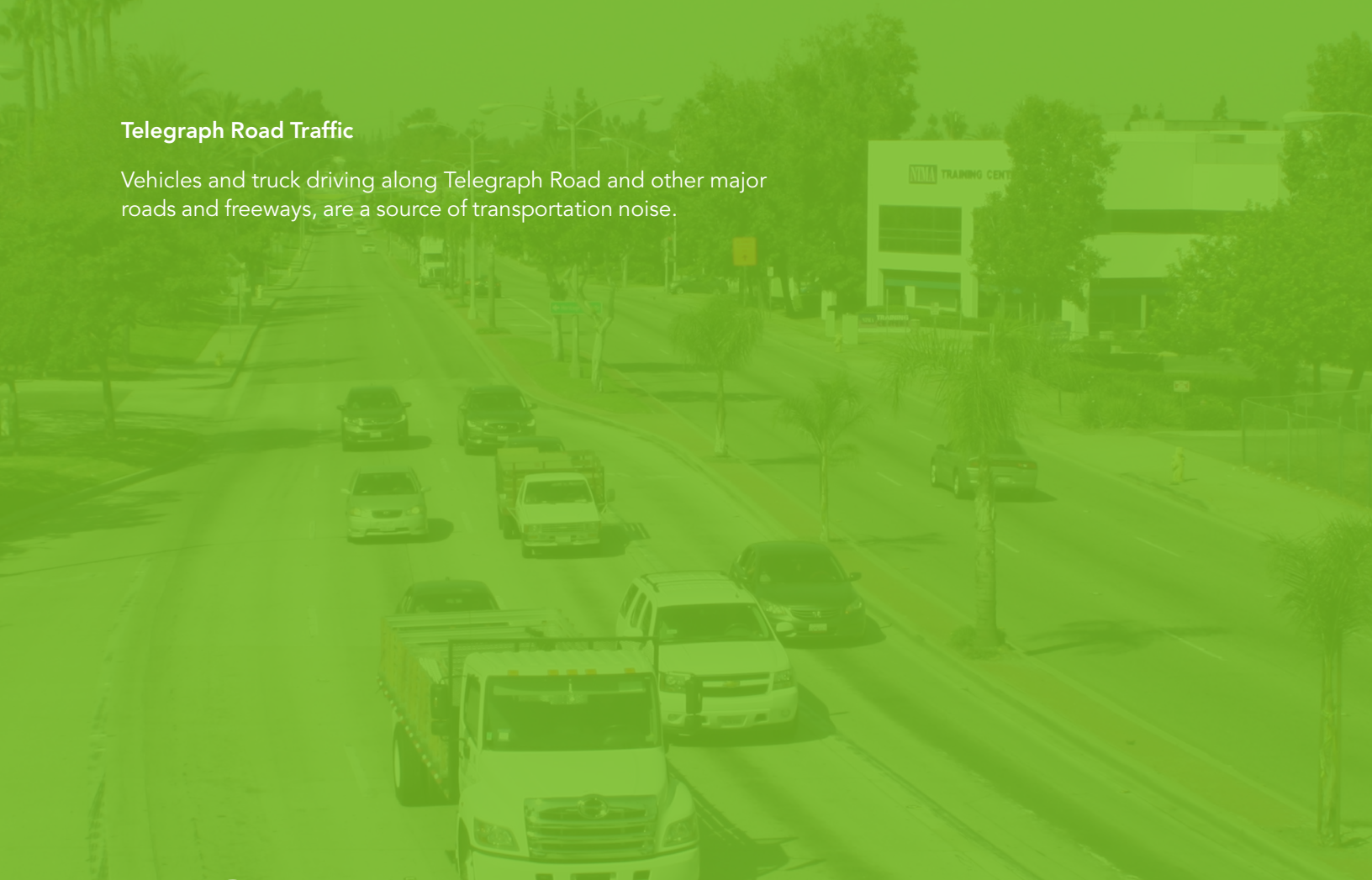


Telegraph Road Traffic

Vehicles and truck driving along Telegraph Road and other major roads and freeways, are a source of transportation noise.

PUBLIC REVIEW DRAFT

CHAPTER 9

NOISE ELEMENT

Re-Imagine Santa Fe Springs

2040 GENERAL PLAN

Train Noise

Trains are a source of various noises including rail squeal caused by wheel slippage on tracks, locomotive engines, and train horns and other noisemaking devices for both communication and warning.

NOISE ELEMENT

Introduction

Noise commonly is defined as unwanted or unpleasant sound. In urban environments like Santa Fe Springs, outdoor noise is a constant presence that, over time, residents pay little heed to unless it disrupts their activities. During evening and night-time hours, people expect the sounds of roadway and freeway traffic, trains, garden equipment, and industrial and commercial businesses to diminish to levels that allow such pleasures as sitting in the backyard or enjoying a restful night's sleep. This Noise Element responds to the community's desire to live in neighborhoods protected from undesirable and harmful noise sources, and for employees in the myriad of local businesses to benefit from the protections afforded by State and federal noise regulations.

Per State law, the fundamental goals of the Noise Element are to:

- Provide sufficient information concerning the community noise environment so that noise may be effectively considered in the land use planning process. The element must establish the policy framework for any community noise ordinance adopted to resolve noise complaints.
- Develop strategies for abating excessive noise exposure.
- Protect areas of the City with noise environments deemed acceptable and locations considered "noise sensitive," such as residences, schools and hospitals.
- Define the community noise environment using standard measures such as the Community Noise Equivalent Level (CNEL) or Day-Night noise (Ldn) that account for heightened night-time noise sensitivity.

The Noise Element works together with the other General Plan elements to guide Santa Fe Springs toward a healthier 2040 by reducing noise exposure resulting from concentrations of vehicle traffic and heavy industry next to or within environmental justice communities—areas that already bear the burden of adverse health effects from air pollution. The Noise Element identifies strategies to mitigate long-standing noise conflicts and minimize future ones as new, denser infill residential and mixed-use development occurs.

The white noise generated by a fountain creates a respite from urban noises, such as the fountain located at the Santa Fe Springs Sculpture Garden.

A Brief Noise Primer

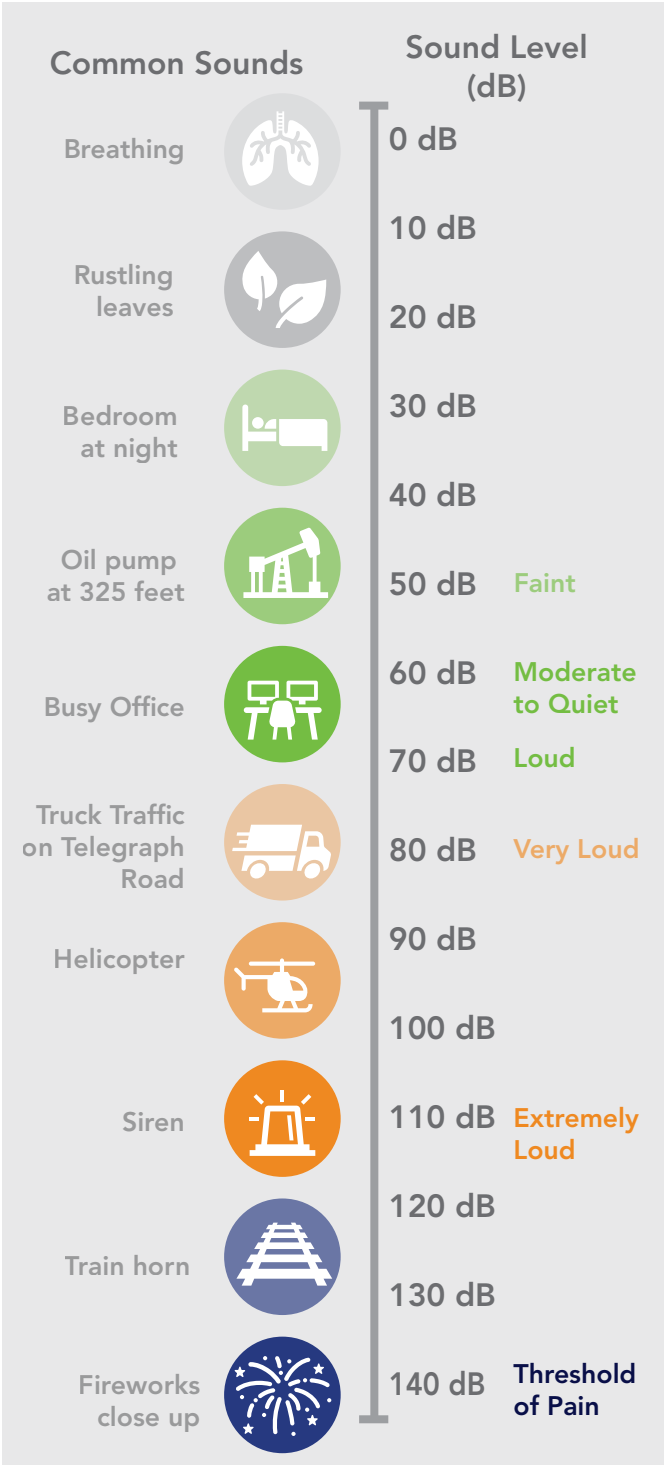
How Do We Measure Noise?

Noise, from a scientific perspective, is a vibration through the air (or water) that we receive into our eardrums. Nerves transmit these vibrations to the brain, and the brain interprets the waves as various sounds which we have learned to call, for example, a dog's bark, a train horn, or the playground bell.

We measure these sound waves by their amplitude, or how forceful (loud) the sound is, and the frequency, or pitch. Acoustical engineers have developed the decibel, or dB, to measure and describe the loudness of sound. To account for the way that humans perceive sounds at each frequency, the A-weighted decibel scale (dBA) is used. The softest we can hear is 0 dBA. A quiet bedroom is about 30 dB (see Figure N-1). One person speaking to you at close range talks at 65 dB. A noisy restaurant? About 90 dB. A crying baby gets your attention at 110 dB. If you drive a Porsche 911 Carrera RSR Turbo 2.1, strap in for 138 dB of vroom.

To measure and mitigate noise at a community level, rather than point-source where a particular noise occurs, planners use the two metrics referenced above: CNEL and Ldn. These metrics report a 24-hour average noise level that is weighted to account for greater sensitivities during the evening/night by adding five decibels to sound levels between 7:00 P.M. to 10:00 P.M. and 10 decibels between 10:00 P.M. and 7:00 A.M. The overall 24-hour noise is indicated as a contour map that illustrates noise exposure zones by dB CNEL. Figure N-2 indicates community noise conditions in 2020, the year this Noise Element was prepared.

Figure N-1: Common Noise Levels



Community Noise Standards

Table N-1 identifies general guidelines the City uses when considering where new land uses can be located to provide for a suitable noise environment. Given their obvious sensitivity, residential neighborhoods receive a high degree of protection. In mixed-use developments, particularly around rail transit stations, residents' expectations and the applied standards may be a bit more flexible.

As Figure N-2 shows, neighborhoods along the western City edge experience noise levels between 65 and 75 CNEL, even with presence of sound walls. As Table N-1 indicates, 65 CNEL generally is considered the highest noise level appropriate for a residential neighborhood; however, the freeways and adjacent neighborhoods were established long before these sensitivities were adopted as common practice. Nonetheless, environmental justice considerations (see the Environmental Justice Element) suggest that continued effort be applied to address noise concerns.

Table N-1: Noise Land Use Compatibility Guidelines

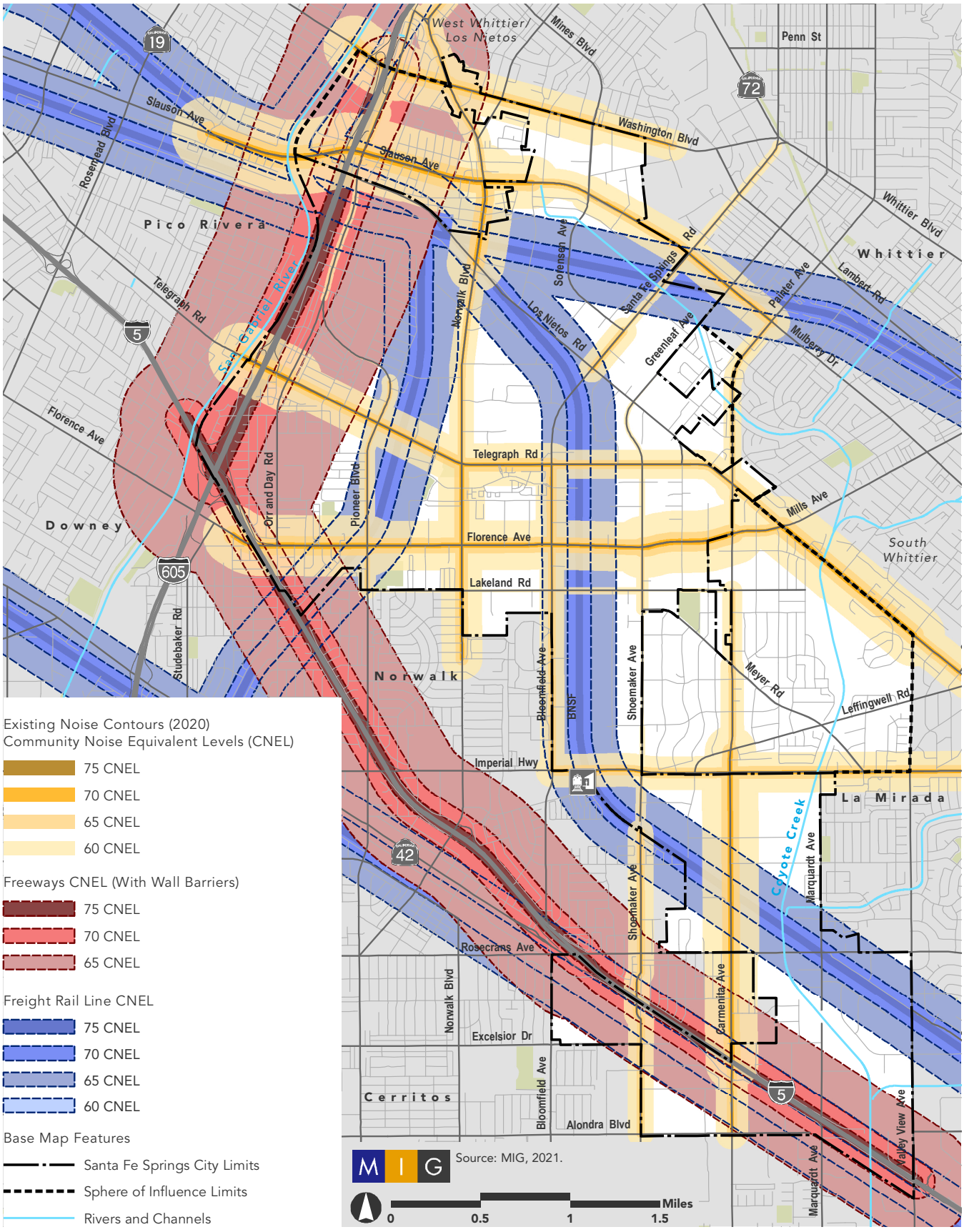
Noise Receptor (Land Use)	Maximum Exterior Noise Level from Property Line (CNEL)
Residential (Low Density, Multi-Family, Mobile Home Parks, Mixed-Use, Housing Developments, Emergency Shelters/Low-Barrier Navigation Centers, Residential Care Facilities)	65; 70 for mixed-use development
Transient Lodging (Motels/Hotels)	70
Schools, Libraries, Churches, Hospitals/Medical Facilities, Nursing Homes, Community Care Facilities, Museums	65
Theaters, Auditoriums	70
Playgrounds, Parks	70
Office Buildings, Business Commercial and Professional	70
Industrial, Manufacturing, and Utilities	75

Notes:

1. The noise level standard is the maximum level which may be imposed upon the referenced land use. For a proposed use not listed on the table, the City uses the noise exposure standards for the nearest similar use.

2. Noise standards for interior noise levels are established by various State and federal regulations, including Title 24 of the California Health and Safety Code and occupational health and safety regulations.

Figure N-2: Existing Noise Conditions (2020)



Along arterial roadways such as Florence Avenue, Telegraph Road, and Norwalk Boulevard, traffic noise levels dissipate quickly due to the shielding effect provided by commercial and industrial buildings along these routes. Regarding train noise, both freight and commuter train 65 CNEL noise contours extend one-quarter mile from the rail line, indicating that any new residential development generally should be located beyond this distance, except for transit-oriented development.

Physical Effects of Noise

Exposure to loud noise levels can adversely impact a person's health. Studies have shown that:

- Extended periods of noise exposures above 90 dBA can result in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace.
- Prolonged exposure to noise levels higher than 85 dBA will begin to physically damage human hearing.
- Prolonged exposure to noises exceeding 75 dBA can increase body tension, thereby affecting blood pressure and functions of the heart and nervous system.

The California Noise Control Act (Health and Safety Code 46000-46080) declares that "excessive noise is a serious hazard to the public health and welfare" and recognizes that "exposure to certain levels of noise can result in physiological, psychological, and economic damage." This Act establishes as a matter of public policy that "all Californians are entitled to a peaceful and quiet environment without the intrusion of noise which may be hazardous to their health or welfare."

Noise Control in Santa Fe Springs

The Santa Fe Springs Municipal Code prohibits "unnecessary, excessive, and annoying noises from all sources" (Section 155.421 Declaration of Policy Pertaining to Noise). The Municipal Code establishes ambient noise level standards, measured in dBA, for residential neighborhoods; schools, churches, and hospitals; commercial districts; business park zones; and industrial districts. These standards are intended to create quality noise environments in residential areas and prohibit excessive, hazardous noise conditions in business districts.

Enforcement of the City's noise ordinance is important to protect the serenity of residential neighborhoods. Education of the public may assist in the reduction of noise levels.

Sources of Community Noise

By understanding the noise sources, the City can structure noise policies to best respond.

Vehicles – General

Vehicle noise results from a combination of mechanical noise, exhaust noise (stack exhaust on heavy trucks), tire/pavement noise, and aerodynamic noise (at high speeds). Electric vehicles create very little mechanical noise, so as the number of electric vehicles increases, this noise source will diminish. At highway speeds, tire/pavement noise affects total vehicle noise to a greater extent than the other vehicle noise components combined. Tire/pavement noise on a passenger car operating at a steady freeway speed may account for as much as 75 to 90 percent of a vehicle's noise energy.

Capital improvement programs can perceptively lower overall traffic noise levels by careful pavement selection and design. While the City cannot effect change on the adjacent freeways, it can plan street resurfacing programs and strategies that can reduce tire/pavement noise—balanced, of course, with the need to ensure pavement designs can withstand the local heavy truck traffic.

Goods Movement

Goods movement has significant noise impacts, from trucks driving on the freeways and roadways and idling at businesses, to freight and commuter rail lines. As an example, one heavy, diesel-powered truck traveling at 35 miles per hour produces a sound level equivalent to 19 gas engine cars.

Similar to traffic on a highway, trains are considered a line source (from a linear rather than stationary location), with sound attenuating at a rate of about 4.5 dB per doubling of distance. That noise, combined with train horns sounded at at-grade crossings, can be heard citywide.

Oil and Gas Operations

The Municipal Code contains regulations specific to oil and gas production to manage noise conditions. The Planning Commission may impose limitations and regulations as deemed necessary to protect adjacent properties from adverse noise impacts, including soundproofing and limitation on hours of operation. Engines used in connection with the drilling of any oil well or in any production equipment must be equipped with an exhaust muffler to prevent excessive or unusual noise. Maintenace activities related to exiting oil well operations must also incoporate measures that prevent excessive noise

Roadway noise is the collective sound energy emanating from motor vehicles, consisting primarily of road surface, tire, engine/transmission, aerodynamic, and braking elements. Noise of rolling tires driving on pavement is found to be the biggest contributor of roadway noise and increases with higher vehicle speeds.

Construction Activity

Construction of new housing, commercial and industrial buildings, and transportation infrastructure are positive signs of economic growth. Continual renewal means constant construction activity and noise. City noise regulations limit when construction activity can occur to minimize people's exposure to the noise.

Conditions to Consider Moving Forward

Santa Fe Springs' land use pattern historically kept residential neighborhoods separate from oil field activity and the heavy industrial operations that dominated the landscape (although as described above, proximity to freeways was less of a consideration). However, as oil field operations consolidated and cleaner industries moved in, new homes were built in areas formerly occupied by industry, with industry continuing to exist as a next-door neighbor. With virtually no vacant land remaining in the city, additional residential development planned as part of transit-oriented projects adjacent to the existing MetroLink and Metro's L Line stations will bring new residents into areas with train noise and along roadways that support truck traffic traveling to nearby industrial districts.

Exterior noise conditions that are expected to be of continuing focus include rail freight traffic, rail station areas, truck traffic volumes, loading docks at industrial businesses, and vehicles traveling along Interstates 5 and 605. Evaluating the potential impacts of this collection of noise sources requires assessing impacts at the community noise level over time using the information provided by CNEL contour maps. Figure N-2 shows projected noise conditions in Santa Fe Springs in 2040 based on anticipated traffic and train volumes and industrial activity associated with growth pursuant to land use growth identified in the Land Use Element. Over time, very few areas of Santa Fe Springs are anticipated to have noise environments below 65 CNEL due to an increase in train activity and a modest rise in roadway traffic volumes. This projected condition suggests the importance of increased efforts to encourage electric vehicle use and modified rail operations.

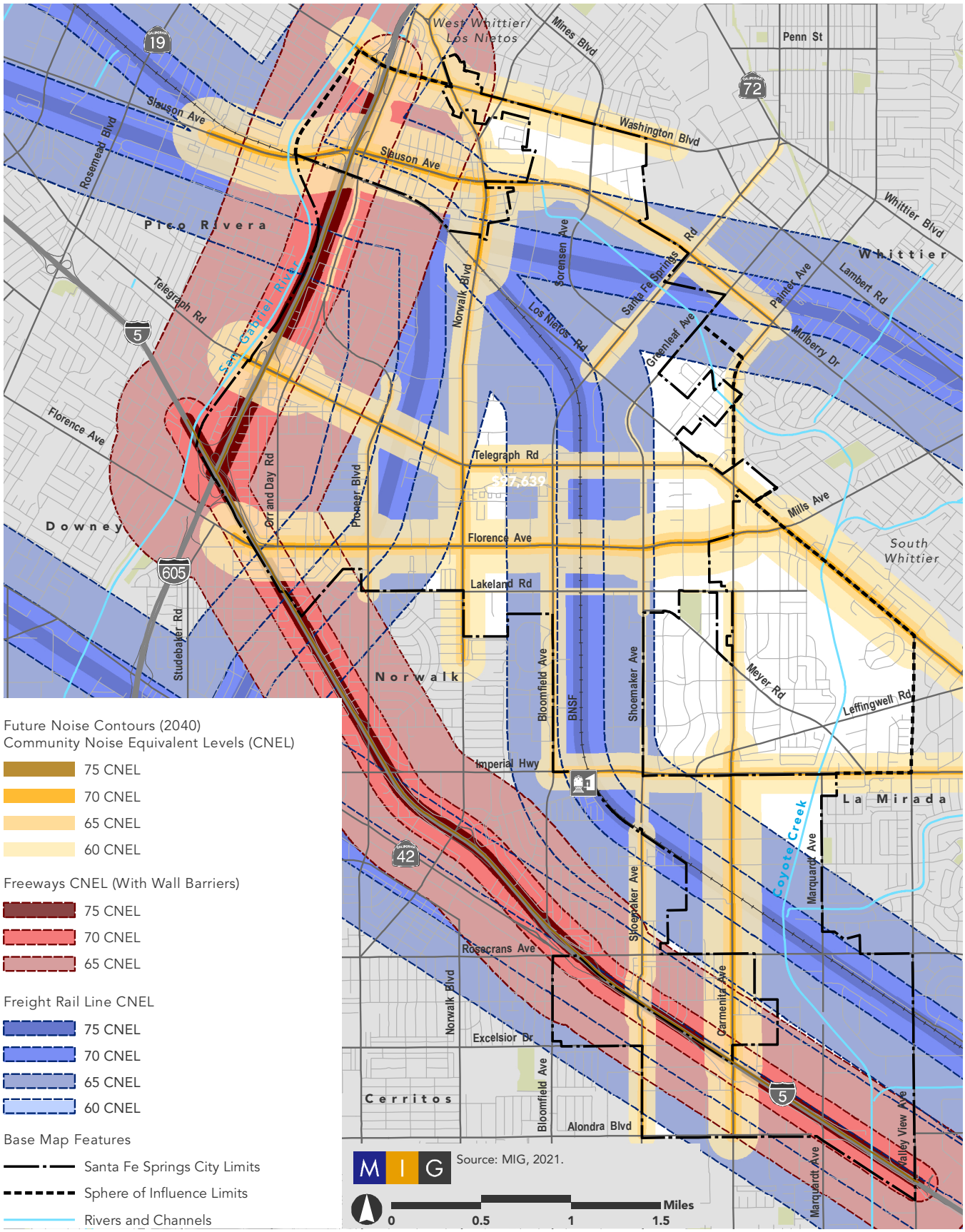
Noise Plan

As a largely industrial City, Santa Fe Springs recognizes that noise will continue to be part of the environment, and that minimizing noise impact on residents and the thousands of employees in the City every day remains a key objective. Actors and actions outside the City will help achieve this goal. For example, the increased electrification of cars and heavy trucks (pursuant to State and federal government mandates) will provide the dual benefit of reduced vehicle noise locally and fewer pollutant emissions—welcome advances toward creating healthier conditions. Train operators can use less-intrusive horns, and the City can work with operators to create "quiet zones." City policies that limit or prohibit truck idling at loading docks or queues can benefit adjacent uses. And foremost, land use policies and practices that address the interface between residential and industrial uses can minimize the populations exposed to excessive noise.

Noise reduction planning starts with the Noise Element and it informs a diverse number of plans and policies:

- Planning of non-residential developments (rezoning, planned unit developments, specific plans, area plans, transit-oriented plans, infrastructure plans and studies)
- Capital improvement programs
- Mitigations from transportation agencies and construction mitigation plan
- Noise-reducing/attenuating designs of a mixed-use building so it does not expose upper floors and private and common open spaces to noise.
- Technical support – home rehabilitation and retrofits that include soundproofed-quality materials, community monitoring of air quality along with noise.
- Regularly scheduled updates of the Noise Element to coincide with anticipated and unanticipated developments and updates to General Plan elements.

Figure N-3: Future Noise Conditions (2040)



Noise Element Goals and Policies

The following goals and policies provide guidance in addressing the current and future challenges the City will confront.

To help identify goals and policies that align with the General Plan Guiding Principles, the following symbologies represent each of the Guiding Principles:

- HS — **Healthy and Safe Neighborhoods**
- ES — **Economic Strength and Local Businesses**
- D — **Downtown**
- DE — **Diversified Economy**
- EJ — **Environmental Justice**
- CSE — **Clean and Sustainable Environment**
- ARC — **Adaptive and Resilient Community**
- EI — **Equitable and Inclusionary**
- ADT — **Active and Diverse Transportation**
- T — **Technology**

Transportation Noise

GOAL N-1: REDUCED TRAFFIC AND TRAIN NOISE

Policy N-1.1: HS

Freeway and Roadway Noise. Incorporate into transportation planning programs noise reduction measures that can reduce noise impacts on residential neighborhoods from surface transportation sources, including such features as noise barriers and walls, insulation, green buffers and berms, and paving technologies that reduce vehicle noise.

Policy N-1.2: HS

Residential Noise Impacts. Update truck routes and redesignate routes to reduce noise exposure in residential neighborhoods and on sensitive community noise receptors that are within noise zones of 70 CNEL or higher.

Policy N-1.3: T

Electric Vehicles. Support efforts that will reduce vehicular noise through programs that increase the percentage share of electric vehicles on roadways.

Policy N-1.4: T

Quiet Road Surfaces. Incorporate into surface roadway design materials that absorb tire noise.

Policy N-1.5: HS

Rail Noise and Vibrations. Consult with rail companies that operate lines through the City to include noise and vibration reduction strategies—signal noise, at-grade crossing noise, and vibration levels produced by heavy and light rail traffic—to minimize train noise impacts on residential neighborhoods.

Policy N-1.6: T

Bus Noise. Support the efforts of Metro to use quiet bus technologies and to route bus lines in a manner that avoids noise impacts on residential neighborhoods.

Policy N-1.7: T

Garbage Trucks and Services. Award garbage collection franchise contracts in part on the ability of service providers to minimize noise by using quiet and non-polluting collection vehicles and other noise-reducing strategies.

Policy N-1.8: HS

Railway Noise and Vibration Impacts. Support the soundproofing and retrofitting of homes adjacent to railways and rail yards by incorporating wall insulation, installing sound-blocking windows and doors, adding indoor and/or outdoor soundproof curtains or panels, and other similar technologies and sound controls.

Policy N-1.9: HS

Railway Barriers. Incorporate physical barriers between residential uses and railways and rail yards, including planting extensive vegetation barriers, adding earth berms, installing sounds walls, and other mitigation strategies to minimize air pollution and noise and vibration impacts.

Noise and Land Use Planning Integration

GOAL N-2: LAND USE DECISIONS THAT MINIMIZE NOISE EXPOSURE

Policy N-2.1: HS

Noise Standards. Review and update as necessary noise standards in the Municipal Code to ensure they sufficiently address community noise conditions, issues, and concerns for various land uses.

Policy N-2.2: HS

Land Use Compatibility. Include the noise/land use compatibility standards of Table N-1 and compliance with the Municipal Code noise regulations as part of development review.

Policy N-2.3: HS

Noise Studies. Require developers of projects that are considered potential sources of noise, or when the projects are proposed next to existing or planned noise-sensitive land uses to prepare an acoustical study that describes the existing and future noise environments and defines noise-reducing design incorporated into the project that will achieve a noise environment consistent with City standards and guidelines.

Policy N-2.4: HS

Truck Access. Require that site design for new industrial and commercial developments and remodels address proximity to residential uses by locating automobile and truck access at the maximum practical distance from residential uses and with adequate noise shielding provided to achieve noise standards.

Policy N-2.5: HS

Noise-Generating Industrial Facilities. Locate noise-generating industrial facilities at the maximum practical distance from residential neighborhoods. Require additional setbacks between noise-generating equipment and noise-sensitive uses and limit the operation of noise-generating activities to daytime hours where such

activities may affect residential uses.

Non-Transportation Noise Control

GOAL N-3: QUIETER NEIGHBORHOODS AND HOMES

Policy N-3.1: **Noise Enforcement.** Enforce City regulations intended to mitigate noise-producing activities, reduce intrusive noise, and alleviate noise deemed a public nuisance.

HS

Policy N-3.2: **Noise Reduction Technology.** Require new City equipment purchases or facilities operations that utilizes noise reduction technology to comply with noise performance standards.

HS

Policy N-3.3: **Construction Noise.** Require construction management plans that, in addition to enforcing City regulations, provide for construction noise mitigation to avoid adverse impacts associated with all construction-related activities and limit the permitted hours of construction activity.

HS

Policy N-3.4: **Home Retrofits.** Develop a program to assist with the retrofit of residences adjacent to freeways to achieve suitable interior noise conditions.

HS

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