

Appendix 4.15-2:

Greentree South
Neighborhood Park,
Amphitheater-Related
Noise Levels



October 20, 2021

Mr. Richard Loewke
LOEWKE PLANNING ASSOCIATES, INC.
547 Wycombe Court
San Ramon, California 94583

**RE: GREENTREE SOUTH NEIGHBORHOOD PARK, AMPHITHEATER-RELATED
NOISE LEVELS**

Dear Mr. Loewke:

As requested, WJV Acoustics, Inc. (WJVA) is providing this letter as an addendum to the acoustical analysis prepared for the Greentree Development Project (dated May 12, 2021). Specifically, this letter is intended to address potential noise levels associated with activities occurring at the proposed amphitheater to be located at the South Neighborhood Park, and to evaluate potential impacts from amplified noise levels to existing and planned sensitive receptor locations.

The Greentree South Neighborhood Park proposes to include an outdoor amphitheater available for use by area residents. The amphitheater would be located within the southern portion of the project site. The closest sensitive receptors to the proposed amphitheater location are existing residential land uses located approximately 200 feet to the northwest (Bighorn Court) and proposed residential land uses located approximately 200 feet to the east (Court E).

A request has been made to include electrification at the amphitheater, for the purpose of utilizing amplified speech and music. It is assumed that any sound system to be used at the amphitheater would be relatively small in nature. The amphitheater is oriented such that the stage would be south-facing, in the general opposite (and side) direction of the nearby existing (and planned) sensitive receptors. Amplified sound systems and speakers are directional in nature, meaning that noise levels are highest in the direction that the speakers are oriented to face toward. Additionally, the amphitheater would include a masonry backdrop wall constructed to approximately 6-8 feet in finished height.

The applicable noise standards for the amphitheater (and associated amplified speech and music) would be the non-transportation noise standards provided on Table II (page 8) of the original acoustical analysis prepared by WJVA. Specifically, a maximum hourly L_{eq} of 50 dB during the daytime hours of 7:00 a.m. to

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10:00 p.m. and a maximum hourly L_{eq} of 45 dB during the nighttime hours of 10:00 p.m. to 7:00 a.m. It is assumed for this discussion that any use of the amphitheater would be limited to daytime hours.

WJVA has conducted numerous noise level measurements during outdoor events utilizing amplified speech and music. These events typically employ a more robust sound system than what would be assumed to be used at amphitheater events. However, WJVA has reviewed these noise level measurements in order to assess potential impacts associated with this project.

Based upon a review of data previously collected by WJVA, during events utilizing amplified speech and music, WJVA estimates that noise levels associated with amplified speech and music (assuming the speaker is located on the stage in a south-facing orientation) would be in the range of approximately 40-45 dB at the closest sensitive receptor locations to the northwest (Bighorn Court) and in the range of 43-48 dB at the closest (proposed) sensitive receptor locations to the east (Court E). Such noise levels would not be expected to exceed any City of Vacaville daytime noise level standards. However, if noise levels produced by a speaker system are set to excessively high volumes or the speaker system is located in an area other than the amphitheater stage or the speakers are oriented in a different direction other than south-facing, noise levels could exceed City of Vacaville noise level standards at nearby sensitive receptor locations.

Additionally, existing ambient noise levels measured in the vicinity of the proposed Greentree South Neighborhood Park (ambient noise monitoring site LT-5 provided in the original acoustical analysis) indicate that average daytime (7:00 a.m. to 10:00 p.m.) noise levels are approximately 50 dB L_{eq} . Therefore (applying the above-described assumptions regarding speaker location and orientation), noise levels associated with amplified speech and music at the amphitheater location would not be expected to exceed existing ambient noise levels in the vicinity of existing and planned nearby sensitive receptor locations.

Please contact me at 559-627-4923 or walter@wjavacoustics.com if there are questions or additional information is required.

Sincerely,

WJV ACOUSTICS, INC.



Walter J. Van Groningen
President