



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

# Advisory Circular

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**Subject:** Qualifications for Wildlife Biologist  
Conducting Wildlife Hazard Assessments and  
Training Curriculum for Airport Personnel  
Involved in Controlling Wildlife Hazards on  
Airports

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**Date:** 01/24/2019  
**Initiated By:** AAS-300

**AC No:** 150/5200-36B

1 **PURPOSE.**

1. This Advisory Circular (AC) has two purposes. First, this AC describes the qualifications for wildlife biologists who conduct Wildlife Hazard Assessments (WHA) for airports.
2. Second, this AC addresses the minimum wildlife hazard management curriculum for the initial and recurrent training of airport personnel who implement Wildlife Hazard Management Plans (WHMPs).

2 **APPLICABILITY.**

The Federal Aviation Administration (FAA) recommends that public-use airport operators fulfill the standards and practices contained in this AC. The holders of Airport Operating Certificates issued under Part 139, Subpart D, may use the standards, practices, and recommendations contained in this AC to comply with the wildlife hazard management requirements of Part 139. The FAA also recommends the guidance in this AC for persons wishing to conduct Wildlife Hazard Assessments and for those who help prepare Wildlife Hazard Management Plans or conduct the requisite training.

3 **CANCELLATION.**

This AC cancels AC 150/5200-36A, *Qualifications for Wildlife Biologist Conducting Wildlife Hazard Assessments and Training Curriculum for Airport Personnel Involved in Controlling Wildlife Hazards on Airports*, dated January 31, 2012.

#### 4 **PRINCIPAL CHANGES.**

The following changes have been incorporated:

1. Paragraph 2, Applicability–Language changed back to original language in AC 150/5200-36 in order to be consistent with current recommended language.
2. Paragraph 7.3 (3)–Revised the following requirement to be a qualified airport wildlife biologist: While working under the direct supervision of a qualified wildlife biologist, have conducted at least one Wildlife Hazard Assessment acceptable to the FAA Administrator (as described in §139.337(c)).
3. The revision of this requirement is necessary following the completion of all initial Wildlife Hazard Assessments at Part 139 certificated airports as per §139.337(b). The FAA recognizes that the opportunities to meet this requirement are now limited. The FAA is providing additional options to meet this requirement.

#### 5 **BACKGROUND.**

Wildlife biologists conducting Wildlife Hazard Assessments or training airport personnel actively involved in implementing FAA-approved Wildlife Hazard Management Plans at certificated airports must have professional training and experience in wildlife hazard management at airports [§139.337(c) and (f)(7)]. Airport personnel actively involved in overseeing or implementing FAA-approved Wildlife Hazard Management Plans must receive initial training and recurrent training every 12 consecutive months [§139.303(c) and (e) (Personnel)].

#### 6 **RELATED READING MATERIAL.**

6.1 Please review the most recent versions of the following documents:

1. FAA AC 150/5200-18, *Airport Safety Self-Inspection*.
2. FAA AC 150/5200-32, *Reporting Wildlife Aircraft Strikes*.
3. FAA AC 150/5200-33, *Hazardous Wildlife Attractions On or Near Airports*.
4. FAA AC 150/5200-34, *Construction or Establishment of Landfills Near Public Airports*.
5. FAA AC 150/5200-38, *Protocol for the Conduct and Review of Wildlife Hazard Site Visits, Wildlife Hazard Assessments and Wildlife Hazard Management Plans*.
6. FAA AC 150/5210-20, *Ground Vehicle Operations on Airports*.
7. FAA AC 150/5220-25, *Airport Avian Radar Systems*.
8. FAA AC 150/5300-13, *Airport Design*.
9. FAA AC 150/5340-1, *Standards for Airport Markings*.
10. FAA AC 150/5340-18, *Standards for Airport Sign Systems*.

11. FAA Office of Safety and Standards, CertAlert 98-05, *Grasses Attractive to Hazardous Wildlife*.
12. FAA Office of Safety and Standards, CertAlert 16-03, *Recommended Wildlife Exclusion Fencing*.
13. Cleary, E. C. and Archie Dickey. 2010. *Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airports*. Airport Cooperative Research Program Report #32.
14. Cleary, E. C. and R. A. Dolbeer. 2005. *Wildlife Hazard Management at Airports: A Manual for Airport Personnel*. 2nd Ed. FAA, Office of Airport Safety and Standards, Washington, DC.
15. Dolbeer, R. A., J.R. Weller, A.A. Anderson and M.J. Begier. 2016. *Wildlife Strikes to Civil Aircraft in the United States, 1990 – 2015*. FAA National Wildlife Aircraft Strike Database Serial Report #22.
16. Dolbeer, R. A. et al. *Ranking the Hazard Level of Wildlife Species to Civil Aviation in the United States: Update #1*. Special Report for the Federal Aviation Administration, July 2, 2003.
17. *Report to Congress: Potential Hazards to Aircraft by Locating Waste Disposal Sites in the Vicinity of Airports*, April 1996, DOT/FAA/AS/96-1.
18. Title 14, Code of Federal Regulation, Part 139, Certification of Airports.
19. Title 40, Code of Federal Regulation, Part 258, Criteria for Municipal Solid Waste Landfills.
20. FAA Grant Assurance No. 34, Policies, Standards, and Specifications.
21. FAA Passenger Facility Charge (PFC) Assurance No. 9, Standards and Specifications.
22. Aeronautical Information Manual (AIM).

- 6.2 Some of these documents and other information on wildlife management, including FAA CertAlerts and guidance on siting hazardous wildlife attractants such as landfills, are available on the FAA website at [http://www.faa.gov/airports/airport\\_safety/wildlife/resources/](http://www.faa.gov/airports/airport_safety/wildlife/resources/).

7 **PROFESSIONAL QUALIFICATIONS OF WILDLIFE BIOLOGISTS CONDUCTING WILDLIFE HAZARD ASSESSMENTS AND WILDLIFE HAZARD MANAGEMENT TRAINING AT FAA CERTIFICATED AIRPORTS.**

- 7.1 Wildlife biologists conducting airport Wildlife Hazard Assessments must meet certain education, training, and experience standards.

Section 139.337(c) reads: Wildlife Hazard Assessment required in paragraph (b) of this section shall be conducted by a wildlife damage management biologist who has professional training and/or experience in wildlife hazard management

at airports or an individual working under direct supervision of such an individual.

- 7.2 Airports with a FAA-approved Wildlife Hazard Management Plan must provide employees the training needed to carry out the Plan.

§139.337(f)(7) reads: A training program conducted by a qualified wildlife damage management biologist to provide airport personnel with the knowledge and skills needed to successfully carry out the Wildlife Hazard Management Plan required by paragraph (d) of this section.

- 7.3 To meet the requirements of §139.337(c) and (f)(7), a wildlife damage management biologist (from now on referred to as a “qualified airport wildlife biologist”) must:

1. Have the necessary academic coursework from accredited institutions and work experience to meet the qualifications of a GS-0486 series wildlife biologist as defined by the U.S. Office of Personnel Management classification standards (Appendix A) **or** be designated as a Certified Wildlife Biologist by The Wildlife Society (<http://www.wildlife.org>) **and**,
2. Have taken and passed an airport wildlife hazard management training course acceptable to the FAA Administrator (Appendix C) **and**,
3. While working under the direct supervision of a qualified airport wildlife biologist:
  - a. Have conducted at least one Wildlife Hazard Assessment acceptable to the FAA Administrator (as described in Section 139.337) **or**,
  - b. Conducted at least one year of continual wildlife hazard monitoring at a certificated airport using FAA-approved methodology (FAA AC 150/5200-38, Ch. 4).
4. Have successfully completed at least one of the following within 5 years of their initial FAA approved airport wildlife hazard management training course, and every 5 years thereafter:
  - a. An airport wildlife hazard management training course that is acceptable to the FAA Administrator (Appendix C), **or**
  - b. Attendance, as a registered participant, at a joint Bird Strike Committee–USA/Bird Strike Committee–Canada annual meeting, **or**
  - c. Other training acceptable to the FAA Administrator.

- 7.4 Individuals who work under the direct supervision of a qualified airport wildlife biologist are allowed to conduct Wildlife Hazard Assessments if the airport sponsor and the qualified airport wildlife biologist agree in writing to determine how the qualified airport wildlife biologist will:

1. Supervise how the individual(s) will conduct the Wildlife Hazard Assessment, and
2. Report progress of the Wildlife Hazard Assessment, and
3. Supervise the Wildlife Hazard Assessment report production.

- 7.5 Certificate Holders or Airport Sponsors must obtain documentation verifying the qualifications outlined in paragraph 7.3 (1) – (4) above of any person(s) conducting wildlife hazard assessments or providing requisite training. Documents such as training certificates, transcripts, diplomas, letters from employers, etc. are acceptable to verify professional qualifications.
- 7.6 Holders of Airport Operating Certificates issued under Part 139 must retain records documenting the airport wildlife biologist(s) qualifications to conduct Wildlife Hazard Assessments. These records must be retained for 2 years.

## **8 INITIAL AND RECURRENT TRAINING FOR AIRPORT PERSONNEL ACTIVELY INVOLVED IN MANAGING HAZARDOUS WILDLIFE ON OR NEAR AIRPORTS.**

- 8.1 Personnel actively involved in implementing FAA-approved Wildlife Hazard Management Plans are subject to the requirements of 14 CFR Part 139.303. Section 139.303 requires a specific training regimen for all airport personnel. Section 139.303(c) and (e) require the holder of an Airport Operating Certificate issued under Part 139 to provide initial training and, every 12 months thereafter, recurrent training in wildlife hazard management to airport personnel actively involved in implementing FAA-approved Wildlife Hazard Management Plans. The required training must include “Any additional subject areas required under ... §139.337” [§139.303(c)(5)] and, “As appropriate, comply with the following training requirements of this part ... §139.337, Wildlife Hazard Management” [§139.303(e)(5)].
- 8.2 Appendix D outlines the minimum training requirements for airport personnel who carry out an airport’s Wildlife Hazard Management Plan. Depending on local wildlife and environmental issues, additional topics or more in-depth coverage of listed topics might be needed.
- 8.3 Section 139.337(f)(1) requires the Wildlife Hazard Management Plan to include a list of the individuals having authority and responsibility for implementing each aspect of the plan. This list identifies the individuals by title or position who must complete the required training.
- 8.4 Section 139.337(f) does not prohibit holders of Airport Operating Certificates from using a “train-the-trainer” approach when providing the requisite training. The trainers must receive and successfully complete initial and recurrent training every 12 consecutive months, which includes a discussion of the trainer’s airport wildlife hazard assessment and wildlife hazard management plan, from a qualified airport wildlife biologist. Trainers who are not qualified airport wildlife biologists are limited to providing training to their airport employees.

8.5 Holders of Airport Operating Certificates issued under Part 139 are required to make and keep records of all training for airport personnel involved in controlling wildlife hazards for at least 24 consecutive calendar months [§139.301(b)(1) and §139.303(d)].

A handwritten signature in black ink, appearing to read 'John R. Dermody', with a stylized flourish at the end.

John R. Dermody  
Director, Office of Airport Safety and Standards

**Appendix A. U.S. Office of Personnel Management Qualification Standards for GS-0486  
Series Wildlife Biologists**

- A.1 To be qualified as a GS-0486 series wildlife biologist, a candidate must have the following:
1. A degree in biological science that includes—
    - a. At least 9 semester hours in such wildlife subjects as mammalogy, ornithology, animal ecology, and wildlife management or research courses in the field of wildlife biology; **and**
    - b. At least 12 semester hours in zoology in such subjects as general zoology, invertebrate zoology, vertebrate zoology, comparative anatomy, physiology, genetics, ecology, cellular biology, parasitology, and entomology or research courses in these subjects (excess courses in wildlife biology may be used to meet the zoology requirements where appropriate); **and**
    - c. At least 9 semester hours in botany or the related plant sciences; **or**
  2. A combination of education and experience equivalent to a major in biological science (i.e., at least 30 semester hours), with at least 9 semester hours in wildlife subjects, 12 semester hours in zoology, and 9 semester hours in botany or related plant science, as shown in Paragraph 1 above, plus appropriate experience or additional education; **or**
  3. Be designated as a Certified Wildlife Biologist by The Wildlife Society (<http://www.wildlife.org>).

## **Appendix B. Training Resource Requirements and Instructor Qualifications**

- B.1 The following training resource requirements and instructor qualifications are for individuals wishing to:
- Provide an airport wildlife hazard management course acceptable to the FAA Administrator, for personnel conducting Wildlife Hazard Assessments; or
  - Provide training to airport personnel actively involved in implementing FAA approved Wildlife Hazard Management Plans.
- B.2 **Training Resources and Requirements.**
- B.2.1 A list of training program providers acceptable to the FAA Administrator can be found on the FAA's wildlife strike website:  
[https://www.faa.gov/airports/airport\\_safety/wildlife/resources/#training](https://www.faa.gov/airports/airport_safety/wildlife/resources/#training).
- B.2.2 Links to the most recent versions of FAA regulations, FAA Advisory Circulars, CertAlerts, and other documents relevant to wildlife hazard management issues can be found at [http://www.faa.gov/airports/airport\\_safety/wildlife/resources/](http://www.faa.gov/airports/airport_safety/wildlife/resources/).
- B.2.3 Those proposing to establish a program to train qualified airport wildlife biologists to meet the requirements of 14 CFR §139.337 must submit a complete training syllabus and instructor resume to the FAA. The syllabus must include all lesson plans, student handouts, and graphic presentations that include at a minimum all curriculum items provided in Appendix C. Submit the materials to:
- FAA National Wildlife Biologist, AAS-300  
Office of Airport Safety and Standards  
Federal Aviation Administration,  
800 Independence Ave SW  
Washington DC 20591
- B.2.4 The goal of the training must be to provide the knowledge, skills, and abilities needed by a wildlife biologist to conduct Wildlife Hazard Assessments [§139.337(c)] and to conduct wildlife hazard training [§139.337(f)(7)]. To be acceptable to the FAA, the course must be at least 24 hours in length and include the curriculum items listed in Appendix C.
- B.3 **Instructor Qualifications.**
- The lead instructor for the training should:
1. Be a qualified airport wildlife biologist.
  2. Have a minimum of 2 years' experience in all aspects of managing hazardous wildlife on or near airports.

**Appendix C. Training Curriculum Outline for Individuals Wishing to Provide an Airport Wildlife Hazard Management Course Acceptable to the FAA Administrator, for Personnel Conducting Wildlife Hazard Assessments**

**C.1 Training Curriculum Outline.**

The goal of the training must be to provide the knowledge, skills, and abilities needed by a wildlife biologist to conduct Wildlife Hazard Assessments [§139.337(c)] and to conduct wildlife hazard training [§139.337(f)(7)]. To be acceptable to the FAA, the course must be at least 24 hours in length and include the curriculum items listed below.

1. Training goals and process
2. Airport familiarization
  - a. Introduction to the National Plan of Integrated Airport Systems
  - b. Airport design and layout (AC 150/5300-13, *Airport Design*)
  - c. Navigation Aids and Air Traffic Control (Aeronautical Information Manual [AIM])
  - d. Airport operations and safety (AIM)
  - e. Signs, marking, and lighting (AC 150/5340-1, *Standards for Airport Markings*, and AC 150/5340-18, *Standards for Airport Sign Systems*)
  - f. Ground vehicle operator communication (AC 150/5210-20, *Ground Vehicle Operations on Airports*)
3. Aircraft familiarization
  - a. Physics of a strike
  - b. Aircraft nomenclature
  - c. Civil aviation aircraft categories
  - d. Aircraft engines
    - i. Reciprocating
    - ii. Turbo
  - e. Aircraft certification standards
4. Preview of wildlife hazards to aviation
  - a. History of major strikes
  - b. Aviation losses
    - i. Worldwide
    - ii. United States
5. Applicable laws, regulations, and policies
  - a. Migratory Bird Treaty Act of 1918, as amended

- b. Animal Damage Control Act of 1931, as amended
- c. Bald Eagle Protection Act of 1940, as amended
- d. Federal Insecticide, Fungicide, and Rodenticide Act of 1948, as amended
- e. National Environmental Policy Act of 1969, as amended
- f. Endangered Species Act of 1973, as amended
- g. Title 14, Code of Federal Regulations, Part 139, Certification of Airports
- h. Title 40, Code of Federal Regulations, Part 258, Criteria for Municipal Solid Waste Landfills
- i. Title 50, Code of Federal Regulations, Parts 1–199, Wildlife Management
- j. Wendell H. Ford Aviation Investment and Reform Act for the 21st Century, Pub. L. No. 106–181 (April 5, 2000), “Structures Interfering with Air Commerce,” section 503
- k. Applicable FAA ACs in the 150/5200 series about Airport Wildlife Hazard Management
  - l. Applicable FAA Airport CertAlerts
  - m. Applicable state and local laws, regulations, and ordinances
- 6. Department of Defense requirements and perspective on military/civilian joint-use airports
- 7. Other Federal and State agency roles and responsibilities
  - a. U.S. Department of Interior, Fish and Wildlife Service
    - i. Role and responsibilities related to managing problem wildlife
    - ii. Migratory Bird Depredation Permits
    - iii. Salvage Permits
    - iv. Bald and Golden Eagle Protection Act Permits: 50 CFR§ 22.26 (*Permits for eagle take that is associated with, but not the purpose of, the activity*) and 50 CFR § 22.27 (*Removal of Eagle Nests*)
  - b. U.S. Department of Agriculture, Wildlife Services
    - i. Role and responsibilities related to managing problem wildlife
  - c. Other agencies
    - i. U.S. Environmental Protection Agency
      - (1) Siting landfills
      - (2) Pesticide registration and use
    - ii. U.S. Army Corps of Engineers
      - (1) Wetlands mitigation
  - d. Multi-Federal Agency Memorandum of Agreement

- e. Applicable State wildlife regulations
8. FAA National Wildlife Strike Database
  - a. Strike reporting
  - b. Species identification and feather identification
  - c. Database access
9. Environmental issues—working with Federal and State agencies
  - a. National Environmental Policy Act
  - b. Endangered Species Act (threatened and endangered species consultation)
  - c. U.S. Army Corps of Engineers (wetland loss and wetland mitigation)
10. Initial consultations and Wildlife Hazard Assessments (WHAs)
  - a. Triggering events for WHAs
  - b. Duration and contents of WHAs
  - c. Wildlife surveys at airports to assess wildlife hazards
  - d. Data analysis and presentation of results
  - e. Writing a WHA
11. FAA review of a WHA and determination of need for a Wildlife Hazard Management Plan (WHMP)
12. Drafting and carrying out integrated WHMPs
  - a. Contents of WHMPs
  - b. FAA review of WHMPs
  - c. National Environmental Policy Act review
  - d. Compliance with the Endangered Species Act, and other special purpose environmental laws and regulations
13. Integrated wildlife hazard management for airports; survey of basic control strategies and tactics
  - a. Flight schedule modification
  - b. Habitat modification and exclusion
  - c. Wildlife dispersal techniques
  - d. Wildlife population management
14. Addressing off-airport attractants and community planning and involvement
15. Outline of field trip (to conduct a “mini” WHA)
16. Field trip/site visit
17. Final exam

18. Post exam review
19. Course evaluation
20. Presentation of certificates

**C.2 Recommendations.**

1. Exams or tests may be oral, written, practical demonstrations, or a combination of each.
2. Passing grade/evaluation should be recorded and retained as instructor's records.
3. Instructors should retain course attendance records for a period of 2 years.

## **Appendix D. Training Curriculum Outline for Airport Personnel Actively Involved in Implementing FAA-Approved Wildlife Hazard Management Plans.**

### **D.1 Training Curriculum Outline.**

The goal of the training course must be to provide the knowledge, skills, and abilities needed by airport personnel to safely, accurately, and effectively implement relevant portions of an FAA-approved Wildlife Hazard Management Plan. To be acceptable to the FAA, initial and recurrent training must include the following agenda items:

1. General survey of wildlife hazards to aviation based on the most recent annual FAA National Wildlife Strike Database Serial Report.
2. Review of wildlife strikes, control actions, and observations at the airport over at least the past 12 months.
3. Review of the airport's Wildlife Hazard Assessment is to include—
  - a. Existing wildlife hazards and trends in wildlife abundance.
  - b. Status of any open or unresolved recommended action items for reducing identified wildlife hazards to air carrier operations within the past 12 months.
4. Review of the airport's Wildlife Hazard Management Plan, to include the following:
  - a. Airport-specific wildlife attractants, including man-made and natural features and habitat management practices of the last 12 months.
  - b. Review of the airport's wildlife permits (local, State, and Federal).
  - c. Review of other airport-specific items:
    - i. Wildlife hazard management strategies, techniques, and tools:
      - (1) Flight schedule modification
      - (2) Habitat modification, exclusion
      - (3) Repelling methods
      - (4) Wildlife population management
    - ii. Responsibilities of airport personnel for—
      - (1) Reporting wildlife strikes, control actions, and wildlife observations
      - (2) Communicating with personnel who conduct wildlife control actions or who see wildlife hazards and air traffic control tower personnel and others who may require notification, such as airport operations or maintenance departments
      - (3) Documenting and reporting wildlife hazards seen during patrols and inspections and follow-up control efforts
      - (4) Documenting and reporting when no hazards are seen during patrols and inspections

5. Basic bird and mammal identification, stressing local hazardous and rare or endangered species of concern.
6. For any airport personnel using pyrotechnic launchers or firearms, training on the following topics from a qualified individual<sup>1</sup>:
  - a. Safety, parts, and operation of pyrotechnic launchers.
  - b. Fundamentals of using pyrotechnics to safely and effectively disperse wildlife.
  - c. Personnel protective equipment.
  - d. Cleaning, storage, and transport of firearms and pyrotechnic launchers.
  - e. Applicable local, State, and Federal regulations on firearms, pyrotechnic launchers, and pyrotechnics.<sup>2</sup>
  - f. Live fire training with pyrotechnic launchers including strategies for dispersing wildlife away from runways and aircraft movement corridors.
  - g. For any airport personnel using firearms, live fire training. This training is highly recommended from a qualified individual but not a requirement for this training program.<sup>3</sup>
7. Any other training required by local, State, or Federal regulations.

## D.2 Recommendations.

1. Exams or tests may be oral, written, practical demonstrations, or a combination of all three.
2. The Trainer should retain passing grades/evaluations records.
3. The Trainer should retain course attendance records for a period of 2 years.
4. Airport personnel responsible for the airport's wildlife hazard management program should retain records of those to whom instruction in airport wildlife hazard management has been given for the period of time during which the employees conduct hazardous wildlife management activity on the airport and for 6 months after termination of employment.

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<sup>1</sup> State Certificated Hunter Safety Instructors, police officers, firearms instructors, and other personnel who have been professionally trained in firearms safety should be qualified to teach firearm safety and possibly the safe use of pyrotechnic launchers. Pyrotechnics are classified as high explosives by the Bureau of Alcohol Tobacco and Firearms (ATF) and as Division 1.4 explosives by the U.S. Department of Transportation. There are numerous regulations, security considerations, and ATF licensing requirements that apply to pyrotechnics.

<sup>2</sup> Bureau of Alcohol, Tobacco and Firearms provides information on Federal explosive requirements for explosive pest control devices at: <https://www.atf.gov/explosives/explosives-pest-control-device-requirements>.

<sup>3</sup> Airport personnel actively involved with the use of firearms for the mitigation of wildlife hazards should receive and maintain current firearms training from either a Certified National Rifle Association (NRA) instructor or other qualified individual. This training should include type and caliber of weapon used at the airport.

## Advisory Circular Feedback

If you find an error in this AC, have recommendations for improving it, or have suggestions for new items/subjects to be added, you may let us know by (1) mailing this form to Manager, Airport Engineering Division, Federal Aviation Administration ATTN: AAS-300, 800 Independence Avenue SW, Washington DC 20591 or (2) faxing it to the attention of the Office of Airport Safety and Standards at (202) 267-5257.

Subject: AC 150/5200-36B

Date: \_\_\_\_\_

*Please check all appropriate line items:*

An error (procedural or typographical) has been noted in paragraph \_\_\_\_\_ on page \_\_\_\_\_.

Recommend paragraph \_\_\_\_\_ on page \_\_\_\_\_ be changed as follows:

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In a future change to this AC, please cover the following subject:  
*(Briefly describe what you want added.)*

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Other comments:

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I would like to discuss the above. Please contact me at (phone number, email address).

\_\_\_\_\_

Submitted by: \_\_\_\_\_

Date: \_\_\_\_\_