Chapter Six

NOISE

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Chapter Six

NOISE

I. INTRODUCTION

A. Background

The Noise Element of the General Plan is intended to limit the exposure of residents of the City to excessive noise levels generated by various sources. Noise is defined as sound which either bothers people, creates difficulty in communications, or causes injury to the ears. Noise analysis provides valuable input to the Circulation, Land Use, and Housing Elements of the General Plan, identifying areas exposed to high levels of noise. The Element also provides the data necessary to prevent the unnecessary exposure of people and sensitive land uses to high levels of noise. It will also describe remedial measures for existing noise problems and preventative actions to protect future development.

The 1985 Noise Element of the General Plan utilized the information from the Bishop Community Plan and was developed without regard to political jurisdictions. The same basic information will be utilized for this Element but will include additional information from the 1991 Inyo County Airport Policy Plan and Comprehensive Land Use Plan. This information pertains to the noise levels and land use impacts surrounding Bishop Airport. Similar to the other elements of the General Plan, this element will focus on the existing City area and the noise impacts that affect those areas.

B. Purpose

The purpose of the Noise Element is to establish policies related to the control and abatement of environmental noise and to protect the citizens of Bishop from excessive exposure to noise. These policies and programs will be used as the guide for the location, type, and intensity of future urban development within the City, with particular consideration to noise impacts. This process will assure that compliance with state noise standards will be achieved.

The Noise Element is designed to develop policies, programs, and actions which will reduce the potential loss of property values, social character, psychological stability, and physical well-being which may result from excessive noise levels.

C. Authorization

The Noise Element of the General Plan Update is a mandatory component pursuant to state law (California Planning and Zoning Law, Section 65302(f). It must recognize the guidelines adopted by the California Office of Noise Control pursuant to Section 46050.1 of the Health and Safety Code. It must also quantify the community noise environment in terms of CNEL

or Ldn metrics for both current and projected levels of growth. More importantly, the Noise Element should provide a systematic approach to:

- the measurement and modeling of noise
- the establishment of noise standards
- the control of major noise sources
- community planning for the regulation of noise

The Noise Element is a guide to be used to identify and mitigate noise problems and establishes uniformity between City policy and programs undertaken to control and abate environmental noise. The Noise Element also serves as a guideline for compliance with the state's noise insulation standards.

II. SUMMARY OF ISSUES, OPPORTUNITIES & CONSTRAINTS

A. Issues

- Will the increasing usage of Bishop Airport have a significant impact on the ability to accommodate and market new development in the northeast portion of the City?
- How can the City assure that the community noise environment is maintained at an acceptable level, even though the level of noise generating activity is expected to increase?
- What does the City need to do in order to adequately plan for increased noise impacts related to airport, industrial, and transportation caused noise?

B. Opportunities

- The existing noise environment of the Bishop area is relatively quiet, due to the dominance of undeveloped land and open space.
- Most of the noise generating land uses are located in specific locations of the City, including the 395 corridor and the light industrial development on the northeast corner of Bishop.
- The Bishop Airport is situated away from the City's urban core, reducing the potential impacts of aviation related noise.

C. Constraints

- Increased use of Highway 395, Route 6 and 168 through Bishop will continue to add to the noise level, thus gradually expanding the 65 CNEL noise contours.

- Increased usage of the Bishop Airport for passenger and aviation industrial service could increase the level of noise impacts on portions of Bishop.

- Bishop Airport is not controlled by the City of Bishop, reducing the ability of the City to moderate activities which may affect existing and future land uses.

- Although the growth rate in the Bishop area is slight, a rise in the population and employment base could increase the noise levels within the City.

III. EXISTING CONDITIONS

A. Major Sources of Noise

There are a variety of noise sources in the City and immediate vicinity which can be divided into two categories: mobile sources and stationary sources. Mobile noise sources include automobiles, trucks, railroads, buses, motorcycles, airplanes, and other moving vehicles. Fixed sources of noise include power equipment, industrial plants and other activities such as rock concerts, auto racing, and group recreational activities. Within the planning area there are three noise sources of particular concern: streets and highways, the Bishop Airport and noise emitted in conjunction with non-residential land uses.

1. Streets and Highways

As identified in the Circulation Element, U.S. 395, State Route 168 and U.S. 6 serve as the City's principal arterials. North-south movement is accommodated by U.S. 395 (Main Street and North Sierra Highway) which also provides frontage for much of the City's commercial uses. This route also serves as the principal inter-regional transportation corridor used extensively by recreational traffic linking the region with southern California. In addition to providing arterial access to the Dixon Lane residential area, U.S. 6 carries considerable truck traffic between Los Angeles and points north and east. East-west movement is accommodated on State Route 168 linking West Bishop, Rocking K and Bishop Creek with the commercial center in the City of Bishop. This route also provides access to the recreational opportunities in the Bishop Creek area west of the City. Barlow Lane, Home Street, East Line Street, Sierra Street, Hanby Street, Mandich Drive, Sunland Drive, Elm Street, Fowler Street, South Street, Dixon Lane, Pa Me Lane, See Vee Lane, Red Hill Road, Ed Powers Road and Brockman Lane serve in varying degrees as collectors for the area's traffic.

Current traffic counts are unavailable within the City except for state routes. As a result the total traffic volume is unknown. Table 6-1 provides information on the most recent and complete traffic counts for the state routes and traffic growth since 1977.

Table 6-1
1990 Traffic Volumes

Route	Annual ADT	Peak Month ADT	Peak Hour	% Increase from 1977
Rte 6 @ Texaco Corner	3,200	3,300	190	5%
Rte 6 @ Silver Canyon	2,100	2,300	200	N/A
Rte 395 @ Rte 6	15,000	17,400	1,050	N/A
Rte 395 @ South St.	10,600	13,100	1,500	+58%
Rte 395 @ 168 West	17,800	20,500	1,700	+69%
Rte 395 @ Ed Powers	11,000	13,000	990	N/A
Rte 168 @ Rte 395	10,500	11,200	1,100	-4%
Rte 168 @ Brockman	8,000	9,100	800	+55%

Source: Caltrans District 9 Traffic Counts 1977-1990.
Note: ADT- Average Daily Traffic
Peak Mo. ADT - Average Daily Traffic during month of highest ADT

Traffic on these routes has increased at an average annual rate ranging from 5 to 13 percent. Approximately 30 percent of the traffic flow consists of trucks and recreation vehicles.

Noise generated by streets and highways through the City is dependent upon volume of traffic, mix of vehicles, speed, grade of roadway, condition of roadway, and starts and stops required. By incorporating Caltrans data and utilizing the latest traffic volumes (1990), associated noise inventory data has produced noise contours for the state maintained routes in the City and immediate area. This information indicates that the traffic on U.S. 395 and State Route 168 constitutes the greatest source of community noise, concentrated in the central business district.

2. Airport Noise

General aviation and regularly scheduled air carrier operations at the Bishop Airport are also a significant source of community noise, although the impacts on the City are minimal at present. The Bishop Airport Master Plan and the Inyo County Policy Plan and Airport Comprehensive Land Use Plans (1991) have been utilized to assess the existing noise levels generated by airport operations. Land leased for agriculture by the LADWP, combined with the predominantly day time, light plane general aviation orientation of the airport, expose very few persons to excessive noise levels. The principal nuisance noise levels and exposure result from occasional low flights over the community and summer military helicopter exercises, based out of distant defense installations.

Noise impacts related to aircraft operations from the Bishop Airport are quantified in CNEL noise contours. It should be noted that the activity levels projected to occur have not been realized. Under these circumstances, it is realistic to use the 1990 noise contour for the year 2000 planning purposes and subsequently the 2000 noise contour for the 2010 planning projection.

Present noise levels to 65 CNEL are contained within the airport boundary except for the end of runway 12/30 (southeast to northwest), where it encroaches into the Runway Protection Zone. The Policy Plan presented by Inyo County recommends acquisition of the RPZ and its incorporation into airport property. The projected 2010 noise contour does extend further into the adjoining land, but existing zoning in the area (OS and P) is compatible with California guidelines and effectively mitigates any noise consequences by assuring that no residential or industrial development will be located in the impact area.

Land uses of the Bishop General Plan are generally compatible with the projected use of the Bishop Airport. Operations from the east/west runway (07) fly over a predominantly industrial and commercial sector of the City. No land uses are contained in the Runway Protection Zone or the projected year 2010 65 CNEL noise contour of the airport.

3. Fixed Point Sources

Non-residential land uses, principally the heavier types of commercial activities (i.e. diesel-auto repair, lumber-construction yards, motels, etc.), are also significant sources of ambient noise levels. No specific information on the noise levels of these areas is available, although it is reasonable to assume that noise levels exceed 60 CNEL within and directly adjacent to these areas. Other noise generating uses include sewage treatment plants, public safety buildings, and public works facilities. These activities are generally isolated and surrounded by low intensity or open space lands, producing few complaints and little exposure to residential or other noise sensitive areas.

City and County officials report few noise complaints, although occasional activities at the Tri-County Fairgrounds such as Mule Days, the Rodeo, demolition derby and concerts produce excessive noise and some complaints. Noise related complaints are sometimes received by the City of Bishop as a result of recreational use of the Bishop Park during the late evening hours. Time limitations, scheduling and other considerations have minimized these noise related problems. Indiscriminate motorcycle use adjacent to residential areas produced an outpouring of complaints. Off-road vehicle restrictions have helped reduce the magnitude and frequency of these problems. Motorcycle use is confined to the Bishop Motorcycle Park and Poleta Off Road Vehicle Area. Both are located away from residential or other noise sensitive land uses.

Northern Inyo Hospital, Bishop Elementary Schools-Home and Elm Street, and the Bishop High School are located on the west side of the City of Bishop. Specific noise sensitive land uses found in the planning area are located adjacent to these facilities. In response to the noise potential of its location on West Line Street (State Route 168), the Hospital has been designed to mitigate the noise impact, including a noise barrier wall. The Elementary Schools are set back from West Line Street in order to reduce the noise within the classrooms. The playground of the Home Street School lies within a 65+ CNEL noise zone. The Bishop High School is buffered from West Line Street traffic noise by commercial development which fronts West Line Street. The City contains few resthomes or other specific types of noise sensitive uses. Those few that do exist are found scattered throughout the City and immediate area in various locations including heavy commercial zones. In general, few people are exposed to excessive noise levels

on a regular or sustained basis. Conflicting uses that do exist are primarily located along the principal arterials or within the downtown area.

IV. NEEDS RELATED TO NOISE LEVELS

A. Land Use Compatibility

Land uses, both existing and planned have a major role in determining the noise characteristics of the community. While the actual noise levels generated by various land use activities vary considerably, it is possible to generalize about the noise acceptability and compatibility of various community land uses. Such land use compatibility can be employed in the environmental review process to minimize potential noise impacts.

Table 6-2 identifies the overall land use compatibility guidelines related to noise exposure. These guidelines are used to determine the degree of noise that is generally acceptable to various land use activities.

Table 6-2 Land Use Compatibility Guidelines

B. Noise Reduction Measures

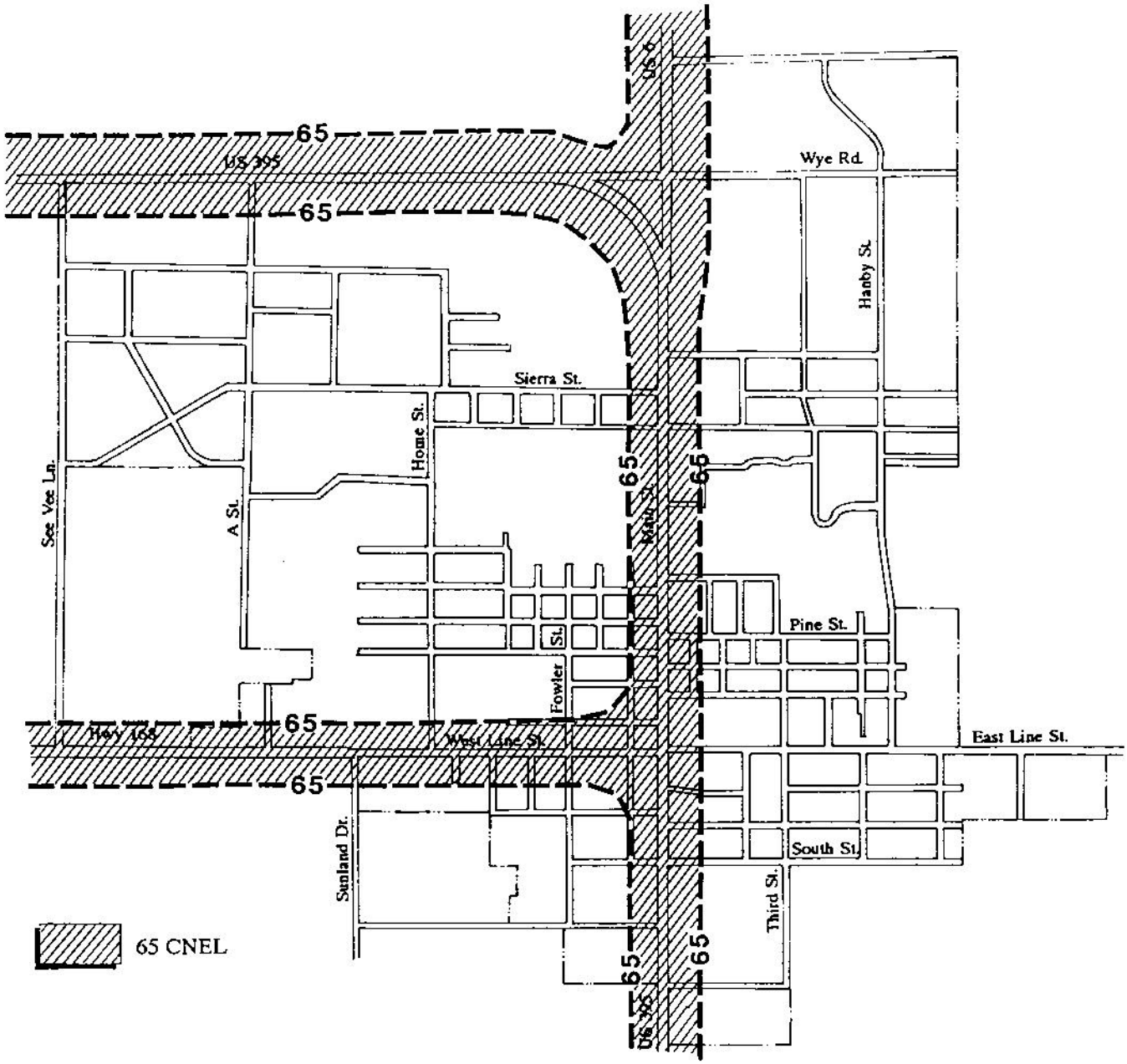
There are three basic strategies for noise reduction or control, including reduction at the source, along the transmission path, or at the receiver. Each situation requires its own approach, depending on the characteristics of the noise source and the sensitive receptors.

1. Source Reduction

Source reduction for mobile noise sources, automobiles, trucks, and aircraft is the responsibility of the State and Federal Governments. Typically these efforts involve the establishment of manufacturing and operating standards. Use of baffles, mufflers, speed limits, insulation and other similar techniques is required by those agencies. Control of land use or fixed point sources is the responsibility of local government as a part of its police powers authority. Control of these sources involves enclosure of the source, time limitations, baffling, and equipment replacement. Segregation of noise sources and noise sensitive land uses is the most permanent and effective form of noise control and is typified by the aggregation of noise generating activities, separated from noise sensitive land uses by open space or buffering techniques.

2. Transmission Path Reduction

As noted above, the easiest way to reduce the affect of noise is to increase the distance between the source and receptor. A doubling of the distance generally produces a 6 dB reduction, nearly one half of the perceived noise level. Planning to locate noise producing uses or activities away from noise sensitive areas can make a significant contribution to noise reduction. Noise-based setbacks and strategic buffering is often employed, utilizing noise barrier walls, berms, depressed grades, and building orientation to block the transmission of noise.



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3. **Receiver Reduction**

Noise insulation, building design, and noise sensitive site planning are used to attenuate noise exposure. Noise insulation techniques include the use of interior wall baffling, double pane glass, and noise reducing building materials, such as masonry and concrete. Since the efforts are expensive, use of these materials should only be used when the existing or future noise environment warrant their application. Avoidance of noise problems through noise sensitive planning is preferable to all of these mitigation measures.

C. Noise Standards

The Environmental Protection Agency recommends that ambient noise levels for residential neighborhoods should not exceed 45 dB (interior) and 55 dB (exterior). Single event sound levels should not exceed 6 dB over ambient levels. EPA also recommends that ambient noise levels should not exceed 65 dB in commercial/industrial with single event levels not to exceed an additional 8 dB. The State Guidelines employ a more realistic standard of 60 dB (CNEL) for these uses. Standards for construction related single event noise is 86 dB. Regardless of the standard employed, emphasis should be placed on creating quieter environments within residential areas, with a greater acceptance of higher noise levels in public places.

V. GOALS, POLICIES & ACTIONS

A. Goals

The following goals, policies and actions form the basis for decisions by the City relating to the exposure of people to excessive noise.

- To provide information concerning the community noise environment in order to make noise a consideration in the on-going planning process and related ordinances.
- To abate and control excessive noise.
- To avoid a mix of incompatible noise generating and noise sensitive land uses.
- To protect areas of the community which have "acceptable" or "sensitive" noise environments.
- To provide indoor noise environments that allow undisturbed conversation, sleep, study, work, relaxation, and privacy.

B. Policies

The following policies are intended to guide and influence the reduction of noise and noise impacts in the planning area.

- Maintain coordination and cooperation between agencies with noise control responsibilities.

- Encourage the enforcement of noise standards for motor vehicles by governmental agencies, including the Highway Patrol and the Bishop Police Department.
- Maintain streets in the City to an acceptable condition to minimize delays and congestion.
- Require emergency response agencies to monitor and regulate the use of emergency sirens within the City of Bishop.
- Promote site planning that incorporates adequate architectural design to minimize potential noise impacts.
- Promote the utilization of noise insulation materials in new construction for all dwellings.
- Discourage incompatible land uses where the noise level exceeds, or has the potential to exceed acceptable noise levels unless mitigation measures are implemented.
- Encourage the location of new noise generating development and activities in areas where the impact is reduced.
- The noise impact of intermittent activities, including those at the Fairgrounds, City Park, and new construction sites, should be considered and appropriate time limits of operation should be established.
- Industrial and heavy commercial areas shall be developed to limit noise exposure to less than 60 dB to surrounding residential or other sensitive land uses.
- Performance standards shall be developed and incorporated into the zoning ordinance to limit noise emissions from light industrial uses to less than 60 dB.
- The CEQA environmental review process, including potential mitigation measures, shall be utilized to identify and mitigate the potentially significant noise impacts generated by automobiles, industry, and airport operations.

C. Actions

The following actions will be implemented by the City of Bishop to promote a healthy environment in regard to the exposure of people to excessive noise levels. Various agencies are responsible for these actions and are identified.

- Enforce noise insulation standards for multiple family residential dwellings located in areas with projected noise levels in excess of 60 dB.

  Responsible Agency: Building Department

- Regulate the use of emergency sirens throughout the City and immediate area.

  Responsible Agency: City Police, California Highway Patrol, Emergency Response Agencies

- Enforce noise emission standards for motor vehicles.

  Responsible Agency: California Highway Patrol, Department of Motor Vehicles