

June 8, 2011

Island County Community Development
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The December 23, 2010 noise study of operations at the Nichols Brothers Boatbuilder (NBBI) shipyard by the Greenbusch Group is, in general, a competent analysis. The analysis concluded that with implementation of a number of mitigation measures the shipyard will, for the most part, comply with state ambient noise standards and, more importantly, the increase in noise attributable to the shipyard expansion will not cause significant adverse noise impacts to the community. For this work to have any benefit to neighbors, it is critical that Island County require that the shipyard operate consistent with the assumptions in the noise analysis and that all recommended noise mitigation measures be implemented.

With this letter, I express concerns with some aspects of the noise analysis that can be remedied. I then address far greater concerns with apparent changes in NBBI's proposal and commitments to noise mitigation.

Comments on December 2010 Greenbusch Group noise analysis

I have several concerns with the analysis.

- Page 4 indicates the state noise code is based on zoning. That is not correct. Unless a local jurisdiction has specifically assigned an EDNA designation to a zone, ambient noise criteria are based on land use.
- Page 10 states the night launches are exempt from the lower night noise limits for residential properties. WAC 173-60-050(b) exempts sources from the reduced night noise limits only under certain conditions: "Noise from existing industrial installations which exceed the standards contained in these regulations and which, over the previous three years, have consistently operated in excess of 15 hours per day as a consequence of process necessity and/or demonstrated routine normal operation. Changes in working hours, which would affect exemptions under this regulation, require approval of the department." The first paragraph of the noise analysis indicates NBBI hours are 7 a.m. to 8 p.m. – 13 hours per day. Night launches have occurred over time, but they are not routine¹, and NBBB has not "consistently operated in excess of 15 hours a day." Furthermore, page 10 of the Greenbusch report implies that the night launches do not even meet the daytime noise limits. There is no exemption from compliance with daytime limits.
- The comparison of measured sound levels with state noise standards notes that "most of the Code exceedances occurred with the Lmax descriptor." "These exceedances were generally due to other sources unrelated to NBBB activities (birdsong, human voices and noises, roadway traffic, aircraft, dog barks, etc.)." Of course, these unrelated sources are exempt from the noise code, so there were no exceedances of the code. Based on my 20

¹ The table note to Table 7-2 acknowledges that night launches are not typical.

or so years of environmental noise evaluation, there is no doubt that the sharp, impulsive sounds that commonly originate at the shipyard exceed the state standards at nearby residential properties – even if observations during the baseline measurements did not confirm such exceedances. The source noise measurements on Tuesday acknowledged that code violation could also occur at residential measurement location M2 if blasting occurred more than five minutes in an hour; neighbors are well aware that blasting commonly occurs more than five minutes in an hour. Existing exceedances should be eliminated before an expansion is approved.

- The primary impact of an increase in sound levels attributable to a new or modified source of noise occurs when background sound levels are low. The basis for comparison with existing sound levels is primarily based on Leq, an energy average sound level. The sound level exceeded approximately 25% of the time (L25) is typically fairly close to the Leq. Consequently, sound levels are lower than implied the Leq approximately 75% of the time. A conservative analysis would have addressed impacts during quiet periods, but the analysis focuses on typical energy average sound levels. Many neighbors, particularly those nearest the shipyard, would prefer noise mitigation that maintains the quiet times that we cherish most.
- Compliance with target sound levels was evaluated by predicting sound levels for individual noise sources (e.g., hammering, cranes, blasting, etc). However, it is common for multiple activities to take place at the same time and/or in the same hour. Noise contributions from all noise sources that could conceivably be active in the same hour must be added to evaluate compliance with the sound level targets and noise limits.
- Most of the evaluations of noise impacts from specific activities were based on Leq or L25. However, if an activity only lasts 15 minutes of an hour, the impact during those 15 minutes is 6 dBA higher than the hourly values identified in the report. It is not appropriate to average away impacts from short term noise sources.
- There is no definition of “quiet activity” that would occur during night hours. What is “light carpentry” - chop saws? hammering? While tempting to accept a “trust me” commitment, the company could be sold at any time and an ownership less concerned with community acceptance could be in charge. Table 7.2 documents sound levels during existing NBBB operating hours, but sound levels before 7 a.m. and after 8 p.m. are lower, so noise from the shipyard is more obtrusive during those periods. ICCD must condition night work with tight restrictions on activity. A noise evaluation must address off-site impacts with those activities during the quieter shoulder hours of operation.
- Greenbusch cites only part of the EPA policy when it describes EPA noise criteria. The same documentation characterizes noise increases of less than 5 dBA as slight impacts; increases of 5-10 dBA as significant impacts; and increases greater than 10 dBA as serious impacts. To its credit, Greenbusch elected to apply a target noise criterion based on a 5 dBA increase. Given the neighborhood’s low background sound levels (L90), I would have preferred a target that was 5 dBA above the measured L90 sound levels, but these background sound levels are not even mentioned. Given that Leq’s were used, a 5 dBA increase over the low end of the measured range would have been more protective of the neighborhood tranquility. In that case, the targets would have been much lower than those identified in Table 7. Nonetheless, Greenbusch is to be commended for

focusing on the increase in noise rather than simple comparisons with state noise standards. NBBB is an incompatible land use in a largely residential area, and the industrial EDNA it enjoys is too lax for such a mixed land use setting.

- Several documents imply that NBBB is a commercial use. If NBBB is a commercial use rather than an industrial use, the more stringent sound level limits for commercial activities should be applied.
- A series of noise reduction measures for various activities begins on Page 18. These measures are key to minimizing impacts to neighboring properties. The measures would be far more valuable if adjectives such as “louder” or “noisier” activities and “higher” sound levels are defined by source sound levels (e.g., 75 dBA at 5 feet) or specific activities (e.g., hammering, cutting, etc).
- The key question in the noise mitigation discussion is whether NBBB is willing to commit to the operating assumptions that are the basis for the noise predictions. If not, the noise analysis is misleading and hinders good decision making, as it offers professional assurance of slight impact for operating conditions that may not represent actual operations. Will NBBB really commit to noise reduction measures and activity location restrictions assumed in the noise analysis?
- Section 10.3.1 addresses sledge hammer impacts using Leq. Leq is appropriate for relatively constant noise sources, but sledge hammers (the most obtrusive noise at my home) create impulsive sounds. The analysis of sledge hammer impacts should focus on Lmax. It is particularly inappropriate to compare model-predicted Leq with the state noise criteria for Lmax. This inappropriate comparison of hourly average sound levels with criteria for maximum sound levels appears in several other tables as well.

NBBB Commitments to Noise Mitigation

Despite my preference for a lower target sound level, the 46 dBA target is a reasonable compromise for residential properties. What is missing from the documents I’ve reviewed, however, is the commitment by NBBB to the mitigation measures that are the basis for the Greenbusch conclusion that expanded activity will not result in a significant adverse noise impact. In fact, the March 31 and May 16, 2011 responses to ICCD requests for more information present two significant departures from the Greenbusch assumptions. First, NBBB seems to commit only to code compliance – not the “slight” impact criteria that Greenbusch used to develop mitigation measures.² Secondly, as if in retaliation for continued questions, NBBB announced its intent to work seven days per week – not Monday through Saturday as previously proposed.

The May 17, 2011 Amended Response to Form D Application Item 18 completely undermines the bases for the Greenbusch Group’s conclusion that the shipyard expansion could be implemented without significant adverse noise impacts to the community. Page 2, Noise Pollution Control, commits to complying with the state noise standards - not the slight noise impact criterion evaluated by Greenbusch. Additional NBBB commitments to noise abatement

² See, for example, the fourth response in the March 31 letter and Page 5 of Part D “Hours of Operation.”

are loosely worded; the Greenbusch study is worthless unless NBBB commits to the operating assumptions and mitigation that form the basis of the noise analyses.

Similarly, Page 5 of Part D, "Hours of Operation", is a commitment to "not do" "fabrication or repair work that makes a significant amount of noise outside the hours of 7 a.m. to 10 p.m., Monday through Sunday." This implies that making significant noise between 7 a.m. and 10 p.m. is acceptable. It also ignores the possibility of work other than fabrication and repair that makes a significant amount of noise during night hours. NBBB appears to have backed away from the earlier commitment to conduct only quiet work after 8 p.m. NBBB must clarify what activities would occur before 7 and after 8 pm, and ICCD must impose restrictive conditions that ensure only slight noise impacts result.

The May 16 supplemental response by Greenbusch included with the Part D revisions indicates it is possible to reduce noise impacts during outdoor blasting and other noisy activities using local noise shields, but offers no analysis of the effectiveness of these barriers.

NBBB's latest submittals void the noise analysis conducted by Greenbusch. If NBBB's only commitment to noise abatement is compliance with the state noise standards, then ICCD should assume 60 dBA sound levels will occur at all times. The 60 dBA L25 that applies to residential properties affected by industrial sources is roughly 20 dBA higher than the low end of the L25s measured at residential locations M1, M2, and M3. A 10 dBA increase represents 10 times the sound energy, and the effect is a sound level that is twice as loud. A 20 dBA increase represents a 100-fold increase in sound energy, and the effect is a sound level that is four times as loud as existing sound levels. Clearly, a commitment to meet only the state noise standard would result in potential sound levels that constitute a significant adverse impact on the neighborhood. This is reinforced by the EPA criteria that refer to an increase exceeding 5 dBA as a significant noise impact, and an increase exceeding 10 dBA as a very serious noise impact. ICCD should demand additional noise mitigation to ensure noise increases do not exceed 5 dBA over existing sound levels.

ICCD lacks funding for enforcement activities and has relatively little experience with state noise regulations. If the expansion is approved, ICCD should require NBBB to fund an independent third party (such as Greenbusch Group) to monitor compliance with mitigation measures and target sound levels.

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