

SUPPLEMENT TO NOTICE OF EXEMPTION

Joint Occupancy Project - Home INstead INnovation Academy and Vintage Hills Elementary School

Temecula Valley Unified School District

The Temecula Valley Unified School District (District) plans to close the existing Home INstead INnovation Academy (HIIA) at 35780 Abelia Street, Winchester, and transfer students to Vintage Hills Elementary School at 42240 Camino Romo, Temecula, approximately 6.6 miles to the south, where the two schools will share the site. This Supplement to Notice of Exemption (Supplement) provides justification for the Statutory Exemption pursuant to the California Environmental Quality Act (CEQA) Guidelines under California Code of Regulations, Title 14 § 15282(i), Other Statutory Exemptions, where the physical changes are categorically exempt under Title 14 §§ 15300.2, 15303, 15304, and 15311.

1. EXISTING CONDITIONS

PROJECT LOCATION

The HIIA is at 35780 Abelia Street in Winchester, unincorporated County of Riverside, at the northwest corner of Abelia Street and Washington Street. Vintage Hills Elementary School is approximately 6.6 miles south of HIIA. The Vintage Hills Elementary School is at 42240 Camino Romo in the City of Temecula, Riverside County (Assessor's Parcel Number 955-060-001). Regional access to the Vintage Hills campus is provided by the Interstate 15 freeway, which is approximately 3 miles west of the elementary school, as shown on Figure 1, *Regional Location*. Because physical changes would occur at this campus, the Vintage Hills Elementary School is referred to herein as the project site.

The Vintage Hills campus is 10.91 acres and bounded by Camino Romo to the west; Corte Villosa to the south; Vintage Hills Park to the east; and single-family residences to the north. See Figure 2, *Local Vicinity*. Two driveways are provided from Camino Romo for parking lots and a student drop-off/pick-up area, and two driveways are provided from Corte Villosa for another student pick-up/drop-off-only area.

EXISTING CONDITIONS

Vintage Hills Elementary School opened in 1997 and serves transitional kindergarten (TK) through 5th grade students. The campus is developed with permanent and portable buildings, hardcourts, kinder-play area, turf playfield, and parking lots with solar canopies. See Figure 3, *Aerial Photograph*. The elementary school had 518 students in 2021-2022 school year, and the peak enrollment for the school was 1,105 students in 2002. The peak enrollment within the past seven years was 815 students in 2018-2019 school year, which decreased to 637 students in 2019-2020, and to 562 students in 2020-2021 (CDE 2022).

HIIA is an alternative school where most learning is done remotely. HIIA has a current enrollment of 300 students in grades TK through 8th.

SURROUNDING LAND USES

The Vintage Hills campus is in a residential neighborhood surrounded by single-family residences to the north, and across Camino Romo and Corte Villosa to the west and south, respectively, and Vintage Hills Park to the east. Vintage Hills Park provides tennis courts, a soccer field, a swimming pool, a grass field area, a community center, and a parking lot.

2. PROJECT DESCRIPTION

The District proposes to close HIIA in Winchester and transfer students to the Vintage Hills campus in Temecula to co-locate two school programs, the existing Vintage Hills Elementary School and the HIIA. The shared campus would be accommodated without any additional buildings to house the HIIA program. The Vintage Hills campus previously housed up to 1,105 students in 2002 but is experiencing declining enrollment, with the current enrollment of 518 students (2021-2022 school year). Therefore, the Vintage Hills campus has the capacity to accommodate the HIIA program with limited modifications. Physical changes involved with this transfer of students would include interior alterations to the existing 12-classroom building, paving approximately 5,000 square feet under the existing solar canopy for an outdoor learning program, and striping and painting the existing paved area for approximately 30 parking spaces as shown on Figure 4, *Proposed Improvements*.

The current enrollment for the HIIA is 300 students, and the program at Vintage Hills campus would accommodate up to 600 TK through 8th grade students and 30 to 35 staff members. Because HIIA is an alternative school program where most learning is done remotely, not all 600 students would regularly attend the school. Instead, approximately 150 students may participate in on-campus voluntary supplemental instruction for one to two hours in the afternoon, Monday through Thursday. Therefore, the proposed transfer of students would not affect the existing elementary school's drop-off/pick-up operations. The Vintage Hills campus would hold approximately four evening events during the school year for the HIIA program, but the events would not coincide with the elementary school events.

3. REASONS WHY THE PROJECT IS EXEMPT

The proposed project is exempt from further environmental documentation under the California Environmental Quality Act (Public Resources Code §§ 21000 et seq.), statutory exemption PRC § 21080.18, Closure of Public School and Transfer of Students, where the physical changes are categorically exempt under Class 1, Class 3, Class 4, and Class 14.

PRC § 21080.18 (CEQA Guidelines § 15282(i)) – The closing of any public school or the transfer of students from that public school to another school in which kindergarten or any grades 1 through 12 is maintained if the only physical changes involved are categorically exempt under Chapter 3 (commencing with Section 15000) of Division 6 of Title 14 of the California Administrative Code.

HIIA at 35780 Abelia Street in Winchester is a public school serving TK-8 grades, where most learning is done remotely. Transfer of students to Vintage Hills Elementary School at 42240 Camino Romo in Temecula, another public school serving TK-5 grades is statutorily exempt and the physical changes involved with the proposed project are categorically exempt under Class 1, Class 3, Class 4, and Class 14, as described below.

Class 1, Existing Facilities (CEQA Guidelines § 15301), consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use. The types of “existing facilities” itemized below are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of use. (a) Interior or exterior alterations involving such things as interior partitions, plumbing, and electrical conveyances...()

The proposed project includes interior alterations to the existing 12-classroom building to accommodate the HIIA program. There would be no expansion of building space, and the building would remain as a classroom building, which meets the criteria for an exemption under CEQA Guidelines § 15301. A review of the possible exceptions to the

exemption, outlined under CEQA Guidelines § 15300.2 and discussed in Section 4 of this document, determined that no characteristics or circumstances would invalidate findings that the project is exempt from further analysis under CEQA.

Class 3, New Construction or Conversion of Small Structures (CEQA Guidelines § 15303), consists of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure.... Examples of this exemption include ... (e) Accessory (appurtenant) structures including garages, carports, patios, swimming pools, and fences.

The proposed project would convert approximately 5,000 square feet of grass area under the solar canopy to a paved outdoor learning program space and stripe already paved hardcourt area to provide 30 parking spaces. These changes would convert one use of the existing outdoor facility to another, which meets the criteria for an exemption under CEQA Guidelines § 15303. A review of the possible exceptions to the exemption, outlined under CEQA Guidelines § 15300.2 and discussed in Section 4 of this document, determined that no characteristics or circumstances would invalidate findings that the project is exempt from further analysis under CEQA.

Class 4, Minor Alterations to Land (CEQA Guidelines § 15304), consists of minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes.

The proposed project would convert approximately 5,000 square feet of grass area under the solar canopy to a paved outdoor learning program space and stripe already paved hardcourt areas to provide 30 parking spaces. These improvements would be minor alterations to the existing grass and hardcourt area and would not involve the removal of healthy, mature, and/or scenic trees. Therefore, the proposed minor alterations to the conditions of the existing campus meets the criteria for an exemption under CEQA Guidelines § 15304. A review of the possible exceptions to the exemption, as outlined under CEQA Guidelines § 15300.2 and discussed in Section 4 of this document, determined that no characteristics or circumstances would invalidate findings that the project is exempt from further analysis under CEQA.

Class 14, Minor Additions to School (CEQA Guidelines § 15314), consists of minor additions to existing schools within existing school grounds where the addition does not increase original student capacity by more than 25% or ten classrooms, whichever is less. The addition of portable classrooms is included in this exemption.

The proposed project would involve interior alterations to an existing classroom building, converting approximately 5,000 square feet of grass area under the solar canopy to a paved outdoor learning program space, and striping the existing hardcourt area to accommodate 30 parking spaces. These improvements will allow sharing of the existing Vintage Hills campus with the HIIA program staff and students without expanding the existing school's capacity or increasing the number of classrooms. The proposed project would not increase original student capacity by more than 25 percent or ten classrooms, whichever is less, meeting the criteria for an exemption under CEQA Guidelines § 15314. A review of the possible exceptions to the exemption, as outlined under CEQA Guidelines § 15300.2 and discussed in Section 4 of this document, determined that no characteristics or circumstances would invalidate findings that the project is exempt from further analysis under CEQA.

4. REVIEW OF EXCEPTIONS TO THE CATEGORICAL EXEMPTION

The proposed project has been reviewed under CEQA Guidelines § 15300.2, Exceptions, for any characteristics or circumstances that might invalidate findings that the project is exempt from further CEQA analysis. Each exception is reproduced and followed by an assessment of whether that exception applies to the proposed project.

- (a) **Location.** Classes 3, 4, 5, 6, and 11 are qualified by consideration of where the project is to be located—a project that is ordinarily insignificant in its impact on the environment may in a particularly sensitive environment be significant. Therefore, these classes are considered to apply all instances, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

The project site is already developed as an elementary school campus in a suburban residential community in the city of Temecula. The HIIA campus to be closed is in the community of Winchester, unincorporated Riverside County. The project site is already developed and used as an elementary school and is surrounded by residential uses to the north, south, and west, and by Vintage Hills Park, a community park with tennis courts, a grass playfield, a soccer field, and a community center. The proposed improvements would modify the existing school facilities and would not disturb any previously undisturbed natural or sensitive environmental habitat. The project site is within the Western Riverside County Multi-Species Habitat Conservation Plan (MSHCP) boundary but is not in a Criteria Cell or part of any conserved or reserved lands for biological resources (RCA 2022). There is no evidence of hazardous materials on the site (see (e), below).

- (b) **Cumulative Impact.** All exemptions for these classes are inapplicable when the cumulative impact of successive projects of the same type in the same place, over time is significant.

A cumulative impact could occur if the project would result in an incrementally considerable contribution to a significant cumulative impact in consideration of past, present, and reasonably foreseeable future projects for each resource area. Due to the declining enrollment, the District is proposing to close one school location and transfer its students and staff to another location, approximately 6.6 miles to the south. Limited improvements that do not involve expansion of the school or student enrollment capacity are proposed at the receiving school. There are no other successive projects of the same type in the same place that would occur over time. Cumulative impacts would not be significant. This exception does not apply to the proposed project.

- (c) **Significant Effects.** A categorical exemption shall not be used for an activity where there is a reasonable possibility that the activity will have a significant effect on the environment due to unusual circumstances.

Aesthetics

No above-grade structures would be constructed on the exterior of the existing campus. The construction would be limited to the pavement under the existing solar canopy, striping for 30 parking spaces on the existing hardcourts, and interior modifications to an existing classroom building. There is no reasonable possibility that the proposed project will have a significant effect on the aesthetics of the existing campus.

Air Quality

The proposed project would involve interior alterations to the existing 12-classroom building, paving approximately 5,000 square feet under the existing solar canopy for an outdoor learning program, and striping and painting the existing paved area for approximately 30 parking spaces. Considering the scale and nature of the proposed construction, no significant effect on the environment due to unusual circumstances related to construction air quality would occur. As discussed under “Transportation,” the proposed project is not anticipated to increase vehicle miles traveled (VMT); therefore, operational air quality impact related to mobile sources would not be significant, and no significant effect on the environment due to unusual circumstances related to operational air quality would occur.

Biological Resources

The project site is an existing elementary school campus. Therefore, the existing campus is already heavily disturbed by human activities, and the proposed project would not disturb any native or sensitive habitat or special status species that could potentially result in a significant impact related to biological resources due to unusual circumstances. The project site does not support native wildlife species, and it does not have any streams or water bodies or native habitat for wildlife species (USFWS 2022; RCA 2022).

Noise

As substantiated in Attachment A, *Noise Tech Memo*, to this Supplement, the proposed project would not result in any significant impact related to noise during construction and operation of the proposed project.

Transportation

For the purposes of CEQA, transportation impacts are analyzed in terms of vehicle miles traveled (VMT). Based on the City of Temecula Traffic Impact Analysis Guidelines, the proposed project is a “locally serving public facilit[y],” and therefore may be presumed to have a less than significant impact absent substantial evidence to the contrary (Temecula 2020).

The HIIA program is a Districtwide alternative school program without specific attendance boundaries, where most learning is done remotely with voluntary supplemental instruction participation for one to two hours in the afternoon, Monday through Thursday. Therefore, closing the existing HIIA campus in Winchester near the northern edge of the District boundary and sharing the Vintage Hills campus with Vintage Hills Elementary School in Temecula, a more centralized location, would likely reduce vehicle miles traveled for students participating in the voluntary supplemental instruction. Furthermore, the Vintage Hills campus previously housed up to 1,105 TK-5th students in 2002, compared to the current 518 TK-5th students. The HIIA program would have a maximum of 600 TK-8 students enrolled remotely but the voluntary supplemental instruction on-campus would have approximately 150 students. Therefore, the combined on-campus student population for the Vintage Hills campus would be approximately 670 students, and these students would be accommodated without any building expansion. Furthermore, the additional 30 parking spaces to be striped would be accessed from the loading zone via Corte Villosa and would not modify any off-site roadways to create any hazardous conditions. Therefore, no significant environmental impacts related to transportation are anticipated, and there is no reasonable possibility that the project would have a significant effect on the environment due to unusual circumstances. Therefore, this exception does not apply to the proposed project.

- (d) **Scenic Highways.** A categorical exemption shall not be used for a project which may result in damage to scenic resources, including but not limited to, trees, historic buildings, rock outcroppings, or similar resources, within a highway officially designated as a state scenic highway.

There are no officially designated state scenic highways near the Vintage Hills campus. The closest officially designated state scenic highway is California State Route 74 (SR-74)—from the western boundary of the San Bernardino National Forest (western end) to SR-111 in Palm Desert (eastern end)—approximately 20 miles to the northeast (Caltrans 2022). The closest eligible state scenic highway is Interstate 15 (I-15) between SR-76 near the San Luis Rey River (southern end) to SR-91 near Corona (northern end) (Caltrans 2022). The campus is approximately 3 miles east of I-15. Due to the distance between the project site and scenic highways, the proposed project would not have any effect on the scenic value of officially designated or eligible scenic highways. There are no scenic resources on campus or in the surrounding community. This exception does not apply to the proposed project.

(e) Hazardous Waste Sites. A categorical exemption shall not be used for a project located on a site which is included on any list compiled pursuant to Section 65962.5 of the Government Code.

California Government Code Section 65962.5 requires the compiling of lists of the following types of hazardous materials sites: hazardous waste facilities; hazardous waste discharges for which the State Water Quality Control Board has issued certain types of orders; public drinking water wells containing detectable levels of organic contaminants; underground storage tanks with reported unauthorized releases; and solid waste disposal facilities from which hazardous waste has migrated.

Five environmental lists were searched for hazardous materials sites on the school campus and within a 500-foot radius:

- » GeoTracker: State Water Resources Control Board (SWRCB 2022)
- » EnviroStor: Department of Toxic Substances Control (DTSC 2022a)
- » EJScreen: US Environmental Protection Agency (EPA 2022a)
- » EnviroMapper: US Environmental Protection Agency (EPA 2022b)
- » Solid Waste Information System (SWIS): California Department of Resources Recovery and Recycling (CalRecycle 2022)

The project site is not listed on GeoTracker, EnviroStor, EJScreen, EnviroMapper, or SWIS as hazardous materials sites. The proposed project would not create a hazard to the public because of a hazardous materials site pursuant to Government Code § 65962.5. This exception does not apply to the proposed project.

(f) Historical Resources. A categorical exemption shall not be used for a project which may cause a substantial adverse change in the significance of historical resources.

Under Public Resources Code § 21084.1, a historical resource is a resource listed in or determined to be eligible for listing in the California Register of Historical Resources. Additionally, historical resources in a local register of historical resources are presumed to be historically or culturally significant, and a lead agency can determine whether the resource may be an historical resource.

Vintage Hills Elementary School opened in 1997 and a review of the National Register of Historic Places and California Historic Resources databases shows that elementary school is not listed or identified as a historic resource (NPS 2022; OHP 2022; TVUSD 1997). The Temecula General Plan Open Space / Conservation Element does not identify the school as a historic resource (Temecula 2005). The project would not cause significant impacts on historical resources. This exception does not apply to the proposed project.

Conclusion

As substantiated in this document, the proposed project meets the statutory exemption under PRC § 21080.18, Closure of Public School and Transfer of Students, where the physical changes are categorically exempt under Title 14 §§ 15301, 15303, 15304, and 15314, and would not meet the conditions specified in § 15300.2, Exceptions, of the CEQA Guidelines.

4. REFERENCES

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US Environmental Protection Agency (USEPA). 2022, October 7 (accessed). EJSCREEN. <https://ejscreen.epa.gov/mapper/>.

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Figure 1 - Regional Location

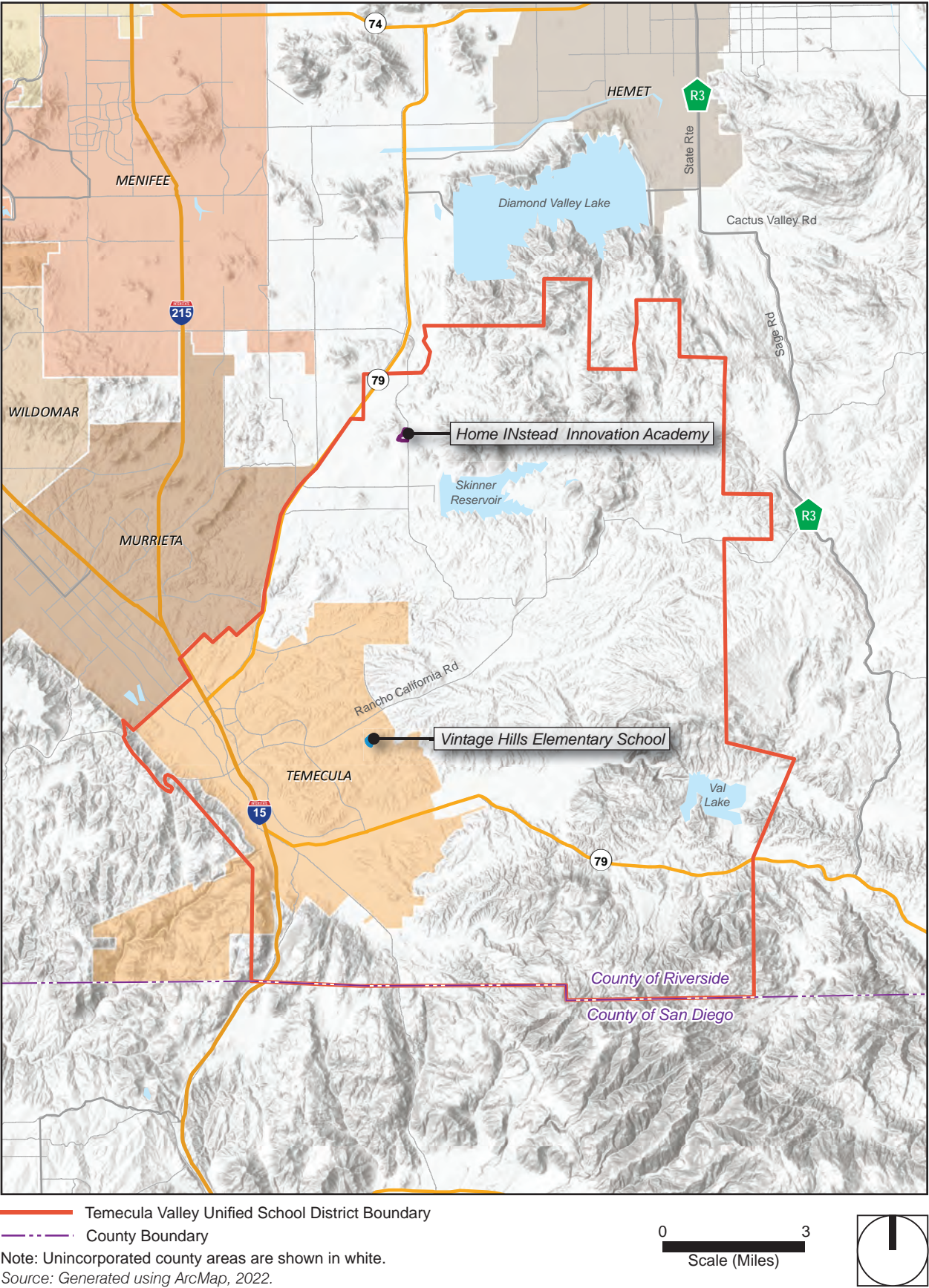
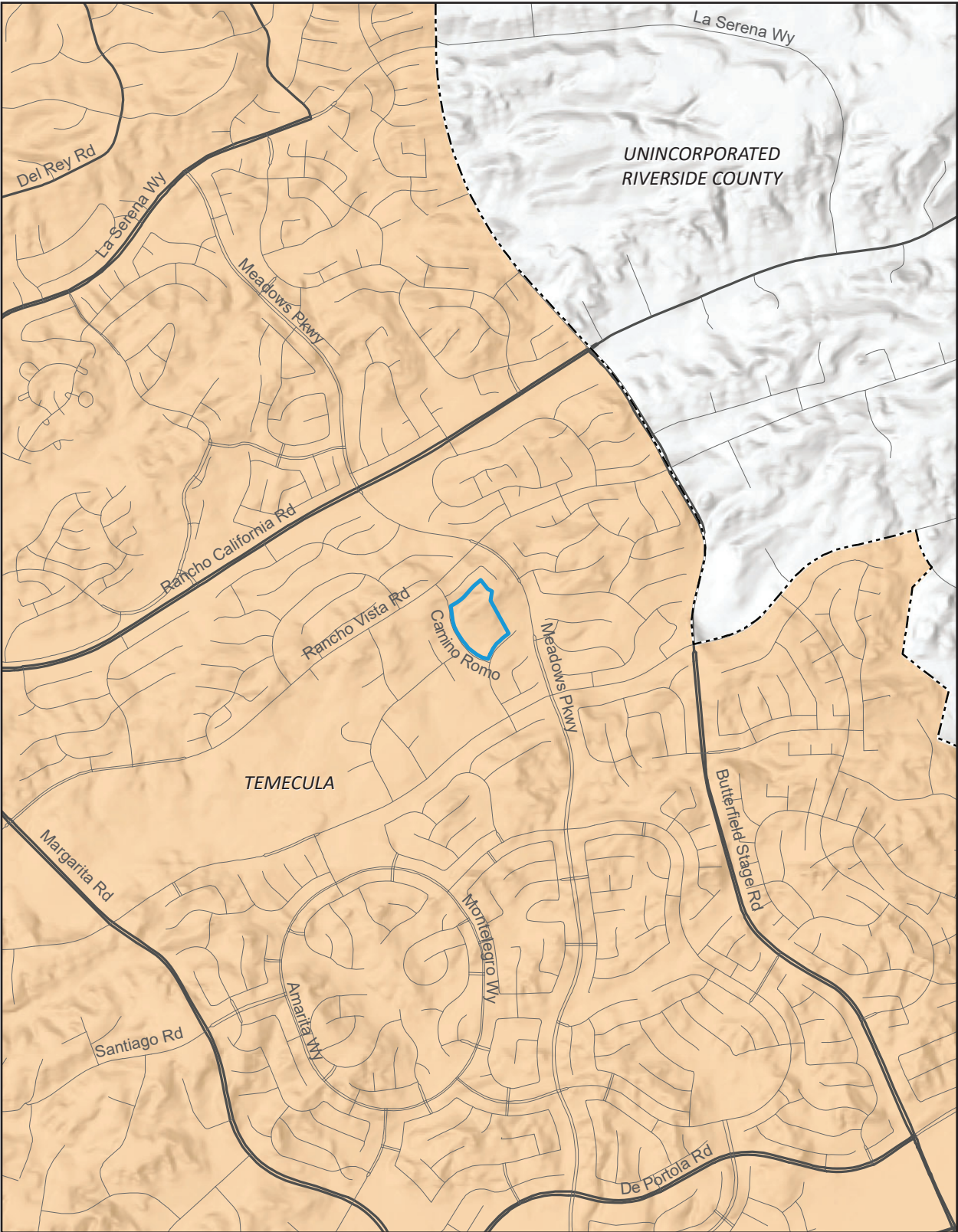


Figure 2 - Local Vicinity



— Vintage Hills Elementary School Boundary

Note: Unincorporated county areas are shown in white.
Source: Generated using ArcMap, 2022.

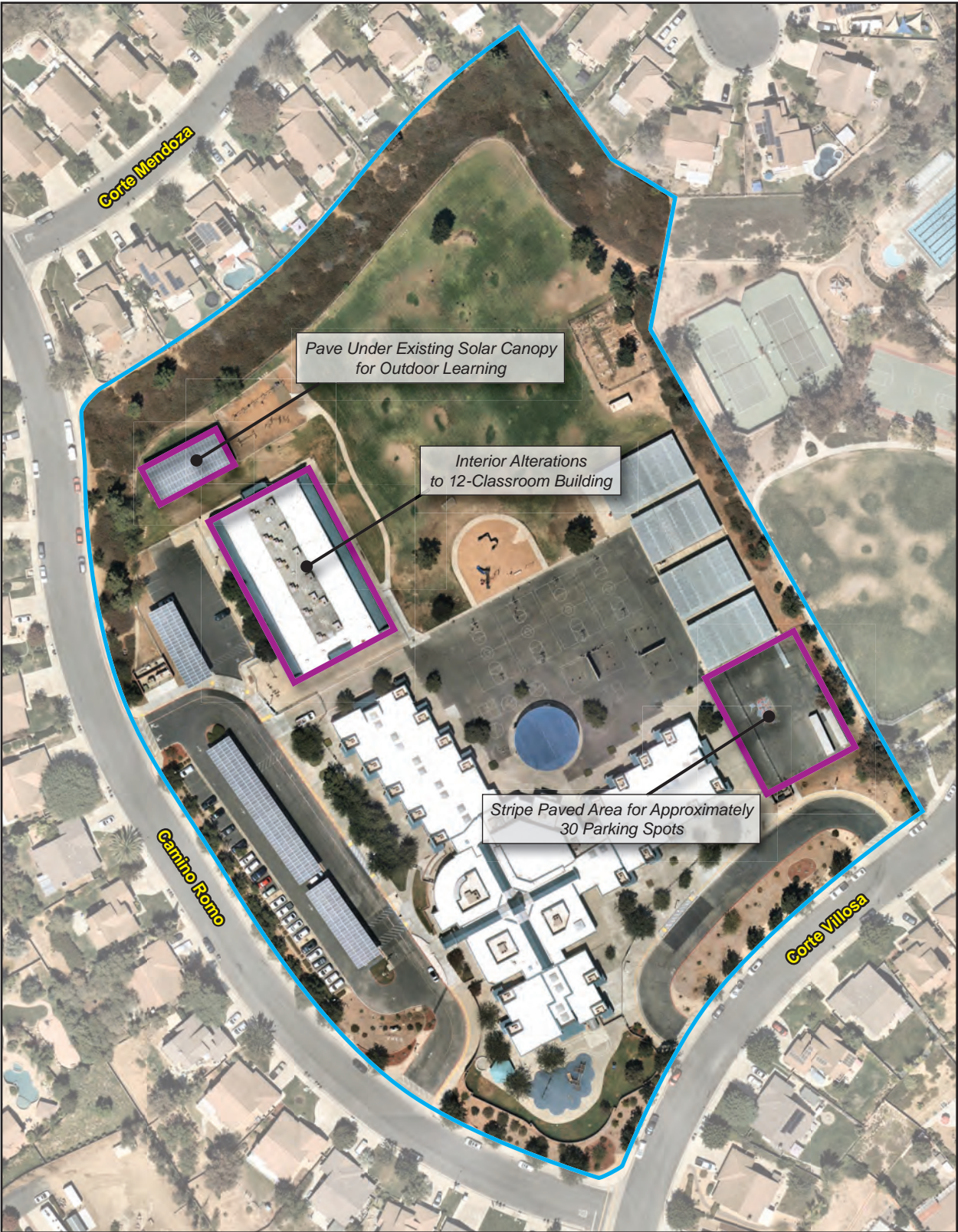
0 2,000
Scale (Feet)



Figure 3 - Aerial Photograph



Figure 4 - Proposed Improvements



— Vintage Hills Elementary School Boundary

— Areas of Improvement

Source: Nearmap, Inc., 2022.

0 135
Scale (Feet)



Attachment A Noise Technical Memorandum

NOISE TECHNICAL MEMORANDUM

DATE	October 14, 2022
TO	Temecula Valley Unified School District
ADDRESS	31350 Rancho Vista Road / Temecula, CA 92592
CONTACT	Janet Dixon Director, Facilities Development Department
FROM	Alejandro Garcia, INCE-USA Senior Associate, Noise and Vibration
SUBJECT	Joint Occupancy Project – Home INstead Innovation Academy and Vintage Hills Elementary School Noise Technical Memorandum
PROJECT NUMBER	TVU-22.1

Project Location and Description

Vintage Hills Elementary School is at 42240 Camino Romo in the City of Temecula, Riverside County. The elementary school campus is 10.91 acres and bounded by Camino Romo to the west; Corte Villosa to the south; Vintage Hills Park to the east; and single-family residences to the north. See the Supplement to Notice of Exemption (Supplement) for the additional project site and description details.

This noise technical memorandum provides a community noise assessment of the proposed joint occupancy project for the Home INstead Innovation Academy (HIAA)/Vintage Hills Elementary School. As described in the Notice of Exemption pursuant to CEQA Guidelines and the Supplement, the District proposes to close the HIAA program at 35780 Abelia Street in Winchester and transfer students to the Vintage Hills Elementary School campus in Temecula, and the existing elementary school campus would be shared. No physical improvements to the Winchester campus are proposed. Noise fundamentals and common definitions are included in Attachment A to this Noise Technical Memorandum.

Applicable Standards

TEMECULA EXTERIOR NOISE STANDARDS

The City of Temecula Municipal Code Section 9.20.040, General Sound Level Standards, provides maximum interior and exterior noise standards for various land use designations. Table 1, *City of Temecula Residential Exterior Noise Standards*, summarizes the maximum exterior noise levels at the receiving property lines of residences.

Table 1 City of Temecula Residential Exterior Noise Standards

Land Use Designation	Exterior Noise Level, dBA
	L_{max}
Hillside, Rural, Very Low, Low, Low Medium	65
Medium	65/70 ¹
High	70

Source: City of Temecula Municipal Code, Section 9.20.040, General sound level standards.
¹ Maximum exterior noise levels up to 70 dBA are allowed for multiple-family housing.

Special Provisions

Under Section 9.20.060, Special sound sources standards, and Section 9.20.030, Exemptions, the following activities are exempt from the municipal code exterior noise standards:

- Noise associated with construction activity that does not take place between the hours of 6:30 p.m. and 7:00 a.m. Monday through Friday, 6:30 p.m. to 7:00 a.m. Saturdays, or any time on Sunday or a national holiday (unless exempted by Section 9.20.070 of the Temecula Municipal Code).
- Noise associated with operation of any power tools or equipment that does not take place between the hours of 10:00 p.m. and 7:00 a.m.
- Noise from public or private schools and school-sponsored activities.

Federal Transit Administration

The City of Temecula does not have quantified limits for vibration. Therefore, to determine impact significance, the following Federal Transit Administration (FTA) criterion is used in this analysis.

A construction-related vibration impact would occur if:

- Vibration levels would exceed 0.20 inches/second (in/sec) peak particle velocity (PPV) at the façade of a nonengineered structure (e.g., wood-frame residential).

Sensitive Receptors

Certain land uses, such as residences, schools, parks, and hospitals are particularly sensitive to noise and vibration. These uses are regarded as sensitive because they are where citizens most frequently engage in activities which are likely to be disturbed by noise, such as reading, studying, sleeping, resting, or otherwise engaging in quiet or passive recreation. The nearest offsite noise sensitive receptors are the surrounding residential uses to the north, west, and south, and Vintage Hills Park east of the project site.

Existing Noise Conditions

The project site is outside the 60 dBA CNEL noise contour according to the City of Temecula General Plan Noise Element's Figure N-2, Future (2025) Noise Contour. The noise environment in the project vicinity is primarily characterized by traffic from local roadway traffic, such as Rancho Vista Road to the north, Meadows Parkway to the east, and Camino Romo to the east. Noise from surrounding residential uses and existing school activities also contribute to the overall noise environment in the project vicinity.

Environmental Impacts

PROJECT CONSTRUCTION NOISE IMPACTS

The proposed project would not require additional/new buildings to house the HIIA program students and staff. The existing elementary school campus has a capacity to accommodate the HIIA program with limited modifications. Physical changes involved with this transfer of students would include interior alterations to the existing 12-classroom building, paving under the existing solar canopy for an outdoor learning program, and striping existing paved area for approximately 30 parking spaces, as shown on Figure 4, *Proposed Site Plan*, of the Supplement.

Off-Site Receptors

As stated above, no major construction activity would be necessary as a result of implementing the proposed project, such as earth-moving equipment (e.g., graders, tractors, and dozers). The loudest outdoor construction equipment for the proposed project would occur during paving, which could require the use of a vibratory or static roller. Construction noise levels associated with rollers at times could reach up to 73 dBA L_{eq} at a distance of 50 feet. Paving under the solar canopy could occur approximately 75 feet from the nearest residential receptors to the north. However, this construction noise would be less than the recommended Federal Transit Administration (FTA) criteria of 80 dBA L_{eq} (FTA 2018). Additionally, the 12-classroom building where interior modifications would occur is approximately 160 feet from the nearest residential receptors, and noise from the interior modifications is not anticipated to exceed 80 dBA L_{eq} . Construction would be minimal and short term. There is no reasonable possibility that the construction activity will have a significant effect on the environment due to unusual circumstances.

On-Site Receptors

Construction noise can be intrusive and disruptive to a learning environment. At times, construction could occur while school is in session. Therefore, this analysis considers construction noise impacts on the students at Vintage Hills campus. Construction noise would be limited to interior alterations (which would not require large noise-generating equipment), paving approximately 5,000 square feet area under the existing solar canopy, and striping and painting an existing paved area to accommodate approximately 30 parking spaces. As stated above, paving equipment such as vibratory rollers generate noise levels of 73 dBA L_{eq} at 50 feet. The nearest classroom building is within 50 feet of the proposed paving area, which is the 12-classroom building where interior modifications are proposed (see Figure 4, *Proposed Improvements*). Typical exterior to interior noise attenuation with windows open is approximately 10 dBA. Therefore, conservatively, interior levels at the nearest classroom building would be 63 dBA or less when the vibratory roller is in use for paving. However, with windows closed, exterior to interior noise attenuation would at least double (20 dBA reduction), achieving interior noise level of 53 dBA or less. Typical interior noise level should not exceed 50 dBA L_{eq} (1 hr). Though construction noise would temporarily elevate interior noise levels at the nearest classrooms, elevated noise levels would be for a short period of time as the scope of construction is limited to paving activities. Therefore, temporary construction noise would not interfere substantially with the learning environment, and there is no reasonable possibility that the construction activity will have a significant effect on the environment due to unusual circumstances.

PROJECT OPERATIONAL NOISE IMPACTS

On-Site Operational Noise

The proposed project would not significantly change on-site operational noise. The proposed project would not require expansion of the existing campus capacity, and the site would remain an educational facility. The Vintage Hills campus previously housed up to 1,105 students but has experienced declining enrollment; the current enrollment at the Vintage Hills campus is 518 students in transitional kindergarten (TK) through 5th grade, a decrease of approximately 53 percent. Although the HIIA could accommodate up to 600 K-8th grade students, most learning is done remotely, and only about 150 students would attend on-campus learning for one to two hours in the afternoon, Monday through Thursday. Therefore, even with two schools sharing the campus, the combined enrollment of both schools would be approximately 670 students, and although enrollments would fluctuate annually, it would not exceed 1,105 students. The distance from the newly paved outdoor learning area under the existing solar canopy is about the same distance from the residences to the north as the adjacent sand playground area, and the proposed project would not place noise-generating sources any closer to the residential receptors. Additionally, the project would not introduce any new mechanical noise sources (e.g., air handling units). Therefore, there is no reasonable possibility that the on-site operational noise will have a significant effect on the environment due to unusual circumstances.

Off-Site Operational Noise

As stated in the Project Description of the Supplement, HIIA is an alternative school program where most learning is done remotely, and not all 600 students (maximum student enrollment capacity for HIIA) would regularly attend the school. Instead, approximately 150 students may participate in on-campus voluntary supplemental instruction for one to two hours in the afternoon, Monday through Thursday. Therefore, trips would be minimal and only associated with students who opt for supplemental on-site learning. As discussed under *On-Site Operational Noise*, the existing campus previously accommodated up to 1,105 students, and the combined number of students from both schools attending the campus on a daily basis would not exceed 1,105 students. Additionally, the proposed transfer of students is not anticipated to affect the existing elementary school's drop-off/pick-up operations, since the supplemental instruction would occur one to two hours in the afternoon, not coinciding with the existing school's drop-off/pick-up hours. Therefore, there is no reasonable possibility that operational traffic noise will have a significant effect on the environment due to unusual circumstances.

CONSTRUCTION VIBRATION IMPACTS

Potential vibration impacts associated with development projects are usually related to the use of heavy construction equipment during the demolition and grading phases of construction. Construction vibration for the proposed project would be limited to equipment used for paving. The most vibration intensive equipment associated with paving is a vibratory roller. Though a roller is not always necessary, this analysis conservatively assumes its use.

Construction equipment (e.g., vibratory roller) generates vibration that spreads through the ground and diminishes with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

For reference, a peak particle velocity of 0.20 in/sec PPV is used as the limit for nonengineered timber and masonry buildings, which would apply to the off-site surrounding structures (FTA 2018). Table 2, *Vibration Levels for Typical Construction Equipment*, shows typical construction equipment vibration levels at a reference distance of 25 feet and estimated vibration levels at the nearest off-site structure, single-family homes to the north at approximately 90 feet. At 90 feet, construction vibration levels would be up to 0.031 in/sec PPV, which would not exceed the vibration thresholds of 0.20 in/sec PPV. All other equipment would generate less vibration than a vibratory roller. Therefore, there is no reasonable possibility that construction vibration impacts will have a significant effect on the environment due to unusual circumstances.

Table 2 Vibration Levels for Typical Construction Equipment

Equipment	Reference Levels at 25 feet (in/sec PPV)	Residential at 90 feet north (in/sec PPV)
Vibratory Roller	0.21	0.031
Large Bulldozer	0.089	0.013
Loaded Trucks	0.076	0.011
Jackhammer	0.035	0.005
Small Bulldozer	0.003	0.000

Source: FTA, 2018. Transit Noise and Vibration Impact Assessment, September.
In/sec PPV = inches per second peak particle velocity

OPERATIONAL VIBRATION

The proposed project would not change the existing use of the site as an educational facility, and operation of the proposed project would not include any long-term vibration sources. There is no reasonable possibility that a significant effect on the environment would occur due to unusual circumstances related to operational vibration.

References

Federal Transit Administration (FTA). 2018, September. Transit Noise and Vibration Impact Assessment.

Federal Highway Administration. 2006, August. Construction Noise Handbook.

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Attachment A Noise Fundamentals and Common Noise Definitions

Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The sound level that is exceeded “n” percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the “median sound level.” The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the “intrusive sound level.” The L_{90} is the sound level exceeded 90 percent of the time and is often considered the “effective background level” or “residual noise level.”
- **Maximum Sound Level (L_{max}).** The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are “felt” more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people’s judgments of the “noisiness” of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2 , L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These “n” values are typically used to demonstrate compliance for stationary noise sources with many cities’ noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max} . These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or “penalty”) of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as “spreading loss.” For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective (“hard site”) surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, though generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the

square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2020, April. *Transportation and Construction Vibration Guidance Manual*. Prepared by ICF International.

CONSTRUCTION NOISE MODELING

Construction Vibration Attenuation

Levels in in/sec PPV

<i>Distance in feet</i>	Vibration Reference Level	Residences to Southeast	
	at <i>25 feet</i>	<i>90</i>	
Vibratory Roller	0.21	0.031	
Hoe Ram	0.089	0.013	
Large Bulldozer	0.089	0.013	
Caisson Drilling	0.089	0.013	
Loaded Trucks	0.076	0.011	
Jackhammer	0.035	0.005	
Small Bulldozer	0.003	0.000	