UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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November 8, 2010

Mr. Mike Spaits,
Eglin AFB Public Affairs Office,
96 ABW/PA,
101 West D Avenue, Suite 110,
Eglin Air AFB, FL 32542-5499.

Subject: EPA NEPA Comments on U.S. Air Force (AF) Draft Supplemental Environmental Impact Statement (DSEIS) for the F35 Beddown Eglin Airforce Base (AFB), Florida; CEQ No. 20100381; ERP No. UAF-E15001-FL

Dear Mr. Spaits:

Consistent with the U.S. Environmental Protection Agency's (EPA) Clean Air Act (CAA) § 309 and National Environmental Policy Act (NEPA) § 102 (2)(C) responsibilities, EPA rates this DSEIS as "EC-2.[1]" EPA's identified environmental concerns ("EC"), where additional environmental information is needed ("2") are focused in the areas of noise and water quality impacts which are briefly outlined below and in detail in the enclosed comments.

Background

The DSEIS' primary purpose is to convey the AF's analysis of: 1) the beddown location, operational alternatives and mitigations for the delivery of 59 F-35 Primary Aerospace Vehicles Authorized (F-35) and 2) joint strike force (JSF) flight-operations alternatives to allow efficient pilot training, de-conflict flying operations with other military and civilian operations, and reduce or avoid noise impacts on sensitive receptors. The F-35 is a supersonic, single-seat, single-engine plane.[2] F-35 beddown requirements are for three multi-forces squadrons:[3] an Air Force squadron with 24 F-35A aircraft for Conventional Take-Off and Landing (CTOL), a Marine Corps Fleet Replacement Squadron with 20 F-35 aircraft designed for Short Take-Off Vertical Landing (STOVL), and a Navy Fleet Replacement Squadron with 15 F-35 aircraft, the Carrier Variant (CV) having large, foldable wings used by the Navy.[4]

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[1] See enclosed EPA-rating-system criteria definition document.
[2] P. 1-3
[3] P. 1-6.
[4] P. 1-3

In the DSEIS, the AF analyzed a range of alternatives to maximize the number of flight training operations to be conducted on the Eglin Reservation, preserve restricted airspace to the greatest extent possible, and protect the military value of Eglin AFB as a major range test facility base to support all existing and future military missions. Each alternative consists of a main operating base (MOB) and 2 auxiliary fields. In the preceding 2009 Final EIS (FEIS), 12 candidate MOBs and 37 candidate auxiliary fields were evaluated and narrowed down to 3 MOB candidates and 4 auxiliary field candidates.[5] Six alternatives carried forward and a new one added for further analysis in the DEIS. The DSEIS identified the preferred alternative to be Eglin as the MOB and Choctaw and Duke Fields as the auxiliary fields. The preferred alternative eliminates the runway flight restrictions limiting the F-35's use to only one of Eglin's three runways[6] (the DSEIS' "no action" alternative) because the majority of public comments on the 2005 JSF Decision[7] concerned aircraft-noise impacts to the public, human health, and residential property values.

EPA's Concerns

Noise and water-quality impacts are EPA's two primary concerns. Under the preferred alternative, 1,174 off-installation residents near Eglin Main Base would be impacted by noise levels exceeding 75 Day-Night Average Sound Level (DNL). Additionally, 211 on-installation buildings and those who work in the vicinity would be exposed to noise levels exceeding 80 DNL.[8] According to the DSEIS, community response to noise in areas exposed to noise greater than 75 DNL can be expected to be "very severe."[9] The Federal Aviation Administration (FAA) determines noise exposure at or above 65 DNL to be incompatible with residential land use.[10]

According to the DSEIS, significant noise exposure to local residents is predicted for all alternatives. Because the mitigation discussed in the DSEIS is primarily limited to aircraft operations, EPA recommends the Final SEIS (FSEIS) discuss mitigation to address residential noise exposure and the prospective Record of Decision should provide commitment targets for residential mitigation. Recommendations include: 1) residential mitigation (home buyouts and soundproofing) starting with those residences located in the highest (noisiest) contours; 2) greater use of auxiliary airfields, assuming that significant incremental increases recognized by FICON[11] do not result or are mitigated; and 3) flexibility in the implementation of military no-fly days to overlap with holidays and weekends. EPA also recommends "on-installation personnel"

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[5] *Proposed Implementation of the Base Realignment and Closure (BRAC) 2005 Decisions and Related Actions at Eglin AFB, FL Final Environmental Impact Statement* (FEIS).

[6] Air Force's 2009 ROD, Implementation of Base Realignment and Closure (BRAC) 2005 Decisions for the Joint Strike Fighter (JSF) Initial Joint Training Site (IJTS), Eglin AFB, Florida.

[7] *Proposed Implementation of the Base Realignment and Closure (BRAC) 2005 Decisions and Related Actions at Eglin AFB, FL Final Environmental Impact Statement* (FEIS).

[8] P. 4-4.

[9] The National Academy of Sciences 1977 report, Guidelines for Preparing Environmental Impact Statements on Noise (CHABA, 1977), see p. 4-7.

[10] http://www.faa.gov/airports/environmental/environmental_desk_ref/media/desk_ref_chap5.pdf and http://www.faa.gov/airports/aip/guidance_letters/media/PGL_05-04.pdf

[11] Federal Interagency Committee on Noise.

expected to be exposed to high noise levels should be noise-protected consistent with OSHA[12] and AF regulations.

Mitigation in the form of the least environmentally damaging alternative consistent with the mission should minimize public noise impacts. The preferred alternative appears to expose the most residents at Eglin MOB to noise impacts compared to the other presented alternatives. Alternatives 2A and 2E appear to reduce the overall residential noise exposure levels to the public. But Alternative 2E may add significant residential noise impacts at Duke Field. Consequently in the FSEIS, EPA recommends the AF reconsider its preferred alternative to select one that best minimizes residential noise impacts in the context with other project impacts. The significance of selecting an alternative with minimal noise (and other) impacts is that such an alternative would minimize the need for mitigation and interaction with Department of Defense (DoD) policy that may limit off-installation residential noise mitigation.

EPA is particularly concerned over noise impacts to children per Executive Order 13045: *Protection of Children from Environmental Health Risks and Safety Risks*. E.O. 13045 recognizes children may suffer disproportionately from environmental health risks and safety risks. Because their smaller ear canals magnify the sounds entering the ear canals, children's hearing may be particularly sensitive. For example, a 20-decibel difference can exist between adult and infant ears.[13] All seven alternatives analyzed in the DSEIS, including the no action alternative, indicate a concern for noise impacts to children. While the DSEIS alternatives analysis discussed the number of schools and day-care centers potentially impacted, it did not discuss the actual number of potential children, e.g., students, residents, etc., exposed to potentially detrimental noise impacts or identify mitigation measures to diminish the noise impacts. Consequently, the FSEIS should identify the population of children, analyze potential noise impacts upon them, and identify mitigation alternatives, including re-evaluating the preferred alternative selection. For example, Alternatives 2A, 2C, and 2E appear to impact the least number of schools. While certain alternatives having a lesser noise impact to children may instead have a greater potential for stormwater runoff impacts to water quality, water quality impacts may be more easily mitigable than noise impacts to children.

Consistent with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, the FSEIS should consider the recommendation for the AF to establish a noise effects working group for Eglin AFB because EPA is concerned about the proposed and foreseeable increases in noise exposure to area residents, particularly children and EJ populations. Additionally, the FSEIS should document the numbers and percentages of low-income and minority residents within the 65-70 and 70-75 DNL noise contours.

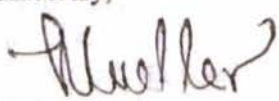
Regarding EPA's water-quality concerns, the FSEIS should address stormwater pollution/runoff and erosion control measures taken to prevent the severe erosion associated with the use of the 20-millimeter aircraft gunnery training target maintenance practices. This previous gunnery training has caused severe erosion of the headwater stream slope of Burntout Creek and altered wetland habitats, Burntout Creek Headwaters. EPA is concerned over continued impacts

[12] Occupational Safety and Health Administration.
[13] www.childrenshearing.org/custom/hearing_health.html

to waters of the U.S., and encourages changes to minimize and mitigate these impacts be reflected in the FSEIS. Additionally, the FSEIS should address stormwater pollution/runoff and erosion control measures taken to prevent the severe erosion associated with the use of TA C-62. The FSEIS should address whether increased gunnery training will increase stormwater runoff/pollution and erosion-related issues for existing target areas and what mitigation measures will be taken, e.g., vegetation buffers surrounding the area to minimize erosion impacts to streams.

Thank you for the opportunity to review and provided comments. The enclosure provides more details regarding EPA's concerns with the proposed action as described in the DSEIS. If you wish to discuss this matter further, please contact Beth Walls (404-562-8309 or walls.beth@epa.gov) of my staff.

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Enclosures: Summary of Rating Definitions and Follow Up Action
EPA's detailed comments on the DSEIS

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION [1]

Environmental Impact of the Action

LO-Lack of Objections
The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns
The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections
The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory
The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS sate, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate
The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alterative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information
The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate
EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant

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[1] From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment.

Enclosure: **EPA's Comments on the F-35 Beddown at Eglin AFB DSEIS**

Aircraft Noise Exposure

- Contour Depiction – Figures depicting noise contours for the No Action Alternative used color-coding and showed noise levels up to 95+ DNL (e.g., Fig. ES-5). We assume that such high levels only occur on airfield property as opposed to outside the airfield boundary where residences would be exposed. The FSEIS should discuss this. On the other hand, noise contours for action alternatives used described contour lines and only showed a maximum contour line of 85 DNL (i.e., 85-90 DNL). However, if there are off-airfield residents living in higher contours (e.g., 90 DNL), those contours should also be depicted in the FSEIS.

- Table ES-17 – EPA's main concern with DoD airfield noise impacts is the level of noise exposure on local residential populations. Table ES-17[1] enumerates the number of people exposed to project military aircraft noise levels by alternative.
  - Contour Increments: The FSEIS should further dissect Table ES-17's noise intervals into conventional 5 DNL increments to provide specific data, particularly for the higher contours. The provided >75 DNL contour should be subdivided further if off-airfield residents are living in contours elevated above 85 DNL. For example, contours should disclose the maximum levels of exposure to the off-airfield residents for each alternative, such as 75-80 DNL, 80-85 DNL, 85-90 DNL and >95 DNL contours. Similarly, the provided 65-75 DNL contour should also be subdivided into 65-70 DNL and 70-75 DNL contours.
  - Noise Exposure Levels: Table ES-17 shows that the No Action alternative[2] would minimize aircraft noise exposure relative to several other alternatives. We assume operation of the to-be-delivered 59 F-35s is incorporated in these noise exposure data. The FSEIS should clarify this. If so, consideration should be given to the No Action alternative and continuing the restrictions provided by the 2009 FEIS since noise exposure impacts are comparatively low (unless this alternative is inconsistent with the SEIS purpose and need or BRAC realignment).
  - Table ES-17 shows that Alternatives 2A[3] and 2E[4] have the least aircraft-noise residential exposure with levels comparable to the No Action, which has the least public noise exposure. Additionally, both 2A and 2E exhibit considerably reduced exposure levels compared to the preferred alternative.[5]

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[1] P. ES-26.

[2] No Action: 1,809 residents within 65-75 DNL and 270 residents within >75 DNL at Eglin Main; 444 residents within 65-75 DNL at Duke Field; and no residents within 65+ DNL at Choctaw Field.

[3] Alt. 2A: 1,801 residents within 65-75 DNL and 194 residents within >75 DNL at Eglin Main; 414 residents within 65-75 DNL at Duke Field; and no residents within 65+ DNL at Choctaw Field.

[4] Alt. 2E: 1,797 residents within 65-75 DNL and 194 residents within >75 DNL at Eglin Main; 781 residents within 65-75 DNL and 141 residents within >75 DNL at Duke Field; and no residents within 65+ DNL at Choctaw Field.

[5] Alt. 1A: 2,289 residents within 65-75 DNL and 1,444 residents within >75 DNL at Eglin Main; 444 residents within 65-75 DNL at Duke Field; and no residents within 65+ DNL at Choctaw Field.

  - EPA recommends the DSEIS preference for 1A should be reconsidered or fully mitigated because it would generate the highest levels of noise exposure to local residents of all the presented alternatives, and therefore could result in public health and quality of life concerns.
- The FSEIS should clarify the noise impacts associated with 69 versus 59 F-35's at Eglin AFB. The SEIS states, "[i]n addition to the Primary Aerospace Vehicle Authorized (PAA) described here, the JSF IJTS plans to periodically operate approximately 10 additional F-35s at Eglin AFB for a period of one to four months at a time.[6]" This statement appears to indicate 69 F-35s will be based at Eglin while the DSEIS' noise analysis appears to be based upon 59. The FSEIS noise analysis should reflect the burden associated with 69 F-35s, particularly considering the affected residences and communities.
- The FSEIS should explain whether the 232 fly days are the same days for all: Airforce, Marines, and Navy. It is unclear whether the three armed forces will observe the same 133 "no fly" calendar days. The DSEIS states that "[o]n average, approximately 80 sorties would be conducted per day, of which approximately 21 would be for CTOL students (i.e., AF), 31 for STOVL students (i.e., Marines), and 28 for CV students (i.e., Navy). And due to certain military no-fly days, the aircraft would fly only 232 days in a year.[7]
- The FSEIS should clarify the total number of landings and take-offs per day, per year expected at Eglin AFB. However, the DSEIS does not provide such numbers of operation. For example, it states the Marine Corps planning factor is for 250 landings per student for the entire training syllabus. The Navy was to build a syllabus allowing each student to achieve at least 100 landings before beginning the Field Carrier Landing Practice (FCLP) phase, approximately 2 per sortie. The FCLP phase has remained the same, with 10 landings per flight.[8] This information does not readily lend to calculating the expected number of F-35 landings and take offs per day, per year.
- The FSEIS should address the Eglin's Airforce Research Laboratory, Munitions Directorate, F-35 Noise-Measurements April 2009 Study findings[9]: 1) the average person would estimate the F-35 to be two – three times louder when landing than any Eglin-based aircraft; 2) it is reasonable to expect the F-35s with a 40,000 lb thrust engine would be in fact noisier than the F-15/F-16's with 23,770 lb engines that are currently based at Eglin; 3) irreversible hearing damage can result from repeated high-noise-level exposure over periods of time; 4) high F-35 noise levels will be problematic both on and off base; 5) the proposed F-35 operations exceed the National Institute for Occupational Safety and Health (NIOSH) recommendations for maximum sound exposure per day, e.g., for F-35 take off level of 121 dB (@ 1,000 ft altitude only 1 takeoff/day would be allowed (Note: The SEIS does not indicate the number of take-offs or landings that would occur per day – see comment above); 6) the F-35 landing approach level of 105-106 dB at 500 ft altitude calls for 20 – 28 more passes per day than allowed under NIOSH's recommendations; and 7) beddown of the F-35 aircraft at some location deep in the Eglin Land Range Complex, e.g., Duke Field, is the only option that will reduce noise to acceptable levels in established communities surrounding Eglin Main.
- The FSEIS should address the preceding 2009 FEIS noise findings that the F-35 at 2,000 ft above ground level (AGL) is louder than the F-16 at 300 ft AGL.

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[6] P. 2-7.
[7] P. 2-5.
[8] P. 2-5.
[9] http://tucsonforward.com/wp-content/uploads/2009/12/F_35_Noise_Measurementsver4_2.pdf

- The FSEIS should discuss the F-35 flying altitude associated with the proposed F-35 training at Eglin, and if altitude (as opposed to only take-off and landing operational noise) was considered in the noise study. The SEIS did not address this issue.
  - For example, Table 3-1 indicates Eglin AFB Existing Airspace ranges from 300 ft AGL floor to unlimited ceiling.[10] The FSEIS should discuss whether the F-35 will be flown at 300 ft AGL, at what frequency, and where. According to the 2009 FEIS, the F-35 noise level at 300 ft AGL is 133 dB while the NIOSH maximum recommended daily exposure levels for 121 dB is 7 seconds.
  - Table 3-1 indicates low altitude training for the "military training route" is 1,500 ft AGL. The 2009 FEIS does not provide the F-35 dB level for 1,500 ft, instead it provides the F-35 noise level for 1,000 ft at 121 dB and 2,000 ft at 112 dB. The FSEIS should discuss whether the F-35 will be flown at 1,500 ft AGL, at what frequency, where, and provide the noise level for 1,500 ft AGL.
  - The United States Marine Corps (USMC) F-35 May 2010 draft EIS Frequently Asked Questions (FAQ) indicates the F-35B will conduct 99 percent of its operations above 5,000 AGL.[11] According to the 2009 FEIS Eglin noise study, the F-35's noise level at 5,000 AGL is 99 dB. The FSEIS should discuss at what altitude AGL the F-35 will be flown for most of its operations.
  - The USMC 2010 draft EIS FAQ indicates the F-35B will conduct more supersonic training than existing military aircraft. The FSEIS should discuss whether more supersonic training will occur than with existing aircraft based at Eglin AFB, what altitudes this training is expected to occur and where supersonic operations will be allowed.
- The FSEIS should identify and address aircraft-noise impacts to children living, going to school, and/or recreating near the considered airfields consistent with Executive Order 13045: *Protection of Children from Environmental Health Risks and Safety Risks*.
  - E.O. 13045 finds a growing body of scientific knowledge demonstrates that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because: children's neurological, immunological, digestive, and other bodily systems are still developing; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible.[12]
  - For example, children's hearing may be particularly sensitive because their smaller ear canals magnify the sounds entering the ear canals, which can translate into as much as a 20-decibel difference between adult and infant ears. For example, some toys and games produce sounds as loud as a jet plane taking off, and that amount of output can cause immediate and permanent hearing loss.[13]
  - All seven alternatives analyzed in the DSEIS, including the no action alternative, indicate a concern for noise impacts to children. For example, under the no action alternative the DSEIS states, "[s]chool and daycare facilities exposed to noise levels above 75 DNL are not considered to be compatible uses or compatible outdoor land use and could increase the risk of hearing loss in children.[14]" Similarly under the preferred alternative, it states "[t]herefore, the noise levels generated by 59 aircraft without flight limitations and the

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[10] P. 3-4.
[11] http://www.usmcjsfwest.com/Resources/Documents/Frequently_Asked_Questions.pdf
[12] Section 1-101.
[13] www.childrenshearing.org/custom/hearing_health.html
[14] P. 2-69.

potentially adverse impacts to children may be considered significant.[15]" Under Alternative 1I it states, "[t]herefore, the noise levels generated under Alternative 1I could have adverse impacts to children that may be considered significant.[16]" Under Alternative 2A it states, "[t]herefore, the noise levels generated under Alternative 2A could have adverse impacts to children.[17]" Under Alternative 2B it states, "[t]herefore, the noise levels generated under Alternative 2B could have adverse impacts to children that may be considered significant.[18]" Under Alternative 2C it states, "[t]herefore, the noise levels generated under Alternative 2C could have adverse impacts to children that may be considered significant.[19]" For Alternative 2D it states, "[t]herefore, the noise levels generated under Alternative 2D could have adverse impacts to children that may be considered significant.[20]" And for Alternative 2E it states, "[f]or noise levels above 75 DNL, educational services are not compatible regardless of noise attenuation. Therefore, the noise levels generated under Alternative 2E could have adverse impacts to children.[21]"

  - The FSEIS should discuss the number of children potentially exposed to detrimental and significant noise impacts and identify schools within the 65-70 and 70-75 dB DNL noise contours, including those potentially requiring noise attenuation and mitigation, since the proposed flight operations have the potential to present a special risk to children.[22] The DSEIS alternatives analysis discusses the number of schools and day-care centers potentially impacted but does not discuss the number of potential children exposed to potentially detrimental noise impacts.

- Consistent with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, the FSEIS should address the following recommendations.
  - The FSEIS should analyze the potential impacts to children compared to potential disproportionate impacts to EJ populations. For example, Alternatives 2A, 2C, and 2E appear to impact the least number of schools but alternatives 2D[23] and 2E[24] could have adverse impacts that could be considered disproportionate to EJ populations.
  - The FSEIS should document the numbers and percentages of low-income and minority residents within the 65-70 and 70-75 DNL noise contours. For example, 12 percent of the people affected by noise at 65 dB DNL may become *highly annoyed*.[25] The DSEIS discusses the EJ populations that are exposed to noise levels above 75 dB DNL, but does not discuss those exposed to noise levels between 65-70 dB DNL and 70-75 dB DNL.
  - The FSEIS should include a synopsis of the public comments received during the public meetings and commenting period along with a summary of the Air Forces response related to EJ.

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[15] P. 2-69.
[16] P. 2-70.
[17] P. 2-70.
[18] P. 2-70.
[19] P. 2-71.
[20] P. 2-71.
[21] P. 2-71.
[22] P. 2-85.
[23] P. 4-134.
[24] P. 4-138.
[25] P. 4-7.

Aircraft Noise Exposure Mitigation

- The FSEIS should identify noise mitigation alternatives for impacts to children, including re-evaluating the preferred alternative selection.
  - For example, Alternatives 2A, 2C, and 2E appear to impact the least number of schools in that both 2A and 2E would impact 2 schools and 2 day care centers while 2C would impact one school and one day care center. While certain alternatives may have a greater potential for stormwater runoff impacts to water quality yet have a lesser noise impact to children, stormwater runoff impacts to water quality may be more easily mitigable than noise impacts to children.
  - The FSEIS should discuss whether schools will require closing or relocating, e.g., the according to the DSEIS, school and daycare facilities exposed to noise levels above 75 DNL are not considered to be compatible uses or compatible outdoor land use and could increase the risk of hearing loss in children. Additionally, the FSEIS should discuss the associated effects upon the local communities should closure or relocation be necessary for mitigation.
- The FSEIS should consider the recommendation for the AF to establish a noise effects working group for Eglin AFB because EPA is concerned about the proposed and foreseeable increases in noise exposure to area residents, particularly children and EJ populations. The working group should address: 1) coordination with local officials to educate development interests and the public about activities and developments that are incompatible with military training activities; 2) receive feedback from the public about issue that may be of concern; 3) regularly apprise communities of any proposed changes to military flight operations, including changes in duration, general flight paths, time of day/night, and noise associated with the training initiative.
- Since military aircraft are designed for performance rather than noise abatement, they typically do not have any engine noise controls, unlike commercial airliners which are subject to FAA noise standards and ratings (e.g., Stage 2 vs. 3 aircraft). Although military-aircraft noise impacts are challenging to mitigate, both operational (flight tracks) and land use (home buyouts and sound-proofing) mitigative methods can be effective. EPA recommends the FSEIS should discuss these as mitigation options.
  - Table ES-17 indicates noise exposure levels from F-35 and other military aircraft are still significant for many local residents despite the noteworthy mitigative methods examined, e.g., 1) flight-number reductions (takeoffs and landings: operations), operational-profile changes (flight tracks), night-flight restrictions, simulation versus actual training, and Runways 01/19-operation reductions; use of auxiliary airfields (e.g., Duke and Choctaw Fields); and "no-fly" days to limit sorties to 232 days per year instead of 365 days.[26]
  - The FSEIS should consider the following recommendations:
    - Residential Mitigation: Land-use mitigation for residents living within the 65+ DNL contours should be considered. Mitigation methods include purchases and/or sound-proofing of homes within the 65+ DNL contours, starting with the highest (noisiest) contours. Table ES-17 indicates residents at the Eglin Main Base live in contours noisier than 75 DNL for all Alternative A and B subalternatives (however, as indicated

[26] Table ES-20.

above, the number of residents living within the provided >75 DNL contour should be further dissected into 5 DNL contour increments).

- Auxiliary Airfield Use: The use of auxiliary airfields to provide relief to a main airfield could be further promoted to further relieve Eglin Main Base (which already accommodates many aircraft operations of F-35 and other military aircraft). The assumption is this mitigation method will not create significant noise increases to residents living near Duke or Choctaw Fields without appropriate land use or operational mitigation (i.e., +1.5 DNL or greater for background levels of 65 DNL or +3.0 DNL or greater for background levels of 60 DNL[27]).
- No-Fly Days Flexibility: The 133 designated "no-fly" days per year should be further discussed in the FSEIS in terms of their application flexibility. The FSEIS should discuss whether holidays and weekends are incorporated into these designated days. Within the limits of the mission, nighttime sorties should also be limited to minimize sleep interference, particularly if air-delivered ordnance training is involved.
- On-Airfield Personnel Protection: The provided contour figures[28] indicate military and contractor personnel working on the installation (Eglin Main, and Duke and Choctaw Fields) may experience very high noise levels of 95+ DNL. EPA expresses concern over these high noise levels and defers to AF and (OSHA) regulations regarding ear protection for such personnel.
- Alternative Selection: The most effective noise "mitigation" would be noise avoidance by selecting the alternative with the least noise impacts that meets the mission and project purpose and need. The preferred alternative (1A) compared to the other alternatives will result in the greatest exposure of residents to aircraft-noise impacts at the Eglin Main Base (including 1,444 residents at >75 DNL), plus additional exposure at Duke Field. The FSEIS should reconsider the preferred alternative from a noise-impact perspective; Alternatives 2A and 2E have the lowest exposure levels to local residences at the Eglin Main Base. However, 2E does have the greatest exposure levels for Duke Field, including 141 residents at >75 DNL. The significance of selecting an alternative with minimal noise (and other) impacts is that such an alternative would minimize the need for mitigation and interaction with DoD policy that may limit off-installation residential noise mitigation.

- AF Handbook 32-7084, The Air Installation Compatible Use Zone Program Manager's Guide - The AF recommends against most residential land uses in areas exposed to noise levels greater than 65 DNL unless special noise-attenuation measures are incorporated into the residences. For example, in areas exposed to noise at 65–70 DNL, a 25 dB outdoor-to-indoor noise level reduction (NLR) is required in order for the residence to be considered compatible with noise. And in areas exposed to noise at 70–75 DNL, a 30 NLR is required for the structure to be considered compatible.[29]
  - The FSEIS should discuss the application of this Handbook to onsite and offsite residences.

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[27] These incremental levels of significance were agreed upon by the Federal Interagency Committee on Noise (FICON), which included the AF, FAA and EPA.
[28] P. ES-5.
[29] P. 5-8.

  - EPA notes the AF will include in its Military Family Housing Privatization Initiative (MFHPI) a request for qualifications a requirement that all residences be designed and constructed such that these outdoor-to-indoor noise-level reductions are achieved and structural noise attenuation would not mitigate noise levels experienced while residents are outdoors.[30] The FSEIS should discuss whether all military families stationed at the Eglin Reservation will be housed in residences designed and constructed consistent with the MFHPI qualifications.
- EPA recommends the selected MOB establish a "hotline" for affected residents to discuss any noise complaints attributable to the airfield training. Complaints could be routed to the airfield Public Relations Officer or Environmental Officer. We recommend that potential visits to homes by the officer or airfield chain of command be considered within airfield and AF policy to verify (or dispute) any reasonable noise complaints as a basis for potential adaptive management to attenuate noise effects.
- While alternative 2A may be the least environmentally damaging alternative in terms of noise impacts, the SEIS should consider other project impacts in context. For example, Figures 2-17 and 2-18 identify several creeks near the notional location of the runway at Duke Field for both Alternatives 2A and 2E. Potential water quality impacts to (e.g., runway and construction stormwater runoff) and mitigation alternatives for these waterways should be considered for construction and operation should Alternative 2A be selected. There may be other impacts associated with 2A also requiring mitigation.

Other

- **Cumulative effects:** The Gulf Regional Airspace Strategic Initiative (GRASI) airspace study indicates airspace configuration will not support more than 59 F-35 aircraft at this time.[31] Since the DoD has selected the F-35 to be the next-generation multi-role fighter aircraft for the AF, Navy, and Marine Corps,[32] the FSEIS should address whether existing aircraft, i.e., F-15 and F-16's used at Eglin AFB, will be phased out and replaced with F-35's and whether this replacement will allow for increasing the number of F-35 aircraft that can fly in the airspace and address the associated environmental impact implications of such a phase out of the F-15/16 and replacement with the F-35.
- **Cumulative effects:** the FSEIS should discuss the reasonable population growth projections for the area including the potential noise exposure to children. Additionally once GRASI is completed and recommendations are implemented, the FSEIS should discuss whether there is potential to increase airspace capacity in the future, particularly for the F-35. Consequently, it is reasonable to assume future efforts may result in additional noise impacts to surrounding communities including children and EJ populations.
- **CZMA[33] Determination:** The FSEIS should address the State's identified issues regarding: stormwater treatment, wetlands impacts, consumptive water use, use of native species for soil stabilization and landscaping, creation of natural buffers for water bodies, recycling measures, use of Hurlburt Field's Waste-to-Energy facility for disposal of non-recyclable materials, use

[30] P. 5-8.
[31] P. 1-2.
[32] P. 1-6.
[33] Coastal Zone Management Act

of pervious surfaces to reduce storm water runoff, use of reclaimed water for landscaping and other non-potable uses. The DSEIS states the AF is preparing a CZMA determination to address the impacts on the coastal zone. Appendix I, *CZMA Determination,* indicates the determination has already been completed but no information has been provided nor do the state-identified issues appear to be addressed.

- **Stormwater pollution/erosion concerns:** The FSEIS should address stormwater pollution/runoff and erosion control measures taken to prevent the severe erosion associated with the use of the 20-millimeter aircraft gunnery training target maintenance practices have previously caused severe erosion of the headwater stream slope of Burntout Creek and have altered wetland habitats. The DSEIS indicates approximately 114,977 rounds of 25-millimeter ammunition are expected to be fired each year. According to the DSEIS, over the years of use, the target surface has been kept free of vegetation to allow for pilot target approach recognition and recovery of projectile debris. Erosion has and would result from keeping the target area free of vegetation. Because the increase in JSF flight training would not change the conditions that led to the severe erosion,[34] EPA is concerned over continued impacts to waters of the U.S., and encourages changes to minimize and mitigate these impacts be reflected in the FSEIS.
- **Stormwater pollution/erosion concerns:** The FSEIS should address stormwater pollution/runoff and erosion control measures taken to prevent the severe erosion associated with the use of TA C-62. The DSEIS indicates management practices for TA C-62 include ground and surface water monitoring, no new cleared target areas should be established within 200 feet of any natural water body, and detonations of explosives should not occur within 200 feet of water bodies.[35] The FSEIS should make clear whether monitoring includes sediments and related stormwater runoff/pollution and erosion-related parameters. And the FSEIS should address whether increased gunnery training will increase stormwater runoff/pollution and erosion-related issues for existing target areas and what mitigation measures will be taken, e.g., vegetation buffers surrounding the area to minimize erosion impacts to streams.

[34] P. 4-190.

[35] P. 4-190.