

7. SAFETY ELEMENT

A. Purpose

The Safety Element, pursuant to Government Code Section 65302(g), deals with the protection of the community from unreasonable risks associated with the effects of earthquakes, landslides, slope instability, subsidence, other geologic hazards, flood, and fire. Maps identifying earthquake hazards, unstable soil hazards, landslide hazards, and flood zones are included in this element.

The geology, topography, soils, hydrology, and fire risk of Fort Bragg pose numerous constraints on future development. This element guides land use planning and policy decisions in order to achieve an acceptable level of public protection.

B. Seismic Safety and Geologic Hazards

There are no active earthquake faults in the City. However, the San Andreas fault is located approximately 9 miles to the west, and the Mayacama fault is 22 miles to the east. Major earthquakes can occur on these faults. Seismic activities can cause major disruptions of the City's transportation and emergency services network. Should the Pudding Creek, Noyo River, and/or Hare Creek Bridges become unusable following a seismic event, people may not be able to evacuate, and emergency access would be blocked. Potential hazards associated with earthquakes include: rupture of the ground surface by displacement along faults, shaking of the ground caused by the passage of seismic waves through the earth, ground failure induced by shaking, such as landslides, liquefaction and subsidence of unstable ground, and tsunamis.

Non-seismic geologic hazards include the presence of unstable soils on steep slopes and expansive soils which, in the presence of moisture, will swell and shrink when returning to a dry condition. Map SF-1: Geologic Hazards identifies areas of potential landslides.

C. Flooding

Portions of the City have areas subject to potential flooding during severe storms. Because of the generally flat terrain in the Fort Bragg area, a 100-year storm could exceed the ability of the City's infrastructure to move runoff water from the City to outfalls into natural drainages and the ocean. This drainage overload may result in standing water in low areas. High tides and severe storms may also cause flooding in low-lying areas near creeks and drainages.

Map SF-2: Flood Hazards shows areas within the 100-year floodplain. Within floodplains established by the Federal Emergency Management Agency (FEMA), property owners may be required to obtain flood insurance as a condition of mortgage approval. The areas subject to flooding are shown on maps called the Flood Insurance Rate Maps (FIRM) that are prepared by FEMA. The City participates in the FEMA flood insurance program, which allows property owners to obtain subsidized insurance rates.

FEMA also requires the City to establish development standards for construction in the 100-year floodplain. Typically the standards developed by a city or county can range from limits on the intensity of development to requirements to raise the "habitable floor" of the structure to at least one foot above the 100-year flood peak elevation. Most of the City, over 99% of the land area, is situated above both the 100-year and the 500-year floodplains. The only areas in the Inland Area located within the 100 year flood plain are along the Noyo River and Pudding Creek. The presence of riparian habitat and excessive slopes in this area prohibits development within the 100 year flood plain.

D. Fire Protection



In 1991, the City of Fort Bragg and the Fort Bragg Rural Fire District entered into an agreement creating the Fort Bragg Fire Protection Authority. The Authority has primary fire protection responsibility within the City limits and/or developed lands within the District (the District includes all of the City's Sphere of Influence). In addition to normal fire calls, the Fort Bragg Fire Protection Authority has increasingly been called to assist with accidents, hazardous material spills, medical calls, and to provide personnel and equipment for large wildfires outside of the area. The California Department of Forestry and Fire Protection (CDFFP) has responsibility for wildland fires within the Planning

Area. The Draft EIR presents a complete description of staffing, response time, calls for assistance, and other factors related to the Fire Protection Authority. The primary constraints or issues involving the Fire Protection Authority concern adequate staffing, adequate equipment, and adequate fireflow to structures.

E. Police Protection

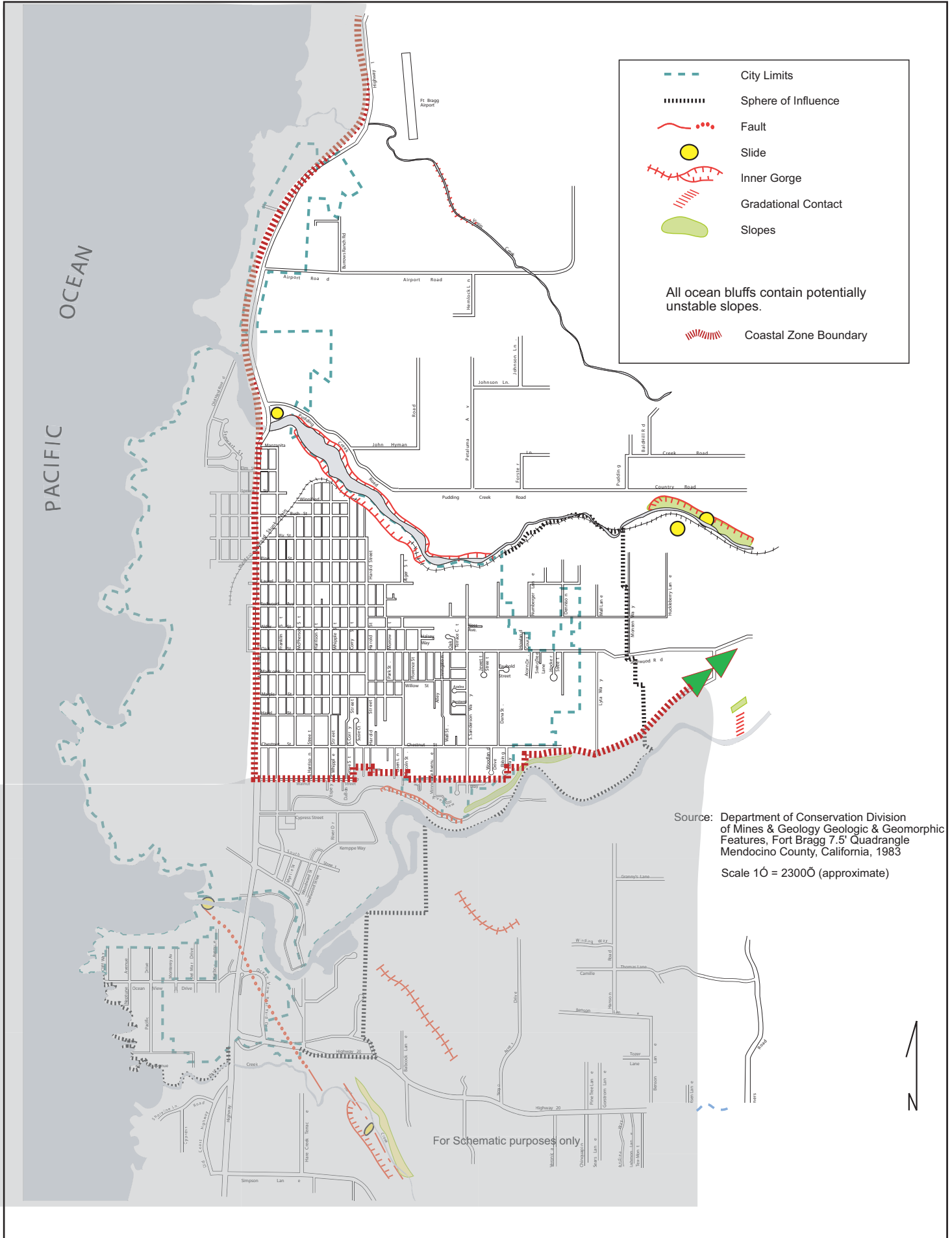


Within the City, the Fort Bragg Police Department has primary responsibility for police response. The constraint to providing adequate police response involves the need to ensure that the City hires sufficient staff to meet the response needs of both the existing and future population.

F. Emergency Preparedness

California State Law requires that all cities and counties adopt an Emergency Plan. The purpose of this plan is to outline policies and procedures with respect to significant events occurring within or threatening the community which would require the deployment of extraordinary resources for the protection of life and property.

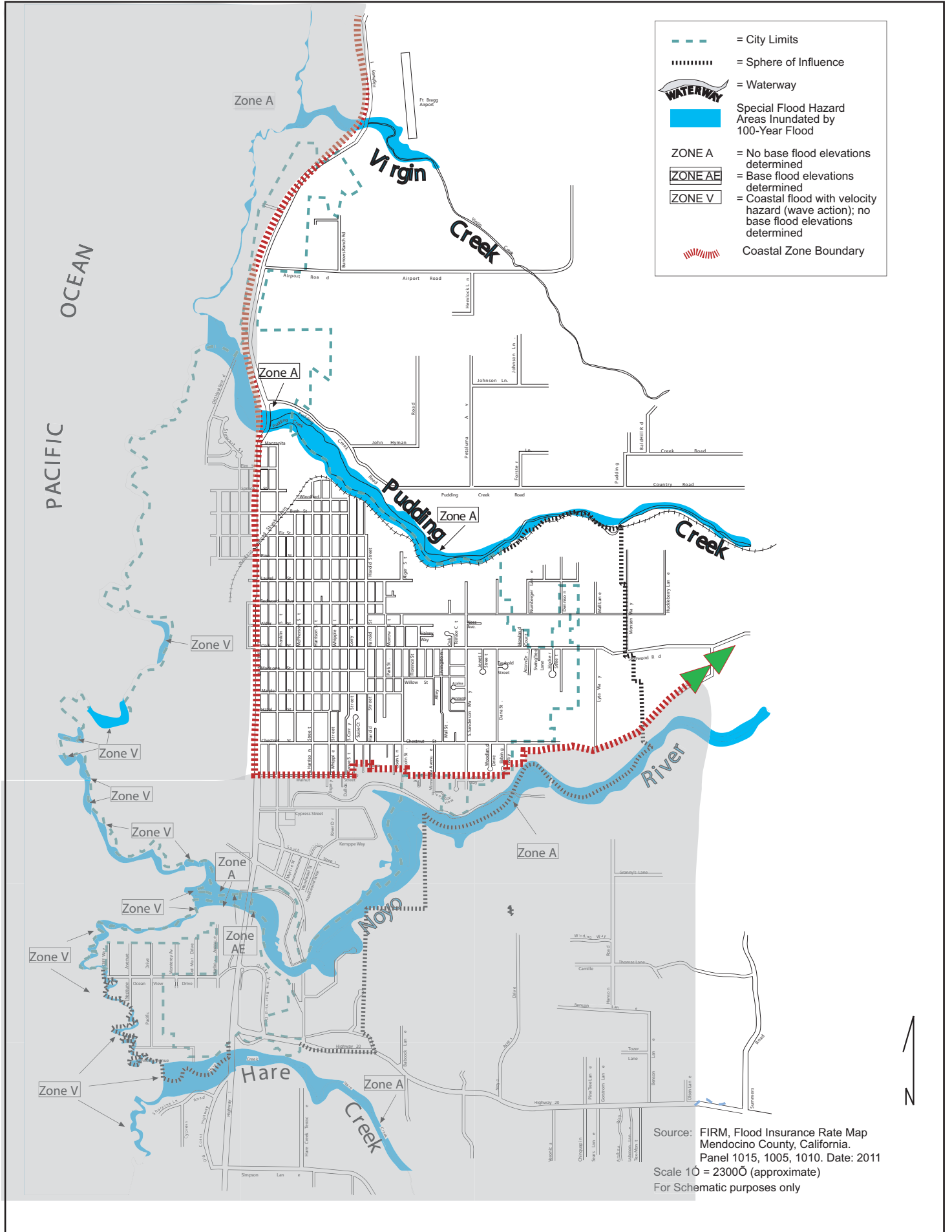
Map SF-1 GEOLOGIC HAZARDS



Source: Department of Conservation Division of Mines & Geology Geologic & Geomorphic Features, Fort Bragg 7.5' Quadrangle Mendocino County, California, 1983
Scale 1" = 2300' (approximate)

For Schematic purposes only

Map SF-2 Flood Hazards



The City has an adopted *Emergency Operations Plan*. The purpose of this plan is to ensure that the City will be prepared to respond effectively in the event of emergencies to save lives, restore and protect property, repair and restore essential public services, and provide for the storage and distribution of medical, food, water, shelter sites, and other vital supplies to maintain the continuity of government.

The Mendocino Emergency Services Authority (MESA), a joint powers organization that includes the County of Mendocino and the incorporated cities within the county, serves as the coordinating agency for mutual aid services provided by fire departments, law enforcement agencies, and emergency medical service providers throughout the county. In addition, MESA reviews and makes recommendations regarding emergency operation plans for public and private institutions where pre-planning for emergency procedures is advisable. Coordination of emergency services and planning guidelines is provided for situations including flood, wildland fires, structure fires, explosions, hazardous material spills, severe weather, and earthquakes.

G. Other Hazards

1. Hazardous Materials

Various types of chemicals and other potentially hazardous materials are used by Fort Bragg industries and businesses. Other hazardous substances are transported to and through Fort Bragg. Finally, residents use various hazardous materials for landscaping, cleaning, and other residential uses. Improper transport, storage, or use of these substances can result in releases to the environment with consequent impacts on human health and the environment.

The Mendocino Solid Waste Management Authority operates a hazmobile that serves the City. The Fire Protection Authority maintains a hazardous materials unit behind the main fire station. This unit is used to respond to hazardous waste spills.

2. Electromagnetic Radiation

The potentially adverse health effects of electromagnetic fields (EMF) from electrical transmission lines, substations, and appliances have been documented in many studies. It is not known what levels of exposure to EMFs are safe, however most sources indicate that an EMF exposure level of less than 1mG is preferred. The approach taken to this potential health hazard is one of prudent avoidance – establishing reasonable regulation before electrical transmission lines are built and discouraging sensitive development from encroaching in or near electrical transmission line rights-of-way.

3. Air Quality

Emissions of pollutants from motor vehicles, industrial uses, and other sources can be injurious to people's health. Policies and programs to protect the City's air quality are included in the Conservation, Open Space, and Parks Element.

H. Goals, Policies, and Programs

Goal SF-1 Reduce seismic and geologic-related hazards.

Policy SF-1.1 Minimize Hazards: New development shall: (a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard; and (b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.

Program SF-1.1.1: Continue to comply with the provisions of the State Alquist-Priolo Act.

Program SF-1.1.2: Require professional inspection of foundations and excavations, earthwork, and other geotechnical aspects of site development during construction on those sites specified in soils, geologic, and geotechnical studies as being prone to moderate or high levels of seismic hazard.

Program SF-1.1.3: Monitor and review existing critical, high priority buildings to ensure structural compliance with seismic safety standards.

Program SF-1.1.4: Provide information to the public on ways to reinforce buildings to reduce damage from earthquakes and what to do in the event of an earthquake.

Program SF-1.1.5: Provide information to educate the public about the availability and the benefits of obtaining earthquake insurance.

Program SF-1.1.6: Encourage residents to consider earthquake insurance for their homes and businesses.

Program SF-1.1.7: Continue to comply with State law regarding reinforcement of unreinforced masonry structures.

Policy SF-1.2 Geotechnical report required: Applications for development located in or near an area subject to geologic hazards, including but not limited to areas of geologic hazard shown on Map SF-1, shall be required to submit a geologic/soils/geotechnical study that identifies all potential geologic hazards affecting the proposed project site, all necessary mitigation measures, and demonstrates that the project site is suitable for the proposed development and that the development will be safe from geologic hazard. Such study shall be conducted by a licensed Certified Engineering Geologist (CEG) or Geotechnical Engineer (GE). *Refer to Map SF-1: Geologic Hazards. Refer to the General Plan Glossary for definitions of these terms.*

Policy SF-1.3 Alterations to Landforms: Minimize, to the maximum feasible extent, alterations to cliffs, bluff tops, faces or bases, and other natural land forms. Permit alteration in landforms only if erosion/runoff is controlled and either there exists no other feasible environmentally superior alternative or where such alterations re-establish natural landforms and drainage patterns that have been eliminated by previous development activities.

Policy SF-1.4 Identify Potential Hazards: Identify potential hazards relating to geologic and soils conditions during review of development applications.

Program SF-1.4.1: Evaluate slopes over 15 percent, unstable land, and areas susceptible to liquefaction, settlement, and/or soil expansion for safety hazards prior to issuance of any discretionary approvals and require appropriate measures to reduce any identified hazards.

Program SF-1.4.2: Require that development in areas with identified slope stability constraints as shown on Map SF-1 or other areas where City staff determines there is potential slope stability issues be supervised and certified by a geologist, geotechnical engineer, or engineering geologist.

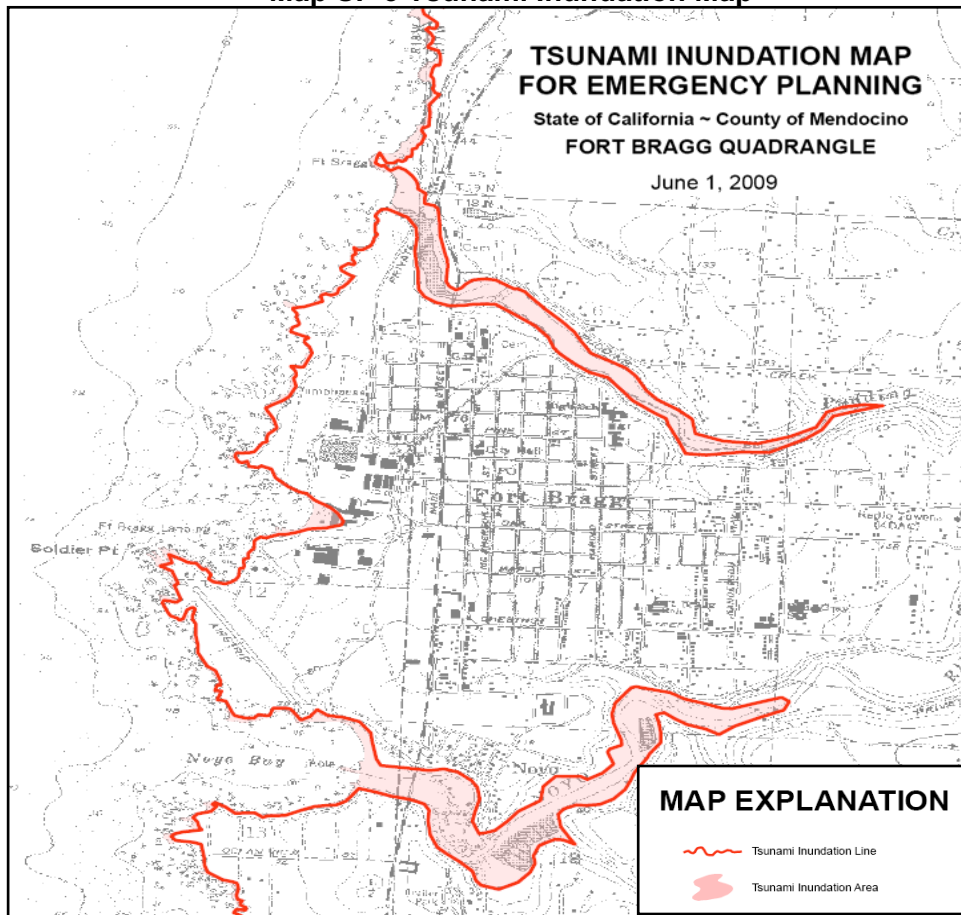
Program SF-1.4.3: Require repair, stabilization, or avoidance of active or potentially active landslides, areas of soil creep, or areas with possible debris flow as a condition of project approval.

Policy SF-1.5 Tsunami: Minimize development in areas subject to tsunami.

Program SF-1.5.1: Utilize map SF-3 to identify areas within the City that are subject to tsunamis.

Program SF-1.5.2: Review development proposals to ensure that new development is not in an area subject to tsunami damage or, if such development is allowed, that it is designed to withstand tsunami damage.

Map SF-3 Tsunami Inundation Map



Goal SF-2 Reduce the risks from flooding.

Policy SF-2.1 Flood Hazards: Ensure adequate standards for development in the 100-year floodplain.

Program SF-2.1.1: Maintain and update as necessary the zoning and building code standards and restrictions for development in identified floodplains and areas subject to inundation by a 100-year flood. Use the Federal Emergency Management Agency's Flood Insurance Rate Map (FIRM) in the review of development proposals.

Program SF-2.1.2: Ensure all development in flood prone areas meet Federal, State, and local requirements.

Policy SF-2.2 Storm Drainage: Continue to maintain effective flood drainage systems and regulate construction to minimize flood hazards.

Program SF-2.2.1: Continue to update the City's Storm Drain Master Plan.

Policy SF-2.3: Require development to pay for the costs of drainage facilities needed to drain project-generated runoff.

Program SF-2.3.1 Update and utilize the City's Drainage Development Impact Fees to ensure that development pays for its proportional share of drainage facilities.

Policy SF-2.4: Require, where necessary, the construction of siltation/detention basins to be incorporated into the design of development projects.

Policy SF-2.5: Require, as determined by City staff, analysis of the cumulative effects of development upon runoff, discharge into natural watercourses, and increased volumes and velocities in watercourses and their impacts on downstream properties. Include clear and comprehensive mitigation measures as part of project approvals to ensure that new development does not cause downstream flooding of other properties.

Policy SF-2.6: Analyze the impacts of and potential flooding issues resulting from Climate Change and rising sea levels on proposed projects located within the 100-year Sea-Level Rise Inundation Area (see Map SF-4).

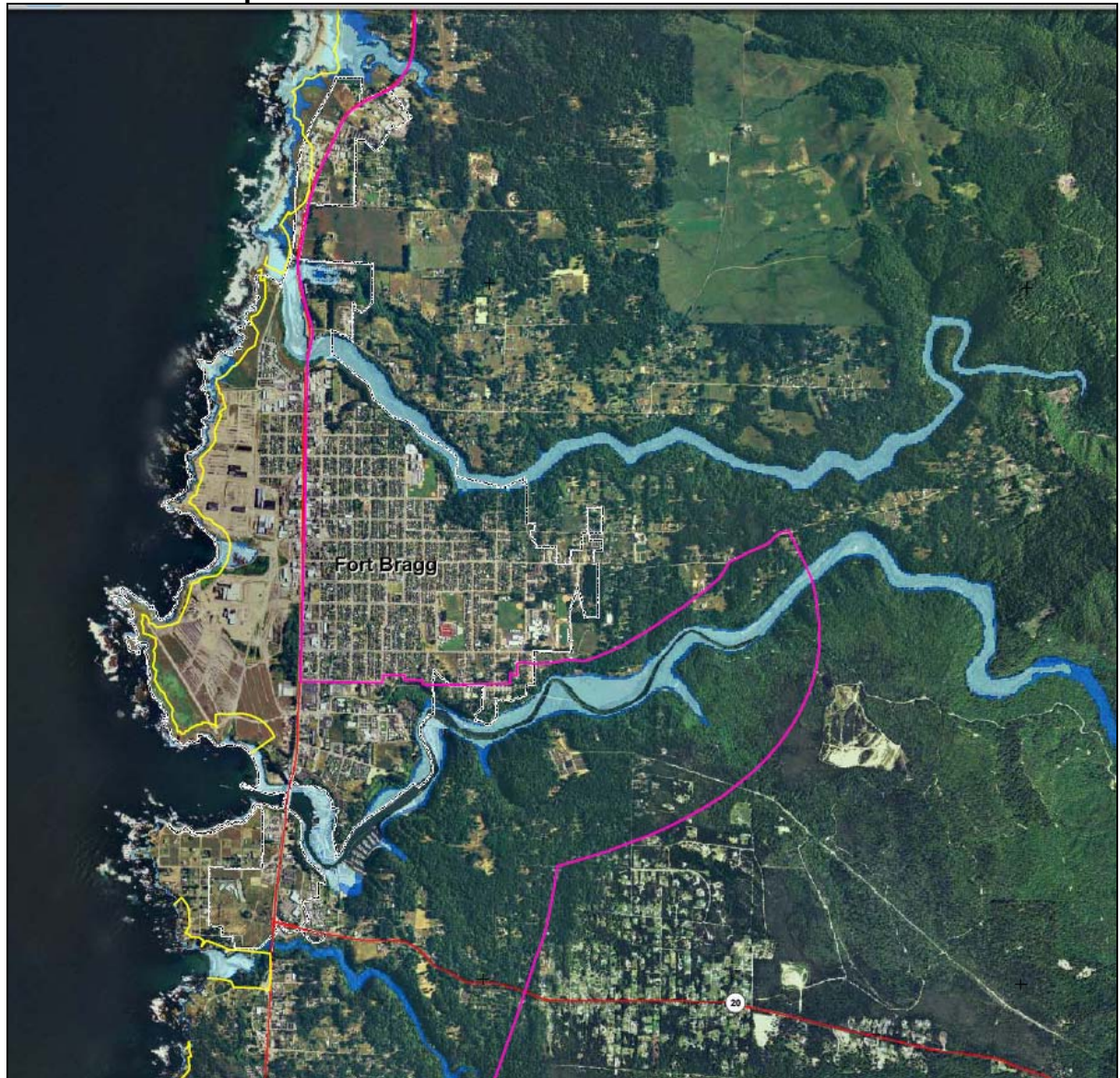
Goal SF-3 Ensure emergency preparedness.

Policy SF-3.1 Coordinate with County: Continue coordination with the Mendocino County Emergency Services Authority.

Policy SF-3.2 Maintain an Updated Emergency Plan: Update the City's *Emergency Operations Plan* as needed to take into account the requirements of the California Emergency Management Systems (SEMS).

Program SF-3.2.1: Establish an emergency evacuation route system that includes standards for street identification, street widths, and grade standards for the evacuation route system.

Map SF-4: 100-Year Sea Level Rise Inundation Area



Interstate	US Highway	State Highway	County Highway	Current Coastal Base Flood (approximate 100-year flood extent)	Sea Level Rise Scenario Coastal Base Flood + 1.4 meters (55 inches)	Landward Limit of Erosion High Hazard Zone in 2100	Coastal Zone Boundary
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Data Sources: US Geological Survey, Department of Commerce (DOC), National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), Coastal Services Center (CSC), Scripps Institution of Oceanography, Philip Williams and Associates, Inc. (PWA), US Department of Agriculture (USDA), California Coastal Commission, and National Aeronautics and Space Administration (NASA). Imagery from ESRI and i-cubed.

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Grid coordinates:
UTM Zone 10N meters
NAD83 GCS degrees

Goal SF-4 Reduce fire hazards.

Policy SF-4.1 Minimize Fire Risk in New Development: Review all development proposals for fire risk and require mitigation measures to reduce the probability of fire.

Program SF-4.1.1: Continue to consult the Fort Bragg Fire Protection Authority in the review of development proposals to identify the projected demand for fire protection services and implement measures to maintain adequate fire protection services. Mitigation measures may include levying fire protection impact fees for capital facilities, if warranted.

Policy SF-4.2 Maintain a High Level of Fire Protection: Work with the Fire Protection Authority to ensure a continued high level of fire protection.

Program SF-4.2.1: Increase water main sizes or loop existing water mains where necessary to provide adequate flows for fire protection. The standard for water flow for fire protection purposes in commercial uses should be a minimum of 1,000 gallons per minute for 2 hours with 20 pounds per square inch residual pressure.

Program SF-4.2.2: Develop a plan to provide sprinklers for commercial structures in the Central Business District. The plan shall include consideration of City funding to construct risers for this area.

Program SF-4.2.3: Work with the Fort Bragg Fire Protection Authority to establish a regular schedule for periodic inspections of commercial and industrial premises by the Fire Prevention Officer.

Policy SF-4.3 Mutual Aid Agreements: Continue to maintain mutual aid agreements.

Program SF-4.3.1: Coordinate equipment use and purchase and inter-agency communications.

Program SF-4.3.2: Continue to coordinate with the Incident Command System (ICS) of Mendocino County.

Policy SF-4.4 Fire Protection Authority Needs: Anticipate the needs of the Fort Bragg Fire Protection Authority.

Program SF-4.4.1: Work with the Fort Bragg Fire Protection Authority to review its long-term fire plan on an annual basis to identify needed capital equipment and staff.

Policy SF-4.5 Vegetation Management: Continue to implement an effective and environmentally sound vegetation management and weed abatement program.

Program SF-4.5.1: Require a landscaping zone system for defensible space around buildings in high fire risk areas.

Program SF-4.5.2: Continue to require weed abatement to reduce the risk of fire. Use mechanical rather than chemical methods wherever possible.

Goal SF-5 Maintain effective police services.

Policy SF-5.1 Demand for Police Services: Review development proposals for their demand for police services and implement measures to maintain adequate police services.

Program SF-5.1.1: Consider the impacts on the level of police services of large development proposals in the environmental review and planning process.

If warranted, mitigation measures may be required that may include the levying of police impact fees for capital facilities, purchasing equipment, and dedication of land for new facilities.

Policy SF-5.2 Shared Resources: Utilize shared resources to improve police response.

Program SF-5.2.1: Periodically review shared use of resources such as communication facilities and joint use of personnel where feasible with the County Sheriff's Department.

Goal SF-6 Maintain an effective medical emergency response system.

Policy SF-6.1 Emergency Medical Response: Ensure that the Fire Protection Authority and the Mendocino Coast District Hospital continue to maintain a high level of emergency medical response.

Program SF-6.1.1: Periodically review the emergency medical response system.

Policy SF-6.2 Support Maintenance of Mendocino Coast District Hospital's Emergency Facilities: Continue to encourage the Mendocino Coast District Hospital to maintain its emergency department and acute care facilities.

Program SF-6.2.1: Maintain ongoing communication with Mendocino Coast District Hospital to identify actions the City can implement to support the Hospital's Emergency Department.

Goal SF-7 Reduce hazards of transportation, storage, and disposal of hazardous materials and wastes.

Policy SF-7.1 Protection from Hazardous Waste and Materials: Provide measures to protect the public health from the hazards associated with the transportation, storage, and disposal of hazardous wastes (TSD Facilities).

Program SF-7.1.1: Continue to ensure that use, transportation, and disposal of hazardous materials are in accordance with the local, State, and Federal safety standards.

Implementation of this program is the responsibility of the Fire Protection Authority.

Program SF-7.1.2: Continue to support and participate in Mendocino County's Hazardous Materials Business Plan which requires all businesses using hazardous materials to list the types, quantities, and locations of hazardous materials with the County's Department of Environmental Health.

Chapter 6.95 of the California Health and Safety Code requires businesses with more than 50 gallons, 500 pounds or 200 cubic feet of hazardous materials to maintain a current Hazardous Materials Business Plan (HMBP). The law provides for the collection of fees to fund the program.

Program SF-7.1.3: Require, as a condition of City approvals of non-residential projects, that the Fire Protection Authority be notified of all hazardous substances that are transported, stored, treated, or could be released accidentally into the environment.

Program SF-7.1.4: Require that applications for discretionary development projects that will generate hazardous waste or utilize hazardous materials include detailed information on hazardous waste reduction, recycling, transportation, and storage, and prepare a plan for emergency response to a release or threatened release of a hazardous material.

Program SF-7.1.5: Revise the Zoning Ordinance to require secondary containment facilities and a buffer zone adequate to protect public health and safety on properties with hazardous materials storage and/or processing activities.

Policy SF-7.2 Support Environmental Review of Hazardous Waste Transportation, Storage and Disposal Facilities: Support a thorough environmental review for Hazardous Waste Transportation, Storage and Disposal (TSD) Facilities, including waste to energy projects, proposed in the Fort Bragg area.

Program SF-7.2.1: Require that the environmental review of proposed Hazardous Waste TSD facilities shall, at a minimum, contain the following analysis and information:

- a) A worst-case generic description, estimating the number, type, scale, scope, location, and operating characteristics of proposed TSD Facility(ies) based on the projected volumes and types of hazardous waste. Data from existing facilities regarding the probability of accidents, spills, and explosions should be documented and included;
- b) An assessment of risk resulting from the accidental release, fire, and explosion of hazardous waste. This assessment should take into account all phases of operation including transport, storage, and treatment. The assessment of risk should include the probability of occurrence and magnitude of impact;
- c) Quantify estimates of air emissions, by applying emissions rates of existing facilities to the future volumes of hazardous waste and identifying emissions for incinerator facilities under worst case circumstances;
- d) An assessment of non-incineration alternatives for hazardous waste treatment such as chemical dechlorination for the detoxification of PCBs, dioxins, solvents, and pesticides; photolysis; and biological treatment;
- e) Review of the operating characteristics of proposed TSD facilities, taking into account maintenance and operating procedures, emissions monitoring, and safety devices to assure the ongoing enforceability of the mitigating measures that are required.

Goal SF-8 Minimize community exposure to electromagnetic fields (EMFs).

Policy SF-8.1 Consider EMFs in Land Use Decisions: Consider information regarding EMF radiation from existing and new electrical transmission lines and substations in making land use decisions.

Program SF-8.1.1: Request that PG&E or other electrical energy distributors provide information on renovation to existing and proposed new electrical transmission lines and substations. Request that information on the EMF radiation levels for proposed new facilities be provided.

Program SF-8.1.2: Request that PG&E or any other electrical energy distributor provide a full and public disclosure of existing electrical transmission lines and existing and proposed facilities with their anticipated EMF levels within the Fort Bragg Planning Area.

Program SF-8.1.3: Require that all new electrical transmission projects and facilities have an EMF mitigation plan as part of the project's environmental review.

Policy SF-8.2 Siting of Schools and Other Sensitive Uses: Minimize and reduce EMF radiation levels near sensitive uses such as schools, hospitals, and playgrounds.

Program SF-8.2.1: Work with the School District to continue enforcement of California State Board of Education regulations requiring that new schools be sited at least 100 feet from the edge of the right-of-way of 100-110 kV lines; 150 feet from 220-230 kV lines; and 250 feet away from 345 kV lines.

