



COUNTY OF ALPINE
Community Development

Brian Peters, Director

December 5, 2016

Board of Forestry and Fire Protection
Safety Element Review
PO Box 944246
Sacramento, CA 94244-2460

Dear Board of Forestry and Fire Protection,

Alpine County is in the process of completing an update to the housing element of our General Plan. SB 1241 requires local general plan safety elements, upon the next revision of the housing element on or after January 1, 2014, to be reviewed and updated as necessary to address the risk of fire in the State Responsibility Areas (SRA) and Very High Fire Hazard Severity Zones (VHFHS Zones), and requires each safety element update to take into account the most recent version of the Office of Planning and Research's "Fire Hazard Planning" document.

We are requesting that the Board of Forestry and Fire Protection (BOF) allow Alpine County to complete adoption of the update to the housing element of our General Plan in early 2017 and defer any update and review of the safety element until 2018. The factors below are the basis for our request:

1. When we started the update to our housing element several years ago, we were not aware of SB 1241. We prepared the draft housing element and completed a number of the procedural requirements associated with updating a general plan including Native American consultation, environmental documentation, public comment and planning commission review. We became aware of SB 1241 between the time that these steps were completed and preparing the final draft of the housing element update for the Board of Supervisors consideration. Adding an update to the safety element at this late date will require significant time and staff resources to go back through the required process, which will delay final adoption of our housing element.
2. An updated housing element that meets state law and is certified by the State Housing and Community Development Department (HCD) is required to apply for a variety of housing and community development funding opportunities.
3. In 2017 updates to two important planning documents relevant to safety will be completed – Alpine County Community Wildfire Protection Plan (CWPP) and the Alpine County Natural Hazard Mitigation Plan (NHMP). These two plans will provide important information and recommended actions that can be incorporated into an update of the safety element of our General Plan.

4. We have been in communication with Carmel Mitchell, Fire Captain for Land Use Planning in the CAL FIRE Northern Region. We have been working closely with Ms. Mitchell to understand the SB 1241 requirements and to identify what is needed to bring our safety element up to date with these requirements. Her guidance has been very helpful.
5. Allowing additional time for completing an update to our safety element will enable a more thorough process and a better final product.

I have attached a copy of our existing safety element that was last updated in 2007. We did submit this to the BOF for review prior to it being adopted.

I look forward to your response and to continuing to work with Carmel Mitchell on updating our safety element.

Sincerely,



Brian Peters

cc: Carmel Mitchell, CAL FIRE

ALPINE COUNTY GENERAL PLAN



II. SAFETY ELEMENT

REVISIONS TO THIS SECTION:

SECTION A, FIRE
BOARD OF SUPERVISORS RESOLUTION NO. R2007-02, JANUARY 16,
2007

II. SAFETY ELEMENT

The Safety Element meets State requirements for general plan safety and seismic safety and noise. The Element addresses hazards that are known to have potential for causing injury to people or damage to property in the County. The element addresses issues in the following categories:

- A. Fire
- B. Seismic Ground Movement
- C. Unstable Slopes/Avalanche
- D. Flood
- E. Noise
- F. Hazardous Materials

SAFETY ELEMENT

A. FIRE

(AS AMENDED ON JANUARY 16, 2007 PER BOARD OF SUPERVISORS RESOLUTION NO. 2007-02)

Wildland Fire

Wildland fire protection on private lands in California outside of local fire district jurisdictions is typically provided by the California Department of Forestry and Fire Protection (commonly referred to as "CDF"). The CDF does not maintain a physical presence (fire station or fire fighting equipment) in Alpine County. As a result, the CDF responsibility for fire protection has been delegated to federal agencies (U.S. Forest Service "USFS" and Bureau of Land Management "BLM") by virtue of an intergovernmental agreement referred to as the "Five Party Agreement." The goal of this agreement is to efficiently allocate fire suppression resources among federal jurisdiction areas and private lands.

The Sierra Front Interagency Fire Dispatch Center is currently located at the Minden Tahoe Regional Airport in Douglas County Nevada, approximately 18 miles north of Woodfords. This facility has the capability to dispatch wildland fire suppression resources (equipment and manpower) from the Nevada Division of Forestry, BLM, USFS and Bureau of Indian Affairs. Aerial attack resources are also based at this location. Seasonal wildland fire fighting crews have also been stationed at USFS facilities located in Markleeville, west of Kirkwood at the USFS Lumberyard facility in Amador County and west of Bear Valley in the Arnold area of Calaveras County. Early initial attack of wildland fire by ground and aerial attack resources is probably the most effective means of controlling the spread of wildland fire in the County. These resources, available locally and through the Sierra Front Interagency Fire Dispatch Center, are critical to wildland fire protection efforts in Alpine County. However, it is recognized that the first response to wildland fire protection on both private and public lands is often provided by the local fire department(s), many of whose members are trained and certified to fight wildland fires.

Wildland fires within the "wildland urban interface" where development is interspersed with wild lands pose the greatest threat to lives and property. There have been three major wildfires in Alpine

County since 1981. In 1984, the "Indian Creek Fire" burned approximately 6000 acres of forest in Alpine County (17,000 acres total) near Indian Creek on the East Slope. In 1986, a fire burned 2000-3000 acres of wildland plus 2 structures near Fredericksburg and in 1987 the "Acorn Fire" burned 6,000 acres and 26 structures near Woodfords. Fortunately none of these fires resulted in loss of life.

Structural Fire

Response to structural fires and other non wildland fires (vehicle fires, etc.) is the primary responsibility of local fire departments. There are four fire departments in Alpine County - Bear Valley, Kirkwood, Markleeville and Woodfords. Of these, only Bear Valley and Kirkwood have paid staff. All the departments rely heavily on volunteer fire fighters. Additionally, response may also be provided by fire departments in adjoining communities outside of Alpine County. These include the East Fork Fire Protection District located in Douglas County Nevada, the Lake Valley Fire Protection District located in the Myers area in El Dorado County and the Ebbetts Pass Fire Protection District located west of Bear Valley in Calaveras County.

The Insurance Services Office of California provides ratings of the capabilities of local fire departments to respond and fight fires. These "ISO" ratings are reviewed periodically. The ratings are used by insurance companies to help determine rates for the fire protection component of homeowners insurance premiums. A lower ISO rating means a greater capability and thus, potentially lowers insurance premiums. The rating scale is 1-10 and may vary within a fire department's response area. Areas within Alpine County have ratings between 4 and 9. Lower rated areas have good resources including a readily available water supply and relatively short response times. The Kirkwood area has an ISO rating of 4. Most of the Bear Valley area is rated 5. Areas rated 8 and 9 (eastern Alpine County) have significant deficiencies such as very limited or lack of water sources available for suppression and longer response times.

Note to the reader: The text that follows refers in general to "Fire Safe Councils." As used in this section, the Fire Safe Councils refers to the existing organizations and is intended to refer to any organization that would replace the councils or perform the same functions.

ELEMENT II - SECTION A

G.P. GOAL NO. 20:

MINIMIZE THE THREAT TO LIVES AND PROPERTY POSED BY THE POSSIBILITY OF WILDLAND AND STRUCTURAL FIRES WITHIN THE WILDLAND URBAN INTERFACE IN THE COUNTY.

20A. FUELS REDUCTION

Background: The National Fire Danger Rating System and the CDF Fire Hazard Severity Classification System are used to identify the level of wildland fire hazard in local areas. These ratings are generally based on vegetation type, terrain and local weather conditions. Most areas within Alpine County are classified as high or very high hazard for wildland fire. Fuels reduction is the most effective way of reducing hazards. The Alpine Fire Safe Council, Bear Valley Residents Incorporated, U.S. Forest Service and Bureau of Land Management have all either facilitated or

implemented fuels reduction projects within the County.

OBJECTIVE NO. 20A: Reduce fuel loading to a low risk level within the wildland urban interface.

IMPLEMENTATION MEASURE: 20a-1: The County shall coordinate with the Fire Safe councils to distribute informational materials for homeowners regarding wildland fire hazards, defensible space requirements and other measures that can be done by homeowners to reduce wildland fire hazard and fuel loading on individual lots and within existing neighborhoods. These materials should be included in the building permit packet and made available to the general public at county libraries, other public offices within the County and on the County's web site.

IMPLEMENTATION MEASURE: 20a-2: The County shall work with the California Department of Forestry and Fire Protection to assertively implement the defensible space requirements of Public Resources Code 4291. This includes implementation of the requirements for individual lots and a periodic inspection program to monitor compliance and correct deficiencies.

IMPLEMENTATION MEASURE: 20a-3: The County and/or Fire Safe councils shall pursue public and private funding, where available, to assist private landowners in implementing fuels reduction and defensible space measures in order to achieve a low risk condition.

IMPLEMENTATION MEASURE: 20a-4: The County shall require vegetation management plans for all new development that, at a minimum, include provisions for implementation and maintenance of fuels reduction and defensible space; and which meet the minimum clearance standards pursuant to Public Resources Code 4290 (14 CCR 1270). Consideration should be given to maintaining healthy vegetation, minimizing the potential spread of noxious weeds, habitat for wildlife and visual impacts in formulating these vegetation management plans. For purposes of this policy, new development includes parcel maps and subdivisions that create new lots or building sites, planned developments and conditional use permits that entitle new structures. Requirements for ongoing maintenance of vegetation management plans shall be addressed in conditions of approval and/or CC&Rs for the development. A mechanism for enforcement of the maintenance requirements shall also be implemented.

IMPLEMENTATION MEASURE: 20a-5: The County shall work with public land management agencies to pursue fuel modification and reduction in addition to prescribed burning projects to reduce risks on

public lands in areas both within and surrounding existing communities. Priority areas for this type of project are identified in the Alpine Community Fire Plan.

20B. WATER SUPPLY

Background: The availability of water supply for fire suppression varies among communities within Alpine County. Bear Valley and Kirkwood have developed water supply systems with hydrants capable of delivering substantial amounts of water for suppression. Water supplies are more limited or non-existent on the east slope of the County. The Markleeville area and the Alpine Village subdivision in Woodfords have small water systems designed for domestic use only. Fire hydrants have been connected to the South Tahoe Public Utility District effluent disposal pipeline that extends through the Woodfords area. However, there are restrictions on the ability to use this water for fire suppression. Other water sources for wildland fire include rivers and lakes found in various locations throughout the County.

Both the National Fire Protection Association (NFPA) and CDF have adopted water supply standards for fire suppression. Additionally, Alpine County Code (Section 13.04) sets forth requirements for water systems in new subdivisions. Since this code section was adopted in 1981, only the Morrison Subdivision (AKA "Carson Ridge") subdivision near Markleeville has been required to install a water system designed for fire suppression. Two other subdivisions in the Mesa Vista area approved in the 1990s were granted exemptions from the water system requirement.

In summary, outside of Bear Valley, Kirkwood and the Morrison Subdivision, developed areas in the County do not have adequate water supplies for fire suppression. The Alpine Fire Safe Council has identified the need for water sources in the Mesa Vista and River Ranch areas. Most recently, the Council had a consultant complete the "Mesa Vista/River Ranch Scoping Study" that evaluates alternatives for providing water supplies for fire suppression in these areas.

OBJECTIVE 20B: Improve water supplies for fire protection in developed areas within the wildland urban interface.

IMPLEMENTATION MEASURE: 20b-1: The County shall work in conjunction with the Fire Safe councils, CDF, fire departments and other agencies with responsibility for fire protection to establish uniform minimum water supply standards for new development. The standards shall meet or exceed the requirements of Public Resources Code 4290. These standards shall be officially adopted by the County. Variances, waivers and/or exceptions to the minimum standards shall only be allowed when an alternative that can be documented to provide an equivalent or better level of protection is required. When compliance with the water supply standards specified in Public Resources Code 4290 is not possible, mitigation measures or alternatives shall be included to achieve fire safe goals as an exception in accordance with 14 CCR 1270.03.

IMPLEMENTATION MEASURE: 20b-2: The County shall encourage long range planning for improved water supplies for fire protection throughout the County. This planning process should involve the Fire Safe councils, local area residents, fire departments, CDF and other agencies with responsibility for fire protection.

IMPLEMENTATION MEASURE: 20b-3: The County and/or Fire Safe councils shall pursue public and private funding to improve water supply for fire protection throughout the County.

20C. ACCESS REQUIREMENTS

Background: Providing adequate and safe access to communities and developed areas is key to reducing the risk of injury or loss of life, and to facilitating access for fire suppression resources. Road design standards are addressed in the Alpine County Code, the "Alpine County Improvement Standards for Subdivisions, Parcel Maps and Site Improvements" adopted by a resolution of the Board of Supervisors, in regulations administered by CDF and in the National Fire Protection Association (NFPA) standards. The Alpine County Public Works Department has recently initiated work on revising the County's standards in an effort to clarify requirements and eliminate conflicts among the various standards.

OBJECTIVE 20C: All new development in Alpine County shall be provided with adequate access for emergency response vehicles and an emergency egress route for evacuation.

IMPLEMENTATION MEASURE: 20c-1: The County shall work in conjunction with the Fire Safe councils, CDF, fire departments and other agencies with responsibility for fire protection to establish uniform minimum access standards for new development. The access standards shall meet or exceed the requirements of Public Resources Code 4290, except as specifically provided in Item 20c-2, 20c-3 and 20c-4. These standards shall address driveways and roads and shall include minimum standards for the number of access points into and out of the development area, driving lane width, grade, curve and cul de sac radius, dead end roads, turn arounds, emergency access/escape routes, home addressing and signing. These standards shall be officially adopted by the County. Variances, waivers and/or exceptions to the minimum standards shall only be allowed when an alternative that can be documented to provide an equivalent or better level of protection is required.

IMPLEMENTATION MEASURE: 20c-2: Where through roads or dual access to new development is not feasible or desirable due to significant environmental constraints or legal access rights, mitigation measures shall be required. Possible mitigation measures could include, but not be limited to, increased road

width, more frequent turn outs and/or turn around locations, increased water supply requirements for fire protection and sprinkler requirements for structures.

IMPLEMENTATION MEASURE: 20c-3: The standards established through implementation of 20c-1 should include special consideration for land uses that customarily rely on remote locations and existing parcels in remote locations that do not have road access or are served by roads that may not meet minimum standards. Examples of these land uses that rely on remote locations include, but are not limited to, backcountry ski huts, pack stations, dispersed recreation sites and campgrounds. Some examples of existing parcels in remote locations with roads that do not meet minimum standards include, but are not limited to, private lands in the Poor Boy Road, Wolf Creek, Willow Creek, Forestdale Road, Blue Lakes and Leviathan Mine areas.

IMPLEMENTATION MEASURE: 20c-4: When compliance with the access standards specified in Public Resources Code 4290 is not possible, mitigation measures or alternatives shall be included to achieve fire safe goals as an exception in accordance with 14 CCR 1270.03.

20D. FIRE PROTECTION PLANNING AND CAPABILITY

Background: Recent efforts in fire protection planning include the “Alpine County Community Fire Plan” prepared in 2004 under the direction of the Alpine Fire Safe Council, the “Eastern Alpine Fire Services Plan” prepared in 2005 by an ad hoc committee of the Alpine County Board of Supervisors and the Alpine Fire Safe Council, and the “Bear Valley Community Fire Plan to Reduce Wildfire Risk and Improve Forest Health” completed by the community in Bear Valley. Additionally, in 2005 the Alpine County Board of Supervisors adopted the “Alpine County Natural Hazard Mitigation Plan” that addresses a variety of hazards including wildland fire. Taken together, these plans outline strategies and priorities for reducing the risk of fire and improving fire protection capability. Additionally, each of the fire protection districts within the County undertakes planning for capital needs and other necessary resources.

OBJECTIVE 20D: Obtain the best possible level of fire protection and emergency response services for all communities in Alpine County.

IMPLEMENTATION MEASURE: 20d-1: The Board of Supervisors should continue to contribute stable funding from the County general fund at recent historical levels for fire protection and emergency services.

IMPLEMENTATION MEASURE: 20d-2: The County shall support efforts by each fire department within the County to obtain lower

ISO ratings for structure fires within all fire protection areas.

IMPLEMENTATION MEASURE: 20d-3: To the extent allowable by law, the County shall support efforts to implement the recommendations of the Eastern Alpine Fire Services Plan in a timely manner. Further, and also to the extent allowable by law, the County should consider providing funding for completing preliminary studies and other documentation necessary to place a measure on the ballot regarding Option 9 as described in the Eastern Alpine Fire Services Plan and endorsed by the Board of Supervisors.

IMPLEMENTATION MEASURE: 20d-4: The County shall support efforts to utilize the Alpine County Airport as a base of operations for the Bureau of Land Management SEAT planes and associated fire suppression equipment.

IMPLEMENTATION MEASURE: 20d-5: No new development shall be approved unless the County can make a finding that the development can be provided with adequate fire protection and emergency services. For purposes of this policy, new development includes parcel maps and subdivisions that create new lots or building sites, planned developments and conditional use permits that entitle new structures.

IMPLEMENTATION MEASURE: 20d-6: To the extent possible by law, the County shall require all new parcel maps, subdivisions and planned developments to participate in any prospective or existing benefit assessment district or other similar organization or entity that will develop and improve water supply or other fire protection capabilities in the area where the new development is proposed.

IMPLEMENTATION MEASURE: 20d-7: The County shall work in conjunction with the Fire Safe councils, CDF, fire departments, and other agencies with responsibility for public safety and fire protection to establish designated safe emergency evacuation routes and early warning systems.

IMPLEMENTATION MEASURE: 20d-8: The Community Fire Plan should be completed, adopted and updated on a regular basis.

IMPLEMENTATION MEASURE: 20d-9: The Alpine County Natural Hazard Mitigation Plan should be reviewed on a regular basis and updated if necessary as provided for in the plan.

IMPLEMENTATION MEASURE: 20d-10: The County shall support completion of a Master Fire Protection Plan to identify long term capital facility and operational needs for fire protection services in all areas of Alpine County. This plan should include minimum fire protection service standards based on NFPA (National Fire Protection Association) criteria.

IMPLEMENTATION MEASURE: 20d-11: The County Board of Supervisors should evaluate available options and consider establishing the functions of a Fire Marshall within all areas of Alpine County.

IMPLEMENTATION MEASURE: 20d-12: The County shall support the continued location of the Sierra Front Interagency Fire Dispatch Center and associated fire fighting resources at the Minden-Tahoe Regional Airport.

IMPLEMENTATION MEASURE: 20d-13: The County shall designate a suitable site between Woodfords and the Nevada state line for a future fire station and related facilities such as water storage, so that all existing residences and lots that have road access entirely within Alpine County and that are between Woodfords and the Nevada State line will be within five miles of either the Woodfords fire station or the designated site.

IMPLEMENTATION MEASURE: 20d-14: The County shall evaluate the current and future transportation system and identify opportunities to incorporate fire infrastructure elements such as turn outs, heliports and safety zones.

IMPLEMENTATION MEASURE: 20d-15: The County shall incorporate or reference the most current fire hazard mapping from CDF for both the SRA (State Responsibility Area and VHFHSZ (Very High Fire Hazard Severity Zones) in Local Responsibility Areas if applicable.

IMPLEMENTATION MEASURE: 20d-16: The County shall encourage the local fire protection agencies to conduct pre wildfire attack planning that includes consideration of structures, fuel breaks, back fire areas and staging areas that will support safe fire suppression.

B. SEISMIC

The seismic hazards of greatest potential in Alpine County include those associated with surface rupture, ground shaking, or ground failure. Surface rupture involves displacement along fault lines

and can result in direct damage to utilities, canals, pavement, foundations, and other improvements. The State Division of Mines and Geology has delineated "Special Study Zones" in Alpine County which encompass traces of active faults, as required by the Alquist-Priolo Special Studies Act of 1972. These zones are shown in Appendices R-8 and R-10. The Alquist-Priolo Special Studies Act requires that a geologic report be prepared for development projects proposed within the "Special Study Zones" and prohibits the location of most structures for human occupancy across the traces of active faults.

Ground shaking associated with seismic activity is the source for more damage to life and property than any other geologic hazard. Earthquakes have been monitored at various locations on the County's eastern slope. The maximum expected earthquake intensity rating for the eastern slope indicates that quakes could occur that would damage foundations, masonry, underground piping, and reservoirs. Seismologists in Nevada feel that earthquake intensity ratings along the entire Sierra Nevada east slope area zone may be low. (See Data Base Section 13.21.) On the County's west slope seismic risk is somewhat less.

Geologic reports done for two developments in the Woodfords area indicated that these developments were in a Zone 4 area and that structural design for Zone 4 per the Uniform Building Code was required. In Alpine County, the most probable ground failures associated with seismic activity would be landslides or liquefaction. Landslides are addressed in the following section. Liquefaction is defined as a process by which water saturated granular soils transform from a solid to a liquid state because of a sudden shock or strain. The greatest possibility for liquefaction in the County occurs where structures may be placed upon inadequate soils or fill material.

ELEMENT II - SECTION B

G. P. GOAL NO. 21

INFORM RESIDENTS OF THE CORRIDOR AREA OF SEISMIC RISKS THAT ARE LOCATED IN THE AREA

POLICY NO. 21a

Any parcel map, or subdivision map, subdividing lands near the potentially active faults located along the eastern escarpment of the Sierra Nevada as shown on the Land Use Map shall contain a notation warning that said area may be subject to seismic activity.

POLICY NO. 21b

All new development proposed within or adjacent to a "Special Study Zone" as identified on the Official Map prepared by the State Mines and Geology and shown in Appendices R-8 through R-10 in the Alpine County General Plan, shall require a geologic report. Human occupied structures shall not be constructed across traces of active faults as identified in a required geologic report.

C. UNSTABLE SLOPES

The hazards associated with unstable slopes in Alpine County can be divided into two categories - landslides and avalanches. Landslides are defined to include rockslides, mudslides, and any other rapid down slope movement of earth material. Landslide potential can be considered significant

where slopes consisting of material with questionable strength or coherence tend to exceed 30 percent. Landslides can be either natural or construction induced and both have been documented in the County. (See Data Base Section 13.22.)

Avalanche can be defined as the rapid down slope movement of snow or ice. Avalanche hazards are endemic to mountain country. A brief history of avalanche in Alpine County is provided in Data Base Section 13.4. The U.S. Forest Service offers that, as a rule of thumb, all treeless slopes, gullies, and bowls steeper than 30 percent where snow accumulates are possible avalanche areas. For safety sake, the rule must be recognized as a generalization. Like flooding, the likelihood of avalanche occurrence varies by season. Just as State guidelines require the County to address 100 year flood plains in its General Plan, the County should require future developers to study, address, and protect future developments on terrain that may be subject to avalanche occurrence.

Areas in the County containing slopes that generally exceed 30 percent are shown in Appendix S. Slope and soils maps have influenced the location, density, and intensity of areas planned for development shown on the Land Use Map.

ELEMENT II - SECTION C

G. P. GOAL NO. 22 LOCATE AND DESIGN ALL NEW DEVELOPMENT TO PREVENT THREAT DUE TO LANDSLIDE OR AVALANCHE

POLICY NO. 22a All developments intended for human use or occupation shall address potential hazards by natural or construction related landslides.

POLICY NO. 22b All developments intended for human use or occupation shall address avalanche hazard assessment where the following conditions occur: treeless or sparsely vegetated slopes, gullies, and bowls steeper than 30 percent; and/or any history or evidence of avalanche occurrence susceptibility.

D. FLOOD

Two types of natural flood occurrence have the potential to inflict injury to persons or damage to property in Alpine County. These are:

1. Flash floods or summer dry-mantle floods. Alpine County has no history of flash flood occurrence. The U.S. Department of Agriculture has, however, documented flash floods in other areas along the eastern slope of the Sierra Nevada. Flash floods usually result from brief but locally intense convectional (thunder) showers. The downpour can combine with sediment and debris and form a rapidly moving wave that often leaves normal stream channels. (See Data Base Section 13.31.).
2. Wet-Mantel and rain-on-snow or frozen ground floods may occur during winter or spring months. More than 13 of these floods have been historically

documented as having affected the Carson River drainage in Alpine County (See Appendix U).

Based upon flood recurrence interval estimates prepared for the Carson River West Fork, none of the historic flood occurrences appear to have contained flows that could be expected in a 100 year flood incident. Floods reported in 1950, 1955, and 1963 all qualified as 50 year floods. (See Data Base Section 13.1.).

The 1950 flood caused evacuations and "engulfed the road and roared into residences and other buildings in the Woodfords-Markleeville area." The 1955 flood was reported to have created similar impacts. The 1963 flood was reportedly less severe than 1950 or 1955 floods. (See Appendix U of the Data Base).

No flood since 1937 has had the dramatic effects that were reported with flood occurrences up to and including the flood of that year. The 1937 flood which may have been classified as only a 25 year occurrence, swept away bridges and buildings. The reason later floods, including the record-setting 100 year flood of 1997, caused less damage is probably due to improved construction and the location of less development in flood prone areas. Changes to the Carson River West Fork channel constructed by the U.S. Army Corps of Engineers in 1962 may be partly responsible for lessening flood hazards at Woodfords.

The Federal Insurance Administration has prepared flood hazard boundary maps which designate the entire County as Zone D. This means that there are areas within the County where flood hazards are possible, but have not yet been determined. State law requires that general plans "identify areas...which are subject to flooding". (Government Code Section 65302-a) The stream environment designation on the Land Use Map disallows developments in possible flood prone areas unless it can be proven that damages from a 100 year flood occurrence would be insignificant.

Dam failures are a third type of flood hazard to areas located downstream from dams and reservoirs. In Alpine County reservoirs with potential to inflict damage to persons or property include Heenan Lake, Indian Creek Reservoir, Bear Lake, Red Lake and Caples Lake. (See data Base Section 13.3) Flood hazard inundation maps and plans have been prepared for Heenan Lake, Bear Lake, and Caples Lake. Dam failure may be a potentially greater risk in east slope areas due to the higher possibility of significant earthquake shaking or ground displacement.

County Ordinance Number 476-88 requires a development permit for all proposed construction and development in the County to include review of flood potential. The ordinance requires certain construction methods and standards be followed to minimize flood damage, or other for proposed projects or structures in flood-prone areas.

ELEMENT II - SECTION D

G. P. GOAL NO. 23

LOCATE AND DESIGN ALL NEW DEVELOPMENT TO PREVENT THREAT FROM FLOOD OCCURRENCE

POLICY NO. 23a

Subdivision Maps shall identify 100 year flood zones. Uses which

include overnight human occupancy, storage or processing of hazardous materials, or encroachments into the flood plain which could adversely affect the velocity, volume or direction of flood flows in a manner which could create threat to public health and safety shall be prohibited in those zones.

POLICY NO. 23b No living quarters shall be allowed at ground level and commercial, industrial, and other human activities shall be controlled within areas possibly subject to flood inundation due to possible dam failure.

POLICY NO. 23c Dam and irrigation ditch failure hazard assessments and emergency plans shall be prepared before any development which may subject persons or property to hazards associated with dam failure is approved.

POLICY NO. 23d Any parcel map, or subdivision map subdividing lands near drainage in Alpine County, shall contain a notation warning that said area is possibly subject to flash flood occurrence.

E. NOISE

State Government Code Section 65302(f) requires that an adequate Noise Element "identify and appraise noise problems in the Community." The Noise Element shall:

Recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

- A. Highways and freeways;
- B. Primary arterials and major local streets;
- C. Passenger and freight on-line railroad operations and ground rapid transit systems;
- D. Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation;
- E. Local industrial plants, including, but not limited to, railroad classification yards;
- F. Other ground stationary noise sources identified by local agencies as contributing to the community noise environment.

Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (Ldn). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the

various sources identified in paragraphs (1) to (6), inclusive.

The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise.

The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any.

Due to the lack of sizeable industrial operations, the County's small population and topography, existing noise emissions in Alpine County are generally limited to transportation facilities and corridors. Recreation and tourism in the County create higher levels of noise at these facilities and corridors than would otherwise exist. The County airport presently receives very limited use and is located three miles from the nearest developed area. It is therefore not included as a significant noise producing transportation facility.

Noise issues which may be of concern in the future include noise produced by new industry and increased traffic on State highways. The establishment of new industry is listed as one of the General Plans primary goals.

Noise contours have been prepared for Alpine County by Brown-Buntin Associates which show existing and projected (2015) noise levels along County transportation corridors. Contour information is listed in Appendices O-1 through O-2 and the location of these segments is shown in Appendices O-3 through O-12. The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) was used to develop the contours.

Short-term traffic noise measurements were taken at various sites in the County (shown in Appendix O-13) and were used in verifying the noise contours developed using the FHWA model. The measurement results are shown in Appendix O-14.

Section 12.1, Noise, in the data base discusses the noise contours and provides a community noise exposure inventory which shows noise levels in the more populated areas in the County.

The State's Guidelines for the Preparation and Content of the Noise Element of the General Plan prepared by the California Department of Health Services, provides suggested criteria for evaluating land use compatibility. This criteria is shown in Appendix O-15, and should be used in determining compatibility of new proposed projects with existing or planned land uses on surrounding sites.

ELEMENT II - SECTION E

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| G. P. GOAL NO. 24 | REDUCE OR MINIMIZE THE NUMBER OF NUISANCES CREATED BY NOISE AFFECTING CITIZENS OF ALPINE COUNTY |
| POLICY NO. 24a | No development shall be allowed that would subject persons living in existing or planned residential areas to unhealthful noise levels. |
| POLICY NO. 24b | New development of noise-sensitive uses shall not be allowed where |

the noise level due to non-transportation noise sources will exceed the noise level standards shown in the chart below, 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.

Noise created by new proposed non-transportation noise sources shall be mitigated so as not to exceed the noise level standards as measured immediately at the property line of lands designated for noise-sensitive uses. Noise sensitive uses include hospitals, clinics, schools, libraries or residences. This policy shall not apply to noise sources associated with agricultural operations on lands zoned for agricultural uses, residential units established in conjunction with industrial or commercial uses or snow-making in ski resort areas.

NOISE LEVEL PERFORMANCE STANDARDS FOR NOISE SENSITIVE USES AFFECTED BY NON-TRANSPORTATION PROJECTS		
Noise Level Descriptor	Daytime (7 a.m to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Leq,	50	45
Maximum level, dB	70	65

POLICY NO. 24c The Planning Commission may allow noise level standards to be exceeded for temporary activities.

POLICY NO. 24d New development of noise-sensitive land uses will not be permitted in areas exposed to existing or projected levels of noise from transportation noise sources which exceed the levels specified in the following chart, unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to the levels specified.

**MAXIMUM ALLOWABLE NOISE EXPOSURE
TRANSPORTATION NOISE SOURCES**

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

¹ Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.

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

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

Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified as follows, at outdoor activity areas or interior spaces of existing noise-sensitive land uses.

F. HAZARDOUS MATERIALS

There are no large generators of hazardous waste in the County and no procedures of hazardous materials. The majority of waster generated in the County is from households, small businesses, ski areas, and Caltrans, U.S. Forest Service and County vehicle maintenance stations.

The Alpine County Hazardous Waste Management Plan adopted in 1988 identified four potential sites in the County for hazardous waste storage and transfer facilities, 1) the Mud Lake Road Area, 2) the County Maintenance Yard, 3) The County Airport, and 4) Harvey Reservoir and nearby private lands. Leviathan Mine, a State Substance Cleanup Bond Site, is the only known contaminated site in the County.

ELEMENT II - SECTION F

G. P. GOAL NO. 25

PROTECT CITIZENS AND PROPERTY FROM DAMAGE BY HAZARDOUS MATERIALS INCLUDING BUT NOT LIMITED TO HARMFUL CHEMICALS, RADIATION LEVELS, GASES, EXPLOSIVES AND

HAZARDOUS WASTE

POLICY NO. 25a

Ensure the hazardous waste materials used in business and industry are properly handled and that information on their handling and use is available to fire and police protection agencies.

IMPLEMENTATION MEASURE: Continue to enforce hazardous materials provisions in the County Zoning Code.

POLICY NO. 25b

Ensure the hazardous waste generated in the County is properly planned for, handled, treated and disposed of.

IMPLEMENTATION MEASURE: Enact provisions of the implementation plan provided in the Alpine County Hazardous Waste Management Plan.

IMPLEMENTATION MEASURE: Comply with the California Integrated Waste Management Act which directs counties to prepare an Integrated Waste Management Plan consisting of the following elements:

- A. Source Reduction & Recycling
- B. Household hazardous Waste
- C. Nondisposal Facility
- D. Siting
- E. Summary Plan

POLICY NO. 25c

Ensure that Alpine County does not become a corridor for transporting hazardous materials, including nuclear waste.

IMPLEMENTATION MEASURE: The Alpine County Board of Supervisors should consider adopting a resolution to establish a hazardous material and nuclear waste transport free County.

