CHAPTER 8
HEALTH AND SAFETY

Planning for urban growth and development requires consideration of a wide range of public safety issues. Safety hazards may be naturally-induced, such as seismic and geologic, flood, and wildland fire hazards; some hazards may be the result of natural hazards which are exacerbated by human activity and alteration of the natural environment, such as dam failure, urban fire, and development in sensitive areas such as floodplains and areas subject to erosion and landsliding; and some hazards are manmade, including airport crash hazards, hazardous materials, and crime. In addition to safety issues related to hazardous conditions, the planning process should account for other issues related to community health and safety, including crime and noise exposure.

Many of the health and safety risks associated with development can be avoided through locational decisions made at the planning stages of development, while others may be lessened through the use of mitigation measures in the planning and land use regulation process. This chapter outlines the City's strategy for ensuring the maintenance of a healthy and safe physical environment in Woodland.

GOALS, POLICIES, AND IMPLEMENTATION PROGRAMS

This chapter contains goals, policies, programs, and standards intended to protect Woodland residents, businesses, and visitors from the harmful effects of natural and man-made hazards. This information is organized under the following topics, each of which relates to specific conditions and concerns relevant to Woodland.

- Seismic and Geologic Hazards
- Flood Hazards and Protection
- Fire Hazards
- Aircraft Crash Hazards
- Hazardous Materials
- Emergency Response
- Noise

SEISMIC AND GEOLOGIC HAZARDS

The primary seismic and geologic hazards affecting development in Woodland include earthquakes and expansive soils. Generally flat in topography, Woodland does not face risks from landsliding or seiches.

Earthquakes occur infrequently, but can inflict major damage. In the 1890s, Woodland experienced moderate building damage from an earthquake. Since then, the city has experienced groundshaking from

earthquakes in the area, but no major damage. Modern building construction codes require that buildings be designed to resist stresses produced by lateral forces caused by wind and earthquakes.

All soils have properties and characteristics such as erosion potential, shrink-swell behavior, and permeability, that determine their suitability and constraints for building sites, grading, infrastructure, and drainage systems. Such soils require special engineering attention to design to ensure the safety of any buildings or improvements.

The policies in this section seek to ensure that new buildings and facilities are designed to withstand seismic and geologic hazards.

GOAL 8.A

To minimize the loss of life, injury, and property damage due to seismic and geological hazards.

POLICIES

8.A.1. The City shall require the preparation of a soils engineering and geologic-seismic analysis prior to permitting development in areas prone to geological or seismic hazards (i.e., groundshaking, liquefaction, expansive soils).

8.A.2. The City shall require submission of a preliminary soils report, prepared by a registered civil (geotechnical) engineer and based upon adequate test borings, for every major subdivision.

8.A.3. The City shall require that new structures intended for human occupancy be designed and constructed to minimize risk to the safety of occupants due to groundshaking.

8.A.4. City shall continue to support scientific geologic investigations which refine, enlarge, and improve the body of knowledge on active fault zones, unstable areas, severe groundshaking, and other hazardous conditions in the Woodland area.

8.A.5. The City shall require that new structures and alterations to existing structures comply with the current edition of the *Uniform Building Code* and the *City Security Ordinance*.

8.A.6. The City shall support ways to improve the structural safety and stability of older structures of designated historic significance while maintaining their historical character

through the use of the *State Historic Building Code.*

8.A.7. The City shall continue to implement the *Uniform Code for the Abatement of Dangerous Buildings* to address older buildings that may at risk for seismic or geologic hazards.

8.A.8. The City shall avoid siting of structures across soil materials of substantially different expansive properties.

8.A.9. The City shall require the use of special bending-resistant designs where foundations must be slab-on-grade in areas with expansive soil.

FLOOD HAZARDS AND PROTECTION

Woodland is located near the Sacramento River, the Yolo Bypass, and Cache Creek. In the event of a severe storm, these water bodies could overtop creeks banks, and levees or levees could fail, resulting in flooding in Woodland. The Federal Emergency Management Agency conducts studies to identify floodplains and to allow existing development in those areas to secure flood insurance. The FEMA-mapped 100-year floodplain within the Planning Area includes the northeast area and the area east of the City's treatment plant The policies of this section seek to protect development from damage, and to require new development within the floodplain to be designed to avoid flood damage.

In addition, areas in and around Woodland would potentially experience up to eight feet of flooding in the unlikely event of failure of the Indian Valley Dam, located on the North Fork of Cache Creek. Potential events that could lead to dam failure or overtopping include major flood inflows, severe earthquake, massive landslide or slippage, and piping and erosion of the dam embankment. Flooding would occur within six to seven hours of dam failure. Policies of the plan call for support of continued maintenance of the dam and preparedness for evacuation in the event of dam failure.

GOAL 8.B

To protect the lives and property of the citizens of Woodland from hazards and manage floodplains for their open space and natural resource values.

POLICIES

8.B.1. The City shall continue to implement floodplain zoning and undertake other actions required to comply with state floodplain requirements, and to maintain the City's eligibility under the Federal Flood Insurance Program.

8.B.2. The City shall require evaluation of potential flood hazards prior to approval of development projects. The City shall require proponents of new development to submit accurate topographic and flow characteristics information. This will include depiction of the 100-year floodplain boundaries under fully-developed, pre- and post-project runoff conditions.

8.B.3. The City shall not allow development in areas subject to deep flooding (i.e., over four feet deep) unless adequate mitigation is provided, to include project levees designed for a standard project flood or a minimum of 400-year protection, whichever is less.

8.B.4. The City shall require flood-proofing of structures and outdoor storage areas for hazardous materials in areas subject to flooding. Hazardous materials and wastes shall be contained within floodproofed structures or storage areas.

8.B.5. The City shall prohibit the construction of facilities essential for emergencies and large public assembly in the 100-year floodplain, unless the structure and road access are free from flood inundation.

8.B.6. The City shall continue to work closely with the U.S. Army Corps of Engineers, the Yolo County Resource Conservation District, the Federal Emergency Management Agency, the State Department of Water Resources, and the Yolo County Flood Control and Water Conservation District in defining existing and potential flood problem areas and solutions.

8.B.7. The City shall recognize floodplains as a potential public resource to be managed and maintained for the public's benefit and, where possible, shall view flood waters as a resource to be used for waterfowl habitat, aquifer recharge, fishery enhancement, agricultural water supply, and other suitable uses.

8.B.8. The City shall strive to maintain its membership on the Reclamation District 2035 Board.

8.B.9. The City shall support efforts by the Yolo County Resources Conservation District and Yolo County Flood Control and Water Conservation District to manage the Cache Creek watershed area.

8.B.10. The City shall encourage the Yolo County Flood Control and Water Conservation District to continue to maintain the Indian

Valley Dam to protect against potential dam failure.

IMPLEMENTATION PROGRAMS

8.1 The City shall revise the *Floodplain Ordinance.*

Responsibility: Community Development Department
City Council

Time Frame: FY 02-03

FIRE HAZARDS

Structural and wildland fire hazards can threaten life and property in Woodland. Wildland fires resulting from either natural or manmade causes occur in forest, brush, or grasslands, so the threat is minimal in Woodland, although vacant lots and fallow agricultural areas with weeds can be fire hazards. Structural fires usually result from manmade causes and can spread easily. Structural fire hazards are greatest in those structures built before building and fire codes were established.

The policies of this section seek to ensure that new development is constructed to minimize potential fire hazards and to provide public education concerning fire prevention. The "Fire Protection" section in Chapter 4 addresses the service levels and maintenance of the City's Fire Department.

GOAL 8.C

To minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires.

POLICIES

8.C.1. The City shall require that new development meets state and local standards for fire protection. The City Fire Department shall review development proposals for compliance with fire safety standards. All construction plans shall be reviewed by fire prevention staff for consistency and adherence to code requirements.

8.C.2. The City shall ensure that existing and new buildings of public assembly incorporate adequate fire protection measures to reduce the potential loss of life and property in accordance with state and local codes and ordinances.

8.C.3. The City Fire Department shall continue education programs

in schools, service clubs, organized groups, industry, utility companies, government agencies, press, radio, and television in order to increase public awareness of local fire hazards and other risks including the ability to recognize these risks and appropriate avoidance techniques.

8.C.4. The City shall encourage and promote installation and maintenance of smoke detectors in existing residences and commercial facilities that were constructed prior to the requirement for their installation.

8.C.5. The City shall develop high-visibility fire prevention programs, including those offering voluntary home inspections and promoting awareness of home fire prevention measures.

8.C.6. The City shall continue to enforce the City *Fire Sprinkler Ordinance.*

IMPLEMENTATION PROGRAM

8.2 The City shall revise and update its Fire Prevention Code every three years.

Responsibility: Fire Department

Time Frame: FY 02-03

AIRCRAFT CRASH HAZARDS

Woodland is located in the vicinity of several airports. While unlikely, any crash landing of an aircraft is a potentially disastrous event. This section includes policies to encourage safe development patterns around airports and within flight zones to minimize risk.

GOAL 8.D

To minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from airport hazards consistent with Goal 3.G of this Policy Document.

POLICIES

8.D.1. The City shall work with Yolo and Sacramento Counties to ensure that new development around airports does not create safety hazards such as lights from direct or reflective sources, smoke, electrical interference, hazardous chemicals, or fuel storage in violation of adopted safety standards.

8.D.2. The City shall ensure that development within the airport approach and departure zones complies with Part 87 of the Federal Aviation Administration Regulations (objects affecting navigable airspace).

HAZARDOUS MATERIALS

Woodland has some industries and activities that involve the transport, storage, or use of toxic or hazardous chemicals, posing potential safety hazards in the event of unintentional exposure, leak, fire, or accident. Some of the byproducts of industrial processes in Woodland are hazardous materials, which need proper disposal. Residents and businesses in Woodland also generate household hazardous wastes such as waste oil, paint, and solvents. The *County Hazardous Waste Management Plan* concludes that the Woodland area is not suitable for the site of a transfer or disposal facility because of the prime agricultural lands or floodplains. Policies in this section therefore focus on safe disposal, use, storage, and transport of hazardous materials, as well as proper siting between hazardous waste storage and use and sensitive land uses such as homes and schools.

GOAL 8.E

To minimize the risk of loss of life, injury, serious illness, damage to property, and economic and social dislocations resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous materials wastes.

POLICIES

8.E.1. The City shall ensure that the use and disposal of hazardous materials in the city complies with local, state, and federal safety standards.

8.E.2. The City shall prohibit the development of residences or schools near known hazardous waste disposal or handling facilities.

8.E.3. The City shall review all proposed development projects that manufacture, use, or transport hazardous materials for compliance with the *County Hazardous Waste Management Plan*.

8.E.4. The City shall strictly regulate the storage of hazardous materials and wastes.

8.E.5. The City shall ensure that industrial facilities are constructed

and operated in accordance with current safety and environmental protection standards.

8.E.6. The City shall require that new industries that store and process hazardous materials provide a buffer zone between the installation and the property boundaries sufficient to protect public safety. The adequacy of the buffer zone shall be determined by the City.

8.E.7. The City shall require that applications for discretionary development projects that will generate hazardous wastes or utilize hazardous materials include detailed information on hazardous waste reduction, recycling, and storage.

8.E.8. The City shall require that any business that handles a hazardous material prepare a plan for emergency response to a release or threatened release of a hazardous material.

8.E.9. The City shall encourage the State Department of Health Services and the California Highway Patrol to review permits for radioactive materials on a regular basis and to promulgate and enforce public safety standards for the use of these materials, including the placarding of transport vehicles (both rail and truck).

8.E.10. The City shall identify sites that are inappropriate for hazardous material storage, maintenance, use, and disposal facilities due to potential impacts on adjacent land uses and the surrounding natural environment.

8.E.11. The City shall work with other agencies to ensure an adequate countywide response capability to hazardous materials emergencies.

8.E.12. The City shall provide the public, industry, and agriculture with the information needed to take rational steps to minimize, recycle, treat, dispose, and otherwise manage hazardous wastes in Woodland.

8.E.13. The City shall provide education for small-quantity, household, medical, and agricultural hazardous waste generators regarding their responsibilities for source reduction and proper and safe hazardous waste management.

8.E.14. The City shall develop and maintain complete and accurate information on the types, quantities, sources, and management of all hazardous wastes generated in Woodland to aid in

management planning and emergency response.

8.E.15. The City shall provide for safe and efficient hazardous waste emergency response and plan for contaminated site cleanup.

IMPLEMENTATION PROGRAM

8.3 The City of Woodland Fire Department shall perform quarterly exercises with the County of Yolo Hazardous Materials Team to maintain proficiency in hazardous materials response.

Responsibility: Fire Department

Time Frame: Quarterly

EMERGENCY RESPONSE

Although Woodland seeks to minimize hazards and reduce such risks, in the rare event of an emergency, quick and effective response is vital. The City's *Emergency Response Plan* addresses earthquake, fire, technological disaster, toxic spill, flooding, and dam failure. Responses include fire and rescue personnel, law enforcement, utility plans, evacuation plans, and evacuation centers. Policies of the plan seek to ensure continued emergency preparedness.

GOAL 8.F

To ensure the maintenance of an *Emergency Response Plan* to effectively prepare for, respond to, recover from, and mitigate the effects of natural or technological disasters.

POLICIES

8.F.1. The City shall periodically update the City of Woodland *Emergency Response Plan*, as necessary, to ensure that an adequate plan and program can be activated in the event of an emergency.

8.F.2. The City shall continue to coordinate emergency preparedness, response, recovery, and mitigation activities with Yolo County, special districts, service agencies, voluntary organizations, other cities within the county, surrounding cities and counties, and state and federal agencies.

8.F.3. The City shall continue to provide a high-visibility promotional program to inform the general public of emergency preparedness and disaster response procedures.

8.F.4. The City shall maintain the capability to effectively respond to emergency incidents.

8.F.5. The City shall work with the County to ensure an emergency operations center is available when needed to coordinate emergency response, management, and recovery activities.

8.F.6. The City shall ensure that the siting of critical emergency response facilities such as hospitals, fire stations, police offices and substations, dispatch centers, emergency operations centers, and other emergency service facilities and utilities have minimal exposure to flooding, seismic and geological effects, fire, and explosions.

IMPLEMENTATION PROGRAM

8.4 The City shall conduct *Emergency Response Plan* training exercises at the management and operational levels on an annual basis to ensure that an adequate plan and program can be activated in the event of an emergency. These training exercises shall be designed to coincide with the beginning of the risk period for known community hazards.

Responsibility: All City Departments

Time Frame: Annually

NOISE

A feature of Woodland's small-town character and quality of life is its relatively quiet atmosphere. Noise results from many sources, including traffic on freeways and other roads, railroad operations, aircraft, and industrial activities. Exposure to excessive noise has often been cited as a health problem, not so much in terms of actual physiological damage such as hearing impairment, but more in terms of general well-being and contributing to undue stress and annoyance. The policies of this section set noise standards and include policies to protect noise-sensitive uses from excessive noise. Noise-sensitive uses in Woodland include residential areas, motels, hospitals, nursing homes, theaters, auditoriums, music halls, churches, meeting halls, offices, schools, libraries, museums, playgrounds, and parks. New development must be designed so as not to result in excessive noise on adjacent properties, and development of new noise-sensitive uses in areas projected to have high noise levels must be constructed so as to reduce interior noise levels.

GOAL 8.G

To protect Woodland residents from the harmful and annoying effects of exposure to excessive noise.

POLICIES

8.G.1. The City shall prohibit development of new noise-sensitive uses where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 8-1 as measured immediately within the property line of the new development, unless effective noise mitigation measures have been incorporated into the development design to achieve the standards set out in Table 8-1.

8.G.2. The City shall require that noise created by new non-transportation sources be mitigated so as not to exceed the noise level standards of Table 8-1 as measured immediately within the property line of lands designated for noise-sensitive uses.

TABLE 8-1

NOISE LEVEL PERFORMANCE STANDARDS
New Projects Affected by or Including
Non-transportation Sources*

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	50	45
Maximum level, dB	70	65

Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

*For the purposes of compliance with the provisions of this section, the City defines transportation noise sources as traffic on public roadways, railroad line operations, and aircraft in flight. Control of noise from these sources is preempted by Federal and State regulations. Other noise sources are presumed to be subject to local regulations. Non-transportation noise sources may include industrial operations, outdoor recreation facilities, HVAC units, and loading docks.

8.G.3. The City shall not require existing dwellings and new single-family dwellings to comply with the standards set out in Table 8-1. As a consequence, such dwellings may be located in areas where noise levels exceed these standards and it shall not be

the responsibility of the City to ensure that such dwellings meet these standard or the noise standards imposed by lending agencies such as HUD, FHA and Cal Vet. If homes are located and constructed in accordance with the policies and standards in Table 8-1, it is expected that the resulting exterior and interior noise levels will conform to the HUD/FHA/Cal Vet noise standards.

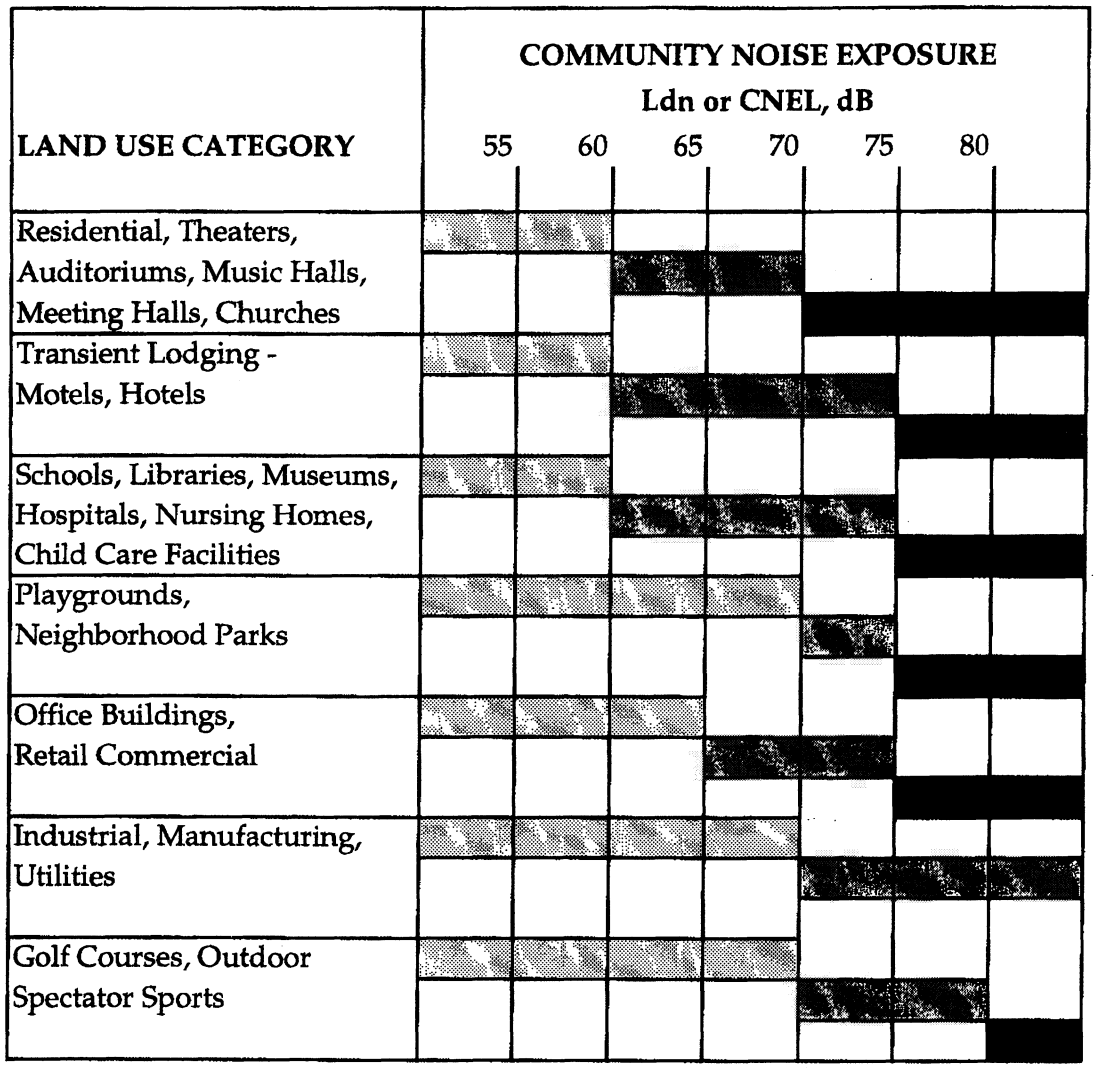
8.G.4. Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 8-1 at existing or planned noise-sensitive uses, the City shall require an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. The acoustical analysis shall meet the following requirements:

a. It shall be the financial responsibility of the applicant.
b. It shall be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics.
c. It shall include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and the predominant noise sources.
d. It shall include estimates of existing and projected cumulative (20 years) noise levels in terms of L_{dn} or CNEL and/or the standards of Table 8-1, and compare those levels to the policies and standards of this section of the General Plan.
e. It shall recommend appropriate mitigation to achieve compliance with the policies and standards of this section of the General Plan, giving preference to proper site planning and design over mitigation measures which require the construction of noise barriers or structural modifications to buildings which contain noise-sensitive land uses. Where the noise source in question consists of intermittent single events, the report must address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance.
f. It shall include estimates of noise exposure after the prescribed mitigation measures have been implemented.
g. It shall describe a post-project assessment program, which could be used to evaluate the effectiveness of the proposed mitigation measures.

8.G.5. The City shall evaluate the general feasibility of proposed projects with respect to existing and future transportation

FIGURE 8-1

FEASIBILITY OF DEVELOPMENTS WITH RESPECT TO NOISE



INTERPRETATION

FEASIBLE

Specified land use is satisfactory. No noise mitigation measures are required.

PROBABLY FEASIBLE

Use should be permitted only after careful study and inclusion of protective measures as needed to satisfy the policies of the noise section of the

USUALLY NOT FEASIBLE

Development is usually not feasible in accordance with the goals and policies of the noise section of the General Plan.

noise levels shown in Figure 8-1.

8.G.6. The City shall prohibit new development of noise-sensitive land uses in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels set out in Table 8-2, unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to the levels set out in Table 8-2. Exceptions to this standard will be permitted within the Southeast Area Specific Plan Area, where a 5 dB increase in outdoor activity areas will be permitted.

8.G.7. The noise created by new transportation noise sources shall be mitigated so as not to exceed the levels specified in Table 8-2 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.

8.G.8. New roadway improvement projects will be needed to accommodate development permitted according to the Land Use Diagram. Where existing noise-sensitive uses may be exposed to increased noise levels due to increased roadway capacity and increases in travel speeds associated with roadway improvements, the City will apply the following criteria to determine the significance of increases in noise related to roadway improvement projects:

a. Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant; and
b. Where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant; and
c. Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB L_{dn} increase in noise levels due to a roadway improvement project will be considered significant.

TABLE 8-2

MAXIMUM ALLOWABLE NOISE EXPOSURE
Transportation Noise Sources

Land Use	Outdoor Activity Areas[1] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/ CNEL, dB	L_{eq}, dB[2]
Residential	60[3]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[3]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60[3]	--	40
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

[1] Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building facade, in addition to a 60 dB L_{dn} criterion at the outdoor activity area.

[2] As determined for a typical worst-case hour during periods of use.

[3] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

GOAL 8.H

To protect the economic base of the city by preventing incompatible land uses from encroaching upon existing or planned noise-producing uses.

8.H.1. Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels set out in Table 8-2 or the performance standards of Table 8-1, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design.

8.H.2. Where noise mitigation measures are required to achieve the standards of Tables 8-1 and 8-2, the emphasis in such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered as a

means of achieving the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.

8.H.3. The City shall support the County's right-to-farm ordinance, especially as it relates to noise emanating from the agricultural operations adjacent to urban uses.