

Noise Element

Chapter 3

3. NOISE ELEMENT

3.1 INTRODUCTION

The Noise Element is a mandatory element of the General Plan (California Government Code Section 65302 (f)). The State, recognizing the effects of noise upon people's health and well being, required that local jurisdictions prepare statements of policy indicating their intentions regarding noise and noise sources, establish desired maximum noise levels according to land use categories, set standards for noise emission from transportation facilities and fixed-point sources, and prepare a program for implementation of noise control measures. Noise Elements are prepared in accordance with Guidelines for the Preparation and Content of Noise Elements of the General Plan published by the California Office of Noise Control in 1976. Those Guidelines are found in Appendix A of the General Plan Guidelines prepared by the State Office of Planning and Research (OPR).

The major purpose of the Noise Element is to: (1) establish reasonable standards for maximum desired noise levels in Kern County, and; (2) develop an implementation program which could effectively deal with the noise problem.

Considerable research has been done to determine the effects of various sound pressure levels on human health and on the successful performance of various human activities. It is known that noises of 120 dB(A) and higher will cause ear pain in most people; much lower levels may have permanent adverse effects on hearing.

The federal standards for industrial safety regulate the amount of time workers may be exposed to sound levels above 90 dB(A). This level was selected on the assumption that inability to hear at frequencies above 2,000 Hz is unimportant to speech communication. Tests show, however, that hearing loss of this extent will have an adverse effect on hearing low-level conversation and on hearing ordinary speech in the presence of background noise levels which commonly occur in everyday listening conditions.

It is desirable to control ambient noise level to reduce the adverse effects of noise. Ambient noise is the all-encompassing noise associated with a given environment; it usually is a composite of sounds from many sources, near and far.

The U.S. Environmental Protection Agency and the California Department of Health have suggested standards for ambient noise. These suggestions have been utilized in developing noise standards in Kern County.

Of primary importance in controlling noise in Kern County is protection of the public health, particularly insuring against hearing loss resulting from community noise. Next in importance is minimization of adverse effects of noise on the economic well-being of the community, and third, minimization of annoyance caused by noise.

Good land use planning should be employed to insure that the quality of the noise environment in Kern County does not deteriorate, and whenever practical be improved. Where noise sensitive uses are proposed, appropriate noise control measures shall be required as a condition of approval for discretionary projects. Measures to control the quality of the noise environment could include architectural design to reduce noise impact, acoustical insulation of exterior walls and construction of sound barriers.

The following major noise sources were considered in the preparation of the Noise Element:

- Highways and freeways
- Primary arterial and major local streets
- Railroad operations
- Aircraft and airport operations
- Local industrial facilities
- Other stationary sources

Railroad noise, although louder than highway noise, generally affects smaller areas. Railroad yards and rail alignments adjacent to residential areas should have noise barriers. Acoustical noise barriers could reduce existing rail noise up to 20 dB (A).

Little can be done to control airport noise. Through Federal standards more rigid noise controls are being required on aircraft. By adjusting the times of arrival and departure, flight patterns, and the time of day that high noise levels occur, noise levels from airports can be made more tolerable.

Noise contours have been prepared for all airports in the County, major railroad and highways within urban areas. Airport noise contours should be used to determine where noise insulation might be required and are located in the Airport Land Use Compatibility Plan (ALUCP). Any new airport or airport extension will be required to provide estimates of noise impact in conjunction with the required Master Plan updates to the ALUCP. The highway noise contours are contained in Appendix G. Noise contours for Interstate 5; State Route 14, 33, 43, 58, 99, 119, 155, 166, 178, 184, 202, 204, 223, and 395 are shown in Appendix G. Noise contours for the AT & SF Railroad, Southern Pacific Railroad, and Sunset Railroad are shown in Appendix G. The highway and railroad contours are not intended to provide distinct boundaries between noise levels, but as approximations of noise levels that can serve as the basis for further studies. As

these studies are completed, noise treatment may be needed to compensate for higher noise levels.

Definitions

1. Community Noise Equivalent Level (CNEL) – A measure of the cumulative noise exposure in the community, with greater weights applied to evening and nighttime periods. For CNEL calculations, day is defined as 7 a.m. to 7 p.m., and this period has a weighting factor of one; evening is 7 p.m. to 10 p.m. and has a weighting factor of three; and night is from 10 p.m. to 7 a.m. and has a weighting factor of ten. Noises occurring at night are given a substantially heavier weight, since for most people, this is the time when noise is most disturbing.
2. Day Night Average Sound Level, Ldn – The same as CNEL except that the evening time period is not considered separately, but instead it is included as part of the daytime period. Noise contours developed using CNEL and Ldn procedures will normally agree within one dB(A), which is an insignificant difference. The Ldn is a computational simplification of the CNEL.

3.2 NOISE SENSITIVE AREAS

The following noise sensitive land uses have been identified in the County:

- Residential areas
- Schools
- Convalescent and acute care hospitals
- Parks and recreational areas
- Churches

Goals

- 1) Ensure that residents of Kern County are protected from excessive noise and that moderate levels of noise are maintained.
- 2) Protect the economic base of Kern County by preventing the encroachment of incompatible land uses near known noise producing roadways, industries, railroads, airports, oil and gas extraction, and other sources.

Policies

- 1) Review discretionary industrial, commercial, or other noise-generating land use projects for compatibility with nearby noise-sensitive land uses.
- 2) Require noise level criteria applied to all categories of land uses to be consistent with the recommendations of the California Division of Occupational Safety and Health (DOSH).
- 3) Encourage vegetation and landscaping along roadways and adjacent to other noise sources in order to increase absorption of noise.
- 4) Utilize good land use planning principles to reduce conflicts related to noise emissions.
- 5) Prohibit new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into the project design. Such mitigation shall be designed to reduce noise to the following levels:
 - a) 65 dB L_{dn} or less in outdoor activity areas;
 - b) 45 dB L_{dn} or less within interior living spaces or other noise sensitive interior spaces.

- 6) Ensure that new development in the vicinity of airports will be compatible with existing and projected airport noise levels as set forth in the ALUCP.
- 7) Employ the best available methods of noise control.
- 8) Enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code concerning the construction of new multiple-occupancy dwellings such as hotels, apartments, and condominiums.

Implementation Measures

The following are programs to be carried out by the Kern County to implement the goals and policies of the Noise Element.

- A) Utilize zoning regulations to assist in achieving noise-compatible land use patterns.
- B) Require proper acoustical treatment of transportation facilities, including highways, airports, and railroads.
- C) Review discretionary development plans, programs and proposals, including those initiated by both the public and private sectors, to ascertain and ensure their conformance to the policies outlined in this element.
- D) Review discretionary development plans for proposed residential or other noise sensitive land uses in noise-impacted areas to ensure their conformance with the noise standards of 65 dB L_{dn} or less in outdoor activity areas and 45 dB L_{dn} or less within interior living spaces.
- E) Review discretionary development plans to ensure compatibility with adopted Airport Land Use Compatibility Plans.
- F) Require proposed commercial and industrial uses or operations to be designed or arranged so that they will not subject residential or other noise sensitive land uses to exterior noise levels in excess of 65 dB L_{dn} and interior noise levels in excess of 45 dB L_{dn} .
- G) At the time of any discretionary approval, such as a request for a General Plan Amendment, zone change or subdivision, the developer may be required to submit an acoustical report indicating the means by which the developer proposes to comply with the noise standards. The acoustical report shall:
 - a) Be the responsibility of the applicant.

- b) Be prepared by a qualified acoustical consultant experienced in the fields of environmental noise assessment and architectural acoustics.
 - c) Be subject to the review and approval of the Kern County Planning Department and the Environmental Health Services Department. All recommendations therein shall be complied with prior to final approval of the project.
- H) Encourage cooperation between the County and the incorporated cities within the County to control noise.
- I) Noise analyses shall include recommended mitigation, if required, and shall:
- a) Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.
 - b) Include estimated noise levels, in terms of CNEL, for existing and projected future (10 – 20 years hence) conditions, with a comparison made to the adopted policies of the Noise Element.
 - c) Include recommendations for appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.
 - d) Include estimates of noise exposure after the prescribed mitigation measures have been implemented. If compliance with the adopted standards and policies of the Noise Element will not be achieved, a rationale for acceptance of the project must be provided.
- J) Develop implementation procedures to ensure that requirements imposed pursuant to the findings of an acoustical analysis are conducted as part of the project permitting process.