**Comments on the Draft Amended Analysis of the Growler EIS submitted by Citizens of Ebey's Reserve**

**May 12, 2025**

Citizens of Ebey's Reserve (COER) has reviewed the Draft Amended Analysis (DAA) of the expanded Growler Final Environmental Impact Statement ($FEIS_G$) and submits these comments. All the noise referred to here is that produced by EA-18G Growlers stationed at Naval Air Station Whidbey Island (NASWI).

## Overall Compliance with Court Order

The DAA is an attempt to justify $FEIS_G$ Alternative 2A rather than expand the examination of Growler impacts and compare options that might be less harmful. Based on its 2023 ruling against the Navy, the Court was clearly expecting a new EIS and reconsideration of its Record of Decision (ROD) following the Navy's reassessment of deficiencies in the $FEIS_G$.

> As the Court noted above, **the Navy's FEIS and ROD fell short in several respects** which may need to be fully considered on remand. Therefore, the Court cannot say that once the Navy considers these shortcomings that it will be able to expand the Growler program at OLF Coupeville in the same form, although it is possible. Consequently, "**it does not appear 'likely' as opposed to possible" that Navy will produce the same determination on remand**. *Cook Inletkeeper v. Raimondo,* 541 F. Supp. 3d 987, 991-92 (D. Alaska 2021); *Pollinator Stewardship Council,* 806 F.3d at 532 (finding vacatur appropriate where "a different result may be reached" on remand).
>
> …
>
> **Only the forthcoming EIS** will clarify the significance of these impacts with an expanded Growler program.

ECF 140 at 7 (emphasis supplied).

In spite of the Court's expectation that its rebuke of the $FEIS_G$ would inspire the Navy to fully and forthrightly revise its EIS and accordingly reconsider its ROD, the Navy apparently decided otherwise. It presented some new information, but its analysis was mostly recapitulation of the same-old arguing points, and it made no mention of reconsidering its ROD. Instead, the Navy somehow appears to have divined that all it needed to do was provide additional support for its deficient EIS. COER disagrees.

The added studies supporting well-established damage impacts on children's health, education and well-being and the huge uncertainty surrounding the impacts

on endangered bird species should have been a wake-up call for the Navy to judiciously reexamine the pros and cons of the action and forthrightly propose mitigation and alternatives for Growler training. It is not just about the costs and impacts on Navy convenience but is just as much about the damage costs and livability impacts on the Whidbey community. The Navy's DAA made no effort to consider changing anything.

Below we examine the specific failings that we hope the Navy will carefully consider in preparing its final amended analysis, the forthcoming EIS, and reconsideration of the ROD.

## Greenhouse Gas Emissions

COER defers its comments on this section to those provided by Dr. Chris Greacen, but includes Dr. Greacen's comments in their entirety in this commentary by reference thereto.

## Impacts on Avians

### DAA Bird Study Area Incorrect and Deceptive

Page 5: "*The 60 dBA* [i.e., 60 $dBA_{max}$ ($L_{max}$) or possibly 60 $dBA_{SEL}$] *noise threshold was considered a conservative (risk-averse) threshold because research shows that some animals begin to respond to aircraft noise at 60 dBA (Black et al., 1984)*." The Navy accepts 60 dBA as the conservative bird "reaction threshold" to a single noise event and goes on to state it uses the threshold to establish the boundary for bird reaction, the area within being called the "study area" (p. 12, Fig 2-1). But the boundary it applied was not 60 $dBA_{max}$ or 60 $dBA_{SEL}$ (Black *et al*.'s reaction threshold), but rather 60 dB Ldn (day-night average sound level), which is an average of all noise events, quiet and loud, over a given period of time, often a diel day (24-hour). Birds do not react to an artificial average, but rather to individual events. Individual noise events ≥60 dBA occur routinely well beyond the 60-dB Ldn study area boundaries.

If 60 dBA is the accepted reaction threshold, then the Navy needs to expand the study area to that 60 $dBA_{max}$ or 60 $dBA_{SEL}$ contour to include everywhere Growlers create that much noise. Of course, that would greatly increase the size of the study area, and the number of bird disturbances would increase, perhaps significantly.

However, the study area as presented lacks function and purpose.[1] That is, why introduce and define a 60 dBA study area only to go on to consider impacts only in those areas where Growler noise exceeds 92 $dB_{SEL}$?

> In contrast to the 60 dBA Ldn used to conservatively define the study area boundary and area of potential impacts to wildlife in general (see 2018 Final EIS Section 3.8.2 and introductory text to Section 2.2 of this document), **the 92 dBA SEL threshold is a better indicator of a disturbance that causes harmful effects that are more than temporary** (USFWS, 2010, 2020a; see also 2018 Final EIS Section 4.8.2.1.2.2.1), and can thereby potentially threaten the health of an individual of a species or its population. (DAA, p 15) [emphasis supplied]

But if the Navy wants to retain its misleading and obfuscating *"study area"* then it should be expanded to include the entire area and all places where individual Growler noise events can hit 60 $dB_{SEL}$ and that would include the Okanogan, Roosevelt, and Olympic MOAs.

## DAA Wrongly Limited Analysis to Four Species

The Navy claims that because three of the seven listed bird species in the deceptive study area were analyzed in the 2018 $FEIS_G$ (Section 3.8.2.2.1), they do not require an amended analysis. The bypassed species were the spotted owl, marbled murrelet, and streaked horned lark; the four species examined were the American white pelican, common loon, sandhill crane, and tufted puffin.

While that may be a convenient argument for the Navy, the Court made no statement exempting any bird species, whether acceptably analyzed or not. Instead, the Court concluded that "*the bird impact analysis in the FEIS is fundamentally flawed due to the incomplete and arbitrary consideration of species-specific impacts.*" (ECF 109 at 18)

The Court did not stipulate that the impact analyses for species A, B, and C were okay or that the analyses for species X, Y, or Z were fundamentally flawed. Rather, it specified that the entire "birds" consideration was flawed. Hence, the Navy was wrong to arbitrarily exclude any species from the DAA, and our comments include the three listed species the Navy excluded from the DAA.

## DAA Obscures Impacts on Birds

[1] The study does have one visible purpose and that is the study area segregates and isolates from analysis in the $FEIS_G$ other vast areas where Growlers practice and impact listed species. Hence, the impact examined in the jeopardy consideration is just a portion of the full impact that must be analyzed to answer the question: Will expanded Growler operations cause jeopardy to listed species?

An EIS, as it applies to listed species, must address the risks that the proposed action exerts on species of concern. Here, the action is the expansion of the number of Growlers at NASWI.  and the fundamental question is whether their resulting noise threatens the viability of one or more listed species of birds.

Although subpopulations of a listed species may be found in separated geographic areas in which Growlers routinely practice, the noise impact on the species is collective and must be analyzed collectively. The impacts of the action (more Growlers, more noise) must be uniformly accounted for in all areas where the action takes effect. However, the Navy's impact analysis of Growler noise on listed birds overlooked that necessity and split the impact on some species among two different EISs and an Environmental Assessment (EA). That strategy thwarted and obfuscated the bottom-line jeopardy analysis.

For example, for marbled murrelets the $FEIS_G$ examined the number of noise exposures ≥92 dB $dB_{SEL}$ as the surrogate for harm, whereas for the Olympic area, the Northwest Training and Testing (NWTT) EIS only enumerated the amount of time that noise levels would ≥92 $dB_{SEL}$. Those two very different metrics are not addable and hence cannot be combined to assess the cumulative Growler noise impacts on murrelets and render an informed decision on the action, i.e., the Growler increase.

For the spotted owl the splitting strategy enabled the $FEIS_G$ to dismiss any impacts on the bird at all because spotted owls do not occur in the deceptive study area, even though the species is present in the Olympic and Okanogan Growler training areas. But splitting enabled the $FEIS_G$ to easily (but wrongly) conclude more Growlers and noise would have zero impact on spotted owls—because none would be exposed to noise in the study area.

To reach a supportable conclusion on the species impact question, all Growler noise impacts must be uniformly considered in one document, not scattered about like pieces of the same puzzle in three different boxes that cannot be combined into a full picture.

**DAA Understates Bird Disturbance**

Pages 15–16: The DAA explains the 92 $dB_{SEL}$ contour (p. 17, Fig 2-2) within the deceptive study area, while ignoring training areas beyond in the Olympic MOA and Okanogan and Roosevelt MOAs (hereafter Okanogan area) where Growler noise can exceed 92 $dB_{SEL}$ and harass listed birds. If the 92 $dB_{SEL}$ threshold is valid within the study area, then it is valid wherever the NASWI Growlers go for practice. But those other 92 dB noise areas were inappropriately split into three unrelated analyses presenting un-combinable data.

Page 5: In addition to not being forthcoming about all geographical areas of impact, the DAA opted to omit from consideration a second relevant disturbance threshold that applies specifically to northern spotted owls and marbled murrelets and needs to join the impact analysis of those two species. In 2020 the USFWS Arcata office issued guidance regarding noise disturbance as it pertains to the take of marbled murrelets and spotted (owls (hereafter "Arcata Guidance"). The Arcata Guidance reiterated and supported the ≥92 dB)$_{SEL}$ threshold (the *Tolerance Threshold*), but in addition, introduced a second, separate threshold—a noise increase of 20 to 25 dB over the ambient level, called the "*Above-Existing*" threshold (USFWS 2020).

The Above-Existing threshold, as discussed below for spotted owls and marbled murrelets, increases the area of potential noise impact (and take under the ESA) because areas where noise is less than 92 dB$_{SEL}$ may experience noise that exceeds the Above-Existing threshold. Failure of the DAA to apply the Above-Existing threshold understates the impacts on spotted owls and marbled murrelets.

**Northern Spotted Owl and Marbled Murrelet**

The shy and cryptic northern spotted owl was excluded from analysis in the FEIS$_G$ (and in the DAA) because it did not live in the deceptive study area, and hence a no-effect conclusion was reached.

> Northern Spotted Owl The northern spotted owl (Strix occidentalis caurina), a subspecies of the spotted owl (Strix occidentalis), was listed as threatened under the ESA in 1990 (WDFW, 2013). The species is associated with structurally complex, typically old growth, forests. **The northern spotted owl's occurrence within the study area is unlikely**, and no critical habitat has been designated with the study area; **therefore, the Proposed Action would have no effect on the subspecies** (eBird, 2015a, 2015b; Seattle Audubon Society, 2015; WDFW, 2013). This subspecies will not be discussed in Chapter 4.

FEIS$_G$, sec 3.8.2.2.1.4, p 3-153) (emphasis supplied)

While spotted owls may not occupy the deceptive study area, they do live in the Olympic Peninsula and Okanogan areas where NASWI Growlers routinely practice and where their noise levels on the ground can exceed both the *Tolerance* (92-dB$_{SEL}$) and A*bove-Existing* thresholds. Neither the DAA nor the FEIS$_G$ considered noise impacts on spotted owls in those areas in the jeopardy consideration. The effect of the study area obfuscation, whether intended or not, was to understate Growler noise impacts on spotted owls, which makes the jeopardy analysis incomplete and feckless.

In its 2016 Biological Opinion (BiOp) for the NWTT EIS, the USFWS concluded that Growler noise in the Olympic Peninsula area was not likely to detrimentally affect spotted owls. This was based on interpretation of the literature, which while quite ambiguous, nevertheless led USFWS to conclude that Growler noise was likely to adversely affect spotted owls, but not significantly[2].

Then in September 2020, USFWS's re-examination of its 2016 NWTT BiOp reiterated that conclusion[3].

> Although the northern spotted owl occurs within the Study Area, the majority of proposed activities would occur within the marine environment well offshore of terrestrial habitat that would support spotted owls. **Since the publication of the 2015 NWTT Final EIS/OEIS, there have been no updates to the regulatory status, life history information, or species-specific threats that would alter the analysis from the 2015 NWTT Final EIS/OEIS.** In addition, while the current Proposed Action includes aircraft overflights of spotted owl habitat underlying the Olympic MOA, these aircraft overflights are not expected to adversely affect spotted owls. The 2016 Biological Opinions (BO) issued by the United States Fish and Wildlife Service (USFWS) determined that the response of northern spotted owls to aircraft overflights conducting training missions in the airspace over the Olympic Peninsula would not result in flushing or failed attempts by adults to feed nestlings, and determined that the effects would be considered insignificant (U.S. Fish and Wildlife Service, 2016, 2018). **The BO conclusions were based on the altitude of aircraft overflights and not number or frequency of overflights. Both BOs concluded that the proposed aircraft operations may affect, but would not adversely affect, northern spotted owls** in the Study Area. The altitude of proposed aircraft operations over the Olympic Peninsula would not change under the current Proposed Action and there are no other changes to the Proposed Action that would affect these conclusions. **Therefore, the analysis and effects determination for the northern spotted owl from the 2016 and 2018 BOs remain valid**.

2016 NWTT BiOp p 3.6-2) (Emphasis supplied)

A month later, in October 2020, the USFWS issued its revised Arcata Guidance that explained the *Tolerance* threshold (≥92 $dB_{SEL}$) as well as the *Above-Existing* threshold (20 to 25 dB over ambient). While the DAA cites and applies the Tolerance threshold, it completely ignores the companion Above-Existing threshold,

---

[2] https://nwtteis.com/portals/nwtteis/files/2015-2016/NWTT_Final_USFWS_Biological_Opinion_7-21-2016.pdf

[3] https://nwtteis.com/portals/nwtteis/files/final_seis/section/NWTT_Final_SEIS_Sept2020_3.06_Birds.pdf (p 3.6-2)

which is equally as important and applies in areas the Tolerance threshold does not[4]. For the Navy to apply just the Tolerance threshold and ignore the other, arbitrarily and capriciously understates the impact. The Arcata Guidance's *Above-Existing* threshold is the best available science that the Navy must consider.

While the marbled murrelet is not known to nest in the Okanogan area, it does nest in the Olympic area. As such, our comments for the spotted owl apply equally for the murrelet. Disturbance-level noise from NASWI Growler practices occurs routinely in the Olympic area, and like the spotted owl, the $FEIS_G$ and DAA failed to account for those disturbances.

**Tuffted Puffins:** Tufted puffins are now absent in the study area:

> Historically, more tufted puffin colonies were found in the inner marine waters of the Salish Sea. Over the years, many breeding sites formerly present in this area have been abandoned. In the Salish Sea, tufted puffins currently breed only on Protection Island and Smith Island (WDFW, 2019)….Both islands are beyond the closed-loop pattern for FCLPs at either airfield and outside interfacility flight tracks between Ault Field and OLF Coupeville. (p 11)

The DAA does not reveal when tufted puffins were extirpated from the deceptive study area and ignores the question, might Growler noise have been part of the cause? Seems to be an obvious question to consider. Why wasn't it and does that apathy not show a lack of interest and/or an attempt to hide important information? If there are historical population records of the diminishing population in the study area, shouldn't they be presented and compared with historical jet operations?

Here too, by arbitrarily limiting the impact analysis to just the bogus study area, impacts outside that area that may experience ≥92 $dB_{SEL}$ Growler noise is precluded from impact consideration. Are there puffins found anywhere outside the study area that are exposed to Growler noise ≥92 dB SEL? Continuing noise impacts that would preclude the species from re-establishing habitat in this area is an adverse impact that must be addressed.

Furthermore, on page 20 the DAA states: "*Generally, birds tend to begin to react to aircraft overflights (by lifting the head or alerting to the stimulus) at 60 dBA to 65 dBA (Black et al., 1984), with more intense alert responses (e.g., flushing) occurring when noise levels exceed 75 dBA (Wright et al., 2010; Goudie and Jones, 2004).*" Given the extirpation of puffins from the study area, the Navy

[4] A Growler flyover, for example, producing 85 dBA on the ground, while not in excess of the Tolerance threshold, will exceed the Above-Existing threshold if the ambient noise level is 65 dBA or less; spotted owl habitat is generally much less than 65 dBA. Hence, the Above-Existing threshold greatly expands the impacted area and noise exposures.

should seriously consider and study the possibility that maybe puffins are more affected by Growler noise than some other species and that maybe noise at these lower levels (60-75 dBA) is having a profound effect[5] on them.

**Further Comments Regarding Bird Impacts**

Page 15: "*The increase in noise was evaluated in terms of what individual animals are already accustomed to experiencing, which may dampen the intensity of impacts because the change in noise level is not as pronounced.*" That works both ways. If the bird is accustomed to low ambient noise, then new noise may ramp up the reaction. That is the basis behind the Above-Existing threshold, which Navy quietly avoided using presumably because it would expand the area of impact and the noise exposure counts.

Page 16: Navy uses the Alternative 2A increase in ≥92 dB time to examine the presumed impact on listed species. That hides the impacts for two reasons: (1) It does not inform as to how many birds are experiencing at least 92 dB events and how often (*i.e.*, does not mesh with $FEIS_G$ exposure counts), and (2) it does not provide a threshold number of hours by which to judge whether no-action hours or Alternative 2A hours exceed that threshold creating harm.

Page 17: Figure 2-2 shows the 92 dB area within the deceptive study area. But outside the study area there are places where Growler noise can be ≥92 dB and impact birds. Given the Navy accepts 92 dB as the disturbance threshold, then the study area should be wherever noise impacts are >92 dB. To use 60 $dB_{Ldn}$ to define the study area is arbitrary and capricious.

Page 18: DAA states that birds near OLF will experience a 1.74% increase in exposure to 92 dBA contour noise, while the increase in weekly hours of exposure to 92 dBA noise is noted as increasing from 1.03 hours/week to 3.96 hours/week. That is a 285% increase. That nearly tripled increase should have been assessed in the DAA.

[5] From DAA page 21: "Energy lost by behavioral responses to noise must be replaced, or the health of the individual exhibiting those behavioral responses may decline. Replenishing energy requires additional time spent feeding and resting than the individual might have otherwise budgeted. If the affected individual is caring for an egg or chick, then the energy expenditures or altered activity may also negatively affect the young's health. The disturbances could also keep birds away from more productive feeding habitats. This could also negatively affect the impacted individuals because they may be forced to forage in areas with smaller or inferior prey resources."

At 20: "*Generally, birds tend to begin to react to aircraft overflights (by lifting the head or alerting to the stimulus) at 60 dBA to 65 dBA (Black et al., 1984), with more intense alert responses (e.g., flushing) occurring when noise levels exceed 75 dBA (Wright et al., 2010; Goudie and Jones, 2004)*." Given that 92 dBA is about 3 times louder than 75 dBA and bird alert responses begin at 75dBA, the Navy should explain why 92 dBA was used as the disturbance threshold instead of 75 dBA.

At 22: At 22: "*Despite a thorough search of the literature and other scientific sources, species-specific information regarding noise disturbance thresholds for state-listed bird species was not found.*" That does not mean the Navy can ignore the impacts. When in doubt about the impacts on listed species, the Navy should have given the benefit of doubt to the listed species.

$FEIS_G$ notes, "I*n addition to species listed by federal or state regulation as endangered, threatened, or sensitive (see Tables 3.8-2 and 3.8-5), the Island County Critical Areas Ordinance's (17.02) Protected Species list also includes four birds designated as Species of Local Importance. These species include the great blue heron, osprey (Pandion haliaetus), pileated woodpecker (Dryocopus pileatus), and trumpeter swan. The nesting sites of the great blue heron, osprey, and pileated woodpecker are protected under the ordinance, while the trumpeter swan's foraging habitats are protected.*" (FEIS, p 3-163) Ospreys, blue herons, and pileated woodpeckers nest and feed directly within the OLF area where noise levels can approach 120 $dB_{SEL}$. The impacts on these species should be addressed.

## Growler Impacts on Childhood Learning and Health

### Four Major Obfuscations

**Obfuscation 1.** The Court's decision faulted the Navy's $FEIS_G$ for not adequately analyzing the impacts on childhood learning in the face of numerous studies showing significant impacts.

> This Court finds that the Navy's analysis fell short when it concluded that available literature was inadequate to quantify impacts on child learning even while citing numerous studies identifying quantifiable impacts. Based on its own summary, the Navy should have further evaluated the extent to which increased operations would harm children's learning.

ECF No. 109 at 14.

> The very studies that the Navy summarized include measurable links between aircraft noise and lower reading and mathematics scores, solving puzzles, deficits in long-term memory and reading comprehension, recognition memory, and failure rates. GRR 159322; *see also* GRR 150336–37. Yet, the Navy simply failed to make any attempt to quantify the degree of impact on child learning caused by the increase in Growler operations. Instead, after stating that it could not accurately quantify the impact of increased operations, the Navy refused to engage in further analysis.

ECF No. 109 at 15.

The DAA's approach to examining the impact of Growler noise on childhood education was to examine the impact on "*representative*" schools, a term it never explained.

> This amended analysis refines the Navy's evaluation of the impact of increased EA-18G "Growler" operations on childhood learning and includes...a description of EA-18G "Growler" noise exposures at the **representative schools** resulting from the proposed action and the potential impacts to childhood learning[.]

DAA at 25 (emphasis supplied)

The Navy proceeds to examine 10 schools and 2 generic surrogate schools (Coupeville and Sequim) that do not actually exist. The Court's order, however, as noted above, was for the Navy to "*quantify the impacts of Growler noise on child learning*" and to further evaluate "*the extent to which increased operations would harm children's learning*." Quantifying the impacts on child learning requires examining all the schools where Growler noise occurs, not a cherry-picked group of so-called representative schools, selecting some with little to no noise impact and bypassing other heavily impacted schools.

The impact of the operations at the OLF on Coupeville schools cannot be quantified by leaving the high and middle schools out of the analysis. But that is what the Navy did. They selected the elementary school, which is less affected by Growler noise. In spite of being quieter, the DAA identified Coupeville's elementary school as the most academically impacted school, concluding, "*Coupeville Elementary School (S03) would experience the largest increase in noise exposure from 51 to 57 dB Leq(8h)….*" The resulting effects include "*negative impacts to long-term memory, reading comprehension, mathematics test scores, and failure rates.*"

Actually, Coupeville's middle and high schools experience the largest increase in noise exposure because they are about 3/10 of a mile closer to the predominant

flight track (#32) than Coupeville's elementary school. The low FCLP altitude of jets greatly increases the rate of noise attenuation over land, so the noise at the high and middle school is about 50% louder (5 dB) than at the elementary school. By omitting Coupeville's middle and high schools from the analysis, the DAA ignored the worst impacts on school children. (Pages 64-65)

The Navy's intent to bypass noise issues at the high/middle school is further demonstrated by the fact that it avoided taking real-time noise recordings there during the NDAA Noise Monitoring study even though citizen groups and local leaders had specifically requested monitoring at that important location (see COER, 2022).

**Obfuscation 2.** Instead of the Coupeville middle/high school, the Navy invented a meaningless theoretical school presumably representing all areas where schools could be in Central Whidbey (R03). The impacts there were unsurprisingly modest since it represents some sort of arcane average of everywhere near and far from the OLF jet paths. Basically, it is an imaginary site providing meaningless information on a school that cannot be identified on a map. And it was concocted at the expense of analyzing the real—and far more impacted—middle/high school, as well as a large adjacent daycare facility. The DAA's imaginary school serves no purpose or function other than to attempt to mask the actual noise impacts at Coupeville's real schools. (Pages 34-36)

**Obfuscation 3.** The DAA ignores the impact on children's after-school home studies. School is one thing, but just, or perhaps more importantly, is the ability of schoolchildren to concentrate, absorb and comprehend (cognition), remember, and create during studies at home. But late afternoon to late night is the predominant period for FCLPs. For example, 72% of the FCLPs at the OLF in 2024 were scheduled to occur between late afternoon and late night. Note, that the impacts of Growler noise on mental function apply just as well to adults preparing a work bid or a legal brief, or an analyst preparing for and conversing with a client, etc. Note also that many of the homes where kids are trying to study are directly under the jet path, so many children at home experience even greater noise impacts than at the Coupeville schools.

**Obfuscation 4.** Insulting the public's intelligence, the DAA contends that Growler noise is not having much impact on education because standardized testing shows Whidbey kids at just above/below the statewide average, which attempts to obscure the obvious question: Where would those scores be if the kids were not being exposed to jet noise? And then, in the face of all that legerdemain, the DAA offers virtually nothing but token mitigation—*i.e.*, not flying during major testing times—which it attempts to portray as a solution.

> Coupeville Elementary School [S03], and schools near Central Whidbey neighborhood [R03]) could experience negative impacts to long-term memory, reading comprehension, mathematics test scores, and failure rates. However, as evidenced by State assessment score data, schools impacted by the Preferred Alternative have maintained assessment scores within one percentage point from or above the State score. Further, such impacts would be partially mitigated by NAS Whidbey Island's efforts to reduce operations during key academic testing periods at schools.

DAA at 65

So, while the Navy admits there is educational harm from Growler noise, it offers no mitigation other than not flying during key testing times. At the very least, the impacts on learning should have prompted consideration of other alternatives to reduce those damages.

**Children's Health Impacts Their Education**

Recent studies reveal wide-ranging impacts of aircraft noise on human health, which often affects mental acuity and learning in adults and children. Viet et al. (2014) present a strong review of the literature regarding health impacts of noise on children. They assume that vulnerability to hearing loss in children is similar to that of adults but found no studies in support of that assumption. In addition to hearing loss, they report that "*noise exposure is associated with negative birth outcomes, reduced cognitive function, inability to concentrate, increased psychosocial activation, nervousness, feeling of helplessness, and increased blood pressure in children.*" (Abstract)

Noise studies in the aggregate reveal young children are particularly at risk from noise. Hahad et al. (2025) examined compelling and conclusive findings on the detrimental effects of noise on the brain and mental health, which confirm that exposure to noise, particularly from sources such as traffic, can harm the central nervous system. Those harms are manifest as depression, anxiety, suicide, and behavioral problems in children and adolescents. The investigations point to "*direct adverse phenotypic changes in brain tissue by noise (e.g. neuroinflammation, cerebral oxidative stress), in addition to feedback signaling by remote organ damage, dysregulated immune cells, and impaired circadian rhythms, which may collectively contribute to noise-dependent impairment of mental health.*" Addressing the impacts of noise on fetal development, they report a number of health harms from noise.

> Chronic maternal exposure to airport noise during pregnancy has been shown to result in vasoconstriction which subsequently leads to decreased utero-placental blood flow, and possibly increased fetal hypoxia [24]. The

> stress of chronic elevated noise can lead to increased maternal blood pressure, greater secretion of maternal epinephrine and norepinephrine, and decreased human placental lactogen [24,25]. Exposure of pregnant women to airplane noise has been associated with a decrease in body weight of newborn babies; and the height of 3-year-old children was shown to be significantly decreased with higher noise levels [25]. Human fetal exposure to noise has been linked with decreased birth weight and length, and increased incidence of birth defects, specifically cleft lip, cleft palate, anencephaly and spinal bifida [24,26,27]. (p. 4; numbers are references)

They further report that noisy environs have been linked to non-auditory health effects in children that include, "*reduced cognitive function, inability to concentrate, increased psychosocial activation, nervousness, and helplessness [23,26,35]...an increase in stress [36]*[,]... *a small but positive relationship between aircraft noise exposure and blood pressure...[, and] a stronger positive relationship with systolic blood pressure* [for highway noise]*...*.(p. 4; numbers are references).

A 2024 University of Washington study (Jacuzzi, G. et al. 2024) reported on health and educational impacts specific to the NASWI Growler noise in the greater Whidbey Island area. This study is not cited anywhere in the DAA. It is very troubling that the Navy ignored this 2024 study, which examined the very health and educational impacts at NASWI that the Court ordered the Navy to analyze. The Jacuzzi study determined that Growler noise:

- Poses a substantial health risk and impact on 74,316 Washingtonian adults and youths being routinely *"exposed to noise levels associated with adverse health effects*."
- Exposes nearly 12,500 residents to average noise levels incompatible with residential land use per regulations set by the Navy, FAA, and HUD,
- Is so loud in one community near Outlying Field Coupeville that just seconds of exposure can cause "*direct, acute mechanical damage to the inner ear*."
- Jeopardizes the health of nearly 85% of residents of the Swinomish Indian Tribal Community, Swinomish Reservation.
- Exposes numerous schools to noise levels known to interfere with student and teacher conversation and comprehension (not to exclude homework time).
- Can activate stress hormones, which after prolonged exposure, heightens health risks, like cardiovascular and mental health issues.

A study of over 1.4 million children born between 1986 and 2008 showed increased risk of hearing dysfunction for those whose mothers were exposed to noise levels of 85 dB during their pregnancy (Selander 2016). Extreme noise has been found to decrease birth weight (Selander et al. 2019) and create pregnancy complications that can increase the risk of preeclampsia, i.e., serious health problems for the mother and infant (Wang et al. 2022). Additional studies

revealing impacts of noise on children's health and well-being and, hence ability to learn that were not cited in this main body text are presented in Appendix A.

**Other Problems with DAA on Education**

The DAA states at 25:, "*While these studies have identified some correlations between aircraft noise and childhood learning, clear cause-and-effect relationships have only been established in relation to reading...Although evidence has begun to show a stronger link between aircraft noise exposure and cognitive effects in children, the ongoing need for further research and the adjustment for confounding factors means that the existing data remains incomplete and does not support a firm causal connection.*" [emphasis supplied] Sounds just like the science promulgated by the tobacco companies. Perhaps the Navy is unaware that NEPA does not limit applicable science to only that with a proven causal relationship. Rather, it calls for applying the best available science. Unarguably, the latest science reveals a wide range of detrimental educational and health impacts from noise; so, for the Navy to try to dismiss noise impacts in this way reveals questionable intent.

DAA at 26: Re Clark et al. (2021), "*The researchers found that a 1 decibel (dB) increase in aircraft noise exposure at school was associated with a −0.007 (95 percent confidence interval (CI) −0.012 to −0.001) decrease in reading z-score and a 4 percent increase in the odds of scoring well below or below average on a reading test*." And on DAA page 38, "*Coupeville Elementary School (S03) rises above the threshold for the Preferred Alternative 2A scenario with an estimated increase of six dB*." It seems important to re-emphasize here that as bad as the Growler noise impact on Coupeville's elementary school is, the middle and high schools are about 5 dBA louder.

DAA at pages 26–-28: The significant impacts on learning are made abundantly clear. But then after all the impacts are revealed, the Navy concludes with nothing—kind of like saying, "Yeah, so what"? At the very least, the impacts on children's health and learning should have prompted judicious consideration of other FCLP alternatives to reduce those damages. But the only thing the Navy offered was to continue to not fly during critical testing periods.

## El Centro Relocation or Detachment Training

### Single-Siting Obfuscation

Although the Navy concedes that it had never considered the El Centro alternative prior to the 2018 EIS, it claims that its previous analyses cleared the way to single-site at NAS Whidbey Island[6]. That presupposes the Navy had previously complied with NEPA requirements by reasonably and adequately analyzing the Growler single-site alternatives and comparing them with NAS Whidbey Island. The prior analyses started with an Environmental Assessment (EA; *Replacement of the EA-6B "Prowler" with the EA-18G "Growler" at NAS Whidbey Island*), but that EA did not satisfy NEPA requirements under the circumstances. An EIS would have satisfied NEPA, but no EIS was ever completed before the 2018 $FEIS_G$. One was started for the Prowler (the Growler's predecessor) but never was completed.

The Navy clearly understood its requirement to do a full NEPA analysis in 1999 and again in 2005 with regard to single-site basing the EA-18G "Growler" at NAS Whidbey Island. This is evidenced by the fact that they fully complied with NEPA requirements in 1998 when determining whether to base the F/A-18E/F at either NAF El Centro or NAS Lemoore[7]. Clearly, the Navy knew it was required to comply with NEPA with regard to basing the Prowler at NAS Whidbey Island given that they began the EIS process in 1989 with the result being the 1993 DEIS. That process should have been completed, and failing that, they should have initiated an EIS in 2005 instead of utilizing an EA to bypass the full environmental analysis required under NEPA.

The 2018 $FEIS_G$ examined just the impacts of adding 36 Growlers to the existing ~83 Growlers already stationed at NASWI. No NEPA impact analyses have ever been conducted on those 83 Growlers, yet the Navy proffers its 2005 EA as the original source of NEPA compliance in single-siting all Growlers at NAS Whidbey Island. Adding insult to injury, not only did the 2005 EA bypass impact analysis of the existing Growlers, it manufactured dishonest arguments concluding that the Growler transition would produce less jet noise than the Prowler, as documented by Wilbur et al., 2016 (see pages 11-15). That led to a finding of no significant impact, which serves to reveal the inadequacy of the EA for satisfying NEPA.

In the Navy's telling, their analyses following the 2005 EA through to the 2018 Final EIS are simply small extensions of that original 2005 EA. But the 2005 EA was not a comprehensive analysis as required by NEPA. The analyses cited by the Navy in

---

[6] This section is more fully examined and documented in Appendix B of these comments.

[7] Final Environmental Impact Statement (EIS) For Development of Facilities To Support West Coast Basing of F/A-18E/F Aircraft May 1998. https://drive.google.com/file/d/1YHp0fhtkVnC2L7f7T_FEPvGYFFMe1tbD/view

support of its "historical basing" argument is a classic case of *bootstrapping upon a false premise*, the false premise being that they had previously complied with NEPA requirements

Not only did the Navy never satisfy the requirements of NEPA in originally examining the best basing alternatives for its AEA community or electronic attack squadrons, it violated NEPA by *segmenting*[8] its expansion plans for NAS Whidbey Island, thereby limited the scope of its examination at each stage rather than doing one comprehensive examination. NEPA disfavors segmentation, nevertheless the DAA admits that the process of getting to the 2018 EIS was a series of segments.

> Examined in this context, the Proposed Action to augment the Navy's EA-18G "Growler" fleet with 36 new aircraft **is one more incremental development** in the continued sustainment of the AEA mission at NAS Whidbey Island. [Emphasis supplied.]

DAA at 50

The DAA needs to come clean and confront the reality of its misleading missteps in the DAA and accept that concessions are required.

## Reallocation Wrongly Avoided

The $FEIS_G$ listed a range of FCLP allocation scenarios as "action alternatives," including a split of 80% at Ault Field and 20% at the OLF. Each action alternative was doable and meets the purpose and need statement. As we know, the Navy chose the 20% Ault/80% OLF split, not because the others were infeasible, but apparently because it was the most convenient. But that decision totally ignored and dismissed the harms and manufactured information and false arguments to try to justify its one-sided ROD, as reflected in the Court's decision.

Now, the Navy argues it could not move Growler FCLPs back to Ault Field because it would create air space issues with other aircraft stationed at NASWI. No doubt, reallocation of a significant portion of the FCLPs back to Ault Field would complicate runway uses, but if the EIS allocation options were really operationally

---

[8] Segmentation as used here and by NEPA is piecemealing a project into little incremental pieces each of which is small enough to allow for a finding of no significant impact (FONSI) yet would create a significant impact had the whole been considered in one EIS. Segmentation is a violation of the NEPA prohibition on agency action during the environmental review process that precludes alternatives. As stated in the NEPA rules (emphasis supplied):

> 40 CFR 1506.1.(a): Except as provided in paragraphs (b) and (c) of this section, until an agency issues a finding of no significant impact, as provided in § 1501.6 of this chapter, or record of decision, as provided in § 1505.2 of this chapter, no action concerning the proposal may be taken that would:
> (1) Have an adverse environmental impact; **or (2) Limit the choice of reasonable alternatives.**

infeasible, then the Navy is now conceding that there really was just one allocation (80/20 split) that was viable, which would not seem to comply with NEPA and should have provoked attention to other airfields rather than bogus allocation scenarios.

Failing to have done that in the EIS, the DAA needed to seriously examine moving at least some squadrons or detachment training to El Centro (or other airfields) to reduce impacts on childhood education, health, and well-being and impacts on birds of concern, not pretend the impacts as acceptable. The final Amended Analysis needs to correct that serious shortcoming in the DAA.

**Four FCLP Reallocation Scenarios**

Here, COER examines the impacts of four different FCLP allocation scenarios, each of which is aimed at reducing the lopsided impacts that resulted when the ROD increased operations fourfold at the OLF.

These scenarios provide insight into options that would reduce the unsupportable ROD that shifted nearly all the FCLPs from Ault Field to the OLF and in so doing denigrated education at Coupeville's public schools and the ability of children to learn at home, impinged health risks on children with attendant impacts on their learning, magnified catastrophic mishap risks for schools and residences, and increased the area of noise impacts on birds of concern.

The impacts were assessed with two metrics: number of overflights and number of exposures to extreme noise levels. The *overflight impact* is simply how many times people in a given impact area experience a Growler FCLP overflight. As such it is the best measure of the severity of impact on individuals. The *exposure impact* is the number of individual experiences of significant disturbance from Growler FCLPs; i.e., one person experiencing 10 overflights would count as 10 exposures, as would 10 people experiencing 1 exposure. The exposure impact therefore masks severity and instead indexes quantity, or indexes the overall population effect. It is the metric used by U.S. Fish and Wildlife Service and the Navy in their analysis of Growler noise impacts on marbled murrelets.

The four FCLP allocation scenarios below help to inform how reallocation could help to reduce the impacts—i.e., number of overflights and significant disturbance exposures. Three of the allocation scenarios involved just Ault Field and the OLF; the fourth included El Centro:

1) *Existing Condition Scenario*. As the baseline condition from the 2018 ROD, which allocated 29,600 total operations as 5,900 FCLP operations at

Ault Field and 23,700 at the OLF, this shows the overflight and exposure impacts for each runway to compare with the other three scenarios.

2) *Equal Exposure Scenario*. Based again on the ROD's 29,600 total operations, this shows the number of overflights for each runway if the number of significant disturbance exposures were equalized among the six runways.

3) *Overflights Balanced Scenario*. Based again on the ROD's 29,600 total operations, this shows the number of exposures for each runway if the number of overflights were equalized among the six runways.

4) *One-Thirds Scenario*. Based again on the ROD's 29,600 total operations, this shows the overflight and exposure impacts if the operations were divided up as 1/3 for the OLF, 1/3 for Ault Field, and 1/3 for El Centro (or other off-Whidbey airfields).

From ample noise recordings data and information in the FEIS[9], the significant disturbance noise area was defined as the area 1 mile on either side of the FCLP flight track. The affected populations within the significant disturbance areas were derived via EJScreen, an environmental screening and mapping tool developed by the Environmental Protection Agency based on U.S. Census Bureau data.

Under each scenario, the impacts are analyzed for each of the four runways at Ault Field and two runways at the OLF. That is because different populations are affected depending on which runway is used. So the population impacts for each runway had to be treated independently even though some minor disturbance area overlap occurs. Because each runway has a different discrete population in terms of population size and overflights experienced, only comparisons between runways are valid. Nevertheless, we did average the two OLF runway populations and the four Ault Field populations to provide a generalized comparison between two airfields and the four scenarios.

The impacts metrics for each scenario and runway are presented in Appendix C. While Scenarios #2 and #3 would be a significant improvement over the Existing Condition (#1), the best by far is the Thirds Scenario (#4). It not only reduces the overflights and noise at the Ault Field, but it greatly reduces the impacts at the OLF, and thereby mitigates noise impacts on children (and the overall community) and birds of concern. It also provides pilots with the opportunity to practice at the best

[9] A Growler at a speed of 400 kn and a power setting of 84.5 flying at 200 feet AGL will measure 116 dB on the ground directly under the jet, but will be 77 dB at a mile on either side of the track, or a dissipation of 29 dB or 8-fold less loud (EIS Table 3.1-2). The same jet at 1000 feet will be 104 dB under the jet but will be 84 dB at a mile on either side, or 2-fold less loud. Because FCLPs are conducted within that elevation range, the area beyond a mile from the flight path is not extreme and continues to dissipate rapidly.

venue, El Centro, which ancillarily would provide diversity in training geography and topography, something the DAA chose not to mention.

## El Centro is Ideal

In 1998 the Navy finalized an EIS[10] to determine the best site for west-coast basing its new F/A-18E/F. Lemoore and El Centro came out on top, and while considered, NASWI was rejected as an alternative:

> NAS Whidbey Island is too far from adequate training ranges. It would be fiscally and operationally infeasible to upgrade existing ranges or build new ranges to meet the training requirements of the F/A-18E/F FRS and fleet squadron operations. [Page 2-23]

While the Navy labors tediously over why El Centro is impossible, it does so in spite of the reality that up until recently Growler pilots used to go there routinely for carrier landing practice, which they described as ideal for FCLPs, as stated in the Navy's own records.

> FCLP statistics at Ault Field and Coupeville indicating the majority of FCLP were flown at Ault Field in the past do not reflect the significant number of operations conducted by EA-6B, A-6E and EA-18G squadrons on training detachments to other naval airfields.
>
> The combination of FCLP operations at NAF El Centro San Clemente Island and OLF Coupeville left much smaller percentage of FCLP at Ault Field. The unmodified carrier landing pattern at NAF El Centro and the unique at-sea ambient lighting and environmental conditions of nearby San Clemente Island provided higher quality training than Ault Field.
>
> In the mid-1990s to mid-2000s VAQ-129 the EA-6B FRS spent approximately 16 weeks each year at El Centro. Navy can no longer sustain multiple out of area FCLP training detachments.

Internal Navy document [GRR00121880 - GRR00121882]

Moreover, the $FEIS_G$ acknowledged that El Centro was superior to both Ault Field and OLF Coupeville for Growler training. Referencing an earlier temporary deployment of Growlers to El Centro, the Navy concluded:

[10] Final Environmental Impact Statement (EIS) For Development of Facilities To Support West Coast Basing of F/A-18E/F Aircraft May 1998.
https://drive.google.com/file/d/1YHp0fhtkVnC2L7f7T_FEPvGYFFMe1tbD/view

> The unmodified carrier landing pattern at NAF El Centro and the unique at-sea ambient lighting and environmental conditions of nearby San Clemente Island provided **higher quality of training than could be achieved at either Ault Field or Coupeville** reducing the need to maximize the use of Coupeville.

Internal Navy document on FCLP Distribution [GRR00121559] [emphasis supplied]

And in spite of DAA's attempts to make El Centro appear inadequate and too constrained, the message coming from the Navy's own El Centro website is quite different (El Centro Website 2025):

> Naval Air Facility El Centro plays a vital role in Navy, Marine Corps, Army, Air Force, and NATO Allied aviation training. Its unique location and excellent year round flying conditions allow for maximum exercise opportunities. **Limited non-military air traffic, vast desert terrain and numerous range facilities make El Centro an ideal environment for aerial combat maneuvering, air-to-ground gunnery, bombing practice, electronic warfare training and field carrier landing practice**. **NAF El Centro and its personnel provide premier support to deployed squadrons ensuring that all requirements are met**. Our close proximity of runway to range provides the opportunity for more training events in a shorter period of time.
>
> NAF El Centro has two operating runways: 08/26 and 12/30. Runway 08/26 is 9500 feet long and handles 96% of all traffic. **It is equipped with a Fresnel Lens Optical Landing System at each approach end and lighted "carrier deck" landing areas at both ends to facilitate Field Carrier Landing Practice (FCLPs). Runway 12/30 is 6800 feet long, and runway 30 is equipped for FCLPs**. Numerous range facilities are available providing remote controlled targets use for air-to-ground bombing, rocket firing, strafing, dummy bomb drops, and mobile land target training. NAF El Centro has added the Display and Debriefing Subsystem (DDS) utilizing remote television in addition to acoustical and laser scoring systems. The DDS is [l]inked with the Navy's Tactical Aircrew Combat Training System (TACTS), which provides a computerized record of the tactics individual aircrews employ and evaluates the effectiveness of each maneuver. NAF El Centro has eight hangars that can support ten squadrons, 26 Wells Start spots, two aircraft wash facilities, various Ground Support Equipment, hot fuel pits, cold fuel trucks, more than 15 shade structures and abundant aircraft parking space to support detachments.
> [emphasis supplied]

## DAA Retains FEIS$_G$'s One-Sided Analysis

Throughout the DAA, Navy reiterates the $FEIS_G$'s glorification of the attributes of the OLF while sweeping under the rug significant OLF safety issues. COER presented those problems to the public in a full-page ad in the Whidbey News Times on December 16, 2020 and later as part (Section 7) of a detailed report to the FAA (COER 2024). In ruling against the Navy regarding its arbitrary and capricious evaluation of the El Centro alternative, the court observed:

> "A 'viable but unexamined alternative renders [the] environmental impact statement inadequate.'" *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 814 (9th Cir. 1999) (internal citation omitted).
> . . .

ECF No. 109 at 18

> . . .
>
> The FEIS briefly discussed the option of relocating Growler operations and concluded that "[n]o installation exists that could absorb the entire Growler community without excessive cost and major new construction.
> . . .

ECF No. 109 at 19

> . . .
>
> As to the cost of relocation, the cost of moving the entire Growler operation to El Centro would undoubtedly be expensive…. [and] would require over $800 million and the "continued resolve of Congress to support special appropriations and authorizations…. But the prospect of increased cost or obtaining appropriations should be considered as part of the detailed objective evaluation of alternative sites—not cited as the basis for a cursory rejection of an alternative.
> . . .

ECF No. 109 at 19

In spite of the Court's demand that the Navy fully examine the costs, there was only one dollar-sign ($) in the El Centro section of the DAA. The DAA just mirrored the $FEIS_G$ stating that it was too expensive, but failing to substantiate the costs or examine the funding feasibility. We note too that the Defense Authorization Act this year gave the Navy more dollars than the Navy requested. In addition, the costs of Alternative 2A on the community need to be part of the economic analysis. Shuman (2017) revealed significant hidden costs of Growler operations on the greater Whidbey community. A recent publication addressing aircraft noise

highlights the importance of tallying the socioeconomic costs rather than just dollars into the economy and the need to then examine mitigation options.

> The economic impacts of aircraft noise include direct costs, indirect costs, intangible costs, and non-health-related economic impacts. Were we able to precisely estimate these costs and apply them to a given airport, we would be able to provide policymakers with the magnitude of investment required to mitigate the health problems in an economically tenable way. In some extreme cases, it may be cost-beneficial to move the airport out of a city. In others, mitigation efforts such as sound insulation may be more tenable. Other solutions such as altering flight procedures and operations (e.g., changing flight paths) and technological advancements and retrofitting older planes can also help with noise mitigation.

Zafari *et al*. 2025

Regarding to the environmental impacts, the Court further admonished the Navy for making such unsupported claims:

> Beginning with the latter rationale, the observation that shifting Growler operations would move environmental impacts is an arbitrary reason to reject detailed consideration of an alternative. This is always the case when considering an alternative location. The point of detailed analysis of alternatives is to generate information so that the "most intelligent, optimally beneficial decision will ultimately be made." N. Alaska Env't Ctr., 457 F.3d at 978 (internal quotation marks and citation omitted). Rejecting an alternative out of hand because it would merely shift environmental consequences is arbitrary and capricious and contrary to the purpose of NEPA and related regulations.

FCC No. 109 at 19-20

Nevertheless, the DAA attempted no substantive comparison of the noise impacts on the Whidbey versus El Centro communities. The number of people who would be impacted by Growler noise at and near El Centro appears to be far fewer than at NASWI Whidbey. The comparative numbers are not presented. That is, Jacuzzi, G. et al. (2024) reported the NASWI Growler noise poses a substantial health risk and impact on 74,316 Washingtonian adults and youths, but you would never know that by reading the DAA.

The DAA's characterization of expected impacts at El Centro as severe is contradicted by the support in that community for more military planes, not less. Surely the Navy is fully aware that the Imperial Valley was heavily disappointed when the Navy decided not to west coast-base the F-35s at El Centro, as reflected

in their lengthy and strenuous arguments for El Centro and against the Lemoore as the best site (Imperial Valley 2014)[11].

In its $FEIS_{G,}$ the Navy argued that there are other military demands for El Centro that would complicate stationing Growlers there, to which the Court responded:

> But these are not reasons that El Centro is, on its face, unfeasible or to reject El Centro out of hand. **These are reasons to engage in a more detailed consideration** of the costs and benefits of moving Growler aircraft to El Centro. Again, these were arbitrary and capricious reasons to reject more detailed consideration of the El Centro alternative. [emphasis supplied]

ECF No, 109 at 20

The DAA did not so engage and ignored the obvious and critical question here. That is, given the damaging impacts of Growler operations on Whidbey Island and the high import of the Growler mission, the DAA should have examined whether the other uses (helicopter, Blue Angels who use El Centro in the winter) should be reassigned to other areas or in what other ways could all operations be successfully commingled and managed. In addition, could the same consideration mitigate air quality questions noted in the DAA? Rather than provide a detailed objective assessment, the Navy provides a cursory subjective assessment.

The Navy's woefully inadequate analysis not only disrespects the Court and NEPA, but indicates that, for the Navy, NEPA is not a tool to identify the best possible compromise between people, environment and mission, but is rather an obstacle to be gotten around.

**FCLP Requisites—Smoke and Mirrors**

Page 47: The Navy's stated requirement for an outlying field that the runway must be at an elevation of <1000 feet to replicate at sea conditions is a ruse. It is not altitude that determines aircraft performance but density altitude. That varies greatly from sea to sea and by day, so landings and takeoffs must always be adjusted to the density altitude of the day and location.

> The Navy states that FCLP training should be at conducted at <200 feet [since changed to 1000 feet] above sea level to simulate actual carrier landing elevation. That argument, while sounding reasonable, conveniently ignores "density altitude." Aircraft performance is based on density altitude, not true altitude above sea level. Density altitude is pressure altitude corrected for nonstandard temperature—

[11] https://bloximages.newyork1.v, p.townnews.com/ivpressonline.com/content/tncms/assets/v3/editorial/9/81/981c4728-f33f-11e3-934e-0017a43b2370/539b69b2dfa11.pdf.pdf

i.e., it is a combination of barometric pressure, temperature, and humidity. Higher temperatures, altitude, and increased moisture reduce the density of the air. So, in a sense, density altitude is the altitude at which the airplane "feels" it is flying. A reduction in air density reduces engine power, aerodynamic lift, and drag. The EA-18G flight manual cautions pilots to calculate density altitude before each takeoff. That is, because aircraft behave according to density altitude rather than actual altitude, landing or taking off during high density altitude conditions necessarily increases approach speed and involves longer landing roll and longer takeoff roll.

Table 2 compares density altitude of four possible western U.S. sites where NASWI could conduct FCLP training and compares them to both OLFC and actual real world carrier launch conditions in the troubled South China Sea and the Persian Gulf (the two most likely areas for carrier launches to occur from). Compared to these other west coast Navy sites, the OLFC offers the worst venue for "train as we fight" conditions.

Table 2.—Density altitude comparisons at four west coast FCLP training options versus actual carrier launch conditions in the Persian Gulf and South China Sea. These examples are based on an "average day" at each location [from www.USA.com].

| Location | Elevation (feet)[1] | Air Temp. (□F) | Barometric Pressure[2] | Dew Point | Density Altitude |
|---|---|---|---|---|---|
| **FCLP Training at OLF Coupeville** | | | | | |
| OLF Coupeville | 200 | 51 | 29.92 | 35 | **337** |
| **FCLP Training Sites, U.S. West Coast** | | | | | |
| Lemoore NAS, CA | 230 | 62 | 29.92 | 56 | **678** |
| Moses Lake, WA | 1189 | 50 | 29.92 | 45 | **1010** |
| El Centro, CA | □40 | 75 | 29.92 | 40 | **1284** |
| Yakima Training Area | 1370 | 77 | 29.92 | 43 | **2963** |
| **Actual Carrier Launch Sites** | | | | | |
| Persian Gulf | 60 | 88 | 29.92 | 88 | **2182** |
| Manilla[3] | 60 | 88.2 | 29.92 | 79 | **2367** |
| Ho Chi Minh City[3] | 60 | 90.3 | 29.92 | 81 | **2525** |

[1] Airfield elevations were taken from FAA Airfield Diagrams, and actual carrier elevations are mean sea level plus 60 feet to the flight deck.

[2] FAA "standard day" barometric pressure is 29.92.

[3]Historical climatological data was not available for the South China Sea, as bounded by Manila and Ho Chi Minh City, but weather for these two cities should closely approximate.

Wilbur et al. 2016 at 19-20

Pages 48–49: The Navy goes on and on about how substandard Ault Field is for carrier landing training. Prior to the ROD, however, the Navy conducted an

average of about 22,600 annual operations at Ault Field (2015 to 2018; see Appendix D)—and far more than that before then—compared with about only 6000 at the OLF. So now the Navy wants folks to believe those hundreds of thousands of FCLPs did not measure up to standard training needs and that it had to move nearly all FCLPs to the OLF? That is not reasonable or believable. Moreover, the $FEIS_G$ considered conducting 80% of FCLPs at Ault Field (20% at the OLF) as an action alternative that would meet the purpose and need of the proposal.

Page 48: The Navy claims that it maximizes its use of the OLF "*because it more closely replicates the carrier landing pattern and conditions at sea—building and reinforcing correct flight-pattern habits, muscle memory, and familiarity with conditions resembling the at-sea environment—and therefore provides superior training to aviators while also safely managing the risks associated with at-sea carrier operations.*" Therefore, one requisite for an OLF is that the runway must be "*aligned with the prevailing winds*" (DAA p. 47) because at sea the carrier will align with the wind such that pilots will always land and take off into the wind to minimize air speed on landing and maximize lift on takeoff.

But about 30-50% of the time pilots practicing at the OLF do so with a side wind. That does not seem to fit the requisite or provide for superior training. However, during those easterly or westerly winds Ault Field runways 7 and 25 would conform to that requisite if used, but they rarely are. Of course, the runway options at El Centro are also aligned with all four wind direction possibilities. And unarguably the weather conditions at El Centro would virtually eliminate the high weather-related cancellation rate at the OLF, which is problematic not only for pilot training efficiency but for the public that cannot rely on the schedule to help them plan their day.

Page 47: Another ruse is the transit distance requisite of <50 nm to the outlying field. A jet could travel whatever miles, land and fuel up, do its 8-10 FCLPs, then refuel and head home. Note here, the proposed OLF the Navy pursued in eastern North Carolina was about 100 miles from the Oceana base in Virginia Beach. This requisite seems designed to improperly justify elimination of El Centro from analysis.

**Other Problems with DAA on Relocation/Detachment**

Page 44. The DAA argues that relocating any portion of the AEA community would "degrade efficiency and effectiveness." But the DAA fails to consider how much Growler noise degrades the community on which it impinges so much damage. Where is the balancing scale and comparative analysis to put all impacts into thoughtful perspective?

Pages 48–49: The DAA states that Ault Field may be less than ideal. But Ault Field did just fine for carrier landing practice for many years before the ROD. And that statement ignores that the OLF is fraught with safety issues putting civilians and three Coupeville schools and a large daycare center at undo risk (COER 2024). Again, where is the effort to provide a balanced, comparative analysis to put all impacts into thoughtful perspective? The Navy must stop authoring rationalizations to justify preconceived decisions and instead provide an unbiased assessment of options for reallocating a large portion of the FCLPs to El Centro and elsewhere.

Page 50: The DAA states that relocation might amount to an "*unreasonable duplication of resources, increased cost to the taxpayer, major infrastructure investments, and logistical and administrative inefficiencies.*" The DAA presents no data or information to substantiate that it would be unreasonable when juxtaposed against the not-analyzed socio-economic costs and public health, safety, and livability, which the DAA avoids addressing. Just saying it is too expensive does not demonstrate that it actually is, let alone when said by one whose intent is clearly to manufacture the outcome they want.

Page 50: Navy says it would be "impossible" to consider all 134 potential military airfields. That does not seem credible. Surely given the impacts and turmoil the Navy has created for residents of Whidbey Island, filtering 134 down to the best 5-10 options and objectively analyzing that handful does not seem un-doable or unreasonable—in fact, it is more like a *must do*.

Page 57: The Navy did not substantiate that the costs of full or partial relocation are not justified. If the costs were properly identified, analyzed, and juxtaposed against the community costs and harms, it could be that the net difference in costs and harms would make relocation a responsible and very justified expenditure.

Page 58: Given that Growlers seem to be a #1 national security priority, Growler pilots on detachment to El Centro should take priority over the all-for-show Blue Angels, as well as the pilots from the military branches of other countries.

Page 63: The Navy tries very hard to make air quality appear as an insurmountable issue, hand-wringing over whether the home basing would "*(1) cause or contribute to any new violation of a NAAQS, (2) increase the frequency or severity of any existing violation, or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone.*" It goes on to conclude that "*home basing EA-18G "Growler" aircraft at NAF El Centro would exacerbate air quality problems and complicate efforts to bring the area into attainment or maintain the area meeting the NAAQS.*" But these are just conclusory statements devoid of any substantive foundation or analysis. These assertions also do not consider displacing some of the other aircraft uses to other airfields to compensate for the high-priority Growler practice.

Page 64. Even if detachment training would increase costs, there are significant damages and costs for leaving all FCLPs on Whidbey. And the constant burden of FCLP noise on Whidbey families is far greater than short absences of pilots from Navy families while temporarily detached to El Centro.

## COER's Summary and Overall Recommendations

The DAA basically repeats its $FEIS_G$ reasons for rejecting El Centro, droning on and on with the same old unsupported statements about costing too much, inefficient and diminished training vigor, other military demands on the airfield, etc. It complains: "*There is no compelling operational need to divide the community or move all EA-18G Growler squadrons to a new airfield away from the nucleus of AEA training and operations at NAS Whidbey Island.*" (p. 50)

**The question is not whether there is a "compelling operational need" to move some or all Growler FCLPs to El Centro. The question is whether El Centro is a viable alternative. It is.**

The ROD's impacts on children's health and education, on endangered species, on significant safety shortfalls at the OLF, and the noise impacts to the overall Whidbey community are compelling, and should have been to the Navy. NEPA is not a vehicle for an agency rationalizing its way to what it wants, but rather about finding a credible and forthright analysis that identifies and assesses impacts and compares those impacts across a range of reasonable alternatives. The Navy failed to do that in the $FEIS_G$ and fails to do that in the DAA.

In the final Amended Analysis we hope to see a thorough, forthright, and honest balancing of military mission against a child's mental development and preparation for a productive life, all harassment impacts of jet noise on listed bird species, and a fair and balanced comparative analysis of the El Centro option.

And we hope that forthright analysis will lead to problem-solving alternatives and options and a new ROD. As a helpful guide, we summarize here an incomplete list of some of the needed revisions:

1. Greatly expand the bird "study area" to include the Olympic, Okanogan, and Roosevelt MOAs, i.e., all areas where Growlers routinely practice and could disturb listed bird species.

2. In the revised analysis of birds:
    a) include marbled murrelets, spotted owls, and streaked horned larks, as well as any other species of concern;

b) include the USFWS's *above-existing threshold* (noise ≥20-25 dB over ambient) in a revised analysis of marbled murrelets and spotted owls; and

c) enumerate impacts in all areas where Growler noise exceeds both harassment/disturbance thresholds, not just in the deceptive study area.

3. Present historical data on tufted puffin numbers and distribution in the 60-$dB_{SEL}$ area surrounding Whidbey Island and compare that to jet operations numbers during the same historical period.

4. Replace the imaginary Central Whidbey (R03) school site with the Coupeville middle and high schools and include metric-based impacts of Growler noise on children doing homework in their homes in the late afternoon through late night.

5. Develop a reasonable and prudent yardstick to quantify the impacts on children's education and eliminate the meaningless comparison to statewide average test scores. That is, provide the number of children and the number of times those children may be exposed to Growler noise loud enough to disrupt their hearing and mental focus in school and at home.

6. Include analysis of the impacts of Growler noise on children's health and well-being, which obviously can have a profound effect on their ability to focus and learn.

7. Provide a meaningful cost analysis of a) El Centro relocation option vs. the full costs of the status quo (no change), and b) detachment training at El Centro and other FCLP airfields vs the status quo.

8. Provide comparative numbers of adults, children, and residents in the 65 to 85 DNL noise zones for Ault Field, OLF Coupeville, and El Centro.

9. In light of the Growler's priority and import, fully examine the pros and cons of moving non-Growler operations to other airfields or otherwise altering non-Growler use of Ault Field and El Centro to mitigate airspace issues. For example, the non-carrier based squadrons that were given air space at Ault in the $FEIS_G$ are no longer occupying that space, so why then not reallocate that unused space by a reduction from the OLF?

10. Given the harms that Growler noise is inflicting on Whidbey Island and surrounding areas, include a robust analysis of ways the Navy could reallocate Growler FCLP training among the OLF, Ault Field, El Centro, and other off-Whidbey airfields, as demonstrated by Scenario 4 in Appendix C (note that the DAA on page 59 admits that "NAF El Centro is well-suited to support EA-18G

"Growler" detachment training on a transient basis…"). In addition, the Navy should:

- Due to the unsafe proximity of OLF track #32 to Coupeville schools, cease FCLPs on runway #32 when schools are in session.
- Obtain funds for sound insulation at Coupeville and Oak Harbor schools significantly affected by Growler noise or not fly when school is in session.
- Cease FCLPs flown (a) near schools when children are likely to be outside (*e.g.*, walking home, sport activities), (b) after sunset to provide the quiet needed for students with homework and to ensure proper sleep, and (c) during scheduled youth events at Rhododendron Park.
- Provide real time FCLP flight information to help folks avoid at least some exposures and unnecessary disruption, as is done at NAS Patuxent[12]

[12] "FCLPs [are] limited to 45 minutes and we typically schedule only two periods per day....Also, whenever we conduct FCLPs, we try and get the word out to the surrounding communities to keep them aware of our operations.…" (NAVAIR 2002) [https://www.navair.navy.mil/node/6056]

## Literature Cited


Banks, J.L. and B.P. O'Rourke. 2025. Community impacts of aviation noise: a pilot survey. Journal of Exposure Science and Environmental Epidemiology 35, 80–90 (2025).

Bigham, P.M. 2025. Neurodevelopmental costs of noise pollution–is history rhyming again?. Journal of Exposure Science and Environmental Epidemiology. 35, 34–36.

COER. 2024. Safety Violations at the OLF. Section 7 of a lengthy document requesting FAA revocation of Special Use Alert Area 680 OLF Coupeville. February 26, 2024. [The full document is available at: https://citizensofebeysreserve.com/faa-report/ ]

Constantin Cristian Topriceanu, et al. 2025. Higher Aircraft Noise Exposure Is Linked to Worse Heart Structure and Function by Cardiovascular MRI. Journal of the American College of Cardiology. Archive, 85 (5).

El Centro Website. 2025. Screen shot of El Centro website. April 2025.

Fink, D. 2025. What is the safe noise exposure level to prevent noise-induced hearing loss?. Journal of Exposure Science and Environmental Epidemiology. 35, 124–128.

FR 54.24. 1989. Federal Register. 64 (61) February 7, 1989.

FR 64.61. 1999. Federal Register. 64 (61) March 31, 1999.

Hahad, O. et al. 2025. Noise and mental health: evidence, mechanisms, and consequences. Journal of Exposure Science and Environmental Epidemiology. 35, 16–23.

Imperial Valley. 2014. Comment to the Environmental Impact Statement US Navy F-35C West Coast Homebasing.

Jacuzzi, G. 2024. Population health implications of exposure to pervasive military aircraft noise pollution. Journal of Exposure Science and Environmental Epidemiology. 35, 91-103.

Münzel, T., Daiber, A., Engelmann, N. et al. 2025. Noise causes cardiovascular disease: it's time to act. Journal of Exposure Science and Environmental Epidemiology. 35, 24–33.

NAVAIR. 2002. Field carrier landing practices—the foundation of carrier aviation. NAVAIR.

Osborne, MT, et al. 2020. A neurobiological mechanism linking transportation noise to cardiovascular disease in humans. European Heart Journal. 41 (6). pp 772–782.

Park, J. et al. 2025. Projecting the economic burden of health impacts of aircraft noise: a case study of Baltimore Washington International Thurgood Marshall Airport. Journal of Exposure Science and Environmental Epidemiology 35, 107–117 (2025).

Selander, J. et al. 2016. Maternal Occupational Exposure to Noise during Pregnancy and Hearing Dysfunction in Children: A Nationwide Prospective Cohort Study in Sweden. Environmental Health Perspectives. 124 (6), 855-860.

Selander, J. et al. 2019. Full-time exposure to occupational noise during pregnancy . associated with reduced birth weight in a nationwide cohort study of Swedish women. Science fo the Total Environment. 651 (2019) 1137-1143

Shuman, M. 2017. Invisible costs: the $122 million price tag for the Naval Air Station Whidbey Island.

Stansfeld, S., and C. Clark 2015. Health Effects of noise exposure in children. Current Environmental Health Report. 2 (2). pp 171-178.

Viet, S.M., et al. 2014. Assessment of Noise Exposure to Children: Considerations for the National Children's Study. Journal of Pregnancy and Child Health. 1 (1), 1-14.

USFWS (Fish and Wildlife Service). 2020. Memorandum (October 28, 2020) from Field Supervisor, Arcata Fish and Wildlife Office, Arcata, California, to Interested Parties. Subject: Revised Transmittal of Guidance: Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California.

Virkutyte, J. et al. 2020. Maternal aircrew fetal noise and vibration exposure risk model. Aim 1 Literature Search. FY20 Report. 1-116.

Wang, Z., et al. 2022. Association between noise exposure during pregnancy and pregnancy complications: A meta-analysis. Frontiers in Psychology. 21 November 2022: 1-14.

Wilbur, R.L., et al. 2016. Outlying Field Coupeville: Its Time Has Passed. Prepared for Citizens of Ebey's Reserve, Coupeville, WA. October 2016.

Zafari, Z. et al. 2025. Different considerations in economic impacts of aircraft. Journal of Exposure Science and Environmental Epidemiology. 35, 104-106.

## — Appendix A —

These references are pertinent but were not cited per se in the main body of the text. They are summarized and briefly discussed here.

**Banks, J.L., O'Rourke, B.P. 2025. Community impacts of aviation noise: a pilot survey. Journal of Exposure Science and Environmental Epidemiology 35, 80–90 (2025).**

https://doi.org/10.1038/s41370-024-00737-z

In a survey of 1452 individuals, Banks and O'Rourke (2025) found, "*Respondents report experiencing loud, repetitive, low-altitude aircraft noise - day and night - causing stress and negative effects on mental and physical health. For many, "annoyance" did not adequately describe their experience. Strong, consistent exposure-response patterns for weekly flight frequency (<100 to, >1000 flights) were found for most health impacts, perceptions, and concerns. The likelihood of adverse impacts and heightened perceptions and concerns was greatest in respondents exposed mainly to military aircraft.*"

The authors concluded that, "*Aviation-impacted communities are experiencing mental and physical health impacts that extend beyond annoyance...Aviation noise policy should be updated to account for those factors and focus on reducing public health impacts and their human and economic costs.*"

**Park, Je., Muennig, P.A. & Zafari, Z. 2025. Projecting the economic burden of healthh impacts of aircraft noise: a case study of Baltimore Washington International Thurgood Marshall Airport. Journal of Exposure Science and Environmental Epidemiology 35, 107–117 (2025).**

https://www.nature.com/articles/s41370-024-00685-8

Park et al. (2025) examined the health and related economic burden related to aircraft noise over periods of 10, 20 and 30 years. Health impacts included cardiovascular disease, anxiety disorders, noise annoyance, and low birth weight associated with day-night noise levels <55 dB DNL, 55–60 dB DNL, 60–65 dB DNL, >65 dB DNL). A Monte Carlo simulation and sensitivity analyses estimated that aircraft noise exposure would produce incremental mortality costs of $362 million, morbidity costs of $336 million, and losses of 15,326 Quality-Adjusted Life Years over the next 30 years. [emphasis supplied]

**Constantin Cristian Topriceanu, et al. 2025. Higher Aircraft Noise Exposure Is Linked to Worse Heart Structure and Function by Cardiovascular MRI. Journal of the American College of Cardiology. Archive, 85 (5).**

HTTPS://WWW.JACC.ORG/DOI/10.1016/J.JACC.2024.09.1217

In this recent study Constantin et al. (2025) examined aircraft noise effects on the heart at four United Kingdom airports. They found frequent exposure to aircraft noise caused the muscle to grow stiffer and thicker, reducing its ability to pump blood effectively, quadrupling the risk of heart attacks or strokes. The authors concluded that "*Overall, a hypothetical individual experiencing the typical CMR* [cardiovascular magnetic resonance] *abnormalities associated with a higher Lnight exposure may have a 4 times higher risk of MACE* [major adverse cardiac events; i.e., heart attack or stroke]*....Higher aircraft noise exposure associates with adverse LV* [left ventricle] *remodeling, potentially due to noise increasing the risk of obesity and hypertension. Findings are consistent with the existing literature on aircraft noise and cardiovascular disease, and need to be considered by policymakers and the aviation industry*."

**Osborne, MT, et al. 2020. A neurobiological mechanism linking transportation noise to cardiovascular disease in humans. European Heart Journal. 41 (6). pp 772–782.**

https://academic.oup.com/eurheartj/article/41/6/772/5643958

Osborn (2020) examined the neurobiological mechanisms linking transportation noise with major adverse cardiac events (MACE). The authors found "*that noise exposure associates with MACE via a mechanism that begins with increased stress-associated limbic (amygdalar) activity and includes heightened arterial inflammatio*n." The amygdala influences in the brain's response to environmental stressors, like noise. Amygdala activity correlates with perceived stress and is increased in stress-related disorders.

**Fink, D. 2025. What is the safe noise exposure level to prevent noise-induced hearing loss?. Journal of Exposure Science and Environmental Epidemiology 35, 124–128.**

https://doi.org/10.1038/s41370-024-00660-3

Fink (2025) concludes that "*the safe noise exposure level to prevent NIHL is about 55–60 dB time-weighted average for a day. Since any temporary auditory discomfort, tinnitus, or NITTS likely indicates that permanent auditory damage has occurred, it is possible that the safe noise exposure level for impulse noise is also only 55 dBA. These sound pressure levels are radically lower than current occupational noise exposure recommendations, the EPA's calculated safe noise level, or any published guidance for public noise exposure*."

**Stansfeld, S., and C. Clark 2015. Health Effects of noise exposure in children. Current Environmental Health Report. 2 (2). pp 171-178.**

https://pubmed.ncbi.nlm.nih.gov/26231366/

Stansfeld et al. (2015) reviews impacts of environmental noise on children and concludes that "*Environmental noise exposure, such as road traffic noise and aircraft noise, is associated with a range of health outcomes in children. Children demonstrate annoyance responses to noise, and noise is also related to lower well-being and stress responses, such as increased levels of adrenaline and noradrenaline….There is robust evidence for an effect of school noise exposure on children's cognitive skills such as reading and memory, as well as on standardised academic test scores*." [emphasis supplied]

**Bigham, P.M. 2025. Neurodevelopmental costs of noise pollution–is history rhyming again?. Journal of Exposure Science and Environmental Epidemiology. 35, 34–36.**

Bingham (2025) analyses decades of https://doi.org/10.1038/s41370-024-00725-3research that "*attest to the deleterious neurodevelopmental effects of excessive noise exposure in children*...[whose] *auditory perceptual skills appear to be more vulnerable to background noise compared to adults*." [emphasis supplied]

Bingham goes on to note that "*Policy-makers, scientists, and the public will first need to recognize and address the neurotoxic effects of noise on infants and children more directly*," and that numerous studies "*have documented alterations in the `normal activity' of children's nervous system due to noise, including hearing loss, impaired attention span and reading.*

Bingham further notes, *"`Natural experiment' community studies and `dose-response' associations provide strong causal evidence of noise effects on children's behavior and cognition.*"

**Münzel, T., Daiber, A., Engelmann, N. et al. 2025. Noise causes cardiovascular disease: it's time to act. Journal of Exposure Science and Environmental Epidemiology. 35, 24–33.**

https://www.nature.com/articles/s41370-024-00732-4

Munzel et al. (2025) reviewed past and current (post 2018) studies and meta-analyses on the adverse effects of transportation noise on health. They reported that exposure to high levels of road traffic noise over just several years lead to numerous adverse health issues, including premature deaths, ischemic heart disease (IHD), chronic sleep disturbances, and increased annoyance. The mechanistic cause was attributed to noise triggering "*oxidative stress, inflammation, endothelial dysfunction, and circadian rhythm disruptions...*[which] *involve the activation of NADPH oxidase, mitochondrial dysfunction, and nitric oxide synthase uncoupling, leading to vascular and cardiac damage.*" They further found that "*chronic noise exposure does not result in habituation, and susceptible individuals, such as those with pre-existing CVD, are particularly vulnerable*."

**Hahad, O., Kuntic, M., Al-Kindi, S. et al. 2025. Noise and mental health: evidence, mechanisms, and consequences. Journal of Exposure Science and Environmental Epidemiology. 35, 16–23.**

https://doi.org/10.1038/s41370-024-00642-5

Hahad et al. (2025) examined compelling and conclusive findings on the detrimental effects of noise on the brain and mental health, which confirm that exposure to noise, particularly from sources such as traffic, can harm the central nervous system. Those harms are manifest as depression, anxiety, suicide, and behavioral problems in children and adolescents. The investigations point to "*direct adverse phenotypic changes in brain tissue by noise (e.g. neuroinflammation, cerebral oxidative stress), in addition to feedback signaling by remote organ damage, dysregulated immune cells, and impaired circadian rhythms, which may collectively contribute to noise-dependent impairment of mental health.*"

**Zafari, Z. et al. 2025. Different considerations in economic impacts of aircraft. Journal of Exposure Science and Environmental Epidemiology. 35, 104-106.**

https://doi.org/10.1038/s41370-024-00688-5

Zafari et al. Report:

> The economic impacts of aircraft noise include direct costs, indirect costs, intangible costs, and non-health-related economic impacts. Were we able to precisely estimate these costs and apply them to a given airport, we would be able to provide policymakers with the magnitude of investment required to mitigate the health problems in an economically tenable way. In some extreme cases, it may be cost-beneficial to move the airport out of a city. In others, mitigation efforts such as sound insulation may be more tenable. Other solutions such as altering flight procedures and operations (e.g., changing flight paths) and technological advancements and retrofitting older planes can also help with noise mitigation.

**Selander, J. et al. 2016. Maternal Occupational Exposure to Noise during Pregnancy and Hearing Dysfunction in Children: A Nationwide Prospective Cohort Study in Sweden. Environmental Health Perspectives. 124 (6), 855-860.**

Selander et al report:

> Conclusions. This nationwide population-based study supports the hypothesis that occupational noise exposure during pregnancy is associated with future hearing dysfunction in children. Taken together with previous epidemiological and experimental studies as well as mecha-nistic data, the available data indicate that pregnant women should not be exposed to high levels of noise at work.

**Viet, S.M., et al. 2014. Assessment of Noise Exposure to Children: Considerations for the National Children's Study. Journal of Pregnancy and Child Health. 1 (1), 1-14.**

https://pmc.ncbi.nlm.nih.gov/articles/PMC4390126/#S9

Viet, S.M., et al. (2014) present a strong review of the literature regarding health impacts of noise on children. They assume that vulnerability to hearing loss in children is similar to that of adults, but found no studies of support. In addition to hearing loss, they report

that "*noise exposure is associated with negative birth outcomes, reduced cognitive function, inability to concentrate, increased psychosocial activation, nervousness, feeling of helplessness, and increased blood pressure in children.*" (Abstract)

Addressing the impacts of noise on fetal development, they report a number of health harms from noise.

> Chronic maternal exposure to airport noise during pregnancy has been shown to result in vasoconstriction which subsequently leads to decreased utero-placental blood flow, and possibly increased fetal hypoxia [24]. The stress of chronic elevated noise can lead to increased maternal blood pressure, greater secretion of maternal epinephrine and norepinephrine, and decreased human placental lactogen [24,25]. Exposure of pregnant women to airplane noise has been associated with a decrease in body weight of newborn babies; and the height of 3-year-old children was shown to be significantly decreased with higher noise levels [25]. Human fetal exposure to noise has been linked with decreased birth weight and length, and increased incidence of birth defects, specifically cleft lip, cleft palate, anencephaly and spinal bifida [24,26,27]. (p. 4; numbers are references)

They further report that noisy environs have been linked to non-auditory health effects in children that include, "*reduced cognitive function, inability to concentrate, increased psychosocial activation, nervousness, and helplessness [23,26,35]...an increase in stress [36]*[,]... *a small but positive relationship between aircraft noise exposure and blood pressure...[, and] a stronger positive relationship with systolic blood pressure* [for highway noise]....(p. 4; numbers are references).

## — Appendix B —

**Re DAA Section 2.4, El Centro: Historical NEPA Non-Compliance**

In Section 2.4 of its DAA (El Centro), the Navy specifically states that the limited "purpose of the Proposed Action (2018 EIS) was to augment the AEA community at NAS Whidbey Island complex." [DAA page 44] In other words, the Navy was only seeking to add an additional 36 "Growlers" to an already historically established base. The Proposed Action is "one more incremental development in the continued sustainment of the AEA mission at NAS Whidbey Island." [DAA page 50].

The Navy then seeks to justify its position not to re-examine El Centro as a basing alternative (in whole or in part), despite the federal court order to do so, on the basis that it is not required "to reanalyze alternatives previously considered."

> Agencies are not required to reanalyze alternatives previously considered. The process of narrowing alternatives is in accord with NEPA's 'rule of reason' and common sense—agencies need not reanalyze alternatives previously rejected, particularly when an earlier analysis of numerous reasonable alternatives was incorporated into the final analysis and the agency has considered and responded to public comment favoring other alternatives" (85 Federal Register 43304, 43330)(July 16, 2020). The NAF El Centro alternative was not previously considered as an alternative location for the AEA community (or any portion thereof) prior to the 2018 Final EIS, but the Navy had repeatedly explained in **prior analysis** [Emphasis added] why it continued to single-site the AEA community at NAS Whidbey Island. The 2018 Final EIS references these prior analyses (below) as "key documents" incorporated into and informing the analysis. [DAA page 49]

The Navy concedes that it had never considered the El Centro alternative prior to the 2018 EIS (see above). It claims that it had repeatedly explained why it continued to single-site at NAS Whidbey Island by referencing a series of prior analyses:

> 2005 Final Environmental Assessment (EA) for Replacement of the EA-6B Aircraft with EA-18G Aircraft at NAS Whidbey Island;
>
> 2008 Chief of Naval Operations (N3.N5) Strategic Laydown and Dispersal of Ships and Aircraft;
>
> 2012 EA for the Expeditionary Transition of EA-6B Prowler Squadrons to EA-18G "Growler" at NAS Whidbey Island, Oak Harbor, Washington; and
>
> 2013-2014 Scoping Process for 2018 Final EIS, [DAA page 49]

concluding:

> Accordingly, single-siting the AEA community at NAS Whidbey Island is a product of continual investment in the installation's AEA mission over decades, each incremental action **the result of planning, environmental analysis, and decision-making captured in *prior NEPA documents.*** The 2018 Final EIS was not analyzing a new mission or platform for the first time, home basing a general-purpose platform with an existing footprint at multiple airfields, or home basing a platform at one of several locations already resourced to fully support the aircraft and its mission. Instead, the Navy sought to augment the existing fleet of 82 EA-18G "Growler" aircraft at the hub of the AEA community and the only installation in the U.S. at which EA-18G "Growler" aircraft are based, the only installation with the facilities and specialized equipment necessary to support the AEA mission on day one, and the only installation capable of sustaining EA-18G "Growler" operations without any impact to the mission.
>
> Examined in this context, the Proposed Action to augment the Navy's EA-18G "Growler" fleet with 36 new aircraft **is one more incremental development** in the continued sustainment of the AEA mission at NAS Whidbey Island. [Emphasis and italics added.] [DAA page 50]

Although this sounds reasonable on its face, it presupposes that the Navy had previously complied with NEPA requirements by reasonably and adequately analyzing the alternatives to NAS Whidbey Island for single-siting the EA-18G "Growler" at some point in history. In reality, it had never done so. The list of analyzes cited by the Navy in support of its "historical basing" argument is a classic case of *bootstrapping upon a false premise*.

The Navy proffers their 2005 Final Environmental Assessment, (Replacement of the EA-6B "Prowler" with the EA-18G "Growler" at NAS Whidbey Island) as the original source of NEPA compliance in single-siting all Growlers at NAS Whidbey Island. In the Navy's telling, the rest of their listed analyses through to the 2018 Final EIS are simply small extensions of that original 2005 EA. But the 2005 EA was not a comprehensive analysis as required by NEPA. The Navy's overall argument fails for two significant reasons: (i) the Navy never satisfied the requirements of NEPA in originally examining the best basing alternatives for its AEA community or electronic attack squadrons; and (ii) the Navy violated NEPA by **segmenting**[13] its expansion plans for NAS Whidbey Island, thereby limiting the scope of its examination at each stage rather than doing one comprehensive examination.

The 2005 Final Environmental Assessment was limited in its scope to the examination of transitioning from the EA-6B "Prowler" electronic attack aircraft to

[13] Segmentation as used here and by NEPA is piecemealing a project into little incremental pieces each of which is small enough to allow for a finding of no significant impact (FONSI), yet would create a significant impact had the whole been considered in one EIS.

the EA-18G "Growler." It was never a comprehensive NEPA examination as to whether the electronic attack squadrons should be based at NAS Whidbey Island in the first place, or whether all Growlers should be single-sited. Yet there were already indications in the 2005 EA that single-siting at NAS Whidbey Island was being planned[14].

The 2005 EA, which should have been conducted as a comprehensive EIS, was premised on the historical basing (but not single-siting) of the Prowler at NAS Whidbey Island. An Environmental Assessment was the reduced examination format used based upon the claim that the Navy was only switching EA platforms from the Prowler to the Growler and that the switch would result in fewer environmental impacts. It was specifically stated that environmental impacts would be lessened because there would be fewer operations and because there would be reductions in personnel. Consider the following statements in the Executive Summary of the 2005 Final Environmental Assessment:

> For more than 30 years, the EA-6B aircraft has been in the fleet conducting the Airborne Electronic Attack (AEA) mission.
>
> Given the similarities between the EA-6B and EA-18G, the primary types of mission training and readiness requirements will be nearly identical.
>
> The EA-6B community of personnel, equipment, and mission-related functions has been performing the AEA mission at NAS Whidbey Island since 1971. Consequently, NAS Whidbey Island and the surrounding area meet all of the necessary requirements of the AEA mission. Since all the requirements of the new airframe can be met at an existing AEA homebase, the Department of the Navy is proposing to provide facilities and functions to support the replacement of the EA-6B with the EA-18G at NAS Whidbey Island. [Page 1]
>
> The replacement process will result in an overall decrease in the number of Electronic Attack (VAQ) aircraft and associated personnel stationed at NAS Whidbey Island. A total of 57 EA 18G aircraft will replace the existing 72 EA-6B aircraft, resulting in a decrease of 15 VAQ aircraft stationed at NAS Whidbey Island and a decrease of approximately 1,106 personnel associated with the AEA aircraft squadrons.
>
> There will be no change in the training syllabus that would cause changes to the types of flight operations flown by the EA-6B (arrivals, departures, pattern

[14] See: "Navy considered all relevant factors before determining that, in order to maintain force readiness and surge capability during the transition to the EA-18G, the AEA mission should remain at NAS Whidbey. Specifically, Navy analyzed operational requirements, aircraft delivery timeline, overall cost, and the ability to efficiently maintain the required level of AEA capability during the transition process. The results of this analysis revealed that maintaining the AEA mission at NAS Whidbey maximizes operational capabilities by offering several advantages over splitting the AEA mission among several sites. Specifically, single siting the AEA mission offers. …" [Page 12]

> operations), the locations of flight operations (flight tracks over land or water), or the current ratio of daytime and nighttime flight operations at Ault Field or OLF Coupeville. In addition, there will be no change to the number or type of flight operations within national airspace, designated SUA, and in the low altitude MTRs from what has been conducted by the EA-6B squadrons for several decades. [Page 2]

Had the Navy been honest in its 2005 Final EA that the operational facts they laid out were but the first steps in an overall design to single-site all electronic attack aircraft at NAS Whidbey Island, it is clear that the local community would have objected to both the format of the evaluation and to the plan itself. It is more than likely that litigation would have ensued to challenge the Navy's use of an Environmental Analysis instead of an Environmental Impact Statement. How do we know this? Because the Whidbey Island community had already once before stepped up to demand that the Navy comply with NEPA and do an EIS regarding the use of the Coupeville OLF. And the Navy had conceded to the public demands and began an EIS process.

On February 7, 1989, the Navy published its intent to perform an EIS at NAS Whidbey Island in the Federal Register (FR 54.24, 1988).

> **Department of the Navy**
> **Intent To Prepare an Environmental Impact Statement for Aircraft Operations at Naval Air Station Whidbey Island, WA**
>
> In accordance with the Council on Environmental Quality regulations (40 CFR Parts 1500-1508) implementing the procedural provisions of the National Environmental Policy Act (NEPA), the Navy provides notice of the intent to prepare an Environmental Impact Statement (EIS) for the conduct of air operations at Naval Air Station Whidbey Island (NASWI). Washington.
>
> All Navy EA-6B Prowler electronic warfare squadrons and all west coast A-6E Intruder squadrons are stationed at NASWI.
>
> * * *
>
> In recent years regional population increases have resulted in more people residing in noise and accident-potential zones adjacent to NASWI and Couperville [sic.]. This high rate of growth is projected to continue. Ove[r] the pat ["past"] five years, the level of training operations has also gradually increased. The Navy is preparing an EIS to plan for the long-term capability of NASWI to effectively train carrier aircrews while integrating the environmental concerns of the public. The EIS will address the potential environmental impacts associated with training operations currently being conducted and to evaluate possible alternatives to mitigate impacts that may be identified.

The public availability of the resulting Draft EIS was published in the Federal Register on August 27, 1993. Public hearings were then held on September 29, 1993 and November 10, 1993. However, no Final Environmental Impact

Statement and no Record of Decision were ever released with regard to this Draft EIS. Instead, on March 25, 1999, the Navy published a notice in the Federal Register (FR 54.24, 1988 and FR 64.61, 1999) that the EIS process was being terminated because it was no longer necessary due to changed conditions.

> At the time of the preparation of the DEIS, all Navy EA-6B Prowler electronic warfare squadrons and all west coast A-6E Intruder squadrons were stationed at NAS Whidbey Island. Ault Field and Outlying Field (OLF) Coupeville were used for aircraft training exercises on Whidbey Island.
>
> Since the publication of the DEIA, the conditions at NAS Whidbey Island have changed significantly. All A-6E aircraft have been decommissioned and are no longer based at NAS Whidbey Island. Accordingly, air operations at NAS Whidbey Island have been reduced 40-50% from 1988 levels.
>
> The significant reduction in air operation activities has eliminated the need for proposed modifications to NAS Whidbey Island air operations. Therefore, the preparation of an EIS for Management of Aircraft Operations at NAS Whidbey Island is no longer required and the process is hereby terminated.

This 1993 DEIS would have been the appropriate NEPA examination as to whether NAS Whidbey Island was the best alternative for single-siting all (then current) electronic attack aircraft and squadrons. It was never completed nor tested in court. At some point after the 1999 notice, when the Navy once again decided to make NAS Whidbey Island the single-siting base for all EA-18G Growler aircraft, NEPA required that it reinitiate the EIS examination begun in 1989 and abandoned in 1999. Instead of performing an EIS, however, the Navy took the short-cut of claiming historical precedent to do an EA instead. The historical precedent that they relied upon in 2005, however, was one they had abandoned in 1993. Today, in the DAA, they are claiming that they complied with NEPA all along. Clearly, they have not. The court found that they had violated NEPA with regard to looking at El Centro as an alternative basing option to NAS Whidbey Island. Their decision in this DAA to again reject looking at El Centro as an alternative is based upon a false historical premise. It is also a continuing violation of NEPA and a blatant refusal to comply with the court's order.

Finally, NEPA disfavors segmentation. The Navy admits that the process of getting to the 2018 EIS was a series of segments. Whether the Navy actually changed its mind at some point after it terminated the 1989 EIS process or whether they abandoned the process in order to make it easier to achieve what they wanted all along will likely never be discoverable. Nevertheless, they have admitted in their DAA that the aspects of their basing decision in the 2018 EIS is a product of segmentation. Given this long-running violation of NEPA regarding the use of Whidbey Island for Prowlers and then Growlers, it is incumbent on the Navy to now prepare a path to mitigate the damage and harm it has managed to bypass via segmentation.

## — Appendix C —

## Four Allocation Scenarios

***1) Existing Condition Scenario.*** The 2018 ROD allocates 5,900 FCLP operations to Ault Field and 23,700 to the OLF. Under this scenario, the number of noise exposures widely unbalanced, varying among the 6 runways by 171-fold (0.224 million to 38.215 million exposures). The severity index high in this scenario, at 8295 overflights affecting 4607 individuals, was far greater than the high in any of the other scenarios and was more than 2 times the next closest: 3825 overflights of 2468 individuals (Scenario 2).

| **Existing Condition Scenario** | | | | |
|---|---|---|---|---|
| **FCLP Usage% by Runway[a]** | | **(A) 2020 Census Population[b]** | **(B) Number of Overflights per Year** | **(A x B) No. of Indivdual Exposures (in Millions, x10$^6$)** |
| **Ault Field [Total FCLP operations = 5900 (FEIS Table 2.3-2) or 2950 overflights]** | | | | |
| #07 | 21% | 3608 | 620 | 0.224 |
| #14 | 30% | 2468 | 885 | 2.184 |
| #25 | 49% | 5700 | 1446 | 8.242 |
| #32 | 1% | 16,924 | 30 | 0.508 |
| Average for 4 Ault Runways | | | | 2.790 |
| **Outlying Field [Total FCLP operations = 23,700 (FEIS Table 2.3-2) or 11,850 overflights]** | | | | |
| #14 | 30% | 2796 | 3555 | 9.939 |
| #32 | 70% | 4607 | 8295 | 38.215 |
| Average for 2 OLF Runways | | | | 24.077 |

[a] These percentages, as derived from $FEIS_G$ (Tables A3-2 and A3-3, pages A3-5 and A3-6), were separate for night and day and had to be averaged into one for day/night. That totaled to over 100% so reduced to not overstate Column B; they may therefore be off a point or so, but not significant.

[b] Population counts by runway were derived from via EJScreen (as depicted below).

***2) Equal Exposure Scenario.*** This scenario examines reallocating the total number of FCLPs in the Existing Condition (ROD = 29,600 ops) so that the exposure totals are the

same for each runway, i.e., how the Navy could adjust FCLPs to balance the exposure impact. Some areas would experience increases in noise, but for most, there would be a reduction in noise exposure.

| **Equal Exposure Scenario[a]** | | | | |
|---|---|---|---|---|
| **FCLP Proposed[b] vs. (Historical) Usage% by Runway** | | **(A) 2020 Census Population** | **(B = C/A) Number of Overflights per Year** | **(C) No. of Indivdual Exposures[c] (in Millions, x$10^6$)** |
| **Ault Field [Based on 20,000 FCLP operations or 10,000 overflights]** | | | | |
| #07 | 30.9% (21%) | 3608 | 2616 | 9.439 |
| #14 | 44.2% (30%) | 2468 | 3825 | 9.439 |
| #25 | 19.1% (49%) | 5700 | 1656 | 9.439 |
| #32 | 2.0% (1%) | 16,924 | 557 | 9.439 |
| Average for Ault | | | | 9.439 |
| Ault Field totals | | 28,700 | 8654 | |
| **Outlying Field [Based on 9600 FCLP operations or 4800 overflights]** | | | | |
| #14 | 62.0% (30%) | 2796 | 3376 | 9.439 |
| #32 | 37.8% (70%) | 4607 | 2049 | 9.439 |
| Average for OLF | | | | 9.439 |
| OLF totals | | 7403 | 5425 | |
| Grand Total: Ault + OLF | | | 14,079 | |

[a] Using the total number of operations (14,800 overflights) in the Existing Condition Scenario, this scenario back-calculates the number of overflights for each runway that would produce the same number of exposures (9.439 million) at each runway. the same number of exposures at each runway based on the ROD total overflights of 14,800. Under the Existing Condition there were 57.232 million exposures, which divided equally among the 6 runways equal 9.439 exposures for each runway, which divided by the population for a given runway provides the number of overflights for that runway. Then the number of overflights for that runway divided by grand total of overflights provides the percentages for each runway.

[b] The Proposed Usage that would equalize exposures among all 6 runways is Column B overflights/grand total of overflights (14,079), which is a bit shy of the ROD total 14,800 due to rounding very large numbers. It could be proportionally forced to 14,800, but it would make a barely negligible difference.

[c] Based on the Existing Condition Scenario of 57.232M total exposures split evenly between all 6 runways.

***3) Overflights Balanced Scenario.*** This scenario balances the number of total ROD overflights to 2470 for each runway. (14,800 ROD overflights divided by 6 runways =

2467 per runway). Under this scenario, the number of noise exposures varies far less widely among runways (7-fold from 6.096 to 41.802 million) than under the Existing Condition Scenario, and each person experiences the same number of toxic exposures (2470 overflights/person). From a health and livability standpoint the impact is fair and balanced in that each civilian is exposed to the same number of overflights. That is, in this scenario the impact of noise on each individual is significantly less than the scenarios #1 and #2, but the overall impact as reflected by exposures is greater than #2, primarily due to Ault Field runway 32. It is kind of the conundrum, which is worse, 1 lash on each of 10 peasants or 10 lashes on 1 peasant?

| **Overflight Balanced Scenario** | | | | |
|---|---|---|---|---|
| **FCLP Proposed vs. (Historical) Usage% by Runway[1]** | | **(A) 2020 Census Population[2]** | **(B) Number of Overflights per Year** | **(A x B) No. of Indivdual Exposures (in Millions, x$10^6$)** |
| **Ault Field [Based on 19,760 FCLP operations or 9880 overflights]** | | | | |
| #07 | 16.7% (21%) | 3608 | 2470 | 8.911 |
| #14 | 16.7% (30%) | 2468 | 2470 | 6.096 |
| #25 | 16.7% (49%) | 5700 | 2470 | 14.079 |
| #32 | 16.7% (1%) | 16,924 | 2470 | 41.802 |
| Average for 4 Ault Runways | | | | 17.722 |
| **Outlying Field [Based on 9880 FCLP operations or 4940 overflights]** | | | | |
| #14 | 16.7% (30%) | 2796 | 2470 | 6.906 |
| #32 | 16.7% (70%) | 4607 | 2470 | 11.379 |
| Average for 2 OLF Runways | | | | 9.143 |

***4) The Thirds Scenario.*** This scenario reallocates the Existing Condition (#1) operations as follows: 1/3 at the OLF, 1/3 at Ault Field, and 1/3 at El Centro or any off-Whidbey airfield, which is 29,600 ops/3 = 9867 ops or 4933 overflights at each airfield. This option significantly reduces the impacts at Ault and the OLF over the other scenarios. The impacts could be further reduced by allocating the total overflights for Ault + OLF (9867) and converting to equal overflights or equal exposures, as in scenarios 2 and 3, instead of the historical runway usage.

| **The Thirds Scenario** | | | | |
|---|---|---|---|---|
| **FCLP Hisorical Usage% by Runway** | | **(A) 2020 Census Population** | **(B) Number of Overflights per Year[a]** | **(A x B) No. of Indivdual Exposures (in Millions, x$10^6$)** |
| **Ault Field 9867 ops or 4933 overflights** | | | | |
| #07 | 21% | 3608 | 1036 | 3.738 |
| #14 | 30% | 2468 | 1480 | 3.653 |
| #25 | 49% | 5700 | 2417 | 13.777 |
| #32 | 1% | 16,924 | 50 | 0.846 |
| Average for 4 Ault Runways | | | | 5.503 |
| **OLF 9867 ops or 4933 overflights** | | | | |
| #14 | 50% [b] | 2796 | 2467 | 6.898 |
| #32 | 50% [b] | 4607 | 2467 | 11.365 |
| Average for 2 OLF Runways | | | | 9.132 |

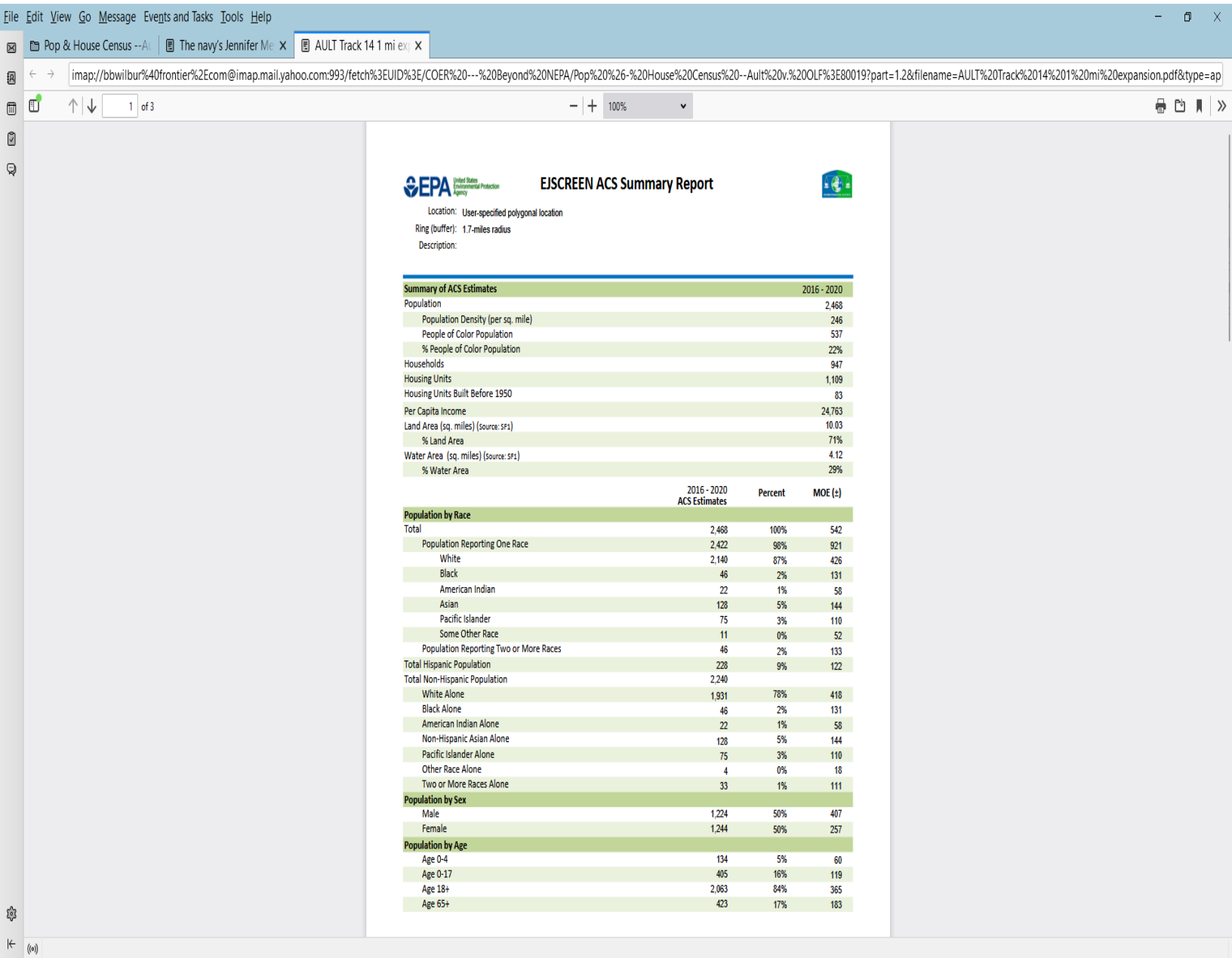
[a] The overflights are the total number of overflights (4933) times the historical usage percent for a given runway.

[b] While this allocation in the ROD has been 30% on #14 and 70% on #32, in recent practice it has been closer to 50:50 and that seems to be a more realistic split to use, especially since the seasonal wind conditions are predominately southerly half the year and northerly the other half. Also, this allocation helps to keep the overflight impact on #32 more in line with all the other runways.

# Example of Derived Population Reports and Maps via EJScreen

EJScreen map of severe Growler noise impact area (green highlight) 0.5 miles on both sides of the field carrier landing practice loop for Runway #14 at Ault Field, Navy Air Station Whidbey Island.

Example of an EJScreen report for severe Growler noise impact area.



EJSCREEN ACS Summary Report

Location: User-specified polygonal location
Ring (buffer): 1.7-miles radius
Description:

| Summary of ACS Estimates | 2016 - 2020 |
|---|---|
| Population | 2,468 |
| Population Density (per sq. mile) | 246 |
| People of Color Population | 537 |
| % People of Color Population | 22% |
| Households | 947 |
| Housing Units | 1,109 |
| Housing Units Built Before 1950 | 83 |
| Per Capita Income | 24,763 |
| Land Area (sq. miles) (Source: SF1) | 10.03 |
| % Land Area | 71% |
| Water Area (sq. miles) (Source: SF1) | 4.12 |
| % Water Area | 29% |

| | 2016 - 2020 ACS Estimates | Percent | MOE (±) |
|---|---|---|---|
| **Population by Race** | | | |
| Total | 2,468 | 100% | 542 |
| Population Reporting One Race | 2,422 | 98% | 921 |
| White | 2,140 | 87% | 426 |
| Black | 46 | 2% | 131 |
| American Indian | 22 | 1% | 58 |
| Asian | 128 | 5% | 144 |
| Pacific Islander | 75 | 3% | 110 |
| Some Other Race | 11 | 0% | 52 |
| Population Reporting Two or More Races | 46 | 2% | 133 |
| Total Hispanic Population | 228 | 9% | 122 |
| Total Non-Hispanic Population | 2,240 | | |
| White Alone | 1,931 | 78% | 418 |
| Black Alone | 46 | 2% | 131 |
| American Indian Alone | 22 | 1% | 58 |
| Non-Hispanic Asian Alone | 128 | 5% | 144 |
| Pacific Islander Alone | 75 | 3% | 110 |
| Other Race Alone | 4 | 0% | 18 |
| Two or More Races Alone | 33 | 1% | 111 |
| **Population by Sex** | | | |
| Male | 1,224 | 50% | 407 |
| Female | 1,244 | 50% | 257 |
| **Population by Age** | | | |
| Age 0-4 | 134 | 5% | 60 |
| Age 0-17 | 405 | 16% | 119 |
| Age 18+ | 2,063 | 84% | 365 |
| Age 65+ | 423 | 17% | 183 |

# — Appendix D —

**Table 1.c.** Summary of the number of FCLP operations conducted at the Outlying Field in Coupeville and Ault Field in Oak Harbor for the years 2015 to 2024. Numbers without footnotes are Freedom of Information Act data as developed for the respective year and presented in Tables 2-5 below. ND = no data.

| Year | FCLPs Outlying Field | | FCLPs Ault Field | | All Aircraft Operations at Ault Field | |
|---|---|---|---|---|---|---|
| | Projected Number of Operations | Actual Number of Operations | Projected Number of Operations | Actual Number of Operations | Projected Number of Operations | Actual Number of Operations |
| 2015 | 6,120[a] | 6,000[b] | 18,282[a] | 25,500[b] | 78,987[a] | ND |
| 2016 | | | | | | |
| 2017 | | 5,804 | | 20,184 | | |
| 2018 | | 6,920 | | 15,188 | | |
| 2019 | 24,100[c] | 19,424 | 5,900[c] | 10,867 | 88,000[c] | ND |
| 2020 | | 14,688 | | 14,688 | | ND |
| 2021 | | 11,004 | | 6,550 | | 49,267[d] |
| 2022 | | 10,362 (12,454)[e] | | 4,606 | | 28,687+[d] |
| 2023 | | 13,968 [f] | | ND | | ND |
| 2024 | | 15,696[g] | | ND | | ND |

[a] Source: Aircraft Noise Study for Naval Air Station Whidbey Island and Outlying Field Coupeville, Washington. Wyle Laboratories, October 2004. Table 4-1.
[b] Estimated from Navy data in Figure 4 graph Section 106 Determination of Effect for the EA-18G "Growler" Airfield Operations at the Naval Air Station Whidbey Island Complex, June 2018. https://media.defense.gov/2019/Jan/29/2002084033/-1/-1/1/ATTACHMENT%202%20-%20DETERMINATION%20OF%20EFFECT.PDF
[c] Source: Final EIS, Tables 4.1-3 and 4.1-5.
[d] FOIA'd data for NASWI operations for 2021 and 2022 (see first two tables). The number of operations for 2022 as reported by the Navy were for January through August, so total number of operations for the year would have been somewhat higher, probably very similar to 2021.
[e] Hypothetical total had OLF not been closed for repairs during July & August.

[f] Estimate based on 99 documented days of flying at the OLF in 2023 times the average number of operations for a day of flying in 2021 (Table 3) and 2022 (Table 4), or (155 + 133)/2 = 144 operations/fly day. Hence, 99 × 144 = 14,256 operations for the year.
[g] Estimate; see Table 6 for explanation