

## **Section VIII**

### **NOISE ELEMENT**

**GOALS, OBJECTIVES, POLICIES, AND IMPLEMENTATION MEASURES**

**THE EFFECT OF NOISE**

**NOISE PROBLEMS IN THE CITY OF CLAYTON**

## **NOISE ELEMENT**

### **Goal**

To maintain or improve the overall environment and the general well-being of the community by reducing annoying levels of noise for all land uses in the city. Physically harmful levels of noise (70 Ldn\* and above) shall be mitigated to below harmful levels and to levels of minimum annoyance (below 60 Ldn) where feasible.

### **Objective 1**

To identify routes in Clayton with high levels of noise.

### **Policies**

- 1a Prepare noise contour maps for Kirker Pass Road, Clayton Road, Marsh Creek Road, Mitchell Canyon Road, Concord Boulevard, Main Street, El Molino, Pine Hollow Road, Oak Street, Mountaire Parkway, and Regency Drive. These maps are needed as a new baseline to reflect changes in noise levels due to the significant growth which has occurred since the last General Plan revision.
- 1b Identify future routes with potential for significant levels of noise. Noise contour maps for these routes should be prepared when development is proposed which will affect noise levels on the routes.

### **Objective 2**

To establish mitigation measures for reducing exposure to traffic noise.

### **Policies**

- 2a Require sound mitigation to 45 Ldn for indoor noise level uses and 60 Ldn for outdoor noise level uses in new developments.
- 2b Require setbacks, sound walls, specific orientation and other measures where new uses are exposed to noise. Such measures shall be consistent with the intent of the Community Design Element.
- 2c Permit noise attenuation measures that do not create traffic hazards along South Mitchell Canyon Road and Clayton Road and retain limited hours of trucking operations on weekdays from 7:00 AM to 4:00 PM with no activity on weekends. Hours may be exceeded in event of emergency with prior city authorization.
- 2d Require developer to conduct noise studies to determine an appropriate noise reduction plan in event development is proposed in areas where roadway or fixed point sources exceed 60 Ldn.

\* Ldn and dBa definitions are provided in the Glossary, Section XII.

### **Objective 3**

To provide control of fixed point sources.

#### **Policies**

- 3a Encourage Concord Pavilion not to generate noise in excess of 60 dBa in Clayton.
- 3b Limit construction activities to the hours of 7:00 AM to 5:30 PM on weekdays and 9:00 AM to 6:00 PM on weekends when adjacent neighbors are affected.
- 3c Restrict home sound equipment noise in excess of 55 Ldn at the property line.
- 3d Restrict operation of home power equipment before 7:00 AM to after 10:00 PM at a noise level above 55 Ldn at the property line.
- 3e Consider an ordinance to reduce the nuisance effects of unattended pets.

#### **Implementation Measures**

- 1. Adopt mitigation measures for affected areas.
- 2. Provide information and assistance in measures to mitigation noise.
- 3. Adopt and enforce noise control ordinances.

## **THE EFFECT OF NOISE**

Noise affects people in three ways:

- 1. It is detrimental to their health.
- 2. It interferes with their activities.
- 3. It reduces their economic potential.

Noise can affect the health of people to a widely varying extent, depending on the intensity. The impact can range from mildly involuntary physiological reactions to a permanent injury or even death.

Noise interferes with human activities in a variety of ways, intruding upon the total quality of life. Perhaps one of the more serious problems is disturbance of sleep; specific sound levels for this effect have been established. Noise can also interfere with cultural or leisure activities. For example, it detracts from the appreciation of park land, historic sites and other outdoor activities.

Noise can have several effects with social or economic implications. These include productivity for workers and students in both their jobs and in the schoolroom, as well as indemnity payments for work-related hearing loss. The value of residential property can be adversely affected by noise and result in reduced livability, reduced saleability, transition from owner to renter status, conversion to nonresidential uses, and pressure for zone change.

## **NOISE PROBLEMS IN THE CITY OF CLAYTON**

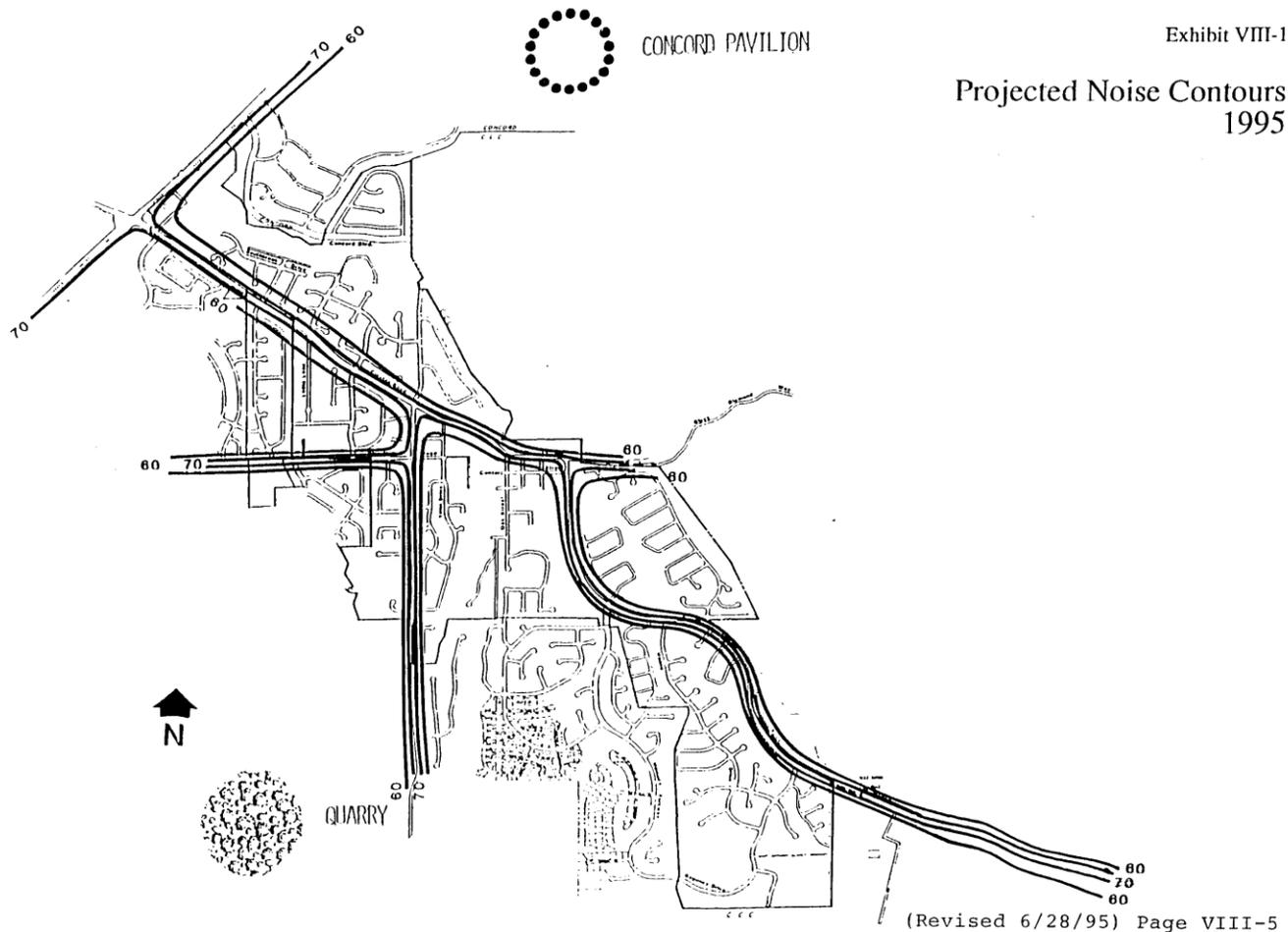
The sources of adverse noise in Clayton can be separated into two categories, mobile (or line) sources, and fixed point sources. The mobile sources include the major through streets and, in particular, the route followed by the gravel trucks from the Lone Star Industries Quarry.

### **Mobile or Line Noise Sources**

Exhibit VIII-1 indicates noise contours for the City of Clayton based on monitoring in January 1985. Exhibit VIII-2 provides projected contours based on anticipated short-term growth. The monitoring and contours verify common knowledge in Clayton. Points for development of contours are indicated in Exhibit VIII-3.

Truck and automobile traffic are the most common sources of noise in the City, and the predominate source of this noise that of the gravel trucks going to and from the quarry.

# Projected Noise Contours 1995

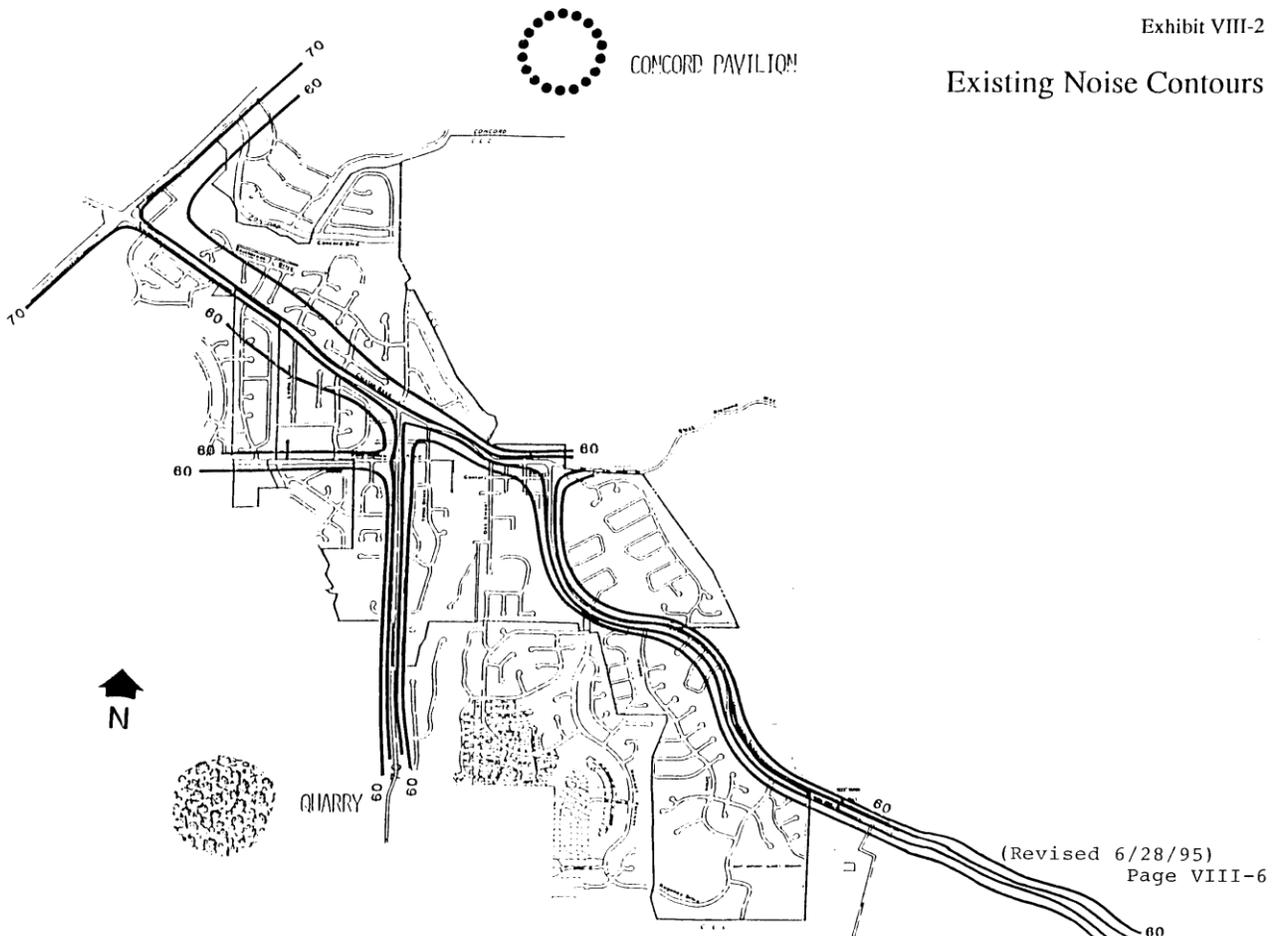


Gravel truck noise is characterized by fluctuation in frequency and duration. These changes are caused by the varying demands for the aggregates extracted by the quarry and the consequent variations in the amount of gravel truck traffic. Truck noise is further characterized by the fact that it occurs along a specific route, and the noise problems of the community are intense along this route.

Truck and automobile noise are additionally intensified in the City because of the existing crosstown thoroughfare, Clayton Road, which must serve as the truck as well as passenger car through route to eastern Contra Costa County. There appears to be no alternative truck route in the future.

Further compounding the problem of mobile noise along Clayton Road is the fact that this street must serve as the only through access for emergency vehicles with the attendant siren noise.

## Existing Noise Contours



It should be noted that the identification, measurement, and examination of noise problems, whether from mobile or fixed point sources, is critical to the considerations of future land use planning. While problems for people who live in the existing homes may be minimized by the enforcement of the proposed ordinance, the problems of noise for future residents can better be addressed by appropriate planning and design. There have been two complaints regarding noise of Clayton Road in the past year. Based on noise contours it can be estimated that two parcels fall within the existing 70 Ldn contour and 51 parcels will fall within the contours projected for 1995. A total of 143 parcels currently fall between the 70 and 60 Ldn contour and 109 parcels will fall within the contour at 1995 levels. These contours identify base noise levels. They do not take into account mounding, changes in elevation, walls or other measures that will affect noise factors for specific homes. Individual homes can benefit from element information in general but site specific monitoring is necessary prior to action. Noise prediction will be affected by future population levels, street design and vehicle equipment standards. Concord Boulevard will not be included until population is projected.

Data deriving from the survey are presented in Appendix F. Previous noise study data is also included.

## Critical Routes

The areas where existing and/or potential noise impacts are determined to have potentially severe impact on individuals that can be classified as critical are as follows:

1. The Clayton Road-Marsh Creek Road thoroughfare including the Main Street traffic through the Town Center area of Clayton.
2. Mitchell Canyon Road, which is the gravel truck route from Lone Star Quarry. The proposed Concord Boulevard extension between Silver Creek II subdivision and the intersection with Marsh Creek Road.
3. The proposed extension of Marsh Creek Road to the connection with the Concord Boulevard extension just east of the downtown area.
4. The proposed extension of Center Street to connect with the Concord Boulevard extension.
5. Other areas of the City in close enough proximity to a street where traffic noise generation is deemed likely to produce exterior noise levels of 60 or more dBA, considering the maximum traffic volume expected.

### CITY OF CLAYTON NOISE CONTOURS

### Exhibit VIII-3

(Distance from Centerline of Roadway in Feet)

	1985				1995			
	55	60	65	70	55	60	65	70
Clayton Road between City Limit at Atchinson Stage Road	300	150	65	30	600	200	140	60
Clayton Road between Atchinson Stage Road and Mitchell Canyon Rd.	200	100	45	20	390	180	80	40
Clayton Road between Mitchell Canyon Road and Oak Street	79	37	15	10	85	40	19	10
Mitchell Canyon Road at Mitchell Canyon Court	130	65	30	15	200	90	45	23
Clayton Road from Oak Street to Mountaire Parkway	80	33	16	10	86	41	20	10
Clayton Road/Marsh Creek Road/ Mountaire Parkway to Regency Drive	95	50	22	10	110	55	27	15
Marsh Creek Road east of Regency Drive	93	48	20	10	108	53	25	13
Pine Hollow Road at Mitchell Canyon Road	80	40	19	0	100	45	20	0
Concord Boulevard from Kirker Pass Road to end	160	78	35	18		N/A		
Concord Boulevard from Kirker Pass Road to Marsh Creek Road			N/A		300	150	70	30
Concord Boulevard south of Marsh Creek Road			N/A		250	120	58	25

All contours shown in Ldn

VIII-7

### **Characteristics of Mobile Source**

1. In numerous instances there was wide variation in the amount of noise produced by motor vehicles moving at the same speed.
  - a. Motorcycles, especially the two-cycle type, often produce more noise than gravel trucks.
  - b. The amount of noise produced by the same size trucks can vary greatly, depending upon the mechanical condition of noise muffling equipment, and the design and condition of tires.
  - c. Passenger cars and pickup trucks equipped with special tires for snow and mud sometimes produce as much noise as gravel trucks.
2. Speed of the vehicle is closely related to the amount of noise produced, with increase from 25 mph to 35 mph causing a noise level increase of 4 or 5 decibels.
3. Noise levels at stop signs are significantly higher in location having considerable truck traffic, due to braking, gear changing, and acceleration noises.
4. Siren noises from emergency vehicles, especially ambulances, are a significant source of noise, particularly along Clayton Road.

### **Fixed Point Noise Sources**

The two most prominent fixed point sources of noise in the Clayton area are located outside the Clayton city limits. They include the Concord Pavilion and the Lone Star Quarry. In both cases the city limits are over 1,000 feet away. Vibration from the Concord Pavilion can be heard in the evenings when the performers use powerful amplifying equipment. The configuration of the land may magnify the problem for Clayton residents somewhat distant from the source, while Concord residents in homes close to the Concord Pavilion may find the problem more acute. The nature of future programming, including the type of entertainment, amplification of the sound, and the positioning of loudspeakers, promises to influence the extent of this problem. Complaints will first come from Concord residences; however, Keller development near the Concord Pavilion should conduct noise analysis to determine the extent of this problem and development-wide and parcel-specific mitigation.

Operational noise from the two quarries in the vicinity of Clayton are generated by blasting in the course of excavating, and by machinery used in conveying, loading, and crushing the rock. The sound of blasting is infrequent. Normally a two-week period within six months will produce a single blast per day. The noise startles people and they call City Hall, but it is not continuous. Posting of blast schedules would help this problem. Machinery that is used to crush rock runs continuously during quarry hours (7 AM to 4 PM on weekdays). It is a vibration noise that can be perceived in Clayton but does not exceed noise standards. Development of vacant parcels within city limits that are near the quarry would increase resident exposure to noise. Unless adequate mitigation or change in quarry operations occur, residential development near the quarry should be prohibited. Mobile source noise from gravel trucks has been effectively limited to specified hours. Other fixed point sources of noise generally fall into the category of those which are problems for residents in the more immediate vicinity of the source.

They may include, but are not limited to the following:

1. Sound reproducing and amplifying equipment such as music (live or recorded) amplifiers, radios, and television sets.
2. Construction noises resulting from the numerous home-building projects in the community.
3. Barking dogs, which sometimes intrude upon peace and quiet and the rest of nearby residents.
4. Homeowner-operated power equipment, such as saws, mowers, tillers, etc.

### **Mitigation Measures**

1. New developments, consideration of the noise impacts upon present and future residents must be an essential part of the environmental impact reporting and acceptance process. Mitigation measures which assure that the development will conform to State and local standards shall be required and enforced.

Where new residential construction is proposed within an area identified as critical, a noise study together with acceptable plans to assure compliance with the standards shall be required. Required noise studies should be done simultaneously with or as part of the EIR preparation and planning process to assure that the results and recommendations will be incorporated into the project proposal, including the grading plan, street layout, height of buildings, orientation and design of buildings, design and elevation of noise barriers required, and any other elements of planing and design that may be related to the noise impacts.

2. In the case of major changes to existing streets, the noise impacts upon the residents in the area will be considered. These impacts should be determined by a noise study provided by the City with appropriate requirements for mitigation.
3. It is recommended that representatives of the Police Department, Fire Department, and local ambulance services meet for the purpose of establishing criteria for the use of emergency vehicle sirens. The aim of the criteria should be to prevent the indiscriminate or unnecessary use of sirens, while maintaining safe practices.
4. The City, through the Police Department should vigorously pursue the enforcement of the California Motor Vehicle Code with regard to illegal operation and equipment of vehicles.
5. In the case of locating and developing noise sensitive recreational areas and activities, the City should be cognizant of the existing and potential noise impacts, recognizing that a dBa of 55 is the level at which most noise begins to interfere with outdoor activity. Conversely, introducing outdoor recreational activity may produce noise which could annoy residents.

6. A source of noise which could present a potentially significant problem for Clayton is the Concord Pavilion, as previously mentioned. The location of the Concord Pavilion being outside the legal jurisdiction of Clayton, but the potential effects of the noise falling inside the City, presents a possible future problem. The City should research all avenues of mitigation available, including seeking the utmost cooperation with those in charge of the programming, levels of amplification, and any other factors contributing to the potential for noise problems for people in Clayton. At the same time Clayton must use design measures to prevent unnecessary exposure to noise.
7. Construction in critical noise areas should be preceded by acceptable noise mitigation measures including recommendations for changes in elevations, setbacks, construction of effective noise barriers, and any other items deemed to be necessary in an attempt to achieve the standard of less than 60 dBA in residential yard areas.

### **Ordinance/ Enforcement**

The City should enact a comprehensive noise control ordinance. It is suggested that Model Community Noise Ordinances, written by the California Office of Noise Control be adapted to apply specifically to Clayton. The noise ordinance should contain regulations and standards including, but not limited to the following:

1. The exterior noise level of 60 dBA as the maximum allowable traffic noise for homes in areas of new construction. This standard should be based upon the predicted noise level for the maximum traffic flow expected through the area.
2. Regulate construction activities so as to provide relative quiet during the more sensitive evening and early morning periods.
3. Regulate the design and construction of public projects so as to cause as little as practical long-term noise inconvenience to existing residents.
4. Require acoustical studies for major residential projects as required by the State of California, pursuant to the critical areas reflected in this element.
5. Prepare a noise abatement program consistent with State and Federal guidelines, which is (a) legally valid, (b) not unduly costly, and (c) does not impose undue hardships on landowners.
6. Require construction and maintenance of noise barriers at standards that do not permit gaps and cracks in protection.

