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### **EVALUATION OF THE DEPARTMENT OF THE NAVY'S FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS) FOR THE BASING OF MV-22 AND H-1 AIRCRAFT IN SUPPORT OF III MEF ELEMENTS IN HAWAII**

Submitted by  
Hawaii State Representative Cynthia Thielen  
House District 50 (Kailua, Kaneohe Bay)

Dear Project Manager:

I represent House District 50, which includes the area where Marine Corps Base Hawai'i-Kaneohe Bay (MCBH) is located. I respectfully submit the following comments on the Final Environmental Impact Statement (FEIS).

My comments on the FEIS cover these areas:

1. Whether the FEIS adequately addresses aircraft noise impact on Aikahi Elementary School.
2. Whether the FEIS adequately addresses aircraft noise impact on the communities of Aikahi Park, Kaimalino, and those along Kaneohe Bay Drive.
3. Whether the FEIS reflects a good-faith effort to adequately address the Environmental Protection Agency's (EPA) recommendation that the FEIS include certain additional information in its discussion regarding aircraft noise impact on schools and residences. In its letter dated January 3, 2012 to the Naval Facilities Engineering Command (NAVFAC), Pacific Division, the EPA recommended (among other things) that the FEIS:
  - a. Make a valid comparison of school noise level with the school noise criteria of Table C-2 in Appendix D, by adopting the Federal Aviation Administration

(FAA) calculation for noise during a school day (e.g., 8:00 a.m. to 3:00 p.m. on weekdays); and

- b. Calculate awakenings [sleep disturbances] for the baseline, no action alternative, and action alternatives, and summarize the results in the body of the document.
4. Whether the FEIS adequately addresses the project's impact on the availability and cost of local rental housing.

NOTE: My concerns are summarized at the beginning of each section. Relevant portions of the FEIS are quoted in italics or block paragraph form. References to the FEIS are cited by the FEIS page number, as well as the electronic Portable Document Format (PDF) page number.

1. **The FEIS does not adequately address aircraft noise impact on Aikahi Elementary School, and its conclusions as to noise impact cannot be taken at face value.**

**Comment:** The FEIS does not discuss aircraft noise impact that is specific to Aikahi Elementary School. This school is adjacent to MCBH and any effects of aircraft noise on student learning and instructional quality should be discussed in the FEIS.

It is disappointing that the FEIS makes no specific mention of Aikahi Elementary School. All nearby public schools are lumped together in a brief, general discussion. The FEIS arrives at the general conclusion that public schools will not be affected, because according to the noise impact study, the additional noise is still within acceptable limits for schools: *“public schools would remain outside the 55 dB DNL contour”* (3-22, PDF p. 183).

Aikahi Elementary School serves children from the MCBH and non-MCBH population. Even though parents and teachers of these students understand that protecting our freedom comes at a cost – and that personal and community sacrifices need to be made – expediency in proceeding with this project does not justify ignoring its possible adverse effects on student learning and achievement. One of my constituents is very concerned about the fate of her autistic child. She notes that Aikahi Elementary School has quite a few students with autism and other learning disabilities. Her specific concern is that autistic children typically cannot tolerate loud noises. Thus, loud aircraft would severely disrupt their entire learning experience. It is unacceptable that the FEIS fails to address such significant issues.

**Comment:** The FEIS discussion of noise impact on schools and the larger community is misleading because noise levels are expressed in terms of day-to-night sound level, averaged over a 24-hour period (DNL). As a result, brief, yet painfully loud aircraft flights can "hide" in the overall DNL measurement. Therefore, the FEIS' use of DNL references makes it difficult to meaningfully assess the real-life impact of additional noise on nearby schools and communities.

The problem is that DNL is not an indication of any single specific noise event, such as the sound intensity of a Cobra helicopter flying over Aikahi Elementary School. Rather, DNL only expresses the cumulative noise level of activity in a given area, averaged over a 24-hour period, with nighttime activity assigned a 10 DB "penalty" to account for humans' increased sensitivity to noise at night. Because it is a cumulative measurement of total sound energy averaged over a period of time, the DNL does not tell us what the maximum noise impact of any single event would be. 3-28 to 3-29, PDF pp. 178-179.

**Comment: The FEIS conclusion that the project will only increase noise by 1 dB DNL for most areas around MCBH is not a true indication of the increased noise burden that community residents will bear, and is therefore misleading.**

The Navy considers increases in aircraft noise levels of less than 1 dB DNL insignificant because "*[c]hanges of 3 dB and less are generally not detected by the human ear.*" A-5 at p. 11, PDF p. 311. Additionally, the FEIS asserts that additional noise generated by the extra aircraft (generally, an increase of +1 dB DNL) is acceptable because the total noise level would still be within acceptable limits for residential purposes:

"The results of the computer noise modeling as determined in dB DNL are compared to DoD thresholds for land use compatibility...65 dB DNL and below is considered compatible with residential land uses." A-5 at p. 10, PDF p. 310.

As such, the FEIS conclusion that the project will only increase noise by 1 dB DNL for most communities around MCBH is not a true indication of the increased noise burden that area residents must bear. As the Navy admits, noise at a particular moment could be softer or louder than the stated DNL measurement: "*[b]ecause the DNL is an average, single event aircraft noises in dB can be both less than and greater than the dB reported as DNL.*" Appendix A-5 at p. 10, PDF p. 310. Thus, the sound of any one event – such as a helicopter flying over a school in the 55 dB DNL contour, or flying at night over a person's home in the 65 dB DNL contour – would register at a higher dB level, more than just a +1 impact on the actual decibel level. For this reason alone, the FEIS conclusions as to noise impact cannot be taken at face value.

**Comment: There are additional reasons why the noise impact predictions can be characterized as not useful, misleading, or even deceptive.**

Essentially, the Navy chose to use theoretical, computer-generated models to determine potential aircraft noise impact on MCBH and surrounding communities. While the noise modeling study established a 2009 baseline for MCBH aircraft operations at that time, the baseline was not created with data recorded "in the field" – that is, measurements of actual noise generated by the various types of aircraft currently in use at MCBH. Instead, a theoretical baseline was established by inputting the known sound levels of aircraft obtained from a database, while taking into account the local geography and topography. Similarly, the projected noise level of the proposed new aircraft was calculated by layering more theoretical sound levels on top of the already-theoretical 2009 "baseline". The FEIS explains its methodology for the noise study and concludes that forecasted changes due to additional aircraft noise would be "very small".

"Modeling for aircraft noise at MCB Hawaii Kaneohe Bay involved inputting data [from a general database] on all of the types of aircraft currently using the airfield and

expected to use the airfield in 2018 under the action and No Action alternatives, including flight tracks and altitude profiles, type and frequency of operations, time of day, and other data. Resulting noise contours represent cumulative noise levels. The following aircraft types were included in the modeling: addition of MV-22 and H-1 aircraft operations; continuation of CH-53 and SH-60 aircraft operations; replacement of P-3C with P-8A aircraft; continuation of C-17, C-5A, and AN-124 aircraft operations; and addition of KC-130 operations. The noise analysis disclosed that fixed wing aircraft would continue to be the dominant contributors (approximately 90 percent) to the DNL noise contours at the base and its environs. Forecasted changes in aircraft noise levels attributed to the MV-22 and H-1 aircraft at six noise sensitive areas would be very small (see Section 5.3.1)." 5-24, PDF p. 530.

- 2. Similarly, the FEIS does not adequately address aircraft noise impact on specific residential communities within District 50 (such as Aikahi Park, Kaimalino, and others along Kaneohe Bay Drive) and again, its conclusions as to noise impact cannot be taken at face value.**

**Comment: Just as the FEIS contains only a broad, general discussion of the impact of additional aircraft noise on area schools, there is no discussion of specific noise impact on any one residential community, particularly those nearest to MCBH.**

Again, the FEIS ignores the fact that some communities will suffer more from additional noise than others, due to their proximity to MCBH operations. Rather than take the time to discuss specific residential communities that will feel the most impact, the FEIS chooses to characterize the project's noise impact on surrounding communities as an overall 1dB DNL increase. As discussed above, DNL gives us only a general idea as to the cumulative noise level averaged over a 24-hour period, and the noise study used only theoretical data, not actual noise measurements taken from aircraft flying over these particular communities. As a result, the FEIS fails to provide citizens, especially those living closest to the flight patterns, with the critical information that they want the most: how loud will aircraft noise be in their specific neighborhood; what is the loudest aircraft sound that they can expect to hear, and what times of day will this be? How will their daily activities, including sleep, be affected?

Similarly, section 3.2.3 on land use compatibility and the noise environment offers only a generalized discussion, with no specific information relevant to the most affected communities:

"There is a potential for certain nearby land uses to be affected by aircraft noise. However, as discussed in Section 3.5, noise contours representing the proposed action would remain similar in size when compared to contours for the No Action Alternative. Existing noise sensitive land uses in the surrounding civilian community currently exposed to aircraft noise levels greater than 65 dB DNL would continue to be exposed to similar noise levels. DoD's acceptability threshold for noise sensitive land uses would not be exceeded in the surrounding civilian communities (see Section 3.5). The increases in future aircraft noise levels associated with introduction of the MV-22 and AH/UH-1 aircraft are expected to be minimal and would be difficult to measure or discern due to the lower noise levels of these aircraft when compared to

other aircraft operating at MCB Hawaii Kaneohe Bay. No mitigation is required for any of the alternatives." 3-7, PDF p. 157.

**Comment: Surprisingly, the FEIS asserts that despite the operation of additional aircraft – said to constitute 28 percent of future flight operations – there will be no significant impact on noise levels for most of the communities around MCBH.**

The project would add several aircraft squadrons to MCBH, which would consist of 24 MV-22 Osprey tiltrotor aircraft, 15 AH-1 Cobra helicopters, and 12 UH-1 Huey helicopters. These additional aircraft are expected to constitute about 28 percent of total future flight operations. One would expect that this sizeable addition to current aircraft operations would be felt and sensed by area residents on a daily basis. However, according to the FEIS:

"DNL contours would remain similar in size and shape to the No Action Alternative contours, with increases in aircraft noise levels of less than 1 dB DNL. The only off-base landfalls of the 65 dB DNL contour are the northern portion of Coconut Island in the middle of Kaneohe Bay and the tip of Kealohi Point (KP). As shown, public schools would remain outside the 55 dB DNL contour. Fixed-wing aircraft [as opposed to the new proposed aircraft] would continue to be the dominant contributor to the overall aircraft noise environment." 3-33, PDF p. 183.

**Comment: As discussed in the previous comments, the FEIS conclusion that the new aircraft will not pose any significant noise impact to residential areas cannot be taken at face value.**

The FEIS discusses noise impact in terms of DNL, an average measurement of noise over a 24-hour period. The actual decibel level of any one event – such as a helicopter flying at night over a person's home located in the 65 dB DNL contour – could be much higher than the overall 65 dB average, and the actual impact would conceivably be felt as much more than just a +1 increase.

**Comment: Noise, particularly aircraft noise from existing and future MCBH operations, has been the number one citizen concern; the Navy needs to take this issue more seriously.**

Over and over again, in the community assessment interviews and scoping documents, there were complaints that noise from MCBH aircraft disrupts the teaching and learning process in schools, causes residences and workplaces to shake, makes indoor conversations impossible at times, and rouses people from their sleep.

Understandably, the community is concerned about the cumulative effect of years of noise exposure, and the overall reduction in their well-being and quality of life. For example, residents (not just near MCBH but on the Big Island as well) feel they are living in a "war zone". Of the citizen responses to the DEIS, one of the most compelling was from a Korean War Veteran who believes in strong national defense and supports the cause, but says he is "*beginning to wonder how much more strain for freedom [he] can stand*"; for years, he and his wife "*endured the noise of jets at the nearby Marine Base*" and "*the blasts that shook [their] windows, interrupted conversations and sleep, blasts that suddenly frightened [them] and visiting friends etc.*" A-5 at p. 44, PDF p. 146.

**Comment:** Unfortunately, when citizens try to obtain information from the Navy about noise from aircraft, they get no satisfactory response, are given "the runaround", or are ignored completely.

For example, one person stated that at a neighborhood board meeting:

"MCBH personnel would not provide details on the decibel level of jets. No straight answer was given. People were frustrated over lack of details...MCBH representative asked questions that the community could not answer, such as 'Are you sure that aircraft is ours?'" A-3 at p. 2, PDF p. 14.

Moreover, people seemed frustrated that there was no apparent effort by the Navy to translate decibel measurements into real-life terms that the average person could understand. Multiple residents asked that the noise impacts be compared in relation to everyday sounds such as vacuum cleaners, lawn mowers, leaf blowers, etc. For example, how loud is an MV-22 Osprey compared to a vacuum cleaner? Is it the equivalent of noise from 100 vacuum cleaners? 1,000 vacuum cleaners? More? A-3 at p. 5, PDF p. 17; A-4 at p. 7, PDF p. 25.

**Comment:** Given this context, it is especially disappointing that the FEIS approached the issue using only computer generated noise modeling, without accounting for specific concerns in the affected communities.

Expressing noise impacts in terms of DNL is of limited value when the supposedly acceptable 60 dB or 65 dB DNL baseline noise levels are not acceptable to the community in a subjective sense. For example, even without the additional aircraft squadrons, residents are already concerned about the detrimental effect of *"fighter jets flying over King Intermediate School during school hours"*, as the noise *"makes it difficult for teachers teaching in the classroom."* A-3 at p. 2, PDF p. 14.

**Comment:** The Navy needs to show more aloha for the impacted communities by treating their concerns with the utmost care and respect. The FEIS' superficial treatment of noise impact on daily life in the affected communities is problematic and does not promote good relations with MCBH's host community.

The FEIS' lack of specificity and apparent avoidance of very "hot-button issue" has likely generated anger, resentment, and suspicion among the community. While the appendices to the FEIS relating to the noise studies contain voluminous information on noise thresholds affecting student learning and sleep, this information appears to have been included for the sake of inclusion – i.e. to make the FEIS seem more official, authoritative, and to take up more space. The body of the FEIS and the appendices contain no meaningful discussion of the specific impact of the proposed aircraft flying over our local schools. Rather, the entire issue is glossed over, with a simple conclusion that *"public schools would remain outside the 55 dB DNL contour."* As a result, there is no support for the FEIS' implicit assumptions that: (1) existing baseline noise levels have not affected student learning in the Kailua and Kaneohe schools; and (2) additional noise from the proposed aircraft squadrons will not have any long-term effect on students in these areas. Moreover, the analysis of cumulative impacts in section 5.3 does not address effects on schools or student learning.

The inadequacy of the FEIS in addressing noise impact on schools, as well as residential communities at night, is further addressed in the next section.

3. **The FEIS does not reflect a good-faith effort to adequately address the Environmental Protection Agency's (EPA) recommendation that the FEIS include certain additional information in its discussion regarding aircraft noise impact on schools and residences.**
  - a. **The FEIS fails to make a valid comparison of school noise levels with the school noise criteria of Table C-2 (Appendix D) by declining to adopting the Federal Aviation Administration (FAA) calculation for noise during a school day (e.g., 8:00 a.m. to 3:00 p.m. on weekdays).**

**Comment:** The FEIS ignores the EPA's recommendation to include a pertinent analysis of the project's noise impact on schools during school hours. This is unacceptable. Potential disruption of classroom activities due to additional aviation activity is a most significant concern.

In its January 3, 2012 letter to the NAVFAC Pacific Division, the EPA explained:

"We are pleased to see the discussion of noise effects on children's learning and sleep disturbance, discussed in Appendix D (0.3.7.1), but these discussion[s] were not summarized in the DEIS. Appendix D includes a range of classroom noise criteria (0-3/119 and 120). It questions the legitimacy of the criteria to address aircraft noise impacts without acknowledging the impact of aircraft noise on learning. The Federal Interagency Committee on Aviation Noise states, 'Recent research, which confirms conclusions from the 1970s, shows learning decreases in reading when outdoor noise...is 65 dB or higher (Stansfeld, 2000).' In light of Executive Order 13045, Protection of Children from Environmental Risks and Health Risks, **we support specific analysis of noise impacts to schools.**" (Emphasis added.)

Thus, the EPA made the following recommendation as to the FEIS' discussion of project impact on school noise levels:

"To make a valid comparison of school noise level with the school noise criteria of Table C2 (in Appendix D), the FEIS should adopt the Federal Aviation Administration calculation for noise during a school day (e.g. 8:00 a.m. to 3:00 p.m. on weekdays).

In the FEIS section on Responses to Draft EIS Comments, the Navy appears to sidestep the issue with the following response, which claims that no further analysis of schools is needed:

"While DoD [the Department of Defense] has not yet established significance criteria for noise impacts to schools for use in NEPA studies, MCO 11010.16 suggests the compatibility of educational land use for bands of outdoor Day-Night Average Sound Levels (DNL). DoD guidelines for identifying the potential for (negative) classroom learning effects suggest a school-day Equivalent Sound Level (Leq) of 60 dB as a

first-order screening, which for aircraft operations at MCB Hawaii Kaneohe Bay corresponds to a 24-hour DNL of between 55 and 60 dB. As all schools are/would be exposed to DNL less than 55 dB, MCO 11010.16 suggests these schools (including the Hawaii Institute of Marine Biology on Coconut Island exposed to DNL between 60 and 62 dB) are/would be compatible with existing and proposed aircraft noise, and DoD guidelines would not recommend further analysis of these schools." A-5 at p. 24, PDF p. 324.

**b. The FEIS fails to calculate awakenings for the baseline, no action alternative, and action alternatives, and summarize the results in the body of the FEIS.**

**Comment:** As with school day noise impact, the FEIS ignores the EPA's recommendation to address the project's impact on the ability of area residents to get a good night's sleep. The FEIS fails to calculate the effect of additional flights on the rate of awakenings (i.e. disruptions to sleep). This, too, is unacceptable. Proper sleep is very important to peoples' health and well-being.

In its January 3, 2012 letter to the NAVFAC Pacific Division, the EPA stated:

"We also note that Appendix D of the DEIS states that the Federal Interagency Committee on Aircraft Noise supports the use of ANSI S12.9-2008 to predict awakenings, but stops short of calculating awakenings."

Thus, the EPA made the following recommendation as to the FEIS' discussion of project impact on residential noise levels and sleep:

"The FEIS should calculate awakenings for the baseline, no action alternative and action alternatives, and summarize the results in the body of the document."

Again, in the FEIS section on Responses to Draft EIS Comments, the Navy appears to deflect this concern with the following response, which claims that any project impact would not exceed the scope of acceptable residential noise limits:

"Similarly, DoD has not yet established significance criteria for noise impacts to residential awakenings for use in NEPA studies. MCO 11010.16 suggests the compatibility of residential land use for bands of Day-Night Average Sound Levels (DNL). As residences outside of the MCB Hawaii boundary are/would be exposed to DNL less than 60 dB, MCO 11010.16 suggests these residences are/would be compatible with existing and proposed/alternative aircraft noise. Because their compatibility designation would not change due to the proposed action or alternatives, the DEIS did not assess the change in residential awakenings." A-5 at p.24, PDF p. 324.

As discussed in the preceding comments, discussing noise impact in terms of DNL is misleading. Because cumulative noise is averaged over a 24-hour period, noise from any one event may be softer or louder than the stated dB DNL noise level. Moreover, while the project's impact is deemed to remain compatible with school and residential land use, the



community does not necessarily view "compatible" noise levels as being "desirable" noise levels.

4. **The FEIS identifies the project's impact on the number of off-base housing units available for rent, but does not discuss possible impact on rental housing prices.**

**Comment: Area residents are concerned about the project's impact on the local rental market.**

This concern was brought to life by a community member's statement included in the FEIS:

“Locals cannot compete for housing with military personnel who have housing allowances (locals do not have housing allowances). Landlords raise rents, knowing military personnel can pay the rents. This causes increased homelessness and people having to move in with family members because they cannot afford to rent a place to live. Single parents cannot live in Kaneohe because they cannot afford the rent. Increasing the number of military personnel will worsen this already existing problem.” A-3 at p. 3, PDF p. 15.

**Comment: The FEIS estimates that the influx of an additional 2,128 persons to MCBH (1,000 active duty personnel, 22 civilian personnel, and 1,106 dependents associated with the new aircraft squadrons) will increase demand for off-base housing in the Windward Oahu area by about 3.2 percent.**

The FEIS contains a detailed discussion and analysis of the project's potential impact on rental housing (particularly in Kailua and Kaneohe) as well as future population growth and housing supply estimates. It accounts for ongoing expansion of on-base housing for families and enlisted bachelors, as well as natural population growth independent of the proposed project. The FEIS concludes that the increased demand for housing associated with the additional aircraft squadrons would amount to a "very small" increase for most of the island. Assuming the increase will be distributed geographically (dispersed proportionately throughout Oahu according to existing rental trends), Windward Oahu, particularly Kailua, is estimated to experience a 3.2 percent increase in rental housing demand:

"The new demand would amount to a very small increase for most of the island. In Windward Oahu, especially in Kailua, increased demand by some 3.2 percent could well be noticed. However, that demand would develop over time as the new squadrons come to MCB Hawaii Kaneohe Bay. No sudden increase in demand for rental housing is anticipated." 3-122, PDF p. 272.

**Comment: Given the projected 3.2 increase in demand for Windward Oahu rental housing, the FEIS should address any corresponding impact on rental prices in this area. However, this was not done, and the discussion of housing impacts is therefore incomplete.**

To its credit, the FEIS does acknowledge that Marines at higher pay levels receive housing allowances, and can thus afford to rent at prices higher than average rents in the Kailua and Kaneohe areas. It also notes that because the housing allowance rates are public knowledge, local landlords are expected to set rents by Marines' ability to pay.

Given the fact that rental housing prices are affected by landlords' assessment of how much MCBH personnel can afford to pay, the influx of additional renters will surely drive up the cost of nearby rental housing. Although MCBH personnel may choose to live in areas other than Kailua and Kaneohe, the reality is that people are willing to pay a premium for housing that is close to where they work. Therefore, a more detailed discussion of the project's impact on rental costs in these areas is warranted. Unfortunately, the extent of the FEIS' discussion on rental prices in Windward Oahu is limited to the following, with no further discussion:

"With an increase in the number of Marines renting in Windward Oahu, competition between civilians and Marines for housing would increase slightly and could affect a slightly more affluent range of renters than at present." 3-123, PDF p. 273.

**CONCLUSION:** Based on the foregoing deficiencies of the FEIS, I would respectfully request that the Navy reject this FEIS and prepare a revised document that adequately addresses the deficiencies identified in this letter.

Sincerely,

*Cynthia*

*Representative Cynthia Thielen  
Assistant Republican Leader  
50<sup>th</sup> Representative District (Kailua, Kaneohe Bay)*

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