APPENDIX C SECTION 4(f) EVALUATION
SECTION 4(f) EVALUATION
In accordance with 49 USC Section 303(c), Section 4(f), a project may require the use of publicly-owned park land, a recreation area, or a wildlife and waterfowl refuge, or land of a historic site as determined by the official having jurisdiction over those resources only if 1) there is no prudent and feasible alternative that would avoid using those resources, and 2) the project includes all possible planning to minimize harm resulting from such use. There is one publicly-owned trail system within the project area that meets the definition of protected sites under Section 4(f).

Description of 4(f) Property
The Huron Valley Trail (HVT) is located just west of Milford Road, between the airport property and Milford Road (see Figures 1 and 2). The trail is 10.5 miles in total length, extending along the former Grand Trunk Railroad ROW from the City of South Lyon to the western boundary of the City of Wixom. The trail is approximately eight feet wide and is made of asphalt. Vegetation along the trail consists of mainly elm and black cherry with a dense understory made up of sumac, dogwood, and honeysuckle. The trail is owned by the MDNR. The trail runs northwest/southeast approximately 630 feet through the project area (Figure 3). The trail is located within the Runway Protection Zone (RPZ) of runway 8/26.

The trail provides access to and may be accessed from McHattie Park, Volunteer Park, James F. Atchison Memorial Park, Lyon Oaks County Park, Kensington Metropark, and Island Lake State Recreation Area. The trail is mainly used as a biking, walking, and jogging trail. The Western Oakland County Trailway Management Council (WOCTMC) developed the Huron Valley Trail and currently leases the trail from the MDNR. Council members include Lyon Township, Milford Township, the Huron-Clinton Metropolitan Authority, and the City of South Lyon.

There are no other National Register of Historic Places (NRHP) eligible sites, publicly-owned parks, waterfowl refuges, or wildlife refuges within the project area that qualify for protection under Section 4(f).
Consequences of the Preferred Alternative
The Preferred Alternative would require the use of land from the HVT which is eligible for protection under Section 4(f) of the Department of Transportation Act. In order to meet FAA requirements for the approach slope, the Preferred Alternative would require the purchase of an aviation easement over the trail with clearance of 15 feet. The 15-foot height clearance is necessary to provide adequate clearance for approaching aircraft. The easement would allow the airport to control the height of any structure or other obstruction within the easement. The new easement would require up to twelve trees to be removed within the trail ROW because they would penetrate the approach slope. The majority of the trees that are to be removed are elm and black cherry. Many of the trees are in poor health or dead.

The trees are a contributing element to the setting of the trail. There is a dense understory along the trail made up of sumac, dogwood, and honeysuckle that would not be affected by tree removal. This understory is and would remain an effective screen for the trail. The location of the property to be placed in the new aviation easement and trees to be removed are depicted on Figures 3 and 4.

The trail would remain in use, and the activities associated with it and access to the trail would not be altered. Coordination with the trail owner has indicated that the likelihood of any vehicles on the trail that exceed more than ten feet in height would be unlikely. Therefore, the height restriction will still allow park vehicles to access the path as needed.

Oakland County sent a coordination letter to WOCTMC describing the proposed project, potential impacts, and mitigation measures. See coordination letter in Appendix B. Oakland County and AERO also meet with the WOCTMC on June 24th, 2011 to discuss the proposed project, impacts to the trail, and potential mitigation measures. Based on this meeting a Memorandum of Agreement (MOA) was developed. Oakland County also coordinated with the MDNR. See the MOA at the end of this section.

Avoidance Alternatives
During the EA process, an evaluation was conducted for alternative runway 8/26 options and alignments that would avoid using property from the Section 4(f) site. This process and the alternatives considered are documented below. These alternatives were evaluated using criteria that included: impacts to the Section 4(f) site, other environmental and social impacts, cost, engineering feasibility, and the ability to meet the purpose and need of the project. All of the avoidance alternatives considered to avoid the trail were eliminated because they are not feasible and prudent for the reasons identified below.

Feasible and prudent refers to the viability of an alternative that avoids the use of a Section 4(f) resource. The term "feasible" refers to the constructability of a project — whether or not it can be built using current construction methods technologies and practices. The term "prudent" refers to how reasonable the alternative is — in essence, whether or not it makes sense. Given a range of options, a transportation agency must select an avoidance alternative if it is feasible and prudent. By contrast, an alternative may be rejected if it is not feasible and prudent. An alternative may be considered not feasible and prudent for any of the following reasons:

- does not meet project purpose and need
- excessive cost of construction
- severe operational or safety problems
- unacceptable impacts (social, economic or environmental)
- serious community disruption
- a combination of any of the above
**Realign Runway 8/26**

This alternative would entail realigning the orientation of the runway to obtain the required RSA and OFA dimension. This would require the construction of an entirely new runway and related taxiways. This alternative would potentially disrupt many other facilities at O/SWA and would result in significant impacts to wetland areas that would have to be filled to support a new runway. This alternative would be significantly more costly than the Preferred Alternative because it would require major wetlands impacts, sub-base preparation on hydric soils, runway construction and reconfiguration of airport infrastructure (taxiways, lighting equipment, hangar and storage buildings, etc.). Therefore, this alternative was eliminated because it is not prudent.

**Runway Shift with Reduction in Runway - Standard Safety Areas**

This alternative would utilize the existing runway pavement by relocating the Runway 8 threshold to the east, while providing full safety areas within the existing airport property. Shifting to the east is limited due to the constraints in the east approach. The clearance of the RSA, OFA and OFZ from a private drive and the 20:1 height clearance over a recreational trail provide the limits to the current Runway 26 siting criteria. This alternative would result in a loss of 248 feet of runway length, providing a total runway length of 2,880 feet and would require significant tree clearing in the Runway 8 approach. This alternative would also require the purchase of two residential homes. Therefore, this alternative is not prudent.

**Application of FAA AC 150/5300-13, Appendix 2 - Category 2 Criteria**

This alternative would abandon the existing circling and one mile daytime visibility approach and apply FAA AC 150/5300-13, Appendix 2, Category 2 criteria. This application allows for the approach surface to begin at the end of the runway pavement instead of beginning 200 feet off the runway with the standard FAR Part 77 approach. This alternative would utilize the existing runway pavement with a minor extension to the east while providing full RSAs. This would require the relocation of the Runway 8 threshold to the east to provide full safety areas, and a 195-foot extension to the east to provide a total runway length of 3,075 feet. This alternative would eliminate current night-time approaches as only visual approaches would be allowed under these criteria. It would also require the acquisition of two residences within the RPZ for Runway 26. Therefore, this alternative is not prudent.

**Declared Distance Concept (DDC)**

This alternative would utilize a declared distance to provide the required RSA for Runway 8 and 26 ends as outlined in FAA AC 150/5300-13. This alternative assumes that the runway approaches would be cleared similar to the Preferred Alternative and the RSA would remain non-compliant. Declared distance is the concept of using a portion of a paved runway as a safety area. Thus, only a specific portion (distance) of the runway is designated for takeoff or landing, and the rest of the runway, at its departure end, is considered part of the safety area. This can limit takeoff and landing weights, depending on the aircraft type and the distance available, meaning that declared distance can result in a runway being unavailable for certain aircraft types or for heavily loaded airplanes. The DDC alternative would result in a runway takeoff distance of 3,128 feet and an available landing distance of 2,880 feet. This alternative would not meet the runway length requirements for the critical aircraft. Therefore, this alternative is not prudent. Additionally, the State of Michigan does not like to use this concept due to the fact that general aviation pilots are unfamiliar with the DDC approach. Therefore, this alternative was eliminated.

**Engineered Materials Arresting Systems**

This alternative would include the use of Engineered Materials Arresting Systems (EMAS) for the RSAs. EMAS is designed to slow an aircraft that overruns a runway by exerting predictable deceleration forces on its landing gear as its wheels roll through high-energy absorbing material. FAA Order 5200.8 states “EMAS should be included in RSA practicability determinations where it can provide a level of safety that is generally equivalent to a standard RSA and may be financially advantageous”. Though a standard...
EMAS installation can provide an equivalent level of safety when compared to a full 1000-foot by 500-foot RSA, it can be more costly as noted in FAA Order 5200.9, *Financial Feasibility and Equivalency of RSA Improvements and EMAS*.

Most of the existing EMAS installations in the U.S. have been completed at air carrier airports where the critical aircraft are typically large aircraft (C-III and above). The EMAS is designed to crush under the weight of these larger aircraft. The aircraft using O/SWA are generally much lighter. Since the critical aircraft utilizing the airport typically weigh 12,500 pounds or less, the strength of the EMAS would have to be lowered in comparison to that which is used at large commercial airports for heavier aircraft. This change in strength bearing capacity is expected to offer considerable challenges for maintenance activities on the runway surface, such as snow removal and general maintenance. Conversations with the manufacturers of the EMAS product indicate that EMAS is not intended to be installed on general aviation airports such as O/SWA, where the weight of the critical aircraft is less than 12,500 pounds. Maintenance and upkeep of EMAS requires costly specialized equipment that will not crush the pavement. The cost of maintenance and upkeep of EMAS is also well beyond the financial means of the airport. Therefore, this alternative is not prudent or feasible.

**Construct New Airport Alternative**

This alternative considered construction of a new airport at a different site. The existing airport is conveniently located to serve the population centers of the community of New Hudson, the City of South Lyon, and surrounding area. The cost for a new facility in an area where development has already occurred would be far greater than the cost for upgrading O/SWA. In addition, negative impacts related to constructing a new airport would be serious compared to rehabilitation of the existing facilities. The time frame for completion of a new airport would be a minimum of five years, with seven to ten years being more realistic. For the above reasons, the Construct New Airport Alternative was dismissed from consideration. Therefore, this alternative is not prudent.

**Expand Other Existing Airport Sites Alternative**

There are four airports that are within an approximate 20-mile radius of O/SWA. A 20-mile radius was selected because it represents an approximate 30-minute drive time to travel to the airport under consideration, depending on traffic and weather conditions. This time frame is considered an acceptable travel time that people are willing to drive to reach an airport. A comparison of alternate airports and O/SWA is shown in Table 2.

The Howell/Livingston County Airport has an adequate runway length and similar lighting. However, this airport is at the northwest extents of driving time from the O/SWA airport location, so moving operations to OCIA would place the major population centers of the City of South Lyon and surrounding area (presently served by O/SWA) outside of a convenient driving distance to the same quality of airport services from which they now benefit. Therefore, this alternative is not prudent.

The Brighton Airport has an adequate runway length and similar lighting, but does not have the capacity to conduct major repairs. The airport is privately-owned, and moving operations to this field would require an agreement with the owners to allow the construction of twice as many hangar facilities and taxiways than presently exist. Adding this number of hangars will require the acquisition of more land, and the potential displacement of 5 to 7 residences to the northwest. Additionally, it is anticipated that airport facilities would need capacity improvements to accommodate the increase in new aircraft operations per year. Therefore, this alternative is not prudent.

The Plymouth/Mettetal Airport does not have a comparable runway length to carry out operations similar to those that are possible at O/SWA, and there is no undeveloped land available in which to expand the existing runway or to construct new hangars for 61 more based aircraft from O/SWA. Additionally,
surrounding the Plymouth/Mettetal Airport is an extensive noise sensitive area, requiring noise abatement procedures that are currently in place. It is anticipated that adding O/SWA’s operations would produce unacceptable noise levels for the sensitive receivers. Therefore, this alternative is not prudent.

The Oakland County International Airport (OCIA) has an adequate runway length and similar lighting. However, this airport is at the northeast extents of driving time from the O/SWA airport location, so moving operations to OCIA would place the major population centers of the City of South Lyon and surrounding area (presently served by O/SWA) outside of a convenient driving distance to the same quality of airport services from which they now benefit. Therefore, this alternative is not prudent.

**No Action Alternative**
The No Action Alternative is the option of not improving the existing facilities at O/SWA. This alternative would consist of continued operations using the existing airport facilities. The No Action Alternative would not bring the airport into compliance with current FAA design standards for safety areas or meet the objectives of FAA Order 5200.8 (Runway Safety Area Program). Therefore, this alternative is not prudent.

**Measures to Minimize Harm**
Measures to minimize harm are described in the mitigation measures section below.

**Mitigation**
In order to mitigate the impact to the trail and minimize the effects of the tree removal, Oakland County agrees to replace all live trees removed at a ratio of 1:1. Oakland County will replace all live trees that have been removed within the trail right-of-way with the planting of low-growing trees/shrubs. If directed by the MDNR or the WOCTMC, improvements of equal value may be conducted at other trail locations of their choice.
DRAFT
MEMORANDUM OF AGREEMENT

Between
Oakland County
and
The Michigan Department of Natural Resources

Regarding
The Oakland/Southwest County Airport Improvement Project
Oakland County, Michigan

WHEREAS, The Huron Valley Trail (HVT) is located just east of the Oakland/Southwest County
Airport (O/SAW) property. The trail runs northwest/southeast approximately 630 feet
trough the runway 8/26 Runway Protection Zone (RPZ). The O/SAW Improvement Project
(Project) would require the purchase of an aviation easement over the trail and would require the
removal of trees within the trail right-of-way. Oakland County has determined that the Project
would impact the Huron Valley Trail, which meets the criteria of a publicly owned publicly-
owned park land or a recreation area in accordance with 49 USC Section 303(c), Section 4(f);
and

WHEREAS, The Michigan Department of Natural Resources (MDNR) and the Western Oakland County
Trailway Management Council participated in the consultation and has been invited to concur in
this Memorandum of Agreement (MOA); and

WHEREAS, the Michigan Department of Transportation – Office of Aeronautics (AERO) AERO has
participated in the consultation and has been invited to concur in this Memorandum of Agreement
(MOA).

NOW, THEREFORE, Oakland County and the MDNR agree that the Project shall be implemented in
accordance with the following stipulations in order to take into account the Project’s effect on the
publicly-owned recreation facility.

STIPULATIONS

The parties agree to the following stipulations.

I. AVIATION EASEMENT

As part of the Project, Oakland County will complete the MDNR Easement Application for
Utility or Public Road Form. This from will provide a legal description of the proposed easement
and an engineered drawing depicting the easement. Upon review and approval of the application,
the MDNR shall dedicate the easement as set forth in the form.

II. MITIGATION

In order to mitigate the impact to the trail and minimize the effects of the tree removal, Oakland
County agrees to replace all live trees removed as part of the Project at a ratio of 1:1. Oakland
County will replace all live trees that have been removed within the trail right-of-way with the
planting of low-growing trees/shrubs. If directed by the MDNR or the Western Oakland County
Trailway Management Council, improvements of equal value may be conducted at other trail
locations of their choice. Oakland County will ensure that the trail remains open during construction activities. Additionally, the County will secure a bond prior to construction activities to address any unforeseen damage that may occur to the trail during construction.

III. AMENDMENT

The MDNR or Oakland County may propose to the other parties that this MOA be amended, whereupon the parties will consult to consider such an amendment.

IV. TERMINATION

If Oakland County determines that it cannot implement the terms of this MOA, or if the MDNR determines that the MOA is not being properly implemented, Oakland County or the MDNR may propose to the other parties to this MOA that it be terminated.

The party proposing to terminate this MOA shall so notify the other parties to this MOA, explaining the reasons for termination and affording them at least sixty (60) days to consult and seek alternatives to termination. The parties shall then consult.

Should such consultation fail, Oakland County or the MDNR may terminate this MOA by so notifying all parties.

OAKLAND COUNTY

By: ______________________________ Date: ______________________________
   Karl Randall, Manager of Aviation

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

By: ______________________________ Date: ______________________________
   Paul Yauk, Land Programs Manager, Parks & Recreation Division

Concur:

MICHIGAN DEPARTMENT OF TRANSPORTATION – OFFICE OF AERONAUTICS

By: ______________________________ Date: ______________________________
   Carol Aldrich, Airports Supervisor-Program Management Unit

Concur:

WESTERN OAKLAND COUNTY TRAILWAY MANAGEMENT COUNCIL

By: ______________________________ Date: ______________________________
   Patricia Carcone, Chairwomen