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November 15, 2010

Mr. Ernest P. Gubry  
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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

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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'.

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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 NOx, 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.