NOISE & VIBRATION

Goal X.X **Protect the health and safety of County residents from the harmful effects of exposure to excessive noise and vibration. (Modified Goal 8.A)**

Policy X.X-1 **Exterior Environmental Noise Standards.** Require development of new noise-sensitive land uses to mitigate noise impacts where the projected exterior environmental noise levels exceed those shown in Table 1. (Modified Policy 8.A-1 and Policy 8.A-4)

Policy X.X-2 **Exterior Incremental Environmental Noise Standards.** Require new development to mitigate noise impacts on noise-sensitive uses where the projected increases in exterior noise levels exceed those shown in Table 2. (New Policy)

Policy X.X-3 **Interior Noise Standards.** Require new development to mitigate noise impacts to ensure acceptable interior noise levels appropriate to the land use type as shown in Table 1. (Modified Policy 8.A-4)

Policy X.X-4 **New Stationary Noise Sources.** Require new stationary noise sources to mitigate noise impacts on noise-sensitive uses wherever the noise from that source alone exceeds the exterior levels specified in Table 3. (Modified Policy 8.A-2, 8.A-5, and 8.A-6)

Policy X.X-5 **Frequent, High-Noise Events.** Require development of noise-sensitive uses subject to a discretionary permit and proposed in areas subject to frequent, high-noise events (such as aircraft over flights, or train and truck passbys) to adequately evaluate and mitigate the potential for noise-related impacts to ensure that noise-related annoyance, sleep disruption, speech interference, and other similar effects are minimized using metrics (such as the "Single Event Level" metric used by the Federal Aviation Administration to evaluate the sleep disturbance potential of aircraft flyover noise) and methodologies appropriate to the effect(s) to be assessed and avoided. (New Policy)

Policy X.X-6 **Construction Noise.** Require discretionary projects to limit noise-generating construction activities within 1,000 feet of noise-sensitive uses (i.e., residential uses, daycares, schools, convalescent homes, and medical care facilities) to daytime hours between 7:00 a.m. and 6:00 p.m. on weekdays, 8:00 a.m. and 5:00 p.m. on Saturdays, and prohibit construction on Sundays and holidays unless permission for the latter has been applied for and granted by the County. (New Policy)

Policy X.X-7 **Vibration Standards.** Require construction projects and new development anticipated to generate a significant amount of vibration to ensure

acceptable interior vibration levels at nearby noise-sensitive uses based on Federal Transit Administration criteria as shown in Table 4. (New Policy)

Implementation Program 1 for Policies X.X-1 to X.X-7:

1. Require new noise-sensitive uses to prepare an acoustical study if the new noise-sensitive use is: (New Implementation Program)

    - Within the existing or future 60 dBA Ldn contour of a roadway for which the noise contours have been mapped or tabulated in the Sutter County General Plan Noise Element;

    - Within 750 feet of a railroad line, 500 feet of a principal arterial roadway, or 100 feet of a minor arterial roadway for which noise contours have not been mapped or tabulated in the Sutter County General Plan Noise Element;

    - Within the existing or future 60 dBA CNEL aircraft noise contour of an airport/airstrip for which noise contours have been mapped under FAA mandate or in an area near an airport/airstrip that may be subject to frequent, high-noise events from aircraft operations;

    - Within an area around a stationary noise source that may be subject to noise levels higher than the standard appropriate to the new use as specified in the Sutter County General Plan Noise Element; or

    - Determined to have the potential to exceed established noise standards specified in the Sutter County General Plan Noise Element by the Sutter County Community Services Director.

2. Require new development that has the potential to generate noise that will exceed the levels contained in Tables 1 through 4 that may affect a noise-sensitive use to prepare an acoustical study.

3. Where required as part of the environmental review process, a project applicant shall be required to have an acoustical study prepared. The acoustical study shall:

    - Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics who is included on the County's approved consultant list. The person preparing the acoustical study shall consult with Planning Division staff to review specific issues or circumstances prior to commencing the study.

    - Provide a general description of the project and the noise sources of concern. Appropriate maps shall be included.

    - Describe the methodology that will be used to assess noise impacts. If computer models are to be used for noise predictions,

they should be standard versions approved by the FHWA, FAA, Caltrans, or other government agencies.

- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and predominant noise sources.

- Estimate existing and projected noise levels and compare those levels to the adopted policies and standards of the Noise Element.

- Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element. Where feasible, noise mitigation measures should focus on site planning and project design solutions rather than the creation of noise barriers. Mitigation measures must be written with specific mitigation needed (e.g. solid masonry wall) and include any proposed follow-up noise monitoring if needed.

- Estimate noise exposure after the prescribed mitigation measures have been implemented.

4. Adopt a Noise Ordinance that includes the following: (New Implementation Program)

   - Exterior and interior noise standards consistent with Tables 1 through 4;
   - Guidelines and technical requirements for taking noise measurements, evaluating noise impacts, and preparing acoustical studies to determine conformance with provisions of this ordinance; and
   - Standards for construction equipment and noise-emitting construction activities.

Policy X.X-8 **Airport Noise Contour.** Limit noise sensitive uses within the 65 dBA CNEL airport noise contour, or in accordance with plans prepared by the Airport Land Use Commission. Only approve noise-compatible land uses within the 65 dBA CNEL airport noise contour. (New Policy)

TABLE 1

MAXIMUM ALLOWABLE ENVIRONMENTAL NOISE STANDARDS

Land Use	Exterior Noise Level Standard for Outdoor Activity Areas[1]	Interior Noise Level Standard	
	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB	L_{eq}, dB[2]
Residential (Low Density Residential, Duplex, Mobile Homes)	60[3]	45	N/A
Residential (Multi Family)	65[4]	45	N/A
Transient Lodging (Motels/Hotels)	65[4]	45	N/A
Schools, Libraries, Churches, Hospitals, Nursing Homes, Museums	70	45	N/A
Theaters, Auditoriums	70	N/A	35
Playgrounds, Neighborhood Parks	70	N/A	N/A
Golf Courses, Riding Stables, Water Recreation, Cemeteries	75	N/A	N/A
Office Buildings, Business Commercial and Professional	70	N/A	45
Industrial, Manufacturing, Utilities, and Agriculture	75	N/A	45

1 Outdoor activity areas for residential developments are considered to be the back yard patios or decks of single-family residential units, and the patios or common areas where people generally congregate for multi-family development.

Outdoor activity areas for non-residential developments are considered to be those common areas where people generally congregate, including outdoor seating areas.

Where the location of outdoor activity areas is unknown, the exterior noise standard shall be applied to the property line of the receiving land use.

2 As determined for a typical worst-case hour during periods of use.

3 Where it is not possible to reduce noise in outdoor activity areas to 60 dB, L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior level of up to 65 dB, L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

4 Where it is not possible to reduce noise in outdoor activity areas to 65 dB, L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior level of up to 70 dB, L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Note: Where a proposed use is not specifically listed on this table, the use shall comply with the noise exposure standards for the nearest similar use as determined by the Community Services Department.

Table 2
Exterior Incremental Environmental Noise Impact Standards for Noise-Sensitive Uses (dBA)

Residences and buildings where people normally sleep[1]		Institutional land uses with primarily daytime and evening uses[2]	
Existing L_{dn}	Allowable Noise Increment	Existing Peak Hour L_{eq}	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Source: Federal Transit Administration, *Transit Noise Impact and Vibration Assessment*, May 2006.

1 This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

2 This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.

Note: Noise levels are measured at the property line of the noise-sensitive use.

TABLE 3

NOISE LEVEL STANDARDS FROM STATIONARY SOURCES

Noise Level Descriptor	Daytime (7am to 10pm)	Nighttime (10pm to 7am)
Hourly L_{eq}, dB	55	45
Maximum level, dB	70	65

Note: Noise levels are measured at the property line of the noise-sensitive use.

Table 4
Ground-Borne Vibration Impact Criteria for General Assessment

Land Use Category	Impact Levels (VdB)		
	Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations	65[4]	65[4]	65[4]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Source: Federal Transit Administration, Transit Noise Impact and Vibration Assessment, May 2006.

1 "Frequent Events" is defined as more than 70 vibration events of the same source per day.
2 "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.
3 "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.
4 This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.

Note: Vibration levels are measured in or near the vibration-sensitive use.