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Nick K. Abbott
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VIA E-MAIL: nabbott@northbayprop.com

SUBJECT: **320 College Avenue, Santa Rosa, CA –
Environmental Noise Assessment**

Dear Nick:

This letter presents the results of the environmental noise assessment prepared for the proposed residential apartment project at 320 College Avenue in Santa Rosa, California. This analysis evaluates the noise levels at the project site with respect to the noise environment resulting primarily from vehicular traffic along College Avenue and U.S. Highway 101. The noise assessment presents the regulatory criteria used in the assessment, the results of on-site noise monitoring, and our evaluation of the compatibility of the noise environment at the project site in relation to the project site plan. In summary, the proposed project would require the incorporation of additional noise insulation in order to provide an acceptable interior noise environment for residential land uses.

Regulatory Background

The City of Santa Rosa's General Plan¹ establishes noise and land use compatibility standards that are used to evaluate a project's compatibility with the noise environment. Figure 12-1 in the Noise and Safety Element of the City's General Plan shows that multi-family uses are normally acceptable up to 65 dBA DNL/CNEL, conditionally acceptable from 60 to 70 dBA DNL /CNEL, normally unacceptable from 70 to 75 dBA DNL /CNEL, and clearly unacceptable if above 75 dBA DNL /CNEL. The City of Santa Rosa also establishes policies in the Noise and Safety Element of the General Plan in order to achieve the goal of maintaining an acceptable community noise level. The following policies are applicable to the proposed project:

¹ Santa Rosa General Plan 2035, July 29, 2014.

NS-B-1 Do not locate noise-sensitive uses in proximity to major noise sources, except residential is allowed near rail to promote future ridership.

NS-B-2 Encourage residential developers to provide buffers other than sound walls, where practical. Allow sound walls only when projected noise levels at a site exceed land use compatibility standards in Figure 12-1 (not shown).

In some established neighborhoods and subdivisions, sound walls may provide the only alternative to reduce noise to acceptable community standards. The Design Review process shall evaluate sound wall aesthetics and landscaping to ensure attractiveness along with functionality.

NS-B-4 Require new projects in the following categories to submit an acoustical study, prepared by a qualified acoustical consultant:

- All new projects proposed for areas with existing noise above 60 dBA DNL. Mitigation shall be sufficient to reduce noise levels below 45 dBA DNL in habitable rooms and 60 dBA DNL in private and shared recreational facilities. Additions to existing housing units are exempt.
- All new projects that could generate noise whose impacts on other existing uses would be greater than those normally acceptable (as specified in the Land Use Compatibility Standards).

NS-B-5 Pursue measures to reduce noise impacts primarily through site planning. Engineering solutions for noise mitigation, such as sound walls, are the least desirable alternative.

NS-B-9 Encourage developers to incorporate acoustical site planning into their projects. Recommended measures include:

- Incorporating buffers and/or landscaped earth berms;
- Orienting windows and outdoor living areas away from unacceptable noise exposure;
- Using reduced-noise pavement (rubberized-asphalt);
- Incorporating traffic calming measures, alternative intersection designs, and lower speed limits; and
- Incorporating state-of-the-art structural sound attenuation and setbacks.

Existing Noise Environment

The proposed project is located at 320 College Avenue in Santa Rosa, California. Ambient noise levels were measured continuously by a sound level meter that was secured to a utility pole located approximately 30 feet from the center of College Avenue. The measurements occurred between Tuesday, February 14, 2017 and Wednesday, February 15, 2017, and documented the diurnal trend in noise levels along College Avenue. Noise levels were measured at the rear of the building to represent ambient conditions at outdoor activity areas and at several additional locations within the building to determine the acoustic performance of the existing building.

Figure 1 shows the project site and noise monitoring locations outside of the building. Based on the results of the noise survey, vehicular traffic along College Avenue was determined to be the predominant source of environmental noise affecting the site.

Long-term noise measurement LT-1 was a reference measurement location approximately 10 feet above the ground on a utility pole located in front of 320 College Avenue and about 30 feet from the centerline of the roadway. As shown in Figure 2, hourly average noise levels at this location typically ranged from 70 to 75 dBA L_{eq} during the daytime and from 60 to 72 dBA L_{eq} during the nighttime. The DNL produced by College Avenue traffic was 75 dBA.

Short-term noise measurement ST-1 was made in the center of the parking lot located south of the building. Ambient sources of noise primarily included distant traffic from U.S. Highway 101 and College Avenue. A SMART train horn was audible during the noise measurements with instantaneous noise levels ranging from 63 to 71 dBA L_{max} . The daytime 10-minute average noise levels ranged from 59 to 60 dBA L_{eq} , and the estimated DNL was calculated to range from 61 to 62 dBA.

Additional short-term noise measurements were made within vacant office buildings along the College Avenue frontage. The interior noise measurements were made with the windows and doors closed for noise control purposes. Three measurements were made within Suite #200, located at the northwest corner of the building. Noise levels measured within the individual offices having views of College Avenue were approximately 43 to 44 dBA L_{eq} , and the DNL was calculated to range from 45 to 46 dBA. On the interior portion of Suite #200, in rooms not having a view of College Avenue, interior noise levels were 39 dBA DNL. An additional series of measurements were made from within Suite #240, which also overlooked College Avenue. Noise levels measured within the individual offices having views of College Avenue were approximately 42 dBA L_{eq} , and the DNL was calculated to range from 44 to 45 dBA.

Figure 1 Noise Monitoring Locations²



² Source: Google Earth

**Noise Levels at Noise Measurement Site LT-1
30 feet from the Centerline of College Avenue on Utility Pole
February 14-15, 2017**

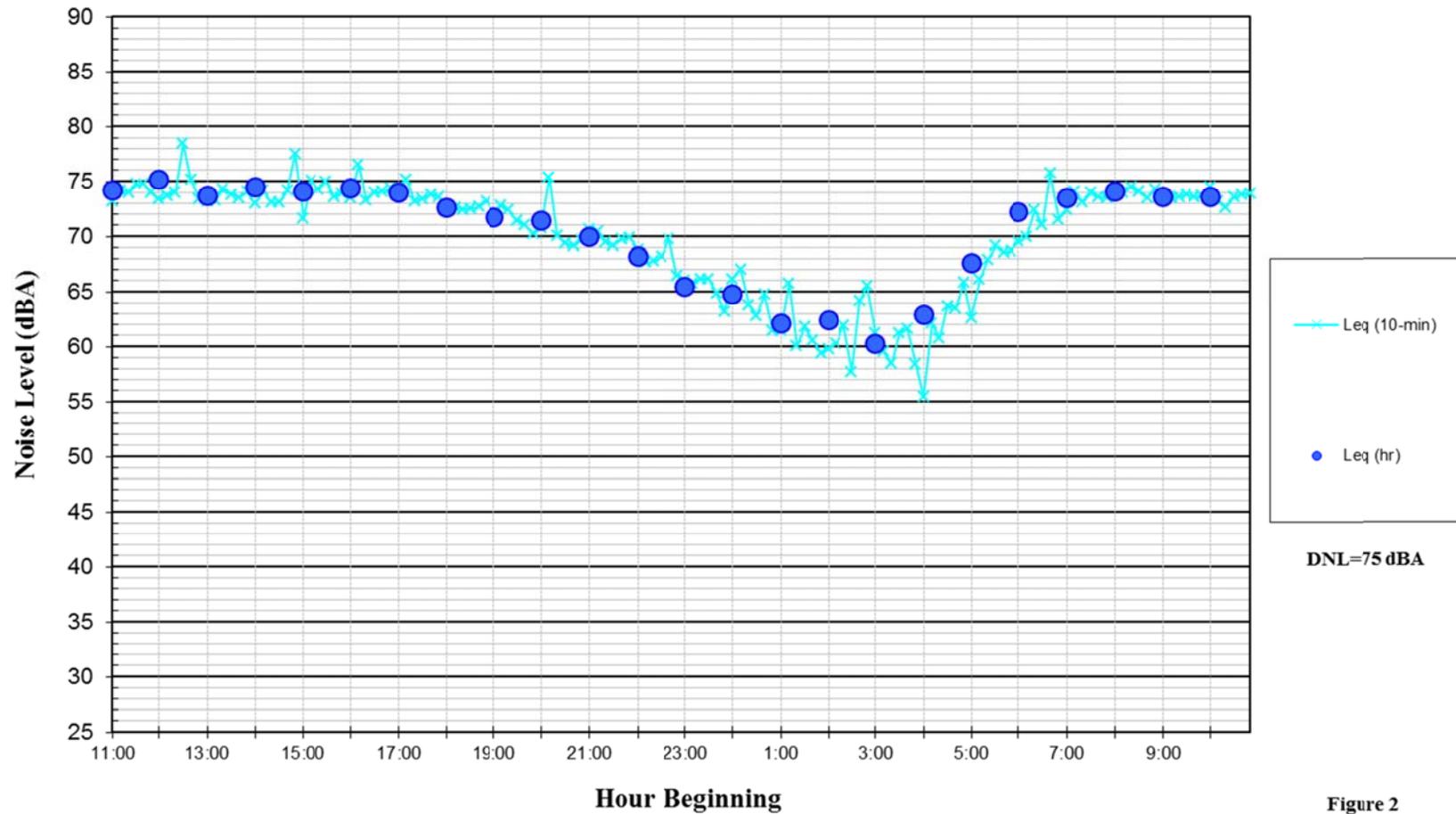


Figure 2

Noise and Land Use Compatibility Assessment

Future Exterior Noise Environment

The predominant noise source affecting the project site is traffic along College Avenue and U.S. Highway 101. An increase in traffic volumes along these roadways would correlate to an increase in noise levels at the project site. This analysis assumes that any private outdoor activity areas would be located south of the building within the existing parking lot area. Future noise levels at this location are anticipated to increase by 1 to 2 dBA DNL³ reaching 63 to 64 dBA DNL. Exterior noise levels at private outdoor use areas located south of the building would be below 65 dBA DNL, which is considered “normally acceptable” with respect to the City Santa Rosa’s Noise and Land Use Compatibility Standards. No additional mitigation would be required.

Future Interior Noise Environment

The City of Santa Rosa requires interior noise levels to be maintained at or below 45 dBA DNL to be considered acceptable for residential development. Unshielded façades of residential units proposed nearest to College Avenue would be exposed to future noise levels of up to 75 dBA DNL. In residential units of standard construction, interior noise levels are approximately 15 decibels lower than exterior noise levels with the windows partially open. Standard construction with forced air ventilation (allowing the occupant to control noise by maintaining the windows shut) provides approximately 20 to 25 dBA of noise reduction in interior spaces.

The results of the short-term noise measurements indicate that the existing building provides approximately 28 to 31 dBA of noise reduction between the exterior and interior spaces with the windows and doors in the closed position. Therefore, interior noise levels are calculated to range from 44 to 47 dBA DNL within residential units having views of College Avenue with the existing windows and doors closed for noise control purposes (assumes that forced-air mechanical ventilation systems would continue to be provided allowing occupants the option of maintaining the windows shut to control noise).

It is recommended that the existing windows and doors of the building overlooking College Avenue be replaced with sound rated windows capable of reducing interior noise levels to below 45 dBA DNL with an adequate margin of safety. The following measures should be incorporated into the project’s design to reduce interior noise levels to 45 dBA DNL or less:

- Maintain or provide a suitable form of forced-air mechanical ventilation, as determined by the local building official, for residential units throughout the site, so that windows could be kept closed at the occupant’s discretion to control noise and achieve the 45 dBA DNL interior noise standard.

³ Sonoma County General Plan Draft EIR, Appendix 7.7, Page 7.7-21.

- Provide sound rated windows and doors to maintain interior noise levels at acceptable levels. Preliminary calculations indicate that sound-rated windows and doors with a sound transmission class rating of STC 35 to 36 would be sufficient to control noise and achieve the 45 dBA DNL interior noise standard.
- Confirm the final specifications for noise insulation treatments during final design of the project. Results of the analysis, including the description of the necessary noise control treatments, will be submitted to the City along with the building plans and approved prior to issuance of a building permit.



This concludes the environmental noise assessment for the 320 College Avenue project. If you have any questions, or if we can be of further assistance, please do not hesitate to call.

Sincerely yours,

Michael S. Thill
Principal Consultant
ILLINGWORTH & RODKIN, INC.
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