

## VII. NOISE ELEMENT

In recognition of the adverse environmental impact of noise -- that excessive noise is socially disruptive, may be physically and psychologically damaging, and can diminish property values and levels of productivity -- the State now requires each community:

- to assess noise problems within the community,
- to measure and project noise impact of major transportation arteries,
- to adopt standards and criteria relating land use to reasonable noise levels, and
- to outline implementation measures.

### A. SETTING

#### 1. Sources

The City of Belvedere has increasingly found that noise is a source of community concern. Excessive noise from traffic, from construction equipment and activities, from yard/garden equipment, and other, more sporadic sources, including amplified music and speech from yacht club special events, is objectionable. Additionally, the irregular topography of the City, along with the surrounding water areas, causes noise to be transmitted in irregular ways, with some distant sources of noise seeming to be very near due to reflection off of water or hillside surfaces.

#### 2. Definition of Terms

1. Decibel: A unit for measuring the relative loudness of sounds detectable by the human ear, abbreviated dB(A).
2.  $L_{eq}$  is the equivalent of a steady noise containing the same amount of energy as a fluctuating noise over the same period.
3.  $L_{dn}$  is the day-night average noise level,  $L_{eq}$ , with a penalty for the nighttime hours -- that is, noise levels occurring between 11 pm and 7 am are treated as though they are 10 dB noisier than they are.

#### 3. Noise in Belvedere

The major noise generators affecting Belvedere are the two major roads serving the city: Tiburon Boulevard and the San Rafael Avenue - Beach Road loop. The following table shows existing and projected sound levels at selected distances from the center line of each road. Traffic noise includes buses.

Table N-1 - Traffic Noise

	Average Daily Traffic	Distance from C <sub>L</sub> of Roadbed Noise Calculation in L <sub>dn</sub> dB(A)					80	
		45	55	65	70	75		
Tiburon Blvd. from Trestle Glen to Main St.								
1974	15,824	1440	360	90	45	22	11	
1990	15,500-20,000	1600	400	100	50	25	12	
San Rafael Avenue -Beach								
-Tiburon Blvd. (County)	1974	2,917	480	120	30	15	7	3
	1990	5,000-10,000	1120	280	70	35	17	8
	1990 <sup>1</sup>	3,300	538	130	33	17	8	4

Using the "protection" level for residential areas of 55 dB(A), housing along Lagoon Road and the north end of Cove Road exceeds the limit because it is affected by Tiburon Boulevard traffic noise. Similarly, housing on both sides of the San Rafael Avenue - Beach Road loop is affected by Tiburon Boulevard. In these cases, however, neither existing nor projected levels fall into the hearing loss consideration category, and in fact range 5-10 decibels below the level.

The Noise Element of the Tiburon General Plan, adopted September 28, 1989, indicates that the noise measurement was 68 dB (A) 43 feet from the edge of Tiburon Boulevard at Lyford Drive. Lyford Drive is between Trestle Glen and Main Street on Tiburon Boulevard. This noise measurement shows that the noise level in 1989 was similar to the level in 1974, outlined in Table N-1 above.

By another mode of evaluation, community response, Belvedere can be characterized as a relatively quiet community in which noise is a significant community concern, even though in absolute terms, noise levels may not exceed legal standards. Because of the way in which noise tends to "bounce" around, noises are heard in locations which are quite unusual. Further, the topography tends to amplify some noises rather than absorb them.

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 1. The "high" 1990 estimate done by the County is based on population projections resulting from uncontrolled operation of the market. It seems excessive since Belvedere is mostly developed, and since street capacity in the City will act as a brake on car trip increases over the next 20 years. Assuming modest increases in the use of auto alternatives, the second estimate, roughly a 10% traffic increase, is more likely.

Community Response Predictions  
Categories Related to Noise Level

L<sub>dn</sub> for residential areas

I. Some noise complaints may occur, and noise may, occasionally, interfere with some activities.

55-65

II. In developed areas, individuals may complain, perhaps vigorously and group action is possible.

65-75

III. In developed areas, repeated vigorous complaints and concerted group action might be expected.

Over 75

Belvedere is a Category I community. Within Belvedere, there has been some sensitivity to the transmission of sound over water and to the use of noisy construction and yard/garden equipment such as leaf blowers and saws. In 1987, the City Council passed an ordinance banning gasoline powered leaf blowers. Amplified sound from events at the yacht clubs has also caused numerous complaints. The Belvedere Planning Commission limits construction activity to Monday through Friday between 8 A.M. and 5 P.M. when approving Design Review applications.

B. POLICIES

Belvedere should continue to maintain noise levels compatible with public health and safety within the city. In order to accomplish this, the City Council should direct the preparation of a comprehensive Noise Ordinance which addresses construction noise, amplified sound, hours of use for equipment, etc.

1. Belvedere shall develop a comprehensive Noise Ordinance regulating the hours and days of construction activity, limiting the use of yard/garden and construction equipment which generates significant noise, and regulating amplified sound systems used outdoors, and other noise sources considered objectionable by the community.