquisition which involves land covered under Section 4(f) of the DOT Act (recited 49 USC Subtitle I, Section 303, January 12, 1983).
- Any airport development action that falls within the scope of Paragraph 24 of FAA Order 5050.4A, or which involves any of the following:
  - Use of Section 4(f) lands.
  - Effect on any properties included in or eligible for inclusion in the National Register of Historic Places or other property of state or local historical, architectural, archeological, or cultural significance.
  - Land acquisition for the conversion of farmland, which source more than 160 net Farm A7-1006 and is protected under the Farmland Protection Policy Act (FPPA), to nonagricultural use through federal financial assistance or through conveyance of government land.
  - Wetlands, coastal zones, or flood plains.
  - Endangered or threatened species.

Any items not covered above in item 4 shall not take place until the environmental processing has been approved by the FAA. All development items must comply with the National Environmental Policy Act of 1969 (P.L. 91-190).

To avoid conflicts with future development, we recommend you utilize the ALP when preparing leases. We further recommend you provide copies to the local and state planning zoning boards and county and city officials and encourage them to adopt compatible land use criteria in and around the airport. Copies should also be distributed to the Fixed Base Operators (FBO's) and airport users.

The Airport and Airway Improvement Act (49 USC 47107(a)(16)(D)) requires the sponsor to eliminate any adverse effects on Federal facilities, or bear all costs to relocate those facilities that are a result of an airport change. However, if AIP eligible construction/development items adversely affect FAA facilities, the cost of relocating the facilities may be eligible under AIP.

This approval does not include a detailed evaluation of actual construction. Prior to constructing any development on the airport, notice (FAA Form 7460-1) consistent with 14 CFR 77 must be filed with this office. This approval does not include approval for temporary construction equipment which may be used during actual construction, e.g., cranes, equipment staging areas, site access routes, etc. A separate construction safety/phasing plan for any project should be reviewed by the FAA no less than 60 days prior to beginning any project.

If development is planned without aviation trust fund investments that will change the status or geometry of runways, taxiways, aprons, or other existing airport surfaces, notice (FAA Form 7460-1) must be filed with this office consistent with 14 CFR 157.

We trust we have provided a clear explanation of the conditions and terms of our approval. If you need further clarification, please contact John D. Pierce at (517) 335-9857.

Sincerely,

*David L. Baker*  
David L. Baker, P.E., Manager  
ALP Programs  
Airports Division  
Multi-Modal Transportation Services Bureau

Enclosure  
or: ASW-520 (w/ALP on PDF file); FTH: FTO (w/ALP on PDF file); FAA-ADM (w/ALP); Superior SMO (w/ALP on PDF file); AGL-470 (w/ALP on PDF file); and B. Malinowski, URS Corp, Inc.

STATE OF MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
AIRPORTS DIVISION  
LANSING, MICHIGAN



ANN ARBOR MUNICIPAL AIRPORT  
WASHTENAW COUNTY  
ANN ARBOR, MI  
AIRPORT LAYOUT PLAN

ANN ARBOR AIRPORT  
CITY OF ANN ARBOR

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
MATTHEW KULHANEK - AIRPORT MANAGER

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
JOHN HEFTJE - MAYOR

MICHIGAN AERONAUTICS  
COMMISSION

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
RICK HAMMOND - AIRPORTS DIV. ADMINISTRATOR

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
DAVID L. BAKER P.E. NO. 40936 - CHIEF ENGINEER

REVISION BLOCK		
DATE	MODIFICATIONS	INITIALS

DESIGNERS & CONSULTANTS

**URS**

GRAND RAPIDS, MI.  
3850 SPARKS DR. S.E.  
616 574-8500

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
WILLIAM W. MALINOWSKI, P.E. NO. 17808

NOTE: SIGNATURE IN CONSULTANT BLOCK CERTIFIES ALP WAS PREPARED USING ALP CHECKLIST.

10	FAR PART 77 SURFACES	
9	AIRPORT PROPERTY PLAN	
8	TERMINAL AREA PLAN	
7	RUNWAY PROTECTION ZONE DRAWING (RWY 13/31)	
6	RUNWAY PROTECTION ZONE DRAWING (RWY 6/24)	
5	AIRPORT LAYOUT AERIAL	
4	AIRPORT LAYOUT PLAN (FUTURE)	
3	AIRPORT LAYOUT PLAN (EXISTING)	
2	AIRPORT DATA SUMMARY	
1	TITLE & APPROVAL SHEET	
SHEET NUMBER	INDEX OF SHEETS	LATEST REVISION DATE

AIRPORT TYPE - GENERAL AVIATION | SITE NO. - 81-1

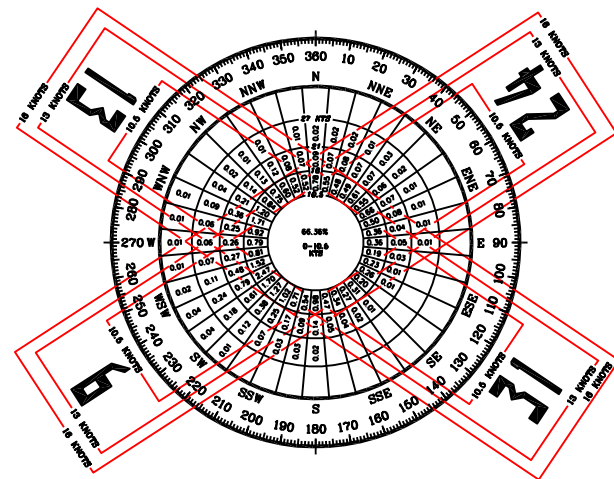
W:\04333\05\01-TITLE.dwg  
J:\andun  
8:20 am on Mar 1, 01

# MODIFICATIONS TO FAA DESIGN STANDARDS

DATE OF FAA LETTER	DESCRIPTION
	CATEGORY C APPROACH MINIMA GRANDFATHERED FAA AIRSPACE NO. 92-AGL-698-NRA
	TAXIWAY WIDTH AT 30', NOT STANDARD 35'
	NORTHEAST FBO HANGAR ATCT LINE OF SITE TO END OF PARALLEL TAXIWAY
	TWO T-HANGARS IN NORTHEAST CORNER OF AIRPORT ATCT LINE OF SITE TO END OF PARALLEL TAXIWAY

## AIRPORT DATA TABLE

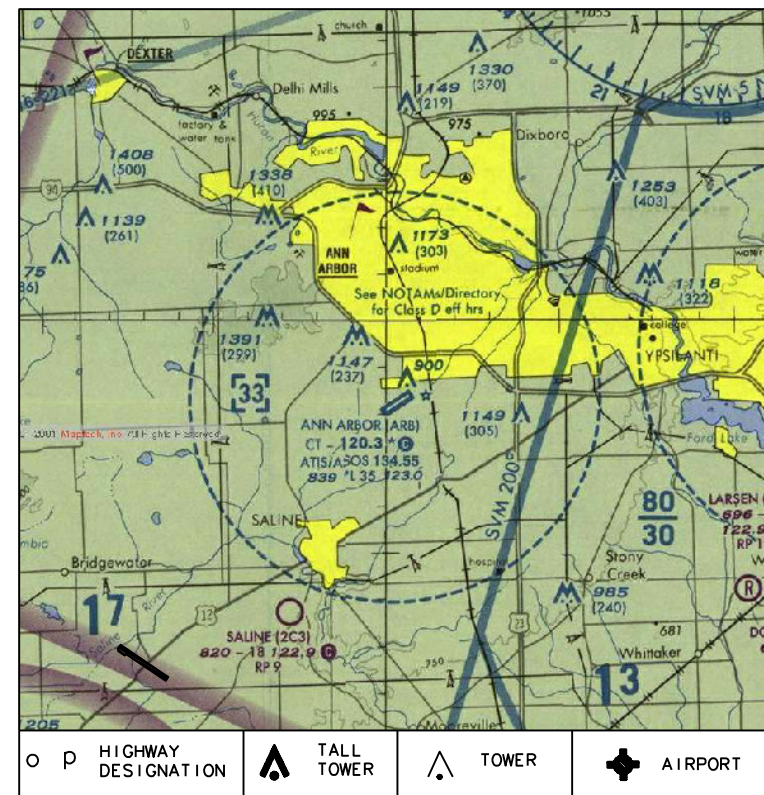
COUNTY:	WASHTENAW	TOWNSHIP:	PITTSFIELD	TOWN:	T 3 S
MEAN MAXIMUM TEMPERATURE:	83°F	JULY		RANGE:	R 6 E
AIRPORT REFERENCE POINT:	LAT: 42°13'22.14" N.		LONG: 83°44'39.79" W		
AIRPORT REFERENCE CODE:	ARB				
AIRPORT ELEVATION (MSL)	EXISTING 829		FUTURE 829		
AIRPORT AND TERMINAL NAVAIDS	ROTATING BEACON VOR, ATCT		ROTATING BEACON VOR, ATCT		
SERVICE LEVEL	GENERAL AVIATION		GENERAL AVIATION		
AIRPORT ROLE	GENERAL UTILITY		GENERAL UTILITY		
APPROACH CATEGORY	B				
AIRPLANE DESIGN GROUP	II				



STATION : DETROIT METROPOLITAN AIRPORT  
PERIOD : 1/82 TO 1/89  
OBSERVATIONS: 94,847

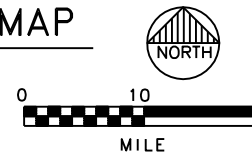
### WIND COVERAGE SUMMARY

	10.5 KNOTS	13 KNOTS	16 KNOTS
RUNWAY 6-24	88.30%	94.10%	98.50%
RUNWAY 13-31	81.80%	88.80%	--
COMBINED COVERAGE	96.90%	99.20%	--



### LOCATION MAP

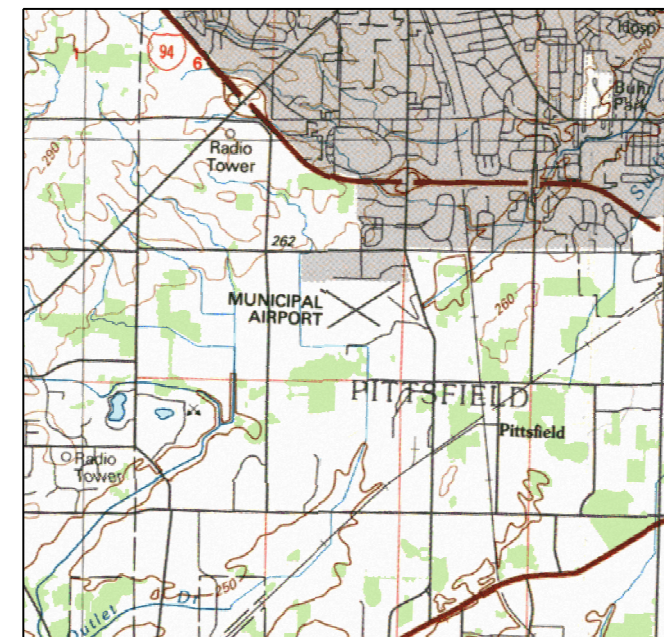
SCALE: 1:500,000



## RUNWAY AND APPROACH DATA

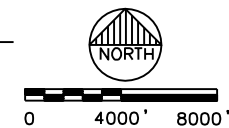
RUNWAY	6		24		13		31	
	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE	EXISTING	FUTURE
RUNWAY LENGTH	3500'	3500'	3500'	3500'	2750'	2750'	2750'	2750'
RUNWAY WIDTH	75'	75'	75'	75'	110'	110'	110'	110'
DISPLACED THRESHOLD	--	--	--	--	--	--	--	--
EFFECTIVE LANDING LENGTH	3500'	3500'	3500'	3500'	2750'	2750'	2750'	2750'
EFFECTIVE TAKEOFF LENGTH	3500'	3500'	3500'	3500'	2750'	2750'	2750'	2750'
TORA	--	--	--	--	--	--	--	--
TODA	--	--	--	--	--	--	--	--
ASDA	--	--	--	--	--	--	--	--
LDA	--	--	--	--	--	--	--	--
STOPWAY	--	--	--	--	--	--	--	--
CLEARWAY	--	--	--	--	--	--	--	--
RUNWAY CATEGORY	NON-PRECISION	NON-PRECISION	NON-PRECISION	NON-PRECISION	UTILITY	UTILITY	UTILITY	UTILITY
RUNWAY GRADIENT	0.17%	0.17%	0.17%	0.17%	0.61%	0.61%	0.61%	0.61%
PAVEMENT TYPE	CONCRETE	CONCRETE	CONCRETE	CONCRETE	TURF	TURF	TURF	TURF
PAVEMENT STRENGTH:	SW 45	SW 45	SW 45	SW 45	NONE	NONE	NONE	NONE
GEAR/LOAD(X 1000)	DW 70	DW 70	DW 70	DW 70	NONE	NONE	NONE	NONE
RUNWAY LIGHTING	MIRL	MIRL	MIRL	MIRL	NONE	NONE	NONE	NONE
RUNWAY MARKING	N.P.I.	N.P.I.	N.P.I.	N.P.I.	NONE	NONE	NONE	NONE
NAVIGATIONAL AIDS	VOR, PAPI ROT. BEACON SEG. CIRCLE REIL, RNAV	VOR, PAPI ROT. BEACON SEG. CIRCLE REIL, RNAV	GPS, VOR, PAPI ROT. BEACON SEG. CIRCLE ODALS, RNAV	GPS, VOR, PAPI ROT. BEACON SEG. CIRCLE ODALS, RNAV	ROT. BEACON SEG. CIRCLE	ROT. BEACON SEG. CIRCLE	ROT. BEACON SEG. CIRCLE	ROT. BEACON SEG. CIRCLE
APPROACH LIGHTING	PAPI	PAPI	VASI	PAPI	NONE	NONE	NONE	NONE
AIRCRAFT APPROACH CATEGORY	B	B	B	B	B	B	B	B
AIRPLANE DESIGN GROUP	II	II	II	II	I	I	I	I
CRITICAL AIRCRAFT	BEECH KING AIR C90-1	CESSNA CITATION II	BEECH KING AIR C90-1	CESSNA CITATION II	CESSNA 172	CESSNA 172	CESSNA 172	CESSNA 172
APPROACH	NON-PRECISION	NON-PRECISION	NON-PRECISION	NON-PRECISION	VISUAL	VISUAL	VISUAL	VISUAL
RPZ	500' x 700' x 1000'	500' x 700' x 1000'	500' x 700' x 1000'	500' x 700' x 1000'	250' x 450' x 1000'	250' x 450' x 1000'	250' x 450' x 1000'	250' x 450' x 1000'
APPROACH RATIO FAR PART 77	20:1	34:1	20:1	34:1	20:1	20:1	20:1	20:1
APPROACH VISIBILITY MINIMUMS	> 1 MILE	> 1 MILE	> 1 MILE	> 1 MILE	> 1 MILE	> 1 MILE	> 1 MILE	> 1 MILE
RUNWAY END COORDINATE (NAD 83) LAT:	N 42°13'12.88"	N 42°13'12.88"	N 42°13'32.97"	N 42°13'32.97"	N 42°13'29.3"	N 42°13'29.3"	N 42°13'14.8"	N 42°13'14.8"
LONG:	W 83°45'00.38"	W 83°45'00.38"	W 83°44'22.45"	W 83°44'22.45"	W 83°45'04.0"	W 83°45'04.0"	W 83°44'33.1"	W 83°44'31.1"

RUNWAY 13/31 COORDINATES ARE FROM 2004 GPS SURVEY  
RUNWAY 6/24 COORDINATES ARE FROM PREVIOUS ALP



### VICINITY MAP

SCALE: 1"=4000'



DATE	ISSUED FOR

IN CHARGE
W. MALINOWSKI

GRAND RAPIDS, MI.  
330 S. W. 11th St.  
ANN ARBOR, MI 48106



ANN ARBOR MUNICIPAL AIRPORT  
ANN ARBOR, MICHIGAN  
AIRPORT LAYOUT PLAN  
AIRPORT DATA SUMMARY

SITE NO.  
81-1

DRAWING  
2 OF 10

12934808

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AD:oum  
4/30/2004 9:26 am

**BUILDING ELEVATION TABLE**

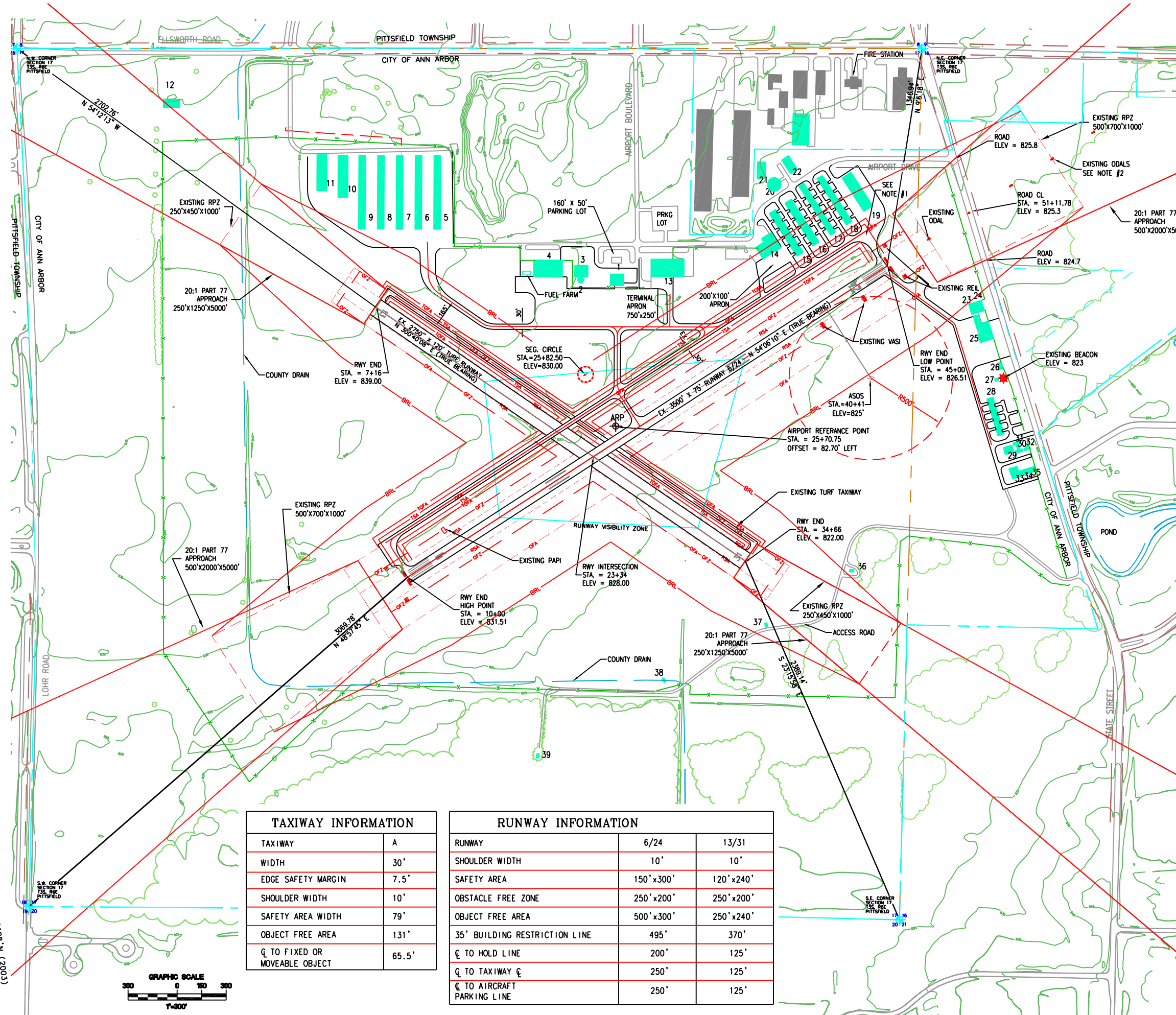
NO.	DESCRIPTION	ELEVATION
1	ADMINISTRATION/TERMINAL BUILDING	849.56
2	AIR TRAFFIC CONTROL TOWER (ATCT)	893.29
3	AIR TRAFFIC ADMINISTRATION BUILDING	864.52
4	CORPORATE HANGAR (AV. GAS CO.)	866.72
5	T-HANGAR	858.03
6	T-HANGAR	857.98
7	T-HANGAR	857.12
8	T-HANGAR	857.95
9	T-HANGAR	858.01
10	T-HANGAR (NESTED)	863.58
11	T-HANGAR (NESTED)	863.56
12	BARN	894.80
13	CORPORATE HANGAR (MICHIGAN UNIVERSITY)	861.57
14	FIXED BASE OPERATION HANGAR	862.57
15	T-HANGAR	846.73
16	T-HANGAR	846.47
17	T-HANGAR	843.65
18	T-HANGAR	846.30
19	T-HANGAR (NESTED)	849.13
20	ROTATING FLOOR HANGAR	850.89
21	CONVENTIONAL HANGAR	851.15
22	CONVENTIONAL HANGAR	847.51
23	CONVENTIONAL HANGAR	838.92
24	CONVENTIONAL HANGAR	838.87
25	FIXED BASE OPERATION HANGAR	846.03
26	OFFICE BUILDING	837.91
27	CITY WATER FACILITY	823.35
28	T-HANGAR	836.39
29	CONVENTIONAL HANGAR	842.77
30	T-HANGAR	834.98
31	T-HANGAR	835.85
32	T-HANGAR	836.80
33	CONVENTIONAL HANGAR	843.80
34	CONVENTIONAL HANGAR	842.34
35	CONVENTIONAL HANGAR	841.81
36	CITY WATER FACILITY	837.20
37	CITY WATER FACILITY	837.60
38	CITY WATER FACILITY	834.09
39	CITY WATER FACILITY	836.12

**LEGEND**

- AIRPORT PROPERTY LINE ———— BM
- EASEMENT ———— CORNER
- SECTION LINES ————
- RUNWAYS, PARKING, TAXIWAYS ————
- FU. RUNWAYS, PARKING, TAXIWAYS ————
- RWY PROTECTION ZONES ————
- EXISTING BUILDINGS ———— EX-BUILD
- FUTURE BUILDINGS ———— FU-BUILD
- ROADS ————
- FUTURE AIRPORT PROPERTY LINE ————
- CENTERLINES ————
- EX. RUNWAY SAFETY AREA ———— RSA
- EX. TAXIWAY SAFETY AREA ———— TSA
- EX. OBJECT FREE AREA ———— OFA
- EX. OBJECT FREE ZONE ———— OFZ
- EX. TAXIWAY OBJECT FREE AREA ———— TOFA
- EX. BUILDING RESTRICTION LINE ———— BRL
- EXISTING TREES AND TREE LINES ———— TREE TREELIN
- EXISTING FENCE LINE ————
- EX. REIL ———— REIL
- EX. VASI OR PAPI ———— VASI / PAPI
- EX. SEGMENTED CIRCLE ———— SEG
- FUTURE ROADS ————
- FUT. TAXIWAY SAFETY AREA ———— F-TSA
- FUT. TAXIWAY OBJECT FREE AREA ———— F-TOFA
- FUTURE RWY PROTECTION ZONES ————
- FUT. RUNWAY SAFETY AREA ———— F-RSA
- FUT. OBJECT FREE AREA ———— F-OFA
- FUTURE CENTERLINES ————
- FUTURE RWY PROTECTION ZONES ————
- EXISTING POWER & TELEPHONE LINE ———— PP ———— F-PP
- RUNWAY VISIBILITY ZONE ————

**NOTE #1**  
TWO T-HANGARS IN NORTHEAST CORNER OF AIRPORT AND NORTHEAST FBO HANGAR OBSCURE LINE OF SITE TO END OF PARALLEL TAXIWAY

**NOTE #2**  
OADLS - OMNIDIRECTIONAL APPROACH LIGHTING SYSTEM

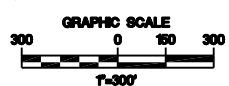


**TAXIWAY INFORMATION**

TAXIWAY	A
WIDTH	30'
EDGE SAFETY MARGIN	7.5'
SHOULDER WIDTH	10'
SAFETY AREA WIDTH	79'
OBJECT FREE AREA	131'
CL TO FIXED OR MOVEABLE OBJECT	65.5'

**RUNWAY INFORMATION**

RUNWAY	6/24	13/31
SHOULDER WIDTH	10'	10'
SAFETY AREA	150' x 300'	120' x 240'
OBSTACLE FREE ZONE	250' x 200'	250' x 200'
OBJECT FREE AREA	500' x 300'	250' x 240'
35' BUILDING RESTRICTION LINE	495'	370'
CL TO HOLD LINE	200'	125'
CL TO TAXIWAY CL	250'	125'
CL TO AIRCRAFT PARKING LINE	250'	125'



BASE: \\C:\V\BASE.dwg  
 info: \\C:\DET\info1.dwg  
 info2: \\C:\DET\info2.dwg  
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 J:\m\j\n 3/13/2006 11:54 am

D/E	JW	X	PM	RC	X	SOC	KAU	X	OC	WM	X	W.	MALINOWSKI	DATE	ISSUED FOR

GRAND RAPIDS, MI.  
3850 N.E. 57th ST.  
**DRS**

**ANN ARBOR MUNICIPAL AIRPORT**  
AIRPORT LAYOUT PLAN  
AIRPORT LAYOUT PLAN (EXISTING)

**ANN ARBOR, MICHIGAN**

**SITE NO. 81-1**

**DRAWING 3 OF 10**

**12934808**