

June 24, 2021

Dino Bonos
Bonos Land Planning
822 College Avenue, Suite D
Santa Rosa, CA 95404

VIA E-MAIL: bonoslandplan@att.net

**SUBJECT: Forestville Downtown Park, Sonoma County, CA
Addendum Memorandum to the Environmental Noise Assessment**

Dear Dino:

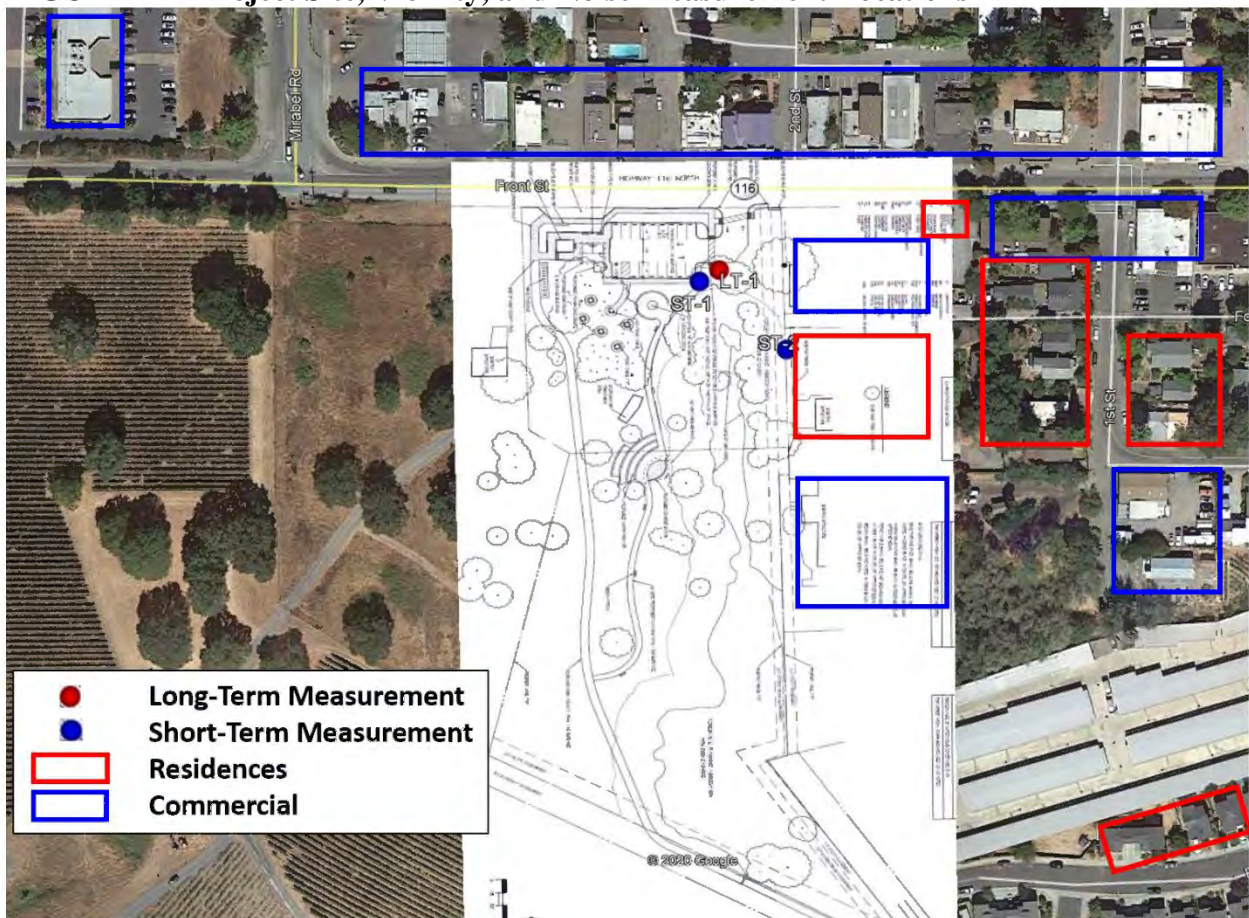
Illingworth & Rodkin, Inc. completed an environmental noise assessment for the Forestville Downtown Park in February 2018. Since the completion of the noise assessment, the total area of the project site located at 6708 State Route 116 (Front Street) has reduced from 7.79 acres to 4.2 acres. The site currently has trails and picnic tables with a gravel parking lot. The project would include a 105-seat amphitheater, public restrooms, parking area, gathering area, picnic areas, trailhead, and a bike staging area. Additionally, Table 1 summarizes the current and anticipated yearly events at the park. Figure 1 shows the updated site plan superimposed on an aerial map of the project site and the surrounding area, with the nearest noise-sensitive receptors identified.

TABLE 1 Information about Current and Anticipated Events at the Project Site

Event	Duration and Frequency	Maximum Expected Occupancy	Amplified Music/ Speech?	New or Current
Christmas Tree Lighting	1 to 2 hours, once a year in December	100 people	Yes	Current and Future
School Fundraiser	3 to 4 hours, once a year	75 to 100 people	Yes	Current and Future
School Field Trips	1 to 2 hours, four times a year	20 to 40 people	No	New
Bike and Walk Fundraiser	3 to 4 hours, once a year	75 to 100 people	Yes	Current and Future
Farmers' Market	3.5 hours, once a week for 16 weeks in the summer	100 to 150 people (total daily), 50 maximum at any given time	Yes	Current and Future

Event	Duration and Frequency	Maximum Expected Occupancy	Amplified Music/ Speech?	New or Current
Business Exposition	4 hours, once a year	100 to 200 people (total daily per event)	Yes	Current and Future
Unknown – Flea Marks, Community events, etc.	1 to 4 hours, 1 to 4 times per year	Est. 50 to 100 people	Yes	New
Skatespot Non-profit Fundraiser	4 hours, once a year in April	Est. 150 people	Unknown	Current and Future
Forestville Downtown Oaks Park Fundraiser	4 to 6 hours, once a year	Est. 50 to 100 people	Yes	New

FIGURE 1 Project Site, Vicinity, and Noise Measurement Locations



Source: Google Earth, 2021.

The purpose of this letter is to determine if the updated project site plan and event description would result in any new impacts at the existing noise-sensitive land uses surrounding the site.

Regulatory Criteria

Sonoma County General Plan 2020 Noise Element. The Sonoma County Noise Element of the 2020 General Plan identifies a goal to:

Protect people from the adverse effects of exposure to excessive noise and to achieve an environment in which people and land uses function without impairment from noise.

The following policies, which are applicable for use at the Project, are intended to achieve this goal:

NE-1a: Designate areas within Sonoma County as Noise Impacted if they are exposed to existing or projected exterior noise levels exceeding 60 dBA L_{dn} , 60 dBA CNEL, or the performance standards of Table NE-2.

NE-1b: Avoid noise-sensitive land use development in noise impacted areas unless effective measures are included to reduce noise levels. For noise due to traffic on public roadways, railroads, and airports, reduce exterior noise to 60 dBA L_{dn} or less in outdoor activity areas and interior noise levels to 45 dBA L_{dn} or less with windows and doors closed. Where it is not possible to meet this 60 dBA L_{dn} standard using a practical application of the best available noise reduction technology, a maximum level of up to 65 dBA L_{dn} may be allowed provided that the interior noise level shall be maintained so as not to exceed 45 dBA L_{dn} .

NE-1c: Control non-transportation related noise from new projects. The total noise level resulting from new sources shall not exceed the standards in Table NE-2 of the recommended revised policies as measured at the exterior property line of any adjacent noise-sensitive land use. Limit exceptions to the following:

- 1) If the ambient noise level exceeds the standard in Table NE-2, adjust the standard to equal the ambient level, up to a maximum of five dBA above the standard, provided that no measurable increase (i.e. +/- 1.5 dBA) shall be allowed.
- 2) Reduce the applicable standards in Table NE-2 by five dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises, such as pile drivers and dog barking at kennels.
- 3) Reduce the applicable standards in Table NE-2 by five dBA if the proposed use exceeds the ambient level by 10 dBA or more.
- 4) For short-term noise sources, which are permitted to operate no more than six days per year, such as concerts or race events, the allowable noise exposures shown in Table NE-2 may be increased by five dBA. These events shall be subject to a noise management plan, including provisions for maximum noise level limits, noise monitoring, complaint response and allowable hours of operation. The plan shall address potential cumulative noise impacts from all events in the area.

- 5) Noise levels may be measured at the location of the outdoor activity area of the noise-sensitive land use, instead of at the exterior property line of the adjacent noise-sensitive use where:
- a. The property on which the noise-sensitive use is located has already been substantially developed, pursuant to its existing zoning, and
 - b. There is available open land on these noise-sensitive lands for noise attenuation.

Note, this exception may not be used on vacant properties, which are zoned to allow noise-sensitive uses.

TABLE NE-2 Maximum Allowable Noise Exposures for Non-Transportation Sources

Hourly Noise Metric ¹	Maximum Exterior Noise Level Standards, dBA	
	Daytime: 7:00 a.m. to 10:00 p.m.	Nighttime: 10:00 p.m. to 7:00 a.m.
L ₅₀ (30 minutes in any hour)	50	45
L ₂₅ (15 minutes in any hour)	55	50
L ₀₈ (5 minutes in any hour)	60	55
L ₀₂ (1 minute in any hour)	65	60

¹The sound level exceeded n% of the time in any hour. For example, the L₅₀ is the value exceeded 50% of the time or 30 minutes in any hour; this is the median noise level. The L₀₂ is the sound level exceeded one minute in any hour.

Noise Impact Assessment

The proposed project would potentially generate two noise impacts at the surrounding land uses: project traffic and special events.

Project traffic would require analysis of two different impacts:

- A significant increase in traffic volumes with the inclusion of the proposed project. Typically, for noise environments less than 60 dBA L_{dn}, a significant impact would occur if project-generated traffic resulted in a permanent noise increase of 5 dBA or more. For noise environments of 60 or more dBA L_{dn}, a 3 dBA increase would be considered a significant impact. A 3 dBA increase would occur if the inclusion of project-generated traffic resulted in roadway traffic to double, while a 5 dBA increase would occur if traffic volumes tripled with the inclusion of project traffic.
- Currently, the parking lot is located at the north of the site adjacent to SR 116. Under project conditions, the parking lot would remain in the same location. In the original noise assessment completed in February 2018, the proposed parking area was relocated to the eastern boundary of the site. Project traffic would include automobile and light vehicle traffic accessing the parking lot during the daytime hours. Any special events occurring at the project site would include pickup truck deliveries, but medium or heavy trucks are not expected at the park. Noise produced by automobiles and light vehicles is expected to

include the sounds of vehicles maneuvering within the parking area, engine starts, door slams, etc. These noises typically range from 53 to 63 dBA at 50 feet.

Special events, such as those summarized in Table 1, are expected to occur at the park. All amplified sound from speech and music or regular levels of conversation would be centered at the proposed amphitheater and outdoor seating area. Typical noise levels expected during special events at the proposed project site are summarized in Table 2, based on the data collected at the project site during an existing farmers' market. Note, the measurements made at the existing farmers' market included amplified speech, which occurred concurrently with amplified music; however, amplified speech alone, such as during student assemblies, typically result in noise levels that are 1 dBA lower than amplified music. This is reflected in the Table 2 source levels.

TABLE 2 Typical Noise Source Levels for Special Events at the Park (A-weighted L₅₀ Levels)

Event or Activity	Typical Noise Level
Amplified Music ¹	54 to 64 dBA at 200 feet
Amplified Speech ¹	53 to 63 dBA at 200 feet
Non-amplified (acoustic) Music	55 to 58 dBA at 200 feet
Typical Conversation	50 to 52 dBA at 50 feet

¹ Amplified sound for the future activities would not exceed the noise levels measured here for the existing activities.

For purposes of assessing noise levels at the surrounding land uses, noise source levels summarized above are propagated to the property lines of the nearest surrounding sensitive uses. For simple, single sources, such as fixed sources, the divergence of the sound waves is hemispherical in nature, yielding a noise reduction of 6 dBA with each doubling of distance. For moving sources of noise, such as auto traffic along roadways, which are considered linear sources of noise, the divergence of the sound wave is cylindrical in nature, yielding a noise reduction of 3 to 4.5 dBA with each doubling of distance. Other effects can modify these fall-off rates, such as partial shielding from buildings or topography, atmospheric attenuation of sound, ground absorption, and meteorological effects. These effects typically reduce the noise in addition to the noise reduction due to sound divergence alone. As most of these effects will vary with time due to changing environmental conditions, it is most conservative to assume only attenuation due to divergence for outdoor activities. Therefore, this analysis conservatively assumes no additional noise reduction effects, representing the worst-case scenario.

To evaluate noise impacts on the most immediate off-site noise-sensitive uses, the closest residences to the site were identified, and noise levels were propagated to the residential property lines, as follows (see Figure 1 for locations):

Residences to the east: Several single-family residences are located adjacent to the park to the east. These residences would have direct line-of-sight to the park activities. In the original noise assessment, short- and long-term measurements were made at the project site. These levels are used in this assessment to establish existing ambient conditions at the surrounding land uses. Table

3 summarizes the existing noise levels used to quantify ambient conditions at the eastern residences.

TABLE 3 Existing Ambient Conditions at the Eastern Residences

Hourly Noise Metric	Exterior Ambient Noise Levels, dBA	
	East Residences (~160ft south of the centerline of SR 116)	
	Daytime: 7:00 a.m. to 10:00 p.m.	Nighttime: 10:00 p.m. to 7:00 a.m.
L ₅₀ (30 minutes in any hour)	54	44
L ₂₅ (15 minutes in any hour)	57	49
L ₀₈ (5 minutes in any hour)	61	54
L ₀₂ (1 minute in any hour)	65	60

While Figure 1 indicates additional residences to the east and to the southeast, these additional residences would be shielded from park activities by intervening buildings. Therefore, these residences would not have direct line-of-sight to activities at the park. Since the adjacent residences represent the worst-case scenario, the following analysis is focused on the adjacent residences only.

Project-Generated Traffic

A traffic analysis was completed for the proposed project by *W-Trans*¹ in December 2020. According to the analysis, 91 daily trips are expected at the park with and without the project. The project would produce 23 peak hour trips during the PM hour. While the peak PM trips would be the same as the traffic study analyzed in the original noise assessment completed in February 2018, the daily trips with and without the project are 2 trips reduced from the original study. Compared to the existing traffic volumes along SR 116, the daily and peak hour trips would be insignificant and would not result in a measurable increase in traffic noise levels. This would be consistent with the findings in the original noise study; therefore, no additional impact would be generated. This would be a less-than-significant impact.

Parking Lot Noise

In the most recent site plan, dated July 7, 2020, the parking lot would be located in the same location as existing conditions, which is different from the site plan analyzed in the original noise assessment. However, since the parking lot location is going to remain in the same location, the distance from the parking lot to the eastern residences would be the same. Considering the existing parking lot noise is included existing ambient noise level conditions at the eastern residences, the new parking lot located in the same place would not change existing noise level conditions. With no change from the existing conditions of the parking lot, this would result in a less-than-significant impact.

¹ W-Trans, *Second Update to the Focused Traffic Analysis for the Forestville Town Park Project*, December 22, 2020.

Amphitheater Noise

Special events expected at the park, which are summarized in Table 1, would only occur during daytime hours. The maximum number of people expected at an event would be 200 people during the once yearly business exposition. As shown in Table 1, amplified music and speech is expected at most events but not all events. However, Table 1 also indicates that amplified music and speech are already included at existing activities, such as farmers' markets, tree lighting, etc. During events when amplified music and speech are expected, this noise source type would be the dominant noise source at the event. Amplified music and speech would represent the worst-case scenario.

Amplified music and speech is expected only at the stage of the proposed amphitheater, located approximately 155 feet southwest of the nearest residential property line and approximately 325 south of the centerline of Highway 116. The stage would face northwest, away from the nearest residences. Further, the site plan, dated July 7, 2020, shows the amphitheater relocated from the previous site plan and indicates a covered stage. Assuming a covered stage with a solid wall at the back of the stage aligning with the eastern side of the stage cover shown in the site plan, which would provide shielding for the eastern residences, amplified sound was modeled in SoundPLAN, version 8.2, which is a three-dimensional ray-tracing computer program capable of modeling stationary noise sources.

Using the noise source levels provided in Table 2 as inputs to the model, noise levels were estimated at the property lines of the nearest residences to the east. These modeling results are summarized in Table 4. Since all proposed events occurring at the project site would be during daytime hours, the noise levels are assessed against the County's daytime thresholds only.

The estimated noise levels for amplified music and speech and non-amplified music shown for the 2020 site plan are about 4 dB lower than the estimated noise levels from the February 2018 noise assessment. While the noise levels are reduced, the County's NE-2 threshold would still be exceeded during the use of amplified music and speech.

Existing special events have successfully included amplified music and speech without receiving complaints from the existing residents living adjacent to the park. Therefore, without any major modifications to the existing special events, the County may permit current activities to continue as they are unless future residents complain about the excessive noise.

Assuming the County does not permit current activities to continue without mitigation, outdoor amplified music is expected to exceed the County's adjusted daytime noise limit of 49 dBA L₅₀ by up to 5 dBA. Outdoor amplified speech would exceed the threshold by up to 4 dBA. Non-amplified music and typical conversations are not expected to exceed the County's daytime limit. This would continue to be a potentially significant impact.

TABLE 4 Special Event Noise Levels, L₅₀, for Noise Sources at the Stage of the Proposed Amphitheater

	L₅₀ (Noise Level Exceeded 30 Minutes in any Hour), dBA
	Residences East of the Park (ST-2)
Unadjusted Table NE-2 Daytime Limit	50 dBA L ₅₀
Daytime Ambient Noise Levels	54 dBA
Ambient Exceeds NE-2 Limit?	Yes
Daytime NE-2 Adjustment	+4
NE-2 Adjustment for speech and music	-5
Special Event Noise at Receptor Property Line	Residences East of the Park (ST-2)
Outdoor Amplified Music	44 to 54 dBA
Outdoor Amplified Speech	43 to 53 dBA
Outdoor Non-Amplified Music	45 to 48 dBA
Typical Conversation	40 to 42 dBA
Adjusted NE-2 Limits and Compliance	Residences East of the Park (ST-2)
Event Noises Exceed Ambient by 10 dBA?	No (all)
NE-2 Adjustment	+0 (all)
Adjusted Table NE-2 Daytime Limit	49 dBA L ₅₀
Amplified Music Exceeds Adjusted NE-2?	Yes
Amplified Speech Exceeds Adjusted NE-2?	Yes
Non-Amplified Music Exceeds Adjusted NE-2?	No
Typical Conversation Exceeds Adjusted NE-2?	No

The following Mitigation Measure would be recommended to reduce noise levels during special events. These measures have been modified from the previous noise assessment to accommodate the most recent site plan.

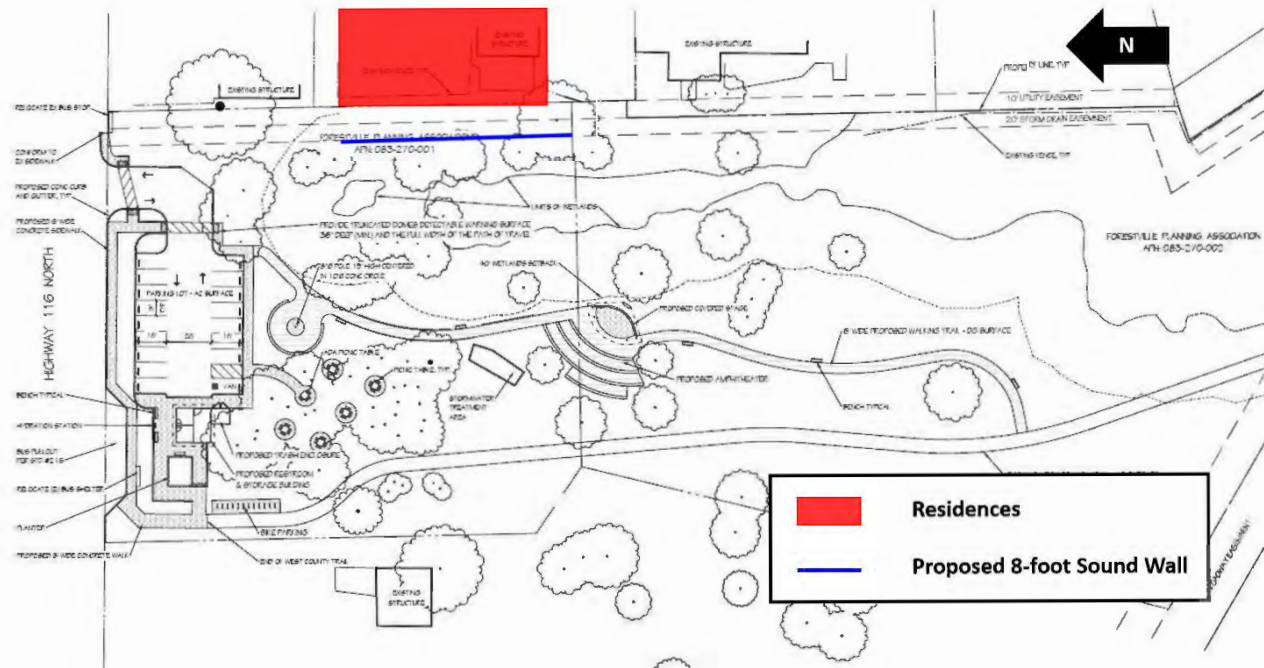
Mitigation Measure 2 (modified):

Assuming the County would not allow existing amplified music and speech to continue to occur without mitigation, the impact would be reduced to a less-than-significant level with one of the following options implemented as part of the project’s conditions of approval:

1. Prohibit amplified music and speech. Under Policy NE-1c(4) of the County’s General Plan, short-term noise sources, such as concert events, would allow for the Table NE-2 thresholds to be increased by 5 dBA for up to six days a year. Therefore, amplified music and speech may be permitted for up to six days a year. During these six events, the County would require a noise management plan, including provisions for a maximum noise level limit of 54 dBA as measured at the nearest residential property line. The noise management plan would identify a procedure for responding to complaints and allowable hours of operation. The plan would also address potential cumulative noise impacts from all events in the area.

2. If the amphitheater was repositioned to face west, instead of northwest as shown in the July 7, 2020 site plan, noise levels would be reduced at the adjacent residential uses. If the wall along the back of the stage is solid from ground to overhang, with no cracks or gaps, noise levels due to amplified music would be reduce to 38 to 48 dBA, and noise levels for amplified speech would be reduce to 37 to 47 dBA. Amplified music and speech would meet the County’s adjusted daytime threshold of 49 dBA L₅₀ and would be allowed to operate year round.
3. Assuming that rotating the amphitheater to face west would not be a feasible option, altering the northwest angle of the amphitheater to be 15 degrees west, in conjunction with a wall along the back of the stage that is solid from ground to overhang, with no cracks or gaps, would also reduce noise levels at the adjacent residences to levels meeting the County’s 49 dBA L₅₀ threshold. Amplified music would be reduced to 39 to 49 dBA, while amplified speech would be reduced to 38 to 48 dBA.
4. Installation of an eight-foot tall sound wall or specially-designed barrier along the eastern boundary of the park, along the existing driveway, would adequately shield the existing residences from amplified music and speech generated at the stage of the amphitheater. The proposed barrier should be continuous from grade to top, with no cracks or gaps, and have a minimum surface density of three lbs/ft² (e.g., one-inch thick marine-grade plywood, ½-inch laminated glass, concrete masonry units (CMU)). The approximate location of the barrier is shown in Figure 2. The total length of the barrier would be about 140 feet long, starting at the northern boundary of the residence and extending south, just beyond the residential property line. The installation of this eight-foot barrier would reduce noise levels generated by amplified music to 38 to 48 dBA and would reduce noise levels generated by amplified speech to 37 to 47 dBA.

FIGURE 2 Proposed Barrier Along the Eastern Boundary of the Park



The implementation of one of the above options would reduce the impact to a less-than-significant level.

The proposed site plan, dated July 7, 2020, would not result in additional noise impacts.



If you have any questions or comments regarding this analysis, please do not hesitate to call.

Sincerely,

A handwritten signature in blue ink, appearing to read "Carrie Janello".

Carrie J. Janello
Senior Consultant
Illingworth & Rodkin, Inc.