

CHAPTER 9

HEALTH AND SAFETY

This chapter assesses the natural and man-made health and safety impacts of development under the *General Plan*. The issues addressed in the chapter are seismic and geologic hazards, flood hazard, fire hazard, hazardous materials, emergency response, noise, and aircraft hazard.

9.1 SEISMIC AND GEOLOGIC HAZARDS

This section describes the likely health and safety effects associated with seismic and geologic hazards under the *General Plan*. Specifically, this section focuses on how development and associated population growth will impact future development in the city in terms liquefaction, ground shaking, and potential levee and dam failure caused by earthquakes.

ENVIRONMENTAL SETTING

Chapter 8 of the *General Plan Background Report* provides a generalized description of the seismic and geologic conditions affecting the Woodland area. Included are descriptions of local soil conditions, the proximity and historic activity of nearby faults, and the history and severity of earthquakes in the region.

Past studies and evaluations of seismic hazards in the region indicate that Woodland is an area of relatively low seismic activity. The Woodland area has been placed in Zone 3 of the Seismic Risk Map of the United States for purposes of structure safety. This signifies that although the potential is low, there is the possibility for major damage (VIII or higher on the Modified Mercalli scale) from a nearby earthquake.

There are no known faults within the radius of five miles of downtown Woodland. However, there is evidence of young faulting west of Woodland and south of Cache Creek. The California Division of Mines and Geology has also identified the Dunnigan Hills Fault approximately five miles northwest of Woodland. A credible earthquake of a Magnitude of 6.75 is possible on this fault. The two other faults in the area are the Midland Fault Zone, located approximately 20 miles southwest of Woodland, and the Capay Valley, 25 miles west of Woodland.

Ground shaking is the primary seismic concern in the Woodland area. The California Division of Mines and Geology has produced a maximum expected earthquake intensity map which shows Woodland in the low severity zone. This zone could potentially experience ground shaking intensities of up to VI - VII in Mercalli intensity.

Building codes are the primary tool governments possess to reduce seismic risk in structures. The City of Woodland has adopted the *Uniform Building Code (UBC)*, requiring all new buildings in the city to meet the UBC's 1991 seismic requirements.

In addition to the structural damage caused by ground shaking, there are other ground effects caused by shaking. These are known as ground failure effects and include liquefaction, settlement, lateral spreading, lurch cracking, and earthquake induced landslides. Liquefaction potential within Woodland exists in low-lying areas comprising unconsolidated, saturated, clay-free sand and silts. Since there is no historic evidence to suggest that high ground shaking intensities are common, the risk of liquefaction in the Woodland area is relatively low.

Settlement, or subsidence, is the compaction of soils and alluvium caused by ground shaking. It occurs irregularly and may be partly controlled by bedrock surfaces, old lakes, sloughs, swamps, and stream beds. The amount of compaction may range from a few inches to several feet. Irregular compaction is most widespread and extreme in major earthquakes. It may occur as much as 75 to 89 miles from the epicenter and may amount to several feet even at that distance. Compaction is most likely to occur in areas, such as Woodland, which are underlain by soft water-saturated low-density alluvial materia. However, there is no known history of an earthquake-related subsidence problems in the General Plan Area.

Lurch cracking refers to fractures, cracks, and fissures produced by ground shaking, settling, compaction of soil, and sliding, and may occur many miles from the epicenter of an earthquake. These effects are characteristic of earthquakes large enough for significant ground motion to occur. The larger the earthquake magnitude, the more extensive the effect. This may damage streets, curbs, sewer, gas and water lines.

Lateral spreading is the horizontal movement or spreading of soil from a stream bank, the open side of a filled embankment, or the sides of a levee. Artificial fill areas which are improperly engineered or which have steep, unstable banks are most likely to be affected.

The potential for lurch cracking and lateral spreading is highest in areas where there is a high groundwater table, relatively soft and recent alluvium deposits, and where creek banks are relatively high. Fracture patterns from lurch cracking and lateral spreading may be controlled by the configuration of shallow bedrock structures, by highway surfacing, by the margins of fill, and engineering structures.

Earthquakes can also cause landsliding and slumping; however, since Woodland is mostly level, these are not considered to be problems.

METHODOLOGY

This section describes the assumptions and thresholds of significance used to assess impacts resulting from development estimated for the year 2020 under the *General Plan*. The analysis was conducted quantitatively, by comparing areas with known and anticipated seismic and geologic hazards with the area proposed for development under the *General Plan*.

Assumptions

1. The potential for seismic activity, and relative ground shaking, surface rupture, and liquefaction was assumed to be compatible with the Zone 3 of the Seismic Risk Map for purposes of structure safety.
2. New construction will be subject to state and local seismic safety building standards.
3. Existing development, especially older structures built before the establishment of earthquake safety standards, were not considered as an impact of the General Plan.

Thresholds of Significance

According to Appendix G of the *CEQA Guidelines*, a project will normally have a significant effect if it would expose people or structures to major geologic hazards or interfere with emergency response plans or emergency evacuation plans.

For purposes of this *EIR*, an impact is considered significant if adoption or implementation of the *General Plan* would result in unacceptable risk to life or property from seismic or geologic hazards.

IMPLICATIONS OF THE LAND USE DIAGRAM

New structures built in accord with the General Plan Land Use Diagram could be subject to shaking or settlement caused by liquefaction, settlement, or lurch cracking. It is unlikely, however, that such shaking or settlement would be severe. Furthermore, all new buildings approved for development by the City would have to comply with the *Uniform Building Code*, so they would be constructed to withstand seismic effects. The most significant seismic and geologic hazards would be related to older, unreinforced masonry structures and structures built before modern building codes were in place. It is also conceivable that fire caused by ruptured gas or eclectic transmission lines could affect both new and old structures.

GENERAL PLAN POLICY RESPONSE

The following policies address seismic and geologic considerations, particularly as they affect new development:

- 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.*

IMPACTS

The implementation of these policies, along with continued enforcement of the *Uniform Building Code*, will ensure that seismic and geologic impacts associated with development under the *General Plan* would be less-than-significant.

MITIGATION MEASURES

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

9.2 FLOOD HAZARD

This section describes the likely health and safety effects associated with flood hazard under implementation of the *General Plan*.

ENVIRONMENTAL SETTING

Chapter 8 of the *General Plan Background Report* provides a generalized description of the flood hazard conditions affecting the Woodland area. The following is a summary of the background information pertinent to flood hazards.

Flooding

Historically, Woodland and the surrounding area have been subject to flooding. The primary sources of flooding are Willow Slough, Cache Creek, and the Yolo Bypass. The U. S. Army Corps of Engineers' (Corps of Engineers) Sacramento River Flood Control Project (SRFCP) provides the area with varying levels of flood protection from these sources. The SRFCP consists of a comprehensive set of levees, leveed bypass floodways, and improved channels. The design flows for the SRFCP were not based upon a specific level of protection, so the level of flood protection afforded by the project varies throughout the system.

SRFCP facilities located near Woodland include levees along the Willow Slough Bypass, portions of Cache Creek, the Cache Creek Settling Basin (Settling Basin), and the Yolo Bypass. As part of the SRFCP, flows are diverted from the Sacramento River into the Yolo Bypass where levees provide protection against overbank flooding. Levees along the lower reaches of the Willow Slough Bypass and Cache Creek also provide some protection from overbank flooding. The primary function of the Settling Basin is to remove a significant portion of the sediment load from Cache Creek to avoid its deposition in the Yolo Bypass, thereby preserving its integrity for conveying flood flows.

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) in which the City participates. The purpose of the NFIP is to provide previously unavailable flood insurance protection to property owners in flood-prone areas, provided that the community meets certain floodplain management regulations. FEMA has identified areas of special flood hazard in the vicinity of the city. These areas are designated by flood zones on published Flood Insurance Rate Maps for Yolo County and Woodland (Figure 9-1). Part of the area within the Urban Limit Line and the urban reserve area are located in special flood hazard areas.

The Corps of Engineers, in their *Westside Tributaries Study*, confirmed that Cache Creek poses a flood threat to Woodland and to the lands east of the city.

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**FIGURE 9-1
FEMA FLOOD
INSURANCE RATE MAP**

ZONE A
Areas of 100-year flood; base elevations and flood hazard factors not determined.

ZONE B
Areas between limits of 100-year and 500-year flood; certain areas subject to 100-year flooding with average depths less than one foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.

ZONE C
Areas of minimal flooding.

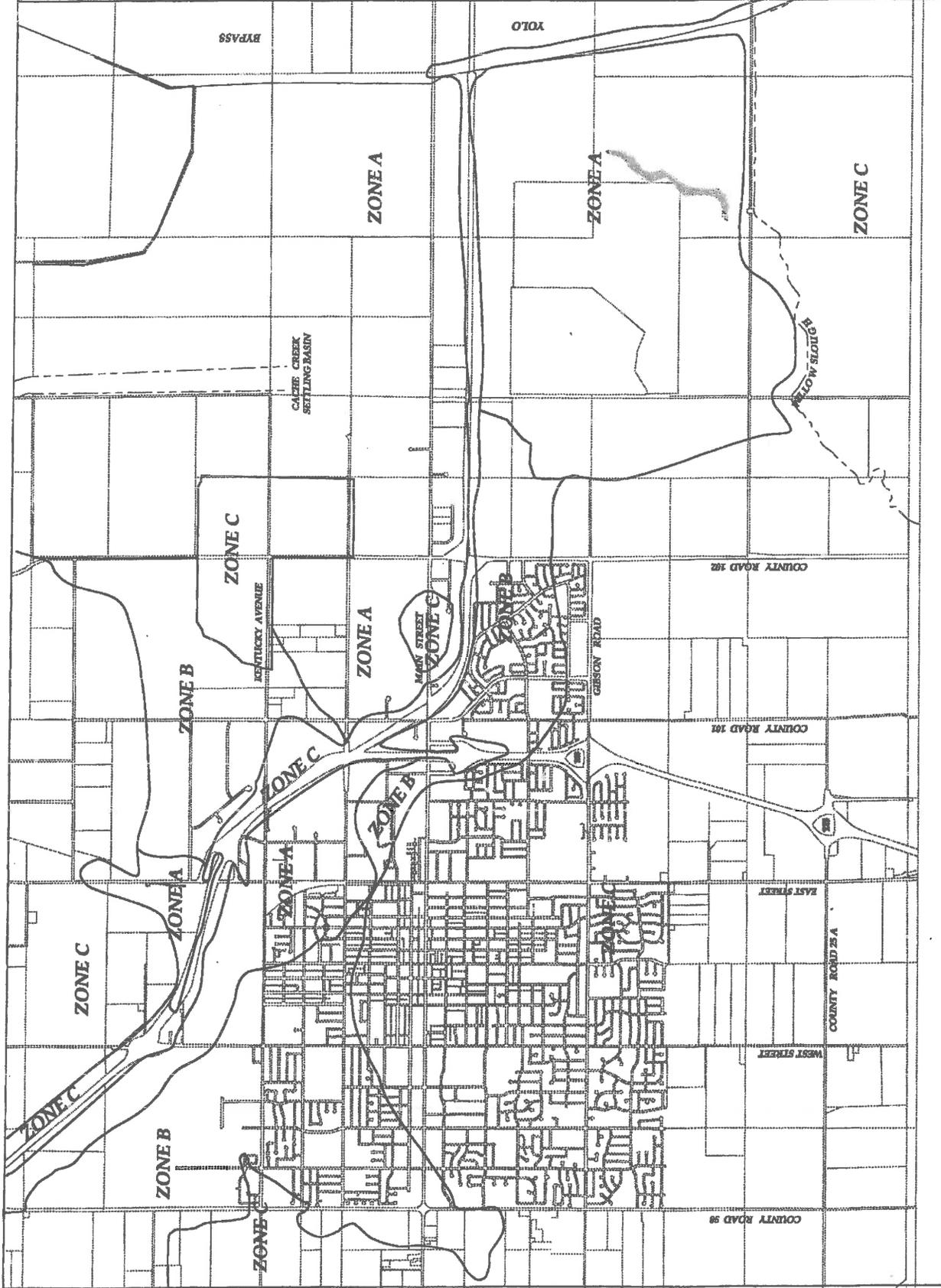
Source: FEMA Flood Insurance Rate Maps, Dec. 1980, Oct. 1981, Mar. 1990



City of Woodland

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FEMA plans to conduct a flood insurance restudy of the Woodland area in fiscal year 1996. FEMA Guidelines and Specifications dated March 1993 require that a levee system meet certain minimum requirements that are set forth in the *Code of Federal Regulations* (No. 44), in order to be considered as providing 100-year level of protection. In lieu of these requirements, FEMA will accept certification from a federal agency, which is responsible for levee design, that the levee system is designed and constructed to provide 100-year level of flood protection.

The levee system protecting Woodland and vicinity was not designed and constructed to provide 100-year level of protection. Cache Creek levees provide less than a 100-year level of protection. Therefore, it is unlikely that certification can be obtained in order to reflect the levees in the floodplain mapping. If the levees are not reflected in a FEMA Flood Insurance Restudy, the area of flooding delineated on the Flood Insurance Rate Maps could be greater than shown on current maps.

Although the likelihood is remote, Woodland and the lands located to the east would be subject to flooding in the event of a failure of Indian Valley Dam. The Indian Valley Dam Break Analysis was updated in December 1994 to address public safety and emergency preparedness, consistent with the latest criteria of the Federal Energy Regulatory Commission. The analysis provided the base information from which the YCFCWCD developed an Emergency Action Plan for the project, which has been distributed to and reviewed by federal, state, and local agencies having responsibility during emergency events.

The lands located to the east of the city could potentially be subject to deep flooding from overflows from the Willow Slough Bypass, Cache Creek, or the Yolo Bypass, depending upon the particular flood event or levee failure and the associated volume of overflow. The deep flooding could occur as a result of water "ponding" against levees of the Yolo Bypass and the Willow Slough Bypass.

The potential for deep flooding can be illustrated by comparing the ground elevations in the area with the top of levee elevations of the Yolo Bypass. The ground elevations range from approximately 30 feet mean sea level (msl) in the vicinity of the City's sewage treatment plant to approximately 20 feet msl near the Yolo Bypass Levee. The top of levee elevations of the Yolo Bypass range between 37 feet msl and 33 feet msl at the Settling Basin and the Willow Slough Bypass, respectively.

The lands located to the east of Woodland are also subject to flooding from a levee failure on the Yolo Bypass. Information developed by the Corps of Engineers indicates that the 100-year water surface elevation is approximately elevation 32.5 feet in the vicinity of the Cache Creek Settling Basin. Reclamation District No. 2035 (RD 2035) has confirmed that lands located to the east of the city would be subject to 6.5 to 16 feet of inundation should the bypass levee fail. RD 2035 contends that the levees are maintained to maintain the 100-year level of flood protection.

Dam Failure Inundation

Parts of Woodland and the outlying area would be subject to inundation resulting from failure of the Indian Valley Dam and Reservoir, which are located on the North Fork of Cache Creek about 13 miles upstream from its confluence with the main stem of Cache Creek and approximately six miles northeast of Clear Lake in Lake County. Major flood inflows, earthquakes, massive landslides or slippage, and erosion of the dam embankment could lead to dam failure or overtopping. The January 1994 *Emergency Action Plan (EAP) for the Indian Valley Dam* prepared by the Yolo County Flood Control and Water Conservation District indicates that for Woodland, the time from dam break to flooding would be six to seven hours. The mitigation planned for this flooding is to evacuate north and west Woodland residents to the south. The flood depths are expected to range from zero to eight feet, which is much greater than a 500-year storm event. The *EAP for*

the Indian Valley Dam contains detailed procedures for emergency action to be taken by the various agencies to respond to an emergency situation, including the Woodland Police Department and the Yolo County Office of Emergency Services.

METHODOLOGY

This section describes the assumptions and thresholds of significance used to assess impacts resulting from development estimated for the year 2020 under the *General Plan*. The analysis was conducted by evaluating known and anticipated flooding and dam inundation hazards in relationship to the areas designated for development on the *General Plan Land Use Diagram*.

Assumptions

1. Flooding impacts are assumed to be generally limited to defined floodways and floodplains as defined by FEMA's Flood Insurance Rate Maps and the U.S. Army Corps of Engineers' *Westside Tributaries Study*(March 1994). These studies are assumed to represent the best available information on flooding, and these federal agencies would be responsible for evaluating and correcting the studies if the information is not correct.
2. Potential inundation resulting from dam failure is assumed to affect Woodland only as it relates to the Indian Valley Dam and Reservoir.
3. The analysis generally does not address impacts associated with flooding less frequent than the 100-year flood event. Storm drainage is addressed in Chapter 5, Public Facilities and Services.
4. Existing development located within the Planning Area may continue to be exposed to flooding and dam inundation hazards, but this is not considered an impact of new development under the *General Plan*.
5. In the event of major flooding or dam failure, the City of Woodland will respond according to the City and County Emergency Plan and the Yolo County Flood Control and Water Conservation District *Emergency Action Plan for Indian Valley Dam*.

Thresholds of Significance

According to Appendix G of the *CEQA Guidelines*, a project will normally have a significant effect if it will cause substantial flooding or interfere with emergency response plans or emergency evacuation plans.

For purposes of this *EIR*, an impact is considered significant if adoption or implementation of the *General Plan* would conflict with the *Yolo County Emergency Plan* or the Yolo County Flood Control and Water Conservation District *Emergency Action Plan for Indian Valley Dam*, or increase risk to life or property from development in the designated 100-year flood plain.

IMPLICATIONS OF THE GENERAL PLAN LAND USE DIAGRAM

100-Year Flood Hazard

The FEMA Flood Insurance Rate Map (FIRM) delineates those areas subject to the 100-year and 500-year flood. Based on the FIRM Map, much of the land within the developed areas of northern and eastern Woodland is identified as within Flood Zone A (100-year flood) and Flood Zone B (100 to 500-year flood).

In addition, currently undeveloped industrially-designated land in the northern part of the Planning Area lies within Flood Zone B (100 to 500-year flood). Based on the FIRM Map, the lands to the south of Woodland lie within Flood Zone C (area of minimal flooding).

The *Westside Tributaries Study* indicated that the 50, 100, and 500-year flood events from Cache Creek would result in more extensive flooding of north and east Woodland than are predicted by the National Flood Insurance Program's Flood Insurance Rate Maps. The flooding would result in 1- to 3-foot sheet flows and ponding.

The *General Plan* does not designate any land for new residential development within the 100-year floodplain. The *General Plan* does, however, designate some land for new commercial and industrial development in areas subject to 100-year flooding.

Dam Failure Inundation

Inundation flooding associated with the failure of the Indian Valley Dam and reservoir would affect land to the north and east Woodland. This includes most of the northern and eastern parts of the Planning Area.

GENERAL PLAN POLICY RESPONSE

The following policies seek to protect development from damage, and to require new development within identified floodplains to be designed to avoid flood damage:

- 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 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.*

The following policies seek 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.

- 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.*

IMPACTS

Flooding

The *General Plan* Land Use Diagram avoids designating new residential development within floodplain areas. Combined with the policies of the *General Plan*, this would ensure no development in areas subject to 100-year flooding without adequate mitigation or floodproofing of structures. The impact of the *General Plan* would therefore be less-than-significant

Dam Failure Inundation

The *Emergency Action Plan for the Indian Valley Dam* describes mitigation measures that would protect Woodland residents from the inundation effects of the failure of Indian Valley Dam. The policies of the

General Plan call for continued updating and implementation of the City of Woodland's *Emergency Response Plan*. These efforts would ensure that the potential impacts related to dam failure inundation would be less-than-significant.

MITIGATION MEASURES

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

9.3 FIRE HAZARDS

ENVIRONMENTAL SETTING

Fire hazards are described in Chapter 8 of the *General Plan Background Report*. Both open space and urban (structural) fire hazards in Woodland create the potential for injury, loss of life, and property damage. Urban fires primarily involve residential, commercial, and industrial structures and are typically the result of man-made causes. Open space fires affect grass, brush lands, agricultural lands, as well as any structures on these lands.

METHODOLOGY

This section describes the assumptions and thresholds of significance developed to assess impacts resulting from development under the *General Plan*. The analysis was conducted by considering existing and anticipated open space and urban fire hazards described in the *General Plan Background Report* in relation to the areas proposed for new development under the *General Plan*.

Assumptions

New development in the Planning Area will require expanded fire protection services and will meet *General Plan* levels of service and response time standards. (See Fire Protection section in Chapter 5, Public Facilities and Services).

Thresholds of Significance

For purposes of this *EIR*, an impact is considered significant if adoption or implementation of the *General Plan* would result in a significant increase in the exposure of people to major fire hazards.

IMPLICATIONS OF THE LAND USE DIAGRAM

Urban Fire Hazard

New development under the *General Plan* will increase the number of structures and persons that will be subject to potential fires simply by increasing the size of the building stock and the number of residents and workers in Woodland.

Open Space Fire Hazard

New development under the *General Plan* will infill most of the vacant parcels that currently represent potential locations for weed growth and fire hazards, and will only modestly increase the urban-open space interface. The cultivated agricultural lands around Woodland represent a low fire hazard.

GENERAL PLAN POLICY RESPONSE

The following policies serve to minimize the risk of loss of life, injury, and damage to property and watershed resources resulting from unwanted fires:

- 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.*
- 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.*
- 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.*

IMPACTS

Urban Fire Hazard

The policies of the *General Plan* and existing code provisions should ensure that all new development in Woodland will meet construction standards for fire safety and provide its fair share contribution to funding fire protection facilities. As a result, the urban fire hazard impacts related to development under the *General Plan* would be less-than-significant.

Open Space Fire Hazard

The policies of the *General Plan* and ongoing fire prevention efforts should ensure that all new development under the *General Plan* will meet standards for fire safety, including the removal of grass and brush from urban parcels and maintaining the required structural set back from property lines to ensure fire safety. As a result, the open space fire hazard impacts related to development under the *General Plan* would be less-than-significant.

MITIGATION MEASURES

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

9.4 HAZARDOUS MATERIALS

ENVIRONMENTAL SETTING

Woodland has a substantial number of industries and activities that involve transport, storage, or use of toxic or hazardous materials. In Woodland, the most prominent hazardous materials include agricultural chemicals (i.e., pesticides, insecticides, herbicides, fumigants), petroleum products, and chemicals used in industrial processing (i.e., solvents). These materials could represent safety hazards in such events as leakage from bulk storage areas of petroleum and gaseous products, railroad derailment, freeway vehicular accidents, and hazardous materials spills within or near the city.

METHODOLOGY

This section describes the assumptions and thresholds of significance used to assess impacts resulting from development under the *General Plan*.

Assumptions

1. Increased development in the Planning Area, particularly commercial and industrial development, will result in increased transport, storage, and use of toxic or hazardous materials.
2. The City's primary mechanism for addressing hazardous materials is, and will continue to be, the *Yolo County Hazardous Waste Management Plan*, adopted in 1989.
3. All federal, state and local regulations governing the production, uses, storage and transportation of hazardous materials will be strictly enforced.

Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, an impact is considered significant if adoption or implementation of the *General Plan* would create a potential public health hazard or involve the use, production, or disposal of materials which pose a hazard to people, animals or plant populations.

IMPLICATIONS OF THE LAND USE DIAGRAM

New development under the *General Plan* will result in the increased possibility of exposure to hazardous materials. This exposure is expected to be greatest in areas where hazardous materials would be used in large quantities, such as the areas designated for industrial development in the northeast and northwest parts of the city. To a lesser extent, use of common household hazardous materials will continue in new residential and commercial areas. Local highways and rail lines will continue to serve as routes for the transport of significant amounts of hazardous materials, thereby exposing nearby people and property to potentially hazardous conditions.

GENERAL PLAN POLICY RESPONSE

The following policies serve 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:

- 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 discourage 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.*
- 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 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 contaminated site cleanup.*

IMPACTS

The successful implementation of the policies of the *General Plan*, along with ongoing administration of the City's *Emergency Response Plan*, the *Woodland Household Hazardous Waste Element (HHWE)*, the *Yolo County Hazardous Waste Management Plan*, and all pertinent federal and state regulations, would minimize the hazardous materials impacts of development under the *General Plan* to a less-than-significant level.

MITIGATION MEASURES

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

9.5 EMERGENCY RESPONSE

This section focuses on how new development under the *General Plan* could result in increased demands on emergency response services.

ENVIRONMENTAL SETTING

City and county emergency response procedures are designed to respond to a range of events such as earthquakes, flooding, fires, and hazardous materials spills. In the event of an emergency, evacuation routes have been defined and are shown on Figure 8-10 contained in Chapter 8 of the *General Plan Background Report*.

METHODOLOGY

This section describes the assumptions and thresholds of significance developed to assess impacts resulting from development estimated for the year 2020 under the *General Plan*.

Assumptions

Existing emergency services will continue to operate, including the City of Woodland's Public Works, Police and Fire Departments, the Yolo County Department of Public Health, Environmental Health Services the Yolo County Sheriff's Department, and the California Highway Patrol.

Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, an impact is considered significant if adoption or implementation of the *General Plan* would interfere with emergency response plans or emergency evacuation plans.

IMPLICATIONS OF THE LAND USE DIAGRAM

New development under the *General Plan* would increase the demand for emergency response services provided through local police and fire departments and emergency response organizations. Natural and man-made hazards associated with the existing urban development would also continue to need such services. Generally, new development called for under the *General Plan* would create a pattern that could be easily served by existing emergency services providers.

GENERAL PLAN POLICY RESPONSE

The following policies seek to ensure the maintenance of emergency response procedures to effectively prepare for, respond to, recover from, and mitigate the effects of natural or technological disasters:

- 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.*

IMPACTS

Implementation of the policies of the *General Plan*, along with ongoing administration of the City's *Emergency Response Plan* and compliance with all pertinent federal and state regulations, should ensure that the emergency response impacts of development under the *General Plan* are less-than-significant.

MITIGATION MEASURES

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

9.6 AIRCRAFT HAZARD

This section describes the likely health and safety effects associated with aircraft hazards under the *General Plan*. Specifically, this section focuses on how development and associated population growth will impact the Watts-Woodland Airport, located west of the City of Woodland; the Yolo County Airport, located southwest of Woodland; and the Sacramento Metropolitan Airport, located in Sacramento County approximately 10 miles east of Woodland.

ENVIRONMENTAL SETTING

Aircraft hazards are described in Chapter 9 of the *General Plan Background Report*. Safety issues associated with airports are primarily concerned with hazards posed to flights and hazards posed to those on the ground. Flight hazards may be physical, such as a tall structure that would obstruct airspace; visuals such as the glare caused by lights; or electric, which could include any electric uses that interferes with aircraft instruments

or communication systems. With urban growth comes the need for increased airport operations, and this increased activity generates increased aircraft hazard potential. With proper land use planning, the risks can be reduced or mitigated, mainly through avoidance of incompatible land uses.

METHODOLOGY

This section describes the assumptions and thresholds of significance used to assess impacts resulting from development estimated for the year 2020 under the *General Plan*. The analysis was conducted by comparing areas with potential aircraft crash hazards with the area designated for development under the *General Plan*.

Assumptions

1. The Comprehensive Land Use Plan (CLUP) for the Watts-Woodland Airport, updated in March 1993, shows that no safety zones fall within the *Woodland General Plan Planning Area*.
2. The CLUP for the Yolo County Airport, updated in December 1992, shows that no safety zones fall within the *Woodland General Plan Planning Area*.
3. The *Sacramento Metropolitan Airport Comprehensive Land Use Plan*, updated in January 1994, shows that no safety zones fall within the *Woodland General Plan Planning Area*.

Thresholds of Significance

Based on Appendix G of the *CEQA Guidelines*, an impact is considered significant if adoption or implementation of the *General Plan* would create a potential public health hazard or conflict with adopted environmental plans and goals of the community.

IMPLICATIONS OF THE LAND USE DIAGRAM

The *General Plan* provides for no development within the safety zones of the Watts-Woodland Airport, the Yolo County Airport, or the Sacramento Metropolitan Airport. The Land Use Diagram, therefore, does not conflict with the CLUPs for these airports.

GENERAL PLAN POLICY RESPONSE

The following *General Plan* policies will minimize the risk of loss of life, injury, damage to property, and economic and social dislocations resulting from airport hazards:

- 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).*

IMPACT

Because the *General Plan* designates no land within the safety zone of any airport, the potential aircraft crash hazards impacts resulting from implementation of the *General Plan* would be less-than-significant.

MITIGATION MEASURES

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

9.7 NOISE

ENVIRONMENTAL SETTING

The *General Plan Background Report* contains a detailed description of Woodland's existing noise environment. Noise in the Woodland area is predominantly the result of traffic on major highways (i.e., I-5 and State Route 113) and major arterial streets and roads.

The Southern Pacific Transportation Company (SPTCo) track which is operated primarily by the California Northern Railroad also operates along one of two railroad lines within Woodland. The major north/south line originates from the south in Davis, and destinations to the north, and is generally located in close proximity of S.R. 113 and East Street. The east/west line is owned by Union Pacific and is operated by Yolo Shortline, originates in Sacramento and terminates in Woodland, and is adjacent to East Main Street.

Industrial and other fixed noise sources are dispersed throughout the city and the adjacent unincorporated areas. The major fixed noise sources in the area are industries involved with agricultural production and processing, the Woodland Biomass plant, tire and muffler shops, large HVAC systems, commercial developments, and loading docks.

Noise related to aircraft operations were identified for the Sacramento Metropolitan Airport (SMF). Aircraft noise levels were due primarily to overflights on departure tracks associated with runways 16R and 16L. These overflights come near the northeastern corner of the Planning Area, but do not cross directly over it.

A community noise survey was conducted throughout Woodland away from major noise sources, in areas containing noise-sensitive land uses. Noise levels ranged between 51 dB and 56 dB L_{dn} .

METHODOLOGY

This section describes the assumptions and thresholds of significance developed to determine noise impacts.

Assumptions

1. As land designated for urban uses in the *General Plan* develops, increased traffic is assumed to result in increased traffic noise. In addition, industrial facilities and other stationary noise sources will be developed. Rail activity and demand at existing aviation facilities are also expected to increase.
2. Increases in traffic noise levels are based upon changes in traffic volumes. Travel speeds, truck mix and distributions of traffic throughout the day are assumed to remain the same. Traffic volume data was provided by Fehr & Peers Associates Transportation Consultants. The Federal Highway Administration

(FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to predict distances to L_{dn} contours for all highways and major roadways.

3. It is difficult to determine the noise impacts associated with future industrial facilities. However, based upon the proposed future land use, areas of potential noise impacts associated with new industrial facilities can be described.
4. SPTCo and California Northern Railroad officials were not able to provide estimates of future railroad activity. Therefore future railroad noise levels were assumed to be the same. Railroad noise level measurements and accepted modeling techniques were used to determine the distances to L_{dn} contours.
5. Future aircraft noise levels were based upon the *Final Report, Data Base Update, Sacramento Metro Airport*, August, 1989.
6. Noise sensitive land uses include residential areas, parks, and schools.

Thresholds of Significance

For the purposes of this *EIR*, an impact is considered significant if adoption or implementation of the *General Plan* would result in noise levels exceeding the noise standards contained in the *General Plan Policy Document*.

Another method of determining the significance of noise impacts is by the expected change in ambient noise levels which will occur as a result of the project. An increase of at least 3 dB is usually required before most people will perceive a change in noise levels, and an increase of 5 dB is required before the change will be clearly noticeable. The common practice has been to assume that a minimally perceptible increase of 3 dB represents a significant increase in ambient noise levels.

Table 9-1 is based upon recommendations made in August 1992 by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. Their recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been assumed for this analysis that they are applicable to all sources of noise that are described in terms of cumulative noise exposure metrics such as the L_{dn} or CNEL. These metrics are generally applied to transportation noise sources, and define noise exposure in terms of average noise exposure during a 24-hour period with penalties added to noise that occurs during the nighttime or evening. L_{dn} or CNEL are often defined in terms of an average annual day, and are therefore quite different than the short-term noise level descriptors described above.

**TABLE 9-1
SIGNIFICANCE OF CHANGES IN CUMULATIVE NOISE EXPOSURE**

| Ambient Noise Level Without Project (L_{dn} or CNEL) | Significant Impact |
|--|--------------------|
| <60 dB | +5.0 dB or more |
| 60-65 dB | +3.0 dB or more |
| >65 dB | +1.5 dB or more |

Source: Federal Interagency Committee on Noise (FICON), applied by Brown-Buntin Associates, Inc.

IMPLICATIONS OF THE LAND USE DIAGRAM

Traffic Noise Levels

Development under the *General Plan* would result in increased traffic noise levels. Table 9-2 shows the distances to the traffic noise contours for all highways and major roadways within the Planning Area. This table also shows the relative change in noise levels from existing levels. The potential exists for traffic noise levels at existing and future land uses to exceed acceptable noise exposure. Future noise-sensitive uses could be located inside the 60 dB L_{dn} roadway noise contours. Increased noise levels associated with traffic may encroach upon existing noise-sensitive land uses, or further increase noise levels already in excess of 60 dB L_{dn} .

**TABLE 9-2
NOISE CONTOUR DATA
DISTANCE (FEET) FROM CENTER OF ROADWAY
TO L_{dn} CONTOURS**

| Seg. | Description | Existing | | Future | | Difference dB at 100 feet |
|-------------------------|--|----------|-------|--------|-------|------------------------------|
| | | 60 dB | 65 dB | 60 dB | 65 dB | |
| Kentucky Avenue: | | | | | | |
| 1 | Road 98 to North Ashley Avenue | 69 | 32 | 70 | 33 | +0.1 |
| 2 | North Ashley Avenue to North West Street | 118 | 55 | 129 | 60 | +0.6 |
| 3 | North West Street to North East Street | 132 | 61 | 215 | 100 | +3.2 |
| 4 | North East Street to I-5 | 85 | 39 | 135 | 63 | +3.1 |
| 5 | I-5 to Road 101 | 66 | 31 | 135 | 63 | +4.7 |
| 6 | Road 101 to Road 102 | 49 | 23 | 98 | 45 | +4.4 |
| Beamer Street: | | | | | | |
| 7 | Road 98 to Cottonwood Street | 54 | 25 | 40 | 18 | -0.2 |
| 8 | Cottonwood Street to North West Street | 80 | 37 | 84 | 39 | +0.3 |
| 9 | North West Street to North East Street | 80 | 37 | 93 | 43 | +1.0 |
| 10 | North East Street to I-5 | 72 | 33 | 114 | 53 | +2.9 |
| 11 | I-5 to Road 101 | 62 | 29 | 121 | 56 | +4.4 |
| 12 | Road 101 to 102 | 46 | 21 | 87 | 40 | +4.2 |
| Court Street: | | | | | | |
| 13 | Ashley Avenue to Cottonwood Street | 56 | 26 | 69 | 32 | +1.4 |
| 14 | Cottonwood Street to California Street | 92 | 43 | 80 | 37 | -0.9 |

**TABLE 9-2
NOISE CONTOUR DATA
DISTANCE (FEET) FROM CENTER OF ROADWAY
TO L_{dn} CONTOURS**

| Seg. | Description | Existing | | Future | | Difference dB at 100 feet |
|---------------------------|------------------------------------|----------|-------|--------|-------|------------------------------|
| | | 60 dB | 65 dB | 60 dB | 65 dB | |
| Main Street: | | | | | | |
| 18 | Road 98 to West Street | 118 | 55 | 104 | 48 | -0.9 |
| 19 | West Street to East Street | 122 | 57 | 139 | 64 | +0.8 |
| 20 | East Street to Road 101 | 137 | 63 | 155 | 72 | +0.8 |
| 21 | Road 101 to Road 102 | 54 | 25 | 132 | 61 | +5.8 |
| Casa Street: | | | | | | |
| 22 | Road 98 to Ashley Avenue | 29 | 14 | 22 | 10 | -1.7 |
| 23 | Ashley Avenue to West Street | 63 | 29 | 56 | 26 | -0.8 |
| 24 | West Street to East Street | 56 | 26 | 77 | 36 | +2.1 |
| Gibson Road: | | | | | | |
| 25 | Road 98 to Ashley Avenue | 56 | 26 | 58 | 27 | +0.3 |
| 26 | Ashley Avenue to Cottonwood Street | 73 | 34 | 69 | 32 | -0.5 |
| 27 | Cottonwood Street to West Street | 104 | 48 | 117 | 54 | +0.7 |
| 28 | West Street to East Street | 126 | 59 | 169 | 78 | +1.9 |
| 29 | East Street to Road 101 | 130 | 61 | 160 | 74 | +1.4 |
| 30 | Road 101 to Road 102 | 78 | 36 | 153 | 71 | +4.5 |
| Road 98: | | | | | | |
| 31 | South of Gibson Road | 74 | 34 | 91 | 42 | +1.4 |
| 32 | Gibson Road to Main Street | 93 | 43 | 105 | 49 | +0.7 |
| 33 | Main Street to Kentucky Avenue | 87 | 40 | 104 | 48 | +1.2 |
| 34 | North of Kentucky Avenue | 53 | 25 | 68 | 32 | +1.6 |
| Ashley Avenue: | | | | | | |
| 35 | Gibson Road to Main Street | 59 | 27 | 16 | 8 | -8.4 |
| 36 | Main Street to Beamer Street | 52 | 24 | 8 | 4 | -12.4 |
| 37 | Beamer Street to Kentucky Avenue | 31 | 14 | 17 | 8 | -3.8 |
| Cottonwood Street: | | | | | | |
| 38 | South of Gibson Road | 47 | 22 | 36 | 17 | -1.6 |
| 39 | Gibson Road to Main Street | 89 | 41 | 82 | 38 | -0.5 |
| 40 | Main Street to Beamer Street | 75 | 35 | 66 | 31 | -0.8 |
| 41 | Beamer Street to Kentucky Avenue | 54 | 25 | 51 | 24 | -0.3 |
| West Street: | | | | | | |
| 42 | South of Gibson Road | 69 | 32 | 65 | 30 | -0.4 |
| 43 | Gibson Road to Main Street | 95 | 44 | 107 | 50 | +0.7 |
| 44 | Main Street to Beamer Street | 95 | 44 | 89 | 41 | -0.5 |
| 45 | Beamer Street to Kentucky Avenue | 78 | 36 | 93 | 43 | +1.2 |
| College Street: | | | | | | |
| 46 | South of Gibson Road | 57 | 26 | 59 | 27 | +0.2 |
| 47 | Gibson Road to Main Street | 69 | 32 | 89 | 42 | +1.7 |
| 48 | Main Street to Beamer Street | 68 | 31 | 78 | 36 | +0.9 |
| 49 | Beamer Street to Kentucky Avenue | 50 | 23 | 66 | 31 | +1.8 |
| Third Street: | | | | | | |
| 50 | Gibson Road to Main Street | 50 | 23 | 63 | 29 | +1.5 |
| 51 | Main Street to Beamer Street | 53 | 25 | 33 | 15 | -3.2 |
| East Street: | | | | | | |
| 52 | South of Gibson Road | 52 | 24 | 162 | 75 | +7.4 |
| 53 | Gibson Road to Main Street | 121 | 56 | 144 | 67 | +1.2 |

**TABLE 9-2
NOISE CONTOUR DATA
DISTANCE (FEET) FROM CENTER OF ROADWAY
TO L_{dn} CONTOURS**

| Seg. | Description | Existing | | Future | | Difference dB at 100 feet |
|-----------------------------|--------------------------------|----------|-------|--------|-------|------------------------------|
| | | 60 dB | 65 dB | 60 dB | 65 dB | |
| Matmor Road: | | | | | | |
| 57 | Entire Length | 67 | 31 | 87 | 40 | +1.7 |
| Road 101: | | | | | | |
| 58 | South of Gibson Road | 18 | 8 | 141 | 66 | +13.5 |
| 59 | Gibson Road to Main Street | 62 | 29 | 130 | 60 | +4.9 |
| 60 | Main Street to Kentucky Avenue | 57 | 26 | 160 | 74 | +6.8 |
| 61 | North of Kentucky Avenue | 41 | 19 | 53 | 24 | +1.7 |
| Road 102: | | | | | | |
| 62 | South of Main Street | 99 | 46 | 218 | 101 | +5.2 |
| 63 | North of Main Street | 90 | 42 | 224 | 104 | +5.9 |
| L.S.: | | | | | | |
| 64 | East of Road 102 | 1279 | 594 | 2246 | 1043 | +3.7 |
| 65 | Road 102 to Main Street | 1177 | 546 | 1752 | 813 | +2.6 |
| 66 | Main Street to Kentucky Avenue | 898 | 417 | 1701 | 790 | +4.2 |
| 67 | North of Kentucky Avenue | 928 | 431 | 1421 | 659 | +2.8 |
| SR 113: | | | | | | |
| 68 | Entire Length | 247 | 115 | 476 | 221 | +4.3 |
| North Side New Road: | | | | | | |
| 69 | Road 98 to Road 99 | | | 54 | 25 | -- |
| South Side New Road: | | | | | | |
| 70 | Road 102 to Road 101 | | | 92 | 43 | -- |
| 71 | Road 101 to East Street | | | 124 | 57 | -- |
| 72 | East Street to West Street | | | -- | -- | -- |
| 73 | West Street to Road 98 | | | -- | -- | -- |

Source: Brown-Buntin Associates, September 1995.

Development under the *General Plan* is generally expected to result in an increase in noise levels due to traffic. It would, however, take a doubling of traffic to increase noise levels by approximately 3 dB. Upon review of areas where noise levels would increase by 3 dB or more, according to Table 9-3, these are locations where the City has already installed sound walls, anticipating future increases in traffic along roadways, or in roadway segments where no noise-sensitive uses are located (i.e., industrial, commercial, or undeveloped areas).

Railroad Noise

Development under the *General Plan* could result in noise-sensitive land uses developing near railroad tracks. This could result in individuals being exposed to noise levels which may be considered unacceptable. The approximate distance to the 60 dB L_{dn} noise contour for the main north/south track is 550 feet from the track centerline. This distance does not account for shielding from buildings or topography, and is considered a worst case scenario. Noise-sensitive land uses located inside the 60 dB L_{dn} contour for the main north/south track would be considered exposed to unacceptable noise levels. This would not be considered an impact of growth under the *General Plan* but an existing condition.

Industrial and Other Fixed Noise Sources

As additional development occurs throughout the Planning Area, the potential exists for noise-sensitive land uses to develop near existing or new fixed noise sources. The potential also exists for new fixed noise sources to encroach upon existing or proposed noise-sensitive land uses. Implementation of the *General Plan* would result in additional commercial, industrial, or office space. All land uses designated General Commercial, Business Park/Industrial and Public Facility would be considered to potentially have noise sources which may exceed acceptable standards. It is not possible at this time to determine noise impacts associated with these types of development.

Aircraft Noise

Development under the *General Plan* will not result in the potential for additional land use noise compatibility conflicts between aircraft operations and noise-sensitive land uses.

GENERAL PLAN POLICY RESPONSE

The following *General Plan* policies are intended to protect Woodland residents from the harmful and annoying effects of exposure to excessive noise.

- 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 | | |
| <i>New Projects Affected by or Including Non-transportation Sources*</i> | | |
| Noise Level Descriptor | Daytime (7 a.m. to 10 p.m.) | Nighttime (10 p.m. to 7 a.m.) |
| <i>Hourly L_{avg} dB</i> | 50 | 45 |
| <i>Maximum level, dB</i> | 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 Ldn 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 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 Ldn at the outdoor activity areas of noise-sensitive uses, a +5 dB Ldn 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 Ldn at the outdoor activity areas of noise-sensitive uses, a +3 dB Ldn 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 Ldn at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB Ldn increase in noise levels due to a roadway improvement project will be considered significant.*

| TABLE 8-2 | | | |
|--|---|--------------------------------|--------------------------------------|
| MAXIMUM ALLOWABLE NOISE EXPOSURE | | | |
| Transportation Noise Sources | | | |
| <i>Land Use</i> | <i>Outdoor Activity Areas¹</i> <i>L_{dn}/CNEL, dB</i> | <i>Interior Spaces</i> | |
| | | <i>L_{dn}/CNEL, dB</i> | <i>L_{eq} dB²</i> |
| <i>Residential</i> | 60 ³ | 45 | -- |
| <i>Transient Lodging</i> | 60 ³ | 45 | -- |
| <i>Hospitals, Nursing Homes</i> | 60 ³ | 45 | -- |
| <i>Theaters, Auditoriums, Music Halls</i> | -- | -- | 35 |
| <i>Churches, Meeting Halls</i> | 60 ³ | -- | 40 |
| <i>Office Buildings</i> | -- | -- | 45 |
| <i>Schools, Libraries, Museums</i> | -- | -- | 45 |
| <i>Playgrounds, Neighborhood Parks</i> | 70 | -- | -- |
| <p>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.</p> <p>² As determined for a typical worst-case hour during periods of use.</p> <p>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.</p> | | | |

The following *General Plan* policies are intended to prevent 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.

IMPACTS

Traffic Noise

The *General Plan* includes policies and programs to effectively reduce noise impacts related to new development to a less-than-significant level. In addition, areas of increased future traffic noise near existing noise-sensitive uses have already been mitigated through the construction of sound walls. As a result the traffic noise impacts of the *General Plan* are considered less-than-significant.

Railroad Noise

The policies and programs of the *General Plan* would effectively reduce impacts related to railroad noise to a less-than-significant level.

Industrial and Other Fixed Noise Sources

Successful implementation of the policies of the *General Plan* would effectively reduce potential noise compatibility conflicts between stationary noise sources and noise-sensitive land uses to a less-than-significant level.

Aircraft Noise

Because implementation of the *General Plan* will not result in the potential for additional land use noise compatibility conflicts between aircraft operations and noise-sensitive land uses, the noise impact of development under the *General Plan* is considered less-than-significant.

MITIGATION MEASURES

Traffic Noise

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

Railroad Noise

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

Industrial and Other Fixed Noise Sources

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.

Aircraft Noise

No mitigation measures beyond the policies and programs of the *General Plan* are necessary.