

MOUNTAIN LOOP CONSERVANCY



P.O. Box 1097
Granite Falls, WA 98252

Phone: 360-691-3022

E-mail:

jlvandat@msn.com

August 15, 2008

Mr. Scott Whitcutt
Snohomish County
Planning and Development Services
3000 Rockefeller Avenue
M/S #604
Everett, WA 98201-4046

Re: FN 07-101924
MXGP Motocross Racetrack Project

Dear Mr. Whitcutt,

We have reviewed the noise study audit dated 7/2/08 performed by Sparling, Inc., for the referenced project and request that the following comments regarding that audit be entered into the file. We appreciate the PDS decision for a peer review of the Geomatrix noise study. The audit revealed eleven important problems in the Geomatrix work and confirmed many deficiencies that had been previously identified by various interested parties, including the MLC. There are several errors and omissions in the audit that should be considered, and will impact the conclusions stated in that report.

1. In the second paragraph of the first page the report states, "Overall, all major issues were addressed in the report by Geomatrix, and it is a thorough report." The report goes on to outline at least eleven deficiencies including several (such as the omission of calculations) that invalidate any conclusions reached by Geomatrix. We respectfully and fully disagree with the Sparling suggestion that, ".....all major issues were addressed...." and, "...it is a thorough report."
2. On page two of the audit there are four problems that Sparling identified in the Geomatrix attempt to measure noise levels at Hannigan Speedway, Bellingham. These combined deficiencies render the "baseline levels" used throughout the original study of little value. As stated in the February '08 letter, the MLC *strongly* encourages the use of the most creditable motocross bike noise level measurement information currently available, performed for the California State Legislature by Wyle Laboratories in September of 2005. That information is readily available at:

<http://ohv.parks.ca.gov/pages/1140/files/ca%20ohv%20noise%20report%20wr%2004-31-06.pdf>

It is impossible to retroactively correct all errors and oversights made in the readings made at Hannigan and arrive at a recalculated baseline measurement that is credible. This leaves two options: use the test results from the source referenced above (which were performed to nationally-recognized standards EPA F-76a and SAE J-1287 and involved a wide variety of motocross bikes) or insist that the applicant conduct new baseline noise level test done in strict accordance with a recognized standard. In our opinion, the former choice seems more expedient, reliable and less costly to the county (or whatever party is required to have the test performed).

3. In addition to the baseline noise measurement deficiencies pointed out in (2), both the original study and the Sparling audit have failed to consider meteorological factors in determining the noise levels at Hannigan and in estimating the projected noise levels at the proposed site. These are non-trivial considerations that would impact the final estimated noise level at each property boundary once they are factored in. The impact will result from two important considerations:
 - The ISO 9613-2 standard that Geomatrix used includes correction factors to account for meteorological conditions, including wind velocity and temperature inversions. In reviewing the results shown in Table 2, page 9 of the Geomatrix report, there is no indication that meteorological correction factors were calculated and included
 - Meteorological conditions also impact the effectiveness of barriers in reducing the noise level, although this parameter is not fully accounted for in the algorithm (see attachment "A", "Handling of Barriers in ISO 9613-2" by Power Acoustics, Inc). There are no references to anticipated wind speed and direction used in the calculations by Geomatrix in predicting the noise levels at property boundaries, and it appears that those important variables were simply omitted in the calculations. The Sparling report states on page 3 that the Barrier Attenuation values shown in Table 2, page 9 of the Geomatrix report are correct. It is clear that without meteorological considerations accounted for, that statement is very likely incorrect.
4. The calculations for Attenuation by Vegetated Area in Table 2, page 9 of the Geomatrix report are incorrect. Geomatrix used an average reduction of 0.049 dBA per 1 meter of forest, up to 200 meters. As pointed out in the Sparling audit, this reduction factor needs to be justified by calculation, but assuming the value of 0.049 dBA per meter is accurate, the correct attenuation would be as follows:

Receiving Property	Depth of Vegetated Area (ft)	Attenuation by Vegetated Area (Geomatrix)	Attenuation by Vegetated Area (Actual)	Difference
East	500	-8.1	-7.5	0.6
West	700	-10.3	-9.8	0.5
North	1000	-10.3	-9.8	0.5
South	700	-10.3	-9.8	0.5

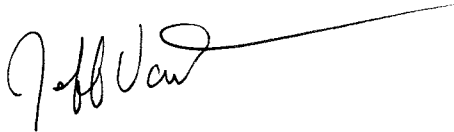
It should also be noted that Attenuation Due to Vegetation is a *variable* whose value is dependent on the nature of the foliage through which the sound waves travel. As such, the degree of attenuation will change in accordance with the density and amount of trees and brush that surround the tracks. The trees in the subject area are currently 25+ years of age and if allowed to grow will soon form a canopy. When this occurs, sunlight is reduced to the forest floor and much of the brush-type vegetation that currently exists will die-off, leaving an area that more open and less able to provide attenuation. Another scenario that will have an important impact on the noise levels involves the planned harvesting of trees surrounding the track area. The calculations performed by Geomatrix assumed current conditions where fully-forested land surrounds the tracks. Once those trees have been harvested in accordance with the applicants plan to manage the land as a commercial forest, the Attenuation due to Vegetation will be reduced by approximately 6 dBA and L_{max} will then exceed SCC limits.

The most important omission in the Geomatrix report was the calculations to support the results in Table 2, page 9. Without those calculations, it is impossible to verify the values shown, or to determine if the ISO 9613-2 algorithm was used appropriately. In this argument, we are in agreement with the Sparling report. We were disappointed that the Sparling audit also failed to include supporting calculations.

Accurately determining the projected noise levels of motocross track activity is a difficult process. However, if the work is performed in accordance with recognized standards and in a thorough fashion the results can be helpful. In the case under review, it is very difficult to assign any degree of credibility to the results due the number and significance of errors and omissions. Calculations performed by ourselves have shown a general alignment with the results suggested by the Sparling audit, although their value of 62 dBA at the East property boundary for L_{max} would be 66 dBA when corrected for meteorological conditions (wind speeds averaging 10 mph from the west during the summer that affects the attenuation ability of the proposed earthen berm) and considering the math errors in Vegetation Attenuation shown in the Geomatrix report. This value is above the SCC limit for L_{max} which is 64 dBA.

At these levels, the noise will be over **8 times** louder than existing ambient conditions (30-32 dBA) and represents a very significant impact. The Lewis County Community Development Department recently reviewed a similar motocross track project and issued a Determination of Significance based on the fact that noise levels at the project site boundaries would be a mere 5-10 dBA over ambient. This determination was in alignment with similar decisions made by other jurisdictions, and indicates the need for this project to undergo an E.I.S. process.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeff Van Datta", with a long horizontal line extending to the right.

Jeff Van Datta
President
Mountain Loop Conservancy

Attachment “A”

Excerpt from “Handling of Barriers in ISO 9613-2”

David Parzych
Power Acoustics, Inc.
12472 Lake Underhill Rd. #302
Orlando, FL 32828
Email: info@poweracoustics.com

*“The effect of wind on a barrier’s attenuation is also a notable affect not explicitly addressed by the ISO 9613-2 algorithm. Testing performed by DeJong and Stusnick⁽¹⁾ has shown wind to **have substantial effects on the sound barrier’s performance**. Their model data shows approximately a 5 dB decrease in the barrier’s attenuation under downwind conditions of 5 meters per second (11 mph). This corresponds to the upper limit on wind speed allowed by the ISO 9613-2 standard. The wind appears to influence high frequencies more so than low frequencies. Salomons⁽²⁾ and Rasmussen⁽³⁾ have provided theory and data on downwind and upwind effects. In general, higher velocity wind and longer distances exacerbate the effect. Since more attenuation is observed in upwind conditions than that predicted by the “no wind” model, the upwind case has no impact on the assessment of ISO 9613-2. Certainly, the meteorological term, Kmet, has a substantial impact in reducing the estimated barrier’s effective attenuation at large distances. It is questionable, however, that the ISO 9613-2 algorithm adequately accounts for the decrease in barrier performance within the wind parameters stated.*

(1) R. DeJong and E. Stusnick, “Scale Model Studies of Effects of Wind on Acoustic Barrier Performance”, Noise Control Eng. J., 6(3), pp. 101-108, (1976).

(2) E. M. Salomons, "Diffraction by a screen in downwind propagation: A parabolic equation approach", J. Acoust. Soc. Am, 95, pp. 3109-3177, (1994).

(3) K. B. Rasmussen, "Sound Propagation over a screened ground under upwind conditions", J. Acoust. Soc. Am, 100 (6), pp. 3581-3586, (1996).