

Planning Division  
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Aurora, Colorado 80012  
303.739.7250



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July 1, 2020

Tim Schlichting  
Prime West  
7001 E. Belleview Avenue, Suite 650  
Denver, CO 80237

**Re: 2nd Submission Review:** High Point PA-64 Multi-Family - Site Plan and Final Plat  
**Application Number:** DA-1746-22  
**Case Numbers:** 2020-4009-00; 2020-3014-00

Dear Mr. Schlichting:

Thank you for your second submission, which we received on June 8, 2020. We reviewed it and attached our comments along with this cover letter. The review letter contains comments from all city departments and outside agencies.

Since several important issues still remain, you will need to make another submission. Please revise your previous work and send us a new submission.

Note that all our comments are numbered. When you resubmit, include a cover letter specifically responding to each item. The Planning Department reserves the right to reject any resubmissions that fail to address these items. If you have made any other changes to your documents other than those requested, be sure to also specifically list them in your letter.

As always, if you have any comments or concerns, please give me a call. I may be reached at 303-739-7220 or [rloomis@auroragov.org](mailto:rloomis@auroragov.org).

Sincerely,

Ryan Loomis, Senior Planner  
City of Aurora Planning Department

Attachments: Xcel Energy Letter, June 23, 2020; DIA Letter dated 6/15/20 w/Advisory Circular Attachment; 27J Schools Letter, May 29, 2020; Mile High Flood District, June 24, 2020

cc: Diana Rael, Norris Design, 1101 Bannock Street, Denver, CO 80204  
Ryan Loomis, Case Manager  
Scott Campbell, Neighborhood Services  
Cesarina Dancy, ODA  
Filed: K:\\$DA\1746-22rev2.rtf



## Second Submission Review

### SUMMARY OF KEY COMMENTS FROM ALL DEPARTMENTS

- Remove all AutoCAD SHX text from the Site Plan.
- Provide required incentive features along Lisbon Street and 66<sup>th</sup> Avenue to meet landscape buffer requirements.
- Add a 5-foot sidewalk along the east side of the site to comply with block perimeter standards.
- Provide more architectural variation to differentiate Type I and II buildings.
- Update the street frontage buffer table.
- Show and label easements and roof drains.
- Site plan will not be approved by Public Works until the plans for 66<sup>th</sup> and 67<sup>th</sup> Avenue have been submitted and no major issues remain.
- Address Real Property comments.
- Show locations of all accessible living units (Type A or B) and accessible attached garages.

### PLANNING DEPARTMENT COMMENTS

#### **1. Planning Comments** (Ryan Looms / [rloomis@auroragov.org](mailto:rloomis@auroragov.org) / 303-739-7220 / Comments in teal)

1A. Please make the provided edits to the Letter of Introduction.

Redlines to Cover Sheet (Sheet 1):

- 1B. The lot and block number (i.e. Lot 1, Block 1 of High Point Subdivision Filing No. 1) should be included below the title on the cover sheet.
- 1C. Please remove all AutoCAD SHX text from the Site Plan, which appears was not done in this submittal.
- 1D. Please make this Amendment Block larger. This may require moving the site plan notes to a new sheet that is located directly after the cover sheet.
- 1E. Please clarify whether any signs proposed. If so, sign data information is needed under Project Data. See example on cover sheet. Even if quantities and square footage are unknown, the code requirements should still be noted in the Data Block and “TBD” can be noted for “proposed number of signs” and “proposed square footage of signs.”

Redlines to Site Plan (Sheet 2 and 3):

- 1F. Please provide a minimum 5-foot north / south sidewalk outside the 25-foot landscape buffer to comply with the block perimeter requirement in the UDO. This was provided in the previous submittal and instead of the sidewalk being shifted to comply with PROS requirements, it was completely removed. This sidewalk should connect from 66<sup>th</sup> Avenue to 67<sup>th</sup> Avenue and should include access to the individual units facing the park off of the sidewalk. Because the site has not been platted yet, the simplest way to accommodate this requirement is by shifting the property line of the park to the east to accommodate the additional space. Alternatively, the buildings along the east side of the site could be shifted west.
- 1G. As mentioned in the PROS comment, Planning has concerns about the grading on the east side of the site and how the neighborhood park will be well-integrated with this development.
- 1H. The High Point at DIA Master Plan shows that a secondary entry monument sign may be placed at the corner of 67<sup>th</sup> Avenue and Lisbon Street. Please verify if a monument sign is proposed.
- 1I. Please turn the retaining wall to the right where Building 6 ends on Lisbon Street instead of having it end abruptly.
- 1J. Please note that a 15' wide setback and a 20' wide landscape buffer is required along all public and private streets as noted in the pre-application notes. However, these requirements were overlooked during the first review of the application and therefore will not be required for this project. Please be aware though that any future projects will be expected to comply with all setback and buffer requirements, even for private streets, and that this will not set a precedent.



- 1K. Please continue the retaining wall along the entire building length of Lisbon Street as this is required based on the incentive allowed for a reduced landscape buffer. Also, the wall needs to follow along 66<sup>th</sup> Avenue to meet the incentive requirement. Please see the Landscape section for additional comments.

Redlines to Landscape Details (Sheet 17)

- 1L. Please provide a detail of the retaining wall proposed along Lisbon Street and required along 66<sup>th</sup> Avenue as part of incentives for a reduced landscape buffer. Show height and materials proposed for wall.

Redlines to Building Elevations (Elevations Sheets 18-21 and Colored Elevations Sheet 1 and 2)

- 1L. It appears Building Type I and II have identical architecture features, just variation in color. As mentioned in original submittal, the third building elevation can be a modified or varied version of the proposed elevations. Similar colors or materials can be utilized, but it should include variation in the architectural features or placement of colors / materials.
- 1M. The entry comment from the original submittal has not been sufficiently addressed. Building entries should be clearly articulated to show importance. The main entries on the ground floor currently are still not articulated. Each entry needs to be accentuated by using a method showcased in Section 146-4.8.7.E, Table 4.8-9.

Open Space Exhibit

- 1N. For total open space, only show the landscaped areas and not hardscape sidewalk areas where no landscaping is found. It appears this is the calculation provided for landscaped areas on site plan cover sheet and this should be modified to include only the usable open space calculation as noted below.
- 1O. For the consolidated usable open space calculation, which should be 20% of the site area (100,560.75 square feet) please outline in red the areas that you are counting. This should not include curbside landscape areas, sidewalks along public or private streets, landscape islands, etc. However, it can include larger buffer areas or pedestrian trails that connect the consolidated usable open spaces to each other. Please revise this exhibit and coordinate with your Case Manager on which areas can count towards meeting this requirement.

Plat

- 1P. Please disregard original comment requesting the signature lines for the Planning and Zoning Commission and City Council.
- 1Q. As suggested on site plan, please shift the east property line further east to accommodate the required 5-foot sidewalk east of buildings and outside the required 25-foot landscape buffer area along proposed park.

**2. Landscape Design Issues (Kelly Bish / [kbish@auroragov.org](mailto:kbish@auroragov.org) / 303-739-7189 / Comments in bright teal)**

Site Plan

Redlines to Landscape Cover Sheet (Sheet 11)

- 2A. Add a landscape building perimeter table for the club house. The requirements are one tree or tree equivalent per 40 lineal feet.
- 2B. For the multi-family buildings, plant counts should meet code or request an adjustment. Remember buffer plant material may count if within 20' of the building face.
- 2C. Update the parking median landscaping table to reflect three separate medians.
- 2D. Make the updates to the remaining tables as noted.

Redlines to Landscape Plan (Sheet 13)

- 2E. Dimension and label the street and non-street frontage buffers where indicated.
- 2F. Turn on the fire hydrants. They appear to be missing.
- 2G. Add a street name where indicated.
- 2H. Add a street tree where shown.
- 2I. Dimension and label the special landscape buffer; non-street frontage.



- 2J. Add the hatch to the legend.
- 2K. Add an additional shrub to the parking lot island where indicated.
- 2L. Extend the low wall along the frontage of building 7 to remain in compliance with the buffer reduction of 15'.
- 2M. This KEL shrub can get 3' tall and the maximum height is 26" for sight distance triangles

**Redlines to Landscape Plan (Sheet 14)**

- 2N. Please note that a 20' wide landscape buffer is typically required along all public and private streets as noted in the pre-application notes. However, given this is in the second review cycle, planning staff is going to overlook this, but will expect to see the required buffer on future land development applications.
- 2O. Dimension and label the street frontage and special landscape buffers.
- 2P. Add the missing hatch to the legend.
- 2Q. Add additional plant material to the parking lot island as noted.
- 2R. Continuation of the low wall should be installed along Lisbon Street in order to meet the buffer reduction of 15'.
- 2S. Add a low wall along 66<sup>th</sup> Avenue if a buffer reduction is being sought.
- 2T. Provide the missing street name.
- 2U. Make sure the fire hydrants are all shown.
- 2V. Add a street tree where indicated.

**3. Addressing (Phil Turner / 303-739-7271 / [pcturner@auroragov.org](mailto:pcturner@auroragov.org))**

- 3A. Please submit a preliminary digital addressing .SHP or a .DWG file as soon as possible. This digital file is used for street naming, addressing and preliminary GIS analysis. Include parcels, street lines and building footprints at a minimum. Please ensure that the digital file is provided in a NAD 83 feet, State plane, Central Colorado projection so it will display correctly within our GIS system. Please provide a CAD .dwg file that is a 2013 CAD version. Please eliminate any line work outside of the target area. More information can be found at: <http://tinyurl.com/AuroraCAD> or by contacting [CADGIS@auroragov.org](mailto:CADGIS@auroragov.org).

**4. Public Works (Kristin Tanabe / 303-739-7431 / [ktanabe@auroragov.org](mailto:ktanabe@auroragov.org) / Comments in green)**

**Redlines to Cover Sheet (Sheet 1):**

- 4A. The Site Plan will not be approved by Public Works until the Preliminary Drainage Report is approved.
- 4B. The Site Plan will not be approved by Public Works until the plans for the adjacent roadways have been submitted, are consistent with this plan set and no major issues remain.

**Redlines to Site Plan (Sheets 2 and 3):**

- 4C. A 20-foot lot corner radius is required for shown area.
- 4D. Please clarify why the easements are not being dedicated with the plat?
- 4E. Provide dimensions for access and label easement.
- 4F. Please note that 66<sup>th</sup> Avenue is supposed to be a Type 1 Local Road with 64-foot ROW per comments from the pre-application meeting.

**Redlines to Preliminary Grading Plan (Sheet 4 and 5):**

- 4G. Please label the longitudinal slope of access.
- 4H. Please show and label easements.
- 4I. Please show and label roof drains.
- 4J. Please note if slopes away from the buildings are not be shown, add a note indicating the minimum slopes required.
- 4K. The proposed grading for the adjacent streets needs to be shown on this plan to ensure they match.
- 4L. Please note a maximum 4% cross slope in fire lane.



Plat

Redlines to Sheet 2

4M. A 20-foot lot corner radius is required for shown area.

4N. Please clarify why the easements are not being dedicated with the plat?

4O. This radius may change based on the plans for the street. Provide adjacent street information to confirm this radius is appropriate.

**5. PROS (Michelle Teller / 303-739-7437 / [mteller@auroragov.org](mailto:mteller@auroragov.org) / Comments in purple)**

Redlines to Site Plan (Sheet 4)

5A. The grade you're proposing within the 25' buffer on the east side is too significant and will cause adverse effects to the neighborhood park as well as make plant material difficult to establish. Note that all local park connections also must meet ADA standards, be a minimum of 6' in width, 2% max cross slope and 5% max longitudinal cross slope.

5B. There is a pedestrian crossing planned between your site and the open space to the north. Please coordinate with Traffic and PROS on the design for safe pedestrian crossing as it relates to the roadway built-out.

Redline to Landscape Plan (Sheet 13)

5C. Location with grade and visibility will not be safe. Remove and this will be coordinated at future site plan for the park.

General Comment

5D. At the time of building permit, a park development fee for the Community Park portion of the development will be collected on a per-unit basis.

**6. Real Property (Maurice Brooks / 303-739-7294 / [mbrooks@auroragov.org](mailto:mbrooks@auroragov.org) / Comments in pink)**

General Comment

6A. See the red line comments on the plat and site plan. Dedicate the new easements, shown on the Site Plan, by separate documents. Contact Andy Niquette ([aniquett@auroragov.org](mailto:aniquett@auroragov.org)) to start the process. There are several objects (steps, fences, etc.) located in the proposed easements that need to be covered by a License Agreement. contact Grace Gray ([ggray@auroragov.org](mailto:ggray@auroragov.org)) for the License Agreement concerns. Send in the State Monument Records for the aliquot corners used in the plat. Send in the updated Title Commitment for this property.

Redlines to Site Plan (Various Sheets)

6B. The private fence in the Utility easement (typ.) will need to be covered for the encroachment

6C. The steps in the Utility easement will need to be covered for the encroachment.

6D. Please dedicate the 10-foot utility easement.

6E. For areas shown, please add "to be dedicated by separate document".

6F. Add "Unplatted" for areas shown.

6G. Add a line of delineation between the two types of easements

6H. Add the street names for streets shown.

6I. Add: to be dedicated by separate document

6J. Dedicate the Utility easement by separate document

6K. Match the name for the easement shown on Sheet 7 with Sheet 3

6L. Please note that no portion of the building can encroach into the easement as shown on Sheet 7

Plat

Redlines to Cover Sheet

6M. Please make textual changes as shown.

6N. Delete these signature lines.

6O. Add the name of the entity as stated in the Title Commitment



Redlines to Sheet 2

- 6P. Send in the State Monument Record for this Section corner.
- 6Q. Dedicate the 10' Utility easement.
- 6R. Update shown note to be within 120 calendar days of the plat approval date.
- 6S. The Lot must have access to the public street R.O.W. before the plat will be approved.

**7. Life Safety** (Jeff Goorman / 303-739-7464 / [jgoorman@auroragov.org](mailto:jgoorman@auroragov.org) / Comments in blue)

Site Plan

Redlines to Cover Sheet (Sheet 1):

- 7A. The Cover Sheet shall include Implementation Plan per HB 03-1221.
- 7B. See comments on required accessible attached and detached garage spaces.
- 7C. Provide the LDN value (i.e. 55-60) for Note 16.

Redlines to Site Plan (Sheet 2):

- 7D. Show locations of all accessible living units (Type A or B) and accessible attached garages. TYP. All sheets.
- 7E. Show locations for accessible detached garages per 2015 IBC 1106.2. One (1) accessible detached garage per every 25 detached garages. Two (2) detached and 6 attached.
- 7F. Provide dashed line delineation between the pocket utilities and the fire lane. Fire lane and pocket utility easements are two separate easements. TYP.

Redlines to Site Plan (Sheet 3):

- 7G. Move accessible parking to this location. Reference 2015 IBC 1106.6. This is 2nd request.

Plat

Redlines to Plat (Sheet 2)

- 7H. Show locations of fire lane easements and pocket utility easements. Plat shall accurately reflect the site plan.
- 7I. The Site Plans list this street as Lisbon St. instead of Liverpool. Verify street name.

**8. Aurora Water** (Ryan Tigera / 303-326-8867 / [rtigera@auroragov.org](mailto:rtigera@auroragov.org) / Comments in red)

Site Plan

Redlines to Utility Plan Sheet 6

- 8A. Show the pocket easement for the irrigation meter and remove size. Meter sizes must be provided at the time of civil plans.

Redlines to Downstream Utility Layout Sheet 8

- 8B. Note: Utility construction is to be phased if the goal is to pave this site in sections. Utility phasing plan to be shown on civil plans if applicable. Otherwise all public and private utilities will be installed prior to paving.

**9. Traffic** (Brianna Medema / 303-739-7336 / [bmedema@auroragov.org](mailto:bmedema@auroragov.org) / Comments in gold)

- 9A. Please contact Brianna Medema directly for Traffic Engineering comments.

**10. Xcel Energy** (Donna George / 303-571-3306 / [donna.l.george@xcelenergy.com](mailto:donna.l.george@xcelenergy.com))

- 10A. See attached letter dated June 23, 2020.

**11. Denver International Airport** (Jeannette Hilaire / 303-342-2391 / [Jeannette.Hilaire@flydenver.com](mailto:Jeannette.Hilaire@flydenver.com))

- 11A. See attached letter dated June 15, 2020.

**12. 27J Schools** (Kerri Monti / 303-655-2984 / [kmonti@sd27j.net](mailto:kmonti@sd27j.net))

- 12A. See attached letter dated May 29, 2020.

**13. Mile High Flood District** (David Skuodas / 303-455-6277)

- 13A. Please see the attached letter dated June 24, 2020



## 27J Schools

Kerrie Monti – Planning Manager  
1850 Egbert Street, Suite 140, Brighton, CO 80601  
Superintendent Chris Fiedler, Ed.D.

## 27J Schools Board of Education

Greg Piotraschke, President  
Blaine Nickeson, Vice President  
Kevin Kerber, Director  
Lloyd Worth, Director  
Tom Green, Director  
Mandy Thomas, Director  
Mary Vigil, Director

Planner: Ryan Loomis  
[rloomis@auroragov.org](mailto:rloomis@auroragov.org)

DATE: May 29, 2020

**SUBDIVISION NAME: High Point at DIA**

STATUS: PA-64

STATUS: Site Plan and Final Plat

Dear Ryan,

**A. STUDENT GENERATION (see attached Table 1 for methodology)**

Dwelling Units	Elementary Students	Middle School Students	High School Students	Total
365 MF	16	9	11	36

(Any discrepancy due to rounding)

**B. LAND DEDICATION/CASH-IN-LIEU REQUIREMENTS  
(See attached Table 1 for methodology)**

The land dedication requirement is 0.86 acres or \$34,274. The District requests cash in lieu of land dedication.

**C. SCHOOL BOUNDARY AREAS**

Students from this proposed development would currently attend:

Second Creek ES – 9950 Laredo Drive, Commerce City  
Stuart MS – 15955 E. 101<sup>st</sup> Way, Commerce City  
Prairie View HS – 12909 E. 120<sup>th</sup> Avenue, Henderson



**D. CAPITAL FACILITY FEE FOUNDATION (see attached Table 2 for methodology)**

The Capital Facility Fee Foundation is a unique public/private nonprofit organization founded in January 2001 to help fund school expansion or new school construction. This program has been developed in partnership with each of the municipalities in the District, developer and builder representatives, and School District 27J. Funding is provided by builders and developers who have agreed to contribute per residential dwelling unit based on the current fee structure.

The current fees negotiated for this program are as follows: \$843 per single family residential unit and \$481 per multi-family unit.

**SCHOOL DISTRICT PLANNING COMMENTS AND RECOMMENDATIONS:**

- 1. The District requests cash in lieu of land dedication in the amount of \$34,274 to be paid to 27J Schools prior to the issuance of building permits.**
- 2. Given the 365 multifamily residential units planned for High Point at DIA PA-64, the tax-deductible capital facility fees are projected to be \$175,565. The District will accept a total payment of \$50,000 prior to the issuance of building permits.**

We appreciate your continuing cooperation and the opportunity to comment upon issues of interest to both the City and the School District. We look forward to receiving updated referrals on this subdivision. Please let me know if you have questions about these comments.

Sincerely,

*Kerrie Monti*

Kerrie Monti  
Planning Manager

Attachment



## High Point at DIA (revised per UDO August 2019)

**Table 1 - School District Enrollment and Site Implications**

### A. Student Generation Estimates

Dwelling Unit Type	Number of DUs	Elementary		Middle		Senior		Total	
		Student Generation Rate *	Number of Students	Student Generation Rate *	Number of Students	Student Generation Rate	Number of Students	Student Generation Rate	Total Students
SFD	0	0.204	0	0.096	0	0.200	0	0.500	0
MF low density	0	0.102	0	0.048	0	0.050	0	0.200	0
MF high density	365	0.045	16	0.024	9	0.030	11	0.099	36
<b>Total</b>	<b>365</b>		<b>16</b>		<b>9</b>		<b>11</b>		<b>36</b>

### B. Facilities Requirements

Project Requirements							
School Type	Students (Part A)	Facility Capacity	Site Size (acres)	Proportion of Facility Capacity	Acreage	Land Cost per Acre	Total Cash-in-lieu
Elementary	16	675	12	0.0175	0.29		
Middle	9	850	25	0.0250	0.22		
Senior	11	1800	60	0.0320	0.35		
<b>Total</b>	<b>36</b>				<b>0.86</b>	<b>\$40,000</b>	<b>\$34,273.50</b>

<b>Land Dedication Provided</b>	<b>0.00</b>		
<b>Remaining Land Needed/Cash-in-Lieu of Land</b>	<b>0.86</b>	<b>\$40,000</b>	<b>\$34,273.50</b>

\* Elementary and middle school student generation rate is 60% of typical due to 40% credit for High Point Academy

**Table 2 - Capital Facility Fee Foundation Contributions**

Dwelling Unit Type	Number of DUs	Rate per Unit **	Total Contribution
SFD	0	\$843.00	\$0.00
SFA	0	\$843.00	\$0.00
TH/C	0	\$481.00	\$0.00
Apartment	365	\$481.00	\$175,565.00
<b>Total</b>	<b>365</b>		<b>\$175,565.00</b>

\*\* through December 2020

## MAINTENANCE ELIGIBILITY PROGRAM (MEP)

### MHFD Referral Review Comments

For Internal MHFD Use Only.	
MEP ID:	107686
Submittal ID:	10004851
MEP Phase:	Referral

**Date:** June 24, 2020  
**To:** Ryan Loomis  
*Via email*  
**RE:** MHFD Referral Review Comments

<b>Project Name:</b>	High Point at DIA
<b>Location:</b>	Aurora
<b>Drainageway:</b>	NA

This letter is in response to the request for our comments concerning the referenced project. We have reviewed this proposal only as it relates to maintenance eligibility of major drainage features, in this case:

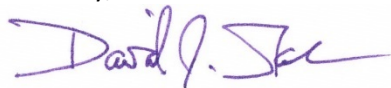
- NA

We have the following comments to offer:

We have no comments on this project as it is not eligible for maintenance. The site is not adjacent to a major drainageway or mapped floodplain and does not include any proposed MHFD master plan improvements.

We appreciate the opportunity to review this proposal. Please feel free to contact me with any questions or concerns.

Sincerely,



David Skuodas, PE, CFM, LEED AP  
Watershed Manager  
Mile High Flood District



**Right of Way & Permits**

1123 West 3<sup>rd</sup> Avenue  
Denver, Colorado 80223  
Telephone: **303.571.3306**  
Facsimile: 303. 571.3284  
donna.l.george@xcelenergy.com

June 23, 2020

City of Aurora Planning and Development Services  
15151 E. Alameda Parkway, 2<sup>nd</sup> Floor  
Aurora, CO 80012

Attn: Ryan Loomis

**RE: High Point PA-64 Multi-Family - 2nd referral, Case # DA-1746-22**

Public Service Company of Colorado's Right of Way & Permits Referral Desk has determined **there is a conflict** with the above captioned project in that the plat as shown on Aurora's website is dated March 17, 2020, does not appear to be an updated version, and does not show the requested 10-foot wide utility easement around the perimeter of the development/Lot 1.

Donna George  
Right of Way and Permits  
Public Service Company of Colorado dba Xcel Energy  
Office: 303-571-3306 – Email: donna.l.george@xcelenergy.com

June 15, 2020

Mr. Ryan Loomis  
Planning Department Case Manager  
15151 E. Alameda Parkway, Ste. 2300  
Aurora, Colorado 80012

Re: HIGH POINT PA-64 MULTI-FAMILY - SITE PLAN AND FINAL PLAT

Dear Mr. Loomis,

Denver International Airport received your referral dated June 10, 2020 for DA-1746-22 High Point PA-64 Multi-Family – Site Plan and Final Plat. We appreciate the opportunity to comment on the proposal and DEN provides the following comments:

- The site is found within/under the navigable airspace associated with DEN, as promulgated and regulated by the Federal Aviation Administration (FAA) under 14 CFR Part 77, Objects Affecting the Navigable Airspace. Based on Part 77 and the development site location, the proponent is required to file notice with the FAA, via the FAA Form 7460-1 process (Notice of Proposed Construction or Alteration), of any structure or temporary construction equipment (e.g., cranes) that penetrate Part 77 surfaces. The FAA website from which the need for the 7460 process can be determined (“Notice Criteria Tool”) and/or the filing can be initiated is:  
<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.
- The proposed development falls within the DEN 10,000' Critical Space separation criteria for the final build-out of future DEN Runways. The Wildlife Biologists from USDA assigned to DEN assist in implementing DEN's Wildlife Hazard Management Plan and have requested coordination as this project progresses. USDA and DEN will provide assistance with the requirements outlined in the current version of FAA Advisory Circular 150/5200-33 (see attached). DEN also requests that the landscape plan include maintenance of trees and grasses to reduce attractants for wildlife such as raptor species, blackbirds/starlings, and geese. Fruit-producing trees and shrubs should be avoided. Water quality ponds/detention structures must be designed to meet a 40-hour drain time following a 100-year event.

DEN appreciates the opportunity to review and comment on the HIGH POINT PA-64 MULTI-FAMILY - SITE PLAN AND FINAL PLAT.



U.S. Department  
of Transportation

**Federal Aviation  
Administration**

# Advisory Circular

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**Subject: HAZARDOUS WILDLIFE  
ATTRACTANTS ON OR NEAR  
AIRPORTS**

**Date:** 8/28/2007

**AC No:** 150/5200-33B

**Initiated by:** AAS-300    **Change:**

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**1. PURPOSE.** This Advisory Circular (AC) provides guidance on certain land uses that have the potential to attract hazardous wildlife on or near public-use airports. It also discusses airport development projects (including airport construction, expansion, and renovation) affecting aircraft movement near hazardous wildlife attractants. Appendix 1 provides definitions of terms used in this AC.

**2. APPLICABILITY.** The Federal Aviation Administration (FAA) recommends that public-use airport operators implement the standards and practices contained in this AC. The holders of Airport Operating Certificates issued under Title 14, Code of Federal Regulations (CFR), Part 139, Certification of Airports, Subpart D (Part 139), may use the standards, practices, and recommendations contained in this AC to comply with the wildlife hazard management requirements of Part 139. Airports that have received Federal grant-in-aid assistance must use these standards. The FAA also recommends the guidance in this AC for land-use planners, operators of non-certificated airports, and developers of projects, facilities, and activities on or near airports.

**3. CANCELLATION.** This AC cancels AC 150/5200-33A, *Hazardous Wildlife Attractants on or near Airports*, dated July 27, 2004.

**4. PRINCIPAL CHANGES.** This AC contains the following major changes, which are marked with vertical bars in the margin:

- a. Technical changes to paragraph references.
- b. Wording on storm water detention ponds.
- c. Deleted paragraph 4-3.b, *Additional Coordination*.

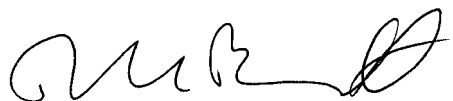
**5. BACKGROUND.** Information about the risks posed to aircraft by certain wildlife species has increased a great deal in recent years. Improved reporting, studies, documentation, and statistics clearly show that aircraft collisions with birds and other wildlife are a serious economic and public safety problem. While many species of wildlife can pose a threat to aircraft safety, they are not equally hazardous. Table 1

ranks the wildlife groups commonly involved in damaging strikes in the United States according to their relative hazard to aircraft. The ranking is based on the 47,212 records in the FAA National Wildlife Strike Database for the years 1990 through 2003. These hazard rankings, in conjunction with site-specific Wildlife Hazards Assessments (WHA), will help airport operators determine the relative abundance and use patterns of wildlife species and help focus hazardous wildlife management efforts on those species most likely to cause problems at an airport.

Most public-use airports have large tracts of open, undeveloped land that provide added margins of safety and noise mitigation. These areas can also present potential hazards to aviation if they encourage wildlife to enter an airport's approach or departure airspace or air operations area (AOA). Constructed or natural areas—such as poorly drained locations, detention/retention ponds, roosting habitats on buildings, landscaping, odor-causing rotting organic matter (putrescible waste) disposal operations, wastewater treatment plants, agricultural or aquaculture activities, surface mining, or wetlands—can provide wildlife with ideal locations for feeding, loafing, reproduction, and escape. Even small facilities, such as fast food restaurants, taxicab staging areas, rental car facilities, aircraft viewing areas, and public parks, can produce substantial attractions for hazardous wildlife.

During the past century, wildlife-aircraft strikes have resulted in the loss of hundreds of lives worldwide, as well as billions of dollars in aircraft damage. Hazardous wildlife attractants on and near airports can jeopardize future airport expansion, making proper community land-use planning essential. This AC provides airport operators and those parties with whom they cooperate with the guidance they need to assess and address potentially hazardous wildlife attractants when locating new facilities and implementing certain land-use practices on or near public-use airports.

**6. MEMORANDUM OF AGREEMENT BETWEEN FEDERAL RESOURCE AGENCIES.** The FAA, the U.S. Air Force, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and the U.S. Department of Agriculture - Wildlife Services signed a Memorandum of Agreement (MOA) in July 2003 to acknowledge their respective missions in protecting aviation from wildlife hazards. Through the MOA, the agencies established procedures necessary to coordinate their missions to address more effectively existing and future environmental conditions contributing to collisions between wildlife and aircraft (wildlife strikes) throughout the United States. These efforts are intended to minimize wildlife risks to aviation and human safety while protecting the Nation's valuable environmental resources.



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Table 1. Ranking of 25 species groups as to relative hazard to aircraft (1=most hazardous) based on three criteria (damage, major damage, and effect-on-flight), a composite ranking based on all three rankings, and a relative hazard score. Data were derived from the FAA National Wildlife Strike Database, January 1990–April 2003.<sup>1</sup>

Species group	Ranking by criteria			Composite ranking <sup>2</sup>	Relative hazard score <sup>3</sup>
	Damage <sup>4</sup>	Major damage <sup>5</sup>	Effect on flight <sup>6</sup>		
Deer	1	1	1	1	100
Vultures	2	2	2	2	64
Geese	3	3	6	3	55
Cormorants/pelicans	4	5	3	4	54
Cranes	7	6	4	5	47
Eagles	6	9	7	6	41
Ducks	5	8	10	7	39
Osprey	8	4	8	8	39
Turkey/pheasants	9	7	11	9	33
Hérons	11	14	9	10	27
Hawks (buteos)	10	12	12	11	25
Gulls	12	11	13	12	24
Rock pigeon	13	10	14	13	23
Owls	14	13	20	14	23
H. lark/s. bunting	18	15	15	15	17
Crows/ravens	15	16	16	16	16
Coyote	16	19	5	17	14
Mourning dove	17	17	17	18	14
Shorebirds	19	21	18	19	10
Blackbirds/starling	20	22	19	20	10
American kestrel	21	18	21	21	9
Meadowlarks	22	20	22	22	7
Swallows	24	23	24	23	4
Sparrows	25	24	23	24	4
Nighthawks	23	25	25	25	1

<sup>1</sup> Excerpted from the *Special Report for the FAA, "Ranking the Hazard Level of Wildlife Species to Civil Aviation in the USA: Update #1, July 2, 2003"*. Refer to this report for additional explanations of criteria and method of ranking.

<sup>2</sup> Relative rank of each species group was compared with every other group for the three variables, placing the species group with the greatest hazard rank for  $\geq 2$  of the 3 variables above the next highest ranked group, then proceeding down the list.

<sup>3</sup> Percentage values, from Tables 3 and 4 in Footnote 1 of the *Special Report*, for the three criteria were summed and scaled down from 100, with 100 as the score for the species group with the maximum summed values and the greatest potential hazard to aircraft.

<sup>4</sup> Aircraft incurred at least some damage (destroyed, substantial, minor, or unknown) from strike.

<sup>5</sup> Aircraft incurred damage or structural failure, which adversely affected the structure strength, performance, or flight characteristics, and which would normally require major repair or replacement of the affected component, or the damage sustained makes it inadvisable to restore aircraft to airworthy condition.

<sup>6</sup> Aborted takeoff, engine shutdown, precautionary landing, or other.



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## **SECTION 1.**

### **GENERAL SEPARATION CRITERIA FOR HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS.**

**1-1. INTRODUCTION.** When considering proposed land uses, airport operators, local planners, and developers must take into account whether the proposed land uses, including new development projects, will increase wildlife hazards. Land-use practices that attract or sustain hazardous wildlife populations on or near airports can significantly increase the potential for wildlife strikes.

The FAA recommends the minimum separation criteria outlined below for land-use practices that attract hazardous wildlife to the vicinity of airports. Please note that FAA criteria include land uses that cause movement of hazardous wildlife onto, into, or across the airport's approach or departure airspace or air operations area (AOA). (See the discussion of the synergistic effects of surrounding land uses in Section 2-8 of this AC.)

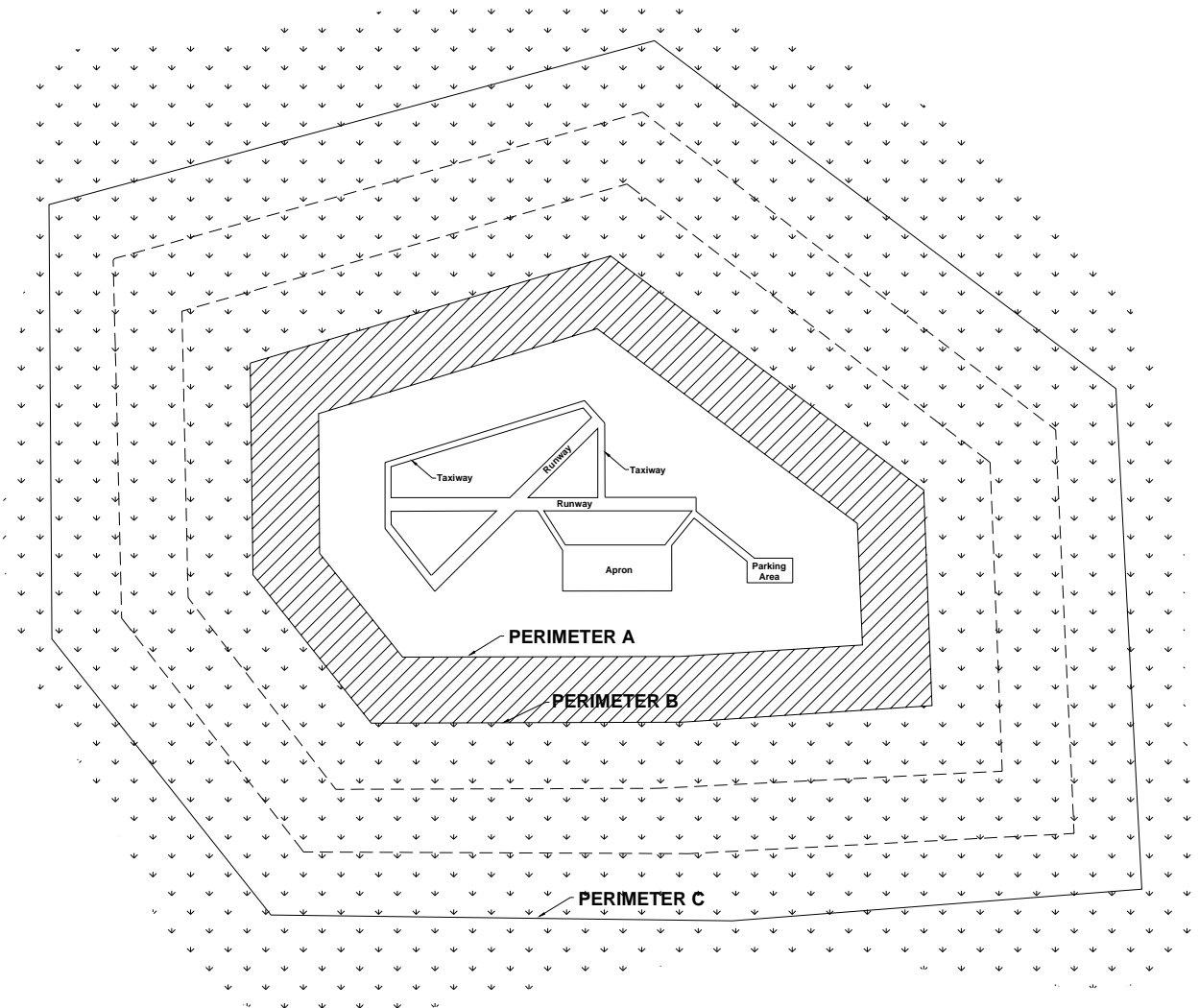
The basis for the separation criteria contained in this section can be found in existing FAA regulations. The separation distances are based on (1) flight patterns of piston-powered aircraft and turbine-powered aircraft, (2) the altitude at which most strikes happen (78 percent occur under 1,000 feet and 90 percent occur under 3,000 feet above ground level), and (3) National Transportation Safety Board (NTSB) recommendations.

**1-2. AIRPORTS SERVING PISTON-POWERED AIRCRAFT.** Airports that do not sell Jet-A fuel normally serve piston-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 5,000 feet at these airports for any of the hazardous wildlife attractants mentioned in Section 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between an airport's AOA and the hazardous wildlife attractant. Figure 1 depicts this separation distance measured from the nearest aircraft operations areas.

**1-3. AIRPORTS SERVING TURBINE-POWERED AIRCRAFT.** Airports selling Jet-A fuel normally serve turbine-powered aircraft. Notwithstanding more stringent requirements for specific land uses, the FAA recommends a separation distance of 10,000 feet at these airports for any of the hazardous wildlife attractants mentioned in Section 2 or for new airport development projects meant to accommodate aircraft movement. This distance is to be maintained between an airport's AOA and the hazardous wildlife attractant. Figure 1 depicts this separation distance from the nearest aircraft movement areas.

**1-4. PROTECTION OF APPROACH, DEPARTURE, AND CIRCLING AIRSPACE.** For all airports, the FAA recommends a distance of 5 statute miles between the farthest edge of the airport's AOA and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.

Figure 1. Separation distances within which hazardous wildlife attractants should be avoided, eliminated, or mitigated.



**PERIMETER A:** For airports serving piston-powered aircraft, hazardous wildlife attractants must be 5,000 feet from the nearest air operations area.

**PERIMETER B:** For airports serving turbine-powered aircraft, hazardous wildlife attractants must be 10,000 feet from the nearest air operations area.

**PERIMETER C:** 5-mile range to protect approach, departure and circling airspace.

## SECTION 2.

### LAND-USE PRACTICES ON OR NEAR AIRPORTS THAT POTENTIALLY ATTRACT HAZARDOUS WILDLIFE.

**2-1. GENERAL.** The wildlife species and the size of the populations attracted to the airport environment vary considerably, depending on several factors, including land-use practices on or near the airport. This section discusses land-use practices having the potential to attract hazardous wildlife and threaten aviation safety. In addition to the specific considerations outlined below, airport operators should refer to *Wildlife Hazard Management at Airports*, prepared by FAA and U.S. Department of Agriculture (USDA) staff. (This manual is available in English, Spanish, and French. It can be viewed and downloaded free of charge from the FAA's wildlife hazard mitigation web site: <http://wildlife-mitigation.tc.FAA.gov>.) And, *Prevention and Control of Wildlife Damage*, compiled by the University of Nebraska Cooperative Extension Division. (This manual is available online in a periodically updated version at: [ianrwww.unl.edu/wildlife/solutions/handbook/](http://ianrwww.unl.edu/wildlife/solutions/handbook/).)

**2-2. WASTE DISPOSAL OPERATIONS.** Municipal solid waste landfills (MSWLF) are known to attract large numbers of hazardous wildlife, particularly birds. Because of this, these operations, when located within the separations identified in the siting criteria in Sections 1-2 through 1-4, are considered incompatible with safe airport operations.

- a. Siting for new municipal solid waste landfills subject to AIR 21.** Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) (AIR 21) prohibits the construction or establishment of a new MSWLF within 6 statute miles of certain public-use airports. Before these prohibitions apply, both the airport and the landfill must meet the very specific conditions described below. These restrictions do not apply to airports or landfills located within the state of Alaska.

The airport must (1) have received a Federal grant(s) under 49 U.S.C. § 47101, et. seq.; (2) be under control of a public agency; (3) serve some scheduled air carrier operations conducted in aircraft with less than 60 seats; and (4) have total annual enplanements consisting of at least 51 percent of scheduled air carrier enplanements conducted in aircraft with less than 60 passenger seats.

The proposed MSWLF must (1) be within 6 miles of the airport, as measured from airport property line to MSWLF property line, and (2) have started construction or establishment on or after April 5, 2001. Public Law 106-181 only limits the construction or establishment of some new MSWLF. It does not limit the expansion, either vertical or horizontal, of existing landfills.

NOTE: Consult the most recent version of AC 150/5200-34, *Construction or Establishment of Landfills Near Public Airports*, for a more detailed discussion of these restrictions.

- b. Siting for new MSWLF not subject to AIR 21.** If an airport and MSWLF do not meet the restrictions of Public Law 106-181, the FAA recommends against locating MSWLF within the separation distances identified in Sections 1-2 through 1-4. The separation distances should be measured from the closest point of the airport's AOA to the closest planned MSWLF cell.
- c. Considerations for existing waste disposal facilities within the limits of separation criteria.** The FAA recommends against airport development projects that would increase the number of aircraft operations or accommodate larger or faster aircraft near MSWLF operations located within the separations identified in Sections 1-2 through 1-4. In addition, in accordance with 40 CFR 258.10, owners or operators of existing MSWLF units that are located within the separations listed in Sections 1-2 through 1-4 must demonstrate that the unit is designed and operated so it does not pose a bird hazard to aircraft. (See Section 4-2(b) of this AC for a discussion of this demonstration requirement.)
- d. Enclosed trash transfer stations.** Enclosed waste-handling facilities that receive garbage behind closed doors; process it via compaction, incineration, or similar manner; and remove all residue by enclosed vehicles generally are compatible with safe airport operations, provided they are not located on airport property or within the Runway Protection Zone (RPZ). These facilities should not handle or store putrescible waste outside or in a partially enclosed structure accessible to hazardous wildlife. Trash transfer facilities that are open on one or more sides; that store uncovered quantities of municipal solid waste outside, even if only for a short time; that use semi-trailers that leak or have trash clinging to the outside; or that do not control odors by ventilation and filtration systems (odor masking is not acceptable) do not meet the FAA's definition of fully enclosed trash transfer stations. The FAA considers these facilities incompatible with safe airport operations if they are located closer than the separation distances specified in Sections 1-2 through 1-4.
- e. Composting operations on or near airport property.** Composting operations that accept only yard waste (e.g., leaves, lawn clippings, or branches) generally do not attract hazardous wildlife. Sewage sludge, woodchips, and similar material are not municipal solid wastes and may be used as compost bulking agents. The compost, however, must never include food or other municipal solid waste. Composting operations should not be located on airport property. Off-airport property composting operations should be located no closer than the greater of the following distances: 1,200 feet from any AOA or the distance called for by airport design requirements (see AC 150/5300-13, *Airport Design*). This spacing should prevent material, personnel, or equipment from penetrating any Object Free Area (OFA), Obstacle Free Zone (OFZ), Threshold Siting Surface (TSS), or Clearway. Airport operators should monitor composting operations located in proximity to the airport to ensure that steam or thermal rise does not adversely affect air traffic. On-airport disposal of compost by-products should not be conducted for the reasons stated in 2-3f.



- f. Underwater waste discharges.** The FAA recommends against the underwater discharge of any food waste (e.g., fish processing offal) within the separations identified in Sections 1-2 through 1-4 because it could attract scavenging hazardous wildlife.
- g. Recycling centers.** Recycling centers that accept previously sorted non-food items, such as glass, newspaper, cardboard, or aluminum, are, in most cases, not attractive to hazardous wildlife and are acceptable.
- h. Construction and demolition (C&D) debris facilities.** C&D landfills do not generally attract hazardous wildlife and are acceptable if maintained in an orderly manner, admit no putrescible waste, and are not co-located with other waste disposal operations. However, C&D landfills have similar visual and operational characteristics to putrescible waste disposal sites. When co-located with putrescible waste disposal operations, C&D landfills are more likely to attract hazardous wildlife because of the similarities between these disposal facilities. Therefore, a C&D landfill co-located with another waste disposal operation should be located outside of the separations identified in Sections 1-2 through 1-4.
- i. Fly ash disposal.** The incinerated residue from resource recovery power/heat-generating facilities that are fired by municipal solid waste, coal, or wood is generally not a wildlife attractant because it no longer contains putrescible matter. Landfills accepting only fly ash are generally not considered to be wildlife attractants and are acceptable as long as they are maintained in an orderly manner, admit no putrescible waste of any kind, and are not co-located with other disposal operations that attract hazardous wildlife.

Since varying degrees of waste consumption are associated with general incineration (not resource recovery power/heat-generating facilities), the FAA considers the ash from general incinerators a regular waste disposal by-product and, therefore, a hazardous wildlife attractant if disposed of within the separation criteria outlined in Sections 1-2 through 1-4.

**2-3. WATER MANAGEMENT FACILITIES.** Drinking water intake and treatment facilities, storm water and wastewater treatment facilities, associated retention and settling ponds, ponds built for recreational use, and ponds that result from mining activities often attract large numbers of potentially hazardous wildlife. To prevent wildlife hazards, land-use developers and airport operators may need to develop management plans, in compliance with local and state regulations, to support the operation of storm water management facilities on or near all public-use airports to ensure a safe airport environment.

- a. Existing storm water management facilities.** On-airport storm water management facilities allow the quick removal of surface water, including discharges related to aircraft deicing, from impervious surfaces, such as pavement and terminal/hangar building roofs. Existing on-airport detention ponds collect storm water, protect water quality, and control runoff. Because they slowly release water

after storms, they create standing bodies of water that can attract hazardous wildlife. Where the airport has developed a Wildlife Hazard Management Plan (WHMP) in accordance with Part 139, the FAA requires immediate correction of any wildlife hazards arising from existing storm water facilities located on or near airports, using appropriate wildlife hazard mitigation techniques. Airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a wildlife damage management biologist.

Where possible, airport operators should modify storm water detention ponds to allow a maximum 48-hour detention period for the design storm. The FAA recommends that airport operators avoid or remove retention ponds and detention ponds featuring dead storage to eliminate standing water. Detention basins should remain totally dry between rainfalls. Where constant flow of water is anticipated through the basin, or where any portion of the basin bottom may remain wet, the detention facility should include a concrete or paved pad and/or ditch/swale in the bottom to prevent vegetation that may provide nesting habitat.

When it is not possible to drain a large detention pond completely, airport operators may use physical barriers, such as bird balls, wires grids, pillows, or netting, to deter birds and other hazardous wildlife. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office.

The FAA recommends that airport operators encourage off-airport storm water treatment facility operators to incorporate appropriate wildlife hazard mitigation techniques into storm water treatment facility operating practices when their facility is located within the separation criteria specified in Sections 1-2 through 1-4.

- b. New storm water management facilities.** The FAA strongly recommends that off-airport storm water management systems located within the separations identified in Sections 1-2 through 1-4 be designed and operated so as not to create above-ground standing water. Stormwater detention ponds should be designed, engineered, constructed, and maintained for a maximum 48-hour detention period after the design storm and remain completely dry between storms. To facilitate the control of hazardous wildlife, the FAA recommends the use of steep-sided, rip-rap lined, narrow, linearly shaped water detention basins. When it is not possible to place these ponds away from an airport's AOA, airport operators should use physical barriers, such as bird balls, wires grids, pillows, or netting, to prevent access of hazardous wildlife to open water and minimize aircraft-wildlife interactions. When physical barriers are used, airport operators must evaluate their use and ensure they will not adversely affect water rescue. Before installing any physical barriers over detention ponds on Part 139 airports, airport operators must get approval from the appropriate FAA Regional Airports Division Office. All vegetation in or around detention basins that provide food or cover for hazardous wildlife should be eliminated. If soil conditions and other requirements allow, the FAA encourages

the use of underground storm water infiltration systems, such as French drains or buried rock fields, because they are less attractive to wildlife.

- c. Existing wastewater treatment facilities.** The FAA strongly recommends that airport operators immediately correct any wildlife hazards arising from existing wastewater treatment facilities located on or near the airport. Where required, a WHMP developed in accordance with Part 139 will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should encourage wastewater treatment facility operators to incorporate measures, developed in consultation with a wildlife damage management biologist, to minimize hazardous wildlife attractants. Airport operators should also encourage those wastewater treatment facility operators to incorporate these mitigation techniques into their standard operating practices. In addition, airport operators should consider the existence of wastewater treatment facilities when evaluating proposed sites for new airport development projects and avoid such sites when practicable.
- d. New wastewater treatment facilities.** The FAA strongly recommends against the construction of new wastewater treatment facilities or associated settling ponds within the separations identified in Sections 1-2 through 1-4. Appendix 1 defines wastewater treatment facility as “any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes.” The definition includes any pretreatment involving the reduction of the amount of pollutants or the elimination of pollutants prior to introducing such pollutants into a publicly owned treatment works (wastewater treatment facility). During the site-location analysis for wastewater treatment facilities, developers should consider the potential to attract hazardous wildlife if an airport is in the vicinity of the proposed site, and airport operators should voice their opposition to such facilities if they are in proximity to the airport.
- e. Artificial marshes.** In warmer climates, wastewater treatment facilities sometimes employ artificial marshes and use submergent and emergent aquatic vegetation as natural filters. These artificial marshes may be used by some species of flocking birds, such as blackbirds and waterfowl, for breeding or roosting activities. The FAA strongly recommends against establishing artificial marshes within the separations identified in Sections 1-2 through 1-4.
- f. Wastewater discharge and sludge disposal.** The FAA recommends against the discharge of wastewater or sludge on airport property because it may improve soil moisture and quality on unpaved areas and lead to improved turf growth that can be an attractive food source for many species of animals. Also, the turf requires more frequent mowing, which in turn may mutilate or flush insects or small animals and produce straw, both of which can attract hazardous wildlife. In addition, the improved turf may attract grazing wildlife, such as deer and geese. Problems may also occur when discharges saturate unpaved airport areas. The resultant soft, muddy conditions can severely restrict or prevent emergency vehicles from reaching accident sites in a timely manner.

**2-4. WETLANDS.** Wetlands provide a variety of functions and can be regulated by local, state, and Federal laws. Normally, wetlands are attractive to many types of wildlife, including many which rank high on the list of hazardous wildlife species (Table 1).

**NOTE:** If questions exist as to whether an area qualifies as a wetland, contact the local division of the U.S. Army Corps of Engineers, the Natural Resources Conservation Service, or a wetland consultant qualified to delineate wetlands.

- a. Existing wetlands on or near airport property.** If wetlands are located on or near airport property, airport operators should be alert to any wildlife use or habitat changes in these areas that could affect safe aircraft operations. At public-use airports, the FAA recommends immediately correcting, in cooperation with local, state, and Federal regulatory agencies, any wildlife hazards arising from existing wetlands located on or near airports. Where required, a WHMP will outline appropriate wildlife hazard mitigation techniques. Accordingly, airport operators should develop measures to minimize hazardous wildlife attraction in consultation with a wildlife damage management biologist.
- b. New airport development.** Whenever possible, the FAA recommends locating new airports using the separations from wetlands identified in Sections 1-2 through 1-4. Where alternative sites are not practicable, or when airport operators are expanding an existing airport into or near wetlands, a wildlife damage management biologist, in consultation with the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the state wildlife management agency should evaluate the wildlife hazards and prepare a WHMP that indicates methods of minimizing the hazards.
- c. Mitigation for wetland impacts from airport projects.** Wetland mitigation may be necessary when unavoidable wetland disturbances result from new airport development projects or projects required to correct wildlife hazards from wetlands. Wetland mitigation must be designed so it does not create a wildlife hazard. The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4.

**(1) Onsite mitigation of wetland functions.** The FAA may consider exceptions to locating mitigation activities outside the separations identified in Sections 1-2 through 1-4 if the affected wetlands provide unique ecological functions, such as critical habitat for threatened or endangered species or ground water recharge, which cannot be replicated when moved to a different location. Using existing airport property is sometimes the only feasible way to achieve the mitigation ratios mandated in regulatory orders and/or settlement agreements with the resource agencies. Conservation easements are an additional means of providing mitigation for project impacts. Typically the airport operator continues to own the property, and an easement is created stipulating that the property will be maintained as habitat for state or Federally listed species.

Mitigation must not inhibit the airport operator's ability to effectively control hazardous wildlife on or near the mitigation site or effectively maintain other aspects of safe airport operations. Enhancing such mitigation areas to attract hazardous wildlife must be avoided. The FAA will review any onsite mitigation proposals to determine compatibility with safe airport operations. A wildlife damage management biologist should evaluate any wetland mitigation projects that are needed to protect unique wetland functions and that must be located in the separation criteria in Sections 1-2 through 1-4 before the mitigation is implemented. A WHMP should be developed to reduce the wildlife hazards.

**(2) Offsite mitigation of wetland functions.** The FAA recommends that wetland mitigation projects that may attract hazardous wildlife be sited outside of the separations identified in Sections 1-2 through 1-4 unless they provide unique functions that must remain onsite (see 2-4c(1)). Agencies that regulate impacts to or around wetlands recognize that it may be necessary to split wetland functions in mitigation schemes. Therefore, regulatory agencies may, under certain circumstances, allow portions of mitigation to take place in different locations.

**(3) Mitigation banking.** Wetland mitigation banking is the creation or restoration of wetlands in order to provide mitigation credits that can be used to offset permitted wetland losses. Mitigation banking benefits wetland resources by providing advance replacement for permitted wetland losses; consolidating small projects into larger, better-designed and managed units; and encouraging integration of wetland mitigation projects with watershed planning. This last benefit is most helpful for airport projects, as wetland impacts mitigated outside of the separations identified in Sections 1-2 through 1-4 can still be located within the same watershed. Wetland mitigation banks meeting the separation criteria offer an ecologically sound approach to mitigation in these situations. Airport operators should work with local watershed management agencies or organizations to develop mitigation banking for wetland impacts on airport property.

**2-5. DREDGE SPOIL CONTAINMENT AREAS.** The FAA recommends against locating dredge spoil containment areas (also known as Confined Disposal Facilities) within the separations identified in Sections 1-2 through 1-4 if the containment area or the spoils contain material that would attract hazardous wildlife.

**2-6. AGRICULTURAL ACTIVITIES.** Because most, if not all, agricultural crops can attract hazardous wildlife during some phase of production, the FAA recommends against the use of airport property for agricultural production, including hay crops, within the separations identified in Sections 1-2 through 1-4. If the airport has no financial alternative to agricultural crops to produce income necessary to maintain the viability of the airport, then the airport shall follow the crop distance guidelines listed in the table titled "Minimum Distances between Certain Airport Features and Any On-Airport Agricultural Crops" found in AC 150/5300-13, *Airport Design*, Appendix 17. The cost of wildlife control and potential accidents should be weighed against the income produced by the on-airport crops when deciding whether to allow crops on the airport.

- a. **Livestock production.** Confined livestock operations (i.e., feedlots, dairy operations, hog or chicken production facilities, or egg laying operations) often attract flocking birds, such as starlings, that pose a hazard to aviation. Therefore, The FAA recommends against such facilities within the separations identified in Sections 1-2 through 1-4. Any livestock operation within these separations should have a program developed to reduce the attractiveness of the site to species that are hazardous to aviation safety. Free-ranging livestock must not be grazed on airport property because the animals may wander onto the AOA. Furthermore, livestock feed, water, and manure may attract birds.
- b. **Aquaculture.** Aquaculture activities (i.e. catfish or trout production) conducted outside of fully enclosed buildings are inherently attractive to a wide variety of birds. Existing aquaculture facilities/activities within the separations listed in Sections 1-2 through 1-4 must have a program developed to reduce the attractiveness of the sites to species that are hazardous to aviation safety. Airport operators should also oppose the establishment of new aquaculture facilities/activities within the separations listed in Sections 1-2 through 1-4.
- c. **Alternative uses of agricultural land.** Some airports are surrounded by vast areas of farmed land within the distances specified in Sections 1-2 through 1-4. Seasonal uses of agricultural land for activities such as hunting can create a hazardous wildlife situation. In some areas, farmers will rent their land for hunting purposes. Rice farmers, for example, flood their land during waterfowl hunting season and obtain additional revenue by renting out duck blinds. The duck hunters then use decoys and call in hundreds, if not thousands, of birds, creating a tremendous threat to aircraft safety. A wildlife damage management biologist should review, in coordination with local farmers and producers, these types of seasonal land uses and incorporate them into the WHMP.

## **2-7. GOLF COURSES, LANDSCAPING AND OTHER LAND-USE CONSIDERATIONS.**

- a. **Golf courses.** The large grassy areas and open water found on most golf courses are attractive to hazardous wildlife, particularly Canada geese and some species of gulls. These species can pose a threat to aviation safety. The FAA recommends against construction of new golf courses within the separations identified in Sections 1-2 through 1-4. Existing golf courses located within these separations must develop a program to reduce the attractiveness of the sites to species that are hazardous to aviation safety. Airport operators should ensure these golf courses are monitored on a continuing basis for the presence of hazardous wildlife. If hazardous wildlife is detected, corrective actions should be immediately implemented.
- b. **Landscaping and landscape maintenance.** Depending on its geographic location, landscaping can attract hazardous wildlife. The FAA recommends that airport operators approach landscaping with caution and confine it to airport areas not associated with aircraft movements. A wildlife damage management biologist should review all landscaping plans. Airport operators should also monitor all landscaped areas on a continuing basis for the presence of hazardous wildlife. If

hazardous wildlife is detected, corrective actions should be immediately implemented.

Turf grass areas can be highly attractive to a variety of hazardous wildlife species. Research conducted by the USDA Wildlife Services' National Wildlife Research Center has shown that no one grass management regime will deter all species of hazardous wildlife in all situations. In cooperation with wildlife damage management biologist, airport operators should develop airport turf grass management plans on a prescription basis, depending on the airport's geographic locations and the type of hazardous wildlife likely to frequent the airport

Airport operators should ensure that plant varieties attractive to hazardous wildlife are not used on the airport. Disturbed areas or areas in need of re-vegetating should not be planted with seed mixtures containing millet or any other large-seed producing grass. For airport property already planted with seed mixtures containing millet, rye grass, or other large-seed producing grasses, the FAA recommends disking, plowing, or another suitable agricultural practice to prevent plant maturation and seed head production. Plantings should follow the specific recommendations for grass management and seed and plant selection made by the State University Cooperative Extension Service, the local office of Wildlife Services, or a qualified wildlife damage management biologist. Airport operators should also consider developing and implementing a preferred/prohibited plant species list, reviewed by a wildlife damage management biologist, which has been designed for the geographic location to reduce the attractiveness to hazardous wildlife for landscaping airport property.

- c. **Airports surrounded by wildlife habitat.** The FAA recommends that operators of airports surrounded by woodlands, water, or wetlands refer to Section 2.4 of this AC. Operators of such airports should provide for a Wildlife Hazard Assessment (WHA) conducted by a wildlife damage management biologist. This WHA is the first step in preparing a WHMP, where required.
- d. **Other hazardous wildlife attractants.** Other specific land uses or activities (e.g., sport or commercial fishing, shellfish harvesting, etc.), perhaps unique to certain regions of the country, have the potential to attract hazardous wildlife. Regardless of the source of the attraction, when hazardous wildlife is noted on a public-use airport, airport operators must take prompt remedial action(s) to protect aviation safety.

**2-8. SYNERGISTIC EFFECTS OF SURROUNDING LAND USES.** There may be circumstances where two (or more) different land uses that would not, by themselves, be considered hazardous wildlife attractants or that are located outside of the separations identified in Sections 1-2 through 1-4 that are in such an alignment with the airport as to create a wildlife corridor directly through the airport and/or surrounding airspace. An example of this situation may involve a lake located outside of the separation criteria on the east side of an airport and a large hayfield on the west side of an airport, land uses that together could create a flyway for Canada geese directly across the airspace of the airport. There are numerous examples of such situations;



therefore, airport operators and the wildlife damage management biologist must consider the entire surrounding landscape and community when developing the WHMP.

## SECTION 3.

### PROCEDURES FOR WILDLIFE HAZARD MANAGEMENT BY OPERATORS OF PUBLIC-USE AIRPORTS.

**3.1. INTRODUCTION.** In recognition of the increased risk of serious aircraft damage or the loss of human life that can result from a wildlife strike, the FAA may require the development of a Wildlife Hazard Management Plan (WHMP) when specific triggering events occur on or near the airport. Part 139.337 discusses the specific events that trigger a Wildlife Hazard Assessment (WHA) and the specific issues that a WHMP must address for FAA approval and inclusion in an Airport Certification Manual.

**3.2. COORDINATION WITH USDA WILDLIFE SERVICES OR OTHER QUALIFIED WILDLIFE DAMAGE MANAGEMENT BIOLOGISTS.** The FAA will use the Wildlife Hazard Assessment (WHA) conducted in accordance with Part 139 to determine if the airport needs a WHMP. Therefore, persons having the education, training, and expertise necessary to assess wildlife hazards must conduct the WHA. The airport operator may look to Wildlife Services or to qualified private consultants to conduct the WHA. When the services of a wildlife damage management biologist are required, the FAA recommends that land-use developers or airport operators contact a consultant specializing in wildlife damage management or the appropriate state director of Wildlife Services.

**NOTE:** Telephone numbers for the respective USDA Wildlife Services state offices can be obtained by contacting USDA Wildlife Services Operational Support Staff, 4700 River Road, Unit 87, Riverdale, MD, 20737-1234, Telephone (301) 734-7921, Fax (301) 734-5157 (<http://www.aphis.usda.gov/ws/>).

**3-3. WILDLIFE HAZARD MANAGEMENT AT AIRPORTS: A MANUAL FOR AIRPORT PERSONNEL.** This manual, prepared by FAA and USDA Wildlife Services staff, contains a compilation of information to assist airport personnel in the development, implementation, and evaluation of WHMPs at airports. The manual includes specific information on the nature of wildlife strikes, legal authority, regulations, wildlife management techniques, WHAs, WHMPs, and sources of help and information. The manual is available in three languages: English, Spanish, and French. It can be viewed and downloaded free of charge from the FAA's wildlife hazard mitigation web site: <http://wildlife-mitigation.tc.FAA.gov/>. This manual only provides a starting point for addressing wildlife hazard issues at airports. Hazardous wildlife management is a complex discipline and conditions vary widely across the United States. Therefore, qualified wildlife damage management biologists must direct the development of a WHMP and the implementation of management actions by airport personnel.

There are many other resources complementary to this manual for use in developing and implementing WHMPs. Several are listed in the manual's bibliography.

**3-4. WILDLIFE HAZARD ASSESSMENTS, TITLE 14, CODE OF FEDERAL REGULATIONS, PART 139.** Part 139.337(b) requires airport operators to conduct a Wildlife Hazard Assessment (WHA) when certain events occur on or near the airport.

Part 139.337 (c) provides specific guidance as to what facts must be addressed in a WHA.

**3-5. WILDLIFE HAZARD MANAGEMENT PLAN (WHMP).** The FAA will consider the results of the WHA, along with the aeronautical activity at the airport and the views of the airport operator and airport users, in determining whether a formal WHMP is needed, in accordance with Part 139.337. If the FAA determines that a WHMP is needed, the airport operator must formulate and implement a WHMP, using the WHA as the basis for the plan.

The goal of an airport's Wildlife Hazard Management Plan is to minimize the risk to aviation safety, airport structures or equipment, or human health posed by populations of hazardous wildlife on and around the airport.

The WHMP must identify hazardous wildlife attractants on or near the airport and the appropriate wildlife damage management techniques to minimize the wildlife hazard. It must also prioritize the management measures.

**3-6. LOCAL COORDINATION.** The establishment of a Wildlife Hazards Working Group (WHWG) will facilitate the communication, cooperation, and coordination of the airport and its surrounding community necessary to ensure the effectiveness of the WHMP. The cooperation of the airport community is also necessary when new projects are considered. Whether on or off the airport, the input from all involved parties must be considered when a potentially hazardous wildlife attractant is being proposed. Airport operators should also incorporate public education activities with the local coordination efforts because some activities in the vicinity of your airport, while harmless under normal leisure conditions, can attract wildlife and present a danger to aircraft. For example, if public trails are planned near wetlands or in parks adjoining airport property, the public should know that feeding birds and other wildlife in the area may pose a risk to aircraft.

Airport operators should work with local and regional planning and zoning boards so as to be aware of proposed land-use changes, or modification of existing land uses, that could create hazardous wildlife attractants within the separations identified in Sections 1-2 through 1-4. Pay particular attention to proposed land uses involving creation or expansion of waste water treatment facilities, development of wetland mitigation sites, or development or expansion of dredge spoil containment areas. At the very least, airport operators must ensure they are on the notification list of the local planning board or equivalent review entity for all communities located within 5 miles of the airport, so they will receive notification of any proposed project and have the opportunity to review it for attractiveness to hazardous wildlife.

**3-7 COORDINATION/NOTIFICATION OF AIRMEN OF WILDLIFE HAZARDS.** If an existing land-use practice creates a wildlife hazard and the land-use practice or wildlife hazard cannot be immediately eliminated, airport operators must issue a Notice to Airmen (NOTAM) and encourage the land-owner or manager to take steps to control the wildlife hazard and minimize further attraction.

## SECTION 4.

### FAA NOTIFICATION AND REVIEW OF PROPOSED LAND-USE PRACTICE CHANGES IN THE VICINITY OF PUBLIC-USE AIRPORTS

#### 4-1. FAA REVIEW OF PROPOSED LAND-USE PRACTICE CHANGES IN THE VICINITY OF PUBLIC-USE AIRPORTS.

- a. The FAA discourages the development of waste disposal and other facilities, discussed in Section 2, located within the 5,000/10,000-foot criteria specified in Sections 1-2 through 1-4.
- b. For projects that are located outside the 5,000/10,000-foot criteria but within 5 statute miles of the airport's AOA, the FAA may review development plans, proposed land-use changes, operational changes, or wetland mitigation plans to determine if such changes present potential wildlife hazards to aircraft operations. The FAA considers sensitive airport areas as those that lie under or next to approach or departure airspace. This brief examination should indicate if further investigation is warranted.
- c. Where a wildlife damage management biologist has conducted a further study to evaluate a site's compatibility with airport operations, the FAA may use the study results to make a determination.

#### 4-2. WASTE MANAGEMENT FACILITIES.

- a. **Notification of new/expanded project proposal.** Section 503 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (Public Law 106-181) limits the construction or establishment of new MSWLF within 6 statute miles of certain public-use airports, when both the airport and the landfill meet very specific conditions. See Section 2-2 of this AC and AC 150/5200-34 for a more detailed discussion of these restrictions.

The Environmental Protection Agency (EPA) requires any MSWLF operator proposing a new or expanded waste disposal operation within 5 statute miles of a runway end to notify the appropriate FAA Regional Airports Division Office and the airport operator of the proposal (40 CFR 258, *Criteria for Municipal Solid Waste Landfills*, Section 258.10, *Airport Safety*). The EPA also requires owners or operators of new MSWLF units, or lateral expansions of existing MSWLF units, that are located within 10,000 feet of any airport runway end used by turbojet aircraft, or within 5,000 feet of any airport runway end used only by piston-type aircraft, to demonstrate successfully that such units are not hazards to aircraft. (See 4-2.b below.)

When new or expanded MSWLF are being proposed near airports, MSWLF operators must notify the airport operator and the FAA of the proposal as early as possible pursuant to 40 CFR 258.

- b. Waste handling facilities within separations identified in Sections 1-2 through 1-4.** To claim successfully that a waste-handling facility sited within the separations identified in Sections 1-2 through 1-4 does not attract hazardous wildlife and does not threaten aviation, the developer must establish convincingly that the facility will not handle putrescible material other than that as outlined in 2-2.d. The FAA strongly recommends against any facility other than that as outlined in 2-2.d (enclosed transfer stations). The FAA will use this information to determine if the facility will be a hazard to aviation.
- c. Putrescible-Waste Facilities.** In their effort to satisfy the EPA requirement, some putrescible-waste facility proponents may offer to undertake experimental measures to demonstrate that their proposed facility will not be a hazard to aircraft. To date, no such facility has been able to demonstrate an ability to reduce and sustain hazardous wildlife to levels that existed before the putrescible-waste landfill began operating. For this reason, demonstrations of experimental wildlife control measures may not be conducted within the separation identified in Sections 1-2 through 1-4.

**4-3. OTHER LAND-USE PRACTICE CHANGES.** As a matter of policy, the FAA encourages operators of public-use airports who become aware of proposed land use practice changes that may attract hazardous wildlife within 5 statute miles of their airports to promptly notify the FAA. The FAA also encourages proponents of such land use changes to notify the FAA as early in the planning process as possible. Advanced notice affords the FAA an opportunity (1) to evaluate the effect of a particular land-use change on aviation safety and (2) to support efforts by the airport sponsor to restrict the use of land next to or near the airport to uses that are compatible with the airport.

The airport operator, project proponent, or land-use operator may use FAA Form 7460-1, *Notice of Proposed Construction or Alteration*, or other suitable documents similar to FAA Form 7460-1 to notify the appropriate FAA Regional Airports Division Office. Project proponents can contact the appropriate FAA Regional Airports Division Office for assistance with the notification process.

It is helpful if the notification includes a 15-minute quadrangle map of the area identifying the location of the proposed activity. The land-use operator or project proponent should also forward specific details of the proposed land-use change or operational change or expansion. In the case of solid waste landfills, the information should include the type of waste to be handled, how the waste will be processed, and final disposal methods.

- a. Airports that have received Federal grant-in-aid assistance.** Airports that have received Federal grant-in-aid assistance are required by their grant assurances to take appropriate actions to restrict the use of land next to or near the airport to uses that are compatible with normal airport operations. The FAA recommends that airport operators to the extent practicable oppose off-airport land-use changes or practices within the separations identified in Sections 1-2 through 1-4 that may attract hazardous wildlife. Failure to do so may lead to noncompliance with applicable grant assurances. The FAA will not approve the placement of airport

development projects pertaining to aircraft movement in the vicinity of hazardous wildlife attractants without appropriate mitigating measures. Increasing the intensity of wildlife control efforts is not a substitute for eliminating or reducing a proposed wildlife hazard. Airport operators should identify hazardous wildlife attractants and any associated wildlife hazards during any planning process for new airport development projects.

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## APPENDIX 1. DEFINITIONS OF TERMS USED IN THIS ADVISORY CIRCULAR.

### 1. **GENERAL.** This appendix provides definitions of terms used throughout this AC.

1. **Air operations area.** Any area of an airport used or intended to be used for landing, takeoff, or surface maneuvering of aircraft. An air operations area includes such paved areas or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiways, or apron.
2. **Airport operator.** The operator (private or public) or sponsor of a public-use airport.
3. **Approach or departure airspace.** The airspace, within 5 statute miles of an airport, through which aircraft move during landing or takeoff.
4. **Bird balls.** High-density plastic floating balls that can be used to cover ponds and prevent birds from using the sites.
5. **Certificate holder.** The holder of an Airport Operating Certificate issued under Title 14, Code of Federal Regulations, Part 139.
6. **Construct a new MSWLF.** To begin to excavate, grade land, or raise structures to prepare a municipal solid waste landfill as permitted by the appropriate regulatory or permitting agency.
7. **Detention ponds.** Storm water management ponds that hold storm water for short periods of time, a few hours to a few days.
8. **Establish a new MSWLF.** When the first load of putrescible waste is received on-site for placement in a prepared municipal solid waste landfill.
9. **Fly ash.** The fine, sand-like residue resulting from the complete incineration of an organic fuel source. Fly ash typically results from the combustion of coal or waste used to operate a power generating plant.
10. **General aviation aircraft.** Any civil aviation aircraft not operating under 14 CFR Part 119, Certification: Air Carriers and Commercial Operators.
11. **Hazardous wildlife.** Species of wildlife (birds, mammals, reptiles), including feral animals and domesticated animals not under control, that are associated with aircraft strike problems, are capable of causing structural damage to airport facilities, or act as attractants to other wildlife that pose a strike hazard
12. **Municipal Solid Waste Landfill (MSWLF).** A publicly or privately owned discrete area of land or an excavation that receives household waste and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 CFR § 257.2. An MSWLF may receive

other types wastes, such as commercial solid waste, non-hazardous sludge, small-quantity generator waste, and industrial solid waste, as defined under 40 CFR § 258.2. An MSWLF can consist of either a stand alone unit or several cells that receive household waste.

13. **New MSWLF.** A municipal solid waste landfill that was established or constructed after April 5, 2001.
14. **Piston-powered aircraft.** Fixed-wing aircraft powered by piston engines.
15. **Piston-use airport.** Any airport that does not sell Jet-A fuel for fixed-wing turbine-powered aircraft, and primarily serves fixed-wing, piston-powered aircraft. Incidental use of the airport by turbine-powered, fixed-wing aircraft would not affect this designation. However, such aircraft should not be based at the airport.
16. **Public agency.** A State or political subdivision of a State, a tax-supported organization, or an Indian tribe or pueblo (49 U.S.C. § 47102(19)).
17. **Public airport.** An airport used or intended to be used for public purposes that is under the control of a public agency; and of which the area used or intended to be used for landing, taking off, or surface maneuvering of aircraft is publicly owned (49 U.S.C. § 47102(20)).
18. **Public-use airport.** An airport used or intended to be used for public purposes, and of which the area used or intended to be used for landing, taking off, or surface maneuvering of aircraft may be under the control of a public agency or privately owned and used for public purposes (49 U.S.C. § 47102(21)).
19. **Putrescible waste.** Solid waste that contains organic matter capable of being decomposed by micro-organisms and of such a character and proportion as to be capable of attracting or providing food for birds (40 CFR §257.3-8).
20. **Putrescible-waste disposal operation.** Landfills, garbage dumps, underwater waste discharges, or similar facilities where activities include processing, burying, storing, or otherwise disposing of putrescible material, trash, and refuse.
21. **Retention ponds.** Storm water management ponds that hold water for several months.
22. **Runway protection zone (RPZ).** An area off the runway end to enhance the protection of people and property on the ground (see AC 150/5300-13). The dimensions of this zone vary with the airport design, aircraft, type of operation, and visibility minimum.
23. **Scheduled air carrier operation.** Any common carriage passenger-carrying operation for compensation or hire conducted by an air carrier or commercial

operator for which the air carrier, commercial operator, or their representative offers in advance the departure location, departure time, and arrival location. It does not include any operation that is conducted as a supplemental operation under 14 CFR Part 119 or as a public charter operation under 14 CFR Part 380 (14 CFR § 119.3).

- 24. Sewage sludge.** Any solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment process; and a material derived from sewage sludge. Sewage does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. (40 CFR 257.2)
- 25. Sludge.** Any solid, semi-solid, or liquid waste generated from a municipal, commercial or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect. (40 CFR 257.2)
- 26. Solid waste.** Any garbage, refuse, sludge, from a waste treatment plant, water supply treatment plant or air pollution control facility and other discarded material, including, solid liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved materials in domestic sewage, or solid or dissolved material in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by product material as defined by the Atomic Energy Act of 1954, as amended, (68 Stat. 923). (40 CFR 257.2)
- 27. Turbine-powered aircraft.** Aircraft powered by turbine engines including turbojets and turboprops but excluding turbo-shaft rotary-wing aircraft.
- 28. Turbine-use airport.** Any airport that sells Jet-A fuel for fixed-wing turbine-powered aircraft.
- 29. Wastewater treatment facility.** Any devices and/or systems used to store, treat, recycle, or reclaim municipal sewage or liquid industrial wastes, including Publicly Owned Treatment Works (POTW), as defined by Section 212 of the Federal Water Pollution Control Act (P.L. 92-500) as amended by the Clean Water Act of 1977 (P.L. 95-576) and the Water Quality Act of 1987 (P.L. 100-4). This definition includes any pretreatment involving the reduction of the amount of pollutants, the elimination of pollutants, or the alteration of the nature of pollutant properties in wastewater prior to or in lieu of discharging or otherwise introducing such pollutants into a POTW. (See 40 CFR Section 403.3 (q), (r), & (s)).

- 30. Wildlife.** Any wild animal, including without limitation any wild mammal, bird, reptile, fish, amphibian, mollusk, crustacean, arthropod, coelenterate, or other invertebrate, including any part, product, egg, or offspring thereof (50 CFR 10.12, *Taking, Possession, Transportation, Sale, Purchase, Barter, Exportation, and Importation of Wildlife and Plants*). As used in this AC, wildlife includes feral animals and domestic animals out of the control of their owners (14 CFR Part 139, Certification of Airports).
- 31. Wildlife attractants.** Any human-made structure, land-use practice, or human-made or natural geographic feature that can attract or sustain hazardous wildlife within the landing or departure airspace or the airport's AOA. These attractants can include architectural features, landscaping, waste disposal sites, wastewater treatment facilities, agricultural or aquaculture activities, surface mining, or wetlands.
- 32. Wildlife hazard.** A potential for a damaging aircraft collision with wildlife on or near an airport.
- 33. Wildlife strike.** A wildlife strike is deemed to have occurred when:
- a. A pilot reports striking 1 or more birds or other wildlife;
  - b. Aircraft maintenance personnel identify aircraft damage as having been caused by a wildlife strike;
  - c. Personnel on the ground report seeing an aircraft strike 1 or more birds or other wildlife;
  - d. Bird or other wildlife remains, whether in whole or in part, are found within 200 feet of a runway centerline, unless another reason for the animal's death is identified;
  - e. The animal's presence on the airport had a significant negative effect on a flight (i.e., aborted takeoff, aborted landing, high-speed emergency stop, aircraft left pavement area to avoid collision with animal) (Transport Canada, Airports Group, *Wildlife Control Procedures Manual*, Technical Publication 11500E, 1994).

## **2. RESERVED.**