ILLINGWORTH & RODKIN, INC.
Acoustics • Air Quality

1 Willowbrook Court, Suite 120
Petaluma, California 94954

Tel: 707-794-0400 *Fax: 707-794-0405*
www.illingworthrodkin.com *illro@illingworthrodkin.com*

February 1, 2016

Preserve Ross Valley
700 Larkspur Landing Circle, Suite 125
Larkspur, CA 94939

Attention: John Holzwarth

VIA E-Mail: jholzwarth@oskr.com

SUBJECT: Marin Catholic Stadium Lighting Review, Greenbrae, CA – Acoustical Review of Application Submittal

Dear John:

Illingworth & Rodkin, Inc. (I&R) has reviewed the materials you provided regarding the proposal by Marin Catholic High School to add stadium lights to Dina Ghilotti Motta athletic stadium where athletic practices and events are held. The lighting of the field would allow the stadium to be utilized during the evening for sporting events and practices, intensifying the use of the field as compared to existing conditions. For acoustic purposes, evening noise is from 7pm to 10pm and nighttime noise is from 10pm to 7am. Our review pertains to the acoustical issues associated with this proposed activity.

According to the school's application, the stadium consists of a football field with artificial turf and a six lane synthetic track that surrounds the football field perimeter. There is a 1,242-seat home bleacher section which includes a six person press box and a 266 seat visitor's bleacher section. The largest events are football games that likely generate the most noise. Other events include smaller sporting matches (e.g., soccer, lacrosse and track matches or events). The stadium is also used for events hosted by outside groups. Based on the schools application, up to 10 football games could be played under the lights. These events could attract up to 1,500 spectators and use the public address system (PA) and would likely include substantial sources of noise such as the school band. Other proposed nighttime events would include Junior Varsity and Freshman football games, soccer games and lacrosse games. There would also be practices. The total number of events proposed under the stadium lights is 514, of which 59 would be games or meets and up to 29 playoff games. Obviously, most of the events would be practices.

Undoubtedly, the evening events at the stadium will have a noise effect on the neighborhood. People are more sensitive to noise in the evening and at night. This activity will affect noise during evening hours, as we assume that the lights will be turned off by 10 pm and that the noise from the event at the stadium would conclude. The lighting project would intensify the use of the

field as compared to existing conditions, and could result in a substantial temporary, periodic, or permanent increase in noise at residences in the project vicinity.

Only two brief studies that include acoustical information have been provided by the project applicant. The Grzebik Design Group[1] study briefly attempted to predict the sound level impact, but did not directly evaluate the schools proposal to have events during the evening that produce noise in the surrounding community. The Rosen Goldberg Der & Lewitz, Inc. (Rosen)[2] study included sound measurements of the PA system meant to confirm noise limits in the condition of approval. The school's application uses these studies to address noise impacts from the proposed action. Rather than critiquing these studies, we are pointing out the lack of a comprehensive acoustical analysis that describes the environmental noise impact that would be a result of the school's action. Such a study is necessary, so that the public is adequately informed and decision makers have the proper information regarding acoustic impacts that would occur in the community to make an informed decision whether or not to approve this action.

We recommend the County commission an acoustical study of this action that includes the following:

1. Properly identify the baseline ambient sound environment in the neighborhood where sound measurements would be conducted. Only brief measurements were conducted for these studies with little description. We suggest measurements be made during the evening when the noise could occur. This is necessary so that the increase in noise level above existing conditions can be quantified.

2. Properly identifies all noise sources that would emanate from the stadium that have the potential to generate noise in the community. Such sources would include crowd noise, school band, PA system, whistles or other potential sources. If these are all going to occur at the same time, the added impact should be clearly quantified. These noise levels should be identified for each type of evening event planned. If outdoor school band practice would occur, then such events should be included in the analysis as well.

3. Make sound predictions in the community that account for the noise generated by each type of event and includes adjustments for changes in the sound environment that occur during the evening. For instance, football games would occur in fall when surface-based temperature inversions can develop in the valley. Temperature inversions can have a substantial effect in sound propagation and should be considered in such a study. The most reliable method to begin such a prediction would include rigorous measurements of sound emissions during actual games. These baseline measurements would then be adjusted for changed conditions to create predicted conditions with the proposed change of use.

[1] Grzebik Design Group. 2015. Marin Catholic Existing Sports Field Public Address System Sound Leakage Report. November 30.
[2] Rosen, Goldberg Der & Lewitz, Inc. 2014. Noise Measurement Results – Varsity Football (10/11/14 and 10/18/14) – Marin Catholic High School Sound System. November 20.

4. Clear significance thresholds should be developed so that the acoustical effect of this activity can be properly evaluated. There are two primary thresholds that should be addressed: (1) whether or not a substantial noise increase occurs and (2) whether the resulting noise level exceeds a threshold or limit (e.g., General Plan allowable limit or noise ordinance limit). The study provided by the school does not address these issues. Note that the consideration of a substantial noise increase has to consider that this noise occurs at a more noise-sensitive time and the number of events, matched with their acoustical output.

5. Mitigation measures, if available, should be considered to reduce noise impacts.

Without such a study, informed decisions regarding the acoustical effects to the neighbors from this action cannot be properly considered.

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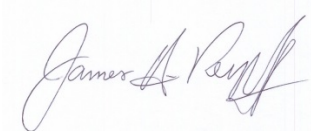
Thank you for the opportunity to conduct this review. We look forward to your questions/comments or to providing additional information regarding the sufficiency of acoustical analyses conducted for the project.

Sincerely yours,



James A. Reyff
Principal Consultant
ILLINGWORTH & RODKIN, INC.