



MEMORANDUM

TO: Trinidad Planning Commission

FROM: Trever Parker, City Planner

DATE: December 5, 2011

RE: General Plan Update Agenda Item

For this meeting, the intent is mostly just to re-familiarize ourselves to the General Plan update, discuss where we are currently and what the next steps will be. For those of you who are new to the Commission, or who want to review, the Introduction chapter of the general plan update is the most informative document explaining what a general plan is for those who are new. It is now available on the City's documents library page – go to planning documents and click on amended general plan if this link does not work: (<http://www.trinidad.ca.gov/documents-library/category/21-amended-general-plan.html>). In addition, the State has a large set of Guidelines for creating and updating General Plans; I can provide a copy of this upon request. Also, some of the background material that I provide for each element generally includes excerpts from those Guidelines.

Up to this point, the Planning Commission has completed its review and preparation of the Introduction Chapter, as well as 3 of the 7 required elements of a General Plan: Land Use, Open Space and Conservation. These have all been submitted to and briefly reviewed by the City Council as well. The Planning Commission review of the Circulation Element is almost complete. However, at the request of the Planning Commission (and suggested by me), I sent the Circulation Element to the City Engineer's office for review. They have proposed a fairly detailed review, which I think is warranted, but it will take a little time to get their comments. Therefore, I went ahead and included what we have for the next two elements, which will both be relatively short: Noise and Public Safety. As you can see in the footer, this has not been worked on in several years, and is not in the same format we are using currently. But this will get us started on the next steps for continuing the General Plan update. In addition to the text and policies of the Elements, I included some guidelines for both Elements so that you can see the legal requirements for them and the types of issues that are addressed in each.

ments (see Chapter 10).

- ◆ Transfer of development rights.
- ◆ Open space in planned unit developments.
- ◆ Action programs for open space within urbanized areas:
 - Connect existing open spaces to the population with the greatest need for these open spaces. This can be facilitated by:
 1. Extending the hours of existing recreational facilities by lighting them at night.
 2. Creating a “vacant lot” task force to examine ways to allow publicly owned vacant parcels to convert to interim passive use parks and community gardens.
 3. Expanding parks and schools and assisting schools to convert asphalt to turf.
 4. Funding and expanding various types of parks and recreational programs.
 - Impose impact fees on new development where justified:
 1. Include open-space acquisition in capital improvement programs.
 2. Employ land use controls to impose reasonable and proportional impact fees to acquire open space.

Technical Assistance

The following state agencies may provide information or assistance for the preparation of the open space element:

- ◆ Air Resources Board
- ◆ Coastal Commission
- ◆ Coastal Conservancy
- ◆ Department of Boating and Waterways
- ◆ Department of Conservation
- ◆ Department of Fish and Game
- ◆ Department of Forestry and Fire Protection
- ◆ Department of Parks and Recreation
- ◆ Department of Water Resources
- ◆ Resources Agency, including the Legacy Project
- ◆ Seismic Safety Commission
- ◆ Wildlife Conservation Board

NOISE ELEMENT

The purpose of the noise element is to limit the exposure of the community to excessive noise levels. In 1976, the Department of Health Services issued the first

Noise Element Guidelines pursuant to Health and Safety Code §46050.1, followed shortly thereafter by a model noise ordinance. In 1984, revisions to the general plan statutes made extensive changes to the noise element requirements (Chapter 1009, Statutes of 1984). These revisions shortened the list of issues required by statute and gave flexibility to local governments in analyzing the issues and subjects pertinent to the local planning area.

Local governments must “analyze and quantify” noise levels and the extent of noise exposure through actual measurement or the use of noise modeling. Technical data relating to mobile and point sources must be collected and synthesized into a set of noise control policies and programs that “minimizes the exposure of community residents to excessive noise.” Noise level contours must be mapped and the conclusions of the element used as a basis for land use decisions. The element must include implementation measures and possible solutions to existing and foreseeable noise problems. Furthermore, the policies and standards must be sufficient to serve as a guideline for compliance with sound transmission control requirements. The noise element directly correlates to the land use, circulation, and housing elements.

The noise element must be used to guide decisions concerning land use and the location of new roads and transit facilities since these are common sources of excessive noise levels. The noise levels from existing land uses, including mining, agricultural, and industrial activities, must be closely analyzed to ensure compatibility, especially where residential and other sensitive receptors have encroached into areas previously occupied by these uses.

Caltrans administers several freeway noise control programs. In general, these are applied to residential and school uses that preexisted the particular freeway. For instance, noise attenuating walls are installed along the freeway frontages of qualified residential development under the New Construction or Reconstruction and Community Noise Abatement programs. In addition, there are a number of schools adjacent to freeways that have qualified for School Noise Abatement Program funds for the acoustical attenuation of classrooms.

Local airports are subject to the noise requirements of the Federal Aviation Administration and noise standards under Title 21, §5000, et seq., of the California Code of Regulations. These standards are designed to cause the airport proprietor, aircraft operators, local governments, pilots, and Caltrans to work cooperatively to diminish noise problems. The Federal Aviation Act,

however, preempts local regulations controlling noise at airports themselves and limits arrival and departure times of jet aircraft flights. (See *City of Burbank v. Lockheed Air Terminal* (1973) 93 S.Ct 1854 and 53 Ops.Cal.Atty.Gen 75 (1970)).

The Caltrans Office of Transportation Laboratory publishes the *Caltrans Noise Manual* and numerous reports on mitigating transportation noise. The *California Airport Land Use Planning Handbook*, published by Caltrans' Division of Aeronautics, includes noise information relating to airports.

Court and Attorney General Interpretations

As of this writing, no noise element prepared since the statutes' 1984 revision has been the subject of an appellate court decision or Attorney General opinion. However, three past appellate court cases remain germane.

The content of the noise element was one of the central issues in *Camp v. County of Mendocino* (1981) 123 Cal.App.3d 334. Mendocino County's element did not quantify noise levels, did not include an inventory of current and expected noise exposure (noise contours), and was apparently not supported by monitoring data. As a result, the court found the element to be inadequate. The county's argument that the existing element was sufficient for a quiet rural county was not persuasive to the court, since the statute was neither subjective nor geographical. The *Camp* decision underscores the importance of comprehensive data collection and analysis.

The decision in *Neighborhood Action Group v. County of Calaveras* (1984) 156 Cal.App.3d 1176, highlights the importance of including the noise element in the land use decision-making process. In this instance, where a conditional use permit for a surface mining operation was at issue, the appeal court stated that "a quantitative inventory of existing transportation noise must be compared with that added by a particular project. The aggregate noise level must be measured against policy statements and standards required to be in the general plan." This decision makes clear that the noise element must be adequate to serve as the basis for analyzing projects that may potentially increase noise levels.

Pursuant to the decision in *Guardians of Turlock's Integrity v. City of Turlock* (1983) 149 Cal.App.3d 584, a general plan is invalid if it lacks a noise element. Furthermore, in the words of the court, "unless the general plan sets noise guidelines, an EIR addressing noise issues lacks meaning."

Relevant Issues

The noise element should cover those issues and sources of noise relevant to the local planning area. The element should utilize the most accurate and up-to-date information available to reflect the noise environment, stationary sources of noise, predicted levels of noise, and the impacts of noise on local residents. It should be as detailed as necessary to describe the local situation and offer solutions to local noise problems. Issues to be addressed by the noise element include the following:

- ◆ Major noise sources, both mobile and stationary.
- ◆ Existing and projected levels of noise and noise contours for major noise sources.
- ◆ Existing and projected land uses and locational relationship to existing and projected noise sources. (MAP) (L)
- ◆ Existing and proposed sensitive receptors, including:
 - Hospitals.
 - Convalescent homes.
 - Schools.
 - Churches.
 - Sensitive wildlife habitat, including the habitat of rare, threatened, or endangered species.
- ◆ The extent of "noise problems in the community."
 - Survey of community to determine location and extent.
- ◆ Methods of noise attenuation and the protection of residences and other sensitive receptors from excess noise.
- ◆ Implementation measures and possible solutions that address existing and foreseeable noise problems.

Ideas for Data and Analysis

The following are suggested topics for data collection and analysis:

Identification and appraisal of major noise sources

- ◆ Identify major noise sources, including:
 - Highways and freeways.
 - Primary arterials and major local streets.
 - Passenger and freight on-line railroad operations and ground rapid transit systems.
 - Commercial, general aviation, heliport, helistop, and military airport operations; aircraft overflights; jet engine test stands; and all other ground facilities and maintenance func-

- tions related to airport operation.
- Local industry, including, but not limited to, railroad classification yards.
- Other ground stationary noise sources identified by local agencies as contributing to the community noise environment.

Analysis and quantification of the local noise environment

- ◆ Select the method of noise measurement or modeling to be used in the noise element.
- ◆ Measure major sources of noise, including, but not limited to, highways and freeways, arterial and major streets, railroads, railroad yards, ground rapid transit, airports and aviation-related sources, industrial plants, and other stationary ground sources.
- ◆ Map noise level contours, expressed in CNEL or Ldn, for the area surrounding each of the identified noise sources.
- ◆ Project future noise sources, noise levels, and anticipated impacts upon existing and proposed land uses.
- ◆ Analyze the current and future impacts on community residents of noise emanating from the identified sources. (L)
- ◆ Analyze current and predicted levels of transportation noise consistent with the requirements of the Federal Intermodal Surface Transportation Efficiency Act. (CI)

Minimization of noise exposure

- ◆ Inventory existing and proposed sensitive uses, including residential areas, hospitals, convalescent homes, schools, churches, and sensitive wildlife habitat.
- ◆ Identify local noise problems and areas of conflict between noise sources and sensitive uses.
- ◆ Identify means of noise mitigation, such as soundproofing, landscaping and berms, building design and setbacks, buffer areas, operating hours of major sources, and other techniques.

Ideas for Development Policies

The following are the types of development policies that may be contained in a noise element, as locally relevant:

- ◆ The adoption of noise impact and attenuation standards, consistent with the Noise Element Guide-

lines and the Uniform Building Code.

- ◆ Guidance for zoning and development through the adoption of specified noise mitigation, including provisions for increased building setbacks, buffer areas, compatibility zoning, and other land use strategies. (L)
- ◆ The establishment of local standards and guidelines for noise evaluation, including baseline specifications.
- ◆ The evaluation of new residential and other sensitive uses for consistency with noise standards in areas adjacent to major sources of noise. (L)
- ◆ The review of all land use and development proposals for compliance with noise and land use compatibility standards.
- ◆ Guidance for the location and design of transportation facilities to maintain acceptable noise levels. (L, CI)
- ◆ The control of stationary noise at the source through the use of insulation, berms, building design/orientation, buffer areas, staggered operating hours, and other techniques. (L, O)
- ◆ The minimization of noise exposure around airports in correlation with the policies of the local Airport Land Use Plan and airport noise standards pursuant to Title 21, §5000, et seq., California Code of Regulations. (L)
- ◆ The correlation of noise element concerns with the objectives, policies, and plan proposals of the land use, circulation, and open-space elements in order to minimize community noise exposure.
- ◆ The achievement of noise compatibility between residential and other surrounding land uses, including commercial and industrial.

Technical Assistance

Various noise prediction models can be used to address transportation and aircraft noise in the noise element. For example, the Federal Highway Administration's Traffic Noise Model can calculate noise levels using acoustical algorithms and emission levels for five standard vehicle types: automobiles, medium trucks, heavy trucks, buses, and motorcycles. More information can be obtained from the Federal Highway Administration's Turner-Fairbank Highway Research Center at www.tfhrc.gov. Information regarding noise models can also be obtained from the Federal Aviation Administration's Office of Environment and Energy at www.aee.faa.gov.

SAFETY ELEMENT

The aim of the safety element is to reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from fires, floods, earthquakes, landslides, and other hazards. Other locally relevant safety issues, such as airport land use, emergency response, hazardous materials spills, and crime reduction, may also be included. Some local jurisdictions have even chosen to incorporate their hazardous waste management plans into their safety elements.

The safety element overlaps topics also mandated in the land use, conservation, and open-space elements. When preparing a new general plan or undertaking a comprehensive revision of an existing general plan, OPR suggests addressing these common topics in a single place rather than scattering them among four separate elements. The key concern should be to integrate effectively these common issues into the decision-making process.

The safety element must identify hazards and hazard abatement provisions to guide local decisions related to zoning, subdivisions, and entitlement permits. The element should contain general hazard and risk reduction strategies and policies supporting hazard mitigation measures. Policies should address the identification of hazards and emergency response, as well as mitigation through avoidance of hazards by new projects and reduction of risk in developed areas. Communities may use the safety element as a vehicle for defining “acceptable risk” and the basis for determining the level of necessary mitigation. Policies may address not only methods of minimizing risks, but also ways to minimize economic disruption and expedite recovery following disasters.

Seismic Hazards

The safety element must establish policies to minimize the loss of property and life as a result of earthquake. The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code §2621, et seq.), the Seismic Hazards Mapping Act (Public Resources Code §2690, et seq.), the Unreinforced Masonry Law (§8875, et seq.), and the associated maps and regulations of the State Board of Geologists and Geophysicists and the State Mining and Geology Board offer crucial information and a starting point for local policies.

The Department of Conservation’s California Geological Survey (CGS, also known as the Division of Mines and Geology), the Seismic Safety Commission (SSC), the Office of Emergency Services (OES), and the U. S. Geological Survey (USGS) offer a number of publications that are very useful in identifying, analyzing,

and addressing seismic hazards. The CGS has hazard maps and other information available online at www.conservation.ca.gov/cgs. The SSC’s *California Earthquake Loss Reduction Plan 1997-2001* is a strategic plan for state and local government actions to mitigate earthquake hazards. Technical information about earthquake hazards is available online from USGS at <http://quake.wr.usgs.gov> (maps and reports); the Northern California Earthquake Data Center at <http://quake.geo.berkeley.edu> (technical earthquake data); and the Southern California Earthquake Center at www.scec.org (earthquake modeling and probability). In the San Francisco Bay Area, the Association of Bay Area Governments (ABAG) offers a variety of earthquake hazard and mitigation information on its website at <http://quake.abag.ca.gov>.

The Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code §2621, et seq.) restricts development on the surface traces of known active faults. The State Geologist has produced maps that identify faults throughout the state and makes copies available to planning agencies. The Seismic Hazards Mapping Act (Public Resources Code §2690, et seq.) directs the State Geologist to map potential ground shaking, liquefaction, earthquake-triggered landslides, and other identifiable earthquake-related hazards in California. Current information and an index map of the over 70 quadrangles zoned under the Seismic Hazards Mapping Act in Orange, Los Angeles, Ventura, Contra Costa, Alameda, Santa Clara, and San Mateo counties can be found on the website of the California Geological Survey, www.conservation.ca.gov/cgs. Call (916) 445-5716 for more information.

The Unreinforced Masonry Law (Government Code §8875, et seq.) requires cities and counties within Seismic Zone 4 to identify hazardous unreinforced masonry buildings and consider local regulations to abate potentially dangerous buildings through retrofitting or demolition. The 1990 Loma Prieta quake graphically illustrated the advantages of abatement ordinances: although seismic retrofitting is primarily aimed at saving lives rather than protecting buildings, structural damage was substantially less in communities that had enacted abatement ordinances than in neighboring communities that had not. Information on the Unreinforced Masonry Law, including the status of compliance as of 2000 and a 1995 model seismic retrofit ordinance, is available online from the Seismic Safety Commission at www.seismic.ca.gov. Call (916) 263-5506 for more information.

Flood Hazard

The safety element must also identify flood hazard areas and establish policies to avoid unreasonable flood

risks. A comprehensive approach should include mapping floodplains; establishing general policies to keep intensive new development out of floodplains or to mitigate and protect against flood impacts if development is to be located in such areas; minimizing impacts on existing development where possible; establishing policies regarding capital improvements or acquisitions necessary to ensure flood protection; and establishing flood management policies which may include both structural and non-structural approaches to flood control using a multi-objective watershed approach.

Flooding is often a regional problem that crosses multiple jurisdictional boundaries. Policies should be developed cooperatively with local, state, and federal agencies, including special districts, to create feasible solutions.

The Department of Water Resources' Division of Flood Management can provide floodplain management and flood control information, including floodplain maps where available (www.dfm.water.ca.gov). The Federal Emergency Management Agency (FEMA) also has helpful information on mitigation. It offers a flood insurance program for communities that enact zoning regulations to limit development within flood zones and prepares Flood Insurance Rate Maps delineating those zones. Information on maps can be found at <http://web1.msc.fema.gov/MS>. The telephone number for the flood insurance program at FEMA's western regional office is (510) 627-7177. Another federal source of flood hazard information is the U.S. Army Corps of Engineers at (415) 977-8173. The Corps can develop or interpret data on flood depths or stages; the extent, duration, and frequency of flooding; and obstructions to flooding. The Corps also offers special studies on all aspects of floodplain management planning. The Natural Resources Conservation Service (NRCS), part of the U.S. Department of Agriculture, offers an Emergency Watershed Protection program and can provide advice on erosion control. NRCS's California office can be contacted at (530) 792-5600.

Fire Hazard

The safety element must identify urban fringe and rural-residential areas that are prone to wildland fire hazards. It must also analyze systems, such as adequate evacuation routes and peakload water supplies, that can reduce fire hazards. The policies of the safety element should form the basis for adopting fire safe ordinances and strategic fire defense system zoning.

The State Board of Forestry has adopted the *California Fire Plan*, which describes the environment at risk for fire and the state's activities to reduce that risk. It has also adopted fire safe regulations for counties with State Responsibility Areas (SRAs) as a means of

reducing pre-fire fuel loads (Title 14, §1270, et seq., California Code of Regulations). Although most of these regulations are too specific and regulatory in nature to include in a general plan, they offer useful ideas for local policies and can be adapted into local fire safe ordinances and regulations outside of SRAs. The state-wide fire safe regulations include:

- ◆ Road standards, including width, surface, and grade, for emergency access and evacuation.
- ◆ Standards for signs identifying streets, roads, and buildings.
- ◆ Minimum water supply reserves for emergency fire use.
- ◆ Fuel breaks (i.e., defensible space) around structures and greenbelts around new subdivisions.

With certain exceptions, after July 1, 1991, all new construction and subdivisions within SRAs must meet the Title 14 standards or equivalent local requirements that have been certified by the State Board of Forestry. In addition, any city or county within an SRA is required to submit a copy of its draft safety element or any amendments to that element to the State Board of Forestry and to every local agency that provides fire protection in its jurisdiction for review and comment at least 90 days prior to adopting or amending the element (Public Resources Code §4128.5). If the city or county decides not to follow the board's or a local agency's recommendations, it must advise the board in writing as to its reasons for not doing so.

For SRAs, the California Department of Forestry and Fire Protection (CDF) and counties that contract with CDF for SRA fire protection can identify areas of high risk/high asset value under the *California Fire Plan*. The objective is to reduce the costs and losses from catastrophic fire by fostering public/private partnerships for prevention, fuels management, and other activities. The *California Fire Plan* may be obtained from CDF or viewed at <http://www.fire.ca.gov>. Individual data layers for counties can be obtained from local Ranger Unit offices.

Fire hazard severity zoning information developed by CDF pursuant to Government Code §51175-§51179 is available from the State Fire Marshal (<http://osfm.fire.ca.gov>) for adoption by local agencies. The State Fire Marshal, pursuant to §51189.5, has also developed a model ordinance for space and structure defensibility linking hazard severity zoning or classification with building standards.

General information about fire safety, including vegetation (fuel load) maps and fire management maps, is available from CDF's Fire and Resource Assessment Program at <http://frap.cdf.ca.gov> or (916)

227-2651.

Health and Safety Code §13143.5 allows local fire officials to change or modify state fire safety codes when reasonable and necessary because of local climate or geologic or topographical conditions. Any changes cannot be less restrictive than the minimum state standard.

Landslides

The landslides generated by the El Nino storms of 1998 and 1992 illustrated the hazards to life and property posed by debris flows and landslides. Deep-seated landslides are caused by the infiltration of water from rain or other origin into unstable material. Fast-moving debris flows are triggered by intense rains that oversaturate pockets of soil on hillsides. Landslides are the result of both natural conditions and the works of man. The California Geological Survey and the U.S. Geological Survey have published landslide inventory and landslide and debris-flow susceptibility maps at a variety of scales for selected areas of California. Areas prone to rainfall-triggered landslides overlap areas where earthquake-induced landslides, mapped under the Seismic Hazard Mapping Act, are likely.

Other Hazards

The Office of Emergency Services administers the Standardized Emergency Management System (SEMS), which provides a framework for coordinating multi-agency emergency responses (§8607 and Title 19, §2400, et seq., California Code of Regulations). SEMS

incorporates mutual aid agreements, establishes lines of communication during emergencies, and standardizes incident command structures, among other things. Local agencies are not required to participate in SEMS but are not eligible for reimbursement of response costs under disaster assistance programs unless they do so. The safety element may include general policies for cooperation and assistance consistent with SEMS. For information about emergency response planning, contact the OES Planning and Technological Assistance Branch at (916) 464-3200.

The safety element may address any other subjects that, in the judgment of the local legislative body, relate to the physical development of the county or city (§65303). A number of local jurisdictions have chosen to include the subject of crime safe community planning. The safety element may be used to establish programs and policies that promote neighborhood, institutional, governmental, and business safety. This need not be limited to protection against criminal activity, but may also include policies designed to avoid accidents throughout the community. These policies are commonly implemented through the design review process and address issues such as:

- ◆ Adequate lighting and landscaping for improved natural surveillance.
- ◆ Park and open-space usership, safety, and accident avoidance.
- ◆ Homelessness issues and residential shelters.
- ◆ Safety and accident prevention through design.

Prior to preparing or revising its safety element, a city or county must consult with the Office of Emergency Services and submit one copy of its draft safety element to the California Geological Survey for review (§65302(g)). These agencies can provide safety element advice, particularly in the areas of emergency response, inundation resulting from dam failure, seismic hazards, and geologic hazards. Local governments must consider the findings of the California Geological Survey prior to final adoption of the safety element. In addition, the Department of Water Resources, pursuant to §65303.4, may develop site design and planning policies to assist local agencies that request help in implementing flood control objectives and other land management needs.

Court and Attorney General Interpretations

As of this writing, the provisions of a safety element have not been the subject of a decision by an appellate court or an interpretation by the California Attorney General.

Urban Design as Crime Prevention

Planners, architects, and law enforcement officials have become increasingly aware of the relationship between urban design and crime prevention. Terms for this concept include Safescape and Crime Prevention Through Environmental Design (CPTED). Planning and design strategies that deter crime include natural surveillance (eyes on the street), walkable environments (human/pedestrian scale), demarcated public and private space, and mixed-use development (high levels of activity).

Resources:

- ◆ International CPTED Association, www.cpted.net
- ◆ *Safescape*, by Art Zelinka and Dean Brennan (APA Planners Press, 2001)

Relevant Issues

The safety element must examine issues related to protecting the community from any unreasonable risks associated with:

- ◆ Seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure.
- ◆ Slope instability leading to mudslides and landslides.
- ◆ Subsidence, liquefaction, and other seismic hazards identified on seismic hazard maps.
- ◆ Other known geologic hazards.
- ◆ Flooding.
- ◆ Wildland and urban fires.

It must also address the following as they relate to known fire and geologic hazards:

- ◆ Evacuation routes and signage.
- ◆ Peakload water supply requirements.
- ◆ Minimum road widths and turnouts.
- ◆ Clearances around structures.

The safety element must also contain a map or maps of known seismic and other geologic hazards. The official maps of the Alquist-Priolo Earthquake Fault Zones and seismic hazard zones, available from the California Geological Survey, may be included or incorporated by reference.

Ideas for Data and Analysis

The following are suggested as topics for consideration during the data collection and analysis phase of preparing a safety element.

The general geology and seismic history of the region and the planning area

- ◆ Map known seismic and geologic hazards. (MAP) (O)

The potential for seismically induced surface rupture

- ◆ Determine the location of active fault zones designated by the State Geologist under the Alquist-Priolo Earthquake Fault Zoning Act. (MAP) (O)
- ◆ Perform a geologic evaluation of the potential for displacement along active and potentially active faults in the planning area. (MAP) (O)

The potential for seismically induced ground shaking

- ◆ Identify active and potentially active faults in the

region. (MAP) (O)

- ◆ Gather historical data on seismic ground shaking within the planning area.
- ◆ Perform a geotechnical evaluation of the potential for localized ground shaking based on the state probabilistic earthquake hazard map. (MAP)
- ◆ Identify hazardous or substandard structures that may be subject to collapse in the event of an earthquake, including, but not limited to, unreinforced masonry buildings (§8875, et seq.).

The potential for seismically induced ground failure

- ◆ Perform a geotechnical evaluation of the potential for earthquake-triggered landslide, mudslide, liquefaction, and soil compaction. (MAP) (O)
- ◆ Determine the location of zones of required investigation for liquefaction and earthquake-induced hazards on a seismic hazard zone map prepared by the State Geologist. (MAP) (O)

The potential for seismically induced dam failure

- ◆ Identify areas that would be inundated in the event of a dam failure. Dam inundation maps are available from the Office of Emergency Services. (MAP) (O)
- ◆ Identify the development, facilities, and people potentially at risk in areas subject to potential inundation. (O)

Slope instability and the associated risk of mudslides and landslides

- ◆ Gather historical data on landslides and mudslides. (O)
- ◆ Identify areas that are landslide-prone by using, among other sources, landslide features maps produced by USGS and the California Geological Survey's seismic hazard zone maps, landslide hazard identification maps, watershed maps, and geology for planning maps. (MAP) (O)
- ◆ Perform a geotechnical evaluation of the local potential for landslides and mudslides. (MAP) (O)

The potential for seismically induced seiches and tsunamis

- ◆ Gather historical data on the occurrence of tsunamis and seiches within the planning area. (O)
- ◆ Perform a geophysical evaluation of the potential “run-up” of tsunami and seiche waves. (MAP) (O)

Useful Definitions: **Safety Element**

Alquist-Priolo Earthquake Fault Zone: A regulatory zone, delineated by the State Geologist, within which site-specific geologic studies are required to identify and avoid fault rupture hazards prior to subdivision of land and/or construction of most structures for human occupancy.

Critical Facility: Facilities that either (1) provide emergency services or (2) house or serve many people who would be injured or killed in case of disaster damage to the facility. Examples include hospitals, fire stations, police and emergency services facilities, utility facilities, and communications facilities.

Fault: A fracture or zone of closely associated fractures along which rocks on one side have been displaced with respect to those on the other side. A fault zone is a zone of related faults which commonly are braided, but which may be branching. A fault trace is the line formed by the intersection of a fault and the earth's surface.

Active Fault: A fault which has exhibited surface displacement within Holocene time (approximately the past 11,000 years).

Potentially Active Fault: A fault which shows evidence of surface displacement during Quaternary time (the last 2 million years).

Flooding: A rise in the level of a water body or the rapid accumulation of runoff, including related mudslides and land subsidence, that results in the temporary inundation of land that is usually dry. Riverine flooding, coastal flooding, mud flows, lake flooding, alluvial fan flooding, flash flooding, levee failures, tsunamis, and fluvial stream flooding are among the many forms that flooding takes.

Ground Failure: Mudslide, landslide, liquefaction or soil compaction.

Hazardous Building: A building that may be hazardous to life in the event of an earthquake because of partial or complete collapse. Hazardous buildings may include:

1. Those constructed prior to the adoption and enforcement of local codes requiring earthquake resistant building design.
2. Those constructed of unreinforced masonry.
3. Those which exhibit any of the following characteristics:
 - ◆ exterior parapets or ornamentation which may fall on passersby
 - ◆ exterior walls that are not anchored to the floors, roof or foundation

- ◆ sheeting on roofs or floors incapable of withstanding lateral loads
- ◆ large openings in walls that may cause damage from torsional forces
- ◆ lack of an effective system to resist lateral forces
- ◆ non-ductile concrete frame construction

Hazardous Material: An injurious substance, including pesticides, herbicides, toxic metals and chemicals, liquefied natural gas, explosives, volatile chemicals, and nuclear fuels.

Landslide: A general term for a falling, sliding, or flowing mass of soil, rocks, water, and debris. Includes mudslides, debris flows, and debris torrents.

Liquefaction: A process by which water-saturated granular soils transform from a solid to a liquid state during strong ground shaking.

Peakload Water Supply: The supply of water available to meet both domestic water and fire fighting needs during the particular season and time of day when domestic water demand on a water system is at its peak.

Seiche: An earthquake-induced wave in a lake, reservoir, or harbor.

Seismic Hazard Zone: A regulatory zone, delineated by the State Geologist, within which site-specific geologic, soils, and foundation engineering studies are required to identify and avoid earthquake-caused ground-failure hazards, or selected other earthquake hazards, prior to subdivision of land and for construction of most structures for human occupancy.

Subsidence: The gradual, local settling or sinking of the earth's surface with little or no horizontal motion (subsidence is usually the result of gas, oil, or water extraction, hydrocompaction, or peat oxidation, and not the result of a landslide or slope failure).

Seismically Induced Surface Rupture: A break in the ground's surface and associated deformation resulting from the movement of a fault.

Tsunami: A wave, commonly called a tidal wave, caused by an underwater seismic disturbance, such as sudden faulting, landslide, or volcanic activity.

Wildland Fire: A fire occurring in a suburban or rural area which contains uncultivated lands, timber, range, watershed, brush or grasslands. This includes areas where there is a mingling of developed and undeveloped lands.

The potential for land subsidence, liquefaction, and other seismic hazards

- ◆ Collect historical data on land subsidence resulting from extraction of groundwater, natural gas, oil, and geothermal resources and from hydrocompaction. (O)
- ◆ Identify areas of known risk from liquefaction, subsidence, or ground shaking. (MAP)
- ◆ Evaluate the potential risks associated with other known geologic hazards, such as volcanic activity, avalanche, or cliff erosion.
- ◆ Refer to information from the state seismic hazard maps, when available.

The risk of wildland fires

- ◆ Identify and classify areas of varying fire hazard severity based on degree of development, fuel loading (vegetation), weather and slope, accessibility to fire protection assistance (i.e., response time, availability of helispots, proximity of air tanker attack bases, etc.), historical data, and other pertinent information. (MAP) (O)
- ◆ Analyze the potential for fire to critically impact or eliminate habitat or open-space values. Identify the policy implications of fire safe or fuels reduction policies for both public and private conservation or open-space areas. (CO, O)
- ◆ Assess the need for greenbelts, fuel breaks, fuel reduction, and buffer zones around communities for different levels or zones of fire hazard to mitigate potential losses.

The potential for flooding

- ◆ Define the reasonably foreseeable floodplain (MAP) (CO, L, O)
 - Identify areas subject to inundation by a 100-year flood and a 500-year flood.
- ◆ Collect historical data on flooding, such as frequency and intensity. (CO, L, O)
- ◆ Identify areas vulnerable to post-wildfire flooding.

The risk of fires in urban areas

- ◆ Identify and classify areas of varying fire hazard severity based on age, condition, size, occupancy and use of structures and the spacing between them; access; fire flows; fire crew and equipment availability; response time; historical fire data; and other pertinent information. (MAP)

Emergency evacuation routes as they relate to known fire and geologic hazards

- ◆ Evaluate the adequacy of access routes to and from hazardous areas relative to the degree of development or use (e.g., road width, road type, length of dead-end roads, etc.). (CI, O)
- ◆ Identify potential improvements necessary to avoid unreasonable community risk.

Peakload water supply requirements necessary to avoid unreasonable risks from known fire and geologic hazards

- ◆ Evaluate the adequacy of the existing peakload water supply.
- ◆ Project future peakload water supply and demand and needed improvements, if any, to ensure the provision of adequate water supplies.

Minimum road widths and clearances around structures necessary to avoid unreasonable risks from known fire and geologic hazards

- ◆ Evaluate the adequacy of existing standards.
- ◆ Analyze the need for revised standards.
- ◆ Assess the potential for disruption to evacuation routes from landslide movement, fault ruptures, earthquake-triggered failures, and volcanic eruption.

Emergency response

- ◆ Determine the service areas of emergency services, including fire, police, ambulance, etc.
- ◆ Evaluate the adequacy of existing service and the demand for additional service.

Ideas for Development Policies

Here are some ideas for the general types of policies that may be incorporated into the safety element to the extent that they are locally relevant. Policies may take the following forms:

- ◆ Development standards and restrictions to limit risk to acceptable levels within Alquist-Priolo Earthquake Fault Zones, including limits on allowable development, development intensity, and setbacks from the fault trace. (L, O)
- ◆ A determination of what constitutes an “acceptable risk” in the community (e.g., life safety—the state-wide minimum or some higher standard).
- ◆ Requirements for a geologic evaluation of the po-

- tential for displacement prior to site development to limit risk to acceptable levels along identified active and potentially active faults. (O)
- ◆ Regular safety element revisions to incorporate new seismic hazard maps or other information as it becomes available.
 - ◆ The removal or rehabilitation of hazardous or substandard structures that may be expected to collapse in the event of an earthquake, including, but not limited to, unreinforced masonry buildings, bridges, and critical facilities.
 - ◆ Development standards and restrictions, such as limits on the types of allowable development, development intensity/density standards, and subdivision design policies, to limit risk to acceptable levels for sites subject to seismically induced landslide, mudslide, liquefaction, or subsidence. (L)
 - ◆ Requirements for geotechnical evaluation of the potential for earthquake-triggered landslide, mudslide, liquefaction, and subsidence prior to site development to limit risk to acceptable levels in areas where such hazards have been identified. (L, O)
 - ◆ Use of geologic hazard abatement districts to finance the prevention, mitigation, abatement, or control of geologic hazards. (Public Resources Code §26500, et seq.).
 - ◆ Development standards and restrictions to limit risk to acceptable levels within areas that would be inundated as a result of dam failure. (L, O)
 - ◆ Development standards and restrictions, such as subdivision design policies and building setbacks, to limit risk to acceptable levels within areas subject to inundation as a result of a tsunami or seiche. (L, O)
 - ◆ Development standards and restrictions, such as limits on development and restrictions on water wells, in areas subject to subsidence. (L)
 - ◆ Development policies, standards, and requirements, including setback requirements and subdivision design, to limit risk to acceptable levels within areas subject to other known geologic hazards (e.g., volcanic activity, avalanches, cliff erosion, etc.).
 - ◆ Contingency plans for immediate post-earthquake response and longer-term reconstruction activities in areas potentially subject to significant damage.
 - ◆ Requirements for evaluating the potential risks associated with other known geologic hazards, such as volcanic activity, avalanches, or cliff erosion, and for limiting risk to acceptable levels prior to development.
 - ◆ Requirements for geotechnical evaluation prior to site development of the potential for liquefaction and earthquake-triggered landslides in identified seismic hazard zone. (O)
 - ◆ Development standards and restrictions to limit the risk of loss to acceptable levels within identified floodplains or areas subject to potential inundation by a 100-year flood or by levee failure. These might include subdivision design, setback requirements, and development intensity/density standards. (CO, L, O)
 - ◆ Floodplain management policies, including both structural and non-structural approaches, and cooperative actions with other agencies. (CO, L, O)
 - ◆ Policies to support the enactment of floodplain zoning necessary to qualify for FEMA’s National Flood Insurance Program. (CO, L, O)
 - ◆ Development policies, standards, and restrictions to reduce the risk of urban and wildland fires to an acceptable level, including:
 - Peakload water supply requirements and performance standards for urban, suburban, and rural development.
 - Clearances around structures (i.e., defensible space).
 - Property line setbacks for structures in wildland fire hazard areas.
 - Fire equipment response time.
 - Land use intensity/density standards.
 - Subdivision design for fire safety, including defensible space.
 - Fire safe building materials.
 - Standards conforming to the fire safety standards established by the State Board of Forestry for SRAs (Title 14 §1270, et seq., California Code of Regulations).
 - Road standards for fire equipment access.
 - Standards for signs identifying streets, roads, and buildings.
 - Minimum private water supply reserves for emergency fire use.
 - Land use policies and safety standards that take into account the recurrent nature of wildland fires.
 - ◆ Strategies for both structural fire protection and for

preventing or mitigating wildland fire impacts that correspond to different fire hazard levels (e.g., high or very high fire severity in LRAs or high risk/high value areas in SRAs).

- ◆ Policies and standards addressing multihazard evacuation and emergency access, including:
 - Evacuation routes. (MAP)
 - Design, reservation, and requirements for emergency access in new development.
 - Minimum road widths. (CI)
- ◆ Future service facilities. (MAP)
- ◆ Emergency preparedness protocol and procedures, including SEMS.
- ◆ Crime safe community policies and programs to encourage community support and involvement in

crime and accident prevention through planning.

Technical Assistance

The following state agencies can provide information or assistance in the preparation of the safety element:

- ◆ Department of Conservation, including the California Geological Survey (also known as the Division of Mines and Geology) and the State Geologist
- ◆ Department of Forestry and Fire Protection
- ◆ Department of Transportation (Caltrans)
- ◆ Department of Water Resources
- ◆ Governor’s Office of Planning and Research.
- ◆ Office of Emergency Services
- ◆ Seismic Safety Commission

Noise

The purpose of the noise element is to limit the exposure of the community to excessive noise levels. In order to ascertain where noise is an issue, noise contours must be produced via the collection of primary data that takes into account mobile and point source noise producers. 'The noise element must be used to guide decisions concerning land use and the location of new roads and transit facilities since these are common sources of excessive noise levels. The noise levels from existing land uses, including mining, agricultural, and industrial activities, must be closely analyzed to ensure compatibility, especially where residential and other sensitive receptors have encroached into areas previously occupied by these uses'.

Airports	Industrial Uses	Railways and Yards
Noise Contours	Land Use	Transportation Routes

Recommended Policy by State	Community Issues addressed
1. Guidance for zoning and development through the adoption of specified noise mitigation, including provisions for increased building setbacks, buffer areas, compatibility zoning, and other land use strategies.	<ul style="list-style-type: none"> ➤ Low impact development ➤ Community Design ➤ Commercial development and building constraints.
2. The correlation of noise element concerns with the objectives, policies, and plan proposals of the land use, circulation, and open-space elements in order to minimize community noise exposure.	<ul style="list-style-type: none"> ➤ Keep City as it is ➤ reduce traffic impacts

Noise policy suggestions

The Noise Element is covered in the General plan to the guidance presented by the State. Policy focuses on ensuring that new produces of noise operate within the limits designated in the corresponding policy table (Refer to page II-66 of General Plan). Policy does not however give guidance on how to ensure mobile forms of noise, such as public Transit, is minimized.

Existing General Plan Policies	Suggestions for improvement
<ul style="list-style-type: none"> ➤ Guidance for zoning and development through the adoption of specified noise mitigation, including provisions for increased building setbacks, buffer areas, compatibility zoning, and other land use strategies. 	
<ul style="list-style-type: none"> ➤ existing and potential incompatible noise levels in problem areas shall be reduced through operational or source controls where the City has responsibility for such controls. Land use planning, subdivision review, building code enforcement, and other administrative means shall be utilized as needed (No-1). 	<ol style="list-style-type: none"> 1. no suggestion
<ul style="list-style-type: none"> ○ The correlation of noise element concerns with the objectives, policies, and plan proposals of the land use, circulation, and open-space elements in order to minimize community noise exposure. 	
<ul style="list-style-type: none"> ➤ Noise created by new or proposed stationary noise sources or the expansion or alteration of an existing use shall be mitigated so as not to exceed noise level standards in Table F-1 at adjacent land uses. (No-2) 	<ol style="list-style-type: none"> 1. Public Transport and other public vehicles should be assessed for noise production and measures taken to ensure they do not exceed the noise contours in their operational areas.

Safety element

‘The aim of the safety element is to reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from fires, floods, earthquakes, landslides, and other hazard’. There is also suggestion to ensure that crime is addressed within this element of the General Plan.

There are three major acts that must be referred to when the safety element of the General Plan is being altered. They are the Alquist-Priolo Earthquake Fault Zoning Act (Public Resources Code §2621, et seq.), the Seismic Hazards Mapping Act (Public Resources Code §2690, et seq.), the Unreinforced Masonry Law (§8875, et seq.) These three acts provide information and advice on how best to mitigate development within seismic zones. The Alquist-Priolo Act stipulates that only limited development will be permitted within 50ft either side of a fault. Floodplains must also be identified according to the State Guide Lines so as to ensure development can be managed appropriately, information relating to flooding can be obtained from the Department of Water Resources (www.dfm.water.ca.gov). The table below identifies which issues must be addressed by the General Plan when considering Safety.

Fire	Flooding	Sesmic Hazards
Soil Instability	Water Supply	Transportation Routes

The General Plan guidelines require that a City’s General Plan also address the issues of ‘evacuation routes and signage. Peakload water supply requirements, minimum road widths and turnouts, and clearances around structures’; as they relate to known geological and seismic hazards.

The table below presents suggested policies from the state in relation to public opinion on what the public believe policy should address. Its focus is on crime and anti social behavior prevention which is not a mandatory state element.

Recommended Policy by State	Community issues addressed
<p>1. Crime safe community policies and programs to encourage community support and involvement in crime and accident prevention through planning. -Should include.</p> <ul style="list-style-type: none"> ➤ Adequate lighting and landscaping for improved natural surveillance ➤ Park and open-space usership, safety, and accident avoidance. ➤ Homelessness issues and residential shelters. ➤ Safety and accident prevention through design. 	<ul style="list-style-type: none"> ➤ Keep City Safe ➤ Community Design ➤ Outdoor lighting ➤ Keep the City a family friendly Place
Other important policy guidance (not suggested by the public)	
<p>2. Development policies, standards, and requirements, including setback requirements and subdivision design, to limit risk to acceptable levels within areas subject to other known geologic hazards (e.g., volcanic activity, avalanches, cliff erosion, etc.).</p> <p>3. Development standards and restrictions, such as limits on development and restrictions on water</p>	

wells, in areas subject to subsidence.

4. Requirements for geotechnical evaluation of the potential for earthquake-triggered landslide, mudslide, liquefaction, and subsidence prior to site development to limit risk to acceptable levels in areas where such hazards have been identified.
5. Policies to support the enactment of floodplain zoning necessary to qualify for FEMA's National Flood Insurance Program.
6. Development standards and restrictions to limit the risk of loss to acceptable levels within identified floodplains or areas subject to potential inundation by a 100-year flood or by levee failure. These might include subdivision design, setback requirements, and development intensity/density standards.

Safety policy suggestions

The Safety Element of the General Plan is concerned largely with the promotion of safety relating to hazards. This is mandatory by the State Guidelines and is covered in detail. Policy does not however address the issue of safety from criminal activity or anti social behavior.

Crime is not currently a big issue in Trinidad but the public and the General plan both encourage a safe environment, free from crime and dangers from traffic. In an effort to ensure that Trinidad remains ‘safe’ from such issues policy should encourage design to provide for an atmosphere that promotes social interaction at night as well as in the day. This can be achieved through accommodating building designs, improved lighting and traffic calming measures (eg: shared space).

Existing Policy Identified in Local Plan	Suggested revisions
<p>1. Crime safe community policies and programs to encourage community support and involvement in crime and accident prevention through planning.</p>	
<p>➤ No policy currently exists</p>	<ol style="list-style-type: none"> 1. Ensure that new development provides adequate lighting and minimizes the creation of narrow alley ways where thieves may operate. 2. Provide well lit walkways within the city to encourage pedestrian movement by night. 3. Ensure active frontages are encouraged to offer desirable places to commune.
<p>• Development policies, standards, and requirements, including setback requirements and subdivision design, to limit risk to acceptable levels within areas subject to other known geologic hazards (e.g., volcanic activity, avalanches, cliff erosion, etc.).</p>	
<p>➤ New development proposed on parcels indicated as being located within the Alquist-Priolo study zone shall first prepare reports, as required by the Alquist-Priolo Earthquake Fault Zoning Act (See Department of Conservation Special Publication – 42). (Saf-9)</p>	<p>• No Suggestion</p>
<p>• Development standards and restrictions, such as limits on development and restrictions on water wells, in areas subject to subsidence.</p>	
<p>➤ Questionable or Unstable areas should not be disturbed by any activity that increases soil absorption of water or disturbs vegetation or soils that would impact the</p>	<p>1. No suggestion</p>

<p>stability of the slopes. Areas of questionable stability should not be developed if possible. Development that alters the landform, changes or adds runoff, or significantly covers or adds weight to the property should only be allowed if a registered geologist or other qualified professional determines that the development will not increase erosion or instability and if a specific recommendation for controlling runoff is provided (Saf-1).</p>	
<ul style="list-style-type: none"> Requirements for geotechnical evaluation of the potential for earthquake-triggered landslide, mudslide, liquefaction, and subsidence prior to site development to limit risk to acceptable levels in areas where such hazards have been identified. 	
<ul style="list-style-type: none"> The City shall utilize its parcel specific database of unstable or questionable stability areas to provide a zoning overlay for those parcels.(Saf-5) 	<p>2. No suggestion</p>
<ul style="list-style-type: none"> Policies to support the enactment of floodplain zoning necessary to qualify for FEMA’s National Flood Insurance Program. 	
<ul style="list-style-type: none"> No Policy currently exists 	<ol style="list-style-type: none"> Trinidad should be mapped within FEMA’s flood control Zone. Or a separate flood map produced for the city in an effort to ascertain if the city will be at risk in 20 years time and what measures, if any, it would need to take to mitigate this.

NOISE ELEMENT

Goal: To regulate noise based on zoning and activity while protecting the quality of life of residents, visitors and wildlife of Trinidad

According to California Government Code § 65302 (f) the Noise Element “shall identify and appraise noise problems in the community...”

Trinidad is a small community with minimal traffic and noise pollution, and the intent of the residents is to maintain those characteristics. According to CalTrans¹, the Highway 101 intersection noise contour is far below the threshold that would necessitate a noise reduction project. Other than Highway 101, other factors that influence the noise levels in Trinidad are low flying coast guard helicopters, emergency sirens, and on-site construction. For noise contours of the Trinidad area, see Plate 4 from the City General Plan Public Safety Element, Noise Element, Scenic Highway Element, July, 1975.

Noise is currently not a problem in Trinidad. Implementation measures and possible solutions include, but are not limited to: restricted operating hours, protective building design, and installing sound barriers. The following Table addresses acceptable exterior/interior levels for stationary sources to assess impacts of new development or new sources of noise onto adjacent uses.

Table NO-1: Land Use Noise Compatibility Matrix

NOISE LEVEL PERFORMANCE STANDARDS FOR NEW PROJECTS AFFECTED BY OR INCLUDING STATIONARY SOURCES						
Land Use	Exterior			Interior		
Noise Level Description	7AM-7PM	7PM-10PM	10PM-7AM	7AM-7PM	7PM-10PM	10PM-7AM
Residences, Transient Lodging, Commercial, Nursing Homes						
Hourly L_{eq}	55 dB	50 dB	45 dB	45 dB	40 dB	40dB
Maximum	75 dB	75 dB	70 dB	65 dB	65 dB	60 dB
Auditoriums, Theaters, Libraries, Schools, Churches						
Hourly L_{eq}	55 dB	55 dB	50dB	40 dB	40 dB	40dB
Maximum	75 dB	75 dB	50dB	60 dB	60 dB	60dB

- NOTE: L_{eq}= The energy equivalent level, defined as the average sound level on the basis of sound energy. dB-Decibel= A unit used to express the relative intensity of a sound as it is heard by the human ear.

¹ CalTrans, Personnel Communication. January, 2001.

NOISE POLICIES:

- NO-1. Existing and potential incompatible noise levels in problem areas shall be reduced through operational or source controls where the City has responsibility for such controls. Land use planning, subdivision review, building code enforcement, and other administrative means shall be utilized as needed.
- NO-2. Noise created by new or proposed stationary noise sources or the expansion or alteration of an existing use shall be mitigated so as not to exceed noise level standards in Table F-1 at adjacent land uses.
- NO-3. New development shall be designed and constructed to meet levels listed in chart.

SAFETY ELEMENT

Goal: To protect the community of Trinidad through awareness of hazards and compliance with disaster-preparedness appropriate to zoning

According to Government Code § 65302 (g), a Safety Element is for the protection of the community from any unreasonable risks associated with the effect of seismically induced surface rupture, ground shaking, ground failure, tsunami...slope instability...subsidence, liquefaction and other seismic hazards...flooding, wildland and urban fires.²

A Report entitled “Environmental Conditions and Constraints” dated May 1976 was completed for the previous General Plan project and updated the earlier Public Safety Element, 1965. Both reports identified such hazards and incorporated their analysis into the General plan policies. Changes to the existing General Plan consist primarily of including updated information (such as identification of the Alquist-Priolo Special Study Zone) or policies that improve the notification and restricts development to address these issues. No new data has been generated nor has any new analysis occurred. However, there is no indication that this is necessary. Some of the required topics are covered in other portions of this General Plan.

Unstable Slopes

Much of the area along the sea cliffs and coastal streams is unstable or of questionable stability³. These and other unstable areas have been designated as Open Space or

² Other seismic hazards, such as lurching or cracking, differential settlement, and liquefaction, are discussed in the 1975 Public Safety Element and require no additional policies. Flooding is likewise discussed under Chapter III, Water Resources.

³ See Geologic and Soil Limitations Map in Environmental Conditions and Constraints

Special Environment on the previous Land Use Map and have been similarly designated.

Plate 2 of the above report illustrates the conditions of slope stability within and around Trinidad. The City transferred this information to its data base and developed a list of parcels that fall in the “questionable stability and unstable zone” category based on Plate 2. This has been used during review of development proposals and will become part of overlaying zoning. Review of development proposals by qualified professionals is required by Zoning Ordinance provisions.

Unstable areas were also found that have been designated Resource Production. The Resource Production, Open Space and Special Environment designations and zoning requirements provide an appropriate control of development and other activities on unstable slopes.

Seismic Hazards / Fault Rupture

A portion of the Trinidad area lies within a Special Study (Fault Rupture) Zone, as designated by the State Division of Mines and Geology under the Alquist-Priolo Act. The purpose of the Zone is to ensure that local development patterns do not create seismic hazards. According to the Alquist-Priolo Act, no buildings may be constructed within 50 feet of any active fault in the zone. Trinidad is affected because there has been development within the boundary of the Alquist-Priolo zones. Much of the undeveloped land also falls in or near this zone. There are two fault zones within Trinidad shown on Plate 3, the Trinidad head fault zone and the Anderson Ranch fault zone. The hazard zone for the Anderson Ranch fault zone is delineated on Plate 4. The City has developed a list of parcels located in the Alquist-Priolo zone to use during the review of development proposals and/or become part of overlay zoning.

The 1994 Uniform Building Code (UBC) released by the California Building Standards Commission put Trinidad in “zone 4”. The UBC sets standards for the seismic design of all structures in volume 1, chapter 16, division 3, sections 1624 through 1634, including “zone 4” properties.

Tsunamis

Tsunamis (earthquake induced surges of ocean water) are a possible hazard in the Trinidad area. Structures and other improvements less than 20 feet above Mean Lower Low Water are most likely to be affected.⁴

Report, May 1976.

⁴See the Environmental Conditions and Constrains Report and the Seismic Safety Element adopted in 1975 for more details.

Areas less than 20 feet above Mean Lower Low Water, except lands devoted to harbor improvements and public access facilities, have been previously designated as Open Space or Special Environment to reduce or prevent damage to from tsunamis.⁵

A State of California study (Planning Scenario in Humboldt and Del Norte Counties, California, for a Great Earthquake on the Cascadian Subduction Zone, Special Publication 115, California Department of Conservation, Division of Mining and Geology, 1995) indicates

Fire Hazards

Structural Fires demand immediate response from a combination of onsite and Fire Department resources in order to minimize injury and damage. Fire suppression devices such as extinguishers and sprinklers are important for initial response, reduce fire insurance premiums, and satisfy operations requirements for certain types of businesses. These devices are encouraged in new and renovated non-residential buildings and in all residential structures with more than four units, even when not required by fire and building code. All buildings should have adequate lighting, street numbering, and access to ensure rapid response by fire fighting vehicles.

The City and Trinidad Volunteer Fire Department should continue to take an active role in reviewing new development for compliance with fire safety standards. The City will continue to incorporate requirements to ensure that driveways, turn-arounds, and other access ways have sufficient width, vertical clearance, and turn-around space for fire fighting vehicles. Roadways should have an all-weather surface. Road grades should not exceed the Fire Department's maximum slope standards for emergency access.

The City's fire hydrant system provides the primary source of water for fighting urban fires. The City can only maintain adequate fire flows in its water system for a very short period. The City should maintain fire hydrant space so that no residential structure is more than 500 feet from a hydrant and no commercial structure is more than 300 feet from a hydrant. Each hydrant should have adequate fittings and be capable of providing adequate water flows to meet Fire Department standards.

Wildland fires in forested areas near the City can cause property damage and threaten nearby structures. Buildings near forested areas should consider using materials such as non-flammable perimeter vegetation and roofing material to prevent exposure to wild land fires. The City maintains a mutual aid agreement with the California Department of Forestry and Fire Prevention (CDF) to insure rapid response to wild land fires. Aid was provided in the 1980's when a fire started on Trinidad State Park properties, threatening residences along Underwood Drive.

⁵ The previous Land Use Map incorrectly identified the Tsurai Study Area as a tsunami Study Area. This has been corrected.

Disaster Preparedness

Emergency plans are prepared in response to the requirement of the California Emergency Services Act, which requires counties and cities to adopt emergency preparedness programs. In addition to the hazards mentioned previously in this element other hazards, such as hazardous material spills; storm damage; and accidents occurring on land, air, and sea, should be considered. The best way to manage these and other response needs is to establish a comprehensive Emergency Response Plan.

State Highway 101 to the north and south, Westhaven Drive to the east and south, and Patrick's Point Drive to the north are considered evacuation routes from the planning area in the event of a major disaster. Due to the slippage potential on Scenic Drive, this road is considered only as a last resort. Stagecoach Road is not recommended for designation due to its narrow width. Trinity Street, Edwards Street, and Main Street are essential to through-City evacuation. These routes should be kept passable in major emergencies recognizing that the type and location of the disaster will determine which routes will be most needed and available for use.

Since serious flooding to the north (Big Lagoon, Klamath River) and south (Little and Mad Rivers) of the planning area can effectively cut off vehicle access. Large vacant lands should be designated for points of refuge or as an emergency helicopter landing area. Further, the City should coordinate its disaster preparedness planning with surrounding jurisdictions for mutual assistance.

Training in the Standardized Emergency Management System (SEMS) implementation, is necessary to receive reimbursement from the State of California for disaster response related costs. This training includes instruction about the Incident Command System (ICS), which is used to manage emergency incidents or non-emergency events.

The applications for the incident command system (ICS) include:

- Fires, hazardous materials (HAZMAT), and multi-casualty incidents.
- Multi-jurisdiction and multi-agency disasters.
- Wide area search and rescue missions.
- Pest eradication programs.
- Oil spill response and recovery incidents.
- Single and multi-agency law enforcement actions.
- Air, rail, water, and ground transportation accidents.
- Planned events (celebrities, parades, concerts).
- Private sector emergency management programs.
- State or local major natural hazards management.

Adequate shelter and continued operation of essential services, including communications, medical treatment, water delivery, fire and police services, and key transportation facilities are vital for responding to emergencies. These facilities and services need to be located and designed to withstand disaster impacts and have backup systems, such as emergency generators and water storage (including private

and open water sources), that allow for their continuous operation during emergencies. These critical facilities should not be located in areas with high physical hazards. Critical facilities should be designed to be functional at peak capacity, following a magnitude 7.7 earthquake.

Carelessness with electrical appliances, and safety hazards in the home, and ignorance of what should be done during an earthquake or other disasters can all be reduced by providing information to the general public. Hazard reduction information is particularly effective when presented in the schools. Public safety officials should continue to work with school administrators to ensure that this important information is reaching students and that frequent fire drills are conducted to illustrate appropriate disaster response at school.

SAFETY POLICIES:

- SAF-1. Questionable or Unstable areas should not be disturbed by any activity that increases soil absorption of water or disturbs vegetation or soils that would impact the stability of the slopes. Areas of questionable stability should not be developed if possible. Development that alters the landform, changes or adds runoff, or significantly covers or adds weight to the property should only be allowed if a registered geologist or other qualified professional determines that the development will not increase erosion or instability and if a specific recommendation for controlling runoff is provided.
- SAF-2. City and County Zoning Ordinances should require a use permit for timber harvesting (as defined in the Forest Practices Act) within or nearby unstable lands or lands of questionable stability.
- SAF-3. Provisions in the Uniform Building Code (Chapter 70) regarding grading on slopes should be used to ensure that owners of unstable lands or lands of questionable stability do not create slope stability problems.
- SAF-4. Structures, septic tank systems, access roads, and driveways shall not be located on unstable lands, as defined by the **Land Use Map**. Structures, septic tank systems and driveways should only be permitted on lands of questionable stability (or when outside the City within 100 feet upslope of unstable lands or lands of questionable stability) if analysis by a registered geologist, or civil engineer with soils expertise indicates that the proposed development will not significantly increase erosion, slope instability or sewage system failure.⁶

⁶The areas in the City where studies by a registered geologist or other qualified professional are required by this policy are identified on Plate 3. Outside of the City limits the areas where such studies are necessary are identified by a boundary 100 feet upslope of the upland extent of unstable lands and lands of questionable stability as identified on

- SAF-5. The City shall utilize its parcel specific database of unstable or questionable stability areas to provide a zoning overlay for those parcels.
- SAF-6. Where access trails must traverse steep slopes they should be located away from unstable areas. Improvements should be provided to minimize erosion and slope failure.
- SAF-7. Volunteer Fire Department personnel, the California Department of Forestry, and the City and County Building Inspectors should warn property owners to inspect flues and chimneys for damage after moderate and large earthquakes prior to their use. Occupied structures that appear to have been seriously damaged should be inspected and evacuation required if they are found unsafe and until such time that the problem has been remedied.
- SAF-8. The City shall utilize its parcel specific database of the Alquist-Priolo (Fault Rupture) Study Zone to provide a zoning overlay for those parcels affected.
- SAF-9. New development proposed on parcels indicated as being located within the Alquist-Priolo study zone shall first prepare reports, as required by the Alquist-Priolo Earthquake Fault Zoning Act (See Department of Conservation Special Publication – 42).
- SAF-9. Except for existing harbor and public access facilities and shoreline protection structures, no new permanent structures shall be located less than 20 feet above Mean Lower Low Water.
- SAF-10. To ensure urban fire safety, the City shall enforce the Uniform Building and Uniform Fire Codes (UBC & UFC) currently in effect.
- SAF-11. Upgrades to the City's water supply system shall consider needs for future abatement purposes. Other sources of water, including open-water areas, should be identified for fire-fighting personnel. Fire hydrant spacing and other safety features shall be considered in review of new development projects.
- SAF-12. The City shall maintain a mutual aid agreement with CDF to ensure rapid response to wildland fires.
- SAF-13. The City shall develop a comprehensive response plan for emergencies, including seismic events, tsunamis, slope failure, storms, fires, and materials spills or contamination. The plan will provide for timely and

the Geologic Limitations Map in the Environmental Conditions and Constraints Report.

coordinated agency response to emergencies that threaten community residents, property, and vital services. The plan will identify City and other emergency response agencies that should be contacted, and also identify community resources available for more localized assistance and relief.

- SAF-14. New and renovated structures, as well as streets, driveways, and alleyways, shall be designed to provide adequate entry and exit by emergency vehicles and personnel. This includes visible street numbering, emergency vehicle turn-arounds, accessible building entry points and stairways, lighting, and interior evacuation routes.