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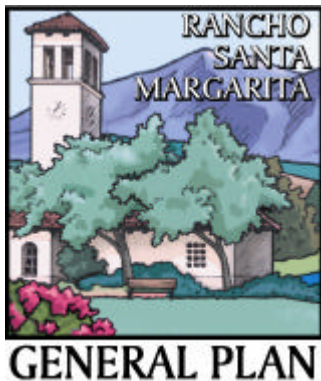
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Introduction

Noise levels within Rancho Santa Margarita affect the quality of life experienced by residents living and working within the community. High noise levels associated with various activities can create stress and irritation. The Noise Element addresses the physiological, psychological and economic effects of noise by providing effective strategies to reduce excessive noise and limit community exposure to loud noise sources.

Purpose of the Noise Element

The purpose of the Noise Element is to identify and appraise existing noise problems in the community, and to provide guidance to avoid noise and land use compatibility problems in the future. This Element addresses existing and projected noise sources in the community and identifies ways to reduce existing and potential noise impacts. In particular, the Noise Element contains policies and programs to achieve and maintain noise levels compatible with various types of land uses. These policies and programs emphasize the need to control noise through land use regulation, as well as enforcement of other City ordinances.

Scope and Content of the Noise Element

The State of California recognizes the relationship between noise and noise sensitive uses and has adopted State Guidelines for Noise Elements. This Noise Element satisfies the requirements of State planning law and is a mandated component of the General Plan. Government Code Section 65302(f) establishes the required components of the Noise Element. The Element also complies with California Health and Safety Code Section 56050.1 guidelines for Noise Elements.



Future noise conditions from short- and long-term growth are quantified and identified as noise exposure contours. This noise information serves as the basis for: developing guidelines for identifying compatible land uses; identifying the proper distribution of land uses on the General Plan Land Use Policy Map; and establishing proper development standards.

The Noise Element comprises three sections: 1) this Introduction; 2) Issues, Goals, and Policies; and 3) the Noise Plan. In the Issues, Goals, and Policies section, major issues pertaining to noise sources are identified and related goals and policies are established. The goals are statements of the City's desires and comprise broad statements of purpose and direction. The policies serve as guides for reducing or avoiding adverse noise impacts on the population. The Plan explains how the goals and policies will be achieved and implemented. Specific implementation programs for the Noise Element are contained in Appendix A of this General Plan.

***Related Plans
and Programs***

There are a number of existing plans and programs that directly relate to the goals of the Noise Element. These plans and programs have been enacted through state and local legislation and are administered by agencies with powers to enforce state and local laws.

California Environmental Quality Act Guidelines

The California Environmental Quality Act (CEQA) was adopted by the state legislature in response to a public mandate for thorough environmental analysis of projects that might affect the environment. Excessive noise is considered an environmental impact under CEQA. The provisions of the law and environmental review procedures are described in the CEQA Statutes and the CEQA Guidelines. Implementation of CEQA ensures that during the decision making stage of development, City officials and the general public will be able to assess the noise impacts associated with public and private development projects.

California Noise Insulation Standards (Title 24)

The California Commission of Housing and Community Development officially adopted noise standards in 1974. In 1988, the Building Standards Commission approved revisions to the standards (Title 24, Part 2, California Code of Regulations). As revised, Title 24 establishes an interior noise standard of 45 dBA for residential space (CNEL or Ldn). Acoustical studies must be prepared for residential structures that are to be located within noise contours of 60 dBA or greater from freeways, major streets, thoroughfares, rail lines, rapid transit lines or industrial noise sources. The studies must demonstrate that the building is designed to reduce interior noise to 45 dBA or lower.

County of Orange General Plan Noise Element

The County of Orange General Plan Noise Element provides parameters for compatibility of noise and various land uses, and the location of new development. These parameters are described in the Noise/Land Use Compatibility Manual. For new residential construction, exterior noise must be reduced to 65 dB or less, and interior noise must be reduced to 45 dB or less. The unincorporated portion of the Planning Area is subject to the County Noise Element.

City of Rancho Santa Margarita Noise Control Ordinance

The City has adopted the County of Orange Noise Control Ordinance, which establishes interior and exterior noise standards. The Ordinance provides controls for excessive and annoying noise from stationary sources such as industrial plants, pumps, compressors and refrigeration units. In addition, specific noise standards for daytime and nighttime hours are provided. Certain noise sources are prohibited and the Ordinance establishes an enforcement process. Noise Control Ordinance requirements are identified in this Element.

Relationship to Other General Plan Elements

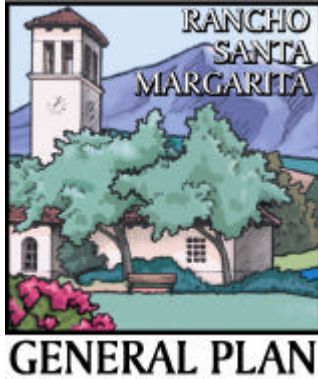
According to state planning law, the Noise Element must be consistent with the other General Plan elements. Each element is independent and all the elements together comprise the General Plan. All elements of the General Plan are interrelated to a degree, and certain goals and policies of one element may also address issues that are primary subjects of other elements. Table N-1 provided in the following section identifies the policies by General Plan element that are related to Noise Element issues. This integration of overlapping issues and policies provides a strong basis for implementation of plans and programs and achievement of community goals.

Policies and plans in the Noise Element are designed to protect existing and planned land uses from significant noise impacts. To do this, the Element identifies potential noise sources and establishes programs to avoid or mitigate noise impacts from community development. Concurrently, the Land Use Element contains policies to ensure that environmental conditions, including noise, are considered in all land use decisions. Planning for future residential and other sensitive land uses on the Land Use Policy Map is intended to avoid new noise sensitive development in areas where noise impacts cannot be reduced or mitigated to acceptable levels.

The Noise Element is linked to the transportation policies in the Circulation Element. Transportation noise is largely responsible for excessive noise levels in certain locations within Rancho Santa Margarita. The projected noise contours identified in this Element directly correspond to the Circulation Plan and the projected traffic generated from the proposed land uses. Both the Noise and Circulation Elements contain policies and programs to minimize the effects of transportation noise on existing and planned land uses. Noise exposure is a key consideration when locating and designing new arterials.

The Noise Element also relates to the Conservation/Open Space Element. Excessive noise can diminish enjoyment of parks and other designated open space. Because of this, noise levels are considered in the planning of new recreational and open space areas. Additionally, open space areas can be used to separate and buffer noise sensitive land uses from noise producers.





Issues, Goals and Policies

Human activities in the community create noise levels that can affect overall quality of life. The goals and policies of the Noise Element are designed to protect the community from excessive noise.

Three major issues related to noise are addressed in the Noise Element: 1) avoiding the negative impacts of noise through the use of land use planning and noise reduction measures; 2) minimizing the impact of transportation-related noise; and 3) minimizing the impact of non-transportation-related noise.

Noise and Land Use Planning

Certain areas within Rancho Santa Margarita are subject to high noise levels. Consideration of the sources and recipients of noise early in the land use planning process can be an effective method of minimizing the impact of noise on population in the community. Consideration may be given to both reducing noise in areas already severely impacted by noise through rehabilitative improvements and avoiding potential noise impacts through proper land use planning.

Goal 1: Minimize the effects of noise through proper land use planning.

Policy 1.1: Ensure that new development and reuse/revitalization projects can be made compatible with the noise environment by utilizing noise/land use compatibility standards and the Noise Contours Map as a guide.

Policy 1.2: Require the inclusion of design features in development and reuse/revitalization projects to reduce the impact of noise on residential development.

Policy 1.3: Ensure proposed development meets noise insulation standards for construction and residential development.

***Transportation
Related Noise***

The primary source of noise impacting Rancho Santa Margarita results from transportation-related noise. The Foothill Transportation Corridor, along with other major roadways, create high levels of noise that affect the overall quality of life in the community. Reduction in transportation-related noise is necessary to deal with the detrimental effects attributable to excessive noise.

Goal 2: Minimize transportation-related noise impacts.

Policy 2.1: Reduce transportation-related noise impacts to sensitive land uses through the use of noise control measures.

Policy 2.2: Control truck traffic routing to reduce transportation-related noise impacts to sensitive land uses.

Policy 2.3: Incorporate sound-reduction design in development projects impacted by transportation-related noise.

***Non-Transportation
Related Noise***

Noise sources that are not directly related to transportation include: construction noise, manufacturing or business operations noise, and property maintenance activities. Such noise sources should be controlled to minimize exposure to excessive noise levels.

Goal 3: Minimize non-transportation related noise impacts.

Policy 3.1: Reduce the impacts of noise-producing land uses, activities, and businesses on noise-sensitive land uses.

Policy 3.2: Incorporate sound-reduction design in new construction or rehabilitation projects impacted by non-transportation-related noise.

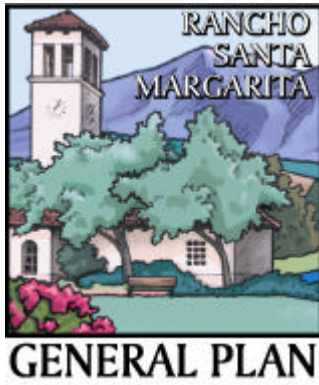
Policy 3.3: Minimize stationary noise sources and noise emanating from construction activities and special events.

***Related Goals
and Policies***

The goals and policies in the Noise Element are directly related to and support subjects included in other General Plan elements. In turn, goals and policies from other elements directly support the goals and policies of the Noise Element. These supporting goals and policies are identified in Table N-1.

**Table N-1
Related Goals and Policies by Element**

General Plan Element	Noise Element Issue Areas		
	Noise and Land Use Planning	Transportation Related Noise	Non-Transportation Related Noise
Land Use	2.3, 2.6, 3.1	3.1, 3.2, 3.3	
Housing	2.1		
Circulation		1.1, 1.4, 1.5, 2.2, 2.3, 3.1	
Economic Development	1.2		2.7, 2.8
Conservation/ Open Space	1.3	1.3, 6.4	1.3
Safety		2.5	
Noise			



Noise Plan

Rancho Santa Margarita, like most urbanized areas, is experiencing increased noise levels associated with transportation and other sources of noise. As the noise level in various parts of the community rises, the City must seek ways to safeguard its population from excessive noise levels. The goals and policies identified in the previous section establish an agenda to reduce overall noise levels within the City. This Noise Plan defines the City's approach to achieve the agenda and generally outlines the action programs. The Noise Element Implementation Program contained in Appendix A of this General Plan is an extension of the Noise Plan and contains specific programs to protect community well-being.

Noise and Land Use Planning

Noise in the community is the cumulative effect of noise from transportation activities and stationary sources. Transportation noise refers to noise from automobile use, trucking, airport operations, and rail operations. Non-transportation noise typically refers to noise from stationary sources such as commercial establishments, machinery, air conditioning systems, compressors, residential and recreational uses, and landscape maintenance equipment.

Regardless of the type of noise, the noise levels are highest near the source and decrease with distance. Noise is problematic when noise sensitive land uses are affected. Noise sensitive land uses (i.e., activities that are interrupted by noise) include residences, schools, hospitals, churches, and recreation areas. Most noise impacts can be avoided when noise sources, sensitive land uses, and information about the future noise environment are considered in land use planning and development decisions.

Noise Standards and Land Use Compatibility

Noise generally is defined as unwanted or intrusive sound. Because noise consists of pitch, loudness, and duration, describing noise with a single unit of measure presents a challenge. The A-weighted decibel scale (dBA) has been developed to describe the loudness of a sound or sound environment based on the sensitivity of the human ear.

Table N-2 outlines criteria the State has established to reduce adverse noise effects on human health.

**Table N-2
State Criteria For Minimizing Adverse Noise
Effects On Humans**

Objective	dBA Range
Prevent Hearing Loss	75 - 80
Prevent Physiological Effects (other than hearing loss)	65-75
Prevent Speech Interference	50-60
Address People's Subjective Preferences for Noise Control	45-50
Prevent Sleep Interruption	35-45

The dBA descriptor only reports noise from a single source or combination of sources at a point in time. To allow a more comprehensive description of a noise environment, Federal and State agencies have established noise and land use compatibility guidelines that use averaging approaches to noise measurement. Two measurement scales commonly used in California are the Community Noise Equivalent Level (CNEL) and the day-night level (Ldn). To account for increased human sensitivity at night, the CNEL level includes a 5-decibel penalty on noise during the 7:00 a.m. to 10:00 p.m. time period and a 10-decibel penalty on noise during the 10:00 p.m. to 7:00 a.m. time period. The Ldn level includes only the 10 decibel weighting for late-night noise. These values are nearly identical for all but unusual noise sources.

The City's primary goal with regard to community noise is to minimize the exposure of residents to unhealthful or excessive noise levels to the extent possible, given the City's built-out condition. To this end, this Element establishes noise/land use compatibility guidelines based on cumulative noise criteria for outdoor noise. Table N-3 outlines the criteria the City will use to review development proposals. New residential development will comply with Title 24 standards of the State Health and Safety Code. These standards establish maximum interior noise levels for new residential development, requiring that sufficient insulation be provided to reduce interior ambient noise levels to 45 CNEL.

The Planning Director acts as the noise control coordinator. This designation of responsibility allows consistent and continued enforcement of the established noise standards.

Noise Contours and Noise Impact Areas

The noise environment for the community can be described with noise contours based on the major noise sources. Noise contours define areas of equal noise exposure. Future noise contours have

**Table N-3
Noise/Land Use Compatibility Criteria**

Land Use Category	Community Noise Equivalent Level (CNEL) or Day-Night Level (Ldn), dB						
	55	60	65	70	75	80	85
Residential- Low-Density Single-Family, Duplex, Mobile Homes			Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines
Residential- Multi-Family			Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines
Commercial- Motels, Hotels, Transient Lodging			Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines
Schools, Libraries, Churches, Hospitals, Nursing Homes			Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines
Amphitheaters, Concert Hall, Auditorium, Meeting Hall	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines
Sports Arenas, Outdoor Spectator Sports	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines
Playgrounds, Neighborhood Parks					Diagonal lines	Diagonal lines	Diagonal lines
Golf Courses, Riding Stables, Water Rec., Cemeteries					Diagonal lines	Diagonal lines	Diagonal lines
Office Buildings, Business, Commercial, Professional, and Mixed-Use Developments				Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines
Industrial, Manufacturing Utilities, Agriculture				Diagonal lines	Diagonal lines	Diagonal lines	Diagonal lines

Nature of the noise environment where the CNEL or Ldn level is:

Below 55 dB

Relatively quiet suburban or urban areas, no arterial streets within 1 block, no freeways within 1/4 mile.

55-65 dB





Most somewhat noisy urban areas, near but not directly adjacent to high volumes of traffic.

65-75 dB

Very noisy urban areas near arterials, freeways or airports.

75+ dB

Extremely noisy urban areas adjacent to freeways or under airport traffic patterns. Hearing damage with constant exposure outdoors.

 Normally Acceptable Specific land use is satisfactory, based on the assumption that any building is of normal conventional construction, without any special noise insulation requirements	 Conditionally Acceptable New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.	 Normally Unacceptable New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in design.	 Clearly Unacceptable New construction or development should generally not be undertaken.
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The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) are measures of the 24-hour noise environment. They represent the constant A-weighted noise level that would be measured if all the sound energy received over the day were averaged. In order to account for the greater sensitivity of people to noise at night, the CNEL weighting includes a 5-decibel penalty on noise between 7:00 p.m. and 10:00 p.m. and a 10-decibel penalty on noise between 10:00 p.m. and 7:00 a.m. of the next day. The Ldn includes only the 10-decibel weighting for late-night noise events. For practical purposes, the two measures are equivalent for typical urban noise environments.

been estimated with information about existing and projected land use development and transportation activity. These contours have been prepared to assist in setting policies for proper distribution of land uses and the establishment of development standards.

Figure N-1 shows the projected noise contours and associated Noise Impact Areas. The noise contours are used as a guide for land use and development decisions. Contours of 60 dBA or greater define noise impacted areas. When noise sensitive land uses are proposed within these contours, an acoustical analysis must be prepared. For the project to be approved, the analysis must demonstrate that the project is designed to attenuate the noise to meet the City noise standards identified in Table N-3. If the project is not designed to meet the noise standards, mitigation measures should be recommended in the analysis. If the analysis demonstrates that the noise standards can be met with implementation of mitigation measures, the project can be approved with the mitigation measures, which shall be required as conditions of project approval.

Construction Standards

The provisions of the State Noise Insulation Standards (Title 24, Part 2, California Code of Regulations) are enforced in Rancho Santa Margarita. Title 24 specifies that combined indoor noise for multi-family living spaces shall not exceed 45 dBA CNEL. This standard must be implemented when the outdoor noise level exceeds 60 dBA CNEL. Title 24 requires that the same standard be applied to all new hotels, motels, apartments and multi-family projects.

Transportation Related Noise

Noise from transportation activity is the primary source of noise in Rancho Santa Margarita. The two major sources of transportation related noise in Rancho Santa Margarita are:

- ? Traffic on the Foothill Transportation Corridor (SR-241); and
- ? Traffic on arterial roadways within the City.

Noise Control at Reception Sites

The most efficient and effective means of controlling noise from transportation systems is to reduce noise at the source. However, the City has little direct control over noise produced by transportation sources because State noise regulations preempt local regulations.

Because the City cannot control noise at the source, City noise programs focus on reducing the impact of transportation noise reception sites.

Figure N-1
Projected Noise Contours



During the planning stages of the development process, potential impacts from transportation noise will be identified and mitigation measures will be required as needed to meet City noise standards.

Site planning, landscaping, topography and the design and construction of noise barriers are the most common method of alleviating vehicular traffic and train noise impacts. Setbacks and buffers can also be used to achieve noise reduction.

Noise attenuating barriers are commonly incorporated into projects and can be extremely effective in reducing noise levels. The effectiveness of the barrier depends on: 1) the relative height and materials of the barrier; 2) the noise source; 3) the affected area; and 4) the horizontal distance between the barrier and the affected area.

Noise barriers should be included in the design of freeway/tollway, roadway and rail improvements. The City supports efforts by Caltrans, OCTA and other transportation providers to provide acoustical protection for noise sensitive uses. In addition, the City will request that barriers are constructed as part of future highway, roadway and rail projects in order to mitigate significant noise impacts.

Although noise barriers can be extremely effective, the aesthetic effect of barriers on neighborhoods must be considered during the preliminary stages of the development process. Potentially significant aesthetics impacts associated with noise barriers must be addressed and mitigated through landscaping or other project design measures in all new public and private projects.



Noise Control at the Source

The California Vehicle Code contains noise regulations pertaining to the operation of all vehicles on public roads. These noise standards for cars, trucks and motorcycles are enforced through coordination with the California Highway Patrol and the Orange County Sheriff's Department. The City also regulates traffic flow and coordinates with the California Highway Patrol to enforce speed limits to reduce traffic noise.

Non-Transportation Related Noise

Sensitive receptors must also be protected from excessive noise generated by non-transportation sources, such as commercial and industrial centers, restaurants and bars, religious institutions and civic centers. Other noise sources commonly referred to as nuisance noises also contribute to the overall noise environment. Application and enforcement of the City Noise Control Ordinance is the best means to control noise from existing noise sources; while noise generated by new development is effectively controlled through the site design review process, compliance with CEQA, and compliance with City noise standards contained in the Noise Element of the General Plan. During the preliminary stages of the development process, potential noise impact must be identified and mitigation measures identified.

Noise Control Ordinance

Upon incorporation, the City adopted the County of Orange Noise Control Ordinance. This Ordinance is designed to protect people from non-transportation related noise sources such as construction activity, machinery and pumps, and air conditioners. Enforcement of the Ordinance ensures that adjacent properties are not exposed to excessive noise from stationary sources. Enforcing the Ordinance includes requiring proposed development projects to demonstrate compliance with the Ordinance and requiring construction activity to comply with established work schedule limits. The Ordinance is reviewed periodically for adequacy and amended, as needed, to address community needs and development patterns.

Business Activity Noise

When reviewing a proposed industrial, commercial, or public project, noise generation and potential impacts to surrounding development are considered in accordance with CEQA. An acoustical analysis is required for projects that will generate noise potentially affecting sensitive receptors. Where significant impacts are identified, mitigation measures are required. Common mitigation measures include acoustically treated and quiet-design furnaces,

fans, motors, compressors, valves, and pumps. The City may also require limited delivery hours and hours of operation in order to minimize impacts to adjacent residential users or other sensitive receptors.

In addition, all City departments must comply with state and federal Occupational Safety and Health Administration (OSHA) standards. Any new equipment or vehicle purchased by the City will comply with local, state and federal noise standards.

Nuisance Noise

Several noise sources can contribute to the overall noise environment in the community, including: barking dogs, loud audio equipment, defective or modified auto and motorcycle mufflers and activities at parks and civic, community or religious institutions. Existing nuisance noises can be addressed through strict enforcement of the Noise Control Ordinance, while potential noise impacts may be avoided or reduced through the site design review process, review of proposed developments per CEQA and mitigation of potential nuisance noise impacts.



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