Appendix G – Wildlife Site Visit Report

Wildlife Hazard Site Visit

For

Springfield-Beckley Muncipal Airport
Springfield, Ohio

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ABSTRACT

The following document is a Final Report written to assist the Springfield-Beckley Muncipal Airport Authority and the City of Springfield with updating their Airport Master Plan. This report represents the effort of a Wildlife Hazard Site Visit (WHSV) as described in the April 12, 2016 FAA-Memorandum Program Guidance Letter (PGL) 16-01. The Springfield-Beckley Muncipal Airport (SGH) is a General Aviation (GA) facility, and presently not under the the requirements of 14 CFR 139. Therefore, SGH is not considered a 139 Airport for addressing Wildlife Hazards. The scope of this report follows the WHSV protocol under Section 1 as defined in PGL 16-01 and presents wildlife management recommendations for alleviating and/or managing wildlife hazards at SGH.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

On October 4, 2016, ASC Group, Inc., under contract with Woolpert, Inc., conducted a Wildlife Hazard Site Visit (WHSV) over the course of two non-consecutive days to identify potential wildlife species hazards to aviation, gather information on current and past wildlife hazard management techniques employed at the airport, collect data on potential wildlife hazard attractants on and in the vicinity of the airport, and develop recommendations for alleviating and/or curtailing wildlife hazards within the airport environment. This study was initiated as a result of a required update of the existing 2006 Master Plan for Springfield-Beckley Municipal Airport. Springfield-Beckley Municipal Airport is officially recognized by the call letters SGH, and will identified as such through the remainder of this report.

2.0 BACKGROUND

SGH is geographically located at 39.841817°N, -83.840729°W (Figure 1) near the southern boundary of Clark County, Ohio, about 2.76 miles south of Springfield on State Route (SR) 72 (Figure 2) between SR 72 to the east and SR 68 to the west. Construction for SGH began in June 15, 1943 as a defense project for a possible landing field during World War II, under the guidance of then Lieutenant Henry Addison Beckley. The airport opened in 1946 and is administered by the City of Springfield, Clark County, Ohio. SGH is surrounded by a rural/agricultural landscape (Figure 3) with some minor developed areas that includes residential and light industrial. The rural, undeveloped, and natural areas surrounding SGH contain a variety of habitats and associated wildlife species that potentially could use those habitats. According to ornithological sources, Ohio and the shores of Lake Erie are positioned within several migratory routes, and for many species, Ohio is their migratory journey's end. This means during spring and fall millions of birds are traveling across Ohio. This is of significance because the vast majority of birds identified within the Federal Aviation Administration's (FAA) strike list (Cleary et al. 1997). SGH recorded 53 bird strikes between 1992 and 2013 are migratory birds with nearly half of all bird strikes occurring during the fall migrationg period (Table 1).

2.1 AIRPORT SPECIFICATIONS

SGH is a general aviation (GA) non-Part 139 facility with runway capacity for aircraft from corporate jets or twin-engine aircraft and on occasion, some larger aircraft. The SGH (Figure 4) Air Operations Area (AOA) covers approximately 714 acres, handling 24,220 operations annually

according to the 2016 Airport Master Record (Appendix H). SGH has one northeast-southwest runway, 6/24, which is 9,009 x 150 ft. with 600-ft. overruns. A second northwest-southeast, crosswind runway 15/33 is 5,499 x 150 ft. The airport is divided into four main areas, including the airside facilities, the landside facilities, the Ohio Air National Guard (OANG) leasehold, and the Airpark Ohio industrial area.

Approximately 99 percent of the airport and its AOA is fenced. However, these fences are of two different heights. Most of the airport fence includes a 10-foot tall chain link fence with a three-strand barbed wire outward-facing runner on top. The 10-foot fence rests on the ground and does not extend below grade. The OANG perimeter fence is a 6-foot tall chain link fence, also not buried below grade, and 1-foot outward-facing barbed wire runner on top. It should be noted, the airport is not completely enclosed by the fence. A 200-foot gap in the perimeter fence is located on the north side of the airport at the entrance road to the Terminal.

2.2 AIRPORT LAND USE

Within the airport perimeter, land cover is comprised of developed-structure areas and areas that are mowed and managed. Additionally, agriculture operations are permitted within the perimeter of the airport and near the AOA (Figure 3). Crops grown at the airport include corn and soybeans and they appear to be grown at specific and regulated distances from the AOA. The developed and impervious surfaces and vegetated areas appear to be under various degrees of management with carful and structured management in the vegetated areas depending on mowing needs (Figure 4). Last, there are some small wooded areas within the perimeter and near the southern fence boundary. Some forested areas are also on the outside of the fence line as well. Some very minor wetland areas were observed within the perimeter of the airport in addition to Mill Creek, a named stream located on the northeastern side of the airport. These natural areas are identified in greater detail on Figure 4. Airport services tend to be concentrated on the northern areas of the facility while industrial and commercial areas are located to the west near SR 68.

3.0 LEGAL STATUS

3.1 STATE AND FEDERAL REGULATIONS APPLICABLE TO WILDLIFE AT SPRINGFIELD-BECKLEY MUNICIPAL AIRPORT

3.1.1 Federal Aviation Administration

Title 14, CFR, Part 139.337 states that airports experiencing one or more of the following events involving wildlife must conduct a Wildlife Hazard Assessment: 1) multiple wildlife strikes, 2) damaging collision with wildlife causing aircraft structural failure requiring repairs, 3) engine ingestion of wildlife, or 4) hazardous wildlife of a size or in numbers with access to the aircraft movement areas. However, SGH is a facility currently not under this regulation.

Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended, (16 U.S.C. 1531 et seq.) states, in part, that each Federal agency shall, in consultation with and with the assistance of the Secretary of Interior, insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any Federally listed or proposed endangered or threatened species, or result in the destruction or adverse modification of designated or proposed critical habitat.

Although, for airports under 14 CFR Part 139, the FAA's action in requiring an airport operator to develop, submit for approval, and implement a wildlife hazard management plan is considered a Federal action as defined in the ESA, and, is therefore subject to Section 7 consultation with the US Fish and Wildlife Service (USFWS). For the purposes of SGH, which is not under 14 CFR 139, the USFWS was contacted and requested to provide information regarding those species that may be within the AOA and vicinity.

It should be noted as previously stated, SGH is not regulated under Part 139.

3.1.2 State of Ohio Wildlife Codes

The State of Ohio has specific laws and regulations regarding wildlife under their domain as listed in Chapters 1531 and 1533 of the Ohio Revised Code (Appendix 11). These Codes are available for review in the clerk of Common Pleas Court in each county or on the Internet at https://www.legislature.ohio.gov/laws/ohio-codes; select Title 15. Ohio Department of Natural Resources (ODNR) Division of Wildlife is the managing and regulatory agency responsible for the wildlife listed in these Codes. Consultation with ODNR Division of Wildlife should be conducted before any harassment projects directed at mammals and game bird species are

performed. Permits from the ODNR Division of Wildlife are generally required before any mammal or game bird species are lethally removed.

3.13 Federal Regulations

Six acts form the basis for wildlife protection at the federal level: the Migratory Bird Treaty Act (1918), the Lacey Act (1900), the Endangered Species Act (1972), the Eagle Protection Act (1962), the National Environmental Policy Act (1970), and the Federal Insecticide, Fungicide, and Rodenticide Act (1947). Permits required for migratory wildlife control at airports are regulated and issued by the USFWS.

Migratory birds can be harassed without a federal permit but not taken. Harassment of eagles and threatened and endangered species require additional permits. Protected groups, specifically eagles and endangered and threatened species, require a separate federal permit to carry out dispersals and removals Migratory Bird Permit CFR 50, Part 13 is required for taking migratory birds (Note: It is extremely rare for the USFWS to grant a permit for such actions to non-wildlife agencies.).

4.0 OBJECTIVES

The objectives of the WHSV were to:

1. Identify wildlife species having the potential to cause aircraft strikes at SGH.
2. Identify areas, habitats, environmental factors, and human activities that are attracting or may attract species potentially hazardous to aviation to the SGH environment.
3. Provide wildlife management recommendations based on observations and data collected during the study to help alleviate and/or manage potential wildlife hazards at SGH and the surrounding areas in the flight paths of aircraft.

5.0 METHODS

5.1 WILDLIFE HAZARD DATA COLLECTION BY ASC GROUP, INC.

5.1.1 General Observations

SGH was partitioned into 16 potential habitat areas that could potentially serve as a wildlife attractant area or contain features that could support wildlife, as observed from available aerial photographs. These 16 areas within the facility perimeter were visited during the October field

visits. Observations of bird and other wildlife use at these areas were recorded from within a vehicle and on foot. Photographs were obtained of each area and included in a Photo log. Other general observations at offsite locations that potentially could attract wildlife were made within a 10,000-foot perimeter and within a 5-mile perimeter of the AOA. These areas are identified and numbered on Figure 5.

5.2 DATA COLLECTION BY OTHER SOURCES

5.2.1 Wildlife Strike Reports

The FAA National Wildlife Aircraft Strike Database was used to gather a history and analysis of wildlife strikes at SGH. The FAA strike summary and risk analysis report can be seen in Table 1 and Appendix C.

5.2.2 Database Research for Wildlife Attractant Areas

Other information is available from a variety of sources. These include the United States Geologic Survey (USGS) topographic maps (Figure 1), the National Wetland Inventory (NWI) (Figure 6, Sheets 1–12), Historical Aerial mapping of the airport (Appendix I), and the Federal Emergency Management Agency (FEMA) [Figure 7]. These sources were utilized in the development of this report. The mapping data was reviewed for the areas within the airport perimeter and within the 10,000-foot and 5-mile separation criteria buffers as indicated in AC 150/5200-33A Appendix C. Mapping from these sources can be viewed in the Figures section of the report.

5.2.3 Agency Consultation & Coordination

Information from local, state, and federal agencies was obtained as well. These include the United States Department of Agriculture (USDA), USFWS, ODNR, and the Clark County Combined Health District. The USDA was contacted for any past wildlife hazard assessments performed for the airport. The USFWS was contacted to determine if any threatened or endangered wildlife were on or in the vicinity of the airport. The ODNR was contacted to determine any state listing of species on or in the vicinity of the airport. The Clark County Combined Health District was contacted due to the presence of two closed landfills in proximity of the airport. Documentation from these agencies is provided in Appendix F.

6.0 RESULTS

6.1 ANALYSIS OF EVENTS PROMPTING WHSV

6.1.1 Airport Masterplan

SGH is currently updating its 10-year masterplan. The previous masterplan document from 2006 did not cover environmental issues or wildlife hazards within the facility. As previously stated, SGH is not regulated under Part 139 and therefore is not required to conform to 14 CFR 139.337 (b). It should be noted that previous recommendations for wildlife control at SGH were provided following a 2014 recurrent wildlife hazard training (Appendix J).

6.1.2 FAA Wildlife Strike Reports

According to the FAA Wildlife Strike Report data obtained from http://wildlife.faa.gov/database.aspx, SGH has recorded 54 incidents spanning from 1992 to 2013. Three of the records pertain to business-type aircrafts, while the remaining 51 records pertain to military aircraft when the OANG was flying military aircraft out of SGH. The strike data may be viewed in Table 1. Additional strike log data is provided in Appendix C. It should be noted that the F-16 millitary air craft mission at the OANG base is no longer operational as of 2014.

6.1.3 Top Hazardous Bird Groups at SGH

The most hazardous bird groups at SGH for this report were determined from the FAA damage ranking (Table 2) and the strike history data (Table 1). Birds and other wildlife not identified in Section 6.1.3 should not be ignored or considered not to be a hazard. For example, the 2004 Wildlife Hazard Assessment performed at SGH by the USDA Wildlife Services division (USDA, APHIS 2004) identified waterfowl on occasion at the airport; waterfowl are a grave hazard to aircraft operations. Although other birds were observed during the October 2016 field review, they were not listed in the Strike Report. Table 2 shows the most hazardous bird groups and corresponding abundance and damage threat.

1. Unknown, are unidentified birds, reported 16 times in the SGH strike record.
2. Birds of prey were reported by only one species in the strike record at SGH: Peregrine falcon (*Falco peregrinus*)
3. Doves were reported three times and by a single species at SGH: mourning doves (*Zenaida macroura*)

4. Blackbirds, starlings, and larks included four species at SGH and comprised the largest group with 11 strikes in the Strike Report: common grackle (*Quiscalus quiscula*), eastern meadowlark (*Sturnella magna*), horned lark (*Eremophila alpestris*), and European starling (*Sturnus vulgaris*).
5. Swallows, sparrows, and swifts included four species with the largest group comprising 15 strikes at SGH: barn swallows (*Hirundo rustica*), tree swallows (*Tachycineta bicolor*), chimney swift (*Chaetura pelagica*), and grasshopper sparrow (*Ammodramus savannarum*).
6. Shorebirds at SGH were represented by two species; however, only one comprised a total of four strikes at SGH: killdeer (*Charadrius vociferous*)

6.1.4 Airside Operations Wildlife Control

The SGH Operations Staff take a proactive approach to wildlife control. When necessary, birds are harassed with pyrotechnics, horns, sirens, lethal control, nest removal, and chasing when identified to present a threat to aviation, as indicated in the logs in Appendix C. Passive means of control are also employed at the airport by way of roosting spikes and grass height management in certain areas. Mammals are trapped and euthanized or removed from the property depending upon the status of species caught. Beaver dams within Mill Creek are destroyed and live caught beaver are euthanized to prevent reintroduction.

At this time, and as stated previously, SGH is not regulated under Part 139, and is under no obligation to report wildlife strikes, keep wildlife logs, or maintain depredation permits. Expired copies of past permits are provided in Appendix G**.**

6.2 SUMMARY OF RESEARCH DATA COLLECTED

6.2.1 Database Research

The data base research reviewed a series of publicly available maps; these are identified in Section 5.2.2.

- The USGS 7.5’ topographic map (Figure 1) identified the presence of Mill Creek near the northeast corner of the airport and other unnamed tributaries to the Mad River taking drainage off the airport.
- The NWI map (Figure 6, Sheets 1–12) identified the location of five mapped wetlands within the airport perimeter comprising an area of approximately 15.8acres, in addition to several wetlands and some ponds within the 10,000-foot and 5-mile separation criteria

perimeters. The NWI mapping collectively identifies approximately 179.4 acres of wetlands within the 10,000 foot separation criteria perimeter.

- The FEMA map (Figure 7) identified the presence of a floodplain along Mill Creek, immediately north of the airport perimeter (FEMA 2001). This is identified as the Limit of Study of the floodplain. However, this should not be interpreted as if the floodplain ends or begins at this location. The floodplain should likely continue across the airport property.
- A series of historical aerial maps was reviewed from 1964 until 2013 (Appendix I). The land use appears to have remained predominantly agricultural during this time period. However, the majority of the changes at the airport appear to occur on the OANG base with few changes to the airport aside from the closure of the original north-south runway, the addition of the control tower, and the removal of some wooded lots.

6.2.2 Agency Consultation and Coordination

Agency consultation was initiated to obtain data and information concerning sensitive species (threatened and endangered) that could potentially be within and around the airport, in addition to obtaining past documentation on any Wildlife Hazard Assessments, or to determine the presence of past and/or presently operating waste disposal operations near the airport.

- The USFWS was contacted to determine if any federally listed threatened or endangered species were known within the area of the airport. The USFWS did not identify any known occurrences of listed species within the SGH perimeter; however, the entire state of Ohio lies within range of the federally endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*). Habitat for these species of bat would be restricted to the wooded lots neat near the southern boundary of the airport in addition to all other wooded areas within the separation criteria buffers. The USFWS also identified potential habitat north of the airport for the threatened eastern massasauga (*Sistrurus catenatus*) rattlesnake. Additionally, three freshwater mussel species have been documented within the southern portion of the 5-mile separation criteria buffers: the snuffbox (*Epioblasma triquetra*), clubshell (*Pleurobema clava*), and rayed bean (*Villosa fabalis*). During the Wildlife Hazard Assessment, no species were observed at SGH that are listed on the USFWS T&E species list (Table 3) or identified in the correspondence dated 10/04/2016 (Appendix B).

- The ODNR was contacted to determine if any state-listed threatened or endangered species were known within the area of the airport. The ODNR did not identify any known occurrences of listed species within the SGH perimeter. Also, no state-listed species were identified within the 10,000-foot separation criteria buffer. The majority of the documented state-listed species were concentrated to the south within the Clifton Gorge State Nature Preserve and the other associated parks (Glen Helen Nature Preserve, Clifton Reserve, John Bryan State Park) found within the 5-mile separation criteria buffer. Data provided by the ODNR, which includes these resource areas, are provided in Figure 8. Additionally, Figure 5 also identifies these areas.
- The USDA-Wildlife Services was contacted to obtain the 2004 Wildlife Habitat Assessment performed at SGH.
- The Clark County Combined Health District was contacted to determine the closure status of two municipal landfills near SGH.
    - Blee Road Municipal Landfill was in operation beginning in January 20, 1967 (Kaup-Fett 2005). The location of this landfill is within the property owned by the City of Springfield across the road from SGH and the OANG at LAT: 39.852097° N : LONG: -83.755129° W. Unofficial records indicate this landfill was closed around February 7, 1969 in a letter from the OANG. It should be noted that the operation and closure of this landfill pre-dates the Ohio Environmental Protection Agency (EPA). The current location is a mowed and managed grass field.
    - Crabill Road Municipal Landfill was in operation beginning in 1969, shortly after the closure of the Blee Road location (Kuypers 1996). The location of this landfill is northeast of SGH within the 5-mile separation criteria buffer at LAT: 39.862917° N: LONG: -83.837203° W. Records indicate this landfill was closed in 1971. It should be noted that the operation and closure of this landfill pre-dates the Ohio EPA. The current location of the landfill is owned by Ray Hensley, Inc., a road repair company.

6.3 WILDLIFE ATTRACTANTS WITHIN 10,000 FEET

According to FAA documentation, AC 150/5200-33A Appendix C (FAA 2007), airports serving turbine-powered aircraft who sell Jet-A fuel are recommend to attain a 10,000 foot separation distance of the AOA from any wildlife attractants as described in Appendix C of the

aforementioned document. A copy of Appendix C from AC 150/5200-33B is provided in Appendix D. This report identified the following attractants:

6.3.1 Waste Disposal Operations within 10,000 Feet

The Blee Road Landfill is a closed facility. Please see Section 6.2.2 for information and details pertaining to the Blee Road Landfill. Closure information has been provided in Appendix F. Although not within 10,000 feet of the AOA, the Crabill Road Municipal Landfill is a closed facility. Please see Section 6.2.2 for information and details pertaining to the Crabill Road Municipal Landfill. Additional information can be found in Appendix F concerning the closure of this facility (Kaup-Fett 2005).

6.3.2 Water Management Facilities within 10,000 Feet

According to the research, water management facilities (including facilities that manage storm water, existing waste water treatment facilities, artificial treatment marshes, and waste water discharge areas) were not observed within 10,000 feet of the AOA. Exceptions include small storm water management diversion ditches and dry detention basins observed on and within the perimeter of the airport and the OANG facility in Area 16 (Figure 4).

6.3.3 Wetlands and Small Ponds within 10,000 Feet

Wetlands provide a variety of functions and are regulated by federal and state laws. These habitats typically attract wildlife (birds, large water fowl, and large mammals) that are hazardous to aircraft operations. According to the NWI database there are approximately 67 mapped wetlands of various sizes and 35 ponds identified within 10,000 feet of the AOA, comprising a cumulative area of approximately 179.4 acres. A series of four wetlands is tightly positioned just north of the approach to Runway 24. The NWI map identifying wetlands within the separation criteria buffers can be found in Figure 6; Sheets 1–12.

6.3.4 Dredge Spoil Containment Areas within 10,000 Feet

According to the research, dredge spoil containment areas were not observed within 10,000 feet of the AOA.

6.3.5 Agricultural Activities within 10,000 Feet

Land in southern Clark County and northern Greene County is rural and vast. Land use surrounding the airport is predominantly agricultural (Figure 3) and the dominant crops are corn and soybeans. There are approximately 10,762 acres of crop production within the 10,000-foot

separation criteria buffer. Additionally, a dairy operation of approximately 20 head of cattle is located approximately 5,500 feet southwest from the end of Runway 6, identified as Area 1. This operation is Young's Dairy (Figure 5), a commercial cheese producer.

6.3.6 Golf Courses and Other Land-Use Considerations within 10,000 Feet

According to the research, Rocky Lakes Golf Course (Area 2) is located approximately 5,500 feet north of the AOA (Figure 5). Additionally, the Udders and Putters driving range is located 5,000 feet southwest from the end of Runway 6. Udders and Putters is a co-operation at Young's Dairy in Area 1 (Figure 5). Also, within 10,000 feet of the AOA are two large ponds. These are located to the southwest almost exactly on the 10,000-ft buffer boundary line. One pond is associated with Ellis Park (Areas 3 and 4) [Figure5]; the other pond appears to be for flood control along Yellow Springs Creek. This is just north of Glen Forest Cemetery. Another land use consideration within 10,000 feet to the east of the AOA are deep sand and gravel quarries (Area 5) on Figure 5. The quarries have created large ponds where waterfowl could aggregate.

6.3.7 Synergistic Effects of Surrounding Land-Use within 10,000 Feet

A potential wildlife attractant is food waste and its management. Potential generators of food waste within 10,000 feet are commercial restaurants and schools. According to the research, two schools were determined within the 10,000-foot perimeter; these are identified as Areas 6 and 7 on Figure 5. Commercial restaurants within the 10,000-foot perimeter are associated with Young's Dairy and Rocky Lakes Golf Course.

6.4 SUMMARY OF DATA COLLECTED DURING WHSV

6.4.1 Wildlife Survey

During the October 2016 field visits observations of bird and other wildlife use at the airport within 16 areas (Figure 5) were recorded from within a vehicle and on foot. This data is recorded on Figure 10 and listed in Appendix A.

6.4.2 Wildlife Habitat

Wildlife habitat requirements are traditionally broken down into four categories: food, cover, water, and space. Specific habitats within the AOA of SGH provide all of these basic needs for many species of wildlife. While it is impossible to completely eliminate all of these components of wildlife habitat, making them unusable by wildlife is the next closest thing. When used properly, the techniques used to harass and devices used to exclude wildlife make resources

unavailable. Wildlife are adaptive and, therefore, methods of making resources unusable must also be adaptive. In some cases, making resources unavailable is more difficult than removal of the resources and efforts should be made to remove and reduce wildlife habitat on and surrounding SGH, if possible. Figure 9 is a photo location and direction map of the various resources at SGH. Figure 10 shows where certain species were observed at SGH.

7.0 RECOMMENDATIONS

7.1 ON SITE – AIRPORT PROPERTY

Prevous recommendations are provided in Appendix J, from the 2004 USDA Wildlife Hazard Assessment. These recommendations have been copied and placed into the airport's own wildlife hazard training manual. Several of the recommendations are still relevant and useful with regard to minimizing wildlife hazards at SGH. The provided recommendations below reflect possibilities for reducing hazardous wildlife from a resource perspecitve with some minor overlap between these and the recommendations provided in Appendix J.

7.1.1 Ditches

Several drainage ditches and Mill Creek are within the AOA of SGH. These areas may attract species of wading birds, waterfowl, shorebirds, blackbirds, birds of prey, and other species of wildlife. Aside from the Mill Creek area, wildlife was not observed using the drainage ditches. Killdeer and the common snipe were the only shorebirds observed. Killdeer were frequently observed in and around disturbed areas and between the asphalt and the grass, while the common snipe prefers areas of taller grass. Most of the drainage ditches do not hold water for very long.

Where possible ditches should be made to drain within 24 hrs and/or be covered in such a way to discourage and exclude usage by bird species.

7.1.2 Wetlands

There are some areas within the property boundary of the airport that contain populations of hydrophytic vegetation and that potentially could be called wetlands (Figure 4). These tend to be small and densely vegetated with little to no standing water. Area 13 on Figure 4 is a scrub-shrub wetland that appears to be used by white-tail deer. Another large wetland is the detention pond at Area 2 on Figure 4. All the other wetland areas are very small linear features usually associated with a drainage feature. Aside from Area 13, which appears to protect white-tail deer,

no other unique wildlife associations could be ascertained from the presence of wetlands within the airport property boundary. Figure 6 (Sheets 1–12) identifies the wetland data from the NWI (USFWS 2011) within the 10,000-foot buffer and the 5-mile buffer. Most wetlands appear to be small and diminutive features on the landscape.

7.1.3 Trees and Vegetation

Presently, the only trees still present within the AOA are located at Area 1 (Figure 4), northeast of Runway 15. These trees are along a narrow drainage way (Photograph 1). Trees and other vegetation should be cleared from within the AOA as these areas provide cover, nesting sites, and perches for many bird species and are also utilized by other species of wildlife. No other wooded areas are noted within the AOA. Area 4 (Figure 4) identifies a large wooded lot where a portion extends into the AOA. This wooded lot has been 99 percent cleared and the remaining trees are located outside the AOA and represent small isolated wooded wetlands. It should be noted that the air space between the Areas 1 and 2, northwest of Runway 15, displayed increased activity of birds flying from roost to roost (Figure 4).

7.1.4 Perches

Signs, fences, power lines, building ledges, lights, trees, vegetation, vehicles, and any structure that sits above ground height may be used as a perch for birds. Minimizing the number of perch sites available and using exclusion devices (for example Nixalite, spiderwire, or spike strips) may help keep birds from roosting and using specific areas. No birds should be allowed to perch on structures within the AOA and should be harassed immediately upon detection. During the on-site visit, several mourning doves were observed at one time roosting on the fence immediately within the approach of Runway 24 (Photograph 41).

7.1.5 Insects

The majority of bird species at SGH are insect-eating birds—these include robins, meadowlarks, horned larks, common snipes, killdeer, and starlings. Interviews with the airport staff indicated large numbers of insects clinging to mowing equipment after use. Controlled pesticide use for insect control could reduce availability of this resource to the insect-eating birds. SGH must not allow insect-eating birds to get their full daily energy requirement from within the AOA.

7.1.6 Security/Perimeter Fences

The perimeter fence at SGH is a 10-foot tall chain link fence with a three-strand barbed wire outward-facing topper that encloses approximately 99 percent of the airport and AOA. However, the 10-foot fence rests on the ground and does not extend below grade. Furthermore, the OANG perimeter is a 6-foot tall chain link fence, also not buried below grade, with a three-strand barbed wire outward-facing topper. It should be noted, the airport is not completely enclosed by fencing. A 200-foot gap in the fence perimeter is located on the north side of the airport at the entrance road to the Terminal (Figure 4). Several gaps between the ground and the fence could allow for smaller mammals to gain access onto the airport property. An automated gate could be employed to help enclose the 200-ft gap leading to the Terminal. Monitoring the at-grade gap in the fence for descrepancies is recommended as part of the airfield daily inspection. If such descrepancies (i.e. burrows or dug-out areas, animal hair stuck in the fence, a trapped and/or dead animal, excessive bending at the base of the fence) are observed then a below-grade fence skirt plan should be implemented.

7.1.7 Grass Management

According to SGH staff, grass management is a difficult task and many areas are mowed on an as needed basis, or are mowed in an orderly rotation. Grass nearest the runway is kept as a uniformed monoculture at heights between 6 and 10 inches. Grass areas outside the AOA may only be mowed twice a year. For those areas nearest the runway, a solid dense grass cover with moderate heights will help to deter usage by doves, shorebirds, blackbirds, and many other grassland species. This grass height will be tall enough to obstruct the vision of these birds, making it unattractive to them and thereby reducing utilization.

However, grass height should be short enough to avoid producing seed heads. Weeds and wildflowers should be removed as these create food sources. Mowing should be conducted at night, or after the sun goes down and before the sun rises to prevent attractiveness to insect-eating birds that may be attracted to the insects disturbed by mowing.

7.1.8 Wildlife Control and Removal

Wildlife control at an airport the size of SGH has been managed so far by the current staff. A full-time staff of only three individuals to manage the operations at the airport can be challenging when trying to complete daily activities in addition to wildlife control. Creating partnerships with commercial entities to assist as necessary for specialized tasks and employing many passive means

of wildlife control all help to keep wildlife activity management to a minimum. SGH could benefit from a part-time qualified wildlife hazard biologist dealing exclusively with wildlife issues as they arise and helping to maintain wildlife activity logs. A part-time qualified wildlife hazard biologist could be shared by other nearby general aviation airports which would then be better able to respond to wildlife hazards more routinely. Prior recommendations (Appendix J) recommended a full time Wildlife Coordinator for SGH; however, this was when the airport was under the requirements of 139 regulations.

There are several reasons why SGH would benefit from a qualified wildlife hazard biologist. The biologist would:

1. Implement out and monitor Wildlife Hazard Management Plans, as needed.
2. Resolve wildlife-related problems that negatively impact airport safety. The biologist could assist the airport as questions/concerns arise. The airport environment could be monitored weekly or as deemed necessary.
3. Have knowledge of wildlife, wildlife problems, what presents hazards; experience in locating problems (where they are coming from and how to best resolve problems), and knowledge of the various wildlife control techniques available.
4. Have foresight in developing wildlife hazard control needs; have the ability to identify developing wildlife hazards and take preventative control measures before problem species become well established on the airport; and avoid or reduce crisis management (crisis management involves more costly measures than would be incurred had preventative approaches been used).
5. Monitor ongoing construction activities at SGH. These activities affect wildlife habitat, may result in wildlife displacement from known areas, and may inadvertently create other wildlife hazards. The biologist can monitor these activities to determine the effect on wildlife species on the airfield.
6. Monitor wildlife populations. Wildlife populations are highly dynamic. Feeding, roosting, nesting, and loafing areas may change as a result of weather, human activity, seasonality, and other factors. It is important that these activities are monitored daily, weekly, seasonally, etc., because patterns of wildlife activity observed during the WHSV will not remain static.

7. Monitor Federal and state-listed species updates and maintain control permits. This keeps the airport in compliance with wildlife regulations, reduces problems associated with private conservation groups (i.e., lawsuits), and provides a basis for sound ecological management of these species should any become listed that are also on airport property.
8. Act as a public liaison with the community for any outreach and educational efforts concerning controlling wildlife around the airport.
9. Improve the existing wildlife control programs at SGH. The current program is a good effort, and could be made more efficient and effective by the inclusion of even a part-time qualified wildlife professional.

A part-time qualified wildlife professional should be considered as an extension of the existing wildlife control measures at SGH, particularly if wildlife numbers get to such a point where existing control is not reducing the hazards.

7.1.9 Control Measures Needed For Hazardous Wildlife at SGH

There are a number of wildlife species/groups that represent a potential threat to safe air operations at SGH. In many cases, control measures are the same for all groups addressed below; however, some groups require additional measures. Also, not all groups are considered primary (direct) threats to aircraft; some create secondary hazards (i.e., beaver [*Castor canadensis*], raccoons [*Procyon lotor*], opossums [*Didelphis virginianus*], etc.). They are not considered direct threats to aircraft but could create situations where a strike involving one of these species can attract another species that subsequently is struck by an aircraft and causes direct damage. Despite not being considered a direct threat, sometimes wildlife considered secondary threats can result in direct damage in rare and unusual circumstances. Control measures needed to alleviate and curtail hazards are outlined in detail in the following sections.

7.1.9.1 Vultures

During the on-site visit vultures were observed in the vicinity of the airport and the surrounding vicinity. Vultures were not observed roosting. There are various tools at the disposal of SGH to disperse and reduce vulture hazards. Harassment with pyrotechnic devices, such as shell crackers and bird bangers or screamers, is the preferred technique to discourage vultures from using a given area. When vultures become accustomed to harassment and persist in using the area, they should be lethally removed. A permit is required to shoot offending vultures. When vulture

roosts are located, the roost trees should be thinned to reduce the attractiveness of the site. Frequent dispersals/removals are the most commonly used forms of control; however, use of vulture effigies to disperse roosts and loafing sites would prove most effective in reducing strikes over the long run (USDA, APHIS 2010). Guidelines for using vulture effigies are stated in Appendix F. It should be stressed that both species of vulture are protected by Federal laws, and it is unlawful to possess them without a permit from the USFWS. Therefore, this technique can only be used under supervision of the appropriate authorities. The most important factors in reducing vulture hazards are frequent dispersals and the integration of several dispersal techniques should vultures become problematic.

7.1.9.2 Wading Birds

During the on-site visit wading birds were not observed at the airport. However, they have been observed in the past and in the vicinity of the Mill Creek portion of the airport. Removal of the beaver dams and the beaver will help by habitat manipulation and prey base reduction to keep these birds away. Wading birds should be dispersed anytime they are observed on the AOA. When it is determined that dispersals alone are not a deterrent, lethal removals should be conducted only if species are not listed as protected by the state or federal government, or after all the appropriate depredation permits have been issued by both the state and federal governments.

7.1.9.3 Birds of Prey

Several species of birds of prey were observed during the on-site visit—these were identified as red-tailed hawk and kestrel. Generally, raptors can present a serious hazard to aviation. Often this group of birds is not easily dispersed, especially once they have established a territory. Habitat manipulation, involving removal of perches or hunting trees on the AOA, will make it more difficult for hawks and owls to survey the area for prey. Harassment with pyrotechnic devices such as shell crackers and bird bangers or screamers is the preferred technique to discourage raptors from using the airfield. When particular raptors become accustomed to harassment and persist using the airfield, they should be removed. A permit is required to shoot offending raptors or to trap and relocate them. If a trapping and relocation project is conducted, great care must be taken when handling the raptor to protect the bird and the handler. The raptor should be relocated a minimum distance from the airport determined during the permitting process, and should have an approved identification leg band attached for future reference. If relocation

fails and the raptor returns, then the bird should be lethally removed. Only professional wildlife biologists or falconers should conduct relocation activities.

7.1.9.4 Shorebirds

Shorebirds were observed during the on-site visit. However, the only shorebirds observed were killdeer and common snipe. Shorebirds, in theory, may be discouraged from feeding on the airfield by keeping grass height 6 to 10 inches. The theory is that this grass height will be over the birds' heads, thus obstructing their view and making them feel more vulnerable to predators. Shorebirds may be harassed from the airfield with pyrotechnic devices, such as screamers and bangers. Lethal control should be used when pyrotechnics prove ineffective. As with killdeer, these birds are attracted to area of disturbance where the ground has been agitated, or exposed.

7.1.9.5 Blackbirds

European starlings were observed during the on-site visit. Starlings and other blackbirds may be discouraged from feeding on the airfield by keeping grass height 6 to 10 inches. Grass height, in theory, will be over the birds' heads, thus obstructing their view and making them feel more vulnerable to predators.

Flocks of blackbirds can be harassed from the airfield with pyrotechnic devices, such as screamers and bangers. Lethal reinforcement may be necessary if the blackbirds become habituated to the pyrotechnics.

Blackbird management has several approaches with varying degrees of effectiveness. The most effective approaches are habitat removal and the use of Avitrol®. Dispersals, trapping, and nest removal can have a significant effect if used in combination with habitat removal and Avitrol®. Starlings and other blackbirds roost in shrubs and wetland vegetation. It is recommended that all aquatic vegetation be removed within the AOA. When starling and other blackbird nests are located, they should be removed. Nest removals should be carried out every spring. Various forms of dispersal should be used to discourage blackbird use of the AOA. If all other approaches prove ineffective, it is recommended that Avitrol® be used to aid in the control of blackbirds on the airfield.

7.1.9.6 Doves

Mourning doves were observed at SGH during the on-site visit. Weed removal and grass management is the best approach to managing dove numbers on the airport environment. Doves

were frequently observed on perimeter fences and in open fields. The most attractive of these areas appear to be near the perimeter fence around Runway 24. Approximately 100 individuals were observed roosting on the perimeter fence near the Mill Creek area of the airport. Mourning doves are seed-eating birds. Maintaining uniform grass heights in areas such as the ends of the runways should help to curtail the attractiveness of these areas to mourning doves. Doves should be dispersed and/or lethally removed when observed inside the AOA. In areas where shooting is not an option due to safety concerns, such as pigeons around the terminal, an alternative removal method is live trapping.

7.1.9.7 Swallows

Swallows were observed during the on-site visit. Swallows respond poorly to harassment and should be managed by reducing insect availability. This can be done by treating grass with insecticides or insect growth inhibitors. This can also be accomplished by replacing grass with artificial turf approved for airport use, such as Avturf. A combination of Avturf in safety areas and insecticides in other areas could provide best results. Lethal control may be effective, but requires skilled shooters as swallows fly fast and in irregular patterns.

7.1.9.8 Waterfowl

Waterfowl were not observed at SGH during the on-site visit; however, ducks have been observed near the Mill Creek portion of the airport, as indicated in prior wildlife reports. Waterfowl control consists of several management options. By far, the most important of these are habitat removal and dispersal/lethal removal. As with Mill Creek, removal of the beaver and beaver dams will help reduce the available habitat for waterfowl. However, other passive means can also be employed at preventing use by waterfowl. This would include constructing a lattice of criss-crossed wire or string across Mill Creek and attaching flags or short streamers for sensory disruption effect. Dispersals and lethal removals of waterfowl need to be frequent and used in an integrated approach. Pyrotechnics (shell crackers, screamers, bangers, etc.) and lethal control should be used together for best results. Ducks have been observed at Runway 24 as indicated on the wildlife logs in Appendix C.

7.1.9.9 All Other Birds

Any species of bird not discussed above should be harassed with pyrotechnics, vehicles, and other devices. The habitat alterations for the groups previously discussed should discourage

use from almost all species of bird. Lethal control should be used as an integrated part of non-lethal harassment. All migratory birds require a permit from USFWS for lethal control. State-and Federally listed species require additional permits for lethal control. A list of all state and federally listed species for Ohio, as of October 2016, can be found in Table 4.

Note: Protected species statuses change. The list included in Table 4 is current for date of this report only. Check with USFWS and ODNR to keep list of protected species current.

7.1.9.10 Raccoons

Although no raccoons (*Procyon lotor*) or evidence of their presence was observed during the field visit, these mammals are fairly common and would be able to negotiate a perimeter fence that does not penetrate below grade. Raccoon populations are managed through habitat manipulation (removal of wooded areas and other vegetation), trapping followed by euthanasia, and lethal removal. Additionally, all trash or refuse should be kept in secure containers.

7.1.9.11 Opossums

Although no opossums (*Didelphis virginiana*) or evidence of their presence was observed during the field visit, these marsupials are fairly common and would be able to negotiate a perimeter fence that does not penetrate below grade. Populations are managed through habitat manipulation (removal of wooded areas and other vegetation), trapping, and lethal removal. Additionally, all trash or refuse should be kept in secure containers.

7.1.9.12 Fox

Although foxes were not observed, scat reminiscent of fox was observed near the Mill Creek location. These mammals are fairly common and airport personnel mentioned they have been observed within the airport perimeter in the past. Foxes would be able to negotiate a perimeter fence that does not penetrate below grade. The most effective means of managing red fox (*Urocyon cinereoargenteus*) and gray fox (*Vulpes vulpes*) on airport property are habitat manipulation, trapping with snares and padded leg hold traps, and lethal removal.

7.1.9.13 Coyotes

Although coyotes (*Canis latrans*) or evidence of their presence was not observed during the field visit, these mammals are fairly common and airport personnel mentioned they have been observed in the past. Furthermore, the FAA strike reports mentioned one being hit on 10/2/2003 by a commercial aircraft (Table 1). Coyotes would be able to negotiate a perimeter fence that does

not penetrate below grade. The most effective means of managing coyotes on airport property are habitat manipulation, trapping with snares and padded leg hold traps, and lethal removal. The wildlife logs in Appendix C indicate that coyotes have been observed more frequently than indicated by the FAA strike record.

7.1.9.14 Stray/Feral Dogs

Although stray/feral dogs (*Canis lupus familiaris*) or evidence of their presence was not observed during the field visit, these mammals could occur near and around residential areas in the vicinity of the airport. Stray/feral dogs would be able to negotiate a perimeter fence that does not penetrate below grade. The most effective means of managing stray/feral dogs on airport property are trapping with snares and padded leg hold traps, and lethal removal if necessary. Additionally, all trash or refuse should be kept in secure containers.

7.1.9.15 Stray/Feral Cats

Although stray/feral cats (*Felis catus*) or evidence of their presence, was not observed during the field visit, these mammals could occur near and around residential areas in the vicinity of the airport. Stray/Ferrell cats would be able to negotiate a perimeter fence that does not penetrate below grade. The most effective means of managing stray/feral cats on airport property are trapping with snares and padded leg hold traps, and lethal removal if necessary. Additionally, all trash or refuse should be kept in secure containers.

7.1.9.16 White-Tail Deer

White-tail deer (*Odocoileus virginianus*) are a potential hazard to aircraft at the airport. White-tail deer were not physically observed during the field visit; however, other indications (scat, deer beds, deer rubs on foliage, and many tracks) were observed in several locations within the perimeter fence. These locations specifically are the forested lots along the southern fence line identified as Areas 8, 9, 10, and 11 and within a scrub/shrub wetland within the agricultural fields to the east identified as Area 13 (Figure 4). It should be noted that the white-tail deer population in Ohio is abut 750,000+ animals. Deer vs. auto collision data for Clark and Greene counties for 2014 were 211 and 291 respectfully. Many local residents hunt on their property. According to the Ohio Department of Natural Resources (ODNR) the white-tail deer harvest for 2016 was 759 for Clark County and 835 for Greene County. According to airport personnel, deer were at one time rounded up and allowed to leave the facility once the 10-foot fence was installed. However,

it appears that some deer have returned or have wandered past the fence perimeter. According to the USDA, white-tail deer are able to vertically jump 15 feet. A 10-foot high fence with an outward-facing barbed wire bracket is a formidable deterrent; however, a smaller fence like the one around the OANG perimeter could be negotiated by a motivated deer (i.e., corn and soybeans or potential reproductive opportunity). Additionally, the 200-foot break in the fence and the culvert crossing of Blee Road at Mill Creek also could allow white-tail deer unfettered access. The most effective means of managing white-tail deer on airport property could periodic organized round ups, trapping with snares and padded leg hold traps, upgrades to the fence around the OANG, closing off the 200-foot open breach with a gate, installing a passive flow gate or slotted baffle/barrier at the culverts at Mill Creek and Blee Road, and lethal removal if necessary. Use of trail cameras can help in determining where deer are active.

7.1.9.17 Beaver

The North American beaver (*Castor canadensis*) was observed during the field visit in Mill Creek in Area 14 (Figure 4). While beaver, by themselves are not necessarily a threat to aircraft and aviation operations, their activities (dam construction and pond creation) can create an indirect hazard by attracting large waterfowl. Beaver should be removed at the earliest opportunity when they are sighted in the Mill Creek portions of the airport. Likewise, the dams beaver create should also be dismantled and destroyed.

Installing a passive flow gate or slotted baffle/barrier at the Blee Road crossing of Mill Creek may help curtail beaver activity and beaver dam construction within the Mill Creek portion of the airport. However, beaver activity may continue downstream of the Blee Road crossing of Mill Creek. It is recommended that monthly observations of the Blee Road crossing of Mill Creek and within Mill Creek on airport property be conducted for evidence of beaver activity. Monitoring of water levels in Mill Creek may help determine if a new beaver dam has been constructed downstream of the Blee Road crossing of Mill Creek.

7.1.9.18 Fish and Aquatic Invertebrate Control

Fish, and to some degree aquatic invertebrates, can attract certain species of waterfowl and fish-eating birds. Removal of this prey base would reduce the likelihood of attracting these birds. During the onsite visit, fish were observed in Mill Creek within the beaver dam portion of the stream. Removing the beaver and dismantling dams would help reduce the availability of fish in this portion of Mill Creek. Use of a licensed individual to carry out the removal of the beaver

should be sought and notification to the ODNR Division of Wildlife should be made prior to removal should any permits be necessary.

7.1.10 Wildlife Control Permits

All state and federal permits needed to disperse and lethally remove wildlife on airport property should be obtained and kept current, as indicated in the previous recommendations in Appendix J. SGH previously kept permits from the USFWS and the ODNR for these activities and copies are provided in Appendix G. These have since expired; it is recommended the airport obtain current dispersal permits.

7.1.11 Training of Personnel

The staff at SGH have records of the wildlife training they have received. The previous recommendation (Appendix J) should be followed.

7.2 OFF SITE - OF AIRPORT PROPERTY – WITHIN 10,000 FEET OF AOA

Figure 5 identifies areas that could potentially attract wildlife occur within a 10,000-foot radius and a 5-mile radius of the AOA. Some are natural areas and some are man-made. These include quarries, golf courses, a dairy with 20 head of cattle, a flood-control structure, parks, and schools. Schools are a potential wildlife attractant due to the concentration of food waste that is generated by schools. If the waste is not handled properly and contained prior to removal from the school premises, it could attract wildlife.

7.2.1 Man-Made Areas

There are few man-made areas in and around SGH. These include quarries, golf courses, and commercial fishing ponds and camp grounds.

7.2.2 Natural Areas

The majority of the land use surrounding the airport is agricultural. However, some private and isolated wooded lots are within the 10,000-foot buffer. The majority of natural areas are to the south, just outside of the 10,000-foot buffer. These comprise state-managed lands of Clifton Gorge State Nature Preserve, John Bryan State Park, and the Glen Helen Ecological Institute (Areas 15, 16, 17) [Figure 5]. The areas are capable of supporting numerous species of wildlife.

7.2.3 Pond and Ditch Network

Within the 10,000-foot buffer are numerous roadside ditches and farm ponds. This network of ponds and ditches creates a stepping stone-like network of feeding and resting areas connecting

these various and disassociated bodies of water. Together these ponds create a large wildlife attractant.

7.2.3 Neighboring Properties, Public Education, Local Community

SGH should work with local businesses, school districts, and neighboring residents regarding the hazards that attracting wildlife can impose to aviation, especially those living and working within the 10,000-foot perimeter and possibly within the 5-mile perimeter. This information should include keeping outside areas free of trash and placing all garbage in closed containers. Active public feeding of any wildlife (for example; feeding bread to waterfowl) at public parks and on private farm ponds should be greatly discouraged.

7.2.4 Community Outreach

SGH should work with local County Rangers and area Law Enforcement to strategize a plan on dealing with Wildlife vs Auto accidents that could attract large carrioneating birds within the 10,000-foot perimeter and possibly within the 5-mile perimeter. Making sure road kill carcasses are expeditiously removed will help to deter the presence of vultures, crows, coyotes, stray and feral dogs, and other carrion-eating wildlife. Additionally, private and public school districts within the 10,000-foot radius and a 5-mile radius of the AOA should be educated on the need to properly contain food waste as a neighbor to the airport.

7.3 OFF SITE - OFF AIRPORT PROPERTY – WITHIN 5 MILES OF AOA

Figure 5 identifies areas that could potentially attract wildlife occur within a 10,000-foot radius and a 5-mile radius of the AOA. There are few man-made areas in the and around SGH. These include quarries, golf courses, commercial fishing ponds and camp grounds, state parks and nature preserves, a livestock operation with 200 head of cattle, several public and private schools, and two waste water treatment facilities.

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PHOTO LOG

Photographs 1 – 65: Wildlife Attractant Resources on-site within Airport Perimeter and OANG.

Photograph 1. Forested stream corridor, Area 1 on Figure 4, view to the south.

Photograph 2. Soybean agricultural fields within the airport perimeter near Area 1 on Figure 4, view to the east.

Photograph 3. Airport perimeter fence (10 ft high with three-strand outward-facing extension) near Area 1 on Figure 4, view to the north.

Photograph 4. Forested detention basin within the airport perimeter, Area 2 on Figure 4, view to the southwest.

Photograph 5. Forested detention basin within the airport perimeter, Area 2 on Figure 4, view to the north.

Photograph 6. Area has been cleared of trees making way for growth in the industrial Airpark. Area 3 on Figure 4, view to the north.

Photograph 7. View of Airpark Drive, Area 3 on Figure 4, view to the east.

Photograph 8. Forested wetland remnant of a once larger wooded lot, now devoid of trees. Area 4 on Figure 4, view to the north.

Photograph 9. Forested remnant of a once larger wooded lot, now devoid of trees. This patch of woods is across the street from the one in Photograph 8. Area 4 on Figure 4, view to the west.

Photograph 10. Graded and grass-covered area where a larger wooded lot once stood, now devoid of trees. Area 4 on Figure 4, view to the south.

Photograph 11. Far southwest corner of SGH being utilized for agricultural production. North of West Jackson Road. Area 5 on Figure 4, view to the northwest.

Photograph 12. Far southwest corner of SGH showing the southern boundary and West Jackson Road. Area 5 on Figure 4, view to the east.

Photograph 13. Small Wooded Lot along the southern boundary of SGH with soybeans. Area 6 on Figure 4, view to the northwest.

Photograph 14. Interior of Small Wooded Lot along the southern boundary of SGH. Area 6 on Figure 4, showing a very large collection of glassware dated around the 1940s, view to the south.

Photograph 15. Small Wooded Lot along the southern boundary of SGH with soybeans. Area 7 on Figure 4, view to the west.

Photograph 16. Interior of Small Wooded Lot along the southern boundary of SGH. Area 7 on Figure 4, showing an antler rub by a male white-tail deer, view to the west.

Photograph 17. Small Wooded Lot along the southern boundary of SGH with soybeans. Area 8 on Figure 4, view to the west.

Photograph 18. Interior of Small Wooded Lot along the southern boundary of SGH. Area 8 on Figure 4, showing an antler rub by a male white-tail deer, view to the west.

Photograph 19. Soybeans west of Small Wooded Lot along the southern boundary of SGH Area 8 on Figure 4, view west.

Photograph 20. View of Small Wooded Lots in Areas 6, 7, and 8 from the soybean field, view to the southeast.

Photograph 21. Narrow area of wetland vegetation within deep vehicle ruts to the south of Runway 6. These ruts take surface flow drainage off the SGH facility. Area 9 on Figure 4, view to the southwest.

Photograph 22. Narrow area of wetland vegetation within deep vehicle ruts to the south of Runway 6. These ruts take surface flow drainage off the SGH facility. Area 9 on Figure 4, view to the northeast.

Photograph 23. Very High Frequency Omnidirectional Range (VOR) location at SGH showing the extent of soybeans to the south of the VOR. Area 10 on Figure 4, view to the south.

Photograph 24. Photo showing shallow surface drainages extending to the southeast from the VOR location at SGH. Area 10 on Figure 4, view to the southeast.

Photograph 25. Photo showing base of the 10-ft perimeter fence resting at or slightly above grade. Area 11 on Figure 4, view to the south behind Small Wooded Lot 4 along the southern boundary of SGH.

Photograph 26. Photo showing vegetation separation between the 10-ft perimeter fence and the woodlot. Area 11 on Figure 4, view to the west behind Small Wooded Lot 4 along the southern boundary of SGH.

Photograph 27. Interior of Small Wooded Lot 4 along the southern boundary of SGH, view to the north. Area 11 on Figure 4.

Photograph 28. Showing possible groundhog feeding activity on the downed corn stalks. On the eastern border of Small Wooded Lot 4, Area 11 on Figure 4.

Photograph 29. Possible coyote footprint in the mud near the groundhog feeding activity. On the eastern border of the Small Wooded Lot 4, Area 11 on Figure 4.

Photograph 30. The far southeast corner gate of SGH. Area 12 on Figure 4, West Jackson Road beyond the perimeter fence, view to the east.

Photograph 31. The far southeast corner of SGH. Area 12 on Figure 4, West Jackson Road beyond the perimeter fence, view to the south.

Photograph 32. Showing a multitude of white-tail deer tracks (deer trail) through cornfield leading to wetland area on the eastern side of SGH. Area 13 on Figure 4 view to the east.

Photograph 33. Wetland area on the eastern side of SGH. Several white-tail deer beds were observed in this location. Area 13 on Figure 4, view to the east.

Photograph 34. Wetland area on the eastern side of SGH. Area 13 on Figure 4, view to the north.

Photograph 35. Wetland area on the eastern side of SGH. Area 13 on Figure 4, showing an antler rub by a male white-tail deer, view to the east.

Photograph 36. Mill Creek at the inlet side of the culvert under Runway 24. Area 14 on Figure 4, view to the northwest.

Photograph 37. Mill Creek at the inlet side of the culvert under Runway 24. Area 14 on Figure 4, view to the southeast.

Photograph 38. Mill Creek at the inlet side of the culvert under Runway 24. Area 14 on Figure 4 showing the presence of fish within the deep water.

Photograph 39. Mill Creek at the inlet side of the culvert under runway 24. Area 14 on Figure 4, view to the northeast with wetland in the distance.

Photograph 40. View of linear wetland drainage extending to Mill Creek. Area 14 on Figure 4, view to the southwest.

Photograph 41. View of the 10-ft perimeter fence, showing about 100 mourning doves roosting directly within the flight path of Runway 24, Area 14 on Figure 4, view to the northeast.

Photograph 42. View of linear wetland drainage extending to Mill Creek. Area 14 on Figure 4, view to the southwest.

Photograph 43. Mill Creek at the outlet side of the culvert under Runway 24. Area 14 on Figure 4 view to the northwest. Beaver lodge highlighted by red circle.

Photograph 44. Mill Creek at the out-let side of the culvert under Runway 24. Area 14 on Figure 4 view to the northwest. Close-up of beaver lodge.

Photograph 45. Mill Creek, Area 14 on Figure 4 view to the north showing one of three beaver dams between the culvert outlet and Blee Road.

Photograph 46. Mill Creek, Area 14 on Figure 4 view to the north showing the second of three beaver dams between the culvert outlet and Blee Road.

Photograph 47. Mill Creek, Area 14 on Figure 4 view to the north showing the third of three beaver dams between the culvert outlet and Blee Road.

Photograph 48. Mill Creek, Area 14 on Figure 4 view to the northwest showing the culvert under Blee Road.

Photograph 49. Mill Creek, Area 14 on Figure 4 view to the southeast.

Photograph 50. Mill Creek area, showing Red-Tail Hawk roosting on fence along the north side of Blee Road within the approach to Runway 24, view to north-northwest.

Photograph 51. Mill Creek location showing drainage ditch carrying surface flow off the OANG base, Area 14 on Figure 4 view to the southwest.

Photograph 52. Unnamed tributary of Mill Creek near the old Blee Road landfill, Area 15 on Figure 4, with view to the north.

Photograph 53. Old Blee Road landfill, Area 15 on Figure 4, view to the west.

Photograph 54. Old Blee Road landfill, Area 15 on Figure 4, with view to the east.

Photograph 55. Old Blee Road landfill, Area 15 on Figure 4, view to the east taken near the OANG perimeter fence.

Photograph 56. Roadside drainage ditch near the intersection of SR 794 and Blee Road, near the entrance to the airport, view to the west-southwest.

Photograph 57. Detention basin on OANG base, Area 16 on Figure 4, this basin is near the Civil Engineering building, view to the southwest.

Photograph 58. Detention basin on OANG base, Area 16 on Figure 4, this basin is also near the Civil Engineering building, view to the south.

Photograph 59. Headwall and drainage taking surface flow off the OANG base, Area 16 on Figure 4, this drainage is near SR 794, view to the north.

Photograph 60. Headwall and convergence of several drainages taking surface flow off the OANG base, Area 16 on Figure 4, this is near SR 794, view to the north-northeast.

Photograph 61. Remnant of a forested wetland on the OANG base, Area 16 on Figure 4, view to the southwest.

Photograph 62. Retention pond at the newly constructed southwest gate to the OANG base. Area 16 on Figure 4, view to the northeast.

Photograph 63. Drainage swale taking surface flow away from new development on the OANG base. Area 16 on Figure 4, view to the north.

Photograph 64. Detention basin on the OANG base, this one is near the northern perimeter fence and SR 794. Area 16 on Figure 4, view to the east-northeast.

Photograph 65. Drainage swale taking surface flow off the OANG base. Area 16 on Figure 4, view to the south.

Photographs 66 – 74: Wildlife Attractant Resources off-site within 10,000-ft Perimeter

Photograph 66. Young's Dairy and driving range. Area 1 on Figure 5.

Photograph 67. Udders and Putters driving range at Young's Dairy. Area 1 on Figure 5.

Photograph 68. Rocky Lakes Golf Course. Area 2 on Figure 5.

Photograph 69. Rocky Lakes Golf Course. Area 2 on Figure 5.

Photograph 70. Flood Control on Yellow Spring Creek. Area 3 on Figure 5.

Photograph 71. Ellis Park & Lloyd Kennedy Arboretum. Area 4 on Figure 5.

Photograph 72. Large pond at Ellis Park. Area 4 on Figure 5.

Photograph 73. Entry to sand quarry. Area 5 on Figure 5.

Photograph 74. Basin at sand quarry. Area 5 on Figure 5.

Photographs 75 – 107: Wildlife Attractant Resources off-site within 5-mile Perimeter

Photograph 75. Signage for Shawnee High School. Area 8 on Figure 5.

Photograph 76. Shawnee High School. Area 8 on Figure 5.

Photograph 77. Signage for REI Lakes Camping and Fishing. Area 8 on Figure 5.

Photograph 78. REI Lakes Camping and Fishing area. Area 8 on Figure 5.

Photograph 79. Aerial showing Ray Hensley, Inc., formerly Crabill Road Landfill. Area 10 on Figure 5.

Photograph 80. Gravel Pile at Ray Hensley, Inc. Area 10 on Figure 5.

Photograph 81. Signage for Locust Hills Golf Club. Area 11 on Figure 5.

Photograph 82. Locust Hills Golf Club. Area 11 on Figure 5.

Photograph 83. North Fork of Little Miami River. Area 12 on Figure 5, view downstream to the south.

Photograph 84. Clifton River Road Reserve. Area 14 on Figure 5.

Photograph 85. Signage for Clifton Gorge State Nature Preserve. Area 15 on Figure 5.

Photograph 86. Clifton Gorge. Area 15 on Figure 5.

Photograph 87. Signage for John Bryan State Park. Area 16 on Figure 5.

Photograph 88. Glen Helen Ecology Institute. Area 17 on Figure 5.

Photograph 89. Little Miami River State Nature Preserve. Area 18 on Figure 5.

Photograph 90. Solar Field and sheep grazing area, previously Antioch Golf Course. Area 19 on Figure 5.

Photograph 91. Signage for Yellow Springs Water Reclamation Facility. Area 20 on Figure 5.

Photograph 92. Yellow Springs Waste Water Treatment Plant. Area 23 on Figure 5.

Photograph 93. Campbellco Cattle Showcase structure. Area 21 on Figure 5.

Photograph 94. Portion of 250-head cattle herd at Campbellco Cattle Showcase. Area 21 on Figure 5.

Photograph 95. Signage for Gaunt Park. Area 22 on Figure 5.

Photograph 96. Gaunt Park. Area 22 on Figure 5.

Photograph 97. Yellow Springs High School. Area 23 on Figure 5.

Photograph 98. Mills Lawn Elementary School. Area 24 on Figure 5.

Photograph 99. Signage for Twin Towers Park. Area 25 on Figure 5.

Photograph 100. Pony and buggies at Twin Towers Park. Area 25 on Figure 5.

Photograph 101. Indian Valley Middle School. Area 26 on Figure 5.

Photograph 102. Springfield Waste Water Treatment Plant. Area 27 on Figure 5.

Photograph 103. Springfield Waste Water Treatment Plant. Area 27 on Figure 5.

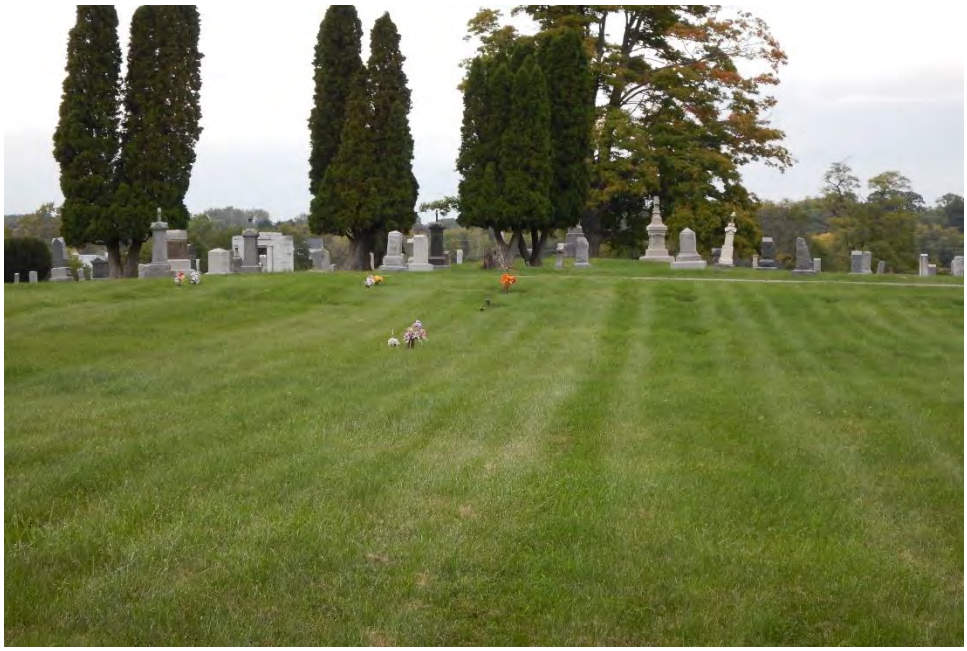
Photograph 104. Birds in flight over Springfield Waste Water Treatment Plant. Area 27 on Figure 45.

Photograph 105. Shelly Materials owns several ponds. Area 28 in Figure 5.

Photograph 106. Quarry ponds owned by Shelly Materials. Area 28 in Figure 5.

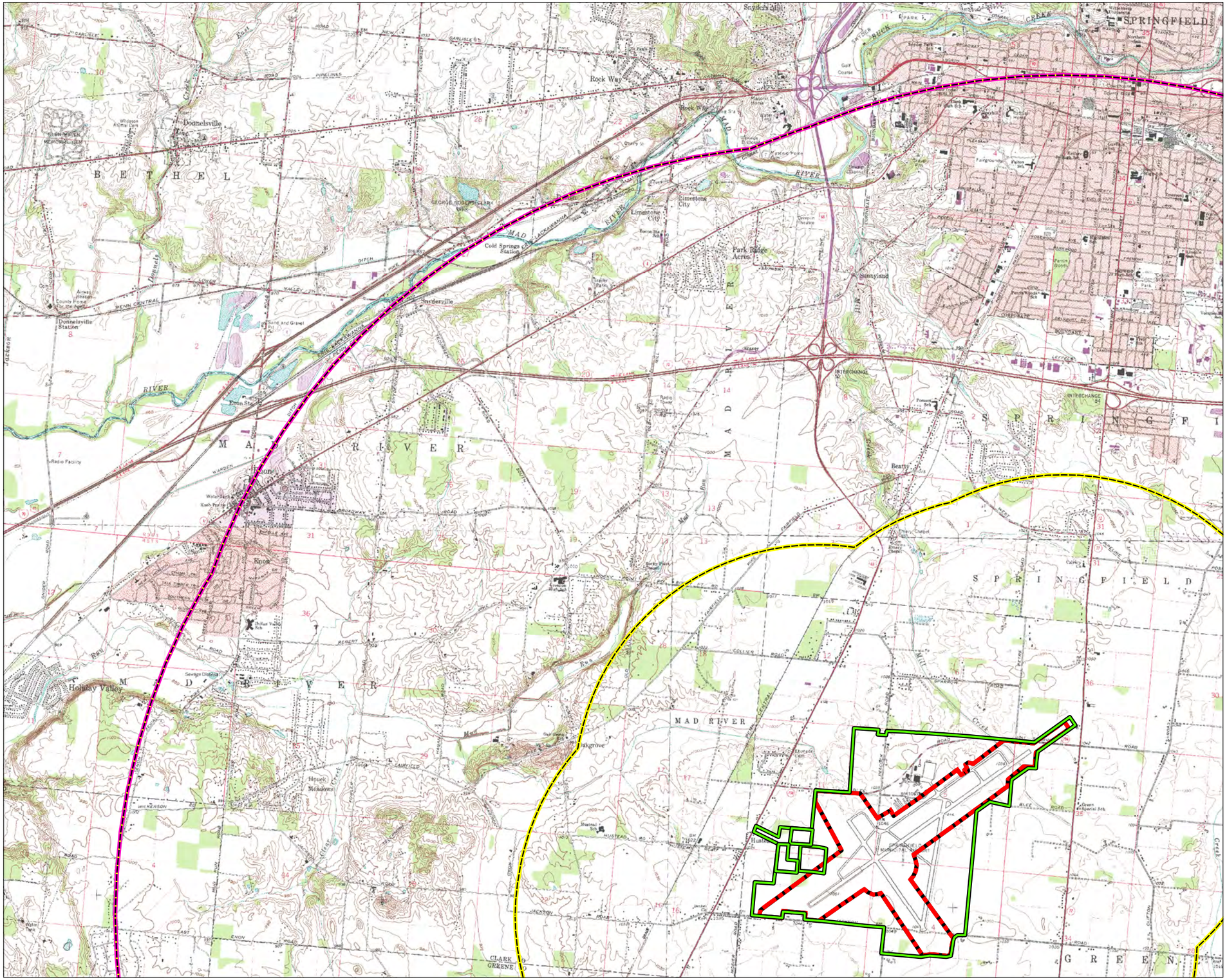
Photograph 107. Signage for Reid Golf Course. Area 29 on Figure 5.

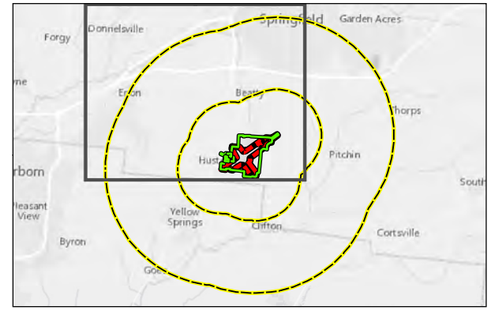
Photograph 108. Portion of Reid Golf Course. Area 29 on Figure 5.



Photograph 109. Portion of Calvary Cemetery. Area 30 on Figure 5.

FIGURES





Air Operations Area (AOA)

Airport property boundary

5-mile buffer per AC150/5200-33A

10,000-ft buffer per AC150/5200-33A

Base: USGS Clifton, Donnelsville, Springfield and Yellow Springs, Ohio 7.5' topographic maps

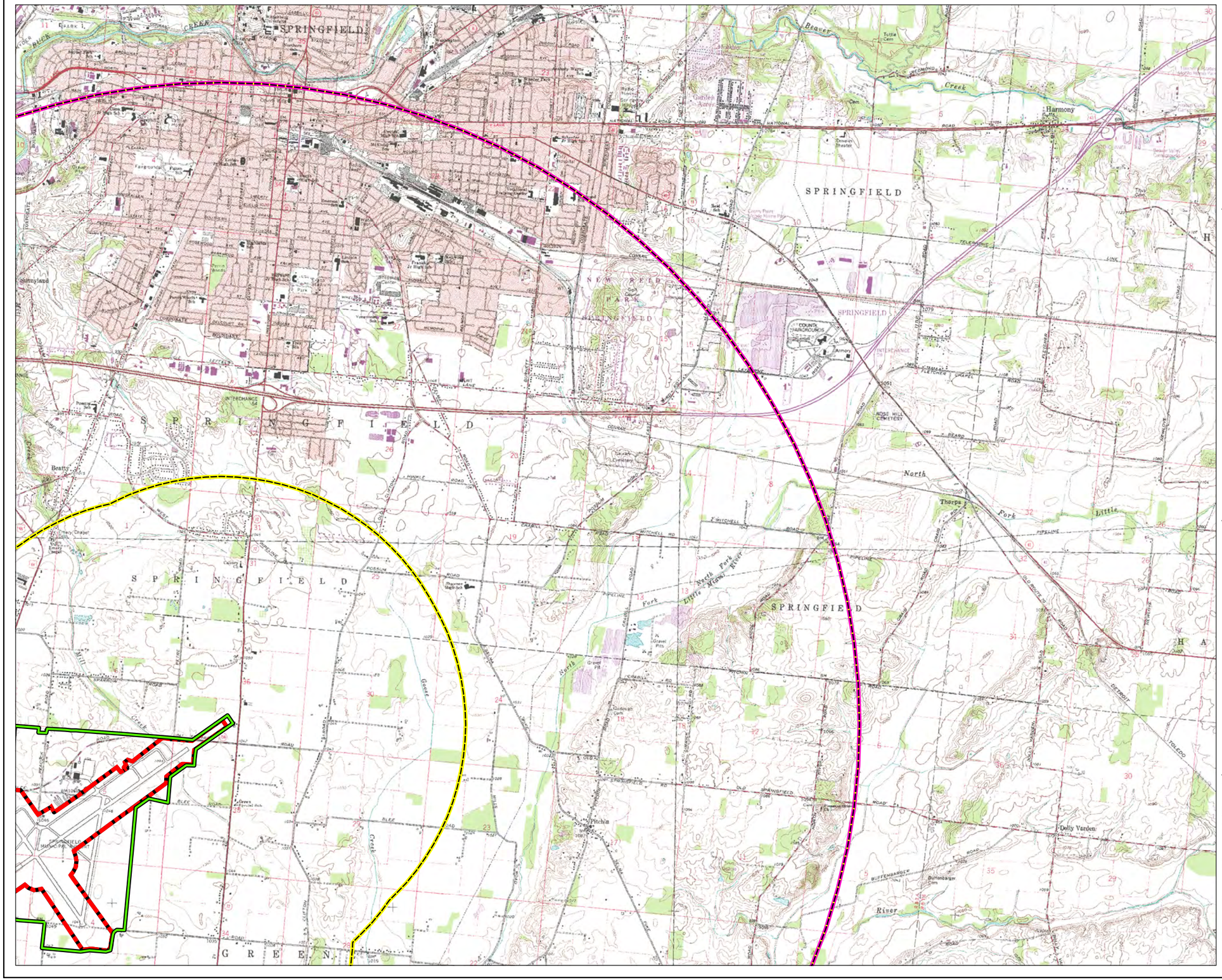
N

0 840 1680 2520 3360 Meters

0 2800 5600 8400 11200 Feet

Figure 1 **Sheet 1 of 4**

Portions of the 1968 (photorevised 1974, photoinspected 1988) Clifton, 1965 (photorevised 1973, photoinspected 1983) Donnelsville, 1966 (photorevised 1981) Springfield, and 1968 (photorevised 1994) Yellow Springs, Ohio quadrangles (USGS 7.5' topographic maps) showing the Springfield-Beckley Muncipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (4 Sheets)



Air Operations Area (AOA)

Airport property boundary

5-mile buffer per AC150/5200-33A

10,000-ft buffer per AC150/5200-33A

Base: USGS Clifton, New Moorefield, South Charelston and Springfield, Ohio 7.5' topographic maps

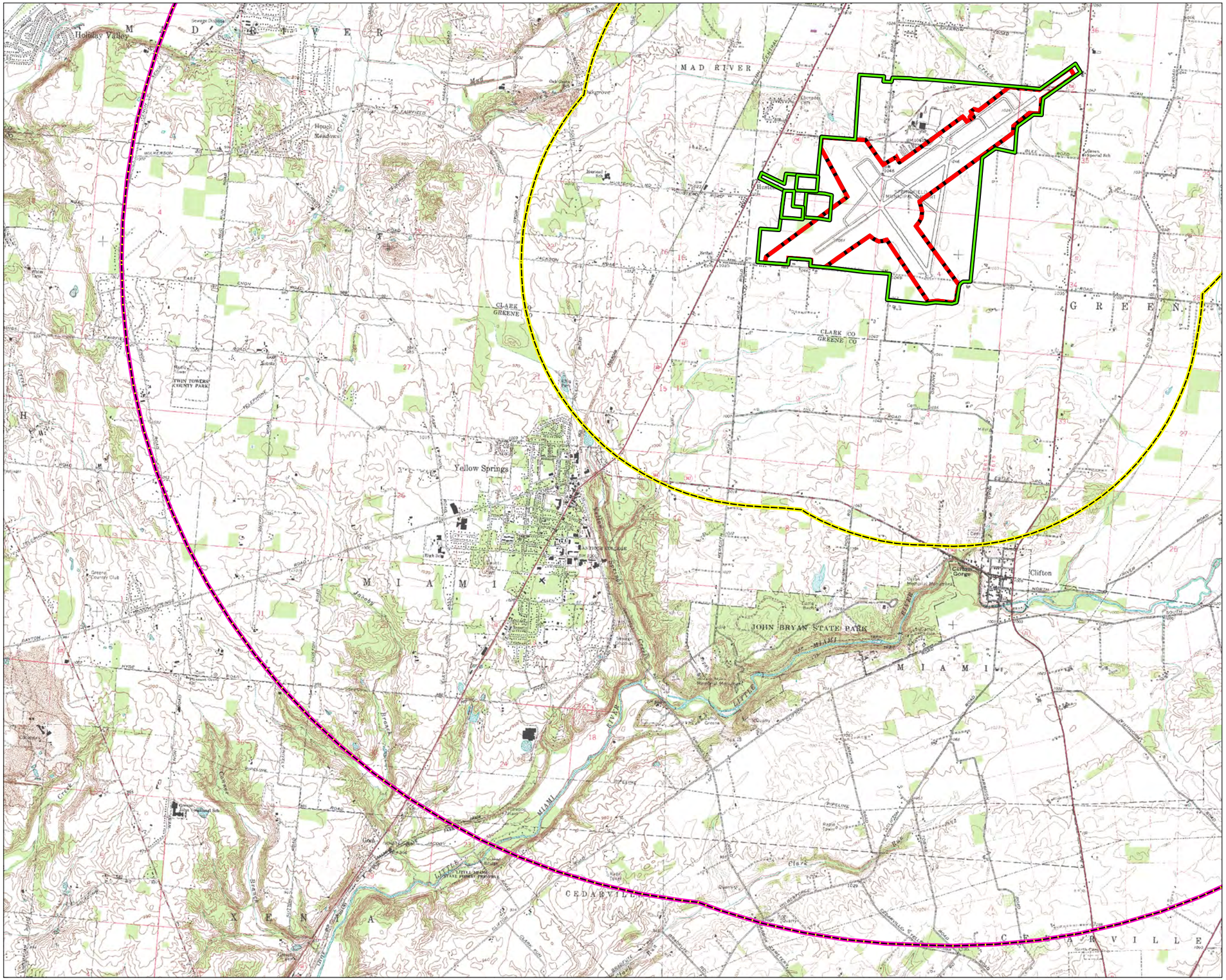
N

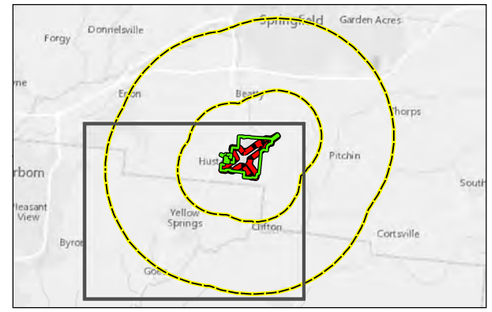
0 840 1680 2520 3360 Meters

0 2800 5600 8400 11200 Feet

Figure 1 **Sheet 2 of 4**

Portions of the 1968 (photorevised 1974, photoinspected 1988) Clifton, 1965 (photorevised 1973, photoinspected 1983) Donnelsville, 1966 (photorevised 1981) Springfield, and 1968 (photorevised 1994) Yellow Springs, Ohio quadrangles (USGS 7.5' topographic maps) showing the Springfield-Beckley Muncipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (4 Sheets)





Air Operations Area (AOA)

Airport property boundary

5-mile buffer per AC150/5200-33A

10,000-ft buffer per AC150/5200-33A

Base: USGS Clifton, Donnelsville, Springfield and Yellow Springs, Ohio 7.5' topographic maps

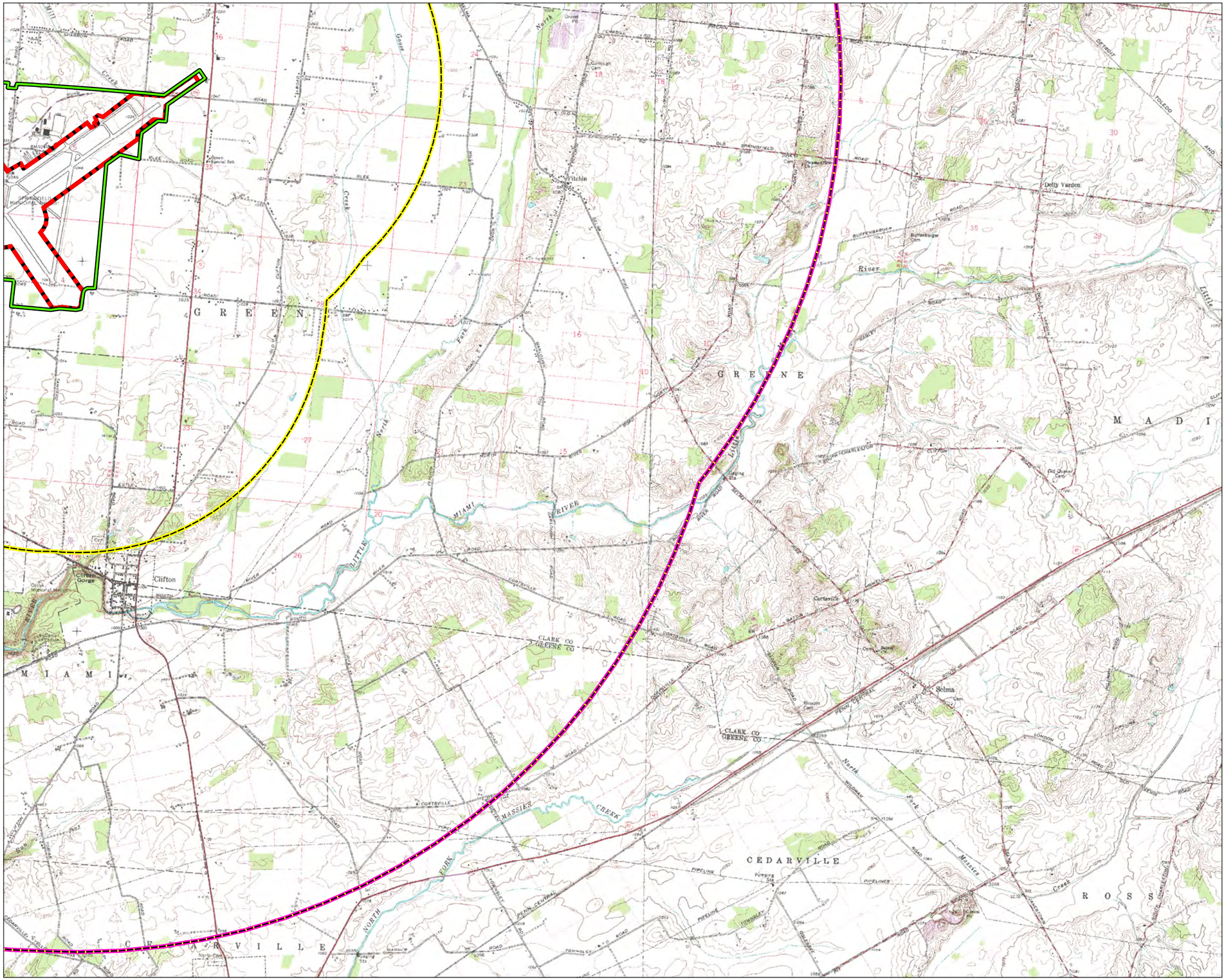
N

0 840 1680 2520 3360 Meters

0 2800 5600 8400 11200 Feet

Figure 1 **Sheet 3 of 4**

Portions of the 1968 (photorevised 1974, photoinspected 1988) Clifton, 1965 (photorevised 1973, photoinspected 1983) Donnelsville, 1966 (photorevised 1981) Springfield, and 1968 (photorevised 1994) Yellow Springs, Ohio quadrangles (USGS 7.5' topographic maps) showing the Springfield-Beckley Muncipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (4 Sheets)



Air Operations Area (AOA)

Airport property boundary

5-mile buffer per AC150/5200-33A

10,000-ft buffer per AC150/5200-33A

Figure 1 **Sheet 4 of 4**

Portions of the 1968 (photorevised 1974, photoinspected 1988) Clifton, 1965 (photorevised 1973, photoinspected 1983) Donnelsville, 1966 (photorevised 1981) Springfield, and 1968 (photorevised 1994) Yellow Springs, Ohio quadrangles (USGS 7.5' topographic maps) showing the Springfield-Beckley Muncipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (4 Sheets)

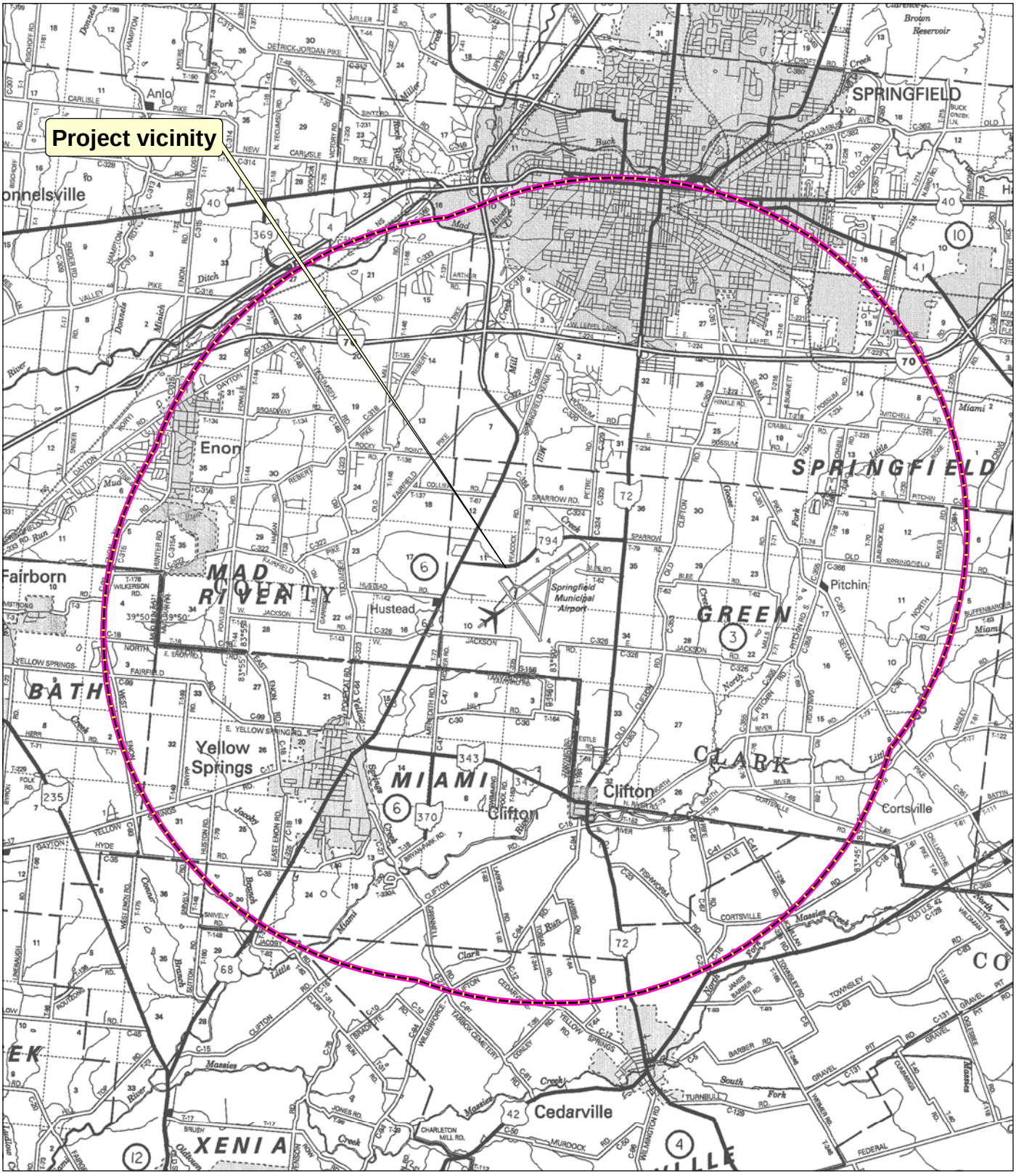
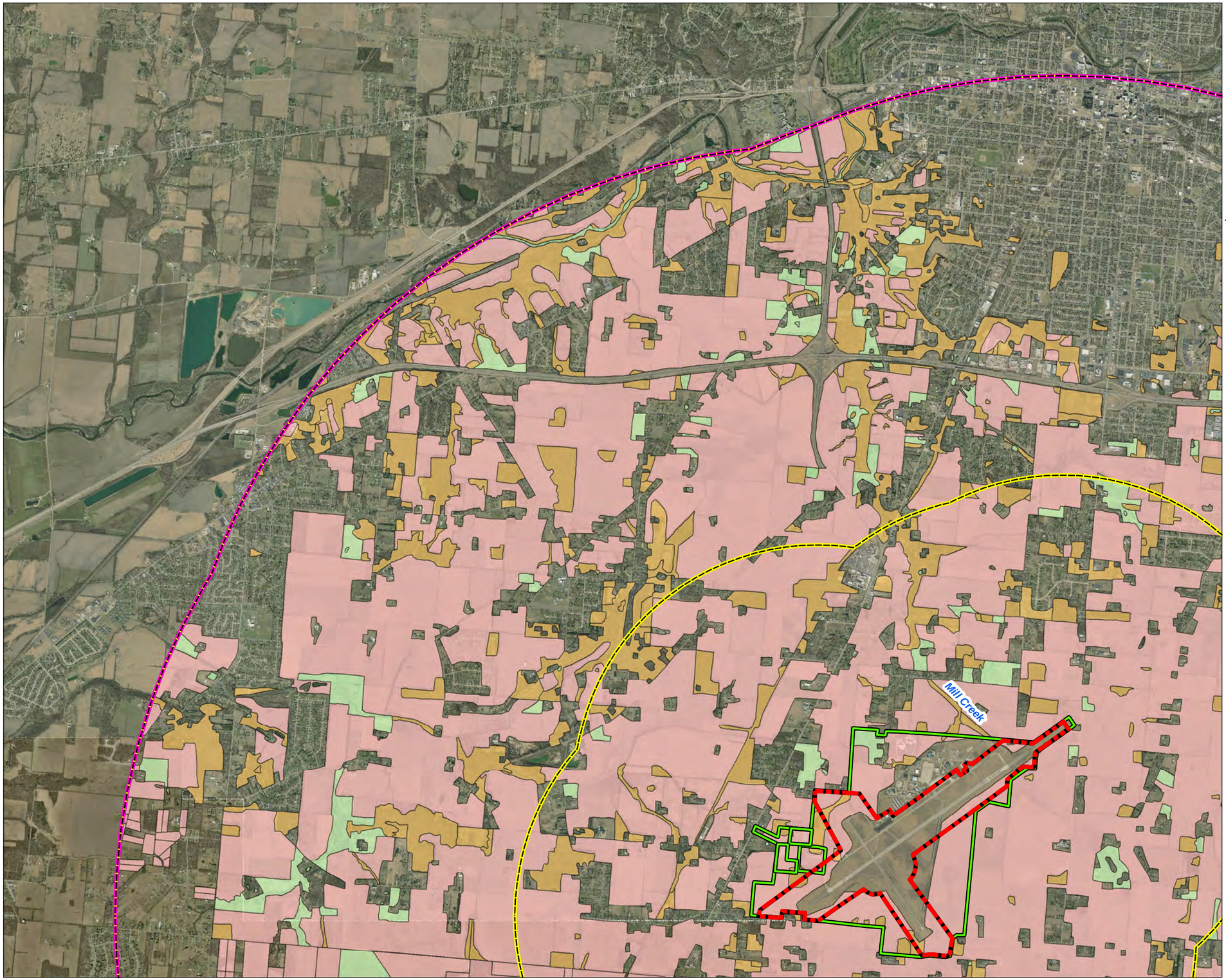
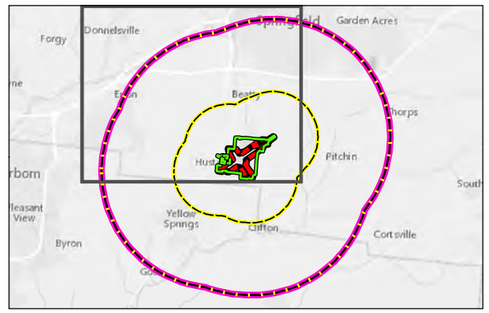


Figure 2

Portions of the ODOT Clark and Greene counties highway maps showing the Springfield-Beckley Muncipal Airport and 5-mile General Seperation Criteria boundary for hazardous wildlife attractants.





Perimeter

Property boundary

10,000-ft buffer*

5-mile buffer*

Cropland

Pasture

Forested stream corridor

* Per AC150/5200-33A

Base: Clark County Auditor 2016, Green County Auditor 2016, Aerial photograph Clark County 2011, Greene County 2014

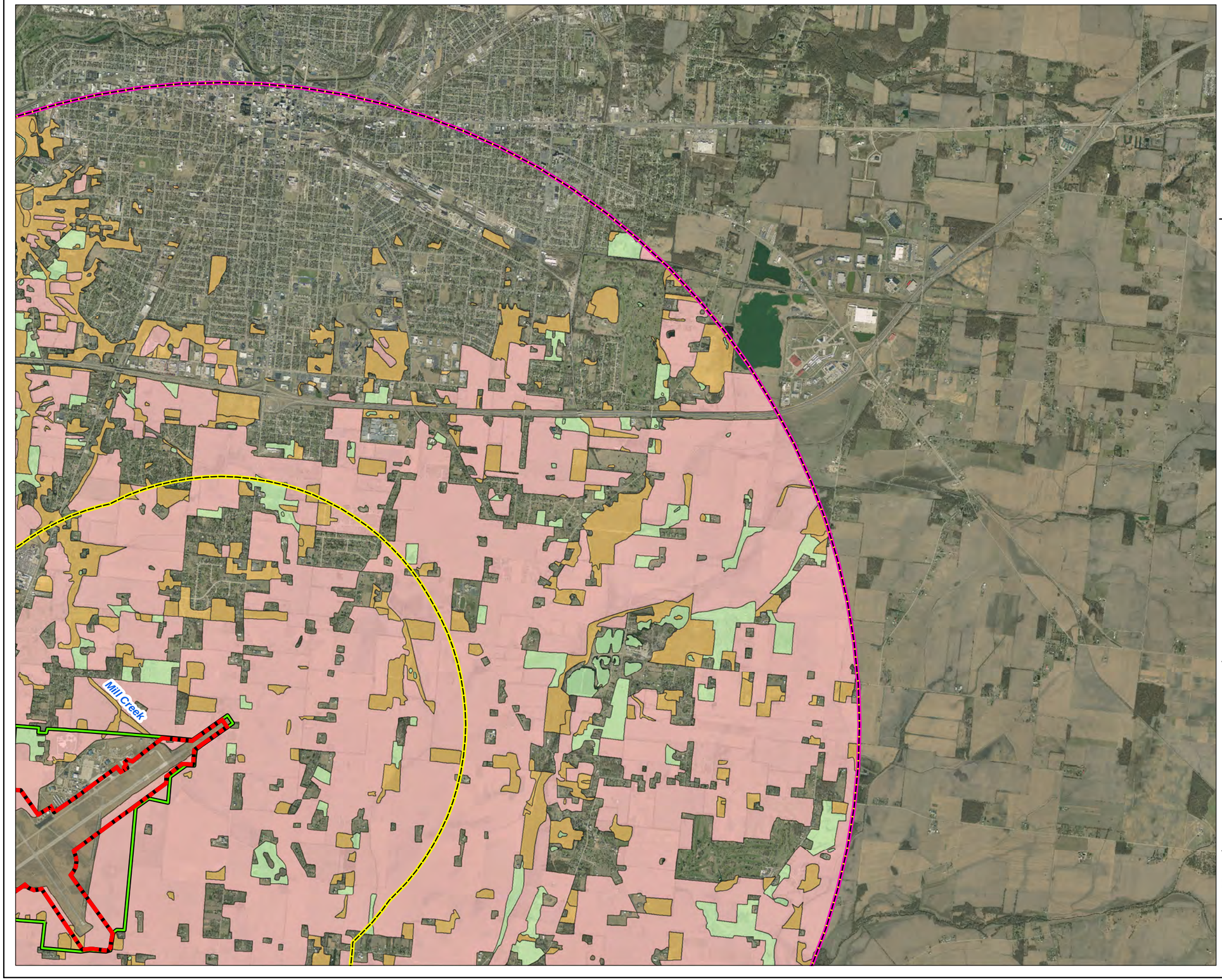
N

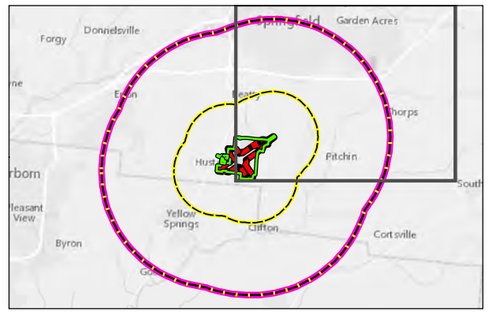
0 840 1680 2520 3360 Meters

0 2800 5600 8400 11200 Feet

Figure 3 **Sheet 1 of 4**

Land-use practices within the General Separation Criteria at the Springfield-Beckley Muncipal Airport. (4 Sheets)





Perimeter

Property boundary

10,000-ft buffer*

5-mile buffer*

Cropland

Pasture

Forested stream corridor

* Per AC150/5200-33A

Base: Clark County Auditor 2016, Green County Auditor 2016, Aerial photograph Clark County 2011, Greene County 2014

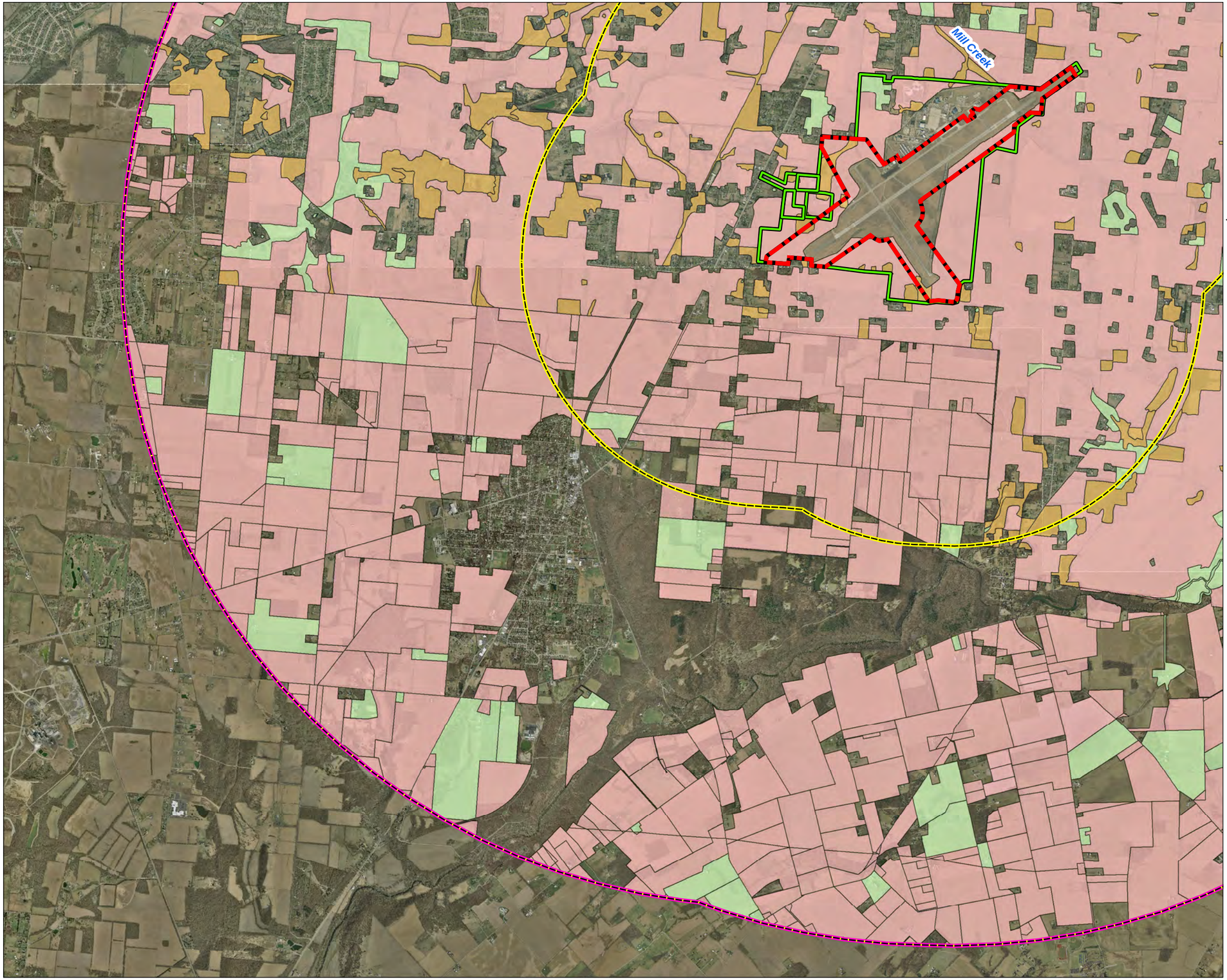
N

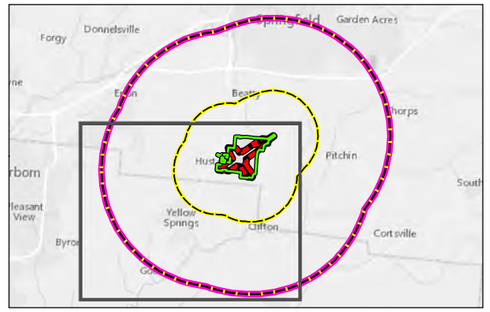
0 840 1680 2520 3360 Meters

0 2800 5600 8400 11200 Feet

Figure 3 **Sheet 2 of 4**

Land-use practices within the General Separation Criteria at the Springfield-Beckley Muncipal Airport. (4 Sheets)





Perimeter

Property boundary

10,000-ft buffer*

5-mile buffer*

Cropland

Pasture

Forested stream corridor

* Per AC150/5200-33A

Base: Clark County Auditor 2016, Green County Auditor 2016, Aerial photograph Clark County 2011, Greene County 2014

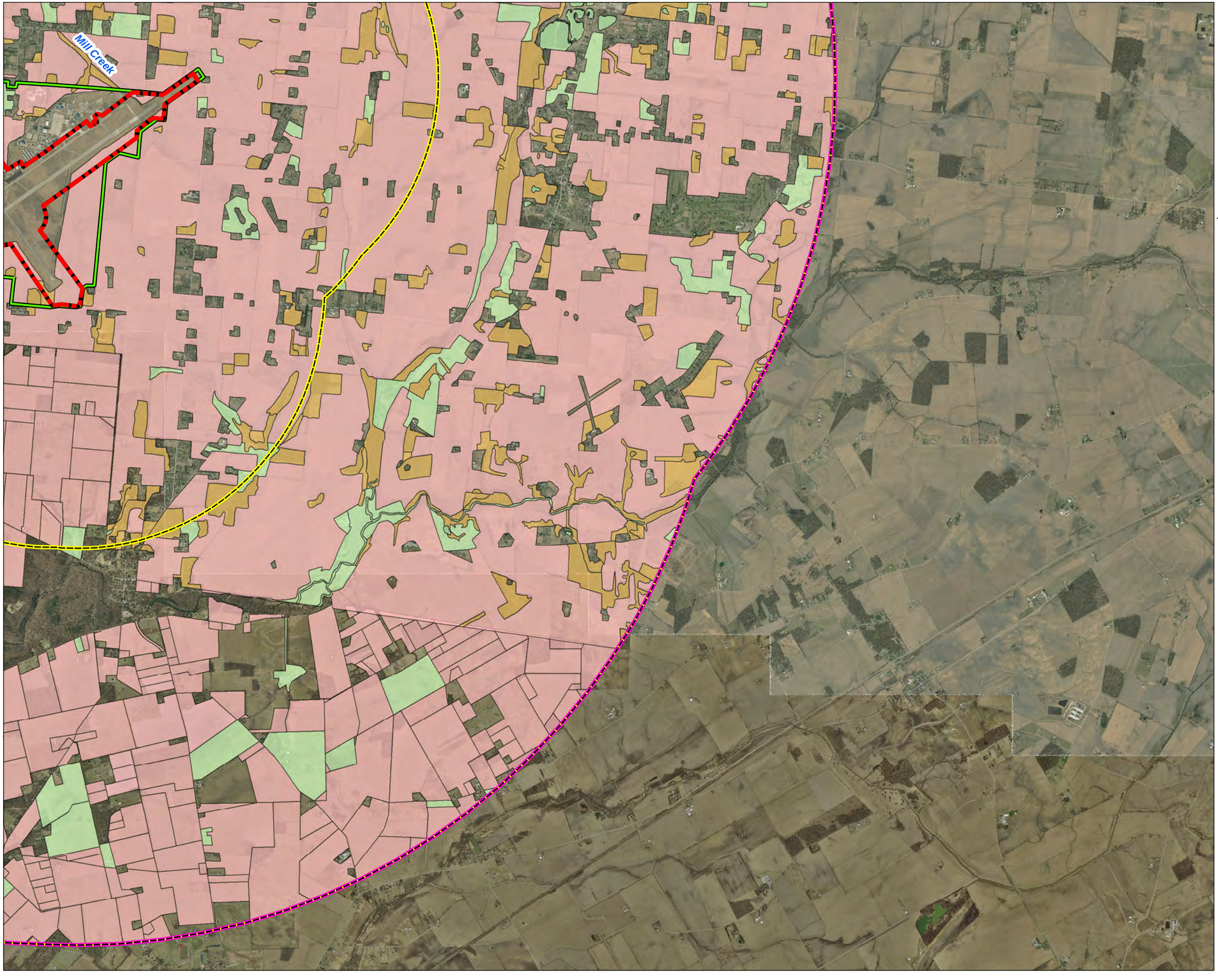
N

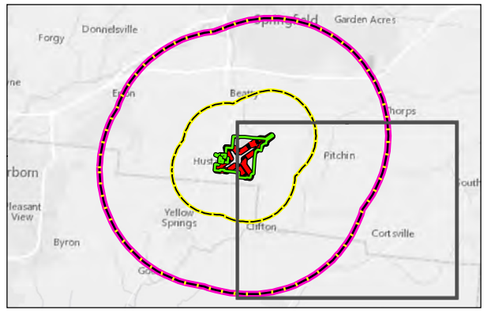
0 840 1680 2520 3360 Meters

0 2800 5600 8400 11200 Feet

Figure 3 **Sheet 3 of 4**

Land-use practices within the General Separation Criteria at the Springfield-Beckley Muncipal Airport. (4 Sheets)





Perimeter

Property boundary

10,000-ft buffer*

5-mile buffer*

Cropland

Pasture

Forested stream corridor

* Per AC150/5200-33A

Base: Clark County Auditor 2016, Green County Auditor 2016, Aerial photograph Clark County 2011, Greene County 2014

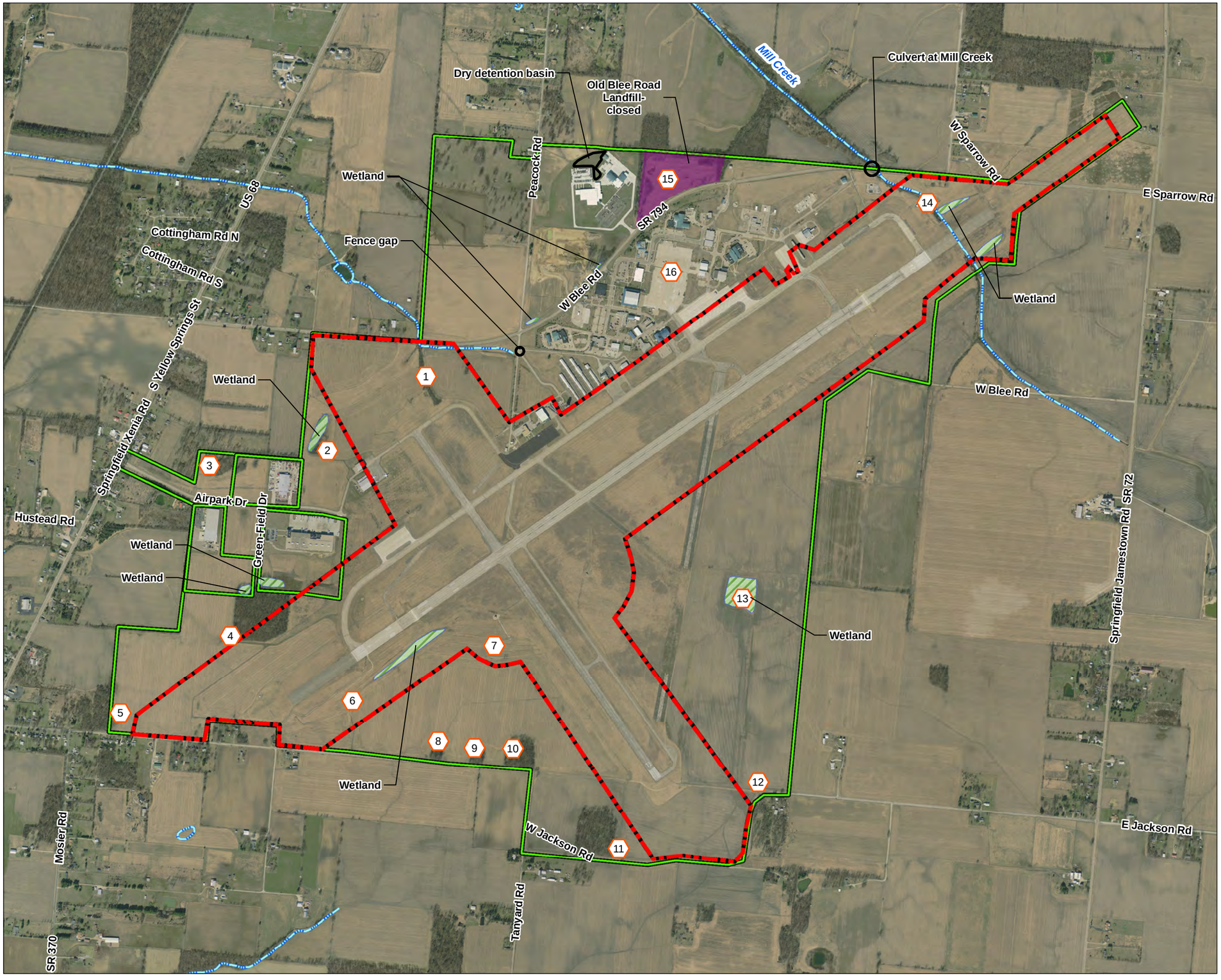
N

0 840 1680 2520 3360 Meters

0 2800 5600 8400 11200 Feet

Figure 3 **Sheet 4 of 4**

Land-use practices within the General Separation Criteria at the Springfield-Beckley Muncipal Airport. (4 Sheets)



On-site wildlife attractant areas

1 Forested Stream Corridor
2 Forested Detention Basin
3 Western Portion Near Airpark
4 Wooded Lot Near Airpark
5 SW Corner of Airport
6 Wetland and Drainages Runway 6
7 Drainages Near VOR
8 Small Woodlot on South Boundary 1
9 Small Woodlot on South Boundary 2
10 Small Woodlot on South Boundary 3
11 Small Woodlot on South Boundary 4
12 SE Corner of Airport
13 Wetland within Cornfield
14 Mill Creek
15 Old Blee Road Landfill - closed
16 Ohio Air National Guard

Base: Aerial photograph 2013

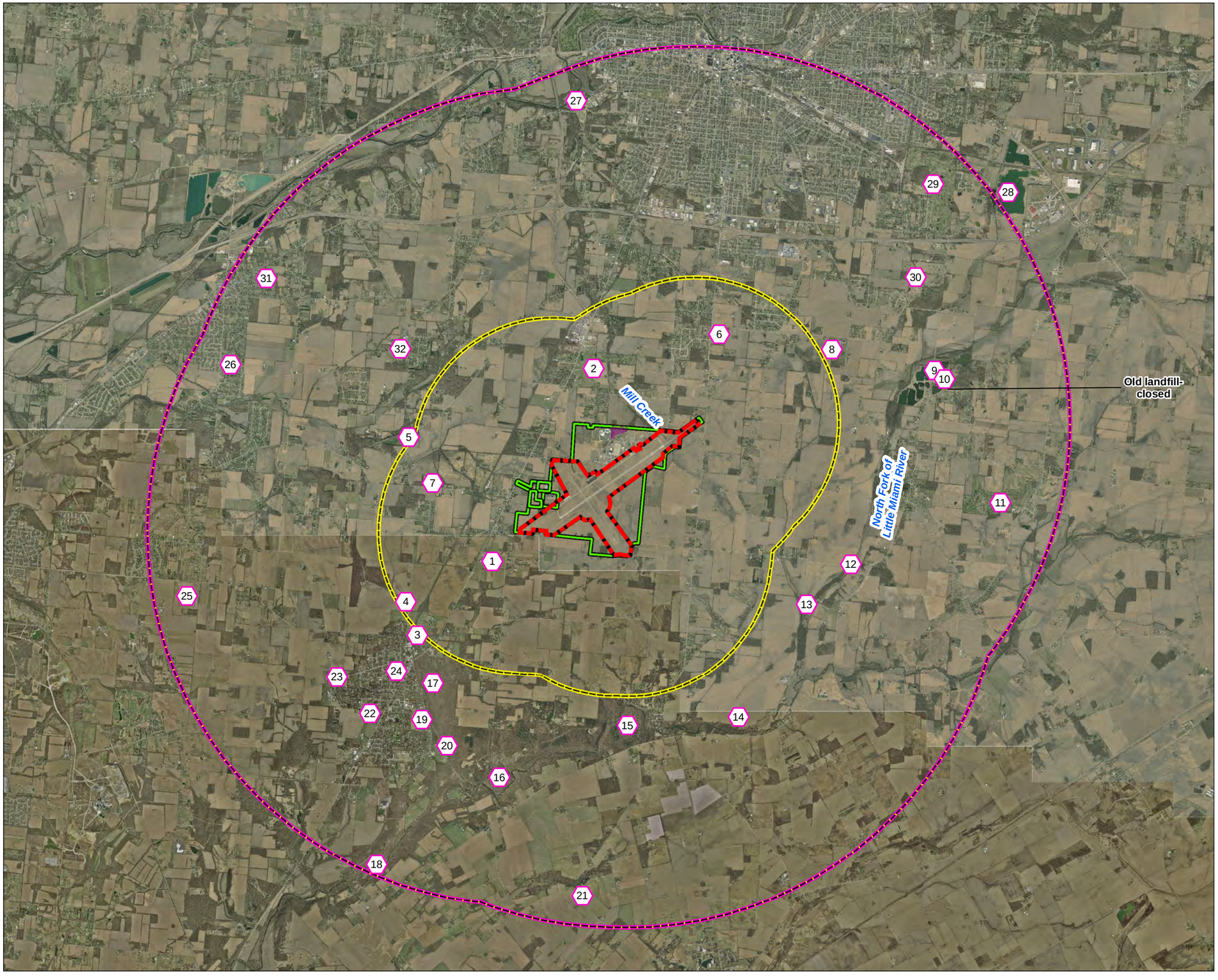
N

0 260 520 780 1040 Meters

0 900 1800 2700 3600 Feet

Figure 4

Aerial photograph showing the Springfield-Beckley Municipal Airport and On-Site hazardous wildlife attractant resource area.



Perimeter

Property boundary

5-mile buffer*

10,000-ft buffer*

Off-site wildlife attractant locations

Off-site wildlife attractant

1 Youngs Dairy
2 Rocky Lakes Gold Course
3 Flood Controll Yellow Springs Creek
4 Ellis Park and Pond
5 Sand and Rock Quarry
6 Risen Crhist Lutheran School
7 Hustead Elementary School
8 Shawnee High School
9 REI Lakes Camp and Fish
10 Crabill Road - Old Landfill
11 Locust Hills Gold Club
12 North Fork Little Miami River
13 Confluence of North Fork of Little Miami and Georges Creek
14 Clifton River Road Reserve
15 Clifton Gorge State Nature Preserve
16 John Bryan State park
17 Glen Helen Ecology Institute
18 Little Miami State Forest Preserve
19 Solar Field previous Antioch Golf Course
20 Yellow Springs Water Reclimation Facility
21 Camp Bellco Cattle Showbarn and Showcase
22 Gaunt Park
23 Yellowsprings High School
24 Mills Lawn Elementary School
25 Twin Towers Park
26 Indian Valley Middle School
27 Springfield WWTP
28 Shelly Materials Quarry Pond
29 New Reid Golf Course
30 Calvary Cemetary
31 Enon Cemetary
32 Green High School

* Per AC150/5200-33A

Base: Aerial photograph 2013

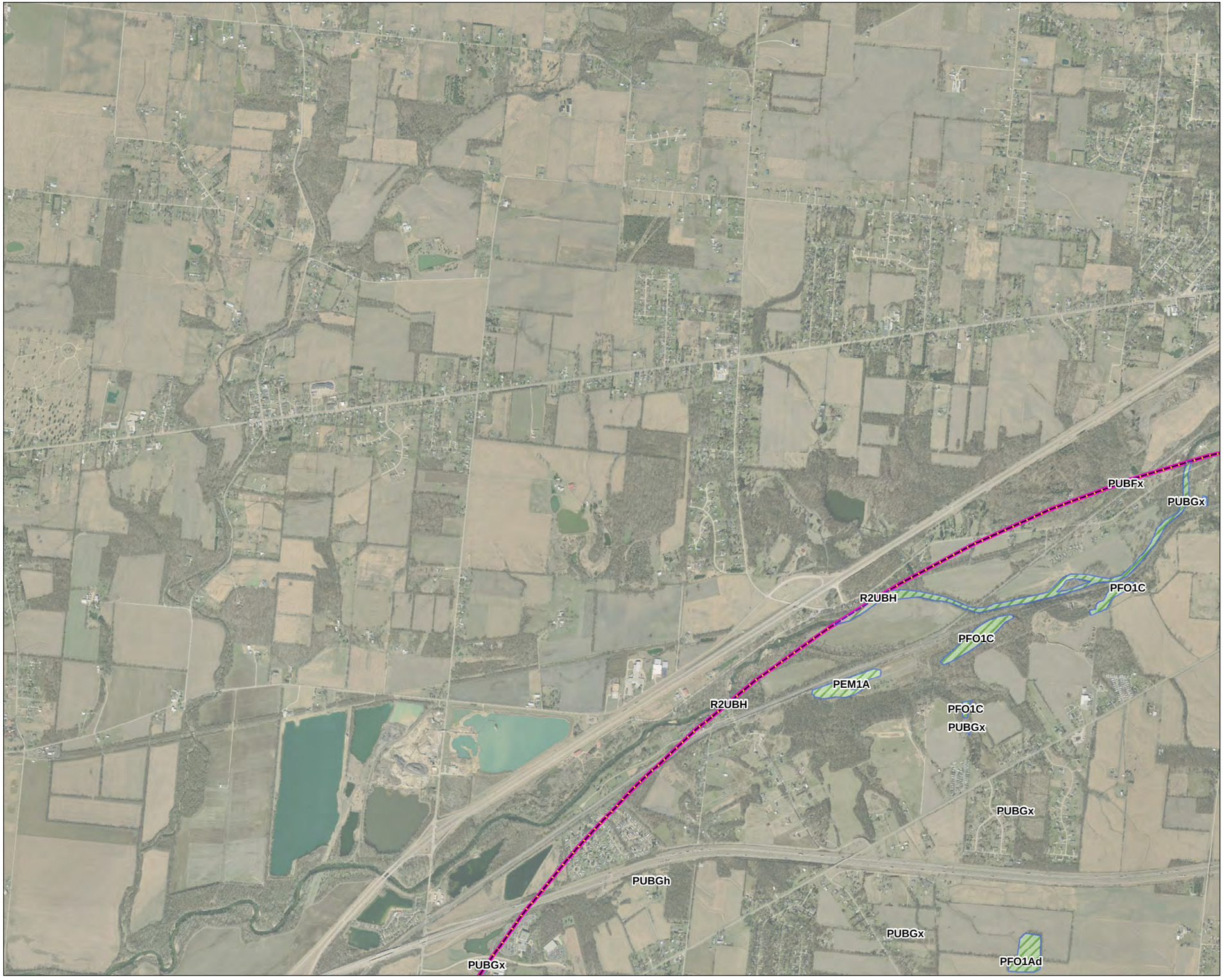
N

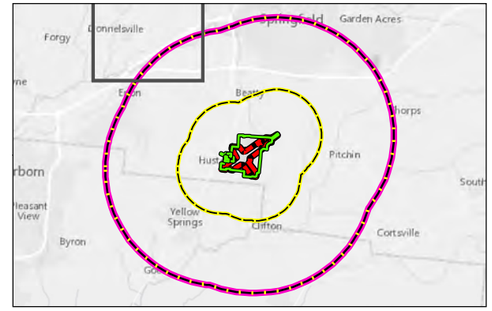
0 1400 2800 4200 5600 Meters

0 4900 9800 14700 19600 Feet

Figure 5

Aerial photograph showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters and Off-Site hazardous wildlife attractant resource areas.





5-mile buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

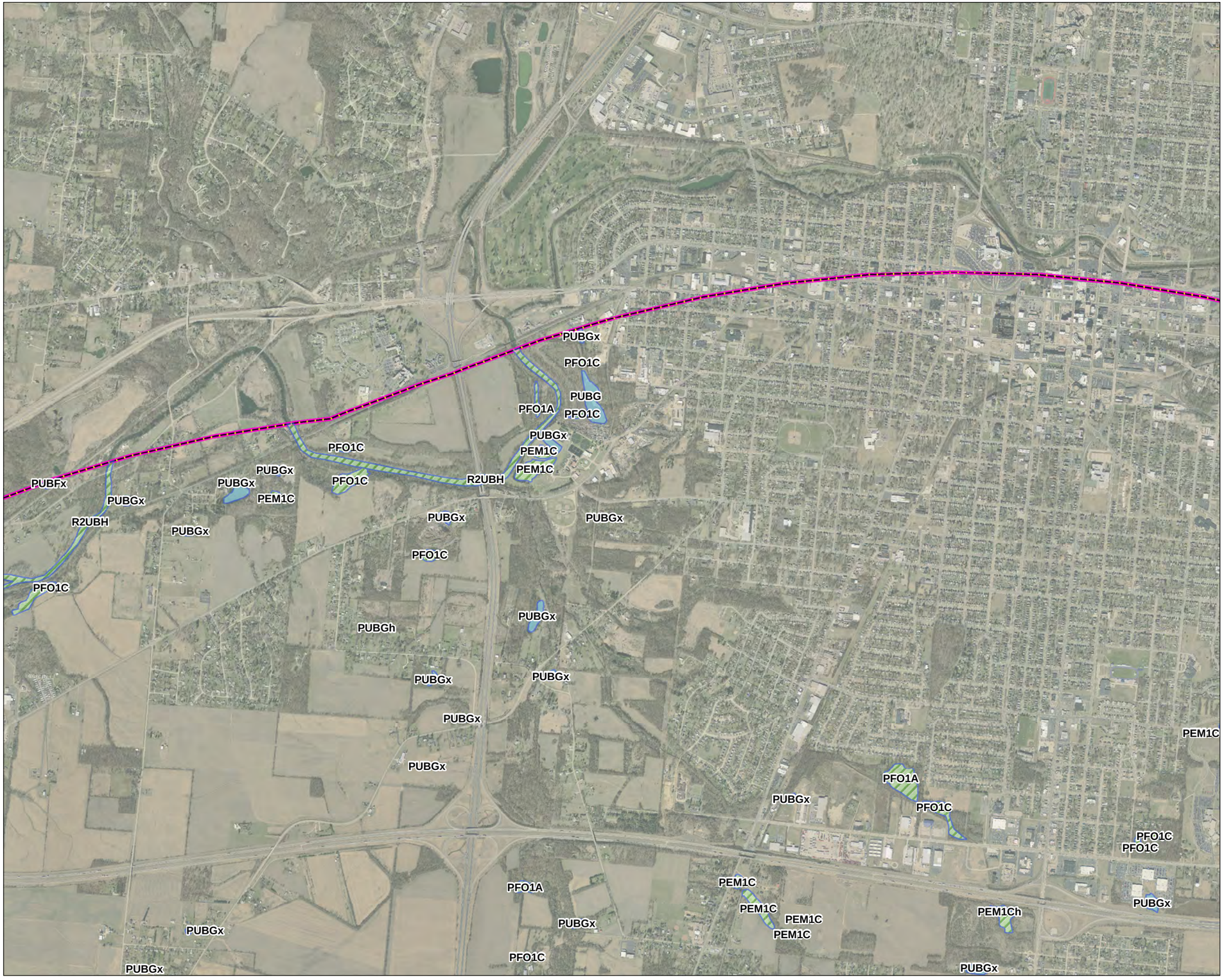
N

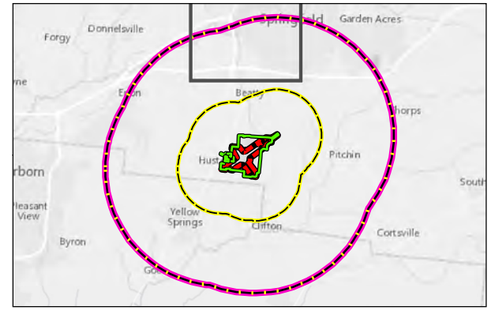
0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 1 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)





5-mile buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

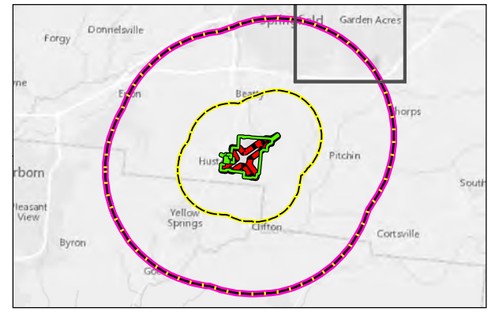
N

0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 2 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)



5-mile buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

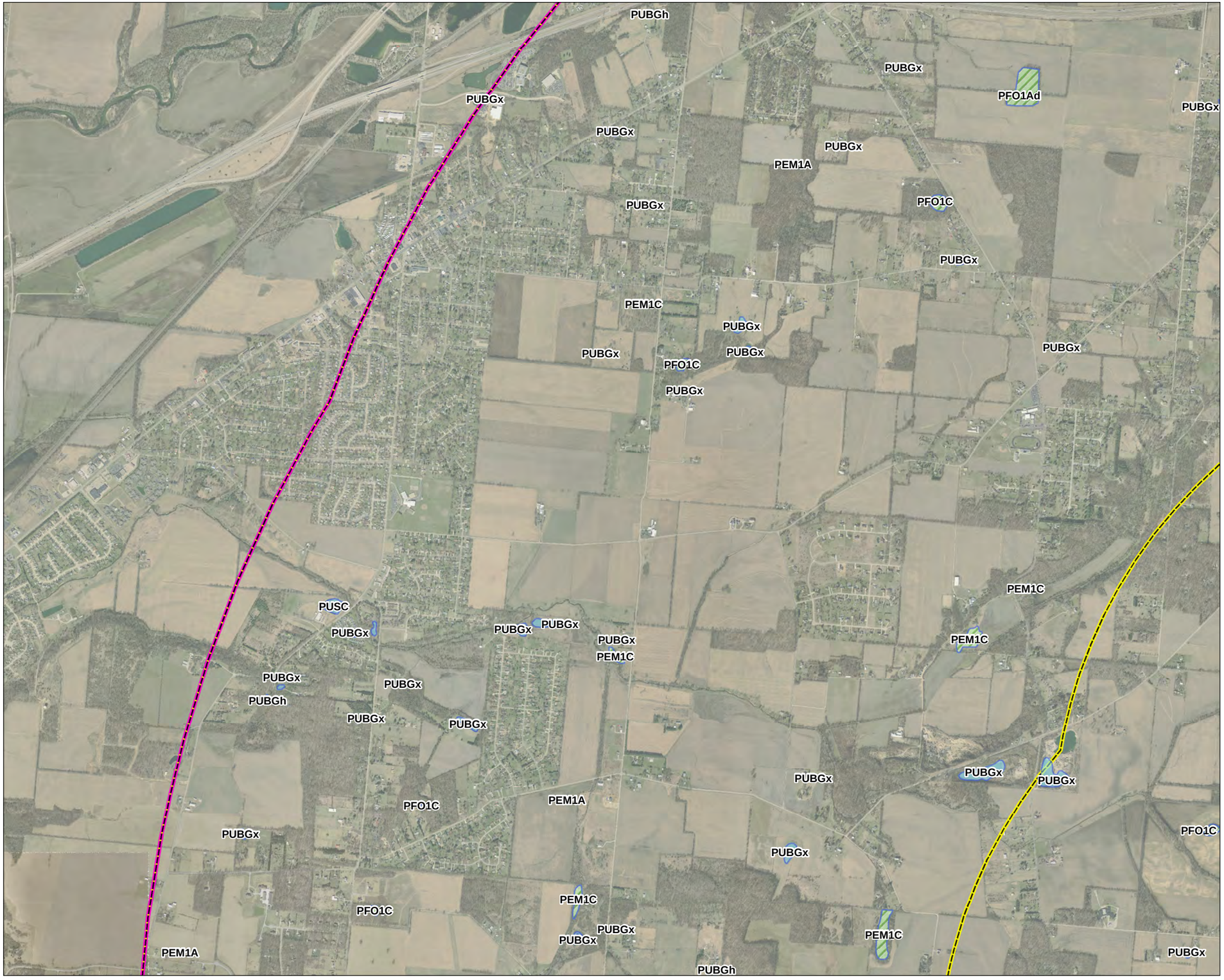
N

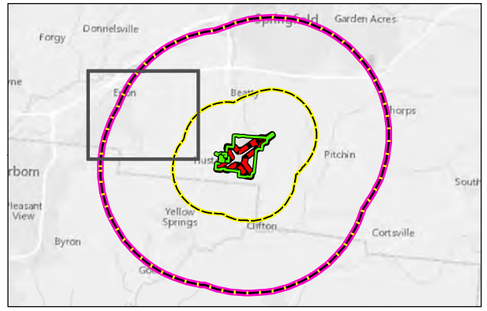
0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 3 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)





5-mile buffer*

10,000-ft buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

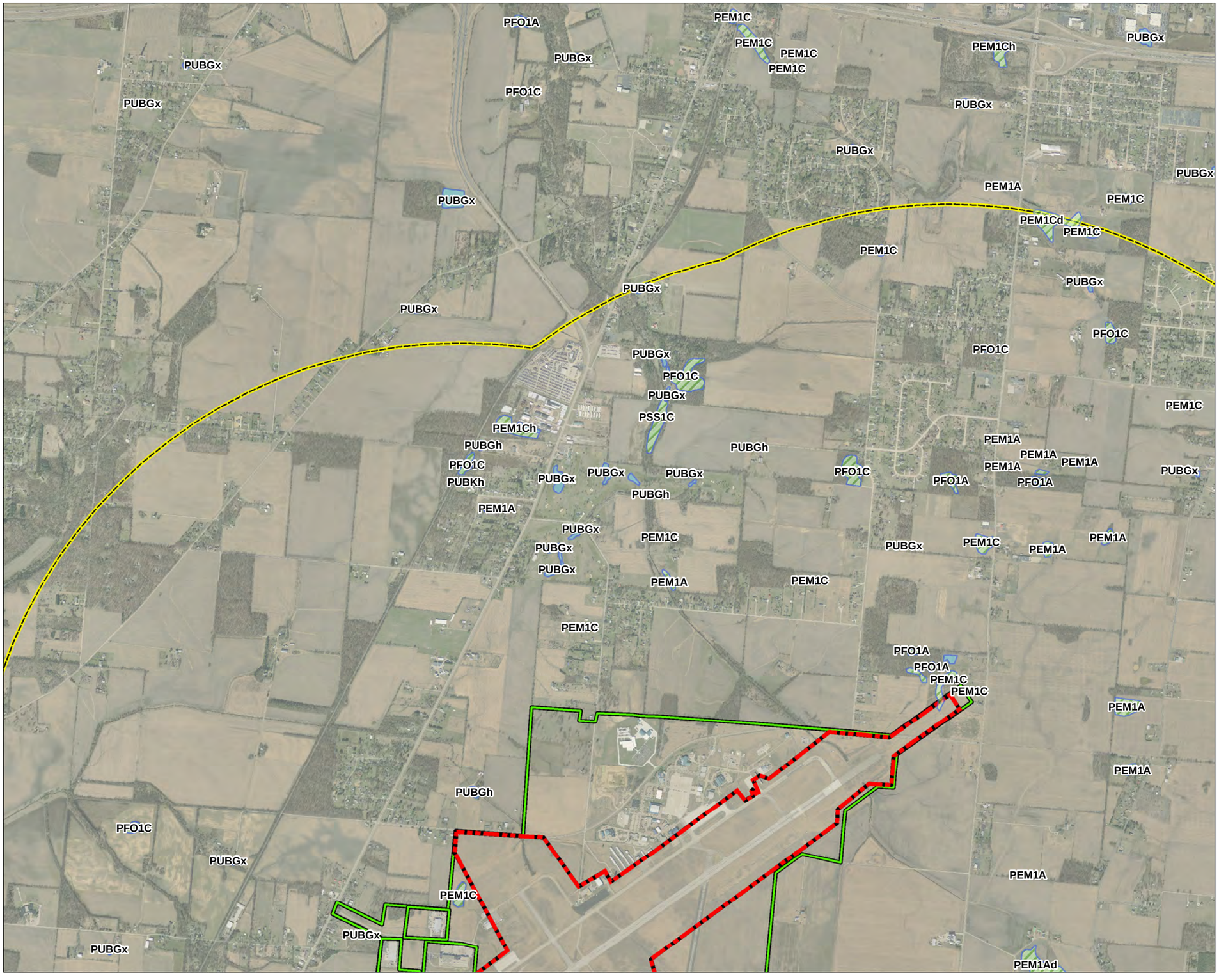
N

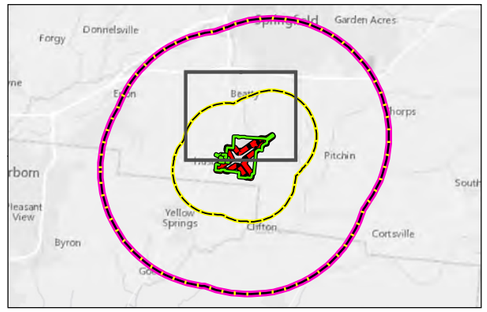
0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 4 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)





Perimeter

Property boundary

5-mile buffer*

10,000-ft buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

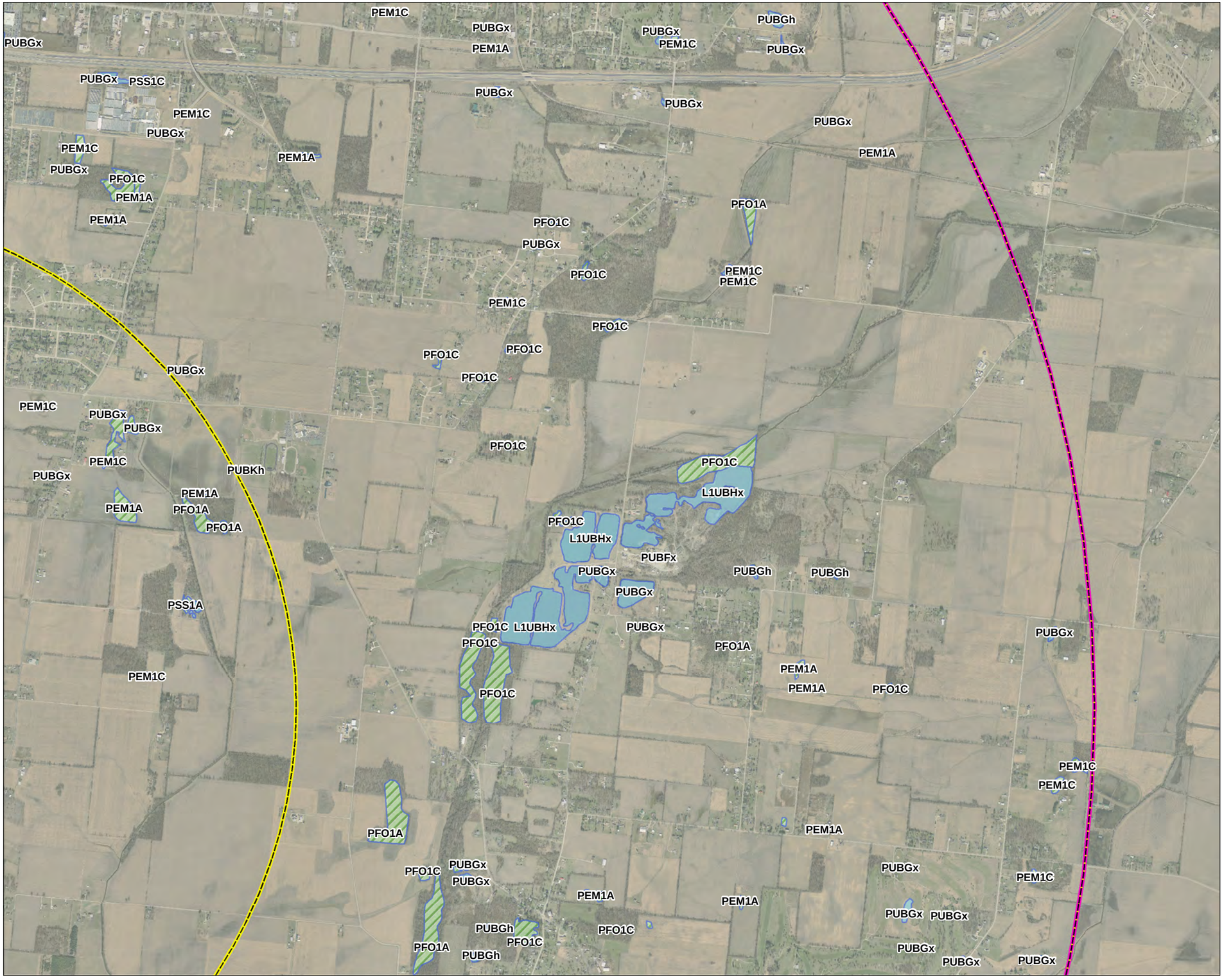
N

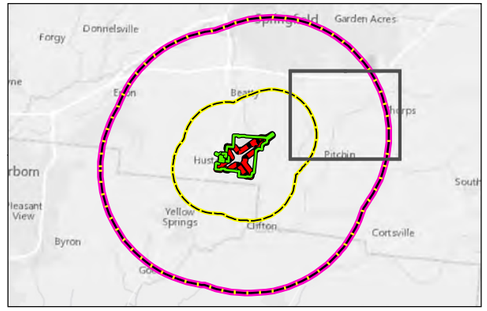
0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 5 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)





5-mile buffer*

10,000-ft buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

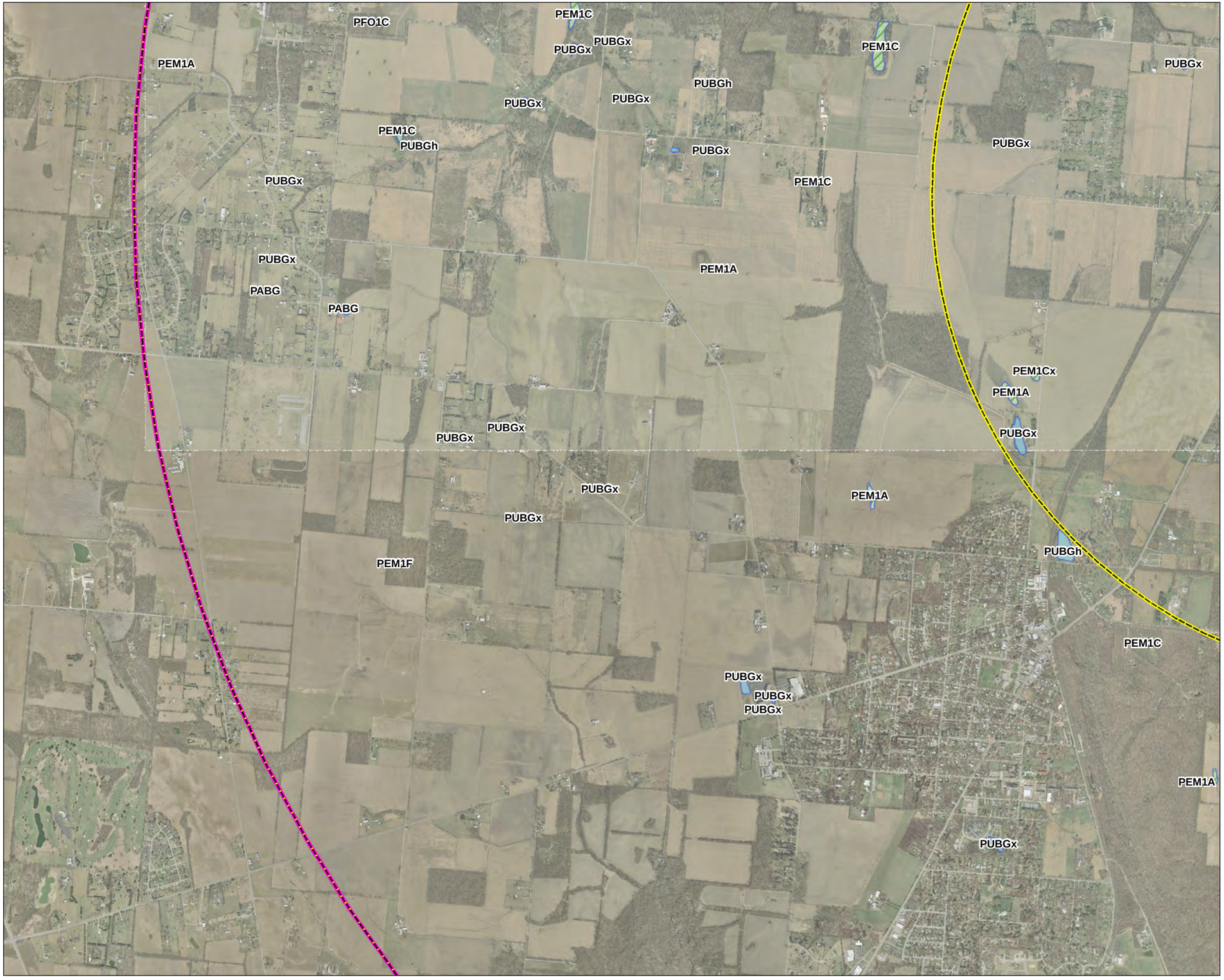
N

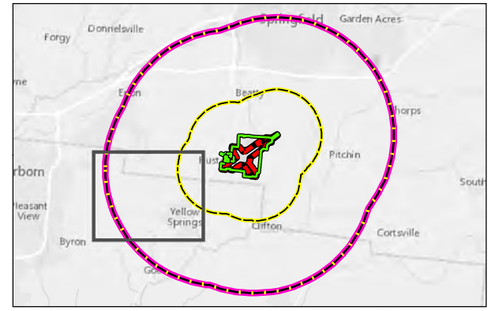
0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 6 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)





5-mile buffer*

10,000-ft buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

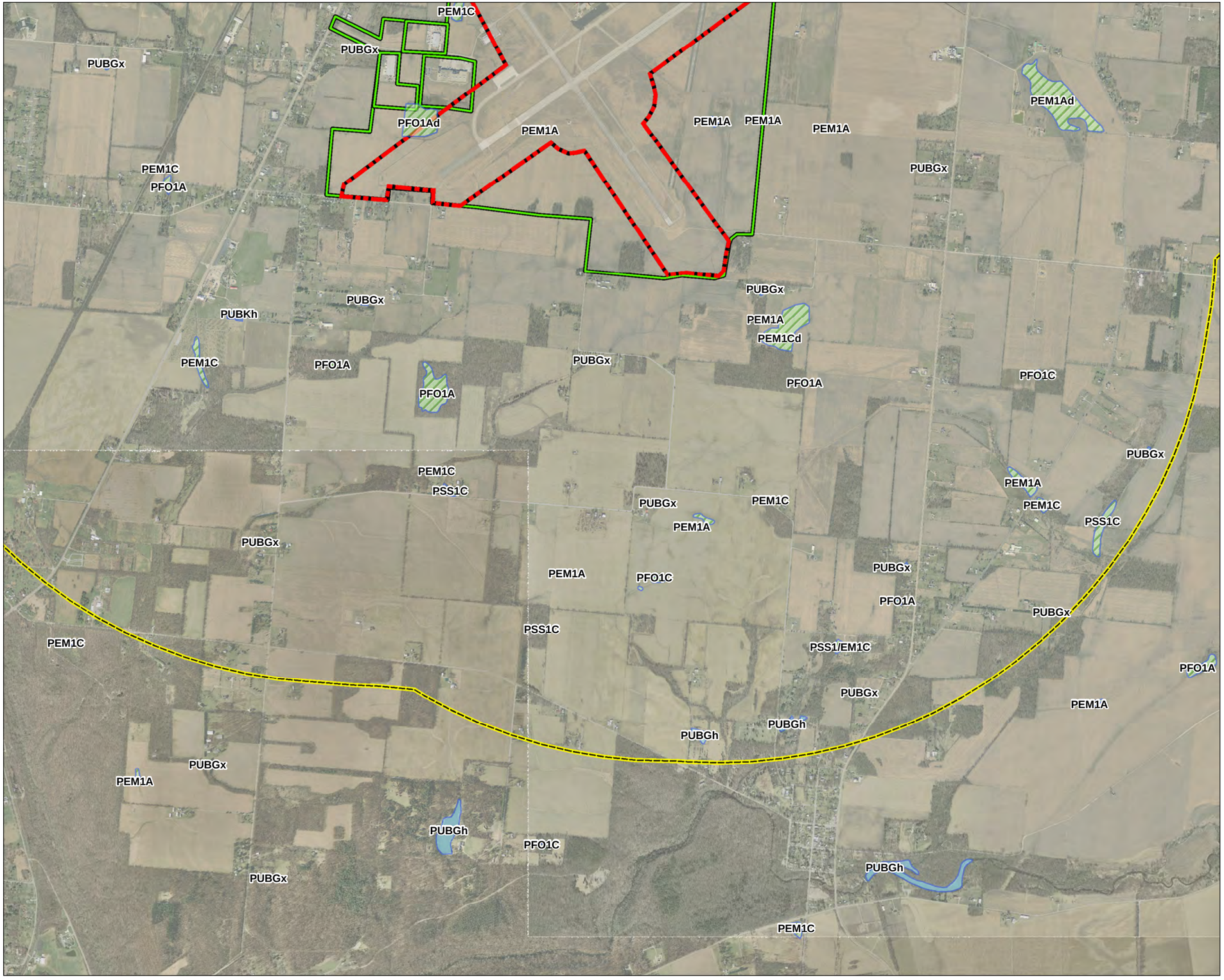
N

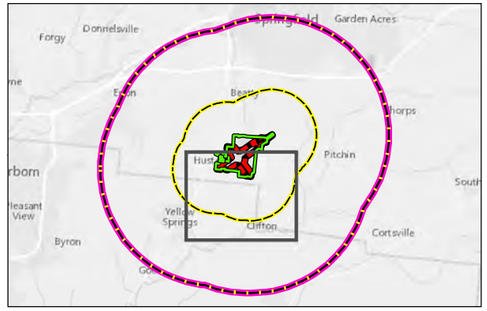
0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 7 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)





Perimeter

Property boundary

5-mile buffer*

10,000-ft buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

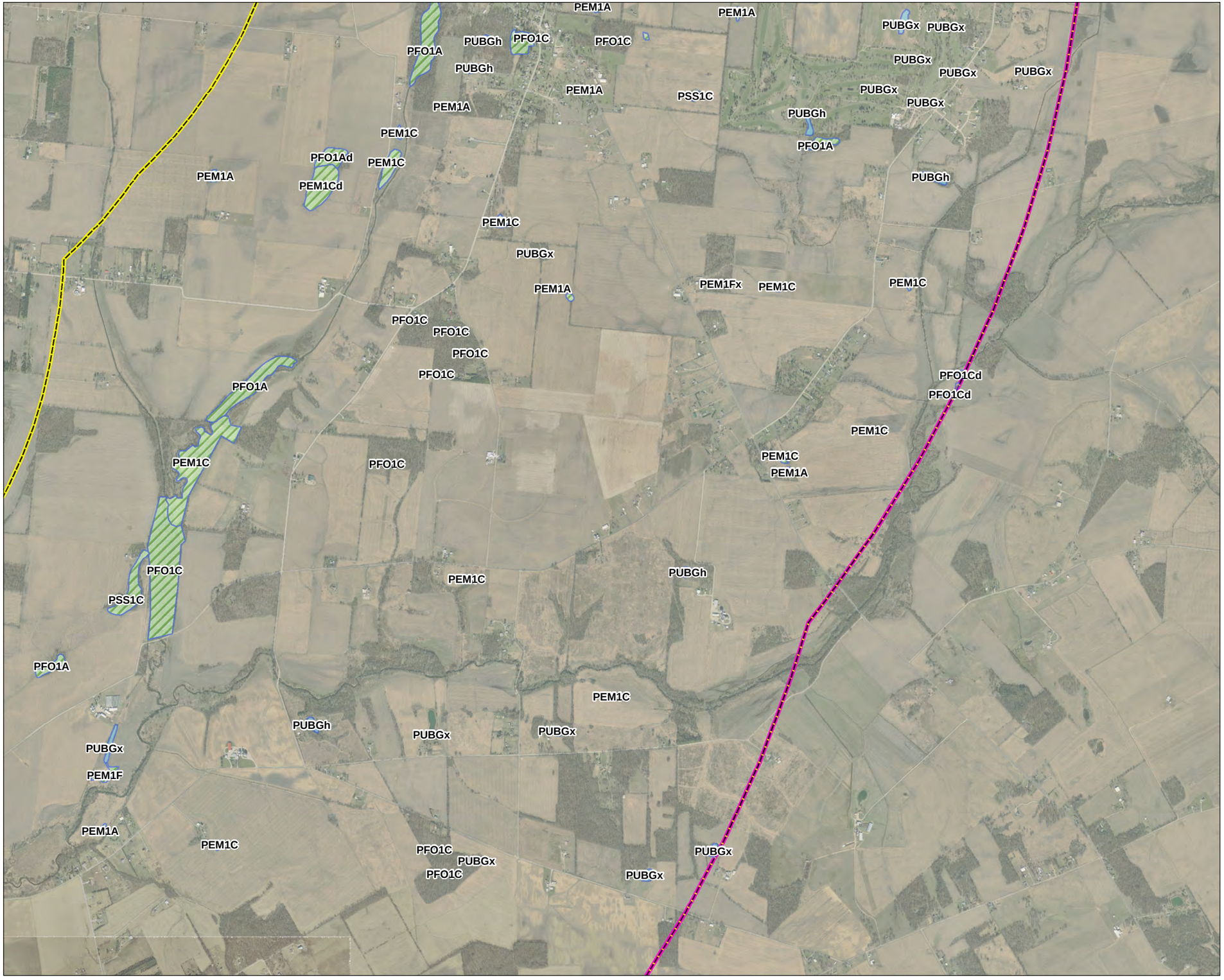
N

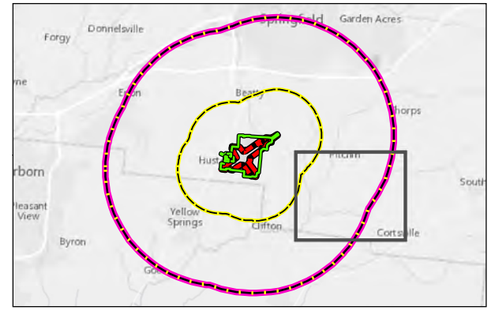
0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 8 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)





5-mile buffer*

10,000-ft buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

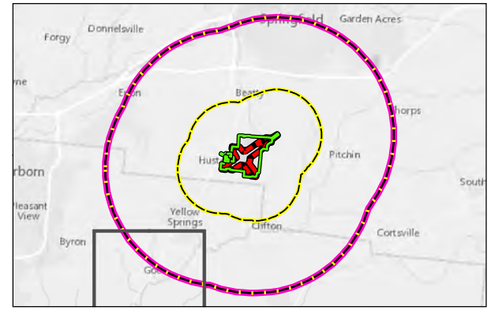
N

0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 9 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)



5-mile buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

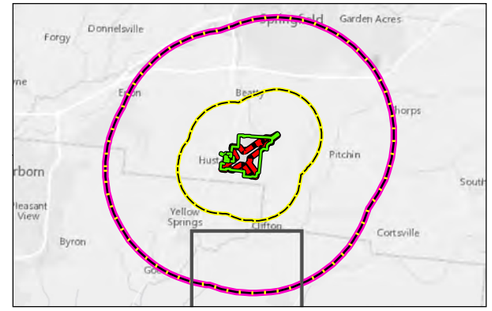
N

0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 10 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)



5-mile buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

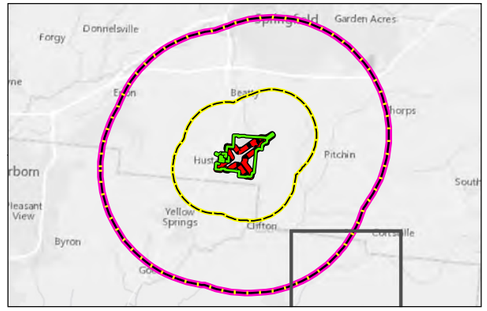
N

0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 11 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)



5-mile buffer*

Wetland

Pond/Lake

* Per AC150/5200-33A

Base: NWI 2014, Aerial photograph Clark County 2011, Greene County 2014

N

0 420 840 1260 1680 Meters

0 1400 2800 4200 5600 Feet

Figure 6 **Sheet 12 of 12**

Portions of the Clark and Greene counties, Ohio National Wetland Inventory (NWI) map (USFWS 2014 and 2011) showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters. (12 sheets)

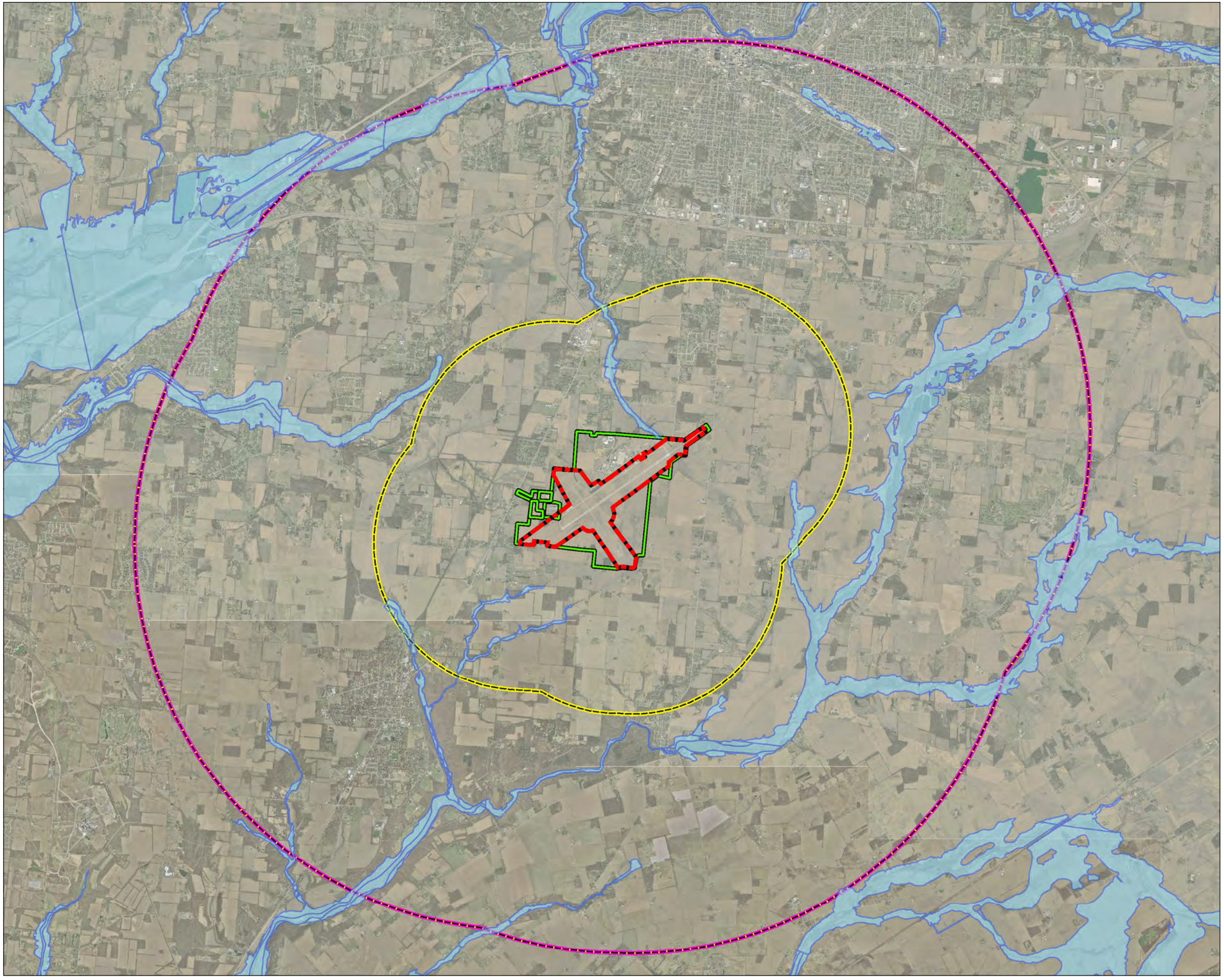


Figure 7

FEMA floodplain map showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters Land-use practices within the General Separation Criteria at the Springfield-Beckley Municipal Airport.

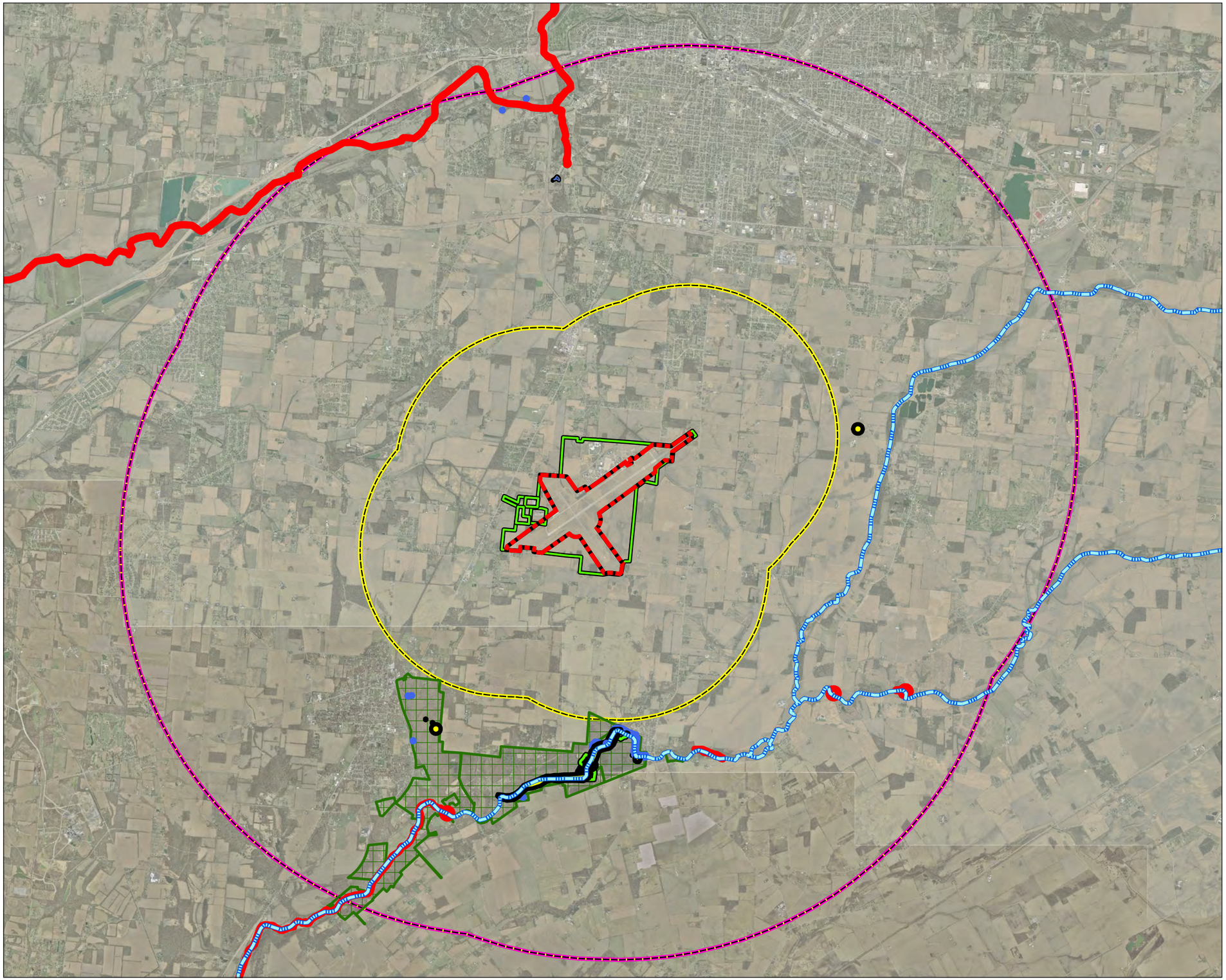


Figure 8

ODNR Resource Data within the showing the Springfield-Beckley Municipal Airport and the General Separation Criteria for hazardous wildlife attractants perimeters.

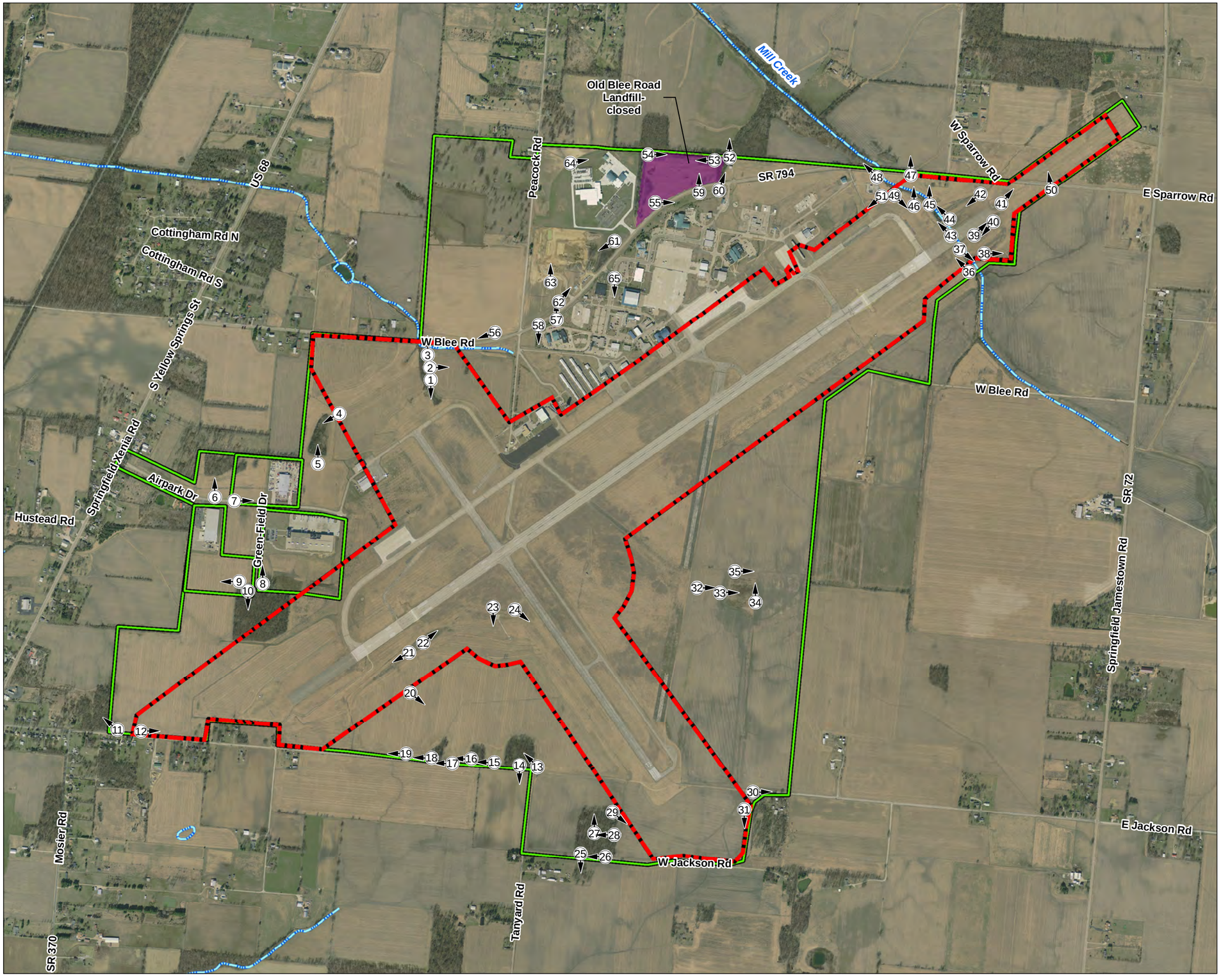


Figure 9

Aerial photograph showing the photograph locations at the Springfield-Beckley Municipal Airport.

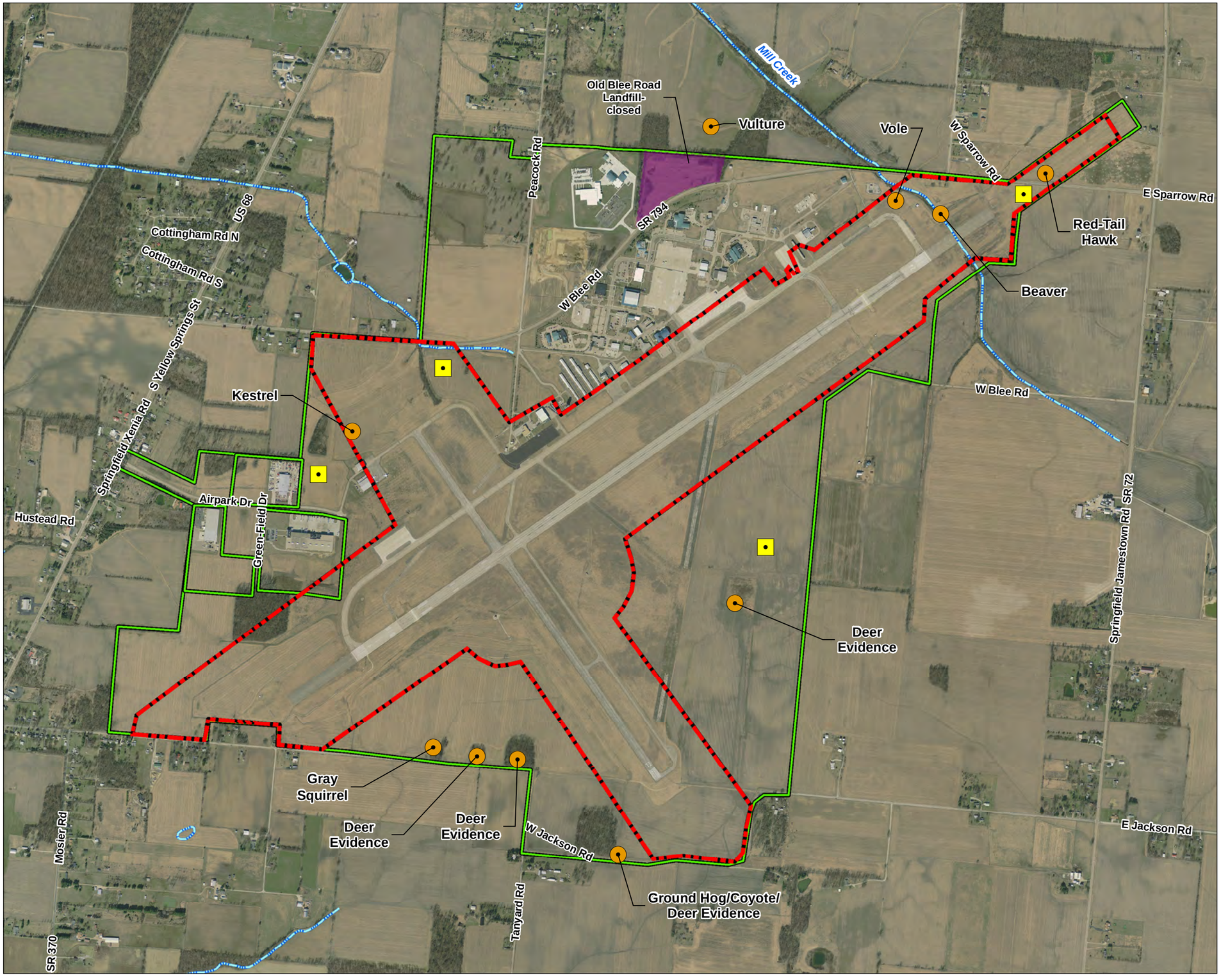


Figure 10

Location of Observed Wildlife at SGH during Wildlife Hazard Site Visit.

TABLES

Table 1. FAA Strike Record Data at the Springfield-Beckley Municipal Airport.

Incident Date	Operator	ATYPE	Type Eng	Species ID	Species	Damage	Cost Repairs	AMA	AMO	EMA	EMO	AC Class	AC Mass	# of Engines	REG	Time	Runway	Height	Speed	Phase_of_FLT	Other Specify	Effect	Birds Seen	Birds Struck	Remarks	AOS	Cost Other
8/13/2013	Business	DA-2000	D	UNKBS	Unknown bird - small	N		300	12	31	14	A	3	2	N71FE	930	24	20	120	Climb		None	2 to 10	2 to 10	# Struck not reported, Assume 2-10, Same as # seen		
7/7/2009	Military	Unknown		YH004	Horned lark	N										1000				Take-off run							0
11/4/2008	Military	Unknown		YH004	Horned lark	N										1000				Approach							0
10/14/2008	Military	Unknown		YH004	Horned lark	N										1045				Approach							0
8/19/2008	Military	Unknown		ZT001	Eastern meadowlark	N										1845				Landing							0
7/17/2008	Military	Unknown		UNKBM	Unknown bird - medium	N														Take-off run							0
12/18/2006	Military	F-16D		YH004	Horned lark	N		561				A				1100		500	250	Approach		None				0	0
9/22/2006	Military	F-16C		O2205	Mourning dove	N		561				A				1430		0	165	Take-off run						0	0
9/20/2006	Military	F-16C		YI	Swallows	N		561				A				1025		500	165	Approach						0	0
9/18/2006	Military	F-16D		YH004	Horned lark	N		561				A				1140		200	150	Approach						0	0
9/14/2006	Military	F-16C		YH004	Horned lark	N		561				A						0	165	Approach						0	0
8/26/2006	Military	F-16D		UNKBM	Unknown bird - medium	N		561				A				1445		300	175	Approach						0	0
8/25/2006	Military	F-16C		N5111	Killdeer	N		561				A				1040		500	165	Approach						0	0
8/23/2006	Military	F-16C		N5111	Killdeer	N		561				A				1530		0	135	Approach						0	0
8/22/2006	Military	F-16C		YI	Swallows	N		561				A				1430		0	150	Approach						0	0
8/8/2006	Military	F-16D		N5111	Killdeer	N		561				A				2220		0	150	Approach	Weapons/Missile Pod					0	0
8/1/2006	Military	F-16C		YI	Swallows	N		561				A				1500		0	150	Approach	Unknown					0	0
7/29/2006	Military	F-16D		YI	Swallows	N		561				A				1500		0	150	Approach	Unknown					0	0
7/18/2006	Military	F-16C		ZT001	Eastern meadowlark	N		561				A				930		0		Approach						0	0
10/15/2004	Military	HH-60G	F	O2205	Mourning dove	N						B	3	2		915				Take-off run		Aborted Take-off			Birdstrikes-Ingested engine-dmg 1st/2nd stg blades		
9/25/2004	Business	MERLIN IV	C	O2205	Mourning dove	S	87000	915	6	19	4	A	2	2	N427SP	640	6	0	115	Take-off run		Precautionary Landing	2 to 10	1	Mourning Doves roosting on runway during night. Runway was warmer than the night air. During T/O they woke up from light and noise and they flew in front of A/C. Ingested 1 or more in engine.	336	50000
7/22/2004	Military	B-52H		YI005	Barn swallow	N		148				A				1000				Take-off run		None					
7/22/2004	Military	C-130H		YI005	Barn swallow	N		561	12			A				1000				Take-off run		None					
7/16/2004	Military	C-17A		ZX310	Grasshopper sparrow	N		148				A				915		400		Take-off run		Precautionary Landing					
7/16/2004	Military	B-52H		YI005	Barn swallow	M?		148				A				1110		0		Landing Roll		None					
7/15/2004	Military	B-52H		YI005	Barn swallow	N		148				A				1250		0		Take-off run		Precautionary Landing					
7/15/2004	Military	B-52H		YI005	Barn swallow	N		148				A				1250		0		Take-off run		Precautionary Landing					
7/15/2004	Military	B-52H		YI005	Barn swallow	N		148				A				1300		10		Take-off run		Precautionary Landing					
6/30/2004	Military	KC-10A	D	K5102	Peregrine falcon	N		148		22	7	A	4	3		1502		0		Landing Roll		None					
5/6/2004	Military	C-40B		YL	Starlings	N						A				1318		0		Climb		None					
5/6/2004	Military	F-16D		YH004	Horned lark	N		561				A				1318		0		Climb		None					
10/2/2003	Business	LEARJET-31	D	1F11	Coyote	N		395	9	19	1	A	2	2	N124FX	830	24	0	100	Landing Roll		None		1	INSPN. NO DMG. COST FOR CLEANING $200	2	200

Table 1. FAA Strike Record Data at the Springfield-Beckley Municipal Airport.

Incident Date	Operator	ATYPE	Type Eng	Species ID	Species	Damage	Cost Repairs	AMA	AMO	EMA	EMO	AC Class	AC Mass	# of Engines	REG	Time	Runway	Height	Speed	Phase_of_FLT	Other Specify	Effect	Birds Seen	Birds Struck	Remarks	AOS	Cost Other
8/22/2003	Military	F-16D		YI005	Barn swallow	N		561				A			86-151	1040		0	150	Landing Roll		None	2 to 10	1			
5/8/2003	Military	F-16D		N5111	Killdeer	N		561				A			87-0373	1115				Take-off run		None		1	Remains found on runway and left main gear well.		
11/9/2002	Military	C-130H		UNKBM	Unknown bird - medium	N		561				A			78-0813	1300	24	0	105	Landing Roll		None	1	1	Not enough bird remains left on aircraft to collect sample.	0	
8/28/2002	Military	F-16C		YH004	Horned lark	N		561				A			86-364	1510		10	155	Landing Roll		None	2 to 10	1			
7/18/2002	Military	F-16D		YI010	Tree swallow	N		561				A			373	833		30	180	Climb		Precautionary Landing	2 to 10	2 to 10			
6/17/2002	Military	F-16D		T1002	Chimney swift	N		561				A			88-151	1500		100	155	Approach		None	1	1	Bird hit bottom side of raydome and nose landing gear.		
5/18/2002	Military	F-16C		YL	Starlings	N		561				A			86-315	1605		0	145	Landing Roll		None	2 to 10	1			
9/11/2000	Military	F-16C		ZT301	Common grackle	N		561				A			86-0373	1035		200	160	Approach							
9/2/2000	Military	F-16D		UNKBM	Unknown bird - medium	D	27700	561				A			86-0050	930		0	140	Take-off run		Aborted Take-off	2 to 10		Aborted takeoff, subsequent hot brake actions and left main wheel fire. Flames extinguished without further damage to aircraft.		
8/18/1999	Military	F-16C		YI005	Barn swallow	N		561				A				1055				Landing Roll					REMARKS - ; AIRCRAFT - F - 16 - C; IMPACT - ; Number of Birds (S, F, or Z) - Z		
7/28/1998	Military	F-16C		UNKBM	Unknown bird - medium	N		561				A			302					Landing Roll		None		1			
7/24/1998	Military	F-16C		UNKBM	Unknown bird - medium	N		561				A								Landing Roll		None		1			
7/9/1998	Military	F-16C		UNKBM	Unknown bird - medium	N		561				A			350					Landing Roll		None		1			
7/8/1998	Military	F-16C		UNKBM	Unknown bird - medium	N		561				A			86-245					Landing Roll		None		1			
6/27/1998	Military	F-16C		UNKBM	Unknown bird - medium	N		561				A								Landing Roll				1			
3/12/1998	Military	F-16C		UNKBM	Unknown bird - medium	N		561				A			86-327					Landing Roll		None		1			
7/30/1994	Military	F-16		YL	Starlings	N		561				A				1000		0	150	Take-off run			1	1	REMARKS - ; AIRCRAFT - F - 16 - ; IMPACT - RADOME; NUMBER OF BIRDS (S, F, or Z) - S		
4/19/1994	Military	F-16		UNKBM	Unknown bird - medium	N		561				A				1145		100	150	Climb			1	1	REMARKS - ; AIRCRAFT - F - 16 - ; IMPACT - NOSE, WHEEL STRUT; Number of Birds (S, F, or Z) - S		
1/8/1994	Military	F-16		UNKBM	Unknown bird - medium	N		561				A				1250		50	175	Climb			1	1	REMARKS - ; AIRCRAFT - F - 16 - ; IMPACT - CANOPY; Number of Birds (S, F, or Z) - S		
8/3/1993	Military	C-21A		UNKBM	Unknown bird - medium	E	2000					A				1140		0	150	Take-off run			1	1	REMARKS - BENT FAN BLADES WERE BLENDED; AIRCRAFT - C - 21 - ; IMPACT - NOSE, #2 ENGINE; Number of Birds (S, F, or Z) - S		

Table 1. FAA Strike Record Data at the Springfield-Beckley Municipal Airport.

Incident Date	Operator	ATYPE	Type Eng	Species ID	Species	Damage	Cost Repairs	AMA	AMO	EMA	EMO	AC Class	AC Mass	# of Engines	REG	Time	Runway	Height	Speed	Phase_of_FLT	Other Specify	Effect	Birds Seen	Birds Struck	Remarks	AOS	Cost Other
8/27/1992	Military	C-130	C	UNKBM	Unknown bird - medium	N		561				A	4	4		2030		1000	150	Approach			1	1	REMARKS - ; AIRCRAFT - C - 130 - ; IMPACT - RIGHT NOSE; Number of Birds (S, F, or Z) - S		
4/9/1992	Military	F-16		UNKBM	Unknown bird - medium	N		561				A				1033		200	180	Climb			2 to 10	2 to 10	REMARKS - MISHAP OCCURED AT CAPITAL AIRPORT.; AIRCRAFT - F - 16 - ; IMPACT - COMPRESSOR BLADES; Number of Birds (S, F, or Z) - F		

Table 2. FAA Ranking of 25 Species Groups as to Relative Hazard to Aircraft in AC 150/5200-33B.

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.[1]

Species group	Ranking by criteria			Composite ranking[2]	Relative hazard score[3]
	Damage[4]	Major damage[5]	Effect on flight[6]		
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
Herons	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

[1] 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.

[2] 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.

[3] 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.

[4] Aircraft incurred at least some damage (destroyed, substantial, minor, or unknown) from strike.

[5] 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.

[6] Aborted takeoff, engine shutdown, precautionary landing, or other.

Table 3. List of Endangered, Threatened, and Species of Special Concern in Ohio as of October 2016.

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

Federally Endangered, Threatened, Candidate Species, and Species of Concern in Ohio by County
October 2016

County	Species
Clark	Indiana bat (E), northern long-eared bat (T), rayed bean (E), eastern prairie fringed orchid (T), eastern massasauga (T), bald eagle (SC)
Greene	Indiana bat (E), northern long-eared bat (T), clubshell (E), rayed bean (E), snuffbox (E), eastern massasauga (T), bald eagle (SC)

APPENDIX A: LIST OF SPECIES OBSERVED DURING THE SITE VISIT AT SGH

Appendix A. Inventory of Species Observed or Signs of Presence* During the Wildlife Hazard Site Visit.		
Common Name	Scientific Name	Guild or Group
White-Tail Deer	*Odocoileus virginianus*	Mammal
Beaver	*Castor canadensis*	Mammal
Coyote	*Canis latrans*	Mammal
Groundhog	*Marmota monax*	Mammal
Vole	*Microtus pennsylvanicus*	Mammal
Gray Squirrel	*Sciurus carolinensis*	Mammal
American Robin	*Turdus migratorius*	Thrush
European Starling	*Sturnus vulgaris*	Blackbirds
Red-tailed Hawk	*Buteo jamaicensis*	Raptor
Turkey Vulture	*Cathartes aura*	Raptor
House Sparrow	*Passer domesticus*	Fringillids
American Kestrel	*Falco sparverius*	Raptor
Mourning Dove	*Zenaida macroura*	Columbid
Cedar Waxwing	*Bombycilla cedrorum*	Waxwing
American Crow	*Corvus brachyrhynchos*	Corvid
Common Snipe	*Capella gallinago*	Shorebird
Killdeer	*Charadrius vociferus*	Shorebird
Horned Lark	*Eremophila alpestris*	Alaudid
Meadow Lark	*Sturnella magna*	Icterid

Source: *Wildlife Hazard Site Visit, ASC Group, Inc. 2016.*
*Signs of Presence – Scat, Print, Hair, Den, or other markings.

APPENDIX B: AGENCY COORDINATION

Ohio Division of Wildlife
Raymond W. Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

September 23, 2016

Stuart Jennings
ASC Group, Inc.
800 Freeway Dr. North
Columbus, OH 43229

Dear Mr. Jennings,

Per your request, I have e-mailed you a set of shapefiles with our Natural Heritage Program data for the Springfield-Beckley Municipal Airport FAA Wildlife Hazard Assessment project, including a five mile radius, in Green Township, Clark County, Ohio. This data will not be published or distributed beyond the scope of the project description on the data request form.

Records included in the data layer may be for rare and endangered plants and animals, geologic features, high quality plant communities and animal assemblages. Fields included are scientific and common names, state and federal statuses, as well as managed area and date of the most recent observation. State and federal statuses are defined as: E = endangered, T = threatened, P = potentially threatened, SC = species of concern, SI = special interest, A = recently added to inventory with a state status not yet determined, X = presumed extirpated from Ohio, FE = federal endangered, FT = federal threatened, FC = federal candidate species, and FSC = federal species of concern.

A layer showing state designated scenic rivers is also included. If this project is located within 1000 feet of a state designated scenic river, the approval of the ODNR Director may be required in accordance with Ohio Revised Code section 1547.82. Please contact Scenic Rivers Program Manager Bob Gable at 614-265-6814 for further information.

The managed areas layer includes state, federal and county lands, as well as areas owned by non-profits, museums and other entities. Managed areas are sites under formal protection for their natural resources. Please be aware that this layer may not be complete and we are continually updating it as new information becomes available to us.

The conservation sites layer shows areas deemed by the Natural Heritage Program to be high quality sites not currently under formal protection. They may, for example, harbor one or more rare species, be an outstanding example of a plant community, or have geologically significant features, etc. These sites may be in private ownership and our listing of them does not imply permission for access.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

Debbie Woischke
Ohio Natural Heritage Program

From: Finfera, Jennifer
To: Stuart Jennings
Subject: Springfield-Beckley Municipal Airport
Date: Tuesday, October 4, 2016 12:52:45 PM

October 4, 2016

TAILS: 03E15000-2017-TA-0001

Re: Springfield-Beckley Municipal Airport, Clark County, Ohio

Dear Mr. Jennings:

This email is in response to your September 20, 2016 request for site-specific review, pursuant to section 7 of the Endangered Species Act of 1973, as amended, regarding the proposed FAA Wildlife Hazard Assessment for the Springfield-Beckley Municipal Airport. The airport is located in Clark County, Ohio.

There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following local wildlife/natural areas are located within the southern portion of the 5-mile perimeter of the Air Operations Area (AOA): Clifton Reserve (Greene County Parks), Glen Helen Nature Preserve (Antioch College), Clifton Gorge State Nature Preserve, and John Bryan State Park.

MIGRATORY BIRD COMMENTS: The project lies within the range of the **bald eagle** (*Haliaeetus leucocephalus*), a species protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d) and the Migratory Bird Treaty Act (16 U.S.C. 703-712). No bald eagle nests or nesting areas are known from within the 5-mile AOA radius. Suitable habitat for nesting may occur within this area but we do not have any nesting records from within it.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). We have records of summer captures of the Indiana bat within the western area of the 5-mile AOA radius. We also have records of southern captures of the northern long-eared bat within the eastern boundary of the 5-mile AOA radius. There are no hibernacula records for either species within the 10-mile AOA radius.

We recommend that trees clearing be avoided if possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. If any in-stream work is planned, a permit from the Army Corps of Engineers may be required. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

The following mussels have been documented within the southern portion of the 5-mile AOA radius: the **snuffbox** (*Epioblasma triquetra*), **clubshell** (*Pleurobema clava*), and **rayed bean** (*Villosa fabalis*).

The northern area of the 5-mile AOA radius contains potential habitat for the **eastern massasauga** (*Sistrurus catenatus*). The eastern massasauga rattlesnake has recently been listed as a threatened species under the Endangered Species Act. The final rule listing the eastern massasauga appears in the September 30, 2016, *Federal Register*. The rule has an effective date of October 31, 2016.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of

1969 and the Service's Mitigation Policy.

If you have any questions regarding our response or if you need additional information, please contact me.

Sincerely,

--
Jenny Finfera
Wildlife Biologist
Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230

Phone: 614-416-8993 ext.13
Fax: 614-416-8994

APPENDIX C: FAA STRIKE DATA AND REPORT ANALYSIS FOR SGH

Airport Springfield Beckley Year 2013

Month	No. of pyrotechnics fired	No. of times distress calls deployed	No. of runway sweeps to clear birds or other wildlife	No. of wildlife removed[a]	Miles driven by wildlife patrol	No. of reported strikes[b]	No. of carcasses found (no strike reported)[b]	Comments
Jan	1	0	1	0	10	0	0	
Feb	0	0	0	0	10	0	0	
Mar	0	0	0	0	10	0	0	
Apr	2	0	0	0	10	0	0	Ducks @ 24 ft/ch
May	1	0	0	0	10	0	0	Coyote
Jun	2	0	0	0	10	0	0	
Jul	0	0	0	1	10	0	1	Found on 24
Aug	0	0	0	0	10	0	0	
Sep	2	0	1	0	10	0	0	Ducks @ 24 ft/ch
Oct	4	0	0	0	10	0	0	Pigeons @ T Hangars
Nov	0	0	0	0	10	0	0	
Dec	0	0	0	0	10	0	0	
Total								

[a] Provide separate list by species and method.

[b] Provide separate list by species.

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley | Page of

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
10/13/23	Charles Coffoose	58	S	Cloudy	

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
10:00	T Hangars	Pigeon	0	4	0	Fired 4 pyros

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-135

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley | Page 1 of 1

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
1-18-13	Charles VanHoose	34°	NW 5	Cloudy	

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
8:15	Clayton Ditch	Ducks				Pyro

WEATHER
SU = sunny CL = cloudy FG = fog
PS = partly sunny RN = rain
PC = partly cloudy SN = snow/sleet

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-136

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley | Page 1 of 1

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
1-23-13	Charles Wallace	38°	S/E 10	Sunny	Ben Norris

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
10:35	Intersection Rwy 24/15	Coyote	0	1	0	Chased to South east of Airfield

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-137

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley

Page 1 of 1

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
2/21/13	Charles VanHoose	35	S/E 5-	Sunny	Ben Norris

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
8:15	Runway 33	Coyote	0	1		Went into woods @ S/W end of Airfield.

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-138

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley | Page 1 of 1

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
2/22/13	Charles VanHoose				Ben Norris

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
10:30	Southside Rwy 24	coyote	0	2		Chased off airfield @ detention pond. Set Snares
3:20	Rwy 33 South	coyote	0	1		Chased into woods S/w side of airfield

WEATHER
SU = sunny CL = cloudy FG = fog
PS = partly sunny RN = rain
PC = partly cloudy SN = snow/sleet

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-139

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME: Springfield Beckley | Page 1 of 1

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
4/16/13	Charles Vallose	48	S/W	Clear	

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
9:00hrs	27 Appch	Duck	0	2		Fired Pyro

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-140

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley

Page 1 of 1

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
4/19/13	Charles Whitacre	42°	S/W	Cloudy	Ben Norris

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
8:15Am	24 Approach	Duck	0	1		Pyro

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-141

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley | Page of

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
5/7/13	Charles Valhoost	48°	S/E	Cloudy	

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
8:20	South Field	Coyote	0	2		Chase in Vehicle
3:15	west of Rwy 15	Coyote	0	1		Gave chase

WEATHER
SU = sunny CL = cloudy FG = fog
PS = partly sunny RN = rain
PC = partly cloudy SN = snow/sleet

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-142

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley | Page of

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
5/15/13	Charles LaHoose	52°	Calm	Cloudy	Ben Morris

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
8:00	~~Intersection~~ 15-24	Coyote	0	1		Gave chase
						Set Traps

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley

Page of

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
5/30/13	Charles Calhoun	52	S	Sunny	Drew Morris

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
10:40	west field of 15	Coyote	0	1		Chase & fire pyro

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-144

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley

Page 1 of 1

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
5/28/13	Charles Vanhoose	47°	Calm	Cloudy	Ben Morris

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
9:15	West Fence	Coyote	1			Caught in trap. Destroyed

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-145

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley | Page of

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
6/5/13	Ben Nowris	62°	S	Sunny	

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
10:30	Runway 6 Approach	Deer	0	1		Coyote chase Pyro

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-146

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley | Page of

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
6/20/13	Charles Coultoose	64°	S/E	Scattered	

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
7:30	VOR	Deer	0	1		Coyote Chase. Pyro

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-147

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield Beckley | Page 1 of 1

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
7/9/13	Charles Vanhoose	72	South	Clear	Ron Morris

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
8:15	Runway 27	Bird				Found on Runway

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

G-148

AIRPORT WILDLIFE ACTIVITY SHEET

AIRPORT NAME Springfield BECKLEY

Date	Name of Observer	Temperature	Wind Direction/Speed	Weather Condition (See Codes Below)	Other Observers Present
9-10-13	Charles Vallaste	72	S	Sunny	Ben Norris

Time	Observation/Grid Location	Wildlife Species	Animals Killed	Animals Harassed	GPS Coord. Lat./Long.	Comments/Actions Taken
9:15	24 Appch	Ducks	0	0		Fired 2 pyros. Ducks in Clayton Ditch
9:30	Runway 24	Swallows	1	0		Made runway sweep To clear birds

WEATHER
SU = sunny
PS = partly sunny
PC = partly cloudy
CL = cloudy
RN = rain
SN = snow/sleet
FG = fog

COVER TYPE
ORW = on/over runway/taxiway
OAP = on/over airport property

WILDLIFE SERVICES
TRAINING CERTIFICATE
WILDLIFE HAZARD IDENTIFICATION AND MANAGEMENT AT AIRPORTS

USDA
APHIS

United States Department of Agriculture

Animal and Plant Health Inspection Service

Wildlife Services

This is to acknowledge that

Benjamin Norris

has satisfied all Wildlife Services training requirements for identifying and managing wildlife hazards at airports.

Certified Wildlife Services Instructor

06/26/2013
Date

Wildlife Services

Protecting People | Protecting Agriculture | Protecting Wildlife

G-150

WILDLIFE SERVICES
TRAINING CERTIFICATE
WILDLIFE HAZARD IDENTIFICATION AND MANAGEMENT AT AIRPORTS

USDA
APHIS

United States Department of Agriculture

Animal and Plant Health Inspection Service

Wildlife Services

This is to acknowledge that:

Charles Vanhoose

has satisfied all Wildlife Services training requirements for identifying and managing wildlife hazards at airports.

Certified Wildlife Services Instructor

6/5/12
Date

W Wildlife Services

Protecting People | Protecting Agriculture | Protecting Wildlife

G-151

APPENDIX D: ADVISORY CIRCULAR 150/5200-33B HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS

U.S. Department
of Transportation

**Federal Aviation
Administration**

Advisory Circular

Subject: HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS	**Date:** 8/28/2007	**AC No:** 150/5200-33B
	Initiated by: AAS-300	**Change:**

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.

DAVID L. BENNETT
Director, Office of Airport Safety
and Standards

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.[1]

Species group	Ranking by criteria			Composite ranking[2]	Relative hazard score[3]
	Damage[4]	Major damage[5]	Effect on flight[6]		
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
Herons	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

[1] 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.

[2] 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.

[3] 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.

[4] Aircraft incurred at least some damage (destroyed, substantial, minor, or unknown) from strike.

[5] 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.

[6] Aborted takeoff, engine shutdown, precautionary landing, or other.

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Table of Contents

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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.)

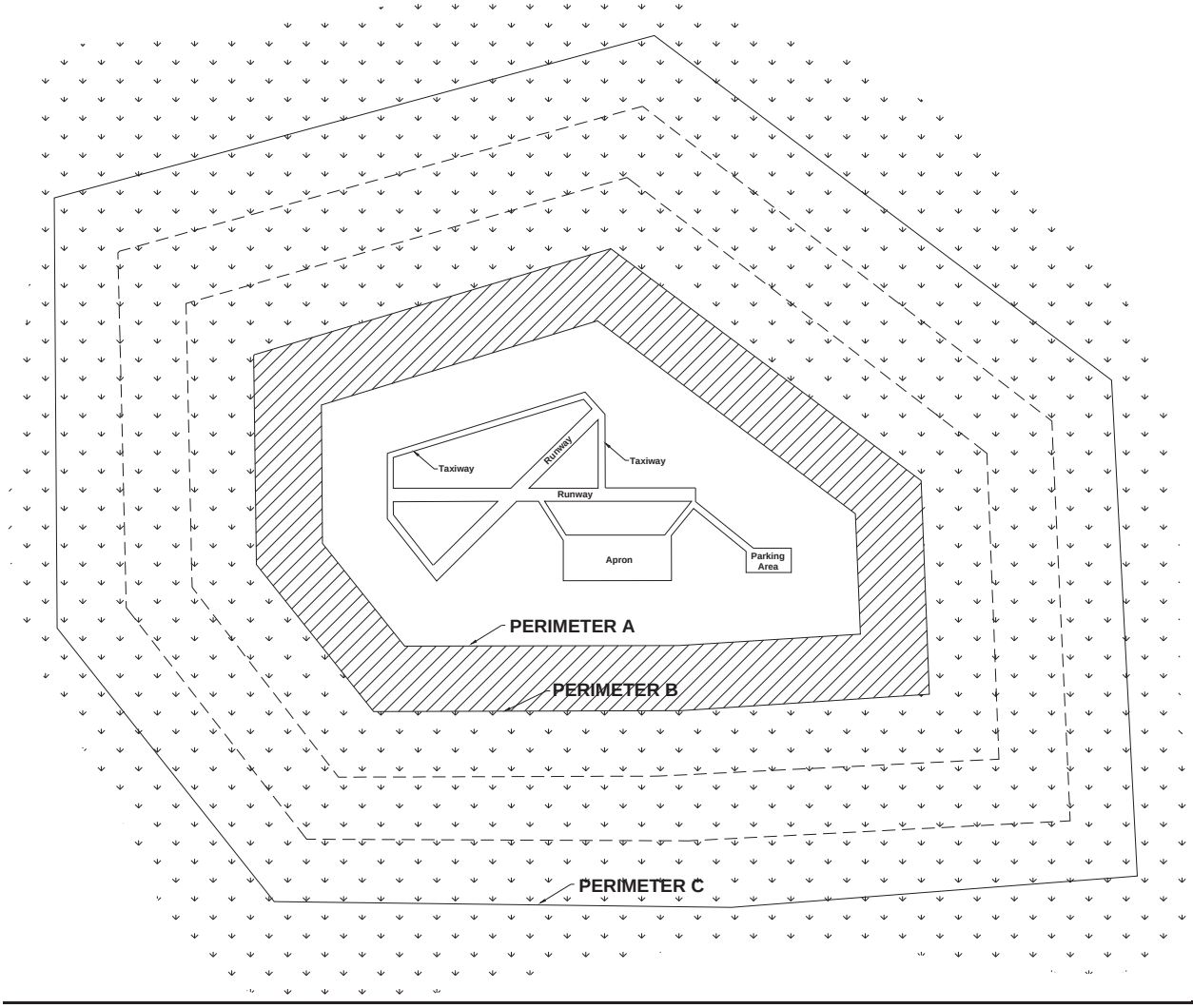
The basis for the separation criteria contained in this section can be found in existing FAA regulations. The separation distances are based on (1) flight patterns of piston-powered aircraft and turbine-powered aircraft, (2) the altitude at which most strikes happen (78 percent occur under 1,000 feet 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/.)

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 used 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 form 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.

APPENDIX E: GUIDELINES FOR USING EFFIGIES TO DISPERSE NUISANCE VULTURE ROOSTS

Guidelines For Using Effigies to Disperse Nuisance Vulture Roosts

John S. Humphrey, Eric, A. Tillman, Michael L. Avery
USDA-APHIS-Wildlife Services-National Wildlife Research Center, Florida Field Station, 2820 East University Avenue, Gainesville, FL 32641

WHAT IS AN EFFIGY?
An effigy as defined in Webster's dictionary, is a "full or partial representation..." of a person or object. For dispersing a vulture roost, an effigy can be a fresh carcass, a taxidermic preparation, or an artificial likeness.

OVERVIEW
These guidelines were developed principally for wooded roosts, but the same principles apply for roosts in towers and other sites. Furthermore, these procedures might also be applicable to nuisance situations caused by daytime vulture activity. **Regardless of the situation or roost habitat, proper placement is the single most important aspect in successfully using an effigy to disperse vultures**.

Important factors to consider when deciding where to hang an effigy include:

- locations with the highest bird activity or use, often indicated by an accumulation of feces and feathers;
- visibility of the effigy to birds coming into the roost;
- prominent branches or support structures; and
- accessibility to the site.

THE EFFIGY
Once a bird has been acquired under a legal permit, it should be determined whether a long term or temporary placement is needed. If long term placement or multiple usage is required, it is advised that the bird be prepared by a taxidermist and then treated with a spray on preservative, such as Scotch Guard for leather. The posture of the prepared bird should resemble that of a dead bird hung by its feet with one or both wings hanging down in a outstretched manner. For short term placement (up to 3 months, depending on weather conditions) and if odor is not a concern, then an intact carcass can be used, under legal permit.

RECOMMENDED MATERIALS
The materials that are needed for hanging effigies in the roost can be found at most outdoor or general merchandise stores. The basic materials include:

- a bow and fishing arrow (fiberglass or other heavy arrow with line attachment point and field point);
- archery fishing set-up with rod, reel, and 20-40# line;
- spool of 1/8" - 1/4" effigy attachment line (nylon or other synthetic weather resistant);
- heavy duty fishing type snap swivels;
- a small smooth weight (e. g. sinker) or sand bag that can be used to adjust the line.

PLACING THE EFFIGY ATTACHMENT LINE
In wooded roosts, the attachment line can be readily placed using a compound bow fitted with a commercially available fishing set-up (such as Zebco 808 reel mounded on a small rod attached to the stabilizer hole and a fishing arrow). Alternatively, it is possible to use a standard fishing rod with fishing arrow (fiberglass field point arrow with a small hole near the nock for line attachment), however this requires a second person to hold the rod and ensure

that the line does not become tangled. It is recommended that 20-lb monofilament line be used due to its strength and flexibility.

Choose a branch or attachment point that is high and prominent. For best results, the effigy should be highly visible to vultures entering the roost. **The space directly below this point should be free of branches or other obstructions that could entangle the effigy during heavy winds.** For example, from an attachment point 5 feet out on a branch the effigy should hang down no more than 5 feet to prevent it becoming tangled in the trunk of the tree.

Shoot the arrow over the attachment branch. Attempt to limit the number of branches the line goes over by putting tension on the line after it passes over the attachment branch. Remove the arrow and secure the attachment line to the fishing line. Pull the effigy attachment line over the branch, remove the fishing line, and attach a heavy duty snap swivel to the effigy attachment line. If this line has gone over multiple branches, it may be necessary to pull back the line from all but the main attachment branch. This can be done by attaching a smooth-edged weight to the end of the line closest to the excess branches, pulling the weight over the branches until it reaches the effigy attachment branch, and then lowering the weight.

For lower attachment points, it may be possible to use a throwing bag slung over the branch or attachment point. For towers or other structures, a professional climber or other authorized maintenance person should install the effigy from a prominent point.

ATTACHING THE EFFIGY

To attach the effigy, take 2 - 3 feet of the same material as the attachment line, fold it in half and tie a small loop at the midpoint. This is the point at which the attachment line and snap swivel are connected. Next, tie the ends of the looped line to the legs of the effigy just above the feet, making sure to wrap the line twice around the leg before tying a secure knot. The knotted loop ensures that in the event one of the leg knots comes loose, the effigy will remain in place.

PUTTING THE EFFIGY TO WORK

Raising the effigy into place may require two people depending on the weight of the bird, the height of the attachment point, and the number of branches the line contacts. It often helps to get the effigy moving by having one person push up on it while a second person pulls on the other end of the line.

Raise the effigy as high as possible while evaluating the factors of visibility, entanglement, and accessibility to perching vultures. It is advisable to back away from the roost and look at it from different angles to determine if the height and prominence of the effigy is satisfactory. Finally, tie the trailing end of the attachment line to a secure location that minimizes potential interference by pedestrian, wildlife, or other traffic. Wrap and secure the excess line so that it will be available at a later time should the effigy need to be lowered for maintenance or replacement. Avoid tying to places (such as along a fence top, horizontal branch, or other movement corridor) where chewing damage by rodents is likely. The effigy should now be visible to incoming birds, hanging upside down with its wings outstretched, and ready to disperse the roost.

Revised, March 2010

(Mention of brand names does not constitute endorsement by the USDA. For technical questions regarding effigy use and installation please contact John S. Humphrey at the USDA National Wildlife Research Center's Florida Field Station - 352-375-2229; email: *john.s.humphrey@aphis.usda.gov*)

APPENDIX F: BLEE ROAD AND CRABILL ROAD LANDFILL CLOSURE INFORMATION

Ordinance Read To Require Bags For Garbage Use

File
Clark Co.
Solid Waste

NEW CARLISLE — The first reading of a 10-page ordinance requiring the use of plastic garbage bags was made at Monday night's village council meeting.

Mayor Charles J. Keller said the ordinance will require that only the bags, supplied by the firm with the contract to collect trash, would be used as containers. They will be placed at the curb on specified days.

He said he believes New Carlisle will be the first community in the state to require the plastic containers. "They are considering it in some other places, but have not made the move," he said.

The firm making collections in New Carlisle is Delaney and Simpson, with homeowners billed privately by them.

In other business, the council approved a final plan for Section 4 of Silver Lake Estates, which will be held by council for 30 days before filing with the County Recorder, to allow for study and possible objections.

Southwest District Office
136 South Ludlow Street
Dayton, Ohio 45402

May 4, 1970

Re: Clark County
Solid Waste

William J. Habeeb, M.D.
Health Commissioner
Clark County Health Department
301 South Fountain Avenue
Springfield, Ohio 45506

Attn: William Marshall, Sanitarian

Dear Dr. Habeeb:

On April 14, 1970, Mr. William Marshall, of your department and I visited your licensed solid waste disposal sites and discussed the status of your solid waste disposal program.

The remainder of this report letter is an outline of our findings and recommendations to guide you in meeting the 1970 solid waste disposal criteria for program approval, but, more importantly to improve the sanitation at the sites:

1. Four (4) known solid waste disposal sites have been licensed. (Delaney Disposal, Clark County Disposal Site, Springfield Municipal Landfill and B. G. Danus Landfill).

2. A completed "operational procedure plan" should be on file in the office of the board of health for each solid waste disposal site in the health district which does not have approved engineering plans. One copy of this "operational procedure plan" should be forwarded to this office. (Copies of the "operational procedure plan" were left with Mr. Marshall during this review).

3. Springfield Municipal Landfill -

   On the day of our visit to this site, it was evident that the waste was not receiving a daily layer of cover material. There had been a manpower shortage due to illness and they had experienced equipment breakdowns. The

department should determine for itself that the improper operation is only temporary and that provisions have been made to have adequate personnel and equipment to carry out the proper operation at the site at all times.

The lack of proper operation was adding greatly to the problem of blowing paper. When properly operated the systematic placement of refuse, restricted to a small unloading area and coordinated with spreading and compacting will minimize the scattering of refuse.

4. Clark County Disposal Site -

Open burning of tree limbs and brush was being conducted on this site the day of our inspection. To my knowledge, no approval has been given for any type of burning on the site, by the board of health nor by the director of health. Burning of any type creates air pollution and adversely affects public acceptance of the operation and proper location of future sanitary landfill sites.

Other municipalities and communities use a "chipper" to reduce limbs, brush and other small pieces of lumber to small wood chips which are more readily landfilled.

A large stack of old tires had accumulated on this site. These tires should be removed or placed in a low area on the site and covered. Incoming tires should be worked into the fill area with other refuse.

Through the years a large amount of salvage material has accumulated on this site. The large accumulation of this material (mostly scrap metal objects) certainly adds to the vector problems and it's unsightliness is detrimental to public acceptance of the operation. A program should be established for the removal of the vast amounts of salvage materials which have accumulated on this site.

5. Delaney Disposal -

This operation was generally satisfactory except for a pile of appliances which were uncovered. At landfills, with heavy equipment, such as this one, such items can generally be handled routinely with other refuse; however, a special provision such as a trench or excavated pit may be necessary to incorporate large bulky items, such as water heaters, large tires, some demolition waste and large tree stumps and trunks.

6. B. B. Danus Landfill -

This operation handles industrial wastes only, at this time, and was operating in a satisfactory manner at the time of this inspection.

You and Mr. Marshall are to be commended for the progress realized in the disposal of solid waste in your health district. Based on this progress we feel certain that all of the solid waste disposal sites in Clark County will achieve more complete compliance to the sanitary landfill operation requirements of the solid waste regulations.

We will be making periodic visits to your department to determine the progress being achieved in the solid waste disposal program. If we can be of assistance in any way, please contact this office.

Sincerely yours,

M. Joe Moore
District Solid Waste Consultant

MJM/ka

SOLID WASTE STATUS

Date 4/14/70 Health Department CLARK COUNTY

I. County Commissioners

1. Have special sanitary districts been established? How many? (Locate on Map) — NO

2. Are fees regulated by commissioners? If yes, list maximums.

3. Are commissioners involved in solid waste disposal sites?

   a. Own land and operate site with county personnel.
   b. Own land and lease operation on bid or other.
   c. Lease land and lease operation on bid or other.
   d. Other (Explain)

II. Health Department

1. Have regulations been established for license fee?

   a. Commercial $ 500.00
   b. Governmental $ NONE
   c. Other $

2. Are there storage and collection regulations? YES

3. Are refuse haulers licensed fees charged? YES $ 10.00

4. Are there transfer station regulations? NO

5. If yes, what are the fees? NO

6. How many sites were licensed for 1969?

Facilities	Sites
	5

7. How many sites are licensed for current year?

Facilities	Sites
	4

8. Have sites and facilities been located on county map? Yes

9. How many transfer stations in district? NONE

10. What are charges at sanitary landfill or incinerators?

    per ton $
    per cubic yard $

11. Is any change in number of sites and facilities anticipated? NO
    If yes, explain.

NOTES ON SOLID WASTE PROGRAM - CLARK COUNTY

January 6, 1970

Sites

Land disposal sites in operation:

1. Delaney Disposal
2. Clark County Disposal Site
3. Springfield Municipal Landfill (new site)
4. B. G. Danus Landfill (industrial site)

Land disposal sites that have been closed:

1. Russell Cotter Dump
2. Russell Cotter teepee burner
3. Springfield Municipal Landfill (old site)
4. South Charleston Dump

Garbage and Refuse Districts

Garbage and Refuse Districts have not been established by the county commissioners and are not being considered at this time.

Plans on New Sites

Detailed engineering plans for the following sites have been submitted and approved:

1. Springfield Municipal site in Springfield Township
2. B. G. Danus industrial disposal site in German Township

General

The county sanitarian, Mr. William Marshall, states that to his knowledge there are no committees or groups studying the future needs of waste disposal in Clark County but he is confident that future problems will be solved as needed.

Joseph Speakman
Sanitarian
Solid Wastes Section

cc: Southwest District Office

CERTIFICATION OF SOLID WASTE FACILITIES AND SITES

IN

Clark County HEALTH DISTRICT TO DIRECTOR OF HEALTH

LAW

Section 3734.07 (B)

Within thirty days after the issuance of a license, the board of health shall certify to the director that the solid waste facility or site has been inspected and is in satisfactory compliance with sections 3734.01 to 3734.11, inclusive, of the Revised Code. Each board of health shall provide the director with such other information as he may require from time to time.

CERTIFICATION

This is to certify that the 3 (number) solid waste facilities and sites on the attached list have been inspected and are in satisfactory compliance with sections 3734.01 to 3734.11, inclusive, of the Revised Code and that the licenses were issued from Dec. 10 (date) to Dec. 15, 1969 (date)

January 22, 1970
(date)

William J. Haberb M.D.
Health Commissioner

THIS REPORT TO BE SENT TO DIRECTOR OF HEALTH WITHIN THIRTY DAYS AFTER THE LICENSE HAS BEEN ISSUED.

Ohio Department of Health

JAN 23 1970

OHIO DEPARTMENT OF HEALTH
CERTIFICATION OF SOLID WASTE DISPOSAL FACILITIES AND SITES

HEALTH DISTRICT Clark County

LICENSED FOR YEAR 1970

License Number	Name of Site or Facility	Address of site or facility	*Type	Volume Handled	Amount of License Fee
1	City of Springfield	Crabill Road, Springfield, Ohio	1	410 Cu yds/day	Fee exempt
2	Delaney & Simpson	128 N Main St., New Carlisle, Ohio	1	150 Cu yds/day	$500.00
3	North Sanitary Landfill	Snyder-Domer Rd, west of Tremont City	1	100-150 Cu yds/day	500.00

*Indicate type by number 1. Sanitary landfill 2. Incinerator Facility
3. Composting

G-191

CERTIFICATION OF SOLID WASTE FACILITIES AND SITES

IN

Clark County HEALTH DISTRICT TO DIRECTOR OF HEALTH

LAW

Section 3734.07 (B)

Within thirty days after the issuance of a license, the board of health shall certify to the director that the solid waste facility or site has been inspected and is in satisfactory compliance with sections 3734.01 to 3734.11, inclusive, of the Revised Code. Each board of health shall provide the director with such other information as he may require from time to time.

CERTIFICATION

This is to certify that the *1 (number) solid waste facilities and sites on the attached list have been inspected and are in satisfactory compliance with sections 3734.01 to 3734.11, inclusive, of the Revised Code and that the licenses were issued from Dec.15,1969 (date) to _____ (date).

January 22, 1970
(date)

William J. Haberl M.D.
Health Commissioner

THIS REPORT TO BE SENT TO DIRECTOR OF HEALTH WITHIN THIRTY DAYS AFTER THE LICENSE HAS BEEN ISSUED.

Ohio Department of Health

*This has been in operation since October 1969 but fee wasn't until December 15, 1969.

JAN 23 1970

OHIO DEPARTMENT OF HEALTH
CERTIFICATION OF SOLID WASTE DISPOSAL FACILITIES AND SITES

HEALTH DISTRICT Clark County

LICENSED FOR YEAR 1970

License Number	Name of Site or Facility	Address of site or facility	*TYPE	Volume Handled	Amount of License Fee
1	City of Springfield	Grabill Road, Springfield, Ohio	1	410 Cu yds/day	Fee exempt
2	Delaney & Simpson	128 N Main St., New Carlisle, Ohio	1	150 Cu yds/day	$500.00
3	North Sanitary Landfill	Snyder-Domer Rd, west of Tremont City	1	100-150 Cu yds/day	500.00

*Indicate type by number 1. Sanitary landfill 2. Incinerator Facility 3. Composting

G-193

OHIO DEPARTMENT OF HEALTH
CERTIFICATION OF SOLID WASTE DISPOSAL FACILITIES AND SITES

HEALTH DISTRICT Clark County

LICENSED FOR YEAR 1969.

License Number	Name of Site or Facility	Address of site or facility	*TYPE	Volume Handled	Amount of License Fee
6	North Sanitary La ndfill	City Snyder-Domer Rd., West of Tremont	1	100-150 Cu yds/day	$500.00

*Indicate type by number 1. Sanitary landfill 2. Incinerator Facility 3. Composting

JAN 23 1970

File Clark Solid Waste

CERTIFICATION OF SOLID WASTE FACILITIES AND SITES

IN

Clark County HEALTH DISTRICT TO DIRECTOR OF HEALTH

LAW

Section 3734.07 (B)

Within thirty days after the issuance of a license, the board of health shall certify to the director that the solid waste facility or site has been inspected and is in satisfactory compliance with sections 3734.01 to 3734.11, inclusive, of the Revised Code. Each board of health shall provide the director with such other information as he may require from time to time.

CERTIFICATION

This is to certify that the 1 (number) solid waste facilities and sites on the attached list have been inspected and are in satisfactory compliance with sections 3734.01 to 3734.11, inclusive, of the Revised Code and that the licenses were issued from Jan.2,1970 (date) to _____ (date).

January 22, 1970
(date)

William J. Hakeel MD
Health Commissioner

THIS REPORT TO BE SENT TO DIRECTOR OF HEALTH WITHIN THIRTY DAYS AFTER THE LICENSE HAS BEEN ISSUED.

Ohio Department of Health

JAN 23 1970

OHIO DEPARTMENT OF HEALTH
CERTIFICATION OF SOLID WASTE DISPOSAL FACILITIES AND SITES

HEALTH DISTRICT Clark County LICENSED FOR YEAR 1970

License Number	Name of Site or Facility	Address of site or facility	*TYPE	Volume Handled	Amount of License Fee
4	Clark County Landfill	1200 Cold Springs Rd., Springfield	1	130 Cu yds/day	$500.00

*Indicate type by number 1. Sanitary landfill 2. Incinerator Facility
3. Composting

STATE OF OHIO
ADJUTANT GENERAL'S DEPARTMENT
HEADQUARTERS 178TH TACTICAL FIGHTER GROUP (TAC)
MUNICIPAL AIRPORT, SPRINGFIELD, OHIO 45501

14 February 1969

Mr. Alfred P. Strozdas
City Manager's Office
Springfield, Ohio 45502

Dear Mr. Strozdas,

I had intended to write you sooner concerning the sanitary land fill operation just concluded opposite our main gate. Too often we are prone to criticize and somewhat reluctant to praise. However, in this case, I think Mr. Hughes and his personnel should be complimented on the efficient and tidy operation they conducted during the past two years. The sanitary land fill operation was handled discreetly and with a minimum of interference to the traffic and appearance of the general area. The city workers took great pains to make the operation as attractive as possible.

I was personally most pleased and I am sure that the residents in this area were pretty well satisfied with the entire operation. Please convey the Air National Guards' appreciation to Mr. Hughes and all the personnel that contributed to the success of the operation.

During your tour of our facilities last Friday, 7 February, I mentioned the request we had in to the city of Springfield for exclusive use of additional land area along the southwest boundary of our existing complex. I gave you the impression that no action had been taken by the city. This was not true. In checking further, I found that the city had granted this request and it is reflected in a supplemental agreement - modification 5, dated 20 Sep 1968, to our present lease. Therefore, we now have the additional land area necessary for the future expansion of our facilities, as I briefed you during that tour.

I appreciate your taking time to visit the Air National Guard and also your interest in one of your "tenants". Come back and see us any time or give me a call if I can be of service. Thank you.

ANDREW C. LACY, Colonel, Ohio ANG
Base Detachment Commander

10-25-68

Southwest District Office
136 S. Ludlow Street
Dayton, Ohio 45402

Re: Clark County
Green Township
Solid Waste
(Springfield)

October 25, 1968

Mr. Fred M. Hughes
Director of Public Works
Municipal Building
Springfield, Ohio 45502

Dear Mr. Hughes:

The plans for the existing landfill facility which is located opposite to the municipal airport on State Route 784 between State Route 72 and State Route 68 were received in this office on September 26, 1968.

In looking through our past correspondence and in discussing the situation with Mr. Donald Day, Engineer-in-Charge, Solid Waste Program, I find that the plans for this facility were approved on January 30, 1967, by the Ohio Department of Health. The approval was granted under section 3707.42 as the solid waste law had not become an act at that time.

The approval under section 3707.42 could be construed as approval under the sections 3734.01 and 3734.11 and 3734.99 which became effective September 17, 1968.

Very truly yours,

Arthur T. Knauer
District Sanitary Engineer

ATK:ijw
encl
cc: William Habeeb, M.D.
Health Commissioner

C O PY

January 12, 1967

Mr. Donald E. Day, Engineer in Charge
Solid Wastes Section
General Engineering Unit
Ohio Department of Health
450 E. Town St.
Columbus, Ohio 43216

IN RE: Proposed Landfill Site
for City of Springfield
at Municipal Airport

Dear Mr. Day:

We were pleased to receive your letter of January 10, 1967 in which you expressed tentative approval of the proposed landfill site north of the Springfield Municipal Airport.

For your review and consideration, we submit herein and herewith the information requested in Items 1 thru 10 in your letter.

1. The locations of the proposed trenches are shown on the attached plan. The trenches will parallel the north property line beginning approx. 25' from that line. The trenches will have a top width of 40' with tapers on the sides dependent on the angle of repose of the earth. Cell widths at the surface will be 5'.

2. On site roads are shown on the plan and will be constructed of gravel base with surface treatment.

3. Show fencing and gates will be erected along the southerly property line to control access to the area and to help prevent after-hour dumping.

4. The final cover of the trenches will be graded to drain to the drainage ditch.

5. A cross section of a typical lift is shown on the plan.

6. On site structures will consist of a gate house near the westerly property line and two equipment and storage sheds in locations shown on the plan. A wash rack will be constructed with a debris collector. The debris is to be disposed of at the end of each day.

7. Lighting for the area will be provided by the operation of diesel-electric generators. A well with casing has been drilled and is ready for operation at the location shown on the plan. The well was drilled to a depth of 74'.

8. This proposed landfill site is located in Greene Township which has no zoning.

9. In the operation of this trench-type sanitary landfill, it is proposed to excavate the trench nearest the north property line first. The excavated earth will be stockpiled over the location of the proposed trench adjacent on the south. This stockpiling will create an effective screen of the dumping operations for motorists on SR 794 and for personnel at the airport. The stockpiled earth will be used for face cover at the end of each days operation and the remainder for daily top cover. Alternate trenches will be excavated using the intermediate trench area for stockpiling. After the stockpiled earth has been used for cover, the intermediate trenches will be excavated and filled. Stockpiling will always be to the south of the open trench in order to maintain the screen.

10. Herewith are three prints of our topo plan of the area on which we have super-imposed the proposed final contours.

An Attendant will be on duty during the daily hours that the landfill is open.

Consistent with our policy at previous landfill operations, a local pest control firm will be contracted to perform monthly rodent control operations.

After landfill operations are completed, the entire area will be graded and seeded to prevent erosion.

We have had considerable experience in operating sanitary landfills, and we are confident that we can make this a highly satisfactory project.

Thanking you for your valuable help in this matter, I remain

Yours truly,

/s/ Fred M. Hughes
Director of Public Works

FMH:dar
CC: City Manager
Director of Health

COPY

STATE OF OHIO
DEPARTMENT OF HEALTH

January 10, 1967

Mr. Fred M. Hughes, Director
Public Works Department
City Building
Springfield, Ohio

On December 29, 1966, a site investigation for a proposed Springfield sanitary landfill was conducted by this writer. Mr. Russell Stein, geologist with the Ohio Division of Water, Mr. Wayne Johnson with the Springfield City Health Department, Mr. Hartford Speakman, City Sanitation Supervisor and you were present during the investigation.

The proposed 17.3 acre site is located on the north side of S.R. 794 and has been referred to as the Municipal Airport site.

Based on information obtained on December 29, 1966, and information recently forwarded by you (concerning R. E. Lower well drilling report) the site appears to be quite adequate for a trench-type sanitary landfill. The trenches should not be excavated below elevation 1021 (see topographical map of Proposed Landfill Area at Airport, January, 1967). This would allow for a blue clay seal of approximately nine feet between trench bottom and the sand and gravel water bearing formation.

For final Ohio Department of Health approval of this site and operation it is requested that the following information be submitted in triplicate:

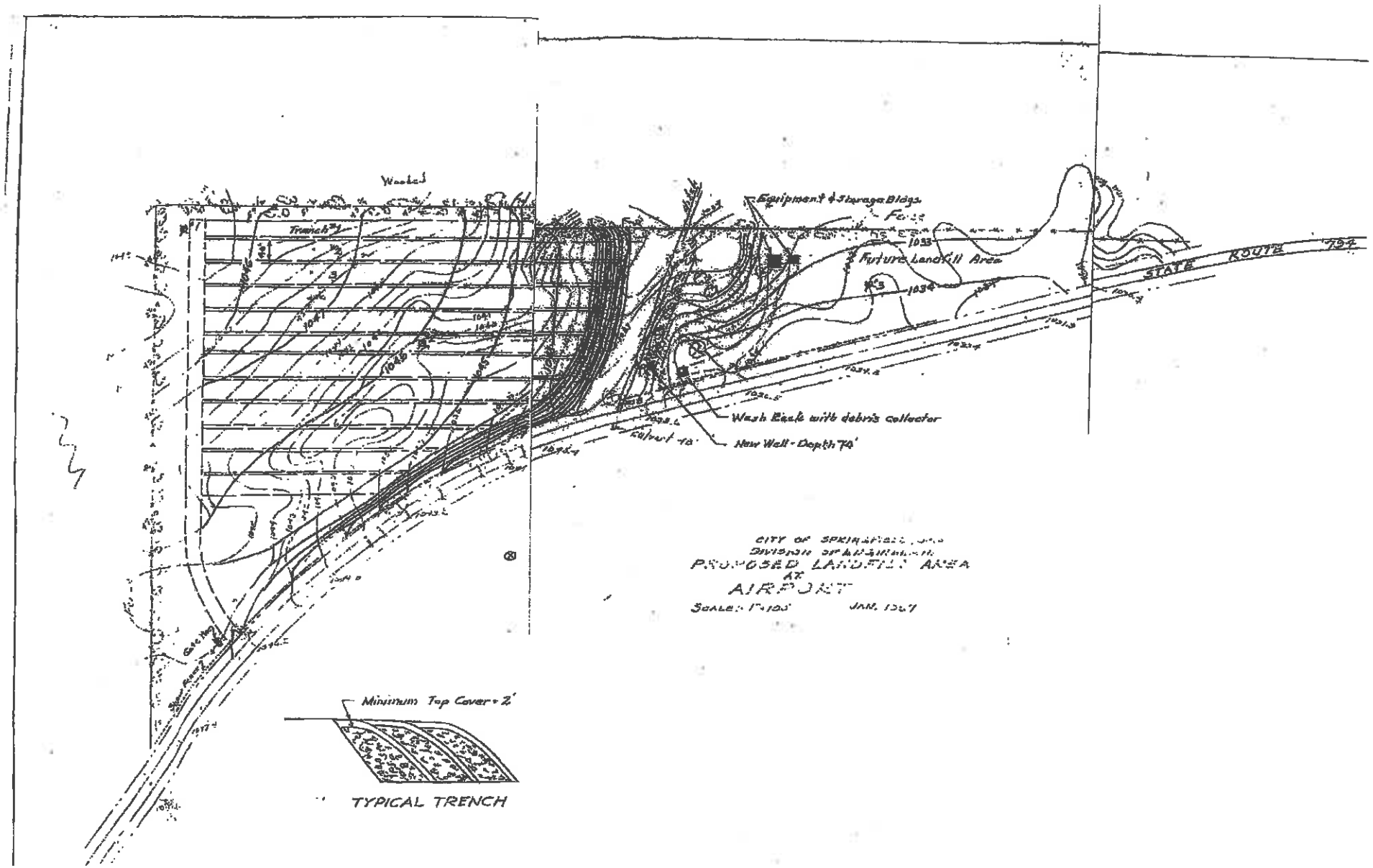
1. Location of proposed trenches
2. On-site roads
3. Fencing and gates
4. Method of drainage control
5. Cross-section of a typical lift
6. On-site structures.
7. Existing and proposed utilities
8. Statement from zoning and/or regional planning officials indicating no opposition to a sanitary landfill
9. Pertinent information on operation and development of the landfill
10. Final contours (preferably superimposed on a map showing present contours - Jan. 1967 topo. would be quite adequate for base map).

You and other responsible officials are to be commended for the orderly approach you are taking in the matter of Springfield's solid waste disposal program.

Yours truly,

D. E. Day
Engineer-in-Charge
Solid Wastes Section
General Engineering Unit

cc Springfield City
Health Department
cc Mr. Russell Stein
cc City Manager, Springfield
cc Southwest District Office


Wooded
Trench
Equipment & Storage Bldgs.
Fence
1033
Future Landfill Area
1034
STATE ROUTE 754
Wash Rack with debris collector
New Well - Depth 70'
Culvert
CITY OF SPRINGFIELD, OHIO
DIVISION OF AERONAUTICS
PROPOSED LANDFILL AREA
AT
AIRPORT
SCALE: 1"=100'
JAN. 1967
Minimum Top Cover = 2'
TYPICAL TRENCH

Clark County
Combined
Health District

Report on the former SPRINGFIELD CITY LANDFILL (Blee Road Landfill) 1251 W. Blee Road

by
Anne Kaup-Fett, R.S., M.S.
Environmental Health
Solid Waste Sanitarian

October 24, 2005

Subsided area on cap of former landfill showing discolored soil
(photo taken September 9, 2005 by representative of CCCHD)

What is a DERR site?

The Ohio EPA Division of Emergency and Remedial Response (DERR) was organized to investigate and, when possible, oversee the cleanup of unregulated contaminated sites in Ohio. DERR produces a Master Sites List (MSL) of sites where there is evidence of, or it is suspected that, waste management has resulted in the contamination of air, water, or soil; and there is a confirmed or potential threat to human health or the environment. These sites may be operating or abandoned industrial sites, contaminated or potentially contaminated public water supplies with the source of contamination undiscovered, or other types of locations. It is important to note that not all sites on the MSL list have confirmed contamination, and that the MSL list may not be complete.

Is the former Springfield City Landfill, also known as Blee Road Landfill, a DERR site?

The former Springfield City Landfill is not on the DERR MSL list.

Location

The former Springfield City Landfill property is located in Green Township, approximately 3 miles south-southeast of the corporation limits of the City of Springfield. The coordinates are Latitude 39° 51' 06" N and Longitude 83° 50' 18" W. It is located on the north side of Blee Road, across from the Springfield – Beckley Municipal Airport. Figure 1 shows the location of the landfill in relation to the City of Springfield. It is located on a portion of parcel 11-05-000-011. This portion is approximately 18.26 acres in size, and bounded by a wooded area to the west; Blee Road to the south; agricultural property to the north; and a small stream (that appears to be a tributary of Mill Creek in the Mill Creek Watershed) to the east. This stream separates the former landfill area from a current garage/storage area.

The former landfill is located within one mile of approximately seventy (70) residential properties to the east, south, and west; and the airport to the south. Figure 2 shows the location of the former landfill in relation to nearby residential property and the airport.

Ownership of the Landfill

The former landfill is currently owned by the City of Springfield. The property was deeded to the City of Springfield in 1944 by Earl A. & Helen Tener.

History of Landfill Activities

An October 25, 1968 Ohio Department of Health (ODH) letter indicated that the facility had been approved as a landfill on January 30, 1967, based upon plans received by the ODH on September 26, 1968. It is not known, however, if the property was used as a dump location prior to that date. A 1994 Phase I Environmental site Assessment of the site by Springfield Environmental indicated that this area had been used until approximately 1985 for land application of sludge from the Springfield wastewater treatment plant.

No records have been found which describe the types of items disposed of at the landfill, but the type of waste was probably residential and municipal wastes from the City of Springfield. There are no records to indicate that any liquid or hazardous wastes were accepted. Figure 3 shows the proposed landfill area as drawn by the Division of Engineering for the City of Springfield.

History of Inspections

1994 Phase I Assessment

The former landfill property was assessed in 1994 by representatives of Springfield Environmental, as part of a Phase I Environmental Site Assessment for the City of Springfield, in order to develop the property to the south known as Airpark Ohio. The assessment concluded that there were several areas of concern:

1. Fill material (soil, concrete, asphalt, wood chips, and gravel) had been dumped along the western border of the tract. The source of this material was not identified, and it was noted that the material may have come from a contaminated site. The possible contaminated site was not identified.
2. A pit had been dug in the northwest corner of the tract. This pit contained solid waste and a dead animal. It was noted that this pit posed a health concern and should be covered with soil.
3. A vegetated area existed near the pit. It was noted that this area contained piles of soil and other materials (two of which were covered with tarps).
4. A vegetated area existed in the northwest portion of the tract. It was noted that this area contained mounds of soil, gravel, and cement; metal items; a water heater; two 55-gallon drums (both of which were unlabelled and contained unidentified materials); and several 10-gallon containers.
5. A 6-inch diameter metal well casing was identified on the east side of the creek, approximately 20-30 feet north of Blee Road. The report indicated that this casing enclosed an abandoned well.
6. A wooded area existed along the northern margin of the tract. The report indicated that a round metal container (possibly a 55-gallon drum) was partially buried in this area.

A Phase II Environmental Assessment was recommended for the tract. It is not known if a Phase II Environmental Assessment was conducted.

Health Department Inspections

From 2002 until 2005, the Clark County Combined Health District (Health District) inspected the former landfill as part of regular monitoring of all known closed dumps and landfills in Clark County. These inspections noted the presence of possible leachate outbreak areas on the top and southeastern slopes of the landfill; piles of clean hard fill-type materials; small accumulations solid wastes and construction and demolition debris (C & DD); and a hole containing dead animals:

- On April 19, 2004 and April 30, 2004, representatives of the Health District and the City of Springfield inspected the former landfill property in response to a report of a leachate outbreak; open dumping of solid waste and C & DD materials; and City of Springfield employees digging a hole. Several issues of concern were seen during the inspection. These issues are listed below and their locations are shown on Figure 4.
  1. A dead animal was observed near the access road, at the western side of the former landfill. An open pit containing a dead animal was observed at the northeastern end of the access road that cuts across the northern end of the former landfill. The representative of the City of Springfield indicated that the pit was one of several that had been dug by City of Springfield employees over the years to serve as burial pits for dead animals collected in the city. It was indicated during the inspection that animals were supposed to be placed into the pits and that lime was supposed to be placed on the animals to quicken decomposition. No lime was seen on either dead animal.
  2. Several piles of junk wood, metal (pieces of metal and 5-gallon buckets), scrap tires, and numerous plastic trash containers were seen. One pile included a junk mattress.
  3. Several barrels were seen in the underbrush at the north edge of the property. The barrels were not closely inspected for contents or spills.
  4. One barrel was seen on the property, on its side near the north portion of the access road. It appeared to be filled with a white powdery material.
  5. An area of rusty red leachate outbreak was seen on the cap of the former landfill, in several subsided areas. It was indicated that the Health District would contact the Ohio EPA DERR program for guidance on testing the potential leachate from this area.
  6. Several piles of clean hard fill, gravel, asphalt, and soil were seen on the former landfill property.

- On May 25, 2004, the City of Springfield contacted the Health District with a plan to mitigate the issues raised during the April inspections. The City indicated that it intended to continue using a pit on the site of the landfill for dead animal disposal, but intended to place lime on the bodies; intended to remove

solid waste items in Fall 2004, when the vegetation died down; intended to examine the barrels on-site in November 2004 and dispose of them properly; had evaluated one of the barrels on-site for content, identified it as lime, and disposed of it at the city service center; and wanted to see the results of leachate testing.

- On May 28, 2005, the Ohio EPA DERR program indicated that there were no current plans to sample the former Springfield City Landfill, and suggested that the Health District consider a limited sampling event to check the leachate on-site. The Health District assessed the costs for a limited sampling event and chose a modified Toxicity Characteristic Leaching Procedure (TCLP) that included several heavy metals, iron, pH, and polychlorinated biphenyls (PCB's).

- On September 28, 2005, the Health District inspected the site as part of yearly monitoring and noted that almost all of the conditions noted in 2004 still existed on the site. Several solid waste items appeared to have been removed from the property and no dead animals were noted outside of the burial pit. However, no lime appeared to have been placed on the dead bodies in the pit; solid waste, scrap tires, and C & DD materials were still present in the underbrush; barrels were still present on the site; and numerous piles of clean hard fill, gravel, and bricks were still present on the property. A sample of leachate and discolored soil was taken from one of several subsided areas at the top of the former landfill.

Environmental concerns at the former Springfield City Landfill

Explosive Gas

Landfill gas (LFG) is produced within landfills because of biological and chemical decomposition of the wastes placed into the landfill. The composition of LFG can vary greatly depending on the types and amounts of waste; the stage of decomposition, oxygen availability; moisture level; rainfall infiltration; pH; organic quantities and types in the waste; and microbe availability. Whether or not the landfill gas can be emitted into the atmosphere depends upon the age of the solid waste; geological and geographical conditions; landfill design; and management practices. LFG components (approximately 116 different compounds) typically include:

- Methane (~50%)
- Carbon dioxide (~50%)
- Non-methane organic compounds, including volatile organic compounds (VOCs) (<5%)
- Water vapor (<1%)
- Inorganic compounds (like nitrogen and hydrogen) (<1%)

The primary health concerns are that LFG may contribute to air-quality issues such as smog and ozone formation, and that explosive components of LFG (such as methane) may migrate off-site to neighboring basements or other enclosed structures, posing an explosion hazard for neighboring property owners. There are documented instances of houses and businesses damaged or destroyed when accumulations of explosive gas were ignited by pilot lights and other ignition sources.

Ohio Administrative Code (OAC) 3745-27-12 states, in pertinent part, that the owner or operator, subsequent owner, lessee, or other person who has control of land on which a closed landfill is located shall submit an explosive gas monitoring plan to the Ohio EPA if the facility was licensed as a landfill AND if the facility ceased acceptance of waste after July 1, 1970 or prior to June 1, 1994 AND if the facility is situated such that a residence or other occupied structure is located within 1000 horizontal feet from emplaced waste. In 2003, the Ohio EPA determined that the former Springfield City Landfill was not required to have an explosive gas plan - it had been licensed and there are several occupied structures within 1000 feet of waste placement on the property south of Blee Road, BUT it had ceased

acceptance of waste before July 1, 1970. The need for explosive gas monitoring may change as development continues in the vicinity. No measurements of explosive gas have been taken on the site.

Groundwater

There are no records of groundwater sampling at this location. However, a 6-inch diameter metal well casing was identified on the east side of the creek, approximately 20-30 feet north of Blee Road, during the Phase I Environmental Assessment. The report indicated that this casing enclosed an abandoned well. Figure 5 shows the well casing.

OAC 3701-28-07 requires, in pertinent part, that all wells not being used for obtaining ground water or for determining the quality, quantity, or level of ground water, be either permanently abandoned or maintained in a manner to prevent ground water contamination. The rule requires that water wells to be permanently abandoned be completely filled with grout in order to seal the aquifer. There are no records of the abandonment of this well. It is not known if this well poses a threat of future groundwater contamination at the site.

Private Well

Health District records of private water system sampling for residential properties near this location show no contaminants of concern.

Public Water System Wells

Ohio EPA records of public water system sampling for the nearby airport near this location show no contaminants of concern.

Barrels

As noted above, the presence of barrels on site, which contain or did contain unknown materials may be a source of contamination on the site. Figure 6 shows one of the barrels.

Solid Waste

As noted above, solid wastes, including scrap tires, have been noted on the site for several years and are currently present on the site. Figure 7 shows one of the piles of solid wastes.

Leachate

On September 28, 2005, a leachate sample was collected from the discolored soil and water in one of the subsided areas on the cap at the southeast portion of the landfill. Figure 8 shows this area. Table 1 lists the parameters checked and the test results. Several heavy metals are elevated above USEPA maximum contaminant levels (MCLs).

Clean Hard Fill Materials

As noted above, piles of clean hard fill, gravel, and other fill-type materials are located on the property. The 1994 Phase I Assessment indicated that one or more of these piles might be contaminated. Figure 9 shows these piles.

Animal Burial Activities

As noted above, pits for the burial of dead animals have been dug on the site for several years. Figure 10 shows the pit and animal remains. No lime was seen on the bodies on September 28, 2005 and noticeable odors were present. Also, the pit is approximately 8-10 feet deep, reaching below any cap that may have been placed over former landfill areas.

The Ohio EPA requires prior notification for activities that may disturb a former solid waste facility. OAC 3701-27-13 (also known as "Rule 13") requires, in pertinent part, that any person wishing to engage in filling, grading, excavating, building, drilling, or mining on land where a solid waste facility was operated obtain prior approval from the Ohio EPA. Attachment B describes this rule.

Recent Developments at the former Springfield City Landfill

No current CCCHD, Ohio EPA DERR, or other regulatory activities are known to be scheduled on the site.

Board of Health Concerns

The primary concern is the presence of leachate on-site that appears to be contaminated with heavy metals above the MCL. Secondary concerns include the presence of a possibly improperly abandoned groundwater well; the continued presence of clean hard fill-like materials and solid wastes; and the continued presence of barrels with unknown contents. Activities of concern include stockpiling of materials on-site and digging of holes in which to bury dead animals. It is recommended that the following actions be taken:

1. Disposal of dead animals should be discontinued at the site until it is determined if the digging encourages infiltration of rainwater into the waste placement AND if it violates Ohio EPA regulations (Rule 13 Authorization).
2. All solid wastes and C & DD material should be removed from the site.
3. All barrels should be assessed and removed from the site.
4. All piles of clean hard fill, gravel, and other materials should be assessed for content and any contaminated materials should be removed from the site.
5. The on-site well should be checked to ensure that it was properly abandoned. If not, it should be.
6. The area of leachate should be further assessed to determine if it poses a serious environmental threat. The pH was at the low end of the accepted 6.5 – 8.5 Federal Limits. Arsenic, cadmium, and chromium were measured above the Maximum Contaminant Levels (MCLs) set by the USEPA. Iron was measured above the Secondary Maximum Contaminant Level (SMCL) set by the USEPA.

A letter will be written to the City of Springfield, summarizing the above concerns. The OEPA DERR program will be contacted about possible retesting of the soils in the leachate area.

No Board of Health action is proposed at this time.

Figure 1. Location of City of Springfield and the former Springfield City Landfill.

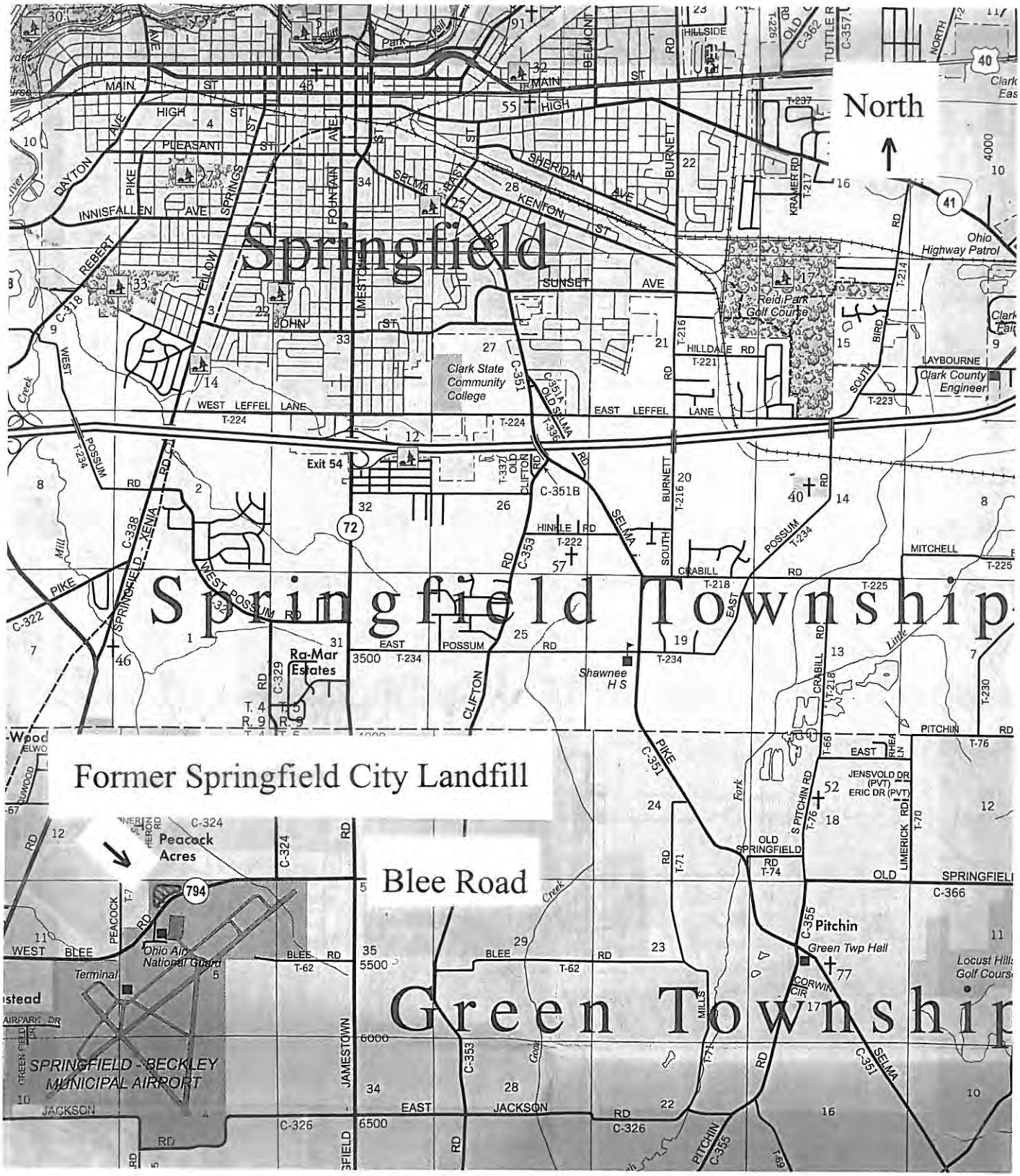


Figure 2. **Location of the former Springfield City Landfill, nearby Residential Properties, and Springfield – Beckley Municipal Airport.**

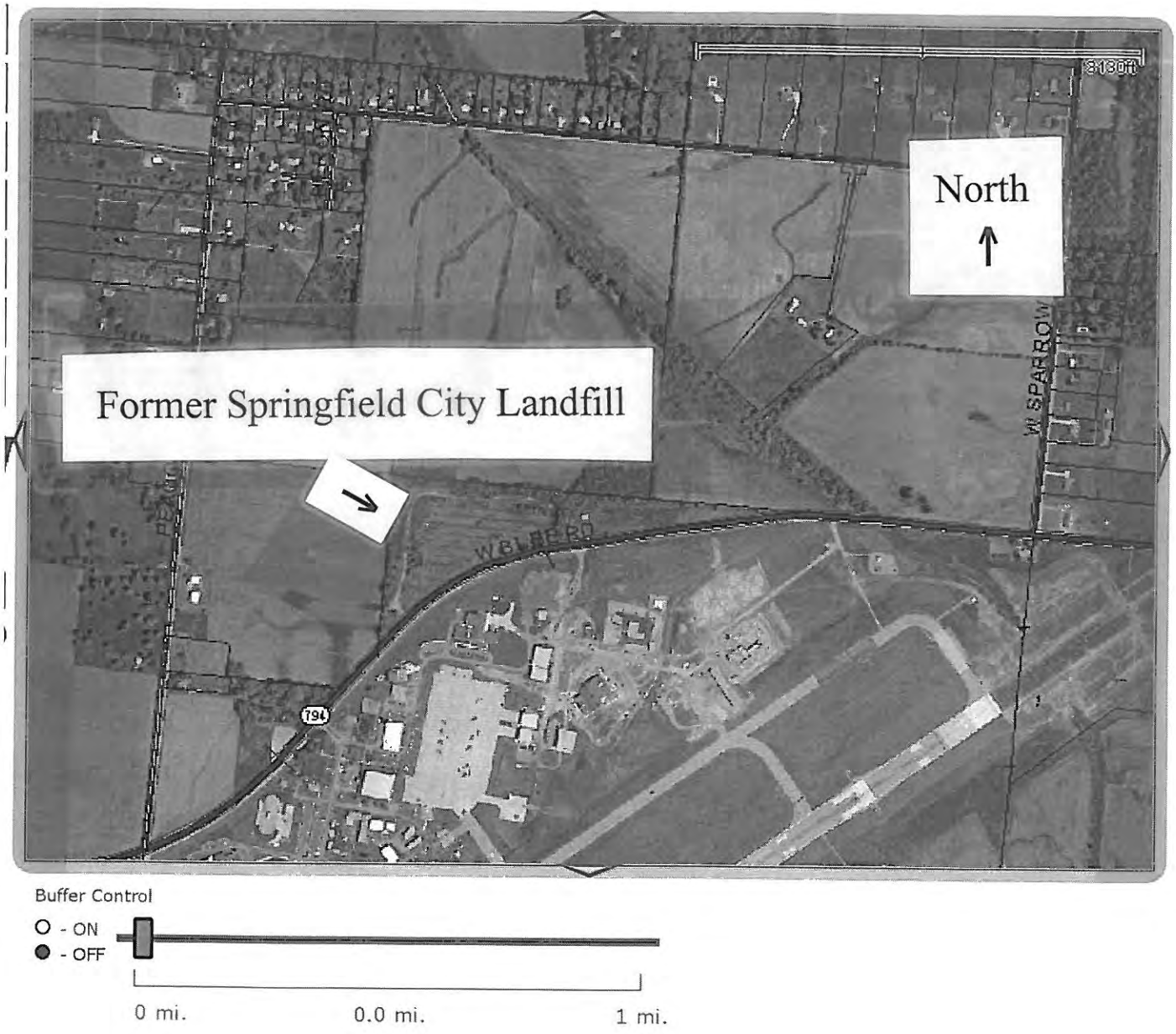


Figure 3. **Proposed Landfill Area at the Airport, as drawn by Division of Engineering, City of Springfield.**

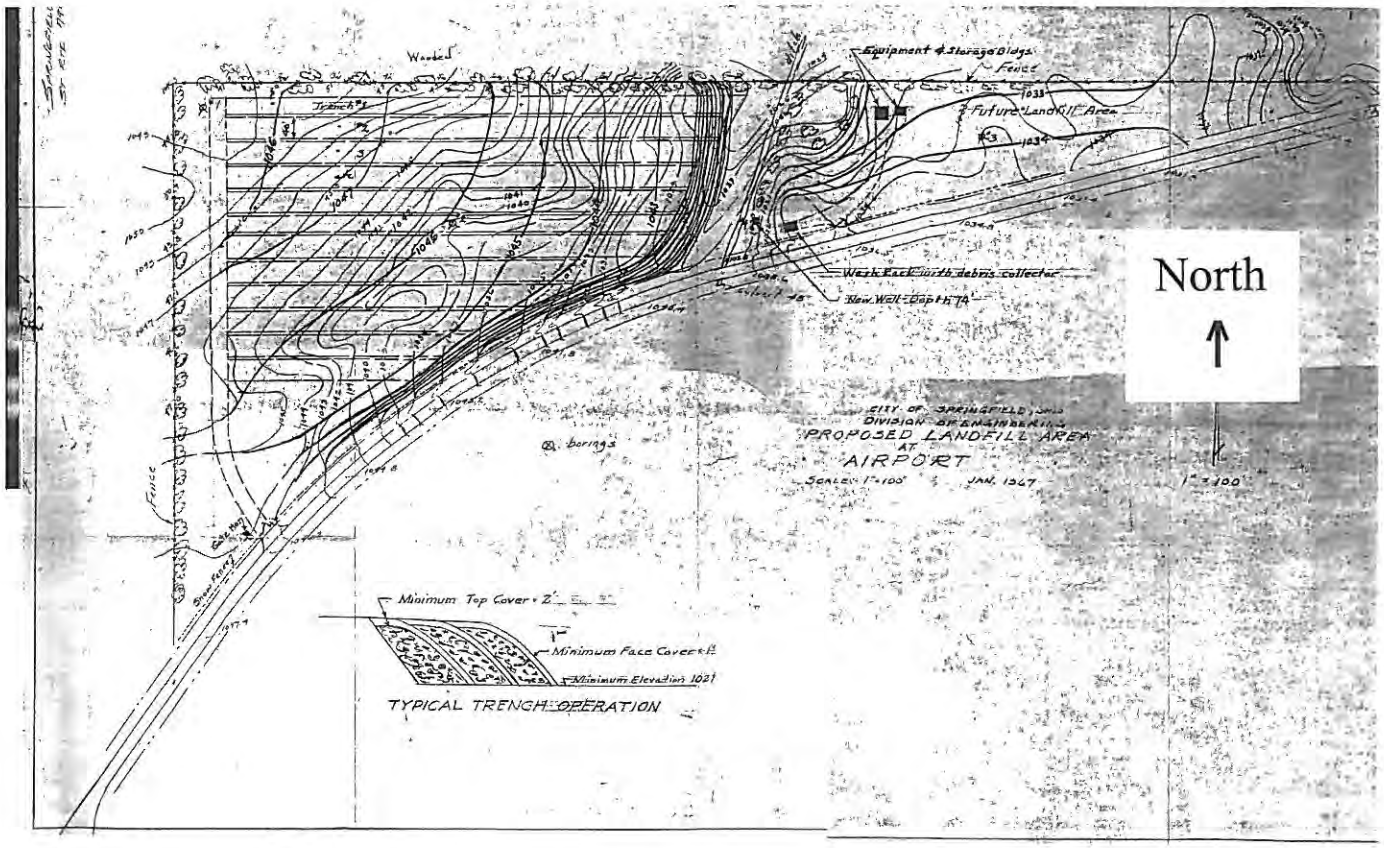


Figure 4. Locations of Issues of Concern during April 2004 Inspections.

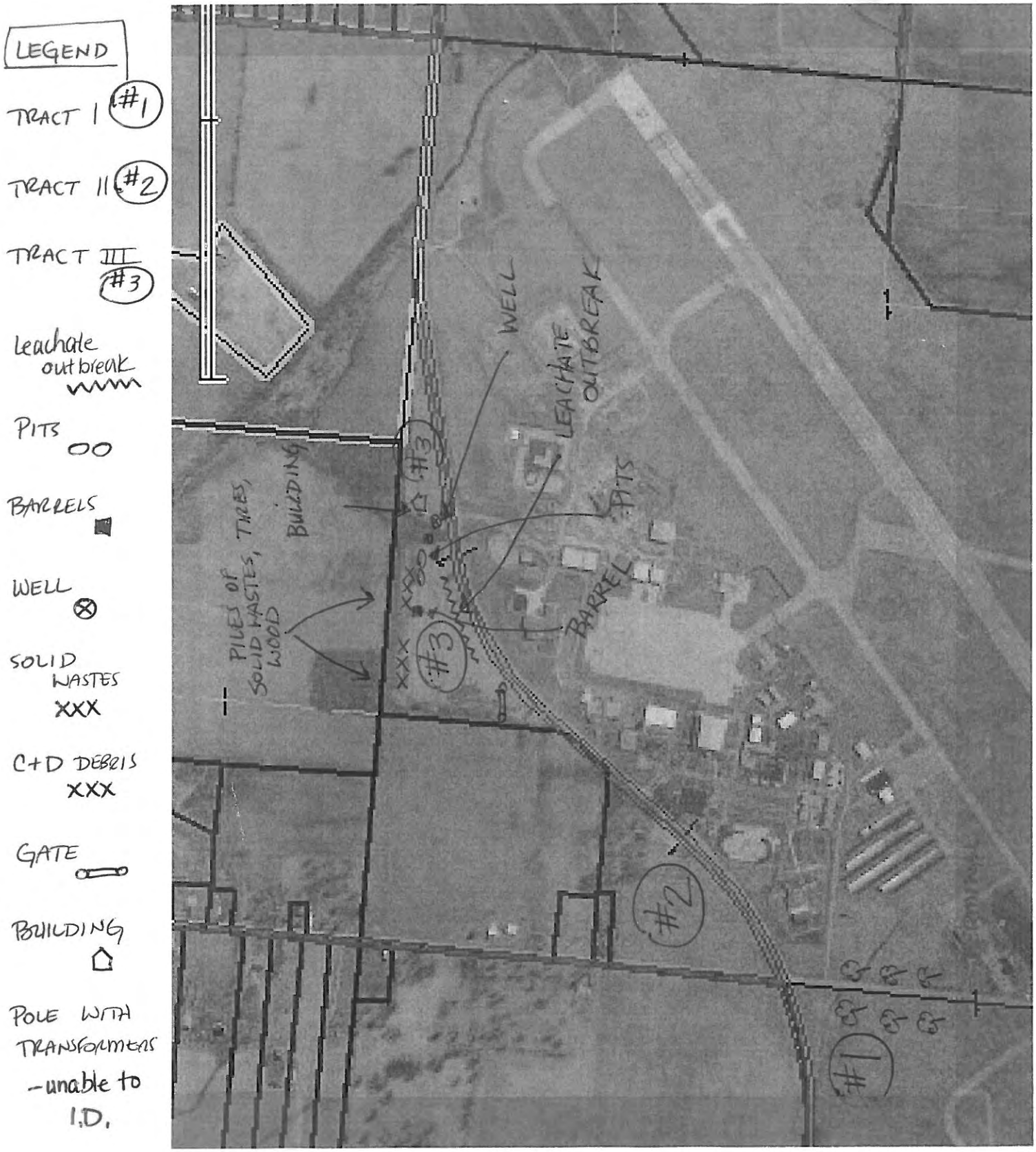


Figure 5. **Photo of well casing at east side of property (photo taken Sept 12th or 13th, 1994, by representatives of Springfield Environmental).**

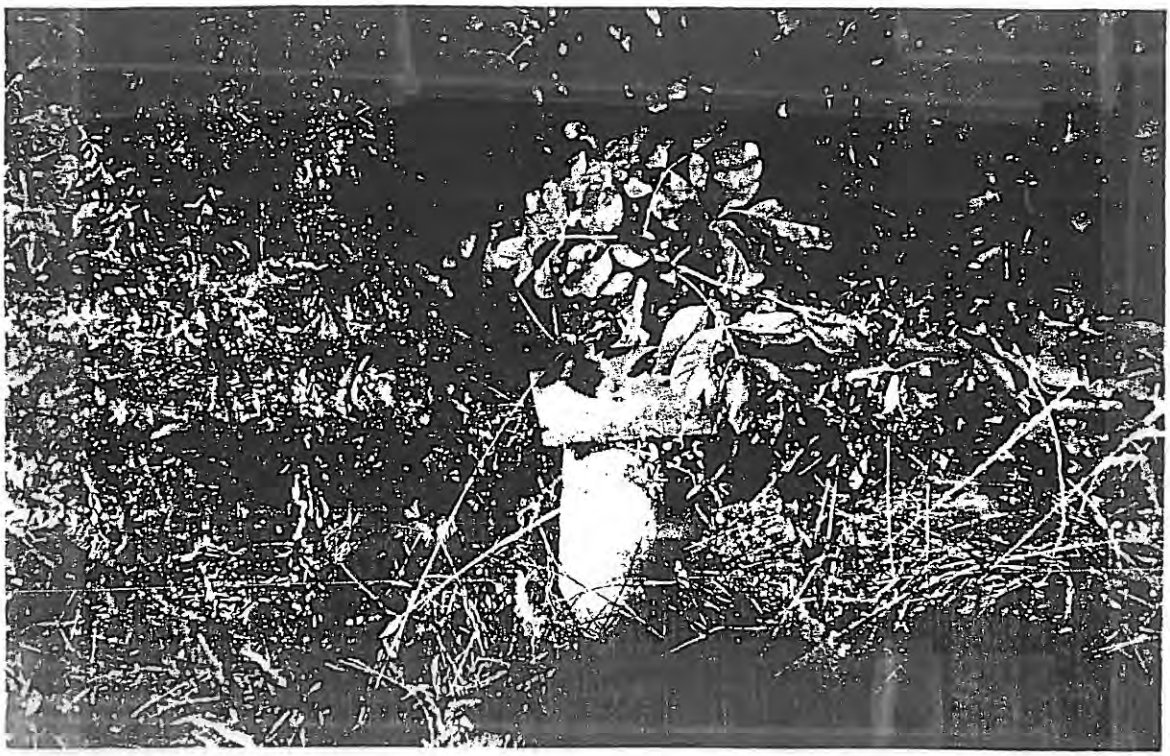


Figure 6. **Photo of abandoned barrel at south side of access road (photo taken September 9, 2005 by representative of CCCHD).**

Figure 7. **Photo of solid waste in underbrush beyond north access road (photo taken September 9, 2005 by representative of CCCHD).**

Figure 8. **Photo of leachate in subsided area on cap of landfill (photo taken September 9, 2005 by representative of CCCHD).**

Figure 9. **Photo of clean hard fill and other piles of materials at western side of property (photo taken September 9, 2005 by representative of CCCHD).**

Figure 10. **Photo of pit at eastern end of north access road (photo taken September 9, 2005 by representative of CCCHD).**

Table 1. Leachate Test Results (Laboratory = Masi Environmental).

Parameter	Results	Regulatory Limit
pH	6.65	6.5 – 8.5 (Federal Limit)
Arsenic	50.2 ppb	10 ppb (MCL)
Cadmium	16.0 ppb	5 ppb (MCL)
Chromium	149.0 ppb	100 ppb (MCL)
Iron	20,500 ppb	0.3 ppm (SMCL)
Selenium	<5.0 ppb	50 ppb (MCL)
PCB's	Below detection limit	

Federal Limit = **Maximum allowable concentration of a contaminant in a public water supply.**

MCL = **Maximum Contaminant Level. The highest concentration of a contaminant that is allowed in drinking water.**

SMCL = **Secondary Maximum Contaminant Level. Non-enforceable federal limits set for contaminants. Usually associated with aesthetic considerations.**

Addendum A
Health Concerns from Exposure to Contaminants of Concern

Potential contaminants of concern (COCs)
Arsenic, cadmium, and chromium were the COCs noted in the leachate testing results.

Possible routes of exposure for COCs at former Springfield City Landfill site:
(1) Groundwater contamination.
(2) Surface water contamination.

Health Effects for arsenic, cadmium, and chromium:

- ARSENIC
  Common inorganic contaminant of groundwater, which is frequently naturally-occurring. Associated with skin, bladder and lung cancer

  Maximum Contaminant Limit (MCL) 10 ppb

- CADMIUM
  Common inorganic element occurring in rocks, animals, plants, and soils. Associated with high blood pressure, kidney damage, destruction of testicular tissue and red blood cells.

  Maximum Contaminant Limit (MCL) 5 ppb

- CHROMIUM
  Common inorganic element occurring in rocks, animals, plants, and soils. Present in the environment in several forms. Associated with skin ulcers and lung cancer

  Maximum Contaminant Limit (MCL) 100 ppb

Addendum B
Implementation of "Rule 13"

State of Ohio Environmental Protection Agency

Date: May 12, 2005

Implementation of "Rule 13" [OAC 3745-27-13]

PURPOSE

This educational guideline presents frequently asked questions about implementation of Ohio Administrative Code (OAC) 3745-27-13, also known as "Rule 13."

Rule 13 establishes the procedure for obtaining authorization from the director to fill, grade, excavate, build, drill, or mine on land where a hazardous waste or solid waste facility was operated.

FREQUENTLY ASKED QUESTIONS

Q1. Does Rule 13 apply to an unpermitted, unlicensed solid waste or hazardous waste facility?

A1. Yes. However, it does not apply to sites of indiscriminate roadside dumping or littering.

Q2. Does Rule 13 apply to just the limits of waste placement or area of hazardous waste treatment, storage and disposal?

A2. No. For the purposes of this rule, Ohio EPA defined 'facility' in OAC 3745-27-13(B), to also include any areas within 300 horizontal feet of the limits of waste placement if the filling, grading, excavating, building, drilling or mining might impact the integrity of the waste placement or the ancillary structures associated with the monitoring and operation of the facility. Ohio EPA is concerned about hazards associated with explosive gases generated by landfills, potential stability issues of the landfill, release of contaminated leachate to surface and ground water, and potential contact with waste materials previously disposed at the facility.

Thus, if your proposed activity is either within the limits of waste placement, or within 300 feet of the limits of waste placement and it may impact the limits of waste placement, slope stability, or other ancillary structures such as the leachate collection, ground water monitoring, gas extraction systems, etc., then you are required to obtain a Rule 13 authorization unless the proposed activity meets the exemption criteria outlined in OAC 3745-27-13(C).

If your property contains a former hazardous waste facility, contact the Division of Hazardous Waste Management staff at your local district office regarding the applicability of Rule 13.

Q3. What is routine maintenance?

A3. Ohio EPA considers routine maintenance to be any activity necessary to maintain the performance of the cap system, pollution control systems, and monitoring systems at the site. For example, mowing the grass to maintain vegetative cover, replacing a ground water monitoring well that is no longer serviceable, or placing soil on the landfill in select areas to correct settlement problems or leachate outbreaks would be considered routine maintenance.

However, activities such as installing a perimeter leachate collection system, installing an explosive gas control system, or covering the entire landfill with soil, are not considered routine maintenance and would require a Rule 13 authorization unless the proposed activity meets the exemption criteria outlined in OAC 3745-27-13(C). These are only a few examples of the rule's application. If you believe your proposed activity may be considered routine maintenance, we recommend that you contact your district office to confirm this before initiating work activities.

Q4. Does Rule 13 apply to a facility in which all waste has been removed (i.e. a "clean closed"

hazardous waste facility or a solid waste facility where all waste was removed)?

A4. No. If the facility meets the criteria established in OAC 3745-27-13(C)(1)(a), then Rule 13 does not apply.

Q5. Does Rule 13 apply to a site which is in post-closure care?

A5. Yes, if the activity is not authorized through the permit, license, plan approval, judicial order or other authorization that is a final action of the director. Authorizations that are not a final action of the director (e.g. alterations, authorizations by rule), cannot replace the need for a Rule 13 authorization.

Q6. Does Rule 13 apply to a site which is out of its post-closure care period?

A6. Yes. Unless the proposed activity meets the exemption criteria outlined in OAC 3745-27-13(C), a Rule 13 authorization will be required for any activity at a solid or hazardous waste facility that has completed its post-closure care period.

Q7. Does Rule 13 apply to RCRA treatment or storage facilities?

A7. It does not apply if the site has either (1) been clean-closed and no residual contamination exists on the property, or (2) been clean-closed by demonstrating successful decontamination through a human health-based risk assessment, under an unrestricted (residential) future land use scenario.

Rule 13 may apply if the site has been clean closed to risk-based standards and residual contamination exists, and the activity does not meet the exemption criteria outlined in OAC 3745-27-13(C). Rule 13 may also apply if a site under deed restrictions or other restricted future land use scenario where human health risk assessment was employed (i.e. an industrial scenario) and the activity meets the exemption criteria outlined in OAC 3745-27-13(C). It is recommended that you contact your local district office regarding any facility with one or more units under evaluation by the risk assessment process prior to proceeding with the proposed activity.

Q8. Does Rule 13 apply to sites eligible for the Voluntary Action Program (VAP)?

A8. Yes, if the site accepted solid, hazardous, residual, or industrial wastes, as they are defined in rule, and if activities that do not meet the exemption criteria outlined in OAC 3745-27-13(C) are proposed for the site. Participation in the VAP does not exempt or preclude a site from the requirements of Rule 13. A Rule 13 authorization is required prior to initiating the work. If the operations and maintenance agreement doesn't contain a Rule 13 authorization for activities such as periodic sampling to confirm remedial progress, then Rule 13 authorization is required each time such work is performed.

Q9. Does Rule 13 apply if the facility's permit application indicated that the site will be utilized for "development" following the closure of the facility?

A9. Yes. Ohio EPA must have adequate information to determine that the proposed activity will not create a nuisance and is unlikely to adversely affect public safety, health, or the environment. Therefore, unless the proposed activity meets the exemption criteria outlined in OAC 3745-27-13(C), authorization pursuant to Rule 13 is required.

Q10. Does Rule 13 apply to open dumps?

A10. Yes. However, it is expected that all the illegally disposed waste on the property you control will be removed and disposed at a permitted disposal facility. If not, enforcement may be taken to clean up the dump.

Q11. What facilities does Rule 13 not apply to?

A11. Rule 13 does not apply to sites which have solely accepted wastes that are excluded from the definition of solid waste. The definition of "solid waste" is found in OAC 3745-27-01(S)(24) and excludes the following materials: earth or material from construction, mining or demolition

operations, nontoxic fly ash and bottom ash, spent nontoxic foundry sand and slag. It is important to note, however, that if a facility disposed of this material with industrial solid waste, residual solid waste, or municipal solid waste, the facility is subject to Rule 13 unless the proposed activity meets the exemption criteria outlined in OAC 3745-27-13(C).

Rule 13 does not apply to facilities exempted from regulation as solid waste facilities. These exemptions are found in OAC 3745-27-03 and include: solid wastes generated within a single-family residence and disposed on the premises, junk yards, lime sludge and sewage sludge disposal approved under ORC 6111, and sites approved under ORC 6111 where certain wastes were land applied.

Although these facilities are not required to obtain a Rule 13 authorization prior to initiating work, they may be subject to requirements of ORC 6111. Contact a Division of Surface Water representative at your local district office to determine the type of authorization needed.

Q12. If the activity is in an area with a history of dumping, but it's not certain that waste will be encountered, does Rule 13 apply?

A12. Ohio EPA recommends the applicant take advantage of the provisions in OAC 3745-27-13(G) and conduct sampling and testing of the property to delineate any limits of waste in the area. If waste is encountered, the applicant can proceed with obtaining a Rule 13 authorization prior to conducting the planned activity.

Q13. What happens if waste is discovered while filling, grading, excavating, building, drilling, or mining on a site not known to be a solid or hazardous waste facility?

A13. Depending on the circumstances, you may be required to cease work and to obtain authorization pursuant to Rule 13 before undertaking any additional activities. Ohio EPA may also take enforcement action. If any liquid is released from the waste, pursuant to ORC 3750.06 *Emergency Planning,* you may be required to immediately call Ohio EPA's emergency spill hotline at (800) 282-9378 (see http://web.epa.state.oh.us/nwdo/spill_reporting.htm for more information). Regarding the excavation of potentially solid or hazardous waste, you should immediately contact the appropriate Ohio EPA district office and local health department.

Q14. As part of authorized Rule 13 activities, do contaminated soils have to be managed as a solid waste?

A14. Contaminated soil associated with a Rule 13 authorization is a waste. The issue of whether contaminated soil is a waste is addressed through Ohio EPA Fact Sheet #0610 *Frequently Asked Questions About the Management of Soils.* This fact sheet is available on Ohio EPA's Web page at: www.epa.state.oh.us/dsiwm/pages/documents.html. If you are unable to obtain this fact sheet over the internet, contact your local district office to obtain a copy.

Q15. As part of authorized Rule 13 activities, can waste be reconsolidated or does it have to be removed and disposed at a permitted disposal facility?

A15. Illegally disposed waste should be removed and not reconsolidated. Otherwise, the waste may be reconsolidated in accordance with OAC 3745-27-13(H)(6). It must be placed within previously existing horizontal and vertical limits of waste placement. Waste cannot be used to backfill any excavated areas outside the limits of waste placement as per OAC 3745-27-13(H)(7).

Previously existing limits are established by the cap/closure certification report. If a certification report does not exist, the previously existing limits are established by the approved limits of waste placement. However, if the facility closed without reaching final grades, the approved limits would not be 'previously existing.' In which case, or if there are no approved limits for the facility, the previously existing limits are what are in existence when the Rule 13 authorization is requested (or notification sent).

Q16. My project involves multiple properties where waste was disposed. Are separate requests for each property required, or can one request be submitted to address all of them?

A16. The division recommends submitting one Rule 13 request showing the entire project with a discussion of proposed procedures for identification, management, and closure. This saves you time by enabling you to follow the approved plan if waste is encountered rather than having to stop work while awaiting approval.

Q17. If a new solid waste, infectious waste, or construction and demolition debris facility is to be established on an old facility, are the authorizations for the new activity enough, or is a Rule 13 authorization also necessary?

A17. A Rule 13 authorization is required. However, if the authorization for the activity is granted through an action of the director (e.g. a permit or license, but not a registration), you have the option of either obtaining two separate actions, one for the new facility and one for the Rule 13 activities, or addressing the Rule 13 issues in the new facility application, thus combining the two actions into one.

Q18. Who do I contact for more information?

A18. If you have questions about this document, would like additional information regarding this topic, or have questions about other issues, you can contact your local Ohio EPA district office at the phone numbers listed below. To find your district, please refer to the map at the end of this document.

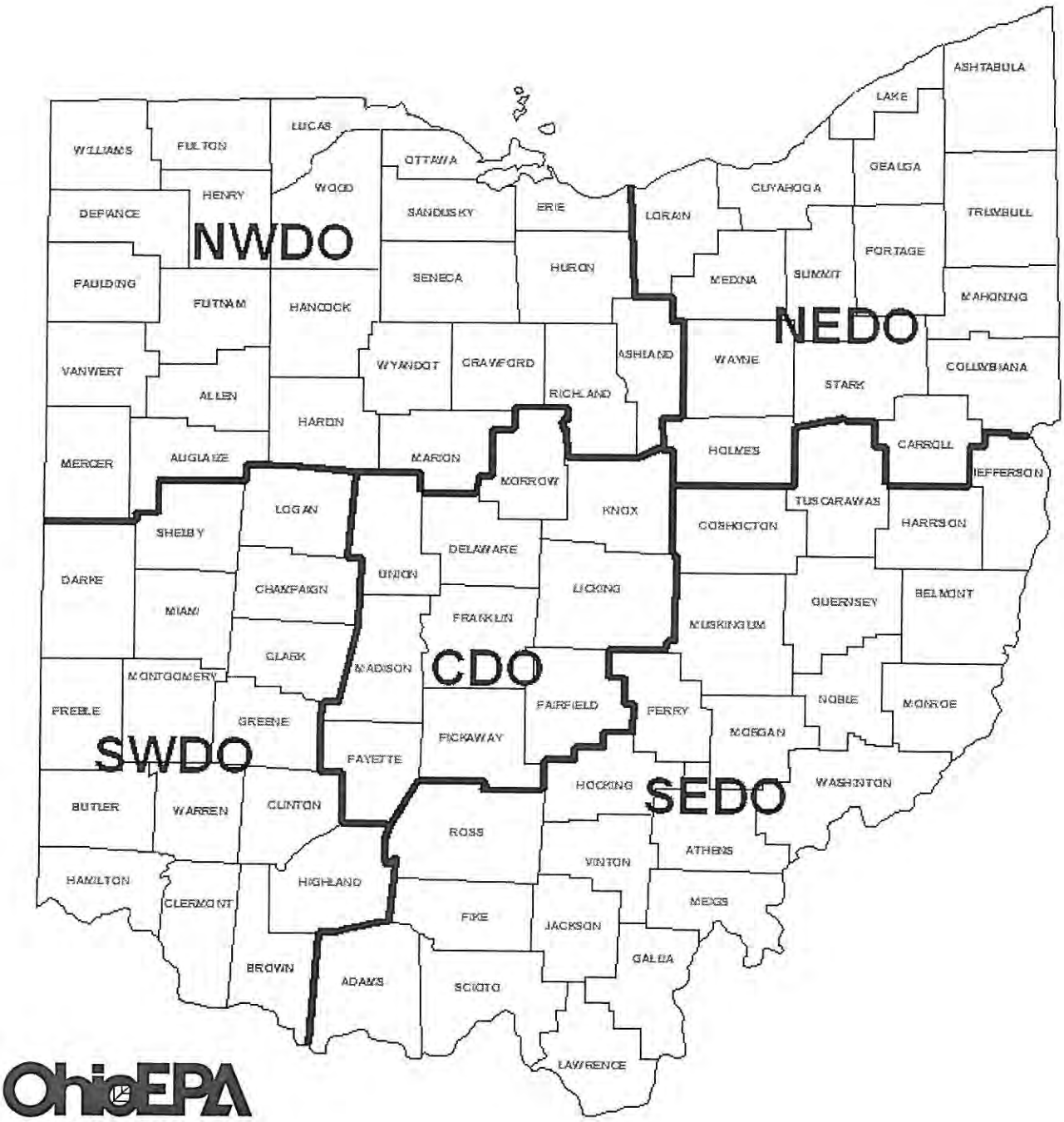
POINT OF CONTACT

Central District Office DSIWM Supervisor
(614) 728-3778
Northeast District Office DSIWM Supervisor
(330) 963-1200
Northwest District Office DSIWM Supervisor
(419) 352-8461
Southeast District Office DSIWM Supervisor
(740) 385-8501
Southwest District Office DSIWM Supervisor
(937) 285-6357

Central Office Processing and Engineering Unit
(614) 644-2621

DISCLAIMER

The procedures set out in this document are intended solely for guidance of government personnel. The procedures are not intended and cannot be relied upon to create rights, substantive or procedural, enforceable by any party against Ohio EPA. While this guidance document is not legally binding, all statutes and rules referenced herein are binding and enforceable. Ohio EPA reserves the right to vary this guidance or to change it at any time without public notice and also reserves the right to deviate from this guidance on a case-by-case basis.



OhioEPA

District Offices

CDO Central District Office
3232 Alum Creek Drive
Columbus, OH 43207-3714
(614) 728-3778
1-800-686-2330

NEDO Northeast District Office
2110 E. Aurora Rd.
Twinsburg, OH 44087
(330) 963-1200
1-800-686-6330

NWDO Northwest District Office
347 N. Dunbridge Rd.
Bowling Green, OH 43402
(419) 352-8461
1-800-686-6930

SEDO Southeast District Office
2195 Front St.
Logan, OH 43138
(740) 385-8501
1-800-686-7330

SWDO Southwest District Office
401 East Fifth St.
Dayton, OH 45402-2911
(937) 285-6357
1-800-686-8930

Toll free numbers are for citizens with questions or concerns about environmental issues. The regulated community should use the business line for routine business. Spills and emergencies should be reported to 1-800-282-9378.

INTEGRATED ASSESSMENT (IA) REPORT

OLD SPRINGFIELD LANDFILL

3790 Crabill Road
Springfield, Ohio
Clark County

Prepared by:

Mary Kuypers

OHIO ENVIRONMENTAL PROTECTION AGENCY
Division of Emergency and Remedial Response
401 East Fifth Street
Dayton, Ohio 45402

INTEGRATED ASSESSMENT REPORT

OLD SPRINGFIELD LANDFILL

3790 Crabill Road
Springfield, Ohio
Clark County
Ohio ID#: 512-1507
October 30, 1996

Prepared By: Mary Kuypers Date: 10/30/96

Mary Kuypers
College Co-op
Division of Emergency and Remedial Response
Southwest District Office
Ohio Environmental Protection Agency

Approved By: Stephen H. Martin Date: 10/30/96

Stephen H. Martin
Group Leader
Division of Emergency and Remedial Response
Southwest District Office
Ohio Environmental Protection Agency

TABLE OF CONTENTS

2.0 INTRODUCTION

The Ohio EPA Division of Emergency and Remedial Response (DERR) conducted an IA of the former Old Springfield Landfill site. This report was prepared to address the immediate or potential threat that on-site contaminants pose to human health and the environment.

2.1 Project Background

On February 27, 1996, Ohio EPA personnel conducted a site reconnaissance at the Old Springfield Landfill site. Based on file reviews and site conditions, an IA workplan was prepared by the Ohio EPA. On June 18, 1996, Ohio EPA personnel conducted IA sampling activities at the site. Samples were collected from on-site soil, ground-water, surface water, sediment and leachate seeps.

2.2 Purpose

The purpose of this IA report is to describe the immediate or potential threat to soil, ground-water, and surface water targets posed by previous disposal activities. The data and information generated from the investigation will be used to assess the possibility of soil, ground-water, and surface water contamination, and to determine the Hazardous Ranking System (HRS) score to confirm a need for initiating possible, future remedial actions.

3.0 SITE BACKGROUND

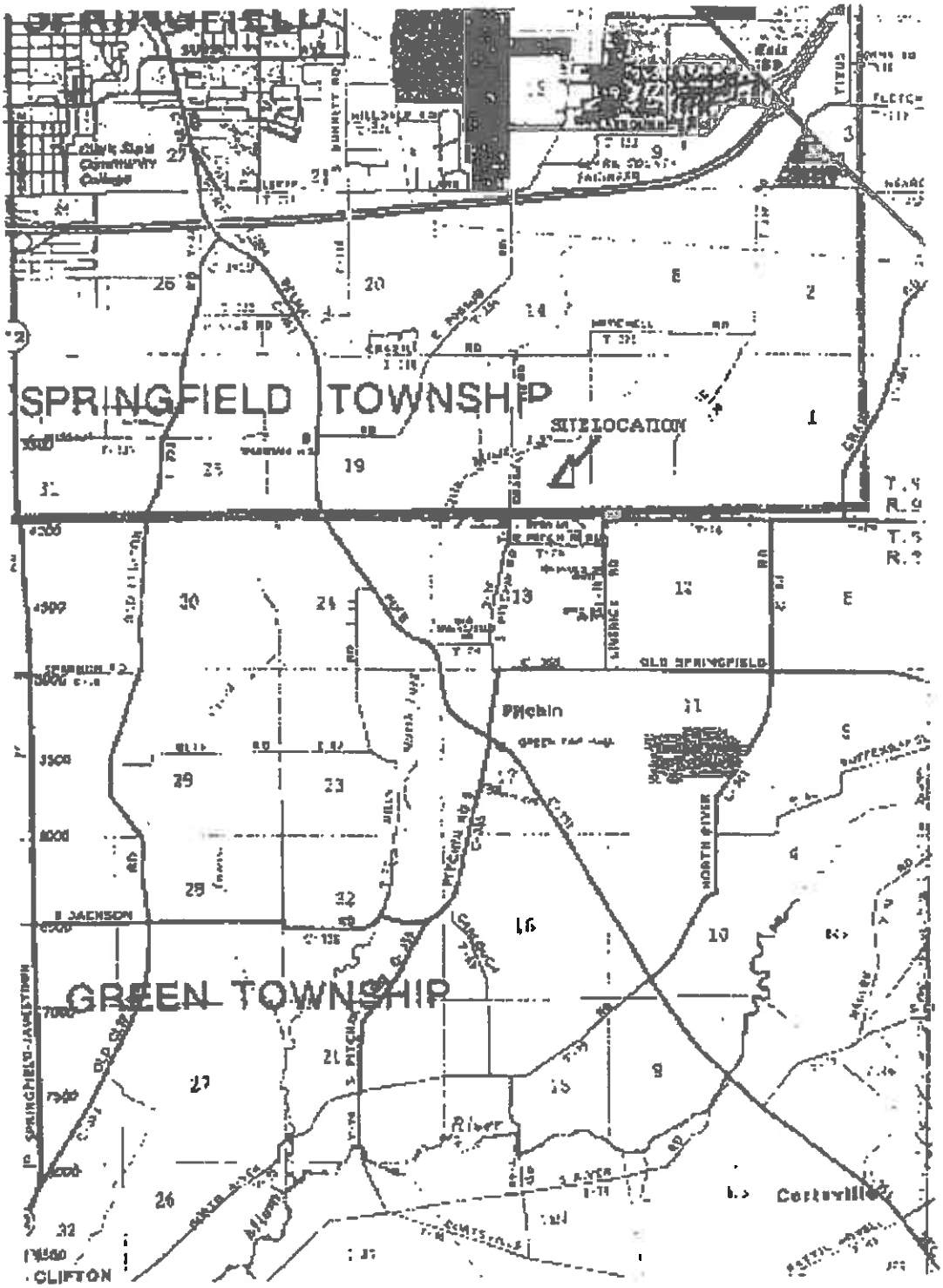
3.1 Location

The Old Springfield Landfill site is located at 3790 Crabill Road in Springfield, Clark County, Ohio (see figure 1). The geographic coordinates of the site are 39° 58' 02" N latitude, 83° 44' 20" W longitude.

3.2 Site Description

The Old Springfield Landfill site is located on approximately 10.85 acres within a 145-acre parcel of property (ODH 1969). The site lies three miles southeast of the city of Springfield. The site is bordered to the north by the North Fork of the Little Miami River, to the south and east by a wooded area, and to the west by a gravel pit lake. A access road leads to the southeast side of the landfill (see figure 2). The site is accessible since no fence surrounds it. The site is used for recreational purposes by the owner (Ohio EPA 1996b). The primary land use in the area is agricultural (Ohio EPA 1995a).

Site reconnaissances were performed on February 27, April 16, and June 6, 1996 by the Ohio EPA. The landfill was found to be covered with porous soil consisting of sand and gravel deposits. Areas of exposed waste were observed on the surface of the landfill, and construction debris was found along the east edge of the landfill near the drainage stream

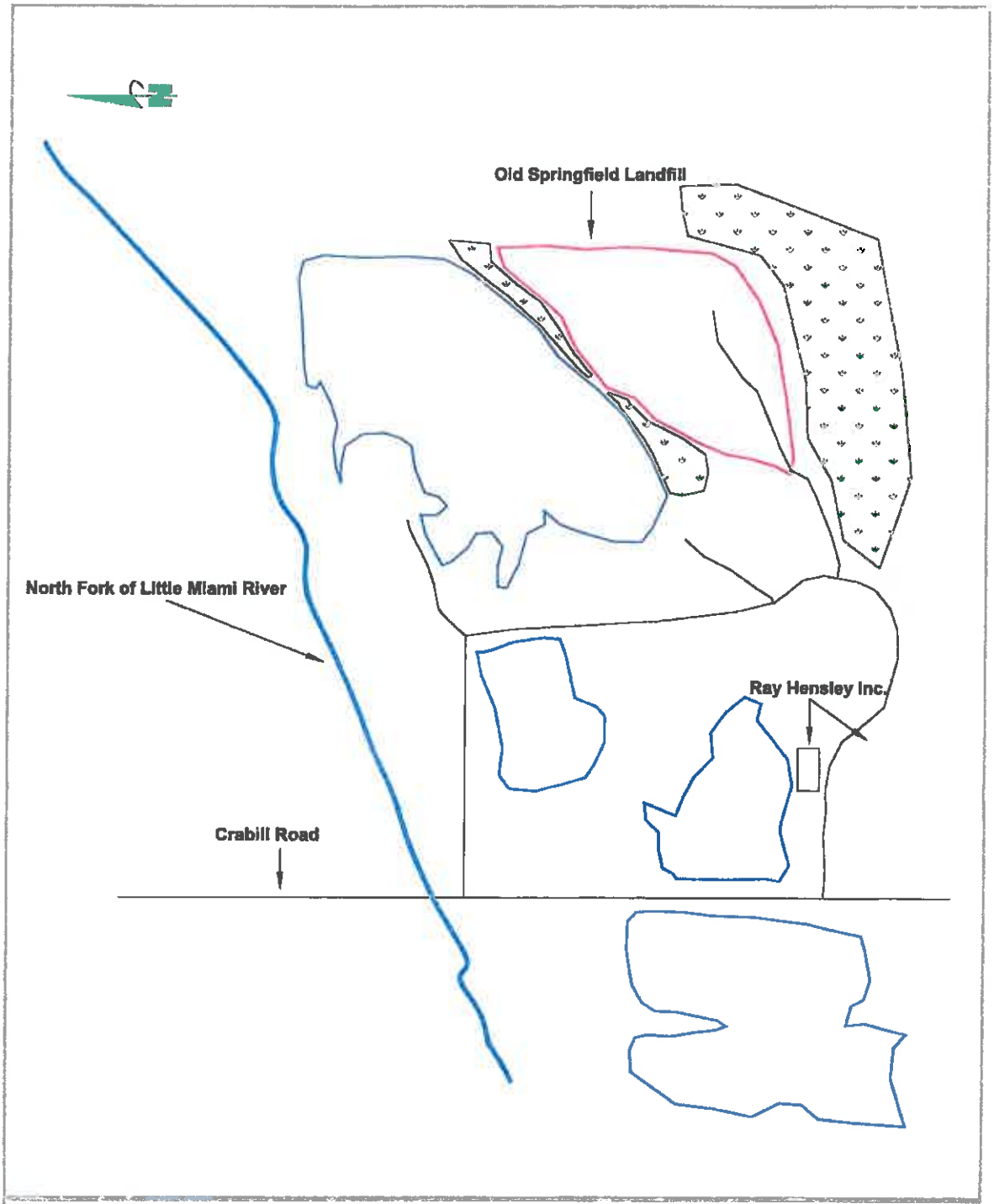


Old Springfield Landfill
Springfield, Ohio

FIGURE 1

SITE LOCATION MAP

Modified From Clark County Highway And Street Map



SITE NAME: Old Springfield Landfill	DRAWN BY: KLK	DATE: 8/5/96
ID NUMBER: 512-1507	SCALE: 1" = 400'	
SITE COORDINATOR: Kerry Klocinski, Frank Zingales	FIGURE 2 - SITE AREA	OhioEPA DIVISION OF EMERGENCY & REMEDIAL RESPONSE

(photo #1). The surface of the landfill was vegetated; however, areas void of vegetation were observed (photo #2). Standing water (photo #3) was also observed on the top of the landfill (Ohio EPA 1996a).

A total of four leachate seeps were observed at the site. Three of these areas were observed on the southwest side of the site, near the toe of the landfill. Two of the seeps were exiting into the drainage stream (photo #4), the third leachate seep was approximately 300 feet east of the gravel pit lake. The fourth leachate seep was observed leaching from the wall of a manhole (photo #5), located on the east side of the landfill, at a depth of approximately 15 feet. The leachate seeps were bright orange in color (Ohio EPA 1996a). See figure 3 for site features.

Surface water travels northwest toward the North Fork of the Little Miami River. Surface water from the highlands is collected in a pond on the north side of Pitchen Road located southeast of the site. The pond discharges to a drainage ravine (photo #6) which then leads to a drainage pipe which runs underneath the landfill. The pipe empties into a drainage stream (photo #1) which leads to the gravel pit lake (photo #7) where it eventually leads to the North Fork of the Little Miami River. Surface water from the landfill cap travels northwest via overland flow into the stream (Ohio EPA 1995a, 1996a).

The landfill was placed over an existing drainage ravine that ran from the highland area to the gravel pit lake. A 24-inch diameter concrete drainage pipe was placed underneath the landfill so runoff would continue from the highland area to the gravel pit lake. There are two manholes located along the path of the drainage pipe (photo #8). The depth of the first manhole to the drainage pipe is estimated to be 25 feet (Ohio EPA 1995a, 1996a).

3.3 Site History

The Old Springfield Landfill was operated by the city of Springfield from 1969 to 1971 (Ohio EPA 1995a). The site was a municipal waste sanitary landfill; however, no records describing the nature of the waste have been found. The total waste disposed of at the landfill was estimated at 2.13×10^5 cubic yards. This estimate was calculated using a daily average of 410 cubic yards per day for five days each week for a period of two years (ODH 1969).

Forrest Ripley owned the land in 1969 and leased 11 acres to the city of Springfield to operate the landfill. American Aggregate, Inc. leased part of Ripley's property for aggregate mining at the time the city was running the landfill. In 1979 Ray Hensley, Inc. purchased the land from Ripley. Ray Hensley, Inc. is the present owner of the land (Ohio EPA 1995b).

The Clark County Health Department sampled three residential wells located within a quarter mile of the landfill in late June 1994. One well is located on Ray Hensley's property at

8.0 REFERENCES

Ohio Department of Natural Resources (ODNR). Well log reports of wells in a 4 mile radius of the Old Springfield Site.

Ohio Environmental Protection Agency (Ohio EPA), 1995a. Preliminary Assessment for Old Springfield Landfill. Prepared by Randy Watterworth, Ohio EPA.

Ohio EPA 1995b. Telephone Memorandum of conversation on February 6, between Mr. Ray Hensley and Jon Watterworth. Prepared by Jon Watterworth, Ohio EPA.

Ohio EPA 1996a. Memo to file regarding site reconnaissances on February 27 and April 16 of Old Springfield Landfill. Prepared by Mary Kuypers, Ohio EPA.

Ohio EPA 1996b. Field logbook notes taken on June 6 during site reconnaissance of Old Springfield Landfill. Prepared by Kerry Klocinski, Ohio EPA.

Ohio EPA 1996c. Geographical information system.

U.S. Geographical Survey (USGS). Topographic map for Springfield, New Moorefield, Clifton, and South Charleston, Ohio Quadrangle. 7.5-Minute Series.

U.S. Department of the Interior (US DOI), 1988. National wetland inventory maps for Clifton, Ohio; and Yellow Springs, Ohio.

Correspondence between Arthur Knauer of the Ohio Department of Health (ODH) and Alfred Strozdas of the city of Springfield, 1969.

Southwest District Office
136 S. Ludlow Street
Dayton, Ohio 45402

January 7, 1969

Re: Clark County
Springfield Township
(Springfield)
Solid Waste

Mr. Alfred Strozdas, City Manager
City Building
Springfield, Ohio 45502

Dear Mr. Strozdas:

On December 12, 1968, detail plans of Crabill Road Landfill were received from Mr. Fred M. Hughes, Director of Public Works, City of Springfield, and they were prepared by Mr. Hughes and Mr. Robert K. McKie.

These plans have been reviewed and the required information and letters from the various interested agencies were received in this office.

These plans have been recommended for the required formal approval, a copy of which you should receive in the near future.

Very truly yours,

Arthur T. Knauer
District Sanitary Engineer

ATK:ijw

cc: Mr. Fred M. Hughes
Director of Public Works
cc: William Habeeb, M.D.
Health Commissioner

THE CITY OF SPRINGFIELD
STATE OF OHIO

PUBLIC WORKS DEPARTMENT
FRED M. HUGHES
DIRECTOR

January 2, 1969

Mr. Wilbert Spies, Principal District Engineer
Southwest District Office
Ohio Department of Health
136 South Ludlow Avenue
Dayton, Ohio 45402

Attention - Mr. Arthur Knauer

In Re: Proposed City of Springfield Landfill
on Crabill Road

Dear Mr. Knauer:

On December 11, 1968, the application to open and operate the above mentioned facility was forwarded to your office.

In this application I indicated that we would necessarily have to move into this new landfill no later than January 15, 1969. This date still appears to be accurate.

Since your visit, we have contined work on our access road despite adverse weather, and have made good progress.

When I called your office on December 16th, I was told that you have been absent from work due to illness, which has no doubt disrupted your work schedule.

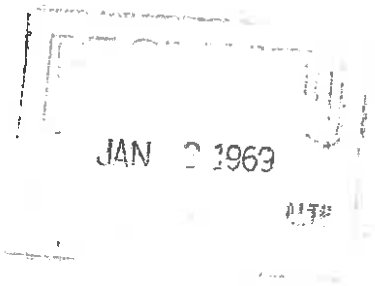
Will you please advise whether or not your office will be able to approve our site by that date, and if not, can you grant us temporary approval to begin our operation there on January 15, 1969.

Thanking you for your cooperation in this matter, I remain

Yours truly,

Fred M. Hughes
Director of Public Works

FMH:jm



REPORT ON DETAIL PLANS OF PROPOSED CRABILL ROAD LANDFILL, (CITY OF SPRINGFIELD), SPRINGFIELD TOWNSHIP, CLARK COUNTY.

On December 12, 1968, detail plans of proposed Crabill Road Landfill, (City of Springfield,), Springfield Township, Clark County, were received from Mr. Fred M. Hughes, Director of Public Works, City of Springfield. The plans bear the signature of Mr. Hughes and Mr. Robert K. McKie, as chief engineer. The site was investigated by Mr. Russell D. Stein, Geologist, Ohio Division of Water, Mr. Donald Day of the Ohio Department of Health. Their letters dated June 19, 1967, and June 22, 1967, indicated their approval of the site with certain reservations. A visit was made by Mr. Knauer of the district office, Mr. William Marshall, Clark County Sanitarian, and Mr. Fred Hughes on December 6, 1968.

Location - The proposed landfill site is owned by Forrest R. Ripley and is adjacent to land leased from him by the American Aggregates, Inc. It is located about 1,200' east of Crabill Road and about 1,200' north of Pitchin Road.

Site - The site is in a gravel pit area and 8 well logs have been submitted. They indicate a gravel down to about 25' in most cases. The area is 10.85 acres in area and a property survey has been submitted. In Mr. Stein's letter it is suggested that solid waste operation be confined to an area not less than 100' from the water line of the existing gravel pit lake, and also that any trench bottoms be at least 8' above the maximum water elevation whichever has been determined to be the highest. The water elevation in the lakes is noted to be 880.4.

There is a ravine extending in a northwesterly direction through the property, and it is proposed to install in this ditch a 24" reinforced concrete pipe, and a note has been added that the pipe should be A.S.T.M. joints C-443. The pipe will be covered 3' of dirt and embedded in a suitable ditch. The area will be filled both by a trench method and an area fill. The ultimate plan is to have two (2) 8' lifts and perhaps a deeper ditch in other areas.

The necessary information as listed on the Ohio Department of Health, Division of Engineering, plans and information sheet for approval of site, development, and operation of a landfill, have been supplied or listed on the drawings.

Mr. Hughes was contacted and a suggestion was made and a note was added that at the upstream end of the tile a compacted face would be made of clay with rip-rap to prevent erosion and seepage of any water to the fill.

Estimated Cost - The estimated development cost for anticipated two years use $238,654,000.

Summary - Plans of the proposed Crabill Road Landfill, (City of Springfield), Springfield Township, Clark County, are satisfactory and it is recommended that they be approved.

Arthur T. Knauer
District Sanitary Engineer

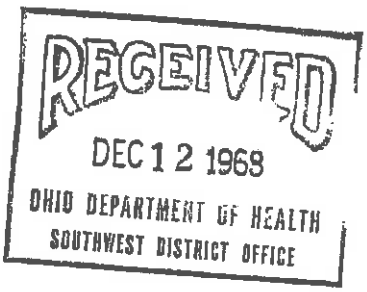
ijw

1/7/69

THE CITY OF SPRINGFIELD
STATE OF OHIO

PUBLIC WORKS DEPARTMENT
FRED M. HUGHES
DIRECTOR

December 11, 1968



Mr. Wilbert Spies, Principal District Engineer
Southwest District Office
Ohio Department of Health
136 So. Ludlow Ave.
Dayton, Ohio 45402

Attention: Mr. Arthur Knauer

IN RE: Proposed Sanitary Landfill for City of Springfield, Ohio

Dear Mr. Knauer:

Submitted herewith is an application for a sanitary landfill for the City of Springfield, Ohio. In the interest of simplicity, we have tried to follow the same numbering and lettering system which you followed in your information regarding requirements.

I (A) Owner - City of Springfield, Ohio. (Leased property from Mr. Forest Ripley, 100 W. North St., Springfield, Ohio for period of 6 years commencing on December 1, 1967.)

(B) Name and Type of Project - Crabill Road Landfill
Sanitary Landfill Project

(C) Specific Location - East side of Crabill Road between North Fork of Little Miami River and Pitchin Road.

(D) Project Engineer - Fred M. Hughes, Director of Public Works
City Building
Springfield, Ohio 45502

NOTE: Site investigation has already been made.
(1) See attached letter from Mr. Russell Stein dated 6-19-67
(2) See attached letter from Mr. Donald Day dated 6-22-67
(3) Visit by Mr. Arthur Knauer and Clark County Supervising Sanitarian W. C. Marshall on December 6, 1968.

II Plans - See Two Plans attached in quadruplicate, Drawings #1972-A and #H-448

III (A) See attached letters in quadruplicate.
(1) See letter from Springfield-Clark County Health Dept. dated 12-10-68
(2) See letter from Clark County Zoning Inspector dated 12-2-68
(3) Letter from Clark County Regional Planning Commission not needed since township where proposed landfill site is located is zoned, and this specific landfill site is zoned to permit a sanitary landfill.
(4) See letter from Springfield Township Trustees dated 12-3-68 permitting construction of new entrance for access road.

III (Continued)

(B) (1) See schedule of operations set forth in our plan #1972-A.
(2) Abundance of cover dirt available because of topography and large mound of earth stockpiled from prior gravel mining operation.
(3) Dust control to be accomplished by use of calcium chloride as required.
(4) Erosion will be controlled by planting rye grass.
(5) Snow fence will be used to control blowing debris as required. If and when necessary, scattered debris will be picked up by hand.
(6) No salvaging will be permitted.
(7) No burning planned initially, since City is now leasing out City owned property elsewhere to a private operator for burning tree limbs, brush, and lumber only.
(8) Fire protection to be provided as follows:
Springfield Township Volunteer Fire Department from (1) Garden Acres and (2) Beatty. For back-up, City of Springfield Fire Division Stations (1) #3 Selma Road and (2) #6 Ludlow Ave.

(C) Equipment Used at Landfill
1 Scraper - 12 yd. capacity
1 Crawler Type Tractor w/bucket for loading and digging dirt, pushing and compacting refuse. Weight - 18 tons.
1 Crawler Type Tractor w/refuse designed blade and also equipped with attachment to pull pan for loading dirt or digging trenches. Weight - 18 tons.
1 10-yd. Tandem Dump Truck. Weight - 18,500 lbs.

Stand-by equipment is readilly available by rental service. One week maximum break-down before rental equipment is needed.

(D) See attached boring reports.

(E) During operation, the area will be used only to stock cover dirt. After completion of landfill operation, property will be turned back to owner, Mr. Forest Ripley, at which time, he will assume maintenance responsibility and determine future use of the land.

(F) Household Refuse
Industrial Refuse (Except paints and thinners)
Commercial Refuse

Approximately 115 tons daily

(G) Two years (anticipated presently)

(H) $238,654 - Estimated Cost of Development for 2 years.

Because of the fact that the recent wet weather has curtailed our excavating work, it now appears that we will necessarily have to move into this new landfill site no later than January 15, 1969, and therefore, we are hoping to satisfy your application requirement in order to get your approval by that date.

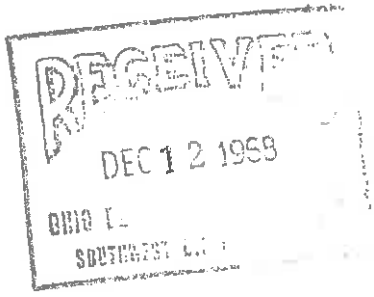
If you need any additional information, please contact the undersigned. (Phone 323-9731, Station 208.)

Yours truly,

Fred M. Hughes
Director of Public Works

FMH:ih

c.c. City Manager



CLARK COUNTY HEALTH DEPARTMENT
COMMUNITY HEALTH CENTER
301 SOUTH FOUNTAIN AVENUE
SPRINGFIELD, OHIO 45506
TELEPHONE
323-9731

WILLIAM J. HABEEB, M. D.
Health Commissioner

December 10, 1968

Mr. Fred M. Hughes
Director of Public Works
Springfield City Building
Springfield, Ohio

Dear Mr. Hughes:

On December 6, 1968, Mr. Marshall of this office and Mr. Knauer, district engineer of the Ohio Department of Health visited and inspected with you the site of the proposed Springfield City Landfill east of Crabill Road, north of Pitchin Road in Clark County.

This is relatively high, with respect to adjacent gravel pits, and rolling ground which will allow separation of proposed fill from ponded waters by at least 100' and disposal of fill in the shallow subsoil 8' to 10' above ground water level. It was also pointed out that surface water would be piped through the fill area in a water-tight pipe.

It appears that all required precautions are to be taken in this operation to prevent ground water and surface water contamination. We have read Mr. Day's review of this proposed project, and Mr. Russell B. Stein's report as Geologist of the Ohio Water Division, and on the basis of opinion contained in these, consultation with you and Mr. Knauer, and our own observations, it is the opinion of this office that requirements of the State of Ohio for sanitary disposal of solid waste may be satisfactorily complied with at this site. We herewith give the approval of this office to the proposed use of this location for a sanitary landfill.

Sincerely yours,

William J. Habeeb, M.D.
Health Commissioner

W. C. Marshall
Supervising Sanitarian

WCM/sm

RECEIVED
DEC 12 1968
OHIO DEPARTMENT OF HEALTH
SOUTHWEST DISTRICT OFFICE

APPENDIX G: PERMITS AT SGH

DEPARTMENT OF THE INTERIOR
U.S. FISH AND WILDLIFE SERVICE

3-200
(1/97)

FEDERAL FISH AND WILDLIFE PERMIT

2. AUTHORITY-STATUTES
16 USD 703-712

REGULATIONS
50 CFR Part 13
50 CFR 21.41

1. PERMITTEE

SPRINGFIELD-BECKLEY MUNICIPAL AIRPORT
WARREN M LECOCQ
1251 WEST BLEE ROAD
SPRINGFIELD, OH 45501
U.S.A.

3. NUMBER
MB065607-0

4. RENEWABLE	5. MAY COPY
[X] YES	[X] YES
[ ] NO	[ ] NO

6. EFFECTIVE	7. EXPIRES
04/01/2010	03/31/2011

8. NAME AND TITLE OF PRINCIPAL OFFICER *(If #1 is a business)*
WARREN M LECOCQ
INTERIM AIRPORT MANAGER

9. TYPE OF PERMIT
DEPREDATION AT AIRPORTS

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED
Springfield-Beckley Municipal Airport
1251 West Blee Road
Springfield, Ohio

11. CONDITIONS AND AUTHORIZATIONS:

A. GENERAL CONDITIONS SET OUT IN SUBPART D OF 50 CFR 13, AND SPECIFIC CONDITIONS CONTAINED IN FEDERAL REGULATIONS CITED IN BLOCK #2 ABOVE, ARE HEREBY MADE A PART OF THIS PERMIT. ALL ACTIVITIES AUTHORIZED HEREIN MUST BE CARRIED OUT IN ACCORD WITH AND FOR THE PURPOSES DESCRIBED IN THE APPLICATION SUBMITTED. CONTINUED VALIDITY, OR RENEWAL, OF THIS PERMIT IS SUBJECT TO COMPLETE AND TIMELY COMPLIANCE WITH ALL APPLICABLE CONDITIONS, INCLUDING THE FILING OF ALL REQUIRED INFORMATION AND REPORTS.

B. THE VALIDITY OF THIS PERMIT IS ALSO CONDITIONED UPON STRICT OBSERVANCE OF ALL APPLICABLE FOREIGN, STATE, LOCAL OR OTHER FEDERAL LAW.

C. VALID FOR USE BY PERMITTEE NAMED ABOVE.

D. You are authorized to take, temporarily possess, and transport the migratory birds specified below to relieve or prevent injurious situations impacting public safety. All take must be done as part of an integrated wildlife damage management program that emphasizes nonlethal management techniques. You may not use this authority for situations in which migratory birds are merely causing a nuisance.

(1) The following may be lethally taken:

20 Canada geese 10 horned larks 10 mallards 50 mourning doves 3 Turkey vulture

(2) The following may be live-trapped and relocated:

5 Red-tailed hawks 5 American kestrel

(3) The following active nests (including eggs) may be destroyed:

10 Canada geese 10 Mallard nests and all of the eggs in those nests

E. You are authorized in emergency situations only to take, trap, or relocate any migratory birds, nests and eggs, including species that are not listed in Condition D (except bald eagles, golden eagles, or endangered or threatened species) when

[X] ADDITIONAL CONDITIONS AND AUTHORIZATIONS ALSO APPLY

12. REPORTING REQUIREMENTS
ANNUAL REPORT DUE: 1/31

ISSUED BY	TITLE	DATE
L. Kelly	CHIEF, PERMIT SECTION	05/11/2010

Spfld-Beckley Airport

Control Permit Number
DD- S-12-1-08

Division of Wildlife
Ohio Department of Natural Resources

Form 68
(R904)

DEER DAMAGE CONTROL PERMIT

Permission to operate under this permit is hereby granted to the following owners, lessees, their immediate family members, bona fide full-time employees, or agents of the owner or lessee. Agents who have been designated as shooters must reside in the county or adjacent Ohio county where this permit is valid and possess a valid Ohio hunting license. No more than five individuals can be designated as shooters at any one time.

(Legal Name)	(Phone No.)	(Date of Birth)	(Resident Address)	(Hunting License Purchased)
Charles E Vest Hoose	937-325-2532	03/16/63	4616 Hickory Rd Spfld, OH 45503	N/A ☐
BENJAMIN NORRIS	937/964-8464	Nov 8 61	4475 S. Paris Pk. SPFLD, OH.	N/A ☐
				☐
				☐
				☐
				☐

To protect the crops or property of Springfield-Beckley Municipal Airport
(Name of Landowner or Lessee)

1251 W. Blee Rd, Spfld, OH. 45502 (Address) 937-325-6108 (Telephone)

by killing deer on land, wherein damage by deer is occurring, located in

Clark (County) Greene (Township) subject to regulations and the following conditions:

1. This permit shall be in effect during the period 5/9/08 (Today's date) through 12/31/08 (Expiration date).
2. This permit authorizes the killing of up to 4 (Number) deer only on lands owned or leased by the permittee. (The killing of antlerless deer should be encouraged as much as possible to help control population levels.)
3. Shooters must be approved by the Division of Wildlife prior to engaging in shooting activities. The permittee shall be responsible for the actions of shooters while they are operating under this permit.
4. The permittee shall attempt to make arrangements for deer killed to be consumed or utilized as the wildlife officer directs. All deer not given away or kept by the landowner, must be disposed of in a legal manner on the landowner's property. Deer or parts thereof given to anyone must be accompanied by a receipt (Form 67) from the permittee.
5. The permittee shall accurately complete a Form 67 for each deer killed immediately after the deer dies. The temporary tag on the Form 67 must be immediately attached to the deer and remain on the carcass until final disposition. All completed Form(s) 67 must be forwarded to the wildlife officer or division representative within 48 hours of killing a deer.
6. The permittee understands that the Division of Wildlife will provide the names of Deer Damage Control Permit holders to anyone upon request.
7. Prior to killing any deer, permittee and/or permittee's agent(s) shall secure any and all permits required by the city/county and shall consult with and follow any and all directives issued by the city/county officials in conjunction with the permitted activity. Permittee agrees to indemnify and hold harmless the state of Ohio, Department of Natural Resources, its employees, officers, and agents from all liability associated with personal injury and/or property damage, loss and expense, including, but not limited to, damages, legal expenses and cost of defense in any matter arising from the permitted use.
8. All antlers must be removed from all deer killed through the use of this permit. The antlers are to be held by the permittee to be turned over to Division of Wildlife personnel at any reasonable hour. In addition the permittee must advise the wildlife officer within 48 hours of killing an antlered deer with antlers greater than three (3) inches in length.
9. The permittee understands that this permit does not allow shooting from a motor vehicle.
10. The permittee understands that he/she will have to secure the landowner's written permission before deer can be killed under this permit on land that is leased or rented.
11. The permittee will be responsible for providing a copy of this permit to shooters. **Shooters must possess a copy of this permit and a valid Form 67 while taking or in possession of deer.**
12. The permittee ☑ owns the land for which this permit is valid; ☐ written permission of the landowner is attached.
13. Only those individuals listed above can be present when operating under this permit.
14. This permit is not valid during any gun season.
15. All unused Form 67s shall be returned to issuing DOW representative 10 days after the expiration of permit.
16. Other conditions are: _____

Any false statement in application for this permit, or failure to comply with the provisions of this permit will be deemed sufficient reason for immediate revocation of this permit, or any misuse thereof will result in prosecution. I have read this permit and agree to its terms and conditions as stated herein.

X _____ _____
(Signature of Landowner or Lessee) (Date)

Approved by: Bryan S. R. 5/9/08
(Wildlife Officer or Division of Wildlife Representative) (Date)

This copy received by district wildlife management supervisor _____ (Initial) and reviewed by W.O. supervisor _____ (Initial) and district manager _____ (Initial).

Distribution of Copies: 1 - Landowner 2 - Wildlife Officer 3 - District Wildlife Management Supervisor

DNR 8003

APPENDIX H: SGH AIRPORT MASTER RECORD 2016

F16 = End 2014

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

AIRPORT MASTER RECORD

PRINT DATE: 9/7/2016
AFD EFF 07/21/2016
FORM APPROVED OMB 2120-0015

> 1 ASSOC CITY: SPRINGFIELD 4 STATE: OH LOC ID: SGH
> 2 AIRPORT NAME: SPRINGFIELD-BECKLEY MUNI 5 COUNTY: CLARK OH FAA SITE NR: 15536.*A
3 CBD TO AIRPORT (NM): 05 S 6 REGION/ADO: AGL/DET 7 SECT AERO CHT: CINCINNATI

GENERAL

10 OWNERSHIP: PUBLIC
> 11 OWNER: CITY OF SPRINGFIELD
> 12 ADDRESS: 76 E HIGH ST
SPRINGFIELD, OH 45502
> 13 PHONE NR: 937-325-6108
> 14 MANAGER: DON SMITH
> 15 ADDRESS: 1251 W. BLEE RD.
SPRINGFIELD, OH 45502
> 16 PHONE NR: 937-325-6108
> 17 ATTENDANCE SCHEDULE:

ALL	MON-FRI	0730-1800
ALL	SAT-SUN	0900-1700

18 AIRPORT USE: PUBLIC
19 ARPT LAT: 39-50-25.0000N ESTIMATED
20 ARPT LONG: 083-50-24.6000W
21 ARPT ELEV: 1051.2 SURVEYED
22 ACREAGE: 1,516
> 23 RIGHT TRAFFIC: NO
> 24 NON-COMM LANDING: NO

25 NPIAS/FED AGREEMENTS: NGY3
> 26 FAR 139 INDEX:

SERVICES

> 70 FUEL:
> 71 AIRFRAME RPRS: MAJOR
> 72 PWR PLANT RPRS: MAJOR
> 73 BOTTLE OXYGEN: NONE
> 74 BULK OXYGEN: NONE
75 TSNT STORAGE: HGR, TIE
76 OTHER SERVICES:
AFRT, AVNCS, CHTR, INSTR, RNTL, SALES

FACILITIES

> 80 ARPT BCN: CG
> 81 ARPT LGT SKED: SEE RMK
BCN LGT SKED: SS-SR
> 82 UNICOM: 122.950
> 83 WIND INDICATOR: YES-L
84 SEGMENTED CIRCLE: YES
85 CONTROL TWR: NO
86 FSS: DAYTON
87 FSS ON ARPT: NO
88 FSS PHONE NR:
89 TOLL FREE NR: 1-800-WX-BRIEF

BASED AIRCRAFT

90 SINGLE ENG:	30
91 MULTI ENG:	5
92 JET:	1
TOTAL:	36
93 HELICOPTERS:	0
94 GLIDERS:	0
95 MILITARY:	0
96 ULTRA-LIGHT:	1

OPERATIONS

100 AIR CARRIER:		0
102 AIR TAXI:	200	~~240~~
103 G A LOCAL:	6000	~~6,050~~
104 G A ITNRNT:	18,000	1,590
105 MILITARY:	30	~~1,700~~
TOTAL:		~~9,215~~ 24,220
OPERATIONS FOR 12 MONTHS ENDING:		24,220 12/31/2015

09-08-2016

RUNWAY DATA

	06/24	15/33
> 30 RUNWAY INDENT:		
> 31 LENGTH:	9,009	5,499
> 32 WIDTH:	150	100
> 33 SURF TYPE-COND:	ASPH-CONC-F	ASPH-F
> 34 SURF TREATMENT:	GRVD	
35 GROSS WT: S	50.0	12.0
36 (IN THSDS) D	60.0	
37 2D		
38 2D/2D2		
> 39 PCN:	60 /R/B/W/T	

2500 = Jet

LIGHTING/APCH AIDS

	HIGH	MED		
> 40 EDGE INTENSITY:	PIR - F / PIR - F	BSC - F / NPI - F	- / -	- / -
> 42 RWY MARK TYPE-COND:	P4L / P4L	P4L / P4L	/	/
> 43 VGSI:	4S / 6D	3G / 3T	/	/
44 THR CROSSING HGT.:	3.00 / 3.00	3.00 / 3.00	/	/
45 VISUAL GLIDE ANGLE:	- / -	- / -	- / -	- / -
> 46 CNTRLN-TDZ:	- / -	- / -	- / -	- / -
> 47 RVR-RVV:	Y /	Y / Y	/	/
> 48 REIL:	/ SSALR	/	/	/
> 49 APCH LIGHTS:				

OBSTRUCTION DATA

50 FAR 77 CATEGORY	C / PIR	B(V) / B(V)	/	/
> 51 DISPLACED THR:	/	/	/	/
> 52 CTLG OBSTN:	TREES / ROAD	TREES / TREES	/	/
> 53 OBSTN MARKED/LGTD:	/	/	/	/
> 54 HGT ABOVE RWY END:	~~40~~ / 17	~~38~~ / ~~87~~	/	/
> 55 DIST FROM RWY END:	~~1,466~~ / 925	~~1,280~~ / ~~1,341~~	/	/
> 56 CNTRLN OFFSET:	~~650L~~ / 605R	~~300L~~ / ~~500R~~	/	/
57 OBSTN CLNC SLOPE:	~~20:1~~ / 42:1	~~28:1~~ / ~~17:1~~	/	/
58 CLOSE-IN OBSTN:	N / N	N / N	/	/

64 1765 ~~40~~ 17 ~~1,466~~ 925 ~~0B~~ ~~650L~~ 605R 24:1 ~~20:1~~ 42:1
36 ~~38~~ ~~87~~ 86 1300 ~~1,280~~ ~~1,341~~ 1830 300L ~~300L~~ ~~500R~~ 400R 30:1 ~~28:1~~ ~~17:1~~ 19:1

DECLARED DISTANCES

> 60 TAKE OFF RUN AVBL (TORA):	9,009 / 9,009	5,499 / 5,499	/	/
> 61 TAKE OFF DIST AVBL (TODA):	9,009 / 9,009	5,499 / 5,499	/	/
> 62 ACLT STOP DIST AVBL (ASDA):	9,009 / 9,009	5,499 / 5,499	/	/
> 63 LNDG DIST AVBL (LDA):	9,009 / 9,009	5,499 / 5,499	/	/

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

> 110 REMARKS

A 033	RWY 06/24 980 FT CONC NE END 1200" CONC SW END.
A 035	RWY 15/33 LIMITED TO 25000 LBS SINGLE WHEEL LOAD CAPACITY OR LESS.
A 081	ACTVT MIRL RY 15/33, REIL RY 06, RY 15 & RY 33 - CTAF. HIRL RY 06/24 PRESET ON MED INTS TO INCREASE INTS ACTIVATE - CTAF.
A 083	WIND TEE OTS INDEFLY.
~~A 110-002~~	~~RY 15/33 & TWY F NOT AVBL FOR ACR OPNS.~~
A 110-006	DEER ON AND INVOF ARPT.
A 110-009	HEAVY BIRD ACTIVITY FALL & WINTER MONTHS.
A 110-018	NS ABTMT: AVOID OVERFLYING YELLOW SPRINGS 2 NM SW BLW 4000 FT.
A 110-022	AVOID OVER FLYING ANG RAMP.
A 110-024	RY 24 IS THE PREFERRED RY, WIND 10 KTS OR LESS.
A 110-025	RY 24 ALS UNMONITORED INDEF.
A 110-026	COLUMBUS APCH CD (614) 338-8537.

111 INSPECTOR: (E) C
112 LAST INSP: ~~10/30/2015~~ 7
113 LAST INFO REQ:

RANDY L. COLLER 517-745-3606 9/08/2016

APPENDIX I: SGH HISTORICAL AERIAL MAP RECORD

Envirosite Corporation

Historical Aerial Photo Report | 2016

Order Number: 7667
Report Generated: 10/12/2016

Project Name: Springfield-Beckley Municipal Airport
Project Number: 2336-1

Springfield-Beckley Municipal Airport
1251 West Blee Road
Springfield, Ohio 45502

1175 Post Road East
Westport, CT 06880
Toll Free: 866-211-2028
www.envirositecorp.com

Historical Aerial Photo Report 2016

Envirosite's Aerial Report is designed to assist in evaluating a subject property resulting from past activities. Envirosite's Aerial Map Report includes a search of USGS historical aerial maps, dating back to the early 1900s.

ENVIROSITE SEARCHED SOURCES

SUBJECT PROPERTY:
Springfield-Beckley Municipal Airport
1251 West Blee Road
Springfield, Ohio 45502

YEAR:	***SCALE:***	***SOURCE:***
1964	1" = 1,000'	U.S.G.S.
1968	1" = 1,000'	U.S.G.S.
1973	1" = 1,000'	U.S.G.S.
1988	1" = 1,000'	U.S.G.S.
1994	1" = 1,000'	U.S.G.S.
2000	1" = 1,000'	U.S.G.S.
2004	1" = 1,000'	U.S.G.S.
2009	1" = 1,000'	U.S.G.S.
2013	1" = 1,000'	U.S.G.S.

Envirosite Corporation appreciates your business.
Please contact your Envirosite Corporation customer service representative at 866-211-2028 with any questions.

AERIAL PHOTO

FLIGHT YEAR:
1964

N
W E
S

Scale: 1" = 1,000'

AERIAL PHOTO

FLIGHT YEAR:
1968

N
W E
S

Scale: 1" = 1,000'

AERIAL PHOTO

FLIGHT YEAR:
1973

N
W E
S

Scale: 1" = 1,000'

AERIAL PHOTO

FLIGHT YEAR:
1988

N
W E
S

Scale: 1" = 1,000'

AERIAL PHOTO

FLIGHT YEAR:
1994

N
W E
S

Scale: 1" = 1,000'

AERIAL PHOTO

FLIGHT YEAR:
2000

N
W E
S

Scale: 1" = 1,000'

AERIAL PHOTO

FLIGHT YEAR:
2004

N
W E
S

Scale: 1" = 1,000'

AERIAL PHOTO

FLIGHT YEAR:
2009

N
W E
S

Scale: 1" = 1,000'

AERIAL PHOTO

FLIGHT YEAR:
2013

N
W E
S

Scale: 1" = 1,000'

APPENDIX J: PRIOR WILDLIFE HAZARD RECOMMENDATIONS - WHA 2004

7.0. RECOMMENDATIONS

The following recommendations are offered as a means to minimize the hazards observed at SGH during the Wildlife Hazard Assessment, and can be readily adapted into a Wildlife Hazard Management Plan by the Airport Manager at SGH. If diligently followed, these recommendations should result in a significant reduction of current wildlife hazards at SGH, but they do not diminish the need for SGH to monitor for new wildlife hazards that may arise as airport conditions change.

7.1. Designate/Hire a Wildlife Coordinator and Delineate Responsibilities to Personnel

Currently, SGH maintenance and ANG personnel conduct all wildlife harassment activities at SGH. A professional wildlife coordinator should be appointed by the airport to respond to and monitor all wildlife related activities. It would be the responsibility of this coordinator to see that recommendations from this Wildlife Hazard Assessment are implemented. Because staff assigned to other duties at the airport cannot effectively respond to all wildlife hazard situations, it is recommended that additional staff be hired or activities related to managing wildlife hazards be contracted to an outside source.

The wildlife coordinator should have a background in wildlife biology and wildlife hazard/damage management. This person needs to be physically capable of carrying out the recommendations outlined in this assessment or have the authority to delegate the responsibilities. The coordinator should keep a database of wildlife strike information collected from pilot reports, mechanical inspections, and runway sweeps. It should also be the coordinator's responsibility to ensure that SGH personnel, ANG, pilots and control tower personnel are familiar with the proper procedures for reporting all types of wildlife strikes and to make the FAA Form 5200-7 readily available.

The wildlife coordinator should actively participate in land-use projects or changes on airport property that could increase wildlife hazards at SGH. This coordinator should also establish a wildlife committee for disseminating wildlife hazard information and informing airport personnel of wildlife management activities. The wildlife committee should meet at least once a year to discuss progress with wildlife activities, but may need to meet more frequently if situations dictate otherwise. The committee should have representatives from all appropriate airport departments such as Management, Maintenance, Firefighting, Operations, and Air Traffic Control. A wildlife hazard management program will need to involve each of these departments to varying degrees if it is to be effective.

7.2. Maintain Necessary Permits to Manage Wildlife

The ability to respond to hazardous situations in a prompt and efficient manner is paramount to ensuring air safety, and may sometimes require the lethal removal of hazardous wildlife. SGH currently has a USFWS Depredation Permit (Appendix 6)

which allows the airport to lethally remove certain identified bird species to reinforce harassment techniques. To enable a rapid response to wildlife hazards, management at SGH should maintain this permit. SGH should also monitor bird species which are causing hazardous situations and have the Depredation Permit amended if warranted. WS recommends adding red-tailed hawks and American kestrels to the Depredation Permit if harassment fails to keep these species off the airfield. These species have been observed in concentrations that constitute a hazard to aircraft or have been frequently observed flying in low-level airspace (i.e. approach/departure zones).

Currently, SGH does have a permit from the ODW to remove nuisance white-tailed deer from the airport. A permit for lethal removal of nuisance animals should be maintained from the ODW for removal of coyotes and woodchucks if current personnel do not have or do not wish to obtain a valid state hunting license.

7.3. Train Personnel in Wildlife Hazing Procedures and Species Identification

All personnel that have duties requiring them access to the AOA should be trained to recognize and respond to potential wildlife hazards in an appropriate manner. Depending on the situation, responding may entail an active harassment or shooting program, or it may simply require the employee to notify the wildlife coordinator or other responsible entity of the hazard. Every employee that might encounter wildlife hazards on the airfield should be made acutely aware that it is their responsibility to recognize and respond to the situation. Employees should also be familiar with the damage caused by wildlife and how to respond to potentially hazardous situations. Training should also include species identification of the most hazardous wildlife found in the vicinity. Personnel should also be trained in the safe handling and most effective use of hazing devices to avoid creating a more hazardous situation (e.g., chasing birds into the path of an approaching aircraft). WS offers an 8-hour training course designed to familiarize airport personnel with basic bird identification and dispersal techniques involving hands-on training. A refresher course is recommended every 3 years for employees who have this training to stay abreast of the latest issues and management techniques.

7.4. Have Management Supplies On Hand

It is recommended that vehicles regularly operating on the airfield (including airport maintenance equipment) be equipped with a pyrotechnic launcher and an accompanying supply of bird bangers/bombs and screamers/whistlers (see Appendix 19 for a list of distributors of wildlife management supplies). Proper safety equipment (eye and ear protection) should also be on hand. This will enable all trained airport personnel to quickly and easily haze any birds they may encounter while conducting routine duties. Due to security issues, shotguns may need to be more closely regulated by SGH management. The airport should have on hand (minimum) the following:

-15 mm pyrotechnic pistol launchers and caps (one/vehicle and two spares)

-Bird bangers/bombs (100/vehicle and 400 in storage)
-Screamers/whistlers (100/vehicle and 400 in storage)
-12-gauge shotgun and ammunition (one/authorized vehicle)
-Binoculars (one/vehicle)
-Bird and mammal field identification books (one each/vehicle and one each in office)
-Eye and hearing protection (two each/vehicle and extras in storage)
-Propane exploders with tanks (2-4 in storage for immediate use)

Other supplies such as distress calls, mammal traps, rotating beacons, and sirens may be necessary as specific situations arise. Additionally it is recommended to have supplies on hand to collect wildlife remains which have been struck by aircraft. The kit should include disposable gloves, garbage bags, information tags(recording date and species found), and hand sanitizer. Remains found should then be sent to the Smithsonian Institution for identification purposes. Complete instructions can be found in Section 7.6. It is the airport's responsibility to ensure these items can be procured in a timely manner. Safety procedures should also be followed at all times while using these supplies. Serious accidents have resulted from the misuse of equipment (e.g., loss of airport vehicles from the unsafe practice of firing pyrotechnics from inside vehicles).

7.5. Continue Monitoring Wildlife Populations and Use Patterns on the Airfield

The intent of this Wildlife Hazard Assessment has been to document general occurrence, land-use patterns, and population characteristics of wildlife at SGH. Attempts also were made to identify significant attractions within a 5-mile radius of the airfield that could adversely affect the safety of pilots and their passengers. It must be realized that wildlife abundance and use patterns on airfields are affected by a host of variables that are rarely the same from year to year. Therefore, conclusions based on wildlife populations and patterns during this study are only meant to be a guide and may or may not be consistent with subsequent years. Survey routes and methods were established in a manner that facilitates continued monitoring by airport personnel. Data from this study will provide a baseline for comparison in subsequent years.

SGH should continue to monitor wildlife populations by conducting monthly surveys using the same stations established in this assessment (Appendix 13). While it is recognized that the surveys performed by airport personnel will not be as exact as the ones performed for this assessment, they will still provide general insights into wildlife use patterns over time and enable SGH to gauge the effectiveness of its management efforts. These monthly surveys will take about 1-1.5 hours and should be conducted by the wildlife coordinator or a trained wildlife biologist. To reduce bias, the same observer should conduct all surveys. Data should be maintained in a computer database for generating reports.

7.6. Develop a Record Keeping System for Wildlife Strikes and Harassment Actions

Approximately 29% of the species causing wildlife strikes at SGH were unidentified. Increased efforts should be made to identify all species involved in aircraft collisions. Management recommendations cannot be made on unknown species; therefore, it is extremely important to identify the exact species so proper techniques to alleviate the hazard can be recommended.

Wildlife strike records should be kept and maintained by the wildlife coordinator. As previously discussed, most strike records are incomplete and conclusions must be drawn cautiously in order to plan appropriate management measures. The wildlife coordinator should periodically request a copy of the airport's strike records that are maintained in the FAA database. The FAA Strike Report Form 5200-7 (Appendix 4) may be filled out by a variety of people, including pilots, tower personnel, and field operations employees. By requesting strike records, the wildlife coordinator can keep abreast of all reported wildlife strikes. Requests for strike records should be directed to the following:

Ed Cleary, FAA Biologist, (202) 267-3389, or
Sandra Wright, FAA Bird Strike Database Manager, (419) 621-9440

When runway sweeps are conducted, bird/mammal remains should be collected, and the incidents submitted to the FAA on a Strike Report Form 5200-7. A copy of the report should also be given to the wildlife coordinator. All bird remains (particularly feathers from the head, wings, and tail) that are discovered as part of the routine runway sweeps should be retained until the type of bird can be positively identified by the wildlife coordinator or qualified individual. Once the bird has been identified, the carcass should be buried or disposed of properly. Carcasses should not be left on the airfield to avoid attracting carrion-eating wildlife.

Species that cannot be identified should be frozen in a labeled plastic bag with a reference tag. If the remains are unidentifiable, or if only feathers are available, send feathers (along with the FAA Form 5200-7) to the Smithsonian Institute at the following address for identification:

Smithsonian Institution, NMNH
E-610, MRC 116
10th & Constitution Ave. NW
Washington, D.C. 20560
Attn: Carla Dove

Detailed records of wildlife harassment and management efforts should also be maintained. Keeping these records will provide a useful index of wildlife abundance and use of the airfield over time. The information gained will also enable the wildlife coordinator to monitor the effectiveness of harassment activities. The minimum amount

of information recorded should include the person conducting the action, the date, time, wildlife species, number of animals, location on airfield, and management method used. It would also be useful to document the animal's response to the management action (e.g. abandon airfield, moved to another location on airfield, etc.). A standardized form makes it quick and easy to log an action or observation. The observation sheet in Appendix 14 can be used to record this information or modified to suit the needs of those collecting the information. The wildlife coordinator should maintain these records on a computer database because the data can be easily extracted or sorted into a presentable report.

7.7. Reevaluate Agriculture Practices on Airport Property

Farming practices on SGH property should be reevaluated as they create significant attractants for many species of wildlife including mourning doves, crows, and deer all of which are species of concern at SGH. Elimination of all cropping in an airport environment is typically recommended.

Eliminating the crops on SGH would greatly increase the amount of area needing to be regularly mowed. Unless SGH is capable of properly managing the grass (i.e. mowing before the grass matures enough to produce seed) on the airfield it may be better to crop those areas with the least attractive crop possible.

The best option for SGH would be to eliminate all cropping on airport property ***if and only if*** crops can be replaced with well-managed and regularly maintained grass. If grass cannot be maintained regularly it is likely to be as much of an attractant as crops.

Finally, it is important to consider that the FAA recommends against allowing farming on airport property AC 150/5200-33A Hazardous Wildlife Attractants On Or Near Airports (APPENDIX 18). If the airport relies upon agricultural crops for income necessary to maintain the viability of the airport, then the airport is responsible for following the crop distance guidelines listed in AC 150/5300-13, Airport Design.

7.8. Blackbird Management Program

Efforts on managing starlings/blackbirds/crows should be especially concentrated during the fall migration period. Habitat modifications should be implemented to decrease the attractiveness of the landscape. Many deciduous tree species can withstand removal of up to one-third of their limbs without causing problems. If thinning is conducted during the dormant season, then adverse effects may be minimized. Overall tree removal is the best way to minimize roosts.

Starlings should be trapped when they form large communal flocks. Decoy traps (Figure 8), as discussed in the results section on blackbirds, provide an effective way to remove large numbers of starlings and can be operated and maintained by airport personnel. These traps should be set up when large concentrations of starlings are observed on the airfield. Concentrated DRC-1339, a restricted use pesticide used for

reducing starling populations, is useful if starlings are in a concentrated area. But, according to label directions, can only be used by WS personnel or persons under their direct supervision. This pesticide cannot be used if there is a danger of consumption by threatened or endangered species.

7.9. Install Perimeter Fence

FAA CertAlert No. 04-16 (Appendix 17) was issued in response to increased deer-aircraft collisions on a nationwide basis. WS recommends using a minimum 10-ft high perimeter fence with 3-stranded barbed wire outriggers. SGH currently does not have a complete perimeter fence. A complete perimeter fence should be installed. The perimeter fence surrounding the airport property should be securely attached to the ground along its entire length. Once installed, openings found in the fence should be repaired to prevent deer or other mammals from gaining access to the AOA. Proper fencing and fence maintenance can significantly reduce mammal access to the airfield.

Standardized surveys and casual observations verified deer and coyotes on SGH property. The AOA should be regularly monitored for any deer and coyote activity. Any deer or coyotes on the AOA should immediately be harassed or removed. (See **Recommendation 7.15**)

7.10. Evaluate Potential Wildlife Hazards When Planning New Construction or Land Use Changes

Should SGH expand the AOA, the wildlife coordinator should stay abreast of any construction or land use changes that may attract wildlife to the airport. One particular concern during expansion is the continued maintenance of a perimeter fence. Once installed, if perimeter fences are not maintained during expansion, deer and coyotes could become a potential hazard to aircraft operations.

7.11. Adopt a Zero-Tolerance Policy Towards Hazardous Wildlife

A policy of zero-tolerance on the airfield should be adopted toward all hazardous wildlife including, but not limited to, waterfowl, mourning doves, blackbirds, raptors, coyotes, and deer. When hazardous wildlife species are encountered on the airfield, immediate action should be taken. Currently, limited wildlife harassment actions are employed by SGH towards pigeons and waterfowl with some success. However, increased harassment and lethal removal towards these species is necessary to reduce the numbers on the AOA. Additionally, other species listed in this wildlife hazard assessment need the same, if not increased, attention. All SGH employees need to participate in wildlife harassment activities. At a minimum, when hazardous wildlife are observed the situation should be immediately reported to the wildlife coordinator.

A zero-tolerance policy towards white-tailed deer on the airfield should be adopted immediately. Deer should be immediately harassed off or removed from the AOA. (See **Recommendation 7.15**)

7.12. Eliminate Areas of Periodic Standing Water and Trees

There are several low lying areas on the northeast side of the airport near observation point F (see appendix 13) that retain water and attract several species of waterfowl and shorebirds. These areas should be filled or drainage systems installed to prevent water from "ponding". Consultation with the U.S. Army Corps of Engineers may be necessary to obtain the proper permits if these areas are classified as wetlands. Beavers can create dams which in turn create large areas of surface water, thus attracting waterfowl. In 2005, one beaver was removed from the drainage ditch on the northeast side of airport property causing large areas of surface water. This area should continue to be monitored as other beavers may begin utilizing this area.

If elimination of this water is not possible, it will be vital to exclude birds from these areas and increase harassment and monitoring of these areas when standing water is present. Wire grids can be constructed over ponds or ditches that cannot be eliminated. WS recommends using braided Kevlar wire that is strong, weather resistant, does not stretch, and easy to install. Construct grids in 20-foot spacing to deter geese, 10-foot spacing to deter most ducks, or 5-foot or less spacing to deter most water bird species.

There are also a few woodlots that remain on the airfield (near observation points C, D and E). These woodlots harbor white-tailed deer and coyotes that use the airfield. In addition, nesting hawks and roosting blackbirds use these areas. Removal of the trees would eliminate bird nesting and roosting sites while also exposing areas where white-tailed deer and coyotes are concealed from airport personnel. Removal of woodlots as mentioned above will also reduce blackbird roosting on the airfield.

7.13. Haze Early in the Morning and Consistently

All birds should be hazed from the airfield in the early morning and late evenings. If birds are consistently chased each morning before they have a chance to become acclimated to the area, they will be less apt to return later in the day. Hazing in the late evening can disperse birds that have a tendency to roost in the area. If this policy is consistently maintained, they will soon learn to avoid the airfield altogether. Once birds become established in the area and feel "comfortable," they become increasingly difficult to disperse, especially if they begin feeding or nesting. Flocking birds such as geese and starlings are readily attracted to individuals or flocks of birds already present, resulting in a dramatic increase in the number of birds on the airfield in a short period of time. To prevent this decoying effect, all flocking birds should be hazed from the airfield immediately upon their arrival and not allowed to loaf, feed, or nest.

7.14. Increase Hazing Efforts During Migration Periods and Inclement Weather

During migration periods, the frequency of hazing patrols should be substantially increased because non-resident birds are unaware of the "zero-tolerance" nature of the

airfield and will attempt to land. Propane exploders and other static deterrents may be applied during these short-term periods of migration to discourage transient birds from landing on the airfield in the first place. It should be noted that static devices such as propane exploders and plastic flagging lose their effectiveness if not frequently moved (i.e. every 2 to 3 days). For this reason, these deterrents are typically directed at non-resident animals just passing through the area.

During and after inclement weather, earthworms may become an attractive food source for birds. Runways and taxiways should be swept during and after rain to remove earthworms. If birds are being attracted to the airfield by insects, then pesticides should be used for insect control.

7.15. Adopt a Policy of Lethal Management (Shooting) for Unusually Persistent Wildlife

Lethal management should be used to remove birds that are non-respondent to other methods, especially geese, pigeons, starlings, and blackbirds. These species are frequently listed as struck; therefore, lethal management should be implemented. SGH currently has a Federal depredation permit for lethal removal of Canada geese, horned larks, killdeer, mourning doves and mallards. One mallard has been lethally removed from the SGH AOA since 2005. No permit is needed for lethal removal of European starlings or for blackbirds when concentrated in numbers and manner that constitute a health hazard. Whenever using lethal measures, extreme caution should be used if an aircraft is on final approach or is departing. The issue of public sensitivity to lethal management should be considered, and discreteness is advised. However, concerns over public sensitivity should not supersede those of public safety, and SGH should not hesitate to implement lethal management when the situation warrants such action.

7.16. Deer and Coyote Removal Programs

White-tailed deer and coyotes are significant hazards to aircraft and should be immediately removed from airfield when observed. Deer have been observed on the airfield on numerous occasions. On one occasion during standard surveys, five individual coyotes were observed on the airfield at one time. Tracks and scat have been witnessed during surveys and on casual observations. Since the initiation of this WHA, two coyotes have been removed from airport property.

Efforts in controlling white-tailed deer and coyote numbers on the airfield should be diligent and especially concentrated during the winter months when food is scarce. Deer and coyotes should be removed anytime they are on the airport property.

SGH has a current deer depredation permit and was utilized once in 2005. White-tailed deer need to be immediately removed from the AOA when observed. Relocation of deer within the state of Ohio is not permitted; therefore, specially trained sharpshooters should be utilized to humanely shoot deer found within the AOA. SGH has allowed

sport hunters to hunt from within the airfield property. Immediate action should be taken to harass or lethally remove deer when observed within the AOA. SGH should not delay deer removal activities by waiting until the regulated legal hunting season and relying on sport hunters to harvest a portion of the deer found within the AOA.

If lethal options are not immediately available, harassment activities should be conducted immediately and may include pyrotechnics, vehicles, sirens, lights, and any type of noise. Harassment activities should be conducted to direct the deer and coyotes away from the airfield.

SGH is partially surrounded with an 8-foot high fence with 3-stranded barbed wire outriggers on top. This fence only encompasses the ANG base and the area northeast of the ANG base along St. Rt. 794. FAA CertAlert No. 04-16 (Appendix 17) was issued in response to increased deer-aircraft collisions on a nationwide basis. WS recommends using a minimum 10-ft high perimeter fence with 3-stranded barbed wire outriggers. Due to the high cost of replacing the fence, SGH should focus on constructing a fence along the west, south, and east side of the airfield. This is critical along the wooded area near observation points C, D, E, and F where the absence of a fence has allowed free access to deer and coyotes. The fence along the north side of the airport property should also be increased to 10 feet.

Lethal management is often the most efficient method for removing problem coyotes. Foot-hold traps or snares can be used to capture coyotes. However, these devices are specialized equipment and should only be applied by an individual that is familiar with their operation and is knowledgeable of the trapping regulations.

Coyote management at SGH is warranted. Be aware, though, that the removal of established coyotes can bring in new, naïve individuals. These inexperienced coyotes may not be familiar with the airport environment and may be more likely to be involved in aircraft strikes. Therefore, it is important to monitor for coyote activity and take appropriate actions.

Coyotes may be shot or trapped without a special State permit; however, a valid hunting license is required. A permit for lethal management of nuisance animals should be obtained from the ODW for removal of coyotes if SGH maintenance and operations employees do not have, or do not wish to obtain a valid state hunting license. State law requires that live-trapped coyotes must be released on site or euthanized within 24 hours.