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Noise

Sound shapes the way we experience the places where we live, work, and play. A pleasant, healthy noise environment can reduce stress, improve health, and enhance quality of life in the community. In an urban environment, noise is a part of everyday life, but thoughtful planning and design can minimize unwanted noise and create welcoming neighborhoods that residents are proud to call home.

The goals, policies, and actions in this chapter seek to proactively address sources of noise in Moreno Valley, protect against excessive noise, and support the social and economic vitality of the community. This chapter satisfies the statutory requirements for the General Plan Noise Element. Airport land use compatibility is also addressed in the Land Use and Community Character and Safety Elements, while goods movement is addressed in the Transportation Element.





Background

Unwanted noise can be defined as a sound or series of sounds that are intrusive, irritating, objectionable and/or disruptive to daily life. Background noise is primarily the product of many distant noise sources, which constitute a relatively stable noise background exposure, with individual contributors unidentifiable. Noise levels are also affected by short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual. The known effects of noise on humans include hearing loss, communication interference, sleep interference, physiological responses, and annoyance.

People in residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks and outdoor recreation areas are generally more sensitive to noise than are people at commercial and industrial establishments. Consequently, noise standards for sensitive land uses are more stringent than for those at less sensitive uses. To protect various human activities in sensitive areas, lower noise levels are generally required.

Typically, when noise levels are reported, they are expressed as a measurement over time in order to account for variations in noise exposure. Levels also account for varying degrees of sensitivity to noise during daytime and nighttime hours. The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) both reflect noise exposure over an average day with weighting to reflect this sensitivity.

Existing Noise Sources and Levels

EXISTING NOISE LEVELS

Moreno Valley is subject to typical urban noises such as noise generated by cars on local roadways, noise from intermittent construction activities, and day-to-day outdoor activities. There are also several transportation-related noise sources that operate at the periphery of the city, including Interstate 215 (I-215), the March Air Reserve Base (MARB), and the railway line, as well as State Route 60 (SR 60), which passes through the northern part of the city. Other sources of noise within the city include commercial and industrial centers and property maintenance activities.

Ambient noise monitoring was conducted to assess current noise levels in Moreno Valley at a variety of land uses proximate to major noise sources. Short-term daytime noise measurements were taken adjacent to major noise sources in the city. These measured noise levels included major noise sources (traffic and/or train passbys) in addition to non-traffic noise sources. Map N-1 reflects the existing noise level contours for 60, 65, and 70 dBA.

Freeway and Internal Roadways

Roadways are the principal noise source in Moreno Valley. Most of Moreno Valley is located between the

I-215 and SR-60 highways. I-215 runs north-south towards the western boundary, while SR-60 runs approximately east-west in the northern part of the city. Roadway noise is expected to remain the principal source of noise in the future. Noise from these sources can be a significant environmental concern for noise sensitive uses, such as residential development where buffers (e.g., buildings, landscaping, etc.) are inadequate or where there is minimal distance from the roadways to sensitive uses.

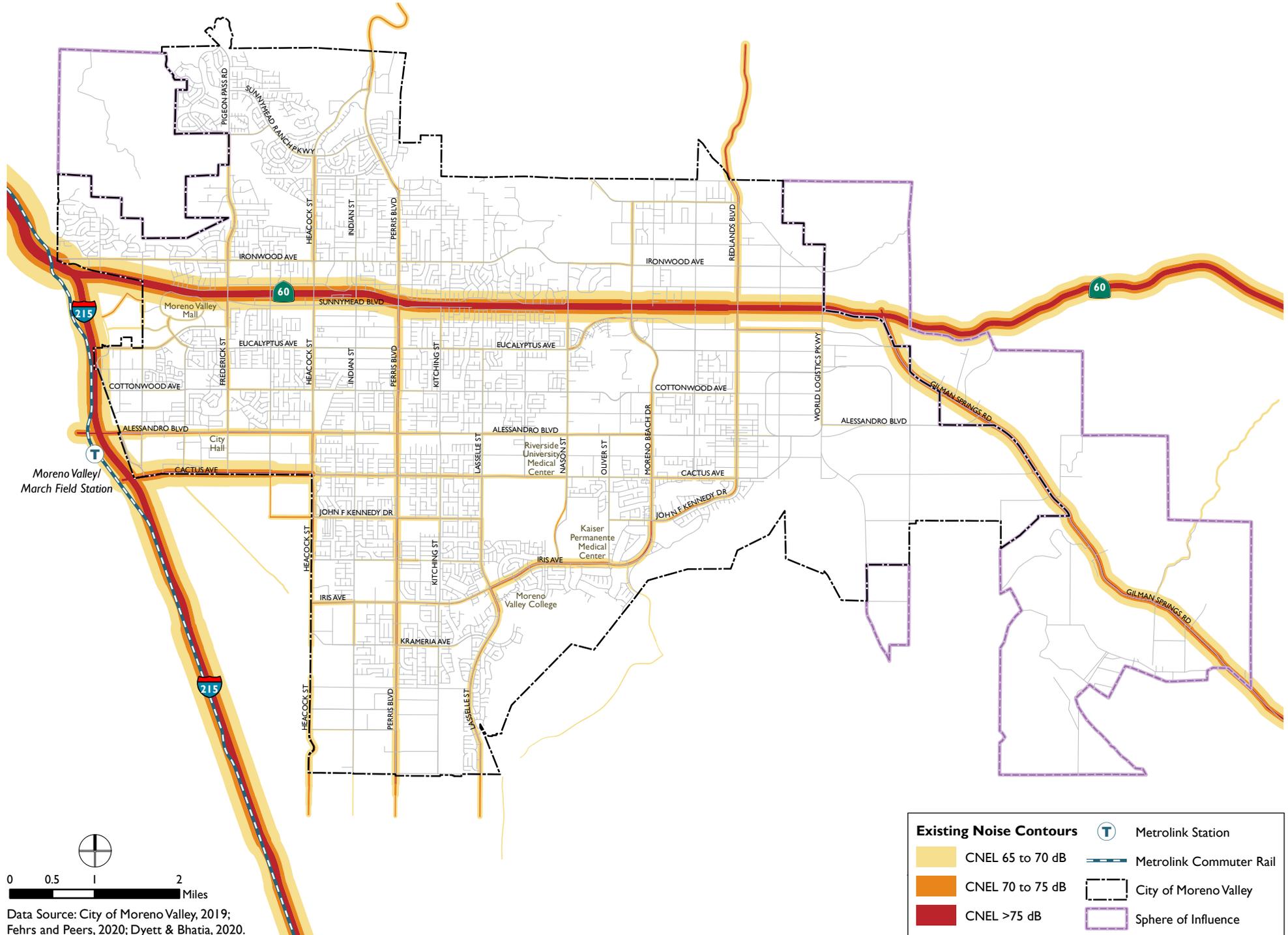
Airport Noise

Noise levels due to air traffic from the joint-use airport at MARB depend on aircraft characteristics, the number, path, elevation and duration of flights as well as the time of day that flights take place. Since 1997, MARB has also been home to the March Inland Port, a civilian air cargo facility. As demand for cargo shipping increases, operations at MARB are projected to increase. Map N-2 shows the existing noise contours surrounding MARB. Though most of the city is located outside the MARB 60-CNEL noise contours, noise from aircraft is audible in the western portion of the city and contributes to the ambient noise environment.

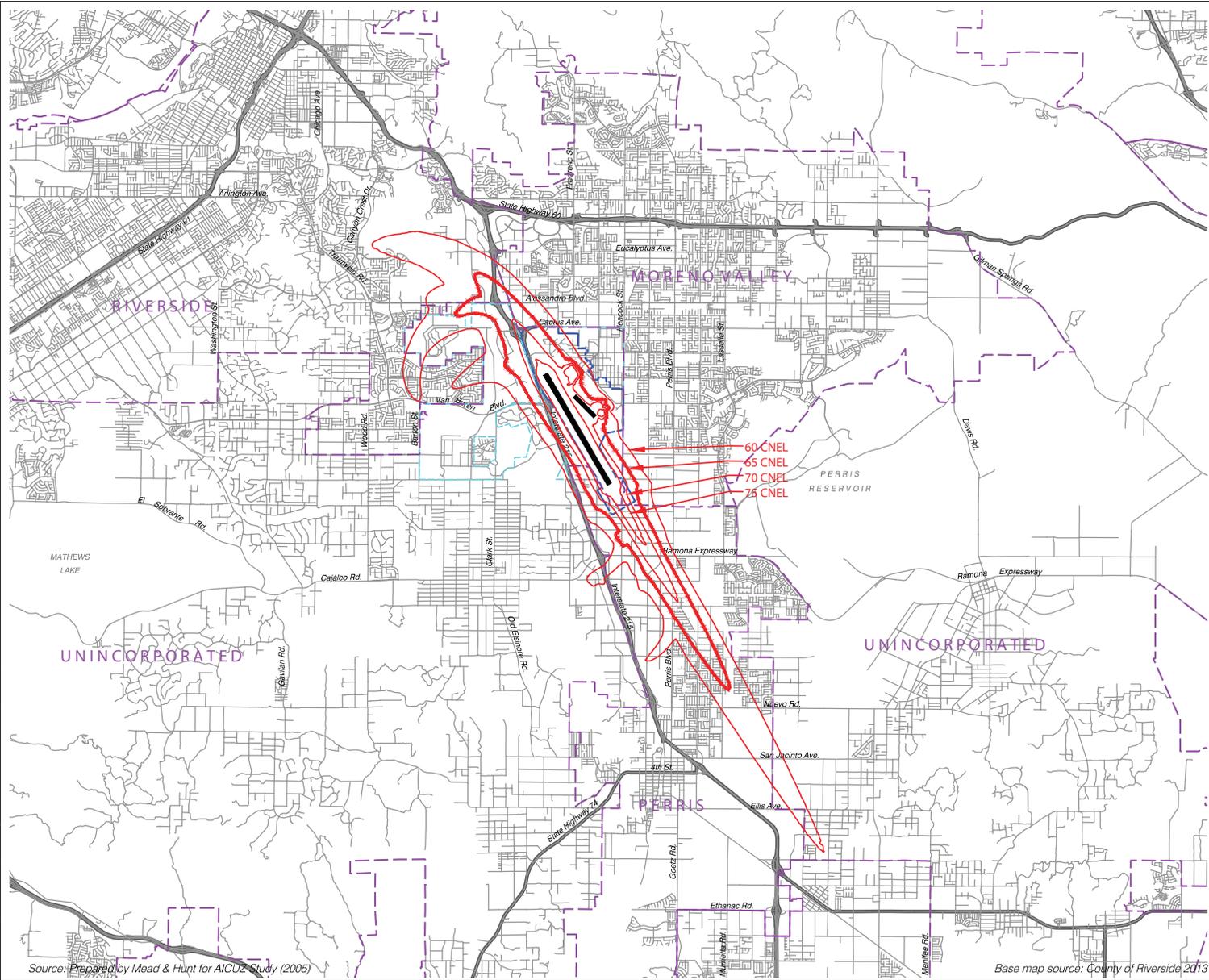
Railroad Noise

Train noise, however intermittent, is a major source of noise due to its magnitude. The San Jacinto Branch Line follows the I-215 corridor closely, bordering the western edge of the city. Both the Metrolink Commuter Rail and freight trains travel along the corridor. The Metrolink commuter rail 91/Perris Valley Line stops at the Moreno Valley/March Air Field Station, located between Eucalyptus and Cactus Avenues in proximity to the western border of the city. Commuter trains stop several times a day in the morning and evening, and freight trains pass through about twice a day.

Map N-1: Existing Noise Contour



Map N-2: MARB Noise Contour



LEGEND

Noise Contours

- 60 dB CNEL
- 65 dB CNEL
- 70 dB CNEL
- 75 dB CNEL

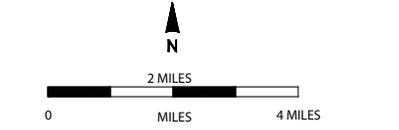
} Projected Activity Level (75,104 operations)

Boundary Lines

- March Air Reserve Base / Inland Port Airport
- - - March Joint Powers Authority Property Line
- - - City Limits

Projected Activity Level	
Annual Operations	75,104
Average Annual Day	206

- Note:**
- Contours represent composite of noise contours from four sources:
 - Forecasts and noise contours from Air Installation Compatible Use Study for March Air Reserve Base (August 2005).
 - Environmental Assessment for Proposed Military Construction and Total Force Integration at March Air Reserve Base (Air Force Reserve Command, June 2010); Environmental Impact Report for March Inland Port General Aviation Facilities Development (March Joint Powers Authority, August 2012).
 - F-15 Aircraft Conversion Environmental Impact Statement 144th Fighter Wing California Air National Guard Fresno-Yosemite International Airport (National Guard Bureau, March 2013).



Source: Prepared by Mead & Hunt for AICUZ Study (2005)

Base map source: County of Riverside 2013

Map Source: March Air Reserve Base Land Use Compatibility Plan, 2014



Most of Moreno Valley is located between the I-215 and SR-60 highways; noise from these sources can be a significant environmental concern.



Construction and equipment can produce very high noise levels. The City currently regulates construction activity through Municipal Code Chapter 8.



Aircraft flying in and out of the March Air Reserve Base contribute to the ambient noise environment of the city.

Industrial Noise

Industrial uses, including manufacturing, warehousing, and distribution-related uses, are another source of noise that can have a varying degree of impact on adjacent uses. Mechanical equipment, generators, and vehicles associated with these uses all contribute to noise levels at industrial sites. Existing industrial uses in Moreno Valley are largely concentrated in the southwest of the City, adjacent to MARB and Interstate-215; however, significant light industrial uses are planned at the World Logistics Center site at the eastern edge of the city. While industrial uses are generally concentrated at the periphery of the city, the potential for noise conflicts exists where these uses abut residential areas.

Construction Noise

Construction can be another source of unwanted noise, although typically short-term in duration. Construction is most significant when it takes place near sensitive land uses, such as homes, schools, or hospitals, or when it occurs at night or in the early morning hours. The dominant construction equipment noise source is diesel engines without sufficient muffling; however, impact pile driving or pavement breaking can also generate unwanted noise. The City currently regulates construction activity through Municipal Code Chapter 11.80.

Other Equipment Noise

Other portable or small-scale pieces of equipment may also produce noise effects. Portable power equipment, such as leaf blowers and drills, is ubiquitous in the modern city, and can produce very high noise levels at the location of the work for intermittent periods. Mechanical equipment, such as pumps and fans may produce low noise levels, but continuously and for substantial distances. Other amplified sounds, from automotive audio equipment or loudspeakers also create noise exposure.

PROJECTED NOISE SOURCES AND LEVELS

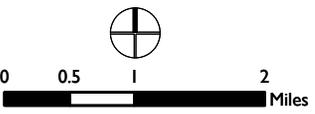
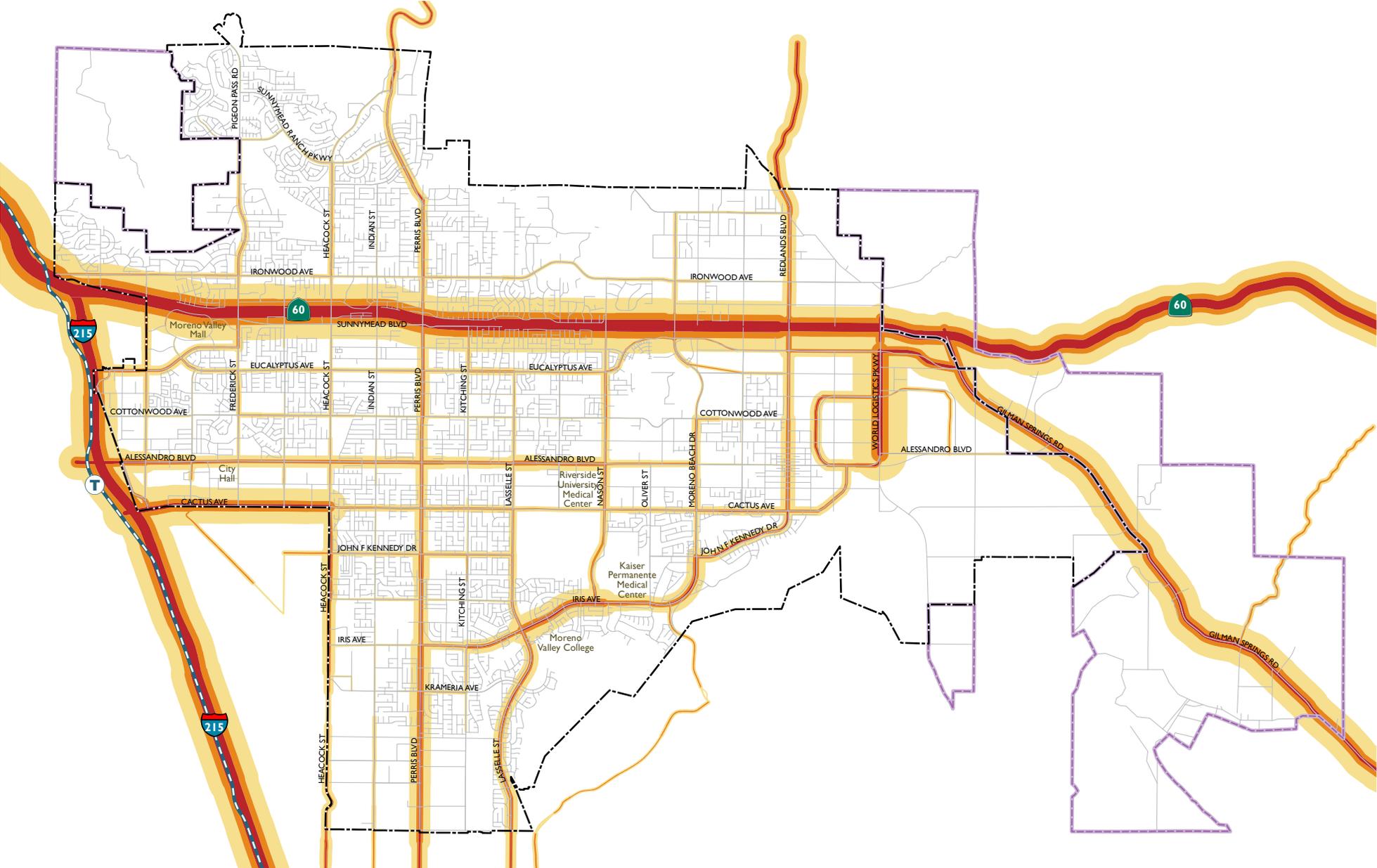
Future development within the Planning Area along with pass-through traffic will result in increased noise levels. Vehicular traffic, including automobile and truck traffic, will continue to be the predominant noise source within the city. The level of vehicular traffic noise varies with many factors, including traffic volume, vehicle mix (including percentage of trucks), traffic speed, and distance from the roadway. Map N-3 shows projected noise level contours at buildout of General Plan land uses in 2040.

Planning for a Pleasant, Healthy Noise Environment

Integrating noise reduction into the planning and design of projects can help address the potential for increased noise as development occurs and ensure a healthy and pleasant noise environment for residents and visitors alike. Proactively reducing noise at its source, separating and buffering noisy land uses, and designing for a quiet indoor environment will contribute to a healthy, livable neighborhood and a vibrant local economy.

In a vibrant city, some noise is inevitable, and making sure that noise-sensitive land uses such as schools and housing are separated from noisy uses is important to ensuring a pleasant, healthy noise environment for all. Land uses have different levels of compatibility relative to noise, and the State of California mandates that general plans include noise level compatibility standards for the development of land as a function of a range of noise exposure values. Noise level is often measured on the Community Noise Equivalent Level (CNEL) scale. CNEL ratings measure levels in noise over a typical day, with higher weight given to noises

Map N-3: Future Noise Contours



Data Source: City of Moreno Valley, 2019; Fehrs and Peers, 2020; Dyett & Bhatia, 2020.

Future Noise Contours	T Metrolink Station
 CNEL 65 to 70 dB	Metrolink Commuter Rail
 CNEL 70 to 75 dB	City of Moreno Valley
 CNEL >75 dB	Sphere of Influence

occurring during evening and sleeping hours. Table N-1 identifies noise level compatibility standards and interior noise standards to be used to guide land use planning decisions within a given contour.

The Municipal Code also contains regulations intended to ensure best practices in siting new development. The air installation compatibility use overlay district (AICUZ) contained in the zoning code includes standards that limit public exposure to aircraft accidents and noise and encourage future development that is compatible with the continued operation of MARB. Additionally, the City has adopted Good Neighbor Guidelines for warehouse and distribution facilities into the zoning code that specify requirements to minimize the potential for impacts from these facilities on surrounding areas, including limiting noise generating activities near residential areas.

Design practices, such as building placement and interior noise proofing, can be used to promote healthy indoor and outdoor noise environments throughout the community. Insulation, primarily used to improve a building’s energy performance, can help reduce indoor noise significantly. Sound-reducing window designs and landscaped buffer areas can also reduce interior noise, even in noisy areas. Noise from traffic on the freeways can be reduced by constructing sound barriers with acoustic dampening materials. Sound reducing paving materials can also significantly reduce sound from arterial roads within the city. General Plan policies seek to promote the use of thoughtful planning and design to minimize unwanted noise in the community and promote a pleasant, healthy noise environment.

Table N-1: Community Noise Compatibility Matrix

Land Use Category	Community Noise Exposure (CNEL)					
	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, Mobile Homes	A			B	C	D
Residential - Multiple Family	A			B	C	D
Transient Lodging: Hotels and Motels	A			B	C	D
Schools, Libraries, Churches, Hospitals, Nursing Homes	A				C	D
Auditoriums, Concert Halls, Amphitheaters	B				C	
Sports Arena, Outdoor Spectator Sports	B				C	
Playground, Neighborhood Parks	A				B	C
Golf Courses, Riding Stables, Water Recreation, Cemeteries	A					C
Office Buildings, Businesses, Commercial and Professional	A				B	C
Industrial, Manufacturing, Utilities, Agricultural	A					B
						C

A	<p>Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.</p>
B	<p>Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.</p>
C	<p>Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.</p>
D	<p>Clearly Unacceptable: New construction or development should generally not be undertaken.</p>

Source: Governor’s Office of Planning and Research 2017.

Goal N-1: Design for a pleasant, healthy sound environment conducive to living and working.

POLICIES

N.1-1: Protect occupants of existing and new buildings from exposure to excessive noise, particularly adjacent to freeways, major roadways, the railroad, and within areas of aircraft overflight.

N.1-2: Guide the location and design of transportation facilities, industrial uses, and other potential noise generators to minimize the effects of noise on adjacent land uses.

N.1-3: Apply the community noise compatibility standards (Table N-1) to all new development and major redevelopment projects outside the noise and safety compatibility zones established in the March Air Reserve Base/Inland Port Airport Land Use Compatibility (ALUC) Plan in order to protect against the adverse effects of noise exposure. Projects within the noise and safety compatibility zones are subject to the standards contained in the ALUC Plan.

N.1-4: Require a noise study and/or mitigation measures if applicable for all projects that would expose people to noise levels greater than the “normally acceptable” standard and for any other projects that are likely to generate noise in excess of these standards.

N.1-5: Noise impacts should be controlled at the noise source where feasible, as opposed to at receptor end with measures to buffer, dampen, or actively cancel noise sources. Site design, building orientation, building design, hours of operation, and other techniques, for new developments deemed to be noise generators shall be used to control noise sources.

N.1-6: Require noise buffering, dampening, or active cancellation, on rooftop or other outdoor mechanical equipment located near residences, parks, and other noise sensitive land uses.

N.1-7: Developers shall reduce the noise impacts on new development through appropriate means (e.g. double-paned or soundproof windows, setbacks, berming, and screening). Noise attenuation methods should avoid the use of visible sound walls where possible.

ACTIONS

N.1-A: Continue to review proposed projects for conformance with the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, including consideration of the Compatibility Zone Factors shown in Table MA-1 and the Basic Compatibility Criteria shown in Table MA-2, as may be amended.

N.1-B: Require dedication of an aviation easement as a condition of development approval for projects within the noise and safety compatibility zones identified by the March Air Reserve Base/Inland Port Airport Land Use Compatibility Plan, as may be amended. The intention of this action is to alert interested individuals, including property buyers and developers, to the proximity of aircraft operations and related noise and safety compatibility protections.

N.1-C: Study the feasibility of using alternative pavement materials such as rubberized asphalt pavements on roadways to reduce noise generation. Update City standards as appropriate.



Noise attenuation measures such as double paned windows (above) and rubberized asphalt (below) can reduce noise and mitigate its effects.



Addressing Noise Concerns

As in any bustling and vibrant city, some noise is inevitable in Moreno Valley. Having systems in place to minimize unwanted noise before it occurs, and to manage noise concerns when they arise is important to ensure a healthy and economically dynamic future.

Moreno Valley's Municipal Code establishes allowable levels of noise within the city and consequences for violation of the standards it sets. When instances of excessive noise do occur, residents can report noise complaints to the City's Code & Neighborhood Services Division, the division responsible for handling violations, including noise complaints, and for generally protecting the health and safety of the community. Noise complaints received by the Division typically involve residential noise, including complaints regarding loud music, animal noise, and noise from unlicensed home business activities.

In addition to the noise controls built into the Municipal Code, the City works closely with the neighboring MARB to coordinate noise control efforts.

As Moreno Valley continues to grow culturally and economically, the potential for noise conflicts will increase, particularly in mixed use areas or locations near public gathering places. While some noise is expected – and even welcome – in a dynamic city, Moreno Valley will continue to ensure that the noises of daily life do not exceed comfortable and pleasant levels for all by maintaining a robust system for addressing noise concerns.

Goal N-2: Ensure that noise does not have a substantial, adverse effect on the quality of life in the community.

POLICIES

- N.2-1:** Use the development review process to proactively identify and address potential noise compatibility issues.
- N.2-2:** Continue to work with community members and business owners to address noise complaints and ensure voluntary resolution of issues through the enforcement of Municipal Code provisions.
- N.2-3:** Limit the potential noise impacts of construction activities on surrounding land uses through noise regulations in the Municipal Code that address allowed days and hours of construction, types of work, construction equipment, and sound attenuation devices.
- N.2-4:** Collaborate with the March Joint Powers Authority, March Inland Port Airport Authority, Riverside County Airport Land Use Commission, and other responsible agencies to formulate and apply strategies to address noise and safety compatibility protection from airport operations.
- N.2-5:** Encourage residential development heavily impacted by aircraft-related noise to transition to uses that are more compatible.

ACTIONS

- N.2-A:** Continue to maintain performance standards in the Municipal Code to ensure that noise generated by proposed projects is compatible with surrounding land uses.
- N.2-B:** Update the Municipal Code to establish controls on outdoor noise in public places, such as outdoor dining terraces in commercial mixed use areas, public plazas, or parks. Controls may include limits on noise levels or hours of operation.



Noise is part of a bustling, dynamic city. However, controls such as limits on hours of operation or noise levels can help ensure that the noises of daily life are not unpleasant or uncomfortable.

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