NOISE ELEMENT

INTRODUCTION

The Noise Element provides comprehensive goals, policies and programs to control and abate environmental noise and to protect the citizens of Live Oak from excessive noise exposure. The Noise Element is intended to:

- ✓ provide sufficient information so that noise may be effectively considered in the land use planning process;
- ✓ develop strategies for abating excessive noise exposure through cost-effective mitigation measures in combination with appropriate zoning to avoid incompatible land uses;
- ✓ protect areas where noise levels are acceptable and noise sensitive areas from excessive noise;
- ✓ protect existing noise-producing agricultural, commercial, and industrial uses from encroachment by noise-sensitive land uses; and,
- ✓ provide guidance for the City in balancing goals for the community's noise environment with other environmental goals, economic and social goals, and goals for fiscal sustainability and balanced urban development, including redevelopment and revitalization.

California Government Code Section 65302(f), the "Guidelines for the Preparation and Content of Noise Elements of the General Plan" and other state guidelines, specify both the contents of a Noise Element and the methods used in its preparation. As adopted, the Office of Noise Control Guidelines require that certain major noise sources and areas containing noise-sensitive land uses be identified and quantified by preparing generalized noise exposure contours for current and projected levels of activity within the community.

KEY ISSUES

The following noise-related key issues inform this element:

- ✓ The primary sources of noise in the Live Oak Planning Area are State Route (SR) 99 and other roadways, industrial operations, agricultural activities, and Union Pacific Railroad operations.
- ✓ Noise-sensitive land uses in the community include residences, parks, schools, and medical and other health care facilities.
- ✓ The City has the opportunity in planning for substantial long-term growth to avoid conflicts relative to noise through thoughtful land use and transportation planning.

BACKGROUND AND CONTEXT

Noise is commonly defined as unwanted sound. At high enough levels, noise can become a serious community health problem. As a form of environmental stress, noise can interfere with human activities such as sleep, conversation, recreation, and tasks demanding concentration.

Examples of major noise sources existing within the city of Live Oak include:

- ✓ Highway 99;
- ✓ major local streets;
- ✓ railroad operations;
- ✓ aircraft overflight; and,
- ✓ local industrial facilities.

State law requires noise-sensitive areas to be considered in the Noise Element. The 2030 General Plan addresses noise relative to such noise-sensitive land uses as:

- ✓ residential areas;
- ✓ schools;
- ✓ hospitals and other medical facilities; and,
- ✓ rest homes.

For a detailed background on the existing noise environment in Live Oak and for information on basic acoustics, please refer to the General Plan Noise Technical Background Report and the "Noise" section of the General Plan Environmental Impact Report, which are incorporated by reference. Noise contour maps are provided in these documents, in addition to other background information.

NOISE FRAMEWORK

In the General Plan Noise Technical Background Report (under separate cover), the City identified important sources of noise in the existing community, which include industrial sources and transportation routes. Some of these noise sources affect surrounding uses. The policies and programs contained in the 2030 General Plan attempt to avoid the planning mistakes of the past. For example, the City will use a network of connected, smaller-volume roadways that disperse traffic and therefore lower noise along such roadways. The City will:

- ✓ use buffers to separate residential uses from large-volume roadways and the railroad;
- ✓ design noise generating industrial and commercial uses to avoid impacts on noise-sensitive receptors; and,
- ✓ implement technologies for quieter railroad crossings.

These approaches are referenced in this Element, as well as the Land Use, Circulation, and Community Character and Design Elements. Overall, the City wishes to plan intelligently in order to reduce substantial noise conflicts and avoid the need for soundwalls and other reactive fixes that create unnecessary barriers and prohibit community connectivity and cohesiveness.

GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS

Following is a description of Live Oak's goals, policies, and implementation programs to address existing and future noise issues.

GOAL NOISE-1. Create land use patterns and transportation networks that minimize noise problems.

Policy NOISE-1.1 New development shall disperse vehicular traffic onto a network of fully connected smaller roadways, where feasible, and minimize funneling of local traffic onto large-volume, high-speed roadways located within or adjacent to neighborhoods.

Policy NOISE-1.2 New development of noise-sensitive land uses in areas exposed to existing or projected levels of noise from transportation, stationary sources, or agricultural operations exceeding, or estimated to exceed, levels specified in Table NOISE-1 and NOISE-2 shall implement site planning techniques and/or feasible mitigation shown to reduce noise exposure in outdoor activity areas and interior spaces to the levels specified in Table NOISE-1 and NOISE-2. Techniques can include dispersing traffic, traffic calming, site planning, buffering, sound insulation, or other methods approved by the City.

Policy NOISE-1.3 Proposed noise-generating industrial and other land uses shall be located away from noise-sensitive land uses, shall enclose any substantial noise sources completely within buildings or structures, or use other site planning or mitigation techniques to achieve the standards established in this Noise Element (see Table NOISE-2).

Policy NOISE-1.4 Soundwalls are discouraged as a method for reducing noise exposure that could be addressed through other means.

Policy NOISE-1.5 The City will require buffers between proposed residences and ongoing agricultural operations outside of the Sphere of Influence to reduce noise exposure.

Policy NOISE-1.6 In general, the newest land use is responsible for mitigating noise. If a use that generates noise is proposed adjacent to lands zoned for uses that may be sensitive to noise (i.e., residential neighborhoods), then the noise-generating use is responsible for mitigating noise consistent with Table NOISE-2 standards at the property line of the generating use.

TABLE NOISE-1
MAXIMUM ALLOWABLE NOISE EXPOSURE FROM TRANSPORTATION NOISE SOURCES AT NOISE-SENSITIVE LAND USES

Land Use	Interior Spaces		Outdoor Activity Areas (dBA L_{dn})						
	dBA L_{dn}	dBA L_{eq}	55	60	65	70	75	80	
Residences	45	-							
Hotels, Motels	45	-							
Schools, Libraries, Museums, Places of Worship, Hospitals, Nursing Homes	45	45							
Theaters, Auditoriums, Concert Halls, Amphitheaters	35	-							
Outdoor Spectator Sports	-	-							
Playgrounds, Parks	-	-							
Golf Courses Riding Stables, Water Recreation, Cemeteries	-	-							
Office Buildings, Retail, and Commercial Services	45	-							
Industrial, Manufacturing, Utilities, Agriculture	-	-							

Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise requirements.

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.

Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.

Clearly Unacceptable – New construction or development clearly should not be undertaken.

Notes: dBA = A-weighted decibels; L_{dn} = day-night average noise level; L_{eq} = energy-equivalent noise level. This table does not apply to existing transportation noise sources affecting existing land uses. Outdoor activity areas are the portion of a property where activities are normally expected. This would include portions of backyards, decks, balconies, pools, sports or game courts, and patios, but would not include front yards, spaces next to parking, roads, driveways, or vehicular loading areas. Hospitals and nursing homes use the L_{dn} interior standard, whereas schools, libraries, museums, and places of worship use a L_{eq} interior standard. Office buildings have an interior standard, but retail and commercial service uses do not have an interior standard.
Source: Governor's Office of Planning and Research 2003 General Plan Guidelines.

TABLE NOISE-2
MAXIMUM ALLOWABLE NOISE EXPOSURE FROM NONTRANSPORTATION NOISE SOURCES AT NOISE-SENSITIVE LAND USES

Noise Level Descriptor	Daytime (7 a.m.–10 p.m.)	Nighttime (10 p.m.–7 a.m.)
Hourly L_{eq}	60 dBA	45 dBA
L_{max}	75 dBA	65 dBA

Notes:
dBA = A-weighted decibel; L_{eq} = energy-equivalent noise level; L_{max} = maximum noise level.
Each of the noise levels specified shall be lowered by 5 dBA for simple tone noises, noises consisting primarily of speech, music, or for recurring impulsive noises. These noise-level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). Noise-sensitive land uses include schools, hospitals, rest homes, long-term care, mental care facilities, residences, and other similar land uses. Outdoor activity areas are defined in Table Noise-1. Where development projects or roadway improvement projects could potentially create noise impacts, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. Such analysis shall be the financial responsibility of the applicant and be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics. Mitigation strategies shall emphasize site planning and design over other types of mitigation.

GOAL NOISE-2. Minimize noise impacts associated with development projects and other land use changes.

Policy NOISE-2.1 Developments that generate traffic shall be designed, and if necessary, mitigated to ensure acceptable daytime and nighttime land use/noise environment at outdoor activity areas according to the standards presented in Table NOISE-1 for transportation related noise. If existing noise levels exceed the acceptable levels listed in Table NOISE-1 at affected outdoor gathering spaces of noise sensitive land uses, projects are required to incorporate mitigation to reduce noise exposure in outdoor activity areas to the maximum extent feasible and to include feasible mitigation for interior spaces to achieve the levels specified in Table NOISE-1 and NOISE-2.

Policy NOISE-2.2 Developments that generate, or are affected by, noise related to anything other than transportation shall be designed and, if necessary, mitigated below maximum allowable levels specified in Table NOISE-2, as measured at outdoor activity areas of existing and planned noise-sensitive land uses. If existing noise levels exceed the maximum allowable levels listed in Table NOISE-2, as measured at outdoor activity areas of noise sensitive land uses, projects are required to incorporate mitigation to reduce noise exposure in outdoor activity areas to the maximum extent feasible and to include feasible mitigation for interior spaces to achieve the levels specified in Table NOISE-1 and NOISE-2.

Policy NOISE-2.3 The maximum noise level resulting from new sources and ambient noise shall not exceed the performance standards in Table NOISE-3, as measured at outdoor activity areas of any affected noise sensitive land use except:

- ✓ If the ambient noise level exceeds the standard in Table NOISE-3, the standard becomes the ambient level plus 5 dBA.

- ✓ Reduce the applicable standards in Table NOISE-3 by 5 decibels if they exceed the ambient level by 10 or more dBA.
- ✓ The City will exempt all school related events and City sponsored events from noise standards outlined in this chapter. Events that are not included in these two categories may apply for an exemption.

Policy NOISE-2.4 New development shall provide all feasible noise mitigation to reduce construction and other short-term noise and vibration impacts as a condition of approval.

Policy NOISE-2.5 New development shall ensure that construction equipment is properly maintained and equipped with noise control, such as mufflers, in accordance with manufacturers' specifications.

Policy NOISE-2.6 Any new noise- or vibration-sensitive receptor proposed within 100 feet of the railroad tracks shall be required to undergo a vibration analysis and identify feasible mitigation, as appropriate, prior to project approval.

TABLE NOISE-3
NOISE LEVEL PERFORMANCE STANDARDS FOR NONTRANSPORTATION NOISE SOURCES

Cumulative Duration of a Noise Event[1] (Minutes)	Maximum Exterior Noise Level Standards[2]	
	Daytime dBA L_{max}[2,4]	Nighttime dBA L_{max}[3,4]
30–60	50	45
15–30	55	50
5–15	60	55
1–5	65	60
0–1	70	65

Notes:
dBA = A-weighted decibel; L_{max} = maximum noise level.
[1] Cumulative duration refers to time within any 1-hour period.
[2] Daytime = hours between 7:00 a.m. and 10:00 p.m.
[3] Nighttime = hours between 10:00p.m. and 7:00 a.m.
[4] Each of the noise level standards specified may be reduced by 5 dBA for tonal noise (i.e., a signal which has a particular and unusual pitch) or for noises consisting primarily of speech of for recurring impulsive noises (i.e., sounds of short duration, usually less than one second, with an abrupt onset and rapid decay such as the discharge of firearms).

Implementation Program NOISE-1

Following adoption of the 2030 General Plan, the City will review the noise regulations in the Municipal Code and make revisions necessary to conform to this Noise Element. The City will consider permitting for special events. Applicants for the permit should provide a detailed outline of the event including hours of operation, why the additional noise is acceptable in their case, and how they plan to reduce noise to the lowest possible level.

Implementation Program NOISE-2

The City will ensure that personnel charged with enforcing such ordinances are properly trained and equipped for on-site measurement techniques and other necessary tasks. Enforcing personnel shall use a properly calibrated Type-II or better sound-level meter (or equivalent future technology) for situations that require a numerical measurement. The measuring instrument shall be placed at 4.5 to 6 feet above the ground on the property boundary in question. The measurement shall be taken in A-weighted decibels and measured for no less than 15 minutes.

Implementation Program NOISE-3

The City will coordinate with Sutter County and the California Department of Transportation to ensure transportation planning and improvement programs are consistent with this Noise Element.

Implementation Program NOISE-4

The City will coordinate with Union Pacific Railroad with the goal of establishing a Quiet Zone within the city limits of Live Oak, as feasible. As funding is available, the City will improve crossings with appropriate technologies to implement the Quiet Zone. The City will seek the cooperation of Union Pacific Railroad to reduce or eliminate the use of horns in noise sensitive areas of the community by installing alternative sounding devices.