Appendix C

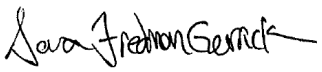
Noise

CONSTRUCTION AND TRAFFIC NOISE IMPACT ANALYSIS

8426 N KESTER AVENUE RESIDENTIAL PROJECT

PANORAMA CITY (LOS ANGELES), CALIFORNIA

Prepared by:



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BACKGROUND

The Project is located at 8426 N Kester Avenue. The site is currently occupied by residential uses which will be demolished as part of the Project. The Project proposes construction of 9 (nine), two story detached single family dwellings (small lots) with attached 2 car-garages. The lot size is 33,012 sf. Setbacks are 15 feet for the front and rear yards and 10-feet for the side yards.

SURROUNDING SENSITIVE USES

Kester Avenue bounds the site to the west. An approximate 6-foot wide alley bounds the site to the east (rear yard). To the east of the alley are commercial structures or parking lots. There are residential uses north and south of the site. The closest residential use is to the north, approximately 30 feet from the shared property line and takes access from Chase Street. There is an associated structure at the property line which appears to be garage or accessory structure as there is only a one-foot distance setback from the property line and the paved driveway leads to it. Behind the existing residences and adjacent to the alley there appears to be car storage or repair.

Kester Avenue is considered a "local street-standard" roadway with a 60-foot ROW and 36-foot roadway width according to The Citywide General Plan Circulation System maps. There are no available traffic counts for Kester Avenue. Speed limits are not posted but are presumed to be 25 mph. Chase Street north of the site is considered a "collector".

CONSTRUCTION IMPACTS

CONSTRUCTION SIGNIFICANCE

The noise impact assessment evaluates short-term (temporary) impacts associated with Project construction. For construction noise, the potential for impacts is assessed by considering several factors, including the proximity of construction-related noise sources to sensitive receptors, typical noise levels associated with construction equipment, the potential for construction noise levels to interfere with adjacent activities, and whether proposed activities would occur outside the construction time limits specified in the Los Angeles Noise Ordinance.

Construction noise is typically governed by ordinance limits on allowable times of equipment operations. The City of Los Angeles limits construction activities to the hours of 7:00 a.m. and 9:00 p.m. on weekdays and 8:00 a.m. to 6:00 p.m. on any Saturday. Construction is not permitted on any national holiday or on any Sunday.

In addition, Section 112.05 of the Los Angeles Building Code specifies the maximum noise level of powered equipment or powered hand tools. Use of any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet from construction and industrial machinery is prohibited. However, the above noise limitation does not apply where compliance is technically infeasible (Section 112.05, Los Angeles Municipal Code). "Technically infeasible" means that the above noise limitation cannot be complied with despite the use of mufflers, shields, sound barriers and/or any other noise reduction device or techniques during the operation of

equipment. An inability to reduce construction equipment noise exposure to 75 dBA or less at any off-site, noise sensitive use would be considered a significant, but temporary, noise impact.

CONSTRUCTION NOISE IMPACTS

For this analysis, a noise impact is considered potentially significant if Project construction activities extended beyond ordinance time limits for construction or construction-related noise levels exceed the ordinance noise level standards unless technically infeasible to do so. The proposed Project consists of the construction of 9, two story detached single family dwellings with attached 2 car-garages. Construction noise levels will vary at any given receptor and are dependent on the construction phase, equipment type, duration of use, distance between the noise source and receptor, and the presence or absence of barriers between the noise source and receptor. The closest sensitive use is the residential structure to the north with an approximate 30-foot distance separation from the property line and a 10-foot side yard setback from the closest Project building façade. The garage for this off-site structure is located at the property line.

OFF-ROAD EQUIPMENT

The City of Los Angeles limits construction activities to the hours of 7:00 a.m. and 9:00 p.m. on weekdays and 8:00 a.m. to 6:00 p.m. on any Saturday. Additionally, use of any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet from construction and industrial machinery is prohibited unless technically infeasible.

The exact construction schedule for the proposed development is not known at this time. Construction activities proposed for similar projects typically include demolition and clearing, grading and improvements, construction of the building shells, interior finishing, and landscaping. Construction equipment such as bulldozers, backhoes, loaders, and assorted other hand tools and professional grade equipment would likely be used.

In 2006, the Federal Highway Administration (FHWA) published the Roadway Construction Noise Model that includes a national database of construction equipment reference noise emissions levels. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power during a construction phase. The usage factor is a key input variable that is used to calculate the average Leq noise levels.

Table 1 identifies highest (Lmax) noise levels associated with each type of equipment identified for use, then adjusts this noise level for distance to the closest sensitive receptor and the extent of equipment usage (usage factor), which is represented as Leq. The table is organized by construction activity and equipment associated with each activity.

Quantitatively, the primary noise prediction equation is expressed as follows for the hourly average noise level (Leq) at distance D between the source and receiver (dBA):

Leq = Lmax @ 50’ – 20 log (D/50’) + 10log (U.F%/100) – I.L.(bar)
Where:
Lmax @ 50’ is the published reference noise level at 50 feet

U.F.% is the usage factor for full power operation per hour
I.L.(bar) is the insertion loss for intervening barriers

For the proposed Project, the construction fleet could include equipment such as shown in Table 1. which describes the noise level for each individual piece of equipment.

Table 1
Construction Equipment Noise Levels at 50-ft Reference Distance

Phase Name	Equipment	Usage Factor[1]	Published Noise @ 50 feet (dB)	Measured Noise @ 50 feet (dB)	Cumulative Noise Level @ 50 feet (dB))
Demolition	Dozer	40%	85	82	78
	Concrete Saw	20%	90	90	84
	Loader/Backhoe	37%	80	78	74
Grading	Grader	40%	85	85	81
	Dozer	40%	85	82	78
	Loader/Backhoe	37%	80	78	74
Building Construction	Forklift	20%	75	75	68
	Loader/Backhoe	37%	80	78	74
	Crane	16%	85	81	73
	Welder	46%	73	74	71
Paving	Paver	50%	85	77	74
	Paving Equip	40%	76	76	72
	Roller	38%	85	80	76

Source: FHWA's Roadway Construction Noise Model, 2006

1. Estimates the fraction of time each piece of equipment is operating at full power during a construction operation.

The highest noise levels generated by Project construction activities would typically range from about 74 to 90 dBA Lmax at a distance of 50 feet from the noise source. Adjusted for usage typical hourly average construction generated noise levels are about 68 dBA to 84 dBA Leq measured at a reference distance of 50 feet from the site. Construction generated noise levels drop off or increase at a rate of about 6 dBA per doubling/halving of distance between the source and receptor. Shielding by buildings or terrain often results in lower construction noise levels at distant receptors. The potential for construction-related noise to adversely affect nearby residential receptors would depend on the location and proximity of construction activities to these receptors.

On-Site Demolition

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Demolition will include removing the existing single family of 796 sq**.** Demolition activities are predicted to require use of the noisiest construction equipment. The probable equipment fleet is comprised of backhoe, dozer, and a concrete saw. Debris will be hauled off site.

The structure to be removed is in the center of the site. Off-site occupied structures (not accessory structures such as garages) are as close as 30-feet to the shared property line. At 60 feet the noisiest piece of construction equipment, a concrete saw would be approximately 83 dBA. There are a combination of masonry and wood 6-foot walls at the property line that would assist in mitigating noise intrusion. Demolition is estimated to require 10 days.

On-Site Grading

Grading is anticipated to require 2 days and is expected to balance on site. After demolition, grading will generate the most noise. The closest off-site structures only have about 30-feet distance separation. Since the site is small, most grading will be done with smaller hand tools such as loader/backhoe, not a dozer. The loader/backhoe will not operate directly at the property line for any length of time. Nevertheless, noise levels at the residences to the north and south will be approximately 82 dBA with a dozer and 78 dBA if a loader/backhoe is used.

Interior noise levels would be approximately 25 dBA lower assuming closed windows. Although noise levels would be noticeable, they would be temporary and will occur only when heavy equipment operates at the closest property line.

Building Construction

Construction activities would require smaller, less noisy equipment than demolition and grading but would require a longer duration. The closest on-site to off-site sensitive use structure is approximately 40 feet from the closest building façade including the side yard setback. At the closest residence construction noise levels could be as high as 76 dBA Leq. With closed windows, the noise interior noise level would decrease to 46-51 dBA Leq. The wood and masonry walls at the shared property line would assist in noise attenuation.

Paving

The paved driveway which provides site access from Kester Avenue will be in the center of the site and not adjacent to off-site uses. Paving activities for the entire site are only estimated to require 5 days.

Summary

Construction noise is unavoidable though noise would be temporary and limited to the duration of the construction in any one location and different types of construction equipment would be used throughout the construction process. These temporary impacts will cease once the Project is completed. Complete elimination of construction activity noise is technically infeasible. However, incorporation of the best available noise reduction methods will minimize impacts.

The closest occupied sensitive use bordering the site are as close as 30-feet to the property line, but more than 40 feet to the closest Project structure with the required setbacks. There are wood and masonry walls surrounding the site.

Construction activities from Project development may exceed noise levels allowed by Section 112.05 of the Municipal Code at the nearest off-site sensitive uses. This can be mitigated by required compliance with all applicable regulatory measures. Compliance with City of Los Angeles Noise Standards requires that:

- Construction activities are limited to the hours of 7:00 a.m. and 9:00 p.m. on weekdays and 8:00 a.m. to 6:00 p.m. on any Saturday. Construction is not permitted on any national holiday or on any Sunday.
- Construction vehicles and equipment (fixed or mobile) shall be equipped with properly operating and maintained mufflers.
- Backup audible warning devices shall be replaced with backup strobe lights or other warning devices during evening construction activity to the extent permitted by the California Division of Occupational Safety and Health.
- Any powered equipment or powered hand tool that produces a maximum noise level exceeding 75 dBA at receptor is prohibited unless no means exist to reduce such noise below 75 dBA.
- Material stockpiles and/or vehicle staging areas shall be located as far as practical from dwelling units.

The Project is required to comply with these regulatory measures, which will minimize any adverse construction noise impact potential. No mitigation measures are necessary.

ON-SITE TRAFFIC NOISE EXPOSURE

The City of Los Angeles General Plan provides the following compatibility guidelines for sensitive uses shown in Table 2.

Table 2
Community Noise Exposure
CNEL, dB

Land Use	Normally Acceptable[1]	Conditionally Acceptable[2]	Normally Unacceptable[3]	Clearly Unacceptable[4]
Single Family, Duplex, Mobile Homes	50-60	55-70	70-75	Above 70
Multi-Family Homes	50-65	60-70	70-75	Above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50-70	60-70	70-80	Above 80
Transient Lodging-Motels, Hotels	50-65	60-70	70-80	Above 80
Auditoriums, Concert Halls, Amphitheaters	-	50-70	-	Above 65
Sports Arena, Outdoor Spectator Sports	-	50-75	-	Above 70
Playgrounds, Neighborhood Parks	50-70	-	67-75	Above 72
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50-75	-	70-80	Above 80
Office Buildings, Business and Professional Commercial	50-70	67-77	Above 75	-
Industrial, Manufacturing, Utilities, Agriculture	50-75	70-80	Above 75	-

Source: California Department of Health Services, as referenced in the 2006 City of Los Angeles L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles.

Notes:

[1] Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
[2] Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
[3] Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
[4] Clearly Unacceptable: New construction or development should generally not be undertaken.

Noise levels of up 70 dBA CNEL are “normally acceptable” for residential uses and levels of up to 75 dBA CNEL are considered “conditionally acceptable”. This threshold would apply to outdoor recreational space such as yards.

Kester Avenue is considered a “local street-standard” roadway with a 60-foot ROW and 36-foot roadway width according to The Citywide General Plan Circulation System maps. The City of Los Angeles Department of Transportation conducts traffic counts every few years on major area roadways. There are been no traffic counts of Kester Avenue because of its minor roadway designation. However, according to City of Los Angeles Master Plan, design capacity for a 2-lane street is 2,800 vehicles per day which would roughly be associated with a 58 dBA CNEL noise level.

Regardless, the minor roadway designation for Kester Avenue and lack of traffic data would indicate a low noise level. Traffic noise is presumed to be lower than the recommended 70 dBA CNEL. All recreational space would meet the City of Los Angeles noise compatibility guidelines without the need for any additional attenuation.

The interior residential noise standard is 45 dB CNEL. For typical wood-framed construction with stucco and gypsum board wall assemblies, the exterior to interior noise level reduction is as follows:

Partly open windows – 12 dB
Closed single-paned windows – 20 dB
Closed dual-paned windows – 30 dB

Use of dual-paned windows is required by the California Building Code (CBC) for energy conservation in new construction. Interior standards will be met as long as occupants have the option to close their windows. Where window closure is needed to shut out noise, supplemental ventilation is required by the CBC with some specified gradation of fresh air. Central air conditioning would meet this requirement.

Project Traffic on Area Roadways

The Project is expected to generate 85 daily trips using default ITE trip generation factors for the proposed use. The addition of 85 vehicular trips to an approximate 2,800 vehicle design capacity for two lane roadways would create a noise increase of +0.1 dBA, which would be below the level of perceptibility.

Traffic Noise Summary

- The Project will be capable of meeting an interior noise level of 45 dBA CNEL.
- The exterior noise threshold of 70 dBA CNEL will easily be met in exterior recreational space.
- Project traffic will not have a significant impact on area roadways.