
Chapter 9
Health and Safety

CHAPTER 9

HEALTH AND SAFETY

9.1 SEISMIC AND GEOLOGICAL CONDITIONS

This section describes health and safety impacts of seismic and geologic hazards on development under the 2010 general plan growth scenario. Specifically, this section focuses on how development at the intensities indicated by the *Countywide General Plan Land Use Diagram* could be affected by potential earthquake faulting, groundshaking, liquefaction, slope instability, expansion and shrinking of soils, soil erosion, and snow avalanche conditions that are known or anticipated.

ENVIRONMENTAL SETTING

Seismic and geologic hazards in Placer County result from potential surface rupture of faults, groundshaking and liquefaction during earthquakes, landslides resulting from earthquakes, expansion and shrinking of soils, soil erosion, and snow avalanches. These conditions are identified below and are described in more detail in the *Background Report*.

Seismicity

Placer County lies within a seismically active area of the western United States, but beyond the influence of the highly active faults of coastal California. The western and central parts of the county generally have generally low seismicity, while the eastern area in the vicinity of Lake Tahoe has rather high seismicity.

Surface Rupture Hazards From Faulting

Within the historical period, earthquakes in Placer County have not caused any surface rupture as a result of faulting. No inferred faults or fault zones in Placer County are considered well-defined enough to warrant designation as hazard zones requiring site-specific studies before land development. Although precise zones cannot be located, there is some potential for surface rupture along fault zones in the Tahoe-Truckee area.

Groundshaking Hazards

During major earthquakes, groundshaking is generally responsible for between 80 and 100 percent of total damage. Groundshaking can cause severe damage even when faulting does not rupture the ground surface. The areas of Placer County with the largest groundshaking risk are in the vicinity of Stampede Valley and Tahoe faults in the Truckee-Tahoe area.

Liquefaction Hazards

Liquefaction is the transformation of uncemented, saturated clay-free sand or silt to a liquefied state resulting from increased pore-water pressures caused by groundshaking during an earthquake. Structures in areas that are prone to liquefaction can be damaged by this failure in soil strength. Soils that are prone to liquefaction are located throughout the county.

Slope Instability

Landslides can occur in natural and manufactured slopes due to unstable soil and rock, undercutting, and unfavorable soil moisture or drainage conditions. Slope instability can occur throughout the hilly and mountainous parts of the county.

Expansive Soils

Certain soils with high clay content may expand or shrink under different soil moisture conditions. This could lead to structural damage unless this condition is anticipated and special features are incorporated into their design. Soils considered to have moderate to high shrink-swell potential are generally limited to the low-lying areas, which are concentrated in western Placer County, from the city of Rocklin to the county line.

Erosion

The hazard of soil erosion can lead to other hazards including slope instability and sedimentation of nearby streams and rivers. Most soils in eastern Placer County are subject to high erosion potential, although some soils have moderate to very-high erosion potential.

Avalanche Hazards

Avalanche hazards exist in certain locations throughout eastern Placer County where steep slopes, abundant snow, and certain weather and snowpack conditions combine to cause an avalanche episode.

Structural Hazards

Historic and modern buildings that are not reinforced to meet current building codes could be substantially damaged by earthquake induced ground-shaking. Unreinforced masonry (URM) buildings, which are located throughout the county, present the most widespread structural hazard.

Additional information on seismic and geologic conditions in Placer County can be found in Chapter 10, of the *Background Report*.

METHODOLOGY

This section describes the assumptions and thresholds of significance developed to assess impacts resulting from development that would be expected to occur under the 2010 general plan development scenario. The analysis was conducted qualitatively, by considering known and anticipated seismic and geological hazards indicated in the *Background Report* in relationship to the areas proposed for development under the General Plan.

Assumptions

1. The potential for seismic activity, and related groundshaking, surface rupture and liquefaction, is assumed to be greater in the eastern part of the county, based on information contained in the *Background Report*.

Thresholds of Significance

Impacts are considered significant and adverse if the General Plan would:

- Allow substantial development of structures in areas susceptible to major faulting and surface rupture conditions;
- Cause substantial grading and construction activities in areas of known soil instability that could lead to increased property damage and accelerated soil erosion; and
- Substantially increase risk of loss of life and major property damage as a result of increased development activity in areas of major known slope instability or avalanche hazard.

IMPLICATIONS OF THE GENERAL PLAN LAND USE DIAGRAM

Potential Placement of Structures in Areas of Seismic Risk

Liquefaction could potentially cause impacts due to increased development in areas with high groundwater and alluvial materials that could become saturated during seismic events. Liquefaction can cause foundations to shift during an earthquake. The conditions where potential development activities could be impacted by liquefaction hazards are identified in Chapter 10 of the *Background Report*.

Groundshaking can cause structures to shift off their foundations and can rupture subsurface infrastructure lines. The locations where potential development activities could be impacted by groundshaking are in the eastern portion of the county identified as Potential Groundshaking Hazard Zones in Figure 10-1 of the *Background Report*.

Critical facilities located in areas susceptible to seismic activity could potentially be affected by seismic events, thereby disrupting emergency service operations. Structural hazard areas and critical facilities are identified in Chapter 10 of the *Background Report*.

The *General Plan Land Use Diagram* could potentially allow substantial development of structures in areas susceptible to major faulting and surface rupture conditions.

Potential Development Activities on Unstable Soils

Expansive soils could potentially impact development in areas with moderate to high shrink-swell potential. Volumetric changes in certain soils could shift shallow foundations and pavement. The areas where potential development activities could be impacted by soil types with shrink-swell potential are identified in the Table 10-7 of the *Background Report*.

Erosive soils could potentially cause impacts due to increased development on soils with moderate to high erosion hazard. Soil erosion can cause slope instability and sedimentation of waterways. The areas where potential development activities could be impacted by soil types with erosion hazards characteristics are identified in Tables 10-8 and 10-9 and Figure 10-3 of the *Background Report*.

The *General Plan Land Use Diagram* could potentially allow substantial grading and construction activities in areas of soil instability; this could lead to increased property damage and accelerated soil erosion.

Potential Risks from Slope Instability and Avalanche

Increased development in recreation/resort areas in higher elevation areas of the east county subject to heavy snowfalls on steep slopes could potentially be affected by avalanches. Avalanches can cause damage to or collapse of structures in their path, and human injury or loss of life. Avalanche hazards are identified in Chapter 10 of the *Background Report*.

Increased development on steep slopes and erosive soils in some eastern areas of the county could potentially be affected by slope instability. Slope instability is discussed in Chapter 10 of the *Background Report*.

The *General Plan Land Use Diagram* could potentially allow increased development activity in areas of major known slope instability or avalanche hazard, and could substantially increase risk of loss of life and major property damage.

GENERAL PLAN POLICY RESPONSE

The *General Plan Policy Document* includes policies and implementation measures to address seismic and geologic impacts to development. The following policies and programs address the implications of the *Land Use Diagrams* on the following areas of seismic and geologic risks.

Placement of Structures in Areas of Seismic Risk

Policies

- 8.A.1. *The County 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, landslides, liquefaction, critically expansive soils, avalanche).*
- 8.A.7. *In areas subject to severe groundshaking, the County shall require that new structures intended for human occupancy be designed and constructed to minimize risk to the safety of occupants.*
- 8.A.8. *County shall continue to support scientific geologic investigations which refine, enlarge, and improve the body of knowledge on active fault zones, unstable areas, severe groundshaking, avalanche potential, and other hazardous conditions in Placer County.*
- 8.A.9. *The County shall require that the location and/or design of any new buildings, facilities, or other development in areas subject to earthquake activity minimize exposure to danger from fault rupture or creep.*
- 8.A.10. *The County shall require that new structures permitted in areas of high liquefaction potential be sited, designed, and constructed to minimize the dangers from damage due to earthquake-induced liquefaction.*
- 8.A.11. *The County shall limit development in areas of steep or unstable slopes to minimize hazards caused by landslides or liquefaction.*

Programs

- 8.1. *The County shall continue to enforce provisions of the Uniform Building Code which address seismic concerns, including masonry building design requirements.*
- 8.2. *The County shall assess the need for an ordinance requiring evaluation of unreinforced masonry structures and the repair or replacement of identified hazardous structures.*

These policies promote increased knowledge of fault zones, unstable areas, severe groundshaking, and similar hazardous conditions. The policies and programs would also require new development to avoid or compensate for the effects of fault rupture and liquefaction.

Development Activities on Unstable Soils

Policies

- 8.A.1. *The County 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, landslides, liquefaction, critically expansive soils, avalanche).*
- 8.A.2. *The County shall require submission of a preliminary soils report, prepared by a registered civil engineer and based upon adequate test borings, for every major subdivision and for each individual lot where critically expansive soils have been identified or are expected to exist.*
- 8.A.3. *The County shall prohibit the placement of habitable structures or individual sewage disposal systems on or in critically expansive soils unless suitable mitigation measures are incorporated to prevent the potential risks of these conditions.*

These policies provide that areas of known soil instability are avoided or the potential adverse effects of new development mitigated by prohibiting placement of habitable structures or individual septic systems on unstable soils unless suitable mitigation is provided.

Risks from Slope Instability and Avalanche

Policies

- 8.A.1. *The County 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, landslides, liquefaction, critically expansive soils, avalanche).*
- 8.A.4. *The County shall ensure that areas of slope instability are adequately investigated and that any development in these areas incorporates appropriate design provisions to prevent landsliding.*
- 8.A.5. *In landslide hazard areas, the County shall prohibit avoidable alteration of land in a manner that could increase the hazard, including concentration of water through drainage, irrigation, or septic systems; removal of vegetative cover; and steepening of slopes and undercutting the bases of slopes.*

- 8.A.6. *The County shall require the preparation of drainage plans for development in hillside areas that direct runoff and drainage away from unstable slopes.*
- 8.A.11. *The County shall limit development in areas of steep or unstable slopes to minimize hazards caused by landslides or liquefaction.*
- 8.A.12. *The County shall not issue permits for new development in potential avalanche hazard areas (PAHA) as designated in the Placer County Avalanche Management Ordinance unless project proponents can demonstrate that such development will be safe under anticipated snow loads and conditions of an avalanche.*
- 8.H.1. *The County shall maintain maps of potential avalanche hazard areas.*
- 8.H.2. *The County shall require new development in areas of avalanche hazard to be sited, designed, and constructed to minimize avalanche hazards.*

Program

- 8.17. *The County shall amend local ordinances as necessary to reflect updated avalanche hazard information.*

These policies provide for identification of areas of slope instability and avalanche hazard and limit development in areas of steep or unstable slopes.

IMPACTS

With full implementation of General Plan policies and programs, there are no significant adverse seismic and geologic impacts to development resulting from development under the General Plan. Seismic and geologic impacts are, therefore, considered less-than-significant.

MITIGATION MEASURES

No mitigation measures are necessary.

9.2 WILDLAND AND URBAN FIRE POTENTIAL

This section describes health and safety impacts associated with increased wildland and urban fire hazards under the 2010 General Plan development scenario. Specifically, this section focuses on how development at the intensities indicated by the *General Plan Land Use Diagram* could be subject to increased fire hazards.

ENVIRONMENTAL SETTING

Wildland and urban (structural) fire hazards in Placer County potentially threaten lives, property, and natural resources. Wildland fires result in the loss of commercial timber, may increase erosion on steep slopes, and degrade water quality in reservoirs. Existing fire hazards and public fire protection services are summarized below and described in more detail in the *Background Report*.

There are 26 local fire districts providing structural and wildland fire protection in the county. The County contracts with the California Department of Forestry and Fire Protection (CDF) to provide structural and wildland fire protection to areas in the western county, along the Interstate 80 corridor between Bowman and Emigrant Gap, and around Truckee.

The areas east of Auburn and Meadow Vista have been identified as very high fire hazard areas (*Background Report*, Figure 10-5). High hazard areas have been identified between Hidden Valley and the Nevada County-Placer County line and from Virginiatown to just west of Auburn. The rest of the county is in a moderate fire hazard area.

Inadequate water supply infrastructure and water pressure, delayed response times, insufficient fire stations, inadequate signing, narrow roads, and dead-end roads all contribute to losses as a result of fires. Individual fire districts generally mandate adherence to the construction standards in the Uniform Building Code and/or the Uniform Fire Code, or impose their own more stringent standards. Refer to the *Background Report*, Chapter 4, *Public Facilities and Services*, and Chapter 8, *Health and Safety*, for additional setting information.

METHODOLOGY

This section describes the assumptions and thresholds of significance used to determine impacts of wildland and urban fire hazards. The analysis was conducted qualitatively, by considering existing and anticipated wildland and urban fire hazards described in the *Background Report* in relationship to the areas proposed for development in the General Plan.

Assumptions

1. New urban development in the county is expected to support additional needed fire protection services which are expected to generally meet General Plan levels of service and response time standards.
2. New suburban and rural development in the high fire hazard area (mid-county, Auburn area) and very high fire hazard areas (east of Auburn) will expose a larger population to existing wildland fire hazards and result in greater structural fire risk in these areas.

Thresholds of Significance

Impacts are considered significant and adverse if the General Plan would create a substantial unmet need for new or altered fire protection services.

IMPLICATIONS OF THE GENERAL PLAN LAND USE DIAGRAM

Development under the *General Plan Land Use Diagram* would result in increased development in suburban and rural areas in the Sierra foothills. Most of the central part of the county is considered a high to very high hazard fire area with steep slopes, highly flammable vegetation, inadequate access, narrow roads and dead-end roads that could delay response times, and insufficient suppression services and facilities. Additional development in these areas would expose new and existing residents to increased structural fire hazards. In addition, new development at the edge of wildland areas would expose more structures to existing wildland fire hazards and introduce new sources for additional wildland fires associated with the longer urban/wildland interface.

Development under the *General Plan Land Use Diagram* would create a substantial need for new or altered fire protection services throughout the county, especially in high and very high fire hazard foothill areas.

GENERAL PLAN POLICY RESPONSE

The *Policy Document* includes policies and implementation measures to address impacts resulting from increased wildland and structural fire hazards and risks due to the development under the General Plan.

Policies

- 4.1.1. *The County shall encourage local fire protection agencies in Placer County to maintain the following minimum fire protection standards (expressed as Insurance Service Organization (ISO) ratings):*
 - a. *ISO 4 in urban areas*
 - b. *ISO 6 in suburban areas*
 - c. *ISO 8 in rural areas*
- 4.1.2. *The County shall encourage local fire protection agencies in the county to maintain the following standards (expressed as average response times to emergency calls):*
 - a. *4 minutes in urban areas*
 - b. *6 minutes in suburban areas*
 - c. *10 minutes in rural areas*
- 4.1.3. *The County shall require new development to develop or fund fire protection facilities, personnel, and operations and maintenance that, at a minimum, maintains the above service level standards.*
- 4.1.4. *The County shall work with local fire protection agencies to identify key fire loss problems and design appropriate fire safety education programs to reduce fire incidents and losses.*
- 4.1.5. *The County shall work with local fire protection agencies and implement ordinances to control fire losses and fire protection costs through continued use of automatic fire detection, control, and suppression systems.*
- 4.1.6. *The County shall continue to promote standardization of operations among fire protection agencies and improvement of fire service levels.*
- 4.1.7. *The County shall maintain and strengthen automatic aid agreements to maximize efficient use of available resources.*
- 4.1.8. *The County shall work with local fire protection agencies to maintain a prefire planning program with selected high-risk occupancies reviewed at least annually.*
- 4.1.9. *The County shall ensure that all proposed developments are reviewed for compliance with fire safety standards by responsible local fire agencies per the Uniform Fire Code and other County and local ordinances.*

- 4.I.10. *The County shall work with local fire protection agencies to inventory and eliminate structurally unsafe and fire-hazardous housing units that are beyond repair or rehabilitation.*
- 8.C.1. *The County shall ensure that development in high-fire-hazard areas is designed and constructed in a manner that minimizes the risk from fire hazards and meets all applicable state and county fire standards.*
- 8.C.2. *The County shall require that discretionary permits for new development in fire hazard areas be conditioned to include requirements for fire-resistant vegetation, cleared fire breaks, or a long-term comprehensive fuel management program. Fire hazard reduction measures shall be incorporated into the design of development projects in fire hazard areas.*
- 8.C.3. *The County shall require that new development meets state, county, and local fire district standards for fire protection.*
- 8.C.4. *The County shall refer development proposals in the unincorporated county to the appropriate local fire agencies for review for compliance with fire safety standards. If dual responsibility exists, then both agencies shall review and comment relative to their area of responsibility. If standards are different or conflicting, the more stringent standards shall be applied.*
- 8.C.5. *The County 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.6. *The County shall encourage fire protection agencies to 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 fire hazards within the county.*
- 8.C.7. *The County shall work with local fire protection agencies, the California Department of Forestry and Fire Protection, and the U.S. Forest Service to promote the maintenance of existing fuel breaks and emergency access routes for effective fire suppression.*
- 8.C.8. *The County 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.9. *The County shall work with local fire agencies to develop high-visibility fire prevention programs, including those offering voluntary home inspections and promoting awareness of home fire prevention measures.*
- 8.C.10. *The County shall continue to implement state fire safety standards through enforcement of the applicable standards contained in the Placer County Land Development Manual.*
- 8.C.11. *The County shall continue to work cooperatively with the California Department of Forestry and Fire Protection and local fire protection agencies in managing wildland fire hazards.*
- 8.C.12. *The County shall support annexations and consolidations of fire districts and services to improve service delivery to the public.*

Programs

- 8.6. *The County shall periodically evaluate fire protection services in the county to determine if fire protection resources are being effectively and efficiently used.*
- 8.7. *The County shall work with the California Department of Forestry and Fire Protection, local fire protection agencies, and city fire departments to maximize the use of resources to develop functional and/or operational consolidations and standardization of services and to maximize the efficient use of fire protection resources.*

These policies require new development to provide new fire protection services and to incorporate fire resistance and fire hazard reduction measures into their design. Policies also promote increased education and promotion of fire prevention programs, and improvements in fire protection agency service and coordination. Because of the physical constraints imposed by the topography and vegetation in the high fire hazard areas of Placer County, as well as inadequate access, some existing and new rural residences located in remote or isolated areas would continue to be exposed to unavoidable risk from wildland fires. This is not considered an impact of the General Plan and would not, in itself, create a substantial unmet or new or altered fire protection services.

IMPACTS

With full implementation of the policies and programs of the *Policy Document*, the development under the *Land Use Diagram* will not result in a substantial unmet need for new or altered fire protection services. The impact of the General Plan on wildland and urban fire potential is, therefore, less-than-significant.

MITIGATION MEASURES

No mitigation measures are necessary.

CUMULATIVE IMPACT

Development in the foothills and rural areas of El Dorado and Nevada Counties adjoining the narrow foothill portion of Placer County combined with development in Placer County would cumulatively increase wildland fire hazards in this region. Fairly large portions of each of these three counties are in very-high fire hazard areas that share similar problems of topography, vegetation, and inaccessibility. Additional development in this region would expose new and existing residents to increased fire hazards. This increased risk is not considered a significant effect of development under the *Placer County Countywide General Plan*.

9.3 FLOODING AND DAM FAILURE INUNDATION

This section describes potential health and safety impacts from flooding and dam failure inundation hazards from development under the 2010 General Plan development scenario. Flood events, dam failures, and resulting inundation will be analyzed to determine how development at the intensities indicated in the *General Plan Land Use Diagram* would be affected by these hazards.

ENVIRONMENTAL SETTING

Flooding due to excessive rainfall can occur in Placer County anytime between November and May. This type of flood is usually a result of heavy, prolonged rainfall following seasonal ground saturation. Localized cloudburst storms may also occur anytime from early fall to late spring. A gradual or instantaneous failure of a dam structure could occur at any time because of internal erosion caused by embankment or foundation leakage, or inadequate spillway capacity and overtopping during or following a major rainfall.

100-Year Flood Hazard

Most floodplain areas within unincorporated Placer County associated with the 100-year flood are presently undeveloped. The only unincorporated area where existing urban development is affected by 100-year flood hazard is Tahoe City on the Truckee River, although suburban and rural areas along Dry Creek and its tributaries are also affected. The most extensive areas subject to flooding are found in the western part of the county on nearly-flat terrain associated with tributaries to the Sacramento River.

Dam Failure Inundation Hazard

Eleven dams in Placer County are at least 75 feet tall or have a capacity of at least 10,000 acre feet of water. At least 33 smaller dams and numerous private impoundments are located throughout the county. Failure of any one of these dams would flood downstream areas and could cause loss of life and property. Only four dams within the county are considered to have the potential to threaten more than 100 persons: Folsom Lake Dikes 5 and 6; Lake Tahoe Dam; Camp Far West Dam; and Lake Combie Dam.

Additional information on other dams within the county that may pose significant inundation hazards and additional flooding hazards information can be found in Chapter 10 of the *Background Report*.

METHODOLOGY

This section describes the assumptions and thresholds of significance developed to assess impacts resulting development that would be expected to occur under the 2010 General Plan development scenario. The analysis was conducted qualitatively by considering known and anticipated flooding and dam inundation hazards indicated in the *Background Report* in relationship to the areas designated for development on the *Land Use Diagram*.

Assumptions

1. Flooding, dam failure, and inundation impacts are assumed to be generally limited to defined floodways and floodplains along county watercourses and inundation is limited to areas downstream from existing dams and dikes. The analysis does not address impacts associated with flooding less frequent than the 100-year flood event, or more frequent localized flooding.
2. Some existing suburban and rural residences located in unincorporated areas, and urban residences located in incorporated cities may continue to be exposed to existing flooding and dam inundation hazards. This impact is not considered an impact of the *Placer County General Plan*.

Thresholds of Significance

Impacts from flooding and dam failure inundation are considered significant if the General Plan would:

- Allow unmitigated development in mapped floodplains or floodways or areas subject to inundation;
- Increase flood risk as a result of increased surface drainage from new development.

IMPLICATIONS OF THE GENERAL PLAN LAND USE DIAGRAM

Potential Development in Floodplains

Flooding could potentially cause impacts due to increased development in floodplains resulting in periodic damage to structures and possible loss of life to residents. This impact is limited to flood hazard areas identified in Chapter 10 of the *Background Report*.

Encroachment into floodplain areas could potentially cause impacts due to increased development resulting in higher flood water velocities downstream from narrowing of flood channels. Increased flood velocities could cause property damage, create erosion, and threaten human life. This impact is expected to be generally limited to flood areas identified in the *Background Report*.

The *General Plan Land Use Diagram* designates some land within mapped floodplains or floodways for development.

Potential Development in Areas Subject to Dam Failure Inundation

Dam failure could result in a surge of water through identified inundation areas that would threaten life and property. The most significant impacts of this type are associated with areas downstream from Folsom Lake Dikes 5 and 6, Lake Tahoe Dam, Camp Far West Dam, and Lake Combie Dam. The *General Plan Land Use Diagram* designates land for development in the dam inundation areas of Folsom Lake Dikes 5 and 6, as identified in the *Background Report*.

The *Land Use Diagram* could result in development in areas subject to inundation.

Potential Surface Drainage from New Development

Development under the *General Plan Land Use Diagram* would decrease infiltration rates and concentrate surface water flows, which could increase downstream flooding. This impact is expected to be limited to existing flooding problem areas identified in *Background Report* and in the largest concentrations of new development proposed as part of the General Plan.

The *General Plan Land Use Diagram* could increase flood risk as a result of increased surface drainage from new development.

GENERAL PLAN POLICY RESPONSE

The *General Plan Policy Document* includes the following policies and implementation measures to reduce flooding and dam inundation hazards to development under the *Land Use Diagram*.

Development in Floodplains

Policies

- 4.F.1. The County shall require that arterial roadways and expressways, residences, commercial and industrial uses and emergency facilities be protected, at a minimum, from a 100-year storm event.*
- 4.F.4. The County shall require evaluation of potential flood hazards prior to approval of development projects. The County shall require proponents of new development to submit accurate topographic and flow characteristics information and depiction of the 100-year floodplain boundaries under fully-developed, unmitigated runoff conditions.*
- 4.F.7. The County shall cooperate with the Placer County Flood Control and Water Conservation District, surrounding jurisdictions, the cities in the county, and other public agencies in planning and implementing regional flood control improvements.*
- 4.F.11. To the extent that funding is available, the County shall work to solve flood control problems in areas where existing development has encroached into a floodplain.*
- 4.F.13. The County shall continue to implement and enforce its Grading Ordinance and Flood Damage Prevention Ordinance.*
- 8.B.1. The County shall promote flood control measures that maintain natural conditions within the 100-year floodplain of rivers and streams.*
- 8.B.2. The County shall continue to participate in the Federal Flood Insurance Program.*
- 8.B.3. The County shall require flood-proofing of structures in areas subject to flooding.*
- 8.B.5. The County shall coordinate with neighboring jurisdictions to mitigate the impacts of new development in Placer County that could increase or potentially affect runoff onto parcels downstream in a neighboring jurisdiction.*

Programs

- 8.3. The County shall continue to maintain flood hazard maps and other relevant floodplain data and shall revise or update this information as new information becomes available.*
- 8.5. The County shall continue to implement and enforce its Flood Damage Prevention Ordinance.*

These policies and programs provide for protection of new development from the potential risks of flooding by requiring including identification of flood hazards and flood-proofing of structures. These policies also promote the planning and implementing of flood control improvements.

Population in Areas Subject to Inundation

Policies

- 8.B.4. *The County shall require that the design and location of dams and levees be in accordance with all applicable design standards and specifications and accepted state-of-the-art design and construction practices.*
- 8.B.6. *The County shall prohibit the construction of facilities essential for emergencies and large public assembly in the 100-year floodplain, unless the structure and access to the structure are free from flood inundation.*

Program

- 8.4. *The County will annually review and revise its Dam Failure Evacuation Plan and applicable portions of the County Emergency Operations Plan. The Office of Emergency Services will continue to provide public information on dam failure preparedness and response.*

These policies and programs require that the design and location of dams and levees be constructed according to the highest design and construction practices to minimize the potential for dam failure. Policies also require annual review of and public education on evacuation plans in the event of dam failure and prohibit construction of new facilities essential for emergencies in the 100-year floodplain, unless the structure and access to the facility are free from flood inundation risk.

Surface Drainage from New Development

Policy

- 8.B.5. *The County shall coordinate with neighboring jurisdictions to mitigate the impacts of new development in Placer County that could increase or potentially affect runoff onto parcels downstream in a neighboring jurisdiction.*

This policies provides for interjurisdictional coordination to ensure that new development mitigates the possible impacts of increased runoff to downstream areas. Policies concerning stormwater drainage under Goal 4.E, and discussed in Chapter 5 of this *EIR*, also address potential increases in stormwater runoff as a result of new development.

IMPACTS

With full implementation of the policies and programs of the *Policy Document*, there are no significant adverse flooding, surface drainage, or dam inundation impacts resulting from development under the *Land Use Diagram*.

MITIGATION MEASURES

No mitigation measures are necessary.

9.4 NOISE

This section describes health and community impacts of noise on development and of noise created by development under the 2010 General Plan development scenario. Specifically, this section focuses on how development at the intensities indicated by the *General Plan Land Use Diagram* could be affected by existing and anticipated traffic, railroad, industrial, and aircraft noise sources.

ENVIRONMENTAL SETTING

This section summarizes a more detailed description of the existing noise environment in Placer County contained in the *Background Report*. The existing noise environment throughout the majority of Placer County is dominated by traffic on highways (I-80, State Routes 65, 193, 49, 174, 20, 89, 28, and 267) and major arterial streets and roads.

The Southern Pacific Transportation Company (SPTCo) also operates two major railroad lines within Placer County. The major east/west line is generally parallels I-80 from Roseville to Truckee. The north/south line originates at the Roseville humpyard and travels north adjacent to S.R. 65.

Industrial and other fixed noise sources are dispersed throughout Placer County. The major fixed noise sources identified in the *Background Report* include industrial parks, lumber mills, landfills, transfer stations, aggregate and sand and gravel operations, cogeneration plants, auxiliary power plants, snowmaking operations, marinas, and shooting ranges.

Noise related to aircraft operations were identified for the Auburn Municipal Airport, Lincoln Municipal Airport, Blue Canyon Airport, and Truckee-Tahoe Airport, as well as McClellan Air Force Base (AFB), which is located in Sacramento County, but affects a small area of southwestern Placer County.

A community noise survey was conducted throughout Placer County away from major noise sources, in areas containing noise-sensitive land uses. Noise levels ranged between 41 dB and 60 dB L_{dn} .

METHODOLOGY

This section describes the assumptions and thresholds of significance developed to assess noise impacts resulting from development under the 2010 General Plan development scenario.

The traffic noise analysis was conducted quantitatively using traffic volume data prepared for Chapter 4 of this *EIR*. 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.

Because SPTCo officials were not able to provide estimates of future railroad activity, railroad noise levels were assumed to remain the same. Railroad noise level measurements and accepted modeling techniques were used to determine the distances to L_{dn} contours.

Future aircraft noise levels were based upon master plans and previous analyses conducted for each airport.

Assumptions

1. Development throughout Placer County will occur based upon the *General Plan Land Use Diagram*. As development occurs, traffic and resulting traffic noise are assumed to increase. 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, vehicle-type mix, and the distribution of traffic throughout the day are assumed to remain the same.
3. While it is difficult to determine the noise impacts associated with future industrial facilities, based upon proposed future land use, areas of potential noise impacts associated with new industrial facilities are described.

Thresholds of Significance

Impact significance criteria are based on standards contained in the *General Plan Policy Document* and on standard professional practice. Impacts are considered significant and adverse if the General Plan would exceed the standards contained in the *General Plan Policy Document* or cause a clearly noticeable increase in noise levels.

Table 9-1 is commonly used to show expected public reaction to changes in environmental noise levels. This table was developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broad-band noise and to changes in levels of a given noise source. It is probably most applicable to noise levels in the range of 50 to 70 dBA, since this is the usual range of voice and interior noise levels.

TABLE 9-1
SUBJECTIVE REACTION TO CHANGES IN NOISE LEVELS OF SIMILAR SOURCES

Change in Level, dBA	Subjective Reaction	Factor Change In Acoustical Energy
1	Imperceptible (Except for Tones)	1.3
3	Just Barely Perceptible	2.0
6	Clearly Noticeable	4.0
10	About Twice (or Half) as Loud	10.0

Source: Architectural Acoustics, M. David Egan, 1988.

IMPLICATIONS OF THE GENERAL PLAN LAND USE DIAGRAM

Potential Exposure of Noise-Sensitive Land Uses to Unacceptable Traffic Noise Levels

Development under the *General Plan Land Use Diagram* would result in an increase in traffic noise levels. Table 9-2 and Figure 9-1 show the distances to the traffic noise contours for all highways and major roadways within Placer County. Table 9-2 also shows the relative change in existing noise levels from those reported in the *Background Report*. The potential exists for existing and future land uses to exceed acceptable noise exposure associated with roadway traffic. 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 in excess of 60 dB L_{dn}.

PLACER COUNTY GENERAL PLAN

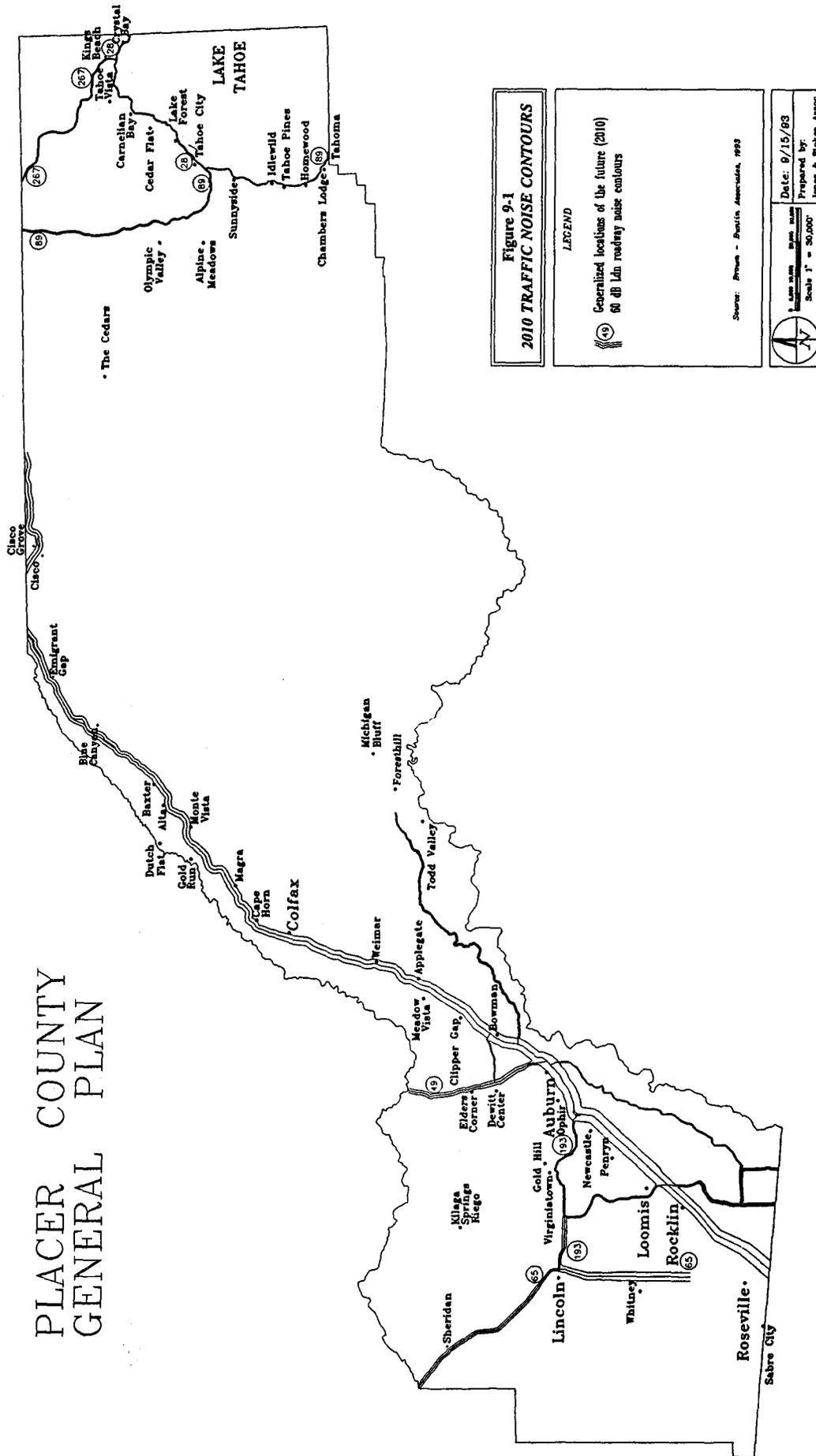


Figure 9-1
2010 TRAFFIC NOISE CONTOURS

Generalized locations of the future (2010)
60 dB Ldn roadway noise contours

Source: Private - South Associates, 1983

Date: 9/15/83
Prepared by:
James & Rickers Assoc.

Scale 1" = 30,000'

Development under the *General Plan Land Use Diagram* for the year 2040 is expected to result in further increases in noise levels from traffic. It would take a doubling of traffic to increase noise levels by approximately 3 dB.

The *General Plan Land Use Diagram* could allow for development of noise sensitive land uses where traffic noise would exceed the standards contained in the *Policy Document*, and/or cause a clearly noticeable change in noise levels.

TABLE 9-2

DISTANCE (FEET) FROM CENTER OF ROADWAY TO L_{dn} CONTOURS

Segment	Description	Future		Future/Existing Difference
		60 Db	65 dB	dB
I-80				
1	Sacramento County Line to Riverside Drive	2,208	1,025	+ 2.2
2	Riverside Drive to Douglas Boulevard	2,124	986	+ 1.9
3	Douglas Boulevard to Atlantic Street	2,115	982	+ 2.0
4	Atlantic Street to Route 65	1,859	863	+ 2.5
5	Route 65 to Rocklin Road	1,895	880	+ 2.9
6	Rocklin Road to Sierra College Boulevard	1,759	816	+ 2.6
7	Sierra College Boulevard to Dixon/Loomis Road	1,480	687	+ 1.6
8	Dixon/Loomis Road to Penryn Road	1,646	764	+ 2.3
9	Penryn Road to Route 193	2,135	991	+ 2.3
10	Route 193 to Route 49	2,003	930	+ 2.1
11	Route 49 to Auburn Ravine	2,011	933	+ 2.3
12	Auburn Ravine to Bell Road	1,622	753	+ 2.4
13	Bell Road to Dry Creek Road	1,575	731	+ 2.4
14	Dry Creek Road to Clipper Gap Road	1,494	694	+ 2.0
15	Clipper Gap Road to Applegate Road	1,395	647	+ 2.4
16	Applegate Road to Heather Glen	1,326	615	+ 1.9
17	Heather Glen to Weimar Cross Road	1,274	591	+ 1.9
18	Weimar Cross Road to Illinois Town Road	1,230	571	+ 2.1
19	Illinois Town Road to Route 174	1,153	535	+ 1.8
20	Route 174 to Magra	1,036	481	+ 1.6
21	Magra to Gold Run	1,027	477	+ 1.7
22	Gold Run to Monte Vista	971	451	+ 1.6
23	Monte Vista to Alta Road	946	439	+ 1.4
24	Alta Road to Baxter	946	439	+ 1.4
25	Baxter to Drum Forebay Road	851	395	+ 1.2
26	Drum Forebay Road to Blue Canyon	871	404	+ 1.2
27	Blue Canyon to Pitts Lake	867	402	+ 1.2
28	Pitts Lake to Carpenter Gap	843	391	+ 1.1
29	Carpenter Gap to Yuba Gap	832	386	+ 1.1
30	Yuba Gap to Cisco Grove	893	414	+ 1.3
31	Cisco Grove to Hampshire Rocks	887	412	+ 1.2
32	Hampshire Rocks to Kingvale	885	411	+ 1.1

TABLE 9-2, cont.

TABLE 9-2, cont.				
S.R. 65				
33	I-80 to Harding Boulevard	1,100	511	+ 5.4
34	Harding Boulevard to Blue Oaks Boulevard	1,225	569	+ 6.1
35	Blue Oaks Boulevard to Sunset Boulevard	1,073	498	+ 5.6
36	Sunset Boulevard to Industrial Boulevard	1,137	528	+ 6.2
37	Industrial Boulevard to Moore Road	332	154	+ 1.8
38	Moore Road to Gladding Road	369	171	+ 1.6
39	Gladding Road to Sheridan (F Street)	427	198	+ 1.3
40	Sheridan (F Street) to Yuba County Line	494	229	+ 1.8
S.R. 193				
41	Route 65 to Auburn Ravine	354	164	+ 4.6
42	Auburn Ravine to Sierra College Boulevard	568	264	+ 5.4
43	Sierra College Boulevard to Clark Tunnel Road	313	145	+ 4.7
44	Clark Tunnel Road to Gold Hill Road	184	85	+ 3.4
45	Gold Hill Road to I-80	204	95	+ 2.7
S.R. 49				
46	Forest Hill Road to Lincoln Way	192	89	+ 0.0
47	Lincoln Way to I-80	225	104	+ 0.6
48	I-80 to Palm Avenue	387	180	+ 0.7
49	Palm Avenue to Luther Road	687	319	+ 1.6
50	Luther Road to Bell Road	704	327	+ 1.3
51	Bell Road to Dry Creek Road	481	223	+ 0.4
52	Dry Creek Road to Nevada County Line	584	271	+ 2.2
S.R. 174				
53	I-80 to Auburn Street	147	68	+ 0.4
54	Auburn Street to Main Street	83	39	+ 1.0
55	Main Street to Rollins Lake Road	70	33	+ 0.0
56	Rollins Lake Road to Nevada County Line	57	27	+ 0.0
S.R. 20				
57	I-80 to Nevada County Line	134	62	+ 1.7
S.R. 89				
58	El Dorado County Line to Pineland Drive	124	57	+ 1.6
59	Pineland Drive to S.R. 28	130	60	+ 1.2
60	S.R. 28 to Squaw Valley	209	97	+ 1.3
61	Squaw Valley to Nevada County Line	272	126	+ 2.4
S.R. 28				
62	S.R. 89 to Tahoe State Park	160	74	+ 1.9
63	Tahoe State Park to Lake Forest Drive	228	106	+ 2.1
64	Lake Forest Drive to Lardin Way	197	92	+ 2.2
65	Lardin Way to Carnelian Bay Road	136	63	+ 1.5
66	Carnelian Bay Road to Granite Road	136	63	+ 2.3
67	Granite Road to National Avenue	146	68	+ 2.5
68	National Avenue to S.R. 267	165	77	+ 2.1
69	S.R. 267 to Coon Street	120	56	+ 1.3
70	Coon Street to Nevada State Line	130	60	+ 1.3

TABLE 9-2, cont.				
S.R. 267				
71	Nevada County Line to Tahoe Truckee Airport Rd.	213	99	+ 2.0
72	Tahoe Truckee Airport Road to North Star Road	200	93	+ 1.8
73	North Star Road to Martis Peak Road	180	83	+ 1.5
74	Martis Peak Road to North Avenue	228	106	+ 1.9
75	North Avenue to S.R. 28	118	55	+ 1.7
Douglas Boulevard				
76	Sierra College Boulevard to Barton Road	394	183	+ 2.1
77	Barton Road to Auburn Folsom Road	411	191	+ 2.4
Sierra College Boulevard				
78	Sacramento County Line to Douglas Boulevard	498	231	+ 2.3
79	Douglas Boulevard to Rocklin Road	473	220	+ 5.8
80	Rocklin Road to I-80	177	82	+ 3.6
81	I-80 to S.R. 193	252	117	+ 5.1
Rocklin Road				
82	Pacific Avenue to I-80	260	121	+ 2.6
83	I-80 to Sierra College Boulevard	353	164	+ 8.3
Auburn-Folsom Road				
84	Sacramento County Line to Douglas Boulevard	361	168	+ 4.1
85	Douglas Boulevard to Cavitt-Stallman Road	177	82	+ 0.7
86	Cavitt-Stallman Road to New Castle Road	92	43	+ 0.5
87	New Castle Road to Shirland Tract Road	152	71	+ 6.3
Bell Road				
88	S.R. 49 to New Airport Road	274	127	+ 2.7
89	New Airport Road to I-80	289	134	+ 2.1
Luther Road				
90	S.R. 49 to Dairy Road	114	53	+ 0.9
91	Dairy Road to Bowman Road	167	77	+ 2.2
Foresthill Road				
92	I-80 to Auburn-Folsom Road	168	78	+ 0.0
93	Auburn-Folsom Road to Ponderosa Way	221	103	+ 0.4
94	Ponderosa Way to Todds Valley Road West	-----	-----	-----
95	Todds Valley Road West to Todds Valley East	-----	-----	-----
96	Todds Valley East to Mesquite Ridge Road	163	76	+ 0.9
Placer Hills Road				
97	I-80 to Meadow Vista	139	65	+ 0.0
Pacific/Taylor Street				
98	King Road to Penryn Road	153	71	+ 4.5
99	Penryn Road to SR 193	109	50	+ 2.1

Source: Brown-Buntin Associates, June 1994.

Potential Exposure of Noise-Sensitive Land Uses to Unacceptable Railroad Noise

Development under the *General Plan Land Use Diagram* could result in noise-sensitive land uses encroaching within close proximity of the SPTCo railroad tracks. This could result in individuals being exposed to noise levels which may be considered unacceptable. Table 9-3 shows the distances to the SPTCo railroad noise contours. Noise-sensitive land uses located inside the 60 dB L_{dn} contours shown in Table 9-3 would be considered exposed to unacceptable noise levels.

Development under the *General Plan Land Use Diagram* could result in additional noise-sensitive land uses encroaching the area affected by noise from rail operations on the SPTCo railroad tracks. This could result in additional exposure to unacceptable noise levels.

The *General Plan Land Use Diagram* could allow for development of noise sensitive land uses where railroad noise would exceed the standards contained in the *Policy Document*, and/or cause a clearly noticeable change in noise levels.

TABLE 9-3

APPROXIMATE DISTANCE TO RAILROAD NOISE CONTOURS

Track/Direction	L_{dn} , dB, 100 Feet From Tracks	Distance to L_{dn} Contour (feet)	
		60 dB	65 dB
East-West Track one direction	65.4	228	106
both directions	68.7	380	176
North-South Track both directions	70.3	485	225

Source: Brown-Buntin Associates, September 1993.

Potential Exposure of Noise-Sensitive Land Uses to Unacceptable Industrial and Other Fixed Sources

As additional development occurs throughout the county, the potential for noise-sensitive land uses encroaching upon existing or proposed fixed noise sources exists. The potential for new fixed noise sources encroaching upon existing or proposed noise-sensitive land uses also exists. Development under the *General Plan Land Use Diagram* would result in additional residential, commercial, industrial, and office space throughout the unincorporated areas of the county.

All land uses designated General Commercial, Business Park/Industrial, and Public Facility are considered to have potential noise sources that may exceed acceptable standards. It is not possible at this time, however, to determine noise impacts associated with development under these land use designations. A review of potential noise impacts should, therefore, be conducted for these types of facilities when they are proposed.

Potential Exposure of Noise-Sensitive Land Uses to Unacceptable Aircraft Noise

Development under the *General Plan Land Use Diagram* may result in additional noise-sensitive land uses located within the 60 dB CNEL contours for existing aviation facilities. The airports identified in the Background Report include the Auburn Municipal Airport, Lincoln Municipal Airport, Blue Canyon Airport, Truckee-Tahoe Airport, and McClellan Air Force Base.

Future 60 dB CNEL contours are shown in the *Background Report* for the Auburn Municipal Airport, Lincoln Municipal Airport, the Truckee-Tahoe Airport, and McClellan Air Force Base. The noise level contours for each of these airports were prepared for their master plans or comprehensive land use plans.

Neither existing or future noise contours have been prepared for the Blue Canyon Airport. Currently there are only 2 single engine aircraft based at the Blue Canyon Airport, with a total of 2,000 annual operations. Based upon the relatively small number of operations, the *Background Report* assumed that the 65 dB CNEL contour would be confined to the airport property. Based upon the 1990 California Aviation System Plan (CASP), future operations (Year 2005) are expected to increase to 3,064 annual operations. Therefore, CNEL values associated with future operations are not expected to increase by more than 2 dB.

Information on future noise impacts associated with airports does not correspond well to the General Plan 2010 development scenario. Therefore, a detailed analysis of airport noise impacts cannot be conducted.

Future noise impacts associated with McClellan AFB operations are considered to be the same as those described above under the *Background Report*.

GENERAL PLAN POLICY RESPONSE

The *Policy Document* includes the following policies and programs to address noise implications of development under the *Land Use Diagram*.

Traffic and Railroad Noise Levels

Policies

- 1.B.5. *The County shall require residential project design to reflect and consider natural features, noise exposure of residents, visibility of structures, circulation, access, and the relationship of the project to surrounding uses. Residential densities and lot patterns will be determined by these and other factors. As a result, the maximum density specified by General Plan designations or zoning for a given parcel of land may not be realized.*
- 9.A.3. *The County shall continue to enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC).*
- 9.A.6. *The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Figure 9-1.*
- 9.A.7. *The County shall purchase only new equipment and vehicles which comply with noise level performance standards based upon the best available noise reduction technology.*
- 9.A.8. *New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources, including airports, which exceed*

the levels specified in Table 9-3, unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table 9-3.

- 9.A.9. *Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 9-3 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.*
- 9.A.10. *Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 9-3 or the performance standards of Table 9-1, the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. At the discretion of the County, the requirement for an acoustical analysis may be waived provided that all of the following conditions are satisfied:*
- a. The development is for less than five single-family dwellings or less than 10,000 square feet of total gross floor area for office buildings, churches, or meeting halls;*
 - b. The noise source in question consists of a single roadway or railroad for which up-to-date noise exposure information is available. An acoustical analysis will be required when the noise source in question is a stationary noise source or airport, or when the noise source consists of multiple transportation noise sources;*
 - c. The existing or projected future noise exposure at the exterior of buildings which will contain noise-sensitive uses or within proposed outdoor activity areas (other than outdoor sports and recreation areas) does not exceed 65 dB L_{dn} (or CNEL) prior to mitigation. For outdoor sports and recreation areas, the existing or projected future noise exposure may not exceed 75 dB L_{dn} (or CNEL) prior to mitigation;*
 - d. The topography in the project area is essentially flat; that is, noise source and receiving land use are at the same grade; and*
 - e. Effective noise mitigation, as determined by the County, is incorporated into the project design to reduce noise exposure to the levels specified in Table 9-1 or 9-3. Such measures may include the use of building setbacks, building orientation, noise barriers, and the standard noise mitigations contained in the Placer County Acoustical Design Manual. If closed windows are required for compliance with interior noise level standards, air conditioning or a mechanical ventilation system will be required.*
- 9.A.11. *The County shall implement one or more of the following mitigation measures where existing noise levels significantly impact existing noise-sensitive land uses, or where the cumulative increase in noise levels resulting from new development significantly impacts noise-sensitive land uses:*
- a. Rerouting traffic onto streets that have available traffic capacity and that do not adjoin noise-sensitive land uses;*
 - b. Lowering speed limits, if feasible and practical;*
 - c. Programs to pay for noise mitigation such as low cost loans to owners of noise-impacted property or establishment of developer fees;*
 - d. Acoustical treatment of buildings; or*
 - e. Construction of noise barriers.*

- 9.A.12. *Where noise mitigation measures are required to achieve the standards of Tables 9-1 and 9-3, the emphasis of 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.*
- 9.B.1. *The County shall require that new noise-sensitive land uses established next to existing industrial areas be responsible for self-mitigating noise impacts from industrial activities.*
- 9.B.2. *The County shall apply noise standards in a manner consistent with encouraging the retention, expansion, and development of new businesses pursuant to Goal 1.N. and Policy 1.N.2.*
- 9.B.3. *Because many industrial activities and processes necessarily produce noise which will likely be objectionable to nearby non-industrial land uses, existing and potential future industrial noise emissions shall be accommodated in all land use decisions.*
- 9.B.4. *Whenever noise exposure standards herein fall subject to interpretation relative to industrial activities, the benefit of the doubt shall be afforded to the industrial use.*

Programs

- 9.1. *The County shall develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the project review process and, as may be determined necessary, through the building permit process.*
- 9.2. *The County shall develop and employ procedures to monitor compliance with the standards of the Noise section of the Policy Document after completion of projects where noise mitigation measures were required.*
- 9.3. *The County shall periodically review and update the Noise section of the Policy Document to ensure that noise exposure information and specific policies are consistent with changing conditions within the community and with noise control regulations or policies enacted after the adoption of the General Plan.*

These policies address potential impacts from traffic and railroad noise upon noise-sensitive land uses, including providing for buffers between residential uses and significant noise-generators, providing for noise insulation in buildings, and requiring new development to meet the noise standards contained in the *Policy Document*. Policies also address reducing existing noise impacts on existing development.

Industrial and Other Fixed Noise Sources

Policies

- 1.B.5. *The County shall require residential project design to reflect and consider natural features, noise exposure of residents, visibility of structures, circulation, access, and the relationship of the project to surrounding uses. Residential densities and lot patterns will be determined by these and other factors. As a result, the maximum density specified by General Plan designations or zoning for a given parcel of land may not be realized.*
- 1.E.1. *The County shall only approve new industrial development that has the following characteristics:*

- a. *Adequate infrastructure and services;*
 - b. *Convenient connections to the regional transportation network, including connections to existing transit and other non-automobile transportation;*
 - c. *Sufficient buffering from residential areas to avoid impacts associated with noise, odors and the potential release of hazardous materials;*
 - d. *Minimal significant adverse environmental impacts; and*
 - e. *Minimal adverse effects on scenic routes, recreation areas, and public vistas.*
- 1.E.3. *Until such time as a JPA is created for the Sunset Industrial Area (see Policy 1.N.12), the County shall review all proposed development projects with the adjacent city and jointly prepare appropriate development infrastructure and public service standards for such projects. (See also Policy 1.A.5.)*
- 9.A.1. *The County shall not allow development of new noise-sensitive uses where the noise level due to non-transportation noise sources will exceed the noise level standards of Table 9-1 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 specified in Table 9-1.*
- 9.A.2. *The County shall require that noise created by new non-transportation noise sources be mitigated so as not to exceed the noise level standards of Table 9-1 as measured immediately within the property line of lands designated for noise-sensitive uses.*
- 9.A.3. *The County shall continue to enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC).*
- 9.A.4. *Impulsive noise produced by blasting should not be subject to the criteria listed in Table 9-1. Single event impulsive noise levels produced by gunshots or blasting shall not exceed a peak linear overpressure of 122 db, or a C-weighted Sound Exposure Level (SEL) of 98 dBC. The cumulative noise level from impulsive sounds such as gunshots and blasting shall not exceed 60 dB L_{Cdn} or $CNEL_C$ on any given day. These standards shall be applied at the property line of a receiving land use.*
- 9.A.5. *Where proposed non-residential land uses are likely to produce noise levels exceeding the performance standards of Table 9-1 at existing or planned noise-sensitive uses, the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. The requirements for the content of an acoustical analysis are listed in Table 9-2.*
- 9.A.10. *Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 9-3 or the performance standards of Table 9-1, the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. At the discretion of the County, the requirement for an acoustical analysis may be waived provided that all of the following conditions are satisfied:*
- a. *The development is for less than five single-family dwellings or less than 10,000 square feet of total gross floor area for office buildings, churches, or meeting halls;*

- b. *The noise source in question consists of a single roadway or railroad for which up-to-date noise exposure information is available. An acoustical analysis will be required when the noise source in question is a stationary noise source or airport, or when the noise source consists of multiple transportation noise sources;*
 - c. *The existing or projected future noise exposure at the exterior of buildings which will contain noise-sensitive uses or within proposed outdoor activity areas (other than outdoor sports and recreation areas) does not exceed 65 dB L_{dn} (or CNEL) prior to mitigation. For outdoor sports and recreation areas, the existing or projected future noise exposure may not exceed 75 dB L_{dn} (or CNEL) prior to mitigation;*
 - d. *The topography in the project area is essentially flat; that is, noise source and receiving land use are at the same grade; and*
 - e. *Effective noise mitigation, as determined by the County, is incorporated into the project design to reduce noise exposure to the levels specified in Table 9-1 or 9-3. Such measures may include the use of building setbacks, building orientation, noise barriers, and the standard noise mitigations contained in the Placer County Acoustical Design Manual. If closed windows are required for compliance with interior noise level standards, air conditioning or a mechanical ventilation system will be required.*
- 9.A.11. *The County shall implement one or more of the following mitigation measures where existing noise levels significantly impact existing noise-sensitive land uses, or where the cumulative increase in noise levels resulting from new development significantly impacts noise-sensitive land uses:*
- a. *Rerouting traffic onto streets that have available traffic capacity and that do not adjoin noise-sensitive land uses;*
 - b. *Lowering speed limits, if feasible and practical;*
 - c. *Programs to pay for noise mitigation such as low cost loans to owners of noise-impacted property or establishment of developer fees;*
 - d. *Acoustical treatment of buildings; or*
 - e. *Construction of noise barriers.*
- 9.A.12. *Where noise mitigation measures are required to achieve the standards of Tables 9-1 and 9-3, the emphasis of 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.*

Programs

- 9.1. *The County shall develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the project review process and, as may be determined necessary, through the building permit process.*
- 9.2. *The County shall develop and employ procedures to monitor compliance with the standards of the Noise section of the Policy Document after completion of projects where noise mitigation measures were required.*

- 9.3. *The County shall periodically review and update the Noise section of the Policy Document to ensure that noise exposure information and specific policies are consistent with changing conditions within the community and with noise control regulations or policies enacted after the adoption of the General Plan.*

These policies require new industrial development to provide buffers from residential areas to avoid adverse noise impacts, require new public facilities to be designed to avoid adverse noise impacts on surrounding land uses, and require noise insulation in buildings. The policies also require that the development of new noise-sensitive uses and the development of new industrial and other fixed noise sources meet the noise standards contained in the *Policy Document*. Policies also address reducing existing noise impacts on existing development.

Aircraft Noise

Policies

- 1.B.5. *The County shall require residential project design to reflect and consider natural features, noise exposure of residents, visibility of structures, circulation, access, and the relationship of the project to surrounding uses. Residential densities and lot patterns will be determined by these and other factors. As a result, the maximum density specified by General Plan designations or zoning for a given parcel of land may not be realized.*
- 8.D.2. *The County shall limit land uses in airport safety zones to those uses listed in the applicable airport comprehensive land use plans (CLUPs) as compatible uses. Exceptions shall be made only as provided for in the CLUPs. Such uses shall also be regulated to ensure compatibility in terms of location, height, and noise.*
- 8.D.3. *The County shall ensure that development within the airport approach and departure zones complies with Part 77 of the Federal Aviation Administration Regulations (objects affecting navigable airspace).*
- 9.A.3. *The County shall continue to enforce the State Noise Insulation Standards (California Code of Regulations, Title 24) and Chapter 35 of the Uniform Building Code (UBC).*
- 9.A.6. *The feasibility of proposed projects with respect to existing and future transportation noise levels shall be evaluated by comparison to Figure 9-1.*
- 9.A.7. *The County shall purchase only new equipment and vehicles which comply with noise level performance standards based upon the best available noise reduction technology.*
- 9.A.8. *New development of noise-sensitive land uses shall not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources, including airports, which exceed the levels specified in Table 9-3, unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the levels specified in Table 9-3.*
- 9.A.9. *Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 9-3 at outdoor activity areas or interior spaces of existing noise-sensitive land uses.*

- 9.A.10. *Where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 9-3 or the performance standards of Table 9-1, the County shall require submission of an acoustical analysis as part of the environmental review process so that noise mitigation may be included in the project design. At the discretion of the County, the requirement for an acoustical analysis may be waived provided that all of the following conditions are satisfied:*
- a. *The development is for less than five single-family dwellings or less than 10,000 square feet of total gross floor area for office buildings, churches, or meeting halls;*
 - b. *The noise source in question consists of a single roadway or railroad for which up-to-date noise exposure information is available. An acoustical analysis will be required when the noise source in question is a stationary noise source or airport, or when the noise source consists of multiple transportation noise sources;*
 - c. *The existing or projected future noise exposure at the exterior of buildings which will contain noise-sensitive uses or within proposed outdoor activity areas (other than outdoor sports and recreation areas) does not exceed 65 dB L_{dn} (or CNEL) prior to mitigation. For outdoor sports and recreation areas, the existing or projected future noise exposure may not exceed 75 dB L_{dn} (or CNEL) prior to mitigation;*
 - d. *The topography in the project area is essentially flat; that is, noise source and receiving land use are at the same grade; and*
 - e. *Effective noise mitigation, as determined by the County, is incorporated into the project design to reduce noise exposure to the levels specified in Table 9-1 or 9-3. Such measures may include the use of building setbacks, building orientation, noise barriers, and the standard noise mitigations contained in the Placer County Acoustical Design Manual. If closed windows are required for compliance with interior noise level standards, air conditioning or a mechanical ventilation system will be required.*
- 9.A.11. *The County shall implement one or more of the following mitigation measures where existing noise levels significantly impact existing noise-sensitive land uses, or where the cumulative increase in noise levels resulting from new development significantly impacts noise-sensitive land uses:*
- a. *Rerouting traffic onto streets that have available traffic capacity and that do not adjoin noise-sensitive land uses;*
 - b. *Lowering speed limits, if feasible and practical;*
 - c. *Programs to pay for noise mitigation such as low cost loans to owners of noise-impacted property or establishment of developer fees;*
 - d. *Acoustical treatment of buildings; or*
 - e. *Construction of noise barriers.*
- 9.A.12. *Where noise mitigation measures are required to achieve the standards of Tables 9-1 and 9-3, the emphasis of 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.*

Programs

- 8.8. *The County shall review all development projects within the overflight zones of Placer County airports for consistency with applicable airport comprehensive land use plans (CLUPs).*
- 9.1. *The County shall develop and employ procedures to ensure that noise mitigation measures required pursuant to an acoustical analysis are implemented in the project review process and, as may be determined necessary, through the building permit process.*
- 9.2. *The County shall develop and employ procedures to monitor compliance with the standards of the Noise section of the Policy Document after completion of projects where noise mitigation measures were required.*
- 9.3. *The County shall periodically review and update the Noise section of the Policy Document to ensure that noise exposure information and specific policies are consistent with changing conditions within the community and with noise control regulations or policies enacted after the adoption of the General Plan.*

These policies address potential noise impacts from airports or aircraft upon noise-sensitive land uses, requiring consistency with airport comprehensive land use plans (CLUPs), and requiring noise insulation in buildings. The policies also require that the development of new noise-sensitive uses meet the noise standards contained in the *Policy Document*. Policies also address reducing existing noise impacts on existing development.

IMPACTS

This section describes the impacts of the General Plan that are not mitigated by the *Policy Document*.

Traffic Noise

Existing noise-sensitive uses which currently are not exposed to unacceptable traffic noise levels could experience increased traffic noise levels in excess of *Policy Document* standards as a result of development under the General Plan. This would be considered a significant impact.

Railroad Noise

No significant adverse railroad noise impacts to sensitive land uses would result from development under the General Plan. Impacts are considered less-than-significant if the General Plan policies are fully implemented.

Industrial and Other Fixed Noise Sources

No significant adverse industrial and other fixed source noise impacts to sensitive land uses would result from development under the General Plan. Impacts are considered less-than-significant if General Plan policies are fully implemented.

Aircraft Noise

No significant adverse aircraft noise impacts to sensitive land uses would result from development under the General Plan. Impacts are considered less than-significant if the General Plan policies are fully implemented.

MITIGATION MEASURES

Traffic Noise

No mitigation measures are available to reduce the impacts of the *General Plan* on existing noise-sensitive land uses to a less-than-significant level.

Railroad Noise

No mitigation measures are necessary.

Industrial and Other Fixed Noise Sources

No mitigation measures are necessary.

Aircraft Noise

No mitigation measures are necessary.