

**Wisconsin Department of Transportation and
Federal Aviation Administration (FAA) FINDING
OF NO SIGNIFICANT IMPACT (FONSI)
For the Runway 10-28 Runway Safety Area Improvements
Environmental Assessment (EA)
At the Waukesha County/Crites Field
Airport
Waukesha County, Wisconsin**

The Wisconsin Department of Transportation and Federal Aviation Administration (FAA) prepared this FONSI for proposed runway safety area improvements at the Waukesha County Airport (UES). In accordance with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and based on the evaluation in the EA, dated May, 2017, there are no significant impacts associated with the proposed project. Therefore, an Environmental Impact Statement (EIS) will not be prepared and a FONSI is being issued.

1. Project Purpose

The purpose of the project is to bring the safety areas for Runway 10-28 at Waukesha County Airport into compliance with FAA design standards, and to provide related infrastructure improvements.

2. Project Need

The need for the proposed project is driven by FAA standards related to runway safety which is one of the FAA's top five safety priorities. The FAA has recognized that the safety areas for Runways 10 and 28 at the Waukesha County Airport are not in compliance with the standards outlined in their Airport Design Advisory Circular, 150/5300-13A.

Design standards have been set by the FAA for runway safety areas (RSAs) to enhance the safe operation of an airport. Currently, Runway 10-28 at Waukesha County Airport is in non-compliance with FAA standards for these safety areas that extend off both the ends and sides of this runway. The safety areas for Runway 10-28 are required to be 500' wide (centered on the runway centerline) and additionally extend 1,000' beyond the useable end of the runway pavement. The safety areas are to be clear, dry and smoothly graded areas capable of supporting the weight of snow removal equipment, aircraft rescue and firefighting equipment, and the passage of an aircraft without causing structural damage to the plane.

For the west (Runway 10) end, Silvernail Road cuts through a substantial portion of the safety area extending beyond this end of the runway. The presence of this roadway in combination with non-standard grading results in roughly half of the required safety area length (500 feet) being non-standard.

For the east (Runway 28) end, Pewaukee Road also cuts through a significant portion of the safety area. Roughly 310 feet of the required 1,000-foot length of safety area is non-standard as a result.

Along the sides of Runway 10-28, several areas of non-standard safety area exist. These include the presence of an abandoned parallel taxiway on the north, areas of non-standard grading where ground slopes exceed the maximums allowed, and the presence of storm sewer culverts and ditching.

Other related deficiencies associated with the Runway 10-28 safety areas have been identified. These include the need to relocate existing navigational instruments outside the runway safety areas and to construct new or relocated access roads to these facilities that will maintain ground vehicles outside the safety areas and object free areas of Runway 10-28.

A separate safety issue also exists on the primary taxi route to and from the Runway 10 end. The transition of parallel Taxiway A from a 400 to 575-foot offset from Runway 10-28 is abrupt and difficult for large jet aircraft to maneuver safely. Widened pavement transitions associated with these curves need to be brought into conformance with Taxiway Design Group 2 standards to provide the required margins of safety between the wheels and the edge of pavement.

3. Alternatives Considered

3.1 No Build Alternatives

Alternative 1 considered taking no action for bringing the existing safety areas for Runway 10- 28 into compliance with FAA standards. Under this scenario the purpose of the project would not be met and the Airport would continue to operate under the non-standard RSA conditions. Alternative 2 considered requesting continuance of previous waivers granted by the FAA for the non-standard RSA conditions. Recent requests by the County for indefinite extensions of these waivers were not granted as the FAA has indicated that practicable, feasible solutions exist for bringing the RSAs into compliance with federal standards.

3.2 Build Alternatives

Using the guidance provided in FAA Order 1050.1F ¹, FAA Order 5200.8 ² and FAA Order 5200.9 ³, initial build alternatives were developed that included both roadway and airfield modifications. Alternatives were then developed that considered combinations of these alternatives to provide an overall safety area solution for both ends while maintaining runway length. This section summarizes the findings of the build alternatives analysis, presents a comparison of the practicable and feasible alternatives, and identifies the preferred alternative from the EA.

3.2.1 Roadway Modifications (Alternatives 3 - 6)

In evaluating roadway modification alternatives, it was determined that neither Silvernail Road to the west or Pewaukee Road to the east could be closed. This conclusion was reached through meetings with the agencies and municipalities who own and maintain these adjacent roadways, and in consideration of the volume of traffic and regional benefits they provide to the traveling public. Options for tunneling either roadway exceeded the maximum feasible cost established in FAA Order 5200.9. Of the roadway modification alternatives, only the realignment of Silvernail Road was determined to be practicable and feasible.

3.2.2 Airfield Modifications - (Alternatives 7 - 10)

In evaluating airfield modification alternatives, the users of the Airport were surveyed to determine their operational needs. The critical aircraft at Waukesha County Airport (UES) are business jets. Based on the feedback received from the users, it was determined that the existing runway length (5,848 feet) needed

¹ FAA Order 1050.1F – Environmental Impacts: Policies and Procedures

² FAA Order 5200.8 – Runway Safety Area Program

³ FAA Order 5200.9 – Financial Feasibility and Equivalency of Runway Safety Area Improvements and Engineered Material Arresting Systems

to remain for both takeoff and landing operations. The FAA reviewed the aircraft operations conducted at UES and the user survey responses and concurred with the need to maintain the existing runway length.

Of the airfield modifications alternatives analyzed, installation of an Engineered Material Arresting System (EMAS) on the end of Runway 28 was determined to be a practicable and feasible alternative. Other options for incorporating declared distances or otherwise shifting the runway starting and stopping points by themselves did not meet the stated purpose and need, but were also carried forward for further evaluation in combination with other improvements.

3.2.3 Combination of Airfield and Roadway Modifications (Alternatives 11 & 12)

Considering the site constraints and the need to maintain runway length, a realignment of Silvernail Road was determined to be the only practicable and feasible way to provide the overall runway safety area length needed between Silvernail Road and Pewaukee Road. Two feasible alternatives were considered for maintaining existing runway length in both directions within the overall safety area length provided by a Silvernail Road realignment. These included extending Runway 10 by 400 feet west and incorporating declared distances (Alternative 11), or installing an EMAS bed off the end of Runway 28 (Alternative 12).

3.2.4 Comparison of Alternative 11 & Alternative 12

Both Alternatives 11 and 12 provide standard RSAs to both ends of Runway 10-28 while maintaining runway length. Both require the realignment of Silvernail Road, the grading of a full safety area off Runway 10, and the corresponding impacts to wetlands and property. A tiered analysis summary of build Alternatives 11 and 12 are presented in comparison to the no build alternatives on Table 3-1.

Table 3-1 - Tiered Analysis for Runway 10-28 Safety Areas Alternatives

		No Build Alternatives		Build Alternatives			
Parameters		No Action	Request Waiver	Alternative 11		Alternative 12	
				Runway 10 (West) End	Runway 28 (East) End	Runway 10 (West) End	Runway 28 (East) End
Tier Level 1							
Purpose and Need	Provides Compliant Runway Safety Areas?	No	No	Yes	Yes	Yes	Yes
	Continue to Next Level?	No	No	Yes	Yes	Yes	Yes
Tier Level 2		(Retained for Comparison)					
Project Criteria	Maintain Existing Useable Runway Lengths?	NA	NA	Yes	Yes	Yes	Yes
	Complies with Maximum Feasible Cost Outlined in FAA Order 5200.9?	NA	NA	Yes	Yes	Yes	Yes
	Continue to Next Level?	No	No	Yes	Yes	Yes	Yes
Tier Level 3							
Practicability and Feasibility	Construction Impacts - <i>Scope of Improvements</i>	None	None	Realign Silvernail Road to the west around Runway 10 Safety Area. Extend Runway 10 by 400'. Relocate MALSR, PAPI, Glideslope and AWOS.	Relocate Localizer Antenna and equipment shelter outside Runway 28 RSA & OFA. Construct perimeter service road outside Runway 28 RSA & OFA.	Realign Silvernail Road to the west around Runway 10 Safety Area.	Construct 270' long by 100' wide EMAS arresting bed with 330' lead-in ramp. Relocate Localizer Antenna and equipment shelter outside Runway 28 RSA & OFA. Construct perimeter service road outside Runway 28 RSA & OFA.
	Required Property Acquisitions and/or Relocations	None	None	Acquisition and relocation of 1 commercial bank property & various segments of other properties for approach light shift would be required at an estimated cost of \$1,000,000. Transfer of land between Airport and City for new road R-O-W.	None	Acquisition and relocation of 1 commercial bank property would be required at an estimated cost of \$940,000. Transfer of land between Airport and City for new road R-O-W.	None
	Fish, Wildlife, and Plants	None	None	The Butler garter snake has been found in the wetland areas on either side of Silvernail Road; amphibian habitat would be affected with a realigned Silvernail Road, airside wetland impacts, and additional impacts associated with the extended MALSR approach lights. The removal of existing fill within portions of Silvernail to be removed could restore continuity between wetland areas on either side of the existing roadway.	None	The Butler garter snake has been found in the wetland areas on either side of Silvernail Road; amphibian habitat would be affected with a realigned Silvernail Road and airside wetland impacts. The removal of existing fill within portions of Silvernail to be removed could restore continuity between wetland areas on either side of the existing roadway.	None
	Runway Protection Zone (RPZ)	None	None	Runway 10 Approach RPZ would shift west by 400', reducing area within Airport ownership. A Fueling Station would be moved outside of the RPZ under the future condition.	None	None	None
	Part 77 Airspace	None	None	Part 77 airspace would be lowered by just under 10 feet. Roadway realignments and existing properties would have sufficient clearances.	None	None	None
	Navigational Instruments	None	None	Runway 10 Glideslope, PAPI, MALSR and AWOS would need to shift by 400' west with the proposed extension of Runway 10. Equipment shelters for both glideslope and MALSR would also need to be relocated.	Runway 10 Localizer and equipment shelter would need to shift east outside of Runway 28 RSA and OFA.	Equipment shelter for the Runway 10 MALSR Approach lights to be shifted outside the relocated right-of-way for Silvernail Road.	Runway 10 Localizer and equipment shelter would need to shift east outside of Runway 28 RSA and OFA.
	Noise	None	None	Would slightly shift noise contours to the west with No significant impacts.	None - may improve noise levels over residences off the approach end of Runway 28	None	None
	Wetlands	None	None	4.30 Acres (ADID)		3.92 Acres (ADID)	
				2.29 (non-ADID)	0.18 (non-ADID)	1.88 (non-ADID)	0.18 (non-ADID)
	<i>Total Wetland Impacts:</i>			6.59 (Total West End)	0.18 (Total East End)	5.80 (Total West End)	0.18 (Total East End)
	Capital Cost	\$0	\$0	\$9,223,956	\$2,946,344	\$5,156,035	\$7,509,566
	<i>Total Capital Cost:</i>			\$12,170,301		\$12,665,602	
	Life Cycle	\$688,611	\$688,611	\$9,705,635	\$3,305,899	\$5,515,883	\$9,592,155
	<i>Total 20-Yr Life Cycle Cost:</i>			\$13,011,534		\$15,108,039	
Continue for Further Analysis and Comparison?		No	No	Yes. The improvements are more consistent with existing Airport Infrastructure and maintenance. This Alternative represent a more cost-effective solution and is supported by the FAA.		No. Despite an overall reduction in impacts, an EMAS installation at UES would represent a substantial burden to the Airport and raise concerns related to maintenance, inspection, replacement and overall liability. The overall solution is more expensive both in the short term and over a 20-year life cycle.	

The EMAS Alternative (Alternative 12) would allow the runway ends to remain unchanged, resulting in no modifications to the approach procedures, airspace or RPZs. Additionally, Alternative 12 would not require the implementation of declared distances, and requires less impact to existing navigational instruments. The realigned Silvernail Road would be located further away from the resulting end of Runway 10 when compared to Alternative 11, with slightly less property and wetland impacts.

However, an EMAS installation at a general aviation airport like Waukesha County Airport presents many concerns given the harsh winter environment and the limited resources available for the periodic inspections, replacements, and maintenance required to keep the EMAS functional. Snow removal from the constructed EMAS arresting blocks must be accomplished by means of special low impact equipment so as to not damage the blocks. This additional equipment would need to be stored on the Airport and would itself require periodic maintenance. In addition, it would be necessary for anyone operating the specialized snow removal equipment to be properly trained in its operation and use.

Waukesha County Airport (UES) does not have a dedicated Maintenance or Operations staff, and snow removal and grass cutting operations are bid to private contractors. Without consistent and dedicated Maintenance or Operations staff, a general aviation facility like UES will have difficulty maintaining the EMAS infrastructure, or protecting it from accidental encroachment from Airport tenants, mobile fuel trucks, tugs or other maintenance contractors.

Per guidance provided in FAA Order 5200.9, an EMAS bed needs to be replaced every ten years. The EMAS would be more expensive, both in the short term and to a much greater extent when factored over a twenty year life cycle, as illustrated in Table 3-2. The life cycle costs were developed using guidance provided within FAA Order 5200.9.

Table 3-2 Alternative Cost Comparison (Alternative 11 vs. Alternative 12)

	Initial Cost			20 Yr. Life-Cycle Cost		
	Rwy 10	Rwy 28	Total	Rwy 10	Rwy 28	Total
Alternative 11:	\$ 9,223,956	\$ 2,946,344	\$ 12,170,301	\$ 9,705,635	\$ 3,305,899	\$ 13,011,534
Alternative 12:	\$ 5,156,035	\$ 7,509,566	\$ 12,665,602	\$ 5,515,883	\$ 9,592,155	\$ 15,108,039
Difference:			\$ (495,301)			\$ (2,096,504)

The Runway 10 Extension Alternative (Alternative 11) would require approach procedure changes, modification of existing aviation easements, and greater impacts to navigational aids, property and wetlands. However, the Alternative 11 solution is consistent with the existing infrastructure and maintenance operations at the Airport and is the more cost effective solution. The departure RPZ off the Runway 10 end would remain unchanged, as well as the RPZs off the Runway 28 end. The Runway 10 approach RPZ would shift 400' west and the area of airport ownership within the RPZ would be modified, however it would shift an incompatible land use of fuel handling/storage outside the RPZ.

3.3 Selection of Preferred Alternative 11

In considering the size and climate of the Waukesha County Airport, an EMAS installation (Alternative 12) presents a number of concerns related to cost, maintenance, liability for replacement if damaged, and overall compatibility with the Airport's infrastructure and environment. The FAA has reviewed both alternatives as part of an RPZ Analysis completed for the RSA project, and concurred with Alternative 11 (see documentation in Appendix G of the Final EA document). In consideration of these factors, Alternative 11 is the more practicable and cost-effective solution and is identified as the preferred alternative for bringing the safety areas for Runway 10-28 into compliance with federal standards.

4. Proposed Action

The proposed action is to:

1. Re-align Silvernail Road to the west.
2. Shift Runway 10 by 400 feet west with corresponding extensions to Taxiway A.
3. Shift Runway 10 approach lights, glideslope, PAPI and AWOS by 400 feet west.
4. Acquire and transfer property to accommodate a realigned Silvernail Road and shifted approach lights.
5. Relocate the Runway 10 localizer array and shelter outside of runway safety critical areas.
6. Implement declared distances for both directions of operation on Runway 10-28.
7. Construct new access roads to the relocated navigational instruments.
8. Remove the non-standard parallel taxiway along the north side of Runway 10-28.
9. Extend or relocate storm sewer culverts outside the Runway 10-28 safety area.
10. Perform grading operations associated with the proposed improvements.
11. Construct dry storm water management facilities for the proposed improvements.
12. Widen the Taxiway A alignment transition to Design Group 2 standards.

5. Environmental Consequences and Mitigation

After careful analysis and consultation with various state and federal resource agencies, the Airport selected the proposed action as the preferred alternative. This alternative satisfies the purpose and need for the project while causing minimal environmental impacts. The Final EA discusses the environmental consequences of the Proposed Action. The Airport will implement the following mitigation measures as a condition of environmental approval of the proposed development listed in this FONSI to support existing and proposed aeronautical activities at the Airport. The Environmental Consequences section of the Final EA provides detail. Table 5-1 provides a summary of the Environmental Consequences analysis.

Table 5-1. Environmental Summary

Environmental Factor	Impact*	Mitigation/Permit Requirements
Air Quality	Presumed to Conform, Minimal during construction	Voluntary construction emission Best Management Practices
Biotic	Potential impact to Butler's garter snake	Impacts minimized by mitigation to be coordinated with WDNR
	Northern Long-eared Bat	Tree Clearing to be conducted outside of the maternal roosting period of June 1 to July 31
Coastal Resources	None	None
Compatible Land Use	None	None
Construction Impacts	Potential	Potential impacts would be minimized through proper use of erosion control techniques and dust control specifications
DOT Section 4(f)	None	None
Farmlands	None	None
Floodplains	None	None
Hazardous Materials	None	None
Historical, Architectural, Archaeological and Cultural Resources	None	None
Light Emissions and Visual Impacts	None	None
Natural Resource and Energy Supply	None	None
Noise	minimal	None
Secondary Impacts	None	None
Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks	Acquisition and relocation of one commercial property for the relocation of Silvernail Rd. and transfer of land between Airport and City. Acquisition of isolated segments of two properties to accommodate shifted approach lights. Existing avigation easements to be lowered.	All land acquisition to be completed in accordance with the provisions stipulated by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.
Water Quality	Potential; can be mitigated	- Storm water Management Plan that complies with 1.City of Waukesha (Chapter 32), 2. MMSD (Chapter 13), 3. TRANS 401 storm water regulations - State Water Quality (401) Certification
Wetlands	Yes	USACOE 404 permit – Impact to be banked at WisDOT bank site, with possibly some onsite mitigation. Wildlife culverts provided.
Wild and Scenic Rivers	None	None

* Note: None of the impacts listed above are classified as a "Significant Impact".

Additionally,

- The Airport will obtain any necessary permits prior to beginning construction.
- The Airport will protect wetlands and waters of the U.S. not directly impacted by the Proposed Action during construction.
- During construction, in the event that previously unknown contaminants are discovered or if a reportable spill occurs, work will cease until the Airport notifies appropriate local, state, and Federal agencies. Remediation of the contaminated area will occur before project construction recommences.
- If a cultural resource is discovered during any (future) construction activity, the Airport will notify the State Historic Preservation Office (SHPO), the WisDOT BOA and the FAA Chicago Airport District Office (ADO). The Airport will protect the area until cultural resource concerns have been appropriately addressed and the Airport will take action to comply with the National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, and the Archaeological Resources Protection Act, as appropriate.
- Endangered species are not anticipated to be located in this area, but if endangered species are sighted during any construction activity, work will cease in the immediate area of the endangered species and all sightings will be reported to the US Fish and Wildlife Service and FAA Chicago ADO.

6. Public Review and Comment

Public involvement is a vital component of the NEPA process. The Airport circulated the Preliminary EA for a forty-three day public comment period (February 25, 2017 to April 10, 2017). A public hearing was held on March 29, 2017. No public comments were received during this period.

Responses to agency comment letters have been incorporated into the Final EA.

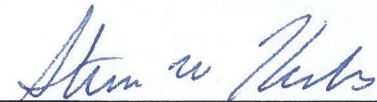
The Final EA and FONSI will be available for public review at the FAA's Chicago Airports District Office; WisDOT Bureau of Aeronautics Office, the Waukesha County Department of Public Works, and the Waukesha Public Library.

7. Finding

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives of Section 101(a) of the National Environmental Policy Act of 1969 (NEPA) and other applicable environmental requirements. The proposed Federal action will not significantly affect the quality of the human environment or include any condition requiring consultation pursuant to section 102(2)(C) of NEPA.

Having met all relevant requirements for environmental considerations and consultation, the proposed action is authorized to be taken when other requirements have been met. These decisions are taken pursuant to 49 U.S.C. § 40101, et seq. The FAA findings regarding the proposed airport improvements, and any necessary funding, for the Waukesha County/Crites Field Airport, constitute an order of the

Administrator, which is subject to review by the Courts of Appeals of the United States, in accordance with the provisions of Section 1006 of the Federal Aviation Act of 1958, as amended, 49 U.S.C. § 46110.



WisDOT, Director
Bureau of Technical Services

6/13/2017
Date



WisDOT, Director
Bureau of Aeronautics

06-13-2017
Date



FAA-CHI-ADO-600
Federal Aviation Administration

June 20, 2017
Date