CHAPTER

5 Noise Element

INTRODUCTION

Putting Noise in its Place

The urban environment contains a variety of noise sources that affect the way people live and work. Some types of noise are only short-term irritants, like the pounding of a jackhammer or the whine of a leaf blower. City noise regulations, including the Noise Control Ordinance, can control this type of noise. However, certain noise sources, such as freeways, roads, aircraft, and trains, are permanent fixtures in the community, adversely affecting its quality of life.

Burbank is a bustling urban community with activities that can result in changes to the noise environment.

As Burbank and surrounding communities continue to grow, transportation and stationary-source noise levels will increase. Burbank is a community that protects residents and businesses from excessive noise. The City will continue to reduce the negative effects of noise throughout the community, while recognizing that certain noisy uses are essential to Burbank's economic prosperity. The City seeks ways to safeguard the community from excessive noise as the ambient noise level in the community rises. The Noise Element describes the means to reduce the negative effects of noise in Burbank.

Purpose and Statutory Requirements

The California Government Code and other state guidelines specify both the required contents of a Noise Element and the methods used in its preparation. The Office of Noise Control Guidelines requires that certain major noise sources and areas containing noise-sensitive land uses be identified and quantified by preparing generalized noise exposure contours for current and projected levels of activity within the planning area.

State law requires that the Noise Element consider the following major noise sources:

- Highways and freeways;
- Primary arterials and major local streets;
- Railroad operations;
- Aircraft and airport operations;
- Local industrial facilities; and,
- Other stationary sources.

Relationship to Other Elements

Noise policies and programs affect implementation of the Land Use Element as it relates to both noise sources and noise-sensitive uses. The noise contours and land use compatibility standards contained in the Noise Element should be used when evaluating planning and development decisions directed by the Land Use Element.

The Noise Element also relates to the Mobility Element, because Burbank's primary noise sources are freeways, arterial roadways, railways, and aircraft. Policies in the Noise Element mitigate excessive noise along transportation routes. Similarly, Noise Element policies relate to the Housing Element by directing new housing development to appropriate sites away from sources of excessive noise and requiring that design features be incorporated to ensure acceptable indoor noise levels.

NOISE GOALS AND POLICIES

Certain areas of Burbank are subject to high noise levels from one or more of the following sources: freeways and arterial roadways, construction activities, machinery, industrial activities, railroads, and aircraft. Noise Element goals and policies minimize the effects of noise in the community, particularly in residential areas and near such noise-sensitive land uses as hospitals, convalescent and day care facilities, schools, and libraries. The Noise Element also describes best practices to protect residents and businesses from severe noise levels.

GOAL 1 NOISE COMPATIBLE LAND USES

Burbank's diverse land use pattern is compatible with current and future noise levels.

Policy 1.1 ***Ensure the noise compatibility of land uses when making land use planning decisions.***

Policy 1.2 ***Provide spatial buffers in new development projects to separate excessive noise-generating uses from noise-sensitive uses.***

Policy 1.3 ***Incorporate design and construction features into residential and mixed-use projects that shield residents from excessive noise.***

Policy 1.4 ***Maintain acceptable noise levels at existing noise-sensitive land uses.***

Policy 1.5 ***Reduce noise from activity centers located near residential areas, in cases where noise standards are exceeded.***

Policy 1.6 ***Consult with movie studios and residences that experience noise from filming activities to maintain a livable environment.***

GOAL 2 NOISE IN MIXED-USE DEVELOPMENT

Noise from commercial activity is reduced in residential portions of mixed-use projects.

Policy 2.1 ***Require the design and construction of buildings to minimize commercial noise within indoor areas of residential components of mixed-use projects.***

Policy 2.2 ***Locate the residential portion of new mixed-use projects away from noise-generating sources such as mechanical equipment, gathering places, loading bays, parking lots, driveways, and trash enclosures.***

Mixed-use development contributes to a thriving community, but can place sensitive receptors adjacent to noisy businesses.

GOAL 3 VEHICULAR TRAFFIC NOISE

Burbank's vehicular transportation network reduces noise levels affecting sensitive land uses.

Policy 3.1 ***Support noise-compatible land uses along existing and future roadways, highways, and freeways.***

Policy 3.2 ***Encourage coordinated site planning and traffic management that minimize traffic noise affecting noise-sensitive land uses.***

Policy 3.3 ***Advocate the use of alternative transportation modes such as walking, bicycling, mass transit, and non-motorized vehicles to minimize traffic noise.***

Policy 3.4 ***Install, maintain, and renovate freeway and highway right-of-way buffers and sound walls through continued work with Caltrans and Los Angeles County Metropolitan Transportation Authority (MTA).***

Policy 3.5 ***Monitor noise levels in residential neighborhoods and reduce traffic noise exposure through implementation of the neighborhood protection plans.***

Policy 3.6 ***Prohibit heavy trucks from driving through residential neighborhoods.***

Policy 3.7 ***Where feasible, employ noise-cancelling technologies such as rubberized asphalt, fronting homes to the roadway, or sound walls to reduce the effects of roadway noise on sensitive receptors.***

Policy 3.8 ***Within the Airport Influence Area, seek to inform residential property owners of airport-generated noise and any land use restrictions associated with high noise exposure.***

GOAL 4 TRAIN NOISE

Burbank's train service network reduces noise levels affecting residential areas and noise-sensitive land uses.

Policy 4.1 ***Support noise-compatible land uses along rail corridors.***

Policy 4.2 ***Require noise-reducing design features as part of transit-oriented, mixed-use development located near rail corridors.***

Policy 4.3 ***Promote the use of design features, such as directional warning horns or strobe lights, at railroad crossings that reduce noise from train warnings.***

GOAL 5 AIRCRAFT NOISE

Burbank achieves compatibility between airport-generated noise and adjacent land uses and reduces aircraft noise effects on residential areas and noise-sensitive land uses.

Policy 5.1 ***Prohibit incompatible land uses within the airport noise impact area.***

Policy 5.2 ***Work with regional, state, and federal agencies, including officials at Bob Hope Airport, to implement noise reduction measures and to monitor and reduce noise associated with aircraft.***

Policy 5.3 ***Coordinate with the Federal Aviation Administration and Caltrans Division of Aeronautics regarding the siting and operation of heliports and helistops to minimize excessive helicopter noise.***

Policy 5.4 ***Within the Airport Influence Area, seek to inform residential property owners of airport-generated noise and any land use restrictions associated with high noise exposure.***

GOAL 6 INDUSTRIAL NOISE

Noise generated by industrial activities is reduced in residential areas and at noise-sensitive land uses.

Policy 6.1 ***Minimize excessive noise from industrial land uses through incorporation of site and building design features.***

Policy 6.2 ***Require industrial land uses to locate vehicular traffic and operations away from adjacent residential areas.***

GOAL 7 CONSTRUCTION, MAINTENANCE, AND NUISANCE NOISE

Construction, maintenance, and nuisance noise is reduced in residential areas and at noise-sensitive land uses.

Policy 7.1 ***Avoid scheduling city maintenance and construction projects during evening, nighttime, and early morning hours.***

Policy 7.2 ***Require project applicants and contractors to minimize noise in construction activities and maintenance operations.***

Policy 7.3 ***Limit the allowable hours of construction activities and maintenance operations located adjacent to noise-sensitive land uses.***

Policy 7.4 ***Limit the allowable hours of operation for and deliveries to commercial, mixed-use, and industrial uses located adjacent to residential areas.***

NOISE PLAN

Noise is most often defined as unwanted sound. Excessive noise is considered a disturbance, especially to residential neighborhoods and other noise-sensitive uses. Noise sources in Burbank fall into two categories: transportation-related and stationary. Examples of transportation-related sources include vehicles, airplanes, and rail cars. Examples of stationary sources include recreational activities at parks (e.g., playgrounds, sports fields), operations in commercial districts (e.g., delivery trucks, air conditioning units), mechanical or industrial processes, and landscaping equipment.

The most prevalent noise source in Burbank is traffic on freeways and arterials—specifically, the Golden State Freeway (I-5), which bisects the city from north to south, and the Ventura Freeway (SR 134), which passes through the southern end of the city. Many arterial roadways (e.g., Glenoaks Boulevard, Olive Avenue, Burbank Boulevard, Hollywood Way) traverse almost all areas of the community.

Other noise sources include passenger and freight rail lines, industrial facilities, and loading docks and mechanical equipment at retail centers. Periodic noise sources include train traffic (i.e., Amtrak, Metrolink, freight trains); aircraft operations into and out of Bob Hope Airport; and trucks and machinery within industrial areas (located primarily along the I-5 corridor). The southwest potion of the city located along the SR 134 corridor consists of movie studios, medical facilities, and office buildings.

Unique to Burbank is "point source" noise originating from movie studios, which are a major land use in the southern portion of the city. Movie studio noise consists of single, periodic events that last for a specific time period, rather than continuously.

Measuring Noise

Although sound can be measured easily, the perception of noise levels is subjective and the physical response to sound complicates the analysis of its effects on people. People judge the relative magnitude of sound sensation in subjective terms such as noisiness or loudness. Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). Table N-1 presents the subjective effect of changes in sound pressure levels.

Table N-1
Changes in Sound Pressure Levels (decibels)

Decibel Change	Change in Apparent Loudness
+/- 3 dB	Threshold of human perceptibility
+/- 5 dB	Clearly noticeable change in noise level
+/-10 dB	Twice/half as loud
+/-20 dB	Louder/much quieter

Source: Engineering Noise Control, Bies and Hansen (1988).

To account for the pitch of sounds and an average human ear's response to such sounds, a unit of measure called an A-weighted sound pressure level (dBA) is used. To provide some perspective on the relative loudness of various types of noise, Table N-2 lists common sources of noise and their approximate noise levels.

Table N-2
Typical Noise Levels of Common Outdoor and Indoor Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 1,000 feet	100	
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
Gas Lawn Mower at 3 feet	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher in Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: Table N-2136.2 of California Department of Transportation's Technical Noise Supplement to the Traffic Noise Analysis Protocol (October 1998).

The intensity of noise fluctuates over time, and several different descriptors of time-averaged noise levels are used. The selection of a proper noise descriptor for a specific source depends on the spatial and temporal distribution, duration, and fluctuation of both the noise source and the environment.

Many metrics have been developed to account for the way humans perceive sound, including the following:

- **L_{eq} (Equivalent Noise Level):** L_{eq} represents an average of the sound energy occurring over a specified period of time. Effectively, the varying sound level over a specified period of time contains the same acoustical energy as a steady-state sound level in that same period.
- **L_{dn} (Day-Night Noise Level):** The 24-hour L_{eq} with a 10-dB "penalty" applied during nighttime noise-sensitive hours, 10 p.m. through 7 a.m. The L_{dn} attempts to account for the fact that noise

during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.

- **CNEL (Community Noise Equivalent Level):** Similar to the L_{dn} described above, but with an additional 5-dB "penalty" for the noise-sensitive hours between 7 p.m. to 10 p.m., which are typically reserved for relaxation, conversation, reading, and watching television. If the same 24-hour noise data are used, the CNEL is typically 0.5 dB higher than the L_{dn}.
- **L_{max} (Maximum Noise Level):** The highest noise level occurring during a specific period of time.

Concerts and community events can result in loud, but temporary, noise conditions.

Assigning the proper noise descriptor when evaluating a noise source is essential to determining a potential environmental impact on the community. Stationary-source noise (e.g., leaf blowers; heating, ventilation, and air conditioning; and loading docks) are generally analyzed using an hourly standard (L_{eq}). Transportation noise sources (e.g., vehicular traffic, aircraft overflights, and train passbys) occur as variable, individual events throughout the day. Hourly descriptors are not effective at describing transportation noise because it occurs at all hours. Instead, a 24-hour descriptor (L_{dn} or CNEL) is used to analyze transportation noise sources because the evening and nighttime penalties are applied to reflect increased sensitivity to noise during the evening and nighttime hours.

Noise Standards and Land Use Compatibility

Burbank has developed land use compatibility standards, based on recommended parameters from the California Governor's Office of Planning and Research, that rate compatibility using the terms normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable. Using these land use compatibility guidelines, the City has established interior and exterior noise standards.

The City's land use compatibility standards are presented in Table N-3. These standards, which use the CNEL/L_{dn} noise descriptor, provide for normally acceptable conditions based on state recommendations. They are intended to apply to land uses exposed to noise levels generated by transportation sources (e.g., traffic, railroad operations, aircraft). Noise exposure limits for land use compatibility are generally established as 60 dBA CNEL/L_{dn} for exterior spaces in most sensitive land use designations (e.g., single-family residential, nursing homes, hospitals). Higher exterior noise levels (65 dBA CNEL/L_{dn}) are permitted for multiple-family housing and housing in mixed-use contexts than for single-family homes. This is because multiple-family complexes are generally located in transitional areas between single-family neighborhoods and commercial districts, or near major arterials served by transit, and a more integrated mix of residential and commercial activity (accompanied by higher noise levels) is often desired in such locations. These standards also establish maximum interior noise levels for new residential development, requiring that sufficient insulation be provided to reduce interior ambient noise levels to 45 dBA CNEL/L_{dn}.

The City's land use compatibility standards are based on the existing or intended future use of the property. The standards are purposefully general, and not every specific land use is identified. Application of the noise standards will vary on a case-by-case basis according to location, development type, and associated noise sources. When stationary noise is the primary noise source, and to ensure that noise producers do not adversely affect noise-sensitive land uses, the City applies a second set of

Table N-3
Maximum Allowable Noise Exposure—Transportation Sources

Land Use Category	Exterior Normally Acceptable[1] (dBA CNEL/L_{dn})	Exterior Possibly Acceptable[2] (dBA CNEL/L_{dn})	Exterior Normally Unacceptable[3] (dBA CNEL/L_{dn})	Interior Acceptable[4] (dBA CNEL/L_{dn} except where noted)
Residential, single-family	Up to 60	61-70	71 and higher	45
Residential, multi-family	Up to 65	66-70	71 and higher	45
Residential, multi-family mixed-use	Up to 65	66-70	71 and higher	45
Transient lodging	Up to 65	66-70	71 and higher	45
Hospitals; nursing homes	Up to 60	61-70	71 and higher	45
Theaters; auditoriums; music halls	Up to 60	61-70	71 and higher	35 dBA L_{eq}[5]
Churches; meeting halls	Up to 60	61-70	71 and higher	40 dBA L_{eq}
Playgrounds; neighborhood parks	Up to 70	71-75	75 and higher	--
Schools; libraries; museums[6]	--	--	--	45 dBA L_{eq}
Offices[7]	--	--	--	45 dBA L_{eq}
Retail/commercial[7]	--	--	--	--
Industrial	--	--	--	--

Notes:

1 Normally acceptable means that land uses may be established in areas with the stated ambient noise level, absent any unique noise circumstances.

2 Possibly acceptable means that land uses should be established in areas with the stated ambient noise level only when exterior areas are omitted from the project or noise levels in exterior areas can be mitigated to the normally acceptable level.

3 Normally unacceptable means that land uses should generally not be established in areas with the stated ambient noise level. If the benefits of the project in addressing other Burbank2035 goals and policies outweigh concerns about noise, the use should be established only where exterior areas are omitted from the project or where exterior areas are located and shielded from noise sources to mitigate noise to the maximum extent feasible.

4 Interior acceptable means that the building must be constructed so that interior noise levels do not exceed the stated maximum, regardless of the exterior noise level. Stated maximums are as determined for a typical worst-case hour during periods of use.

5 dBA L_{eq} is as determine for a typical worst-case hour during periods of use.

6 Within the Airport Influence Area, these uses are not acceptable above 65 dBA CNEL if subject to the City's discretionary review procedures.

7 Within the Airport Influence Area, these uses may be acceptable up to 75 dBA CNEL following review for additional noise attenuation; in excess of 75 dBA CNEL these uses are not acceptable.

standards. These hourly daytime and nighttime performance standards (expressed in L_{eq}) for stationary noise sources are designed to protect noise-sensitive land uses adjacent to stationary sources from excessive noise. Table N-4 summarizes stationary-source noise standards for various land use types, which represent acceptable noise levels at exterior spaces of the sensitive receptor.

In addition to the maximum allowable noise level standards outlined in Tables N-3 and N-4, for analysis of noise impacts and determining appropriate mitigation under the California Environmental Quality Act (CEQA), an increase in ambient noise levels is assumed to be a significant noise impact if a project causes ambient noise levels to exceed the following:

- Where the existing ambient noise level is less than 60 dBA CNEL/L_{dn}, a project-related permanent increase in ambient noise levels of 5 dBA CNEL/L_{dn} or greater.
- Where the existing ambient noise level is greater than 60 dBA CNEL/L_{dn}, a project-related permanent increase in ambient noise levels of 3 dBA CNEL/L_{dn} or greater.

Table N-4
Maximum Allowable Noise Exposure—Stationary Noise Sources

Noise Source	Noise Level Descriptor	Exterior Spaces[2]—Daytime (7 a.m. to 10 p.m.)	Exterior Spaces[2]—Nighttime (10 p.m. to 7 a.m.)
Typical	Hourly dBA L_{eq}	55[1]	45[1]
Tonal, impulsive, repetitive, or consisting primarily of speech or music	Hourly dBA L_{eq}	50[1]	40[1]
Any	dBA L_{max}	75	65

Notes:
[1] The City may impose noise level standards that are more or less restrictive than those specified above based upon determination of existing low or high ambient noise levels.
[2] Where the location of exterior spaces (i.e., outdoor activity areas) is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the exterior space.

Noise Contours and Impact Areas

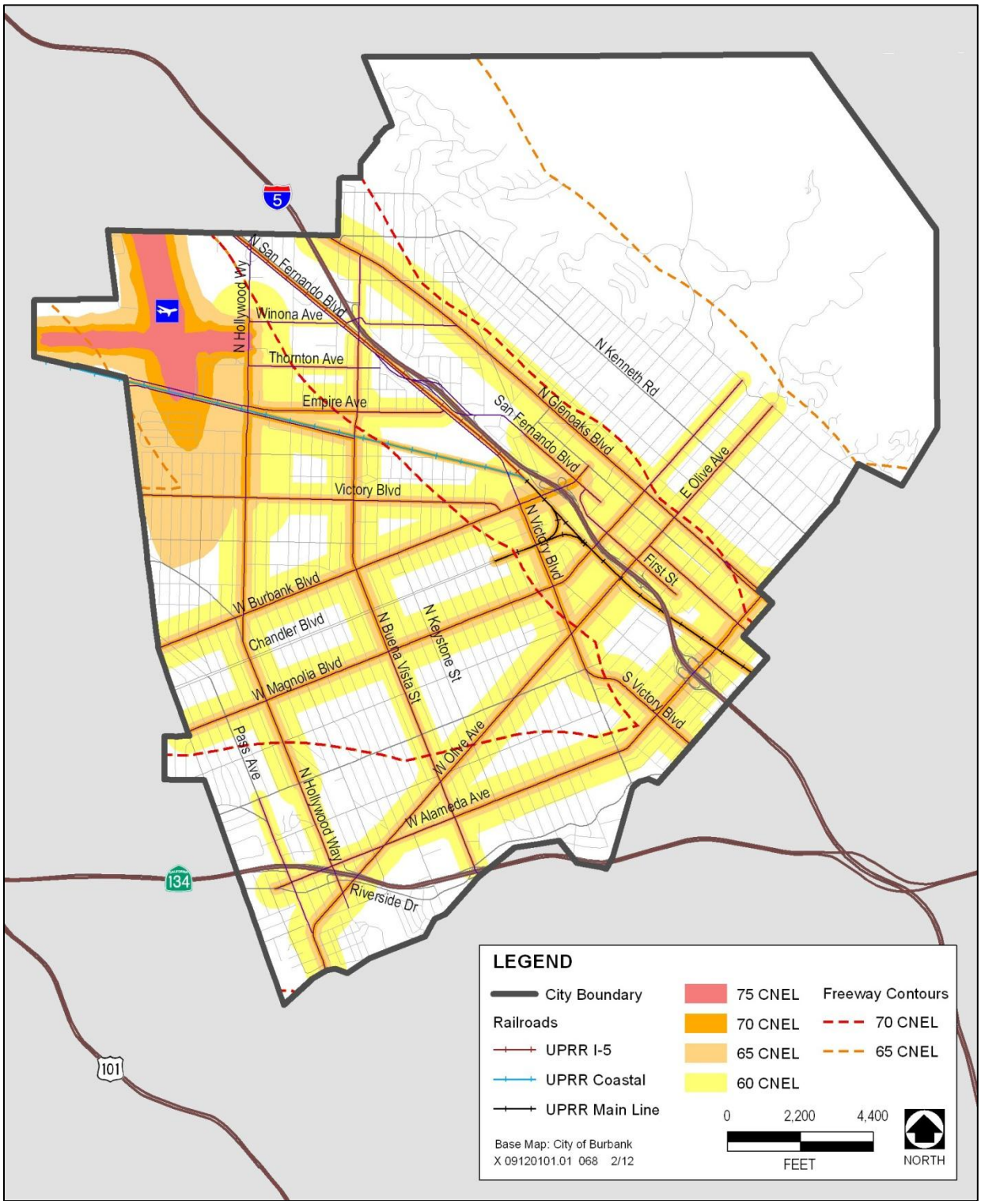
The community noise environment can be described using contours derived from monitoring major sources of noise. Noise contours define areas of equal noise exposure. Noise contours have been estimated using information about both current and projected future land uses and traffic volumes. The contours assist in setting land use policy and establishing development standards.

A study of baseline noise sources and levels was completed in April 2010. Noise level measurements were collected during a typical weekday at 26 locations throughout Burbank. Criteria for site selection included geographical distribution, land uses suspected of noisy activities, proximity to transportation facilities, and noise-sensitive land uses. The primary purpose of the noise monitoring was to establish a noise profile that could be used to estimate current and future noise levels.

Measurements represent motor vehicle noise emanating from freeways, the local roadway network, and industrial land uses. Typical noise sources measured during the short-term survey included vehicular traffic, aircraft, trains, emergency sirens, industrial uses, mechanical equipment, children playing, motorcycles, car alarms, and car audio systems. Of these sources, traffic noise was determined to be the predominant noise source in Burbank.

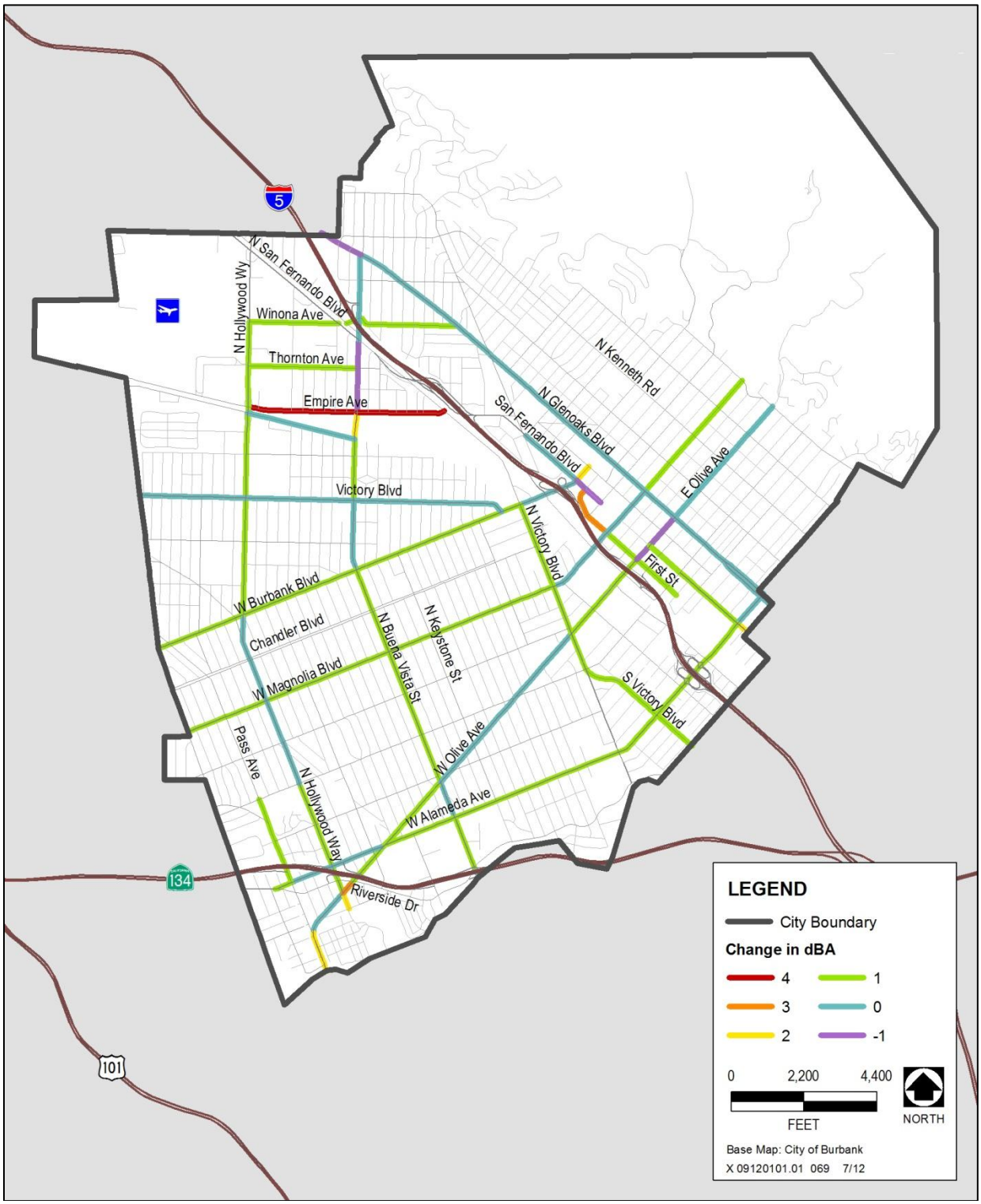
Exhibit N-1 identifies modeled noise contours for baseline year 2010. Major arterials and the freeway network represent the major sources of noise throughout the city. However, railroad and aircraft operations represent the major noise source in certain parts of Burbank. Several areas are exposed to arterial traffic noise in excess of 65 dBA L_{dn}.

Burbank will accommodate additional future growth accompanied by an increase in citywide traffic volumes. Traffic volume increases represent the major anticipated measurable new noise sources in the community over the long term. Potential future ambient noise levels can be estimated by modeling. Exhibit N-2 displays anticipated changes in 2035 noise levels along major roads based upon future traffic levels.



Source: Data compiled by AECOM in 2010

Exhibit N-1. Traffic Noise Contours



Source: Data compiled by AECOM in 2010

Exhibit N-2. Change in Traffic Future Noise Levels

Exhibit N-2 indicates that noise levels may be expected to rise in areas where roadways will experience the greatest increases in traffic volumes over time. Specifically, these areas include Olive Avenue between Hollywood Way and Riverside Drive (3 dBA CNEL/L_{dn} increase), Empire Avenue between Victory Boulevard and Hollywood Way (4 dBA CNEL/L_{dn} increase), and First Street between Magnolia Boulevard and San Fernando Boulevard (3 dBA CNEL/L_{dn} increase).

Exhibit N-3 identifies the Bob Hope Airport planning boundary/Airport Influence Area, which is consistent with the airport's 65 CNEL contour. Areas within the boundary are subject to additional planning considerations.

Identification of Noise Problem Areas

Potential noise problem areas are those areas in which ambient noise levels exceed established noise standards and areas in which sensitive land uses are exposed to ambient noise levels in excess of standards identified in Tables N-3 and N-4. Most of these problem areas are located along freeways and arterial and secondary roadways where noise barriers have not been installed.

Beneath the landing pattern for aircraft approaching Bob Hope Airport, some residents find the aircraft noise disturbing. Aircraft noise is considered an intermittent, recurring noise problem. Noise from helicopters operated by private parties, the police, and emergency medical services, and for news and traffic monitoring also contributes to Burbank's general noise environment, Helicopters approaching the Providence Saint Joseph Medical Center and movie studios located in the southwestern portion of the city are of particular concern.

Noise Control Techniques

City Noise Control Ordinance

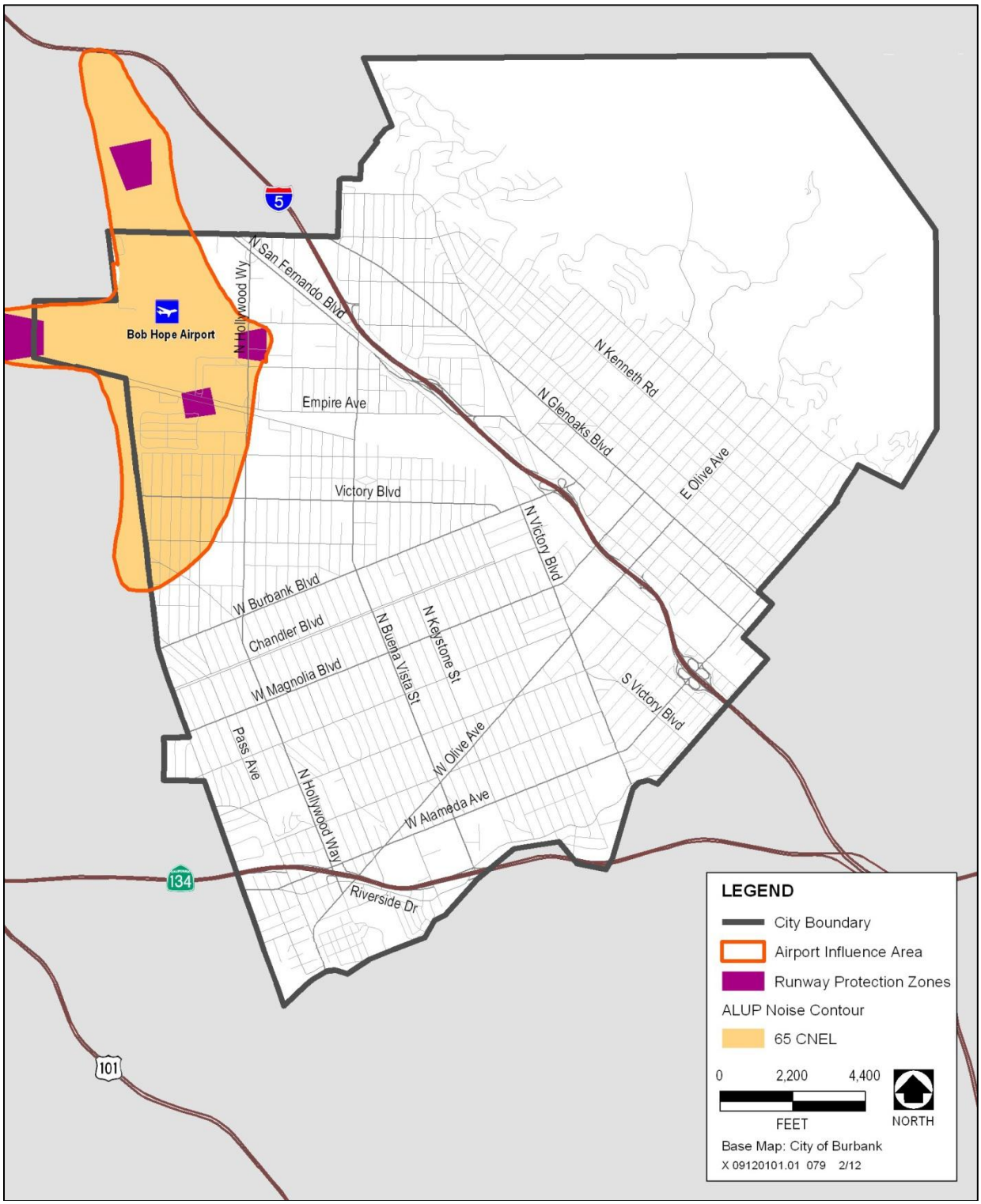
The Noise Control Ordinance authorizes the City authority to regulate noise at its source, protect noise-sensitive land uses, and establish exterior and interior noise standards for residential properties. The City will continue to apply provisions of the Noise Control Ordinance and will modify the ordinance as needed to respond to policy direction in this Noise Element, specifically the interior and exterior noise standards specified in Tables N-3 and N-4 and the policies addressing noise in mixed-use land use districts.

State Noise Standards

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, establishes building standards applicable to all occupancies throughout the state. The code provides acoustical regulations for both exterior-to-interior sound insulation and sound and impact isolation between adjacent spaces of various occupied units. The Title 24 regulations state that interior noise levels generated by exterior noise sources shall not exceed 45 dB L_{dn}, with windows closed, in any habitable room for general residential uses.

Road Traffic Noise

The dominant noise source in Burbank, traffic noise originates from major roads such as Olive Avenue, Hollywood Way, Glenoaks Boulevard, Burbank Boulevard, and Magnolia Boulevard, and from freeway traffic on I-5 and SR 134. The most efficient and effective means of controlling noise is to reduce noise at the source. However, the City has no direct control over noise produced by trucks, cars, and trains because federal and state noise regulations preempt local laws. Because the City cannot control transportation noise at the source, noise programs and standards use noise reduction methods that interrupt the path of the noise or shield the receiver to reduce transportation noise along freeways,



Source: City of Burbank 2010, Los Angeles County Land Use Commission 2003, Adapted by AECOM 2010

Exhibit N-3. Airport Influence Area

arterial roadways, and rail corridors. Such reduction methods may include building orientation, spatial buffers, landscaping, and noise barriers. Such noise reduction methods should be emphasized during site planning and design.

Using noise barriers, such as sound walls, should be considered to achieve the noise standards, but only after all other practical design-related noise reduction measures have been integrated into a project. As new technologies emerge, they should be used in place of sound walls unless no other feasible options are available. Sound walls may not be desirable in some locations, such as at intersections in commercial areas where visibility and access are equally important. For some projects, like those implemented by the California State Department of Transportation (Caltrans) or the Metropolitan Transportation Authority (MTA), using sound walls may be the only feasible option or may be beyond the City's control. Effective acoustical-design features in new construction can further reduce interior noise.

Truck Routes

Truck traffic generates noise that can disturb people in residential and other noise-sensitive land uses. Heavy trucks will not be permitted to drive through residential neighborhoods. Truck routes in Burbank are located mostly on the higher capacity roadways that traverse the community. Truck routes are identified for such purposes as noise reduction, safety, roadway maintenance, and traffic operations.

Stationary-Source Noise

Noise levels from stationary sources are to be addressed primarily at the source. In a mixed-use development, acoustical design should be applied to reduce the exposure of residents to noise from both commercial portions of the development and external noise sources. When addressing stationary noise at the source is infeasible, the aforementioned noise reduction methods will be employed to reduce noise exposure to the levels presented in Table N-5.

The most common and feasible method to control exterior-to-interior noise levels is to improve the building structure and use wall/façade treatments that reduce noise levels. Buildings constructed consistent with the Uniform Building Code typically provide approximately 15 dBA of exterior-to-interior noise level reduction (NLR) with windows open, and 25 dBA of NLR with windows closed. Therefore, special consideration must be given to reducing interior noise levels to the required 45 dBA CNEL/L_{dn} at noise-sensitive land uses exposed to noise levels in excess of 60 dBA. The NLR of a wall element or building façade can be calculated by first assuming a generalized A-weighted noise frequency spectrum for roadway traffic noise. Then, the composite transmission loss of the various wall materials and the wall's structural design is considered to determine the resulting noise level in the receiving room. After correcting for room absorption, the overall noise level in the room is calculated.

The ability to perform these calculations requires detailed floor plans and façade construction details. A qualified acoustical consultant should calculate the required NLR and resultant interior noise levels. Table N-5 provides an example of varying levels of building façade improvements that may be required to comply with the interior noise level standard of 45 dBA CNEL/L_{dn} for land uses exposed to three different noise levels: 60 dBA CNEL/L_{dn}, 65 dBA CNEL/L_{dn}, and 70 dBA CNEL/L_{dn}.

Table N-5
Sample Measures for Controlling Interior Noise

Noise Exposure Level	Exterior to Interior Noise Level Reduction Required to Achieve 45 dBA CNEL/L_{dn}	Noise Control Measures and Façade Upgrades
>60 dBA CNEL/L_{dn}	15 dBA	Normal construction practices consistent with the Uniform Building Code are typically sufficient.
60 dBA to 65 dBA CNEL/L_{dn}	20 dBA	Normal construction practices consistent with the Uniform Building Code are sufficient with the addition of the following specifications: ■ Air conditioning or mechanical ventilation systems are installed so that windows and doors may remain closed. ■ Windows and sliding glass doors are mounted in low–air infiltration rated frames. ■ Exterior doors are solid core with perimeter weather stripping and threshold seals.
65 dBA to 70 dBA CNEL/L_{dn}	25 dBA	Normal construction practices consistent with the Uniform Building Code are sufficient with the addition of the following specifications: ■ Air conditioning or mechanical ventilation systems are installed so that windows and doors may remain closed. ■ Windows and sliding glass doors are mounted in low air infiltration rated frames. ■ Exterior doors are solid core with perimeter weather stripping and threshold seals. ■ Glass in both windows and exterior doors should have a Sound Transmission Classification rating of at least 30. ■ Roof or attic vents facing the noise source of concern should be boxed or provided with baffling.

Notes:
The information listed in this table is sample guidance for interior noise control recommendations and is not intended for application to individual development projects, renovations, or retrofits. Noise-sensitive land uses located in areas with noise level exposures exceeding 65 dBA CNEL/L_{dn} should have perform acoustical analysis on a case-by-case basis.

Sound Walls along Arterials and Secondary Roadways

The City will encourage Caltrans and MTA to abide by Section 215.5 of the California Streets and Highway Code, which establishes a priority system for constructing sound walls along freeways, to minimize exposure of residential or other noise-sensitive land uses to excessive freeway noise. If other design features or technologies cannot reduce noise at sensitive land uses, sound walls may be required. In such cases, all new residential development proposed adjacent to arterials and secondary roadways will be required to buffer land uses by providing sound walls (or a combination of berms and walls). The sound walls must be designed so that noise exposure in the development's common open spaces meets the noise and land use compatibility standards shown in Table N-3. If sound walls are used, the analysis should evaluate multiple reflections between parallel noise barriers (e.g., large structures, noise barriers on each side of the highway) that could reduce the acoustical performance of individual barriers or result in unintended effects on other parts of the community.

Land Use Policy and Design of Residential Projects

To mitigate non-transportation-related noise, the City will require adjustments to site plans, higher insulation performance, spatial buffers, and other mitigation measures to absorb and block sound as needed. Design features incorporated into residential projects can be used to shield residents from

excessive noise. For example, bedrooms, balconies, and open space areas can be located away from streets and focused toward the interior of a project. The City will develop guidelines to assist developers in designing structures that respond to noise concerns.

Rail Traffic Noise

Federal Railroad Administration regulations allow cities to delineate zones where trains are not allowed to blow warning horns. In areas outside of formally established quiet zones, trains approaching all railroad crossings that intersect public streets must blow a warning horn at the intersection to warn motorists and pedestrians. At this time, there are no quiet zones located in Burbank.

Air Traffic Noise

To lessen the effects of air traffic noise associated with Bob Hope Airport, the City will participate in regional efforts to require airlines to use quieter aircraft. Also, the City will continue to register noise complaints with the airport's Noise Abatement Office to ensure that airport officials are made aware of noise problems.

Bob Hope Airport is a major hub for the greater Los Angeles area and contributes to the thriving community.

A limited number of heliports and helistops are located throughout Burbank. The most active heliports and helistops are located at the Providence Saint Joseph Medical Center and entertainment studios in the southwest portion of the city. Helicopter operations at these facilities are regulated by the Federal Aviation Administration, the Caltrans Division of Aeronautics, and the Los Angeles County Airport Land Use Commission. The City will work with these parties to ensure compliance with all federal and state laws pertaining to helicopter operations.

Movie and Television Studios

The City recognizes that operations at movie and television studios (e.g., Warner Bros., Disney, NBC) have the potential to generate noise during exterior filming activities. The City also considers the economic and employment benefits associated with such operations to be essential in maintaining a desired balance between quality of life and economic prosperity.

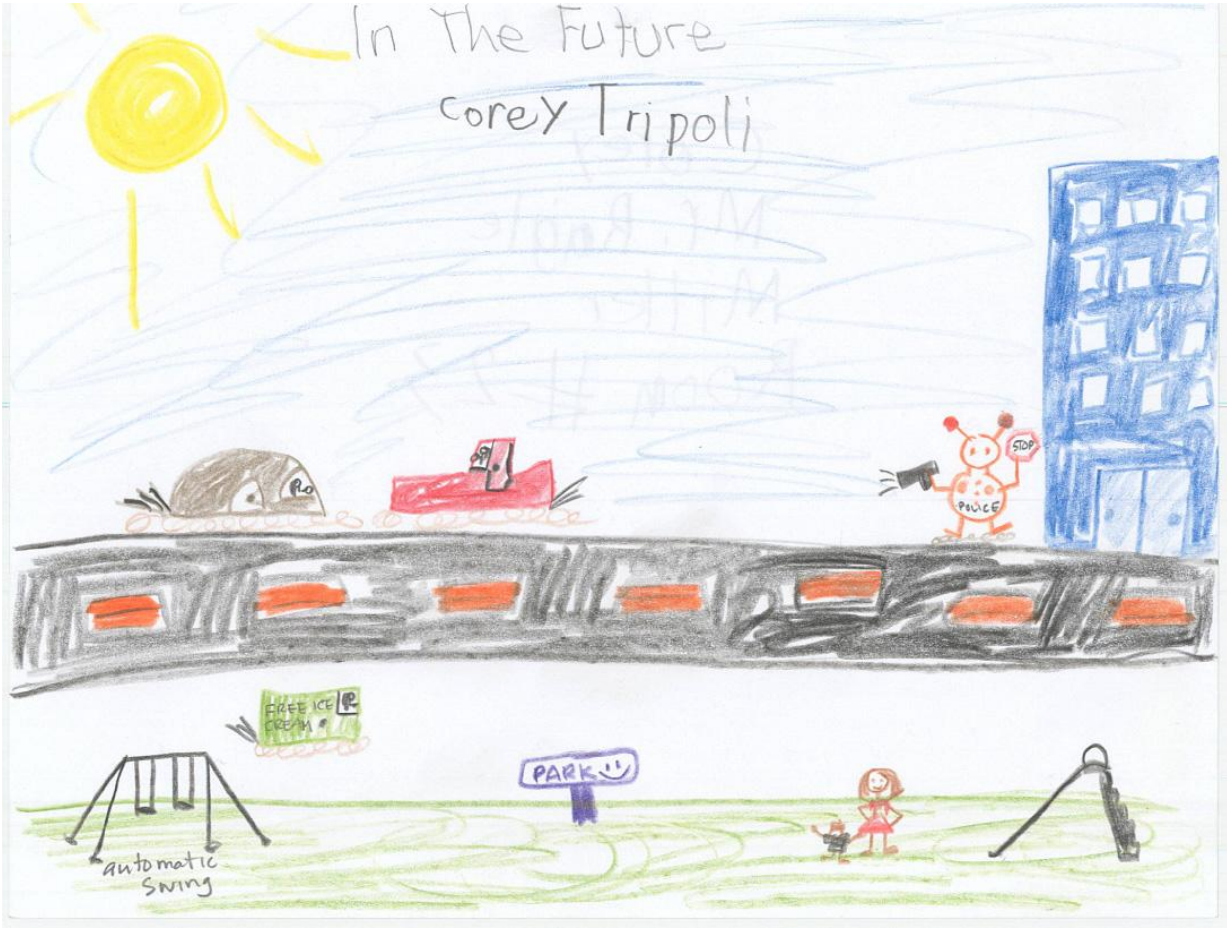
Noise sources associated with operations of movie and television studios include explosions, vehicle operations, loudspeakers, and mechanical equipment. Burbank's studios are located in the southwest portion of the city and share boundaries with adjacent residential areas, which are considered sensitive receptors. As an example, the eastern boundary of the Warner Bros. studio lot abuts residences to the east. However, these areas also experience high ambient noise levels from traffic along SR 134, West Olive Avenue, and West Alameda Avenue. The City will continue to consult with movie studios and residents affected by noise from filming activity to maintain a livable environment.

Construction Noise

Construction is a necessary part of community development. Construction noise typically occurs intermittently; the amount of noise depends on the nature or phase of construction (e.g.,

demolition/land clearing, grading and excavation, erecting structures). Activities such as site preparation, hauling of materials by trucks, pouring of concrete, and use of power tools can temporarily generate noise. Construction equipment, such as earthmovers, material handlers, and portable generators, also creates noise that reaches high levels for brief periods.

In the City of Burbank Municipal Code, construction noise that occurs between the hours of 7 a.m. and 7 p.m. Monday through Friday and 8 a.m. to 5 p.m. on Saturday is exempt from applicable noise standards. With this regulatory exemption, the City acknowledges that construction noise is an acceptable public nuisance when conducted during the least noise-sensitive hours of the day. The City also acknowledges that construction noise could cause a substantial temporary increase in the ambient noise environment at nearby noise-sensitive receptors if construction occurs during the more noise-sensitive hours (i.e., evening, nighttime, early morning), or if construction equipment is not properly equipped with noise control devices.



Burbank in 2035: Drawing by Corey Tripoli of Miller Elementary School