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SAFETY ELEMENT

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SAFETY ELEMENT

INTRODUCTION

The Safety Element is one of the seven state-mandated elements. Its purpose is to require cities and counties to take geologic, seismic, and public safety hazards into account in their planning program. Section 65302(g) of the California Planning Zoning and Development Law requires: "A safety element for the protection of the community from fires, geologic, and seismic hazards including features necessary for such protection as evacuation routes, peak load water supply requirements, minimum road widths, clearances around structures, and geologic hazard mapping in areas of known geologic hazards."

ASSESSMENT

This section summarizes the existing geologic, seismic, and public safety hazards of the City of Colton. A complete analysis of these conditions, which includes several study maps, can be found in the Colton Community Profile Report. The following areas are examined below: geologic hazards, fire hazards, flood hazards, seismic hazards, crime, and emergency preparedness. A map of the known geologic and safety hazards in the Colton Planning Area has been prepared (see Exhibit E located in the map pocket which accompanies this document).

Geologic Hazards

A. Liquefaction

Land areas prone to liquefaction during a strong earthquake are typified by loose granular soils and a high water table. Ground shaking can cause such areas to become saturated with water and lose almost all their firmness, causing extreme damage to structures and property. Two areas in Colton have a high liquefaction potential; the area to the southeast of the I-10/I-15E interchange, and the southwestern portion of the planning area.

B. Landslides and Erosion

While most of the City is flat with overall slopes of less than 5 percent, the southern portion of the Colton planning area is dominated by relatively steep hills and broadly terraced escarpments. Two natural factors are critical in this regard: erosion and slope failures during heavy rains, and landslides due to earthquake activity. The density of development and associated grading in hilly terrain must be fully cognizant of soils stability in these areas, and the overall slope of the terrain. In extreme cases, some areas will likely need to remain in open space, or at a low intensity of development in order to assure a reasonable degree of public safety.

C. Subsidence

Subsidence due to groundwater withdrawal and subsidence due to hydrocompaction are probably the only types that could occur in the Colton area. Generally the effects of subsidence are gradual and become significant only over a period of years. Some dry and low density soils subject to these type of hazards are found in portions of the Cooley Ranch and "Sand Hills".

D. Seismic Activity

The largest losses of life and property in California due to geologic hazards have been caused by violent ground shaking during earthquakes. There are up to six established or suspected earthquake faults within a distance of 12 miles of Colton, all of which are part of the San Jacinto Fault system, which is in turn part of the larger San Andreas system. The largest earthquake expected along the San Andreas Fault is an 8.5 magnitude event.

The San Jacinto Fault runs along the eastern edge of the City, passing directly under the Interstate-10/Interstate-215 interchange. This fault is regarded as one of the most active in California and has been subject to repeated earthquakes with 17 events of 6 to 8 Richter magnitude being recorded since 1769. This Fault is presently undergoing minor creep in the Colton area. A suspected fault also runs in a northwesterly-southerwesterly direction through the center of Colton. Any significant earthquake along these faults could cause extensive damage within the City, thus care should be taken to plan development in the safest possible manner.

Flood Hazards

Potential flood hazards exist mainly along the floodplain of the Santa Ana River, which runs through the from the east in a southeasterly direction (See Exhibit E). Although much of the river's course has been protected from flooding, some areas in the City, especially south of the Interstate-10 Freeway, are subject to inundation during a 100-year storm. Residential and other high value developments should be kept away from areas prone to flooding in order to avoid undue danger to life and property. Unfortunately, however, recent development has occurred in the Cooley Ranch area.

Three major drainage courses have been channelized which are Lytle Creek, Reche Canyon Channel, and the South Rialto Outlet. In the Reche Canyon and La Loma Hills areas and in portions south of La Loma Hills, a number of natural drainage channels exist that would subject development in this areas to intermittent flood and mudslide hazards unless precautions are taken.

Fire Hazards

There are two main types of fire hazards that have a significant impact upon the Colton area: 1) urban fire hazards and 2) brush fires.

Urban fires are generally caused by fire hazardous buildings that, because of current building regulation programs, do not require periodic inspection of older areas. The Building and Safety Code specifies in its provisions the degree of deterioration that must be reached before a building is classified as unsafe. Consequently, building owners suffer no penalty by failing to improve those buildings which have not reached the specified degree of deterioration.

Danger of brush fires is extreme in the Reche Canyon and somewhat less in the La Loma Hills due to the steepness of the terrain and general inaccessibility. Shortage of water in these areas is becoming less of a problem as new reservoirs are developed. For example, a 3,000,000 gallon reservoir has recently been added in the Reche Canyon area (off of Barton Road). Additionally, the City now supplies all of the water for the La Loma Hills and Reche Canyon areas, solving the earlier problems that having several separate water agencies created. (Some of these agencies did not meet standards current at the time, and as a result, in some areas the only dependable supply of water during a major fire would have had to come from fire department tankers).

Crime

Colton's crime rate for major crimes grew rapidly from 1979 to 1981. It has declined since 1982 where it fell to 95 crimes per 1,000 population in 1983 the same level it had been in 1979. The crime rate continued its decline in 1984.

Continued improvement of the police force and use of the "defensible space" concept in physical planning should lead to a continuing decline in the crime rate. The City of Colton currently has 3.3 officers on duty per 10,000 population. According to the Colton Police Department, the ideal number of officers required for maximum efficiency would be 4.4 officers per 10,000 population.

Crime problems facing today's cities will not be answered through increased police forces or fire power alone. A major effort to re-establish security and safety can be made through the concept of "defensible space", as incorporated within the 1981 Colton General Plan, and as a remaining part of the 1985 updated General Plan. The objective of "defensible space" is to introduce crime prevention techniques, methodology, and experience to the planning process. The concept involves a range of mechanisms which combine to bring an environment under the control of its residents and users including: physical and psychological barriers; strongly defined areas of influence, promoting a sense of territoriality; and improvement opportunities for both public and private surveillance.

Emergency-Preparedness

Colton's emergency preparedness program is documented in the Emergency Response Plan, which is currently undergoing revisions and is in draft form. Specific evacuation routes have not been identified, however, the freeways and the major arterials would be used as a first source. (See Exhibit A). The exact routes used would depend upon the nature of the disaster and where it occurred. The emergency plan designates the steps to be taken in time of disaster and identifies possible shelter areas, the location of which to be designated at the time of the disaster.

To determine peak load water requirements for a disaster, the fire department uses the 1974 edition of the Insurance Service Office's Guide for Determination of Required Fire Flow. Peak load water requirements are determined for each building.

In order to allow the ease of access for emergency vehicles, minimum road widths and clearances around structures have been set and are identified in the Municipal Code. Road width clearance is set at a minimum of 20 feet.

THE POLICY PLAN

General Objectives

1. Avoid or prevent damage from natural or man-made hazards by assessing their nature and location, taking steps to control them, and guiding human activities away from areas subject to hazards in which correction is not feasible.
2. Minimize unavoidable or unpreventable losses by requiring a thorough analysis of the geologic environment prior to design approval, and providing or requiring safe design, construction, and maintenance practices according to safety codes, ordinances, or special conditions placed on the project.
3. Take emergency action to save lives and property during or immediately following a natural or man-made disaster.

Principles and Standards

A. Geologic Hazards

Principles:

1. Identify geologic conditions that need special management, restrict widespread urban development in areas of geologic hazards and designate land areas determined unfit for structures of human occupancy as open space land.

Standards:

1. Require geologic studies on proposed developments for human occupancy within areas with identified hazards.
2. Structural design shall be compatible with the local geologic hazard.
3. Public works projects for the protection of the public and property from geologic hazards shall be developed.
4. Improve geologic hazard insurance programs.
5. Public safety facilities shall be located, designed, and managed in a manner which would maximize their ability to remain functional during and after a major geologic disaster.
6. Develop programs to inform the public and governmental agencies of geologic hazards and concerned policies.

B. Flood hazards

Principles:

1. Identify, delineate, and appraise hazardous flood-prone areas and prohibit structures for human occupancy to occur in such areas.

Standards:

1. Parks, green belts, golf courses, bicycle and equestrian trails are to be established in flood plain areas.
2. No structure for human occupancy shall occur with the flood-plain area.
3. Land owners and home buyers shall be informed of property which lie in a high flood hazard area.
4. Periodic review and/or revision will be made of the flood control system so that future changes in land use and new technologies diminishing flood hazard potential can be utilized.

C. Fire Hazards

Principles:

1. Define and limit the extent and intensity of development in areas of high fire hazard.
2. Provide protection to property and life from fire.

Standards:

1. No development for human occupancy shall occur in areas of exceptionally high fire hazard, or any area where fire cannot be safely controlled.
2. Establish programs to combat fire hazards associated with older buildings.
3. Apply strict fire safety standards to hospitals, other medical facilities and critical facilities, and indoor public assembly facilities; such facilities shall not be constructed in high fire hazard areas.
4. Multi-story structures and high-hazard structures shall comply with fire protection standards.
5. A public education program shall be established.
6. All developments must provide streets of adequate width to allow safe ingress and egress of emergency vehicles.
7. Major arterials and freeway shall be used for escape routes for public evacuation.
8. Reliable and sufficient water supplies for fire protection are to be provided to all developments within fire hazardous areas.
9. Distances between structure, shall conform to standards for safe fire protection.
10. All development plans shall be reviewed by local planning, fire, water, health, road, and flood control authorities.

D. Crime and Defensible Space

Principles:

1. Deter crime through proper design techniques.
2. Develop inter-agency input, coordination, and review to incorporate crime prevention techniques and methodology into the planning process.

Standards:

1. Establish neighborhood watch programs.
2. Encourage the clustering of houses into small neighborhoods removed from major thoroughfares, thereby enhancing neighborhood recognition and surveillance of people or activities not normally associated with the neighborhood.

3. Require low shrubbery landscaping and discourage overnight on-street or vacant lot parking as an aid to police and the general public in visually surveying neighborhood.
4. Provide the business community, local residents, developers and general public with written information about the relationships between crime prevention and physical planning.
5. Establish emergency telephones or pay telephones at strategically located areas such that the opportunity to report a crime in progress is maximized.
6. In order that an image of security is established, streets shall be well lighted and pedestrian paths occur in wide open space designed to encourage high intensity use.
7. All development plans are to be reviewed by local planning and crime prevention authorities.

E. Emergency Preparedness

Principles:

1. Prepare for natural or man-made disasters such that containment of the hazard can occur immediately and evacuation of residents can take place readily.

Standards:

1. All major arterials and freeways shall be designated as emergency evacuation routes.
2. Emergency procedure shall follow that of Colton's Emergency Response Plan and as determined by emergency officials.
3. Peak load water requirements are to be met by each building as established in the 1974 edition of the Insurance Service Office's guide for determination of required fire flow.
4. Minimum road widths and clearances around structures shall follow the standards set in the Municipal Code.

PLAN PROPOSALS

Plan proposals, achieved through budgeted, manned programs, ultimately brings about realization of the Policy Plan. The following measures are recommended to achieve stated objectives of the Element and General Plan.

Geologic Hazards

1. Adopt improved land-use plans, grading ordinances, and building codes that incorporate provisions for dealing with seismic hazards, landslides, mudslides erosion, liquefaction and subsidence, and provide sufficient funds to carry out work programs.
2. Devise workable procedure and criteria to determine the relative stability of slopes. The criteria must be applicable in the field, and should relate the stability characteristic to the uses to which the area can be put.
3. Provide funds and Staff to make land-use plans effective, and to enable the ordinances recommended by this element, zoning and grading ordinances to be enforced.
4. Strengthen programs and capabilities for effective inspections of grading practices, including requirement of pre-construction geological studies of slope and soil stability conditions at site.
5. Conduct on-site inspections of building sites as necessary to assure that the various actions to prevent damage from seismic events, landsliding, erosion, liquefaction and subsidence, are properly taken, as required by this element, safety regulations, and zoning and grading ordinances.
6. Carry out inspection procedures relative to geologic problems, to enforce compliance with building codes and grading ordinances.
7. Adopt the 1979 Uniform Building Code with the intent of upholding set safety standards for structures as a protective measure against geologic hazards.
8. An educational program on geologic hazards should be established with information available to all media.
9. Require real estate agents to inform all prospective property buyers of any and all natural hazards which are contained in or are near the subject property.
10. Send safety instructions to every resident of the City explaining how to secure a home against geologic hazard and what a person should do during an emergency.
11. Review and amend the Safety Element for consistency with new information, state-of-the-art advances or acceptable levels of risk change.
12. Provide emergency funds and personnel for data collection when geologic events occur.
13. Support consideration of (1) utilizing redevelopment and capital improvement programs to abate structures located in hazardous areas, and (2) encouraging the private sector to mitigate unsafe structures in hazardous areas through tax incentives and subsidies.

14. Inform all property owners, whose property contains or is traversed by a geologic hazard, of the potential risk.

Flood Hazards

1. Delineate boundaries of present flood-prone areas and indicate areas that should be considered in future studies.
2. Start programs requiring the dedication of land designated as future flood control channels under subdivision, mobile home, and land division planning processes.
3. Make flood hazard information available to any public agency, private firm, or individual requesting said information.
4. Adopt and enforce any pertinent land use ordinances designed to prohibit the occupancy or encroachment of any structure, improvement, or development that would obstruct the flow of water in a designated floodway on the floodplain.
5. Erect warning signs in flood hazard areas and place conspicuous markings of flood levels on bridges or other public works to alert prospective buyers or users of the area of possible flood hazards.
6. Start a public acquisition program of lands located on hazardous flood-prone areas.
7. Develop procedure and practice for including floods into broad coverage insurance programs for properties on flood-prone areas.

Fire Hazards

1. Adopt a City ordinance defining fire hazardous buildings.
2. Adopt a City ordinance requiring the preparation of disaster response plans for areas subject to brush fires.
3. Study feasibility of requiring mandatory fire inspections on residences at time of sale.
4. Amend the Building Code to prohibit the use of untreated wood shingle roofs in those areas designated by County and City fire prevention and control officials.
5. Establish priorities for the renovation, demolition, or occupancy reduction of identified fire hazardous buildings.
6. Require all proposed area development to provide for safe and ready access for fire and other emergency equipment and for routes of escape which will safely handle evacuations.

7. Require at least two different ingress-egress routes for significantly scaled projects.
8. Require all proposed developments to be adequately served by water supplies for community fire protection, in accordance with the standards of the San Bernardino County Fire Chiefs Association. In addition, no hook-up to existing water supply should be considered, if it would lower the underground water table.
9. Require buildings to be spaced at least 30 feet apart (in hazard areas), in order to minimize the exposure and risk from an adjacent structural fire and the conflagration potential of the spread of fire from structure to structure.
10. Establish programs for controlling brush growth.
11. Strengthen existing codes and ordinances pertaining to fire hazards.
12. Require on-site access to swimming pools for fire protection.
13. Support regulations requiring real estate brokers or sellers to disclose the risks involved in living in fire hazard areas.
14. Support public programs to start the acquisition of land from private holdings in the hazardous areas.
15. Revise the subdivision and zoning ordinances to include fire safety standards.
16. Require all requests to build within the hazardous fire area be reviewed by the Planning Commission, and the responsible fire authority for applicable fire regulations and approval.
17. Continue to prohibit debris burning in fire hazardous areas, except in designated areas.
18. Curtail the use of heavy equipment during critical fire weather.

Crime and Defensible Space

1. Encourage the use and type of landscaping situated in locations so as to maximize observation, while providing the desired degree of aesthetics.
2. Encourage the clustering of industries and businesses by operating hours, whereby industrial and businesses operating after normal hours will not be isolated.
3. Adopt subdivision and zoning regulations requiring the incorporation of crime prevention techniques and methodology in the physical design of developments.

4. Adopt regulations specifying the provisions of vehicle access to the front and back of all structures within an industrial park, shopping center, mall, or strip commercial area.
5. Adopt subdivision regulations limiting the length, and provide minimum requirements for the width of cul-de-sacs, to increase patrol and intra-neighborhood surveillance and recognition.
6. Adopt subdivision and zoning regulations specifying sufficient off-street parking, well lighted, and situated so that it can be observed from patrol.
7. Adopt subdivision and zoning regulations requiring developments to locate their recreation or community facilities in areas which will receive a maximum amount of observation from the residents.
8. Adopt regulations whereby parking stalls are laid out to permit maximum observation by patrol of attendants.
9. Adopt subdivision regulations specifying enclosed garages rather than car-ports.
10. Encourage (through the site planning review process) the development of pedestrian amenities within public spaces and along sidewalks, thereby increasing the intensity of use, thus providing a deterrent to crime.
11. Require a representative from the Police Department to be included on the subdivision review process.
12. Support the expansion of the present system of lighting along streets, walkways, parking lots, and entrances to buildings.
13. Support revisions to the building code for stronger anti-intrusion devices, windows and doors for residential and commercial structures.
14. Support the adoption of regulations requiring the removal of all means of acquiring access to the roofs of all commercial or industrial structures barring conflicts with fire regulations.
15. Support the adoption of regulations specifying clear identification of all residences by house numbers and addresses readily visible from the street.
16. Support the adoption of regulations requiring public bicycle racks to be immovable and situated in a readily observable area.
17. Support the adoption of regulations requiring all elevators to be equipped with a security alarm button activating a silent alarm and automatically sending the elevator to the first floor.
18. Support, public and private redevelopment programs designed to remove physical blight from streets and public spaces which promote the perception of an area as a "high crime" area.

Emergency Preparedness

Earthquake emergency plans should include provisions for:

1. An organization which:
 - a. Has assigned emergency functions to intra-jurisdictional agencies to perform field operations;
 - b. Has personnel designated and trained to perform specific tasks both within the control center and the damaged area,
 - c. Control and coordinates field operations from a predesignated, earthquake-resistant control center;
 - d. Has communications to all operating field forces and with higher and lower levels of government, to exchange operation information;
 - e. Has a staff to prepare and disseminate essential public information through the local news media; and
 - f. Conducts exercises to perfect and test plans and procedures.

2. Pre-earthquake preparations which:
 - a. List most vulnerable structures within the City with relationship to their effect on emergency operations.
 - b. Identify and inventory available resources;
 - c. Establish procedures for retaining mutual aid;
 - d. Ensure continuity of emergency communication systems, including augmentation of operating agency radio communications with Radio Amateur Communications Emergency Services or other organized volunteer emergency radio capability; and
 - e. Ensure continued operation or rapid restoration of essential public utilities.

3. Post-earthquake operations which:
 - a. Provide rapid surveillance and assessment of damaged area;
 - b. Search out and rescue people trapped in damaged structures or isolated danger areas;
 - c. Conduct medical triage for the injured;
 - d. Provide first aid in the damage area and transport injured to emergency medical facilities;

- e. Provide necessary fire prevention, fire fighting and life saving services in devastated or threatened areas;
 - f. Clear debris from transportation routes into damaged area;
 - g. Evacuate or direct people from danger areas to locations providing relative safety, shelter, and sustenance;
 - h. Provide traffic supervision and control along established evacuation routes, and security for evacuated areas;
 - i. Care for displaced people;
 - j. Remove, identify, and preserve dead for future disposal;
 - k. Provide for reuniting families;
 - l. Provide for informing victim's relatives outside of area;
 - m. Relieve hardship and expedite rapid and orderly reconstruction and redevelopment;
 - n. Prepare and disseminate essential public information through the news media;
 - o. Prepare and maintain a log of operations; and
 - p. Develop a procedure for cooperating with qualified earthquake investigators.
4. Delineate boundaries of fire hazard areas seismic hazard areas, of present and future flood-prone areas, of soils subject to landslides, erosion, subsidence and liquefaction, and designate these areas as "Special Management Areas".