

Hazards

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Hazards



This chapter addresses potential hazards associated with development and future use of certain portions of the Plan Area, including the overall regulatory context, hazardous materials remediation, and specific land use and other restrictions. This chapter also addresses tsunamis, bluff retreat, and storm surge hazards.

6.1 Site Remediation

6.1.1 REGULATORY CONTEXT

The Plan Area is under an Imminent and Substantial Endangerment Consent Order (Docket No. HAS-RAO 06-07-150) issued in February 2007 by the Department of Toxic Substances Control (DTSC). The order required remedial actions be taken consistent with the requirements of Chapter 6.8 (commencing with Section 25300), Division 20 of the California Health and Safety Code and other applicable state or federal statutes and regulations.

The City of Fort Bragg Redevelopment Agency authorized the use of the Polanco Redevelopment Act (California Health and Safety Code Sections 33459-33459.8) for the Plan Area. The Redevelopment Agency and DTSC have concurrent oversight obligations under their respective statutory authority. The Polanco Redevelopment Act provides subsequent property owners with immunity from responsibility for any ongoing cleanup requirements associated with existing site contamination.

Georgia-Pacific has investigated certain parts of the Plan Area since 2003. Georgia Pacific's objective has been to comply with requirements of the Imminent and Substantial Endangerment Consent Order "...to identify immediate or potential risks to public health and the environment and prioritize and implement response actions using removal actions and operable units, if appropriate, based on the relative risks at the site."

The North Coast Regional Water Quality Control Board (RWQCB) is also responsible for protecting existing and potential beneficial uses of water resources, including groundwater and surface water, and determining applicable remedial action objectives. The RWQCB considers the potential beneficial use of the aquifer under the Plan Area. Therefore, the RWQCB has mandated that "drinking water standards or more conservative values determined by a Risk Assessment shall be remedial action objectives for this Site" even though groundwater at the site is not planned for potable uses, and Georgia-Pacific intends to establish a deed restriction prohibiting the domestic use of groundwater for the entire Plan Area.

Other "applicable or relevant and appropriate requirements" (ARARs) and "to be considered" (TBC) factors include the following:

Standard, Requirement, Criterion, Limitation	Citation	Description
Federal		
RCRA	40 CFR Part 261 42 USC §6901 et.seq.	Establishes criteria to determine whether solid waste exhibits characteristics that make it a regulated hazardous waste.
Maximum Contaminant Level - Safe Drinking Water Act	40 CFR Part 141 USEPA, 816-F-03-016, June 2003 42 USC §300f	National Primary Drinking Water Standards
Risk Assessment Guidance for Superfund; Ecological Risk Assessment Guidance for Superfund; Ecological Screening Levels	USEPA, 1989, 1997, 2005	Guidance and framework to assess human and ecological risks.
State and Local		
Title 22, California Hazardous Waste Control Act of 1972 Health & Safety Code Chapter 6.5	22 CCR 66260.1 et seq.	Establishes criteria for determining waste classification for the purposes of transportation and disposal of wastes.
	22 CCR 66262.1 et seq.	Establishes standards applicable to generators of hazardous waste.
	22 CCR Chapter 18	Identifies hazardous waste restricted from land disposal unless specific treatment standards are met.
Water Quality Control Plan for the North Coast Region	RWQCB, 2007	Identifies the beneficial uses of water in the region's water quality objectives.
Discharges of Hazardous Waste to Land – California Water Code §13142, 13260, 13263	Title 23, California Code of Regulations, Division 3, Ch. 15	Applies to discharge of waste.
Porter Cologne Water Quality Control Act	Cal. Water Code, Division 7, Section 13000 et seq.	Establishes water quality and beneficial uses to protect both groundwater and surface water quality.
Requirements for Substances Deleterious to Fish and Wildlife	California Fish and Game Code Section 5650	Makes it unlawful to deposit into, permit to pass into, or place where it can pass into the waters of the state certain specified pollutants.
Relevant Policies for the Protection and Conservation of Fish and Wildlife	California Fish and Game Code Section 2014	Requires conservation of natural resources and prevention of the willful or negligent destruction of birds, mammals, fish, reptiles, or amphibia.
	California Fish and Game Code Section 1600	Establishes protection and conservation of fish and wildlife resources.

Safe Drinking Water and Enforcement Act of 1986 ("Proposition 65")	22 CCR Section 12000 et seq.	Prohibits discharge of listed chemicals into a source of drinking water and requires that a reasonable warning be given to individuals who may be exposed to listed substances at levels posing an unacceptable risk.
SWRQB Resolution 88-63		Addresses Beneficial Uses of surface water and groundwater.
Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304	SWRQB Resolution No. 92-49	Establishes investigation, cleanup, and abatement policies and procedures for cleaning up discharges that affect or threaten to affect waters of the state.
Non-Degradation Policy	SWRCB Resolution 68-16	Promulgated state policy addressing water quality objectives for waters of the state.
Public Health Goals	HSC Sec. 116365	Health-based drinking water standards.
Water Quality Goals	RWQCB, February 2005	Compilation of water quality goals that may be applicable to waters in California.
Remedial Action Plan Policy	EO-95-007-PP	Guidance and framework to develop a Remedial Action Plan.
Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities; Guidance for Ecological Risk Assessment at Hazardous Waste Sites and Permitted Facilities	CalEPA, 1992 CalEPA, 1996	Guidance and framework to assess human and ecological risks.
California Human Health Screening Levels	CalEPA, 2006	Risk-based concentrations for human receptors that are intended to assist risk assessors and others in initial screening-level evaluations of environmental measurements.

- CalEPA – California Environmental Protection Agency
- SWRCB – State Water Resources Control Board
- CCR – California Code of Regulations
- CFR – Code of Federal Regulations
- HSC – Health and Safety Code
- USEPA – United States Environmental Protection Agency
- RCRA – Resource Conservation and Recovery Act
- RWQCB – Regional Water Quality Control Board

6.1.2 REMEDIATION OF THE PLAN AREA

The Imminent and Substantial Endangerment Consent Order breaks down the cleanup of the site into five geographic areas called Operable Units (OU-A, OU-B,OU- C, OU-D, and OU-E) (see Figure 6-1). The status of each OU is as follows:

- Investigation and remediation work was completed for OU-A and OU-B in 2008.
- For OU-A, remediation was conducted to be protective of a passive recreational use, and a land use covenant (LUC) is in place to prohibit sensitive uses on portions of the OU. OU-A is being developed by the City of Fort Bragg as a component of the local Coastal Trail. OU-A received a “no further action” determination from DTSC in December 2009.
- OU-B received a “no further action” (NFA) determination from DTSC in 2011.¹
- OU-C and OU-D were subdivided into 31 Areas of Interest (AOIs) for the investigation (see Figure 6-1). The investigation identified a number of areas that qualify for a NFA determination from DTSC, as shown in Figure 6-2. These areas can be developed in accordance with the land use designations described in Chapter 2, with no further remedial actions required.

The remaining areas of OU-B and OU-C require remedial planning and, in some areas, remediation. The remedial action plan (RAP) will provide for remediation of the site to accommodate the future uses identified in the Specific Plan. Some areas will require specific land use restrictions as outlined in Figure 6-3 (forthcoming).

- OU-E is under investigation, and several areas, including soils in the OU-E lowland area and sediments in some of the ponds, will likely require remedial action. OU-E will be remediated to support passive recreational use and wetland restoration as discussed in Chapter 5, as well as the removal of the Mill Pond dam spillway, cribwall, and north wall as required by the Department of Safety of Dams (DSOD) (DSOD, 2010). In 2010, DSOD determined that the dam is not seismically sound and should be removed by the end of 2015.

¹ The areas that are suitable for an NFA will have no land use restrictions that affect future development.

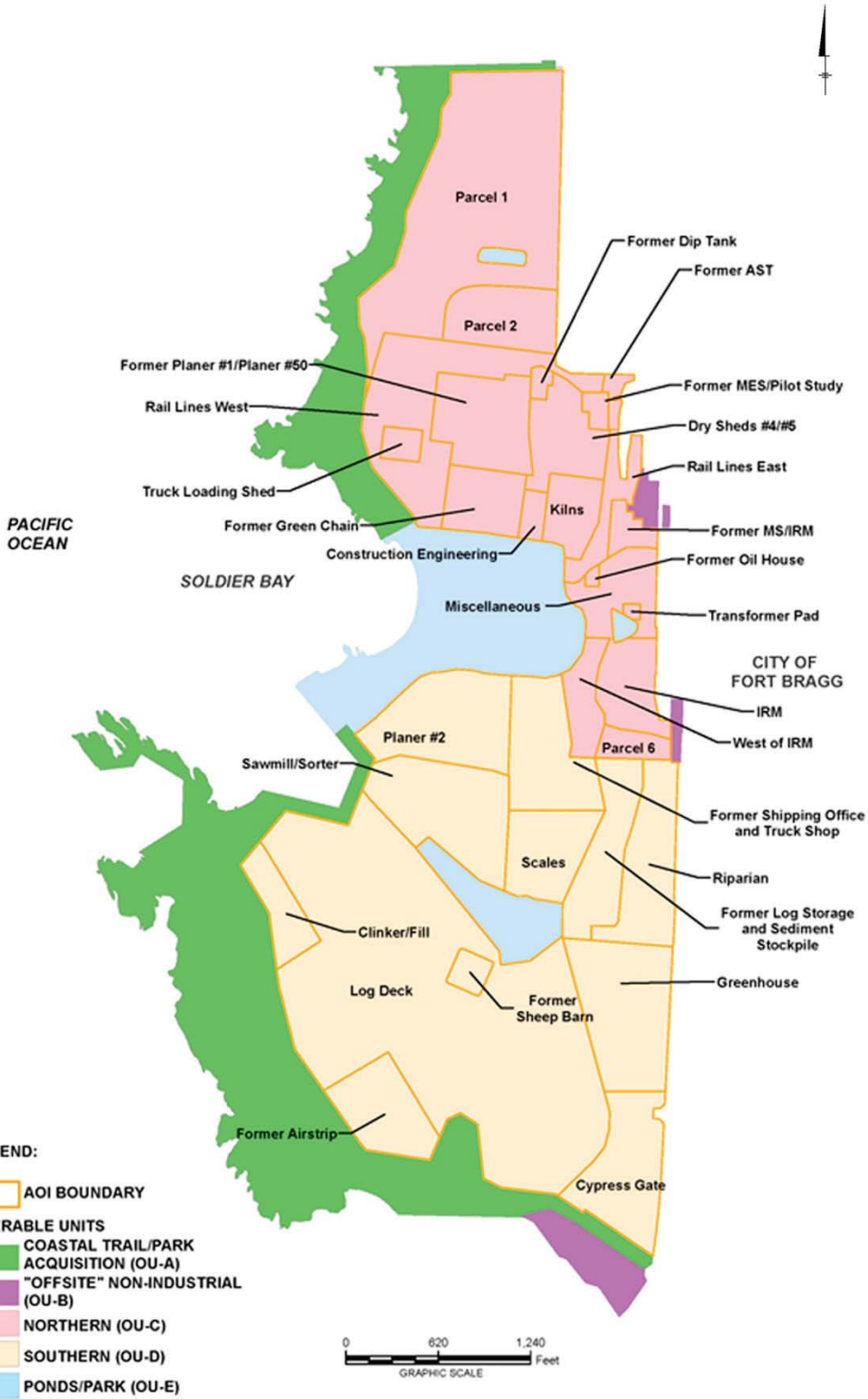


Figure 6-1 Mill Site Operable Units

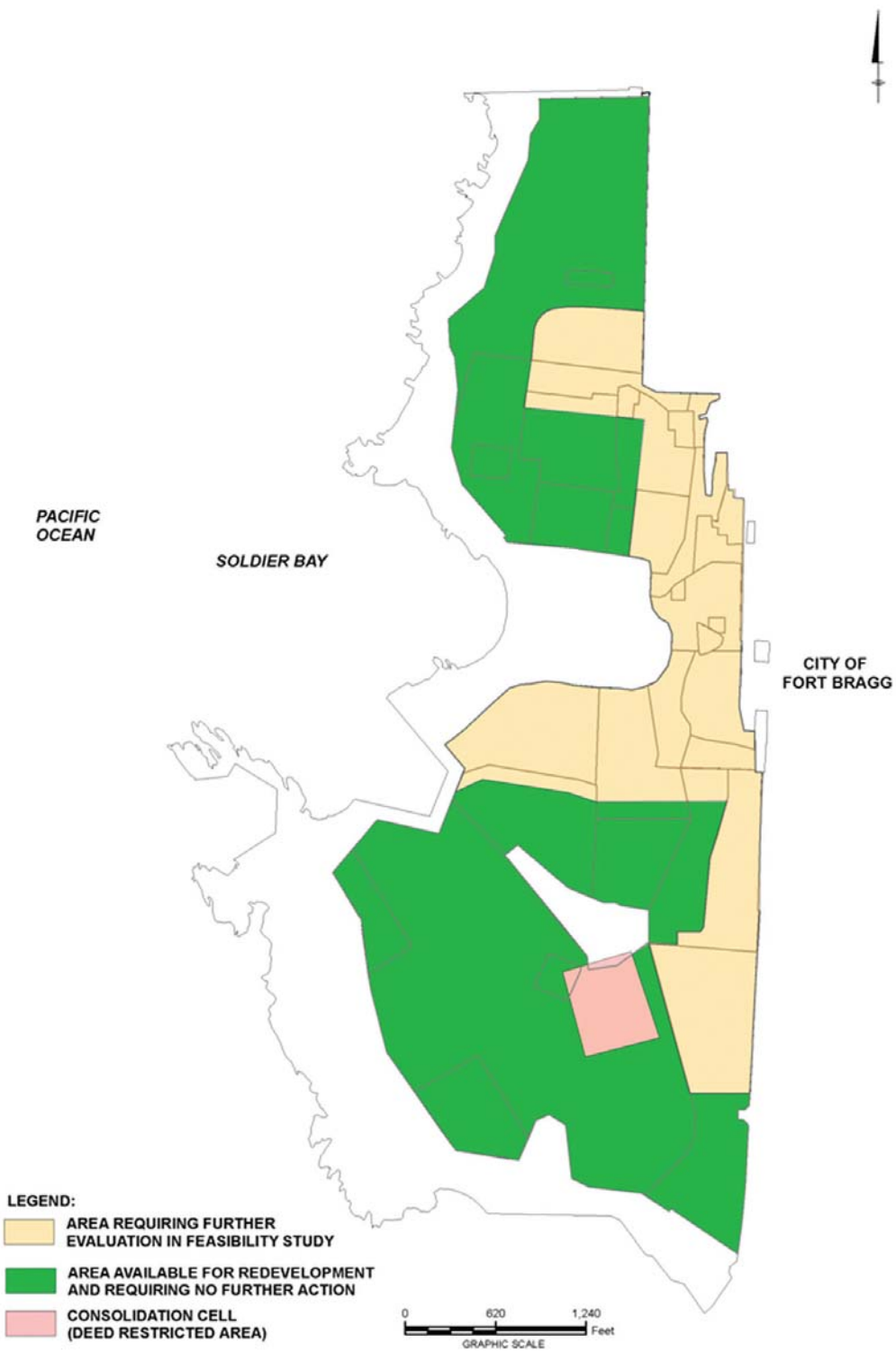


Figure 6-2 Areas of Investigation

6.1.3 GENERAL REQUIREMENTS AND RESTRICTIONS ASSOCIATED WITH AREAS WITH LAND USE CONTROLS

The areas that require remediation will be primarily remediated to unrestricted land use and are not expected to have land use restrictions following implementation of the remedial action, with the exception of the following locations, which likely will be subject to a land use covenant (LUC):

- Central District.** Areas within the Central District, generally within OU-C shown in Figure 6-4 in cross hatch are affected by off-site contamination that provides an unacceptable risk via inhalation of indoor air (vapor intrusion). Future development in these areas will need to consider the level of soil vapor risk present at the time of redevelopment. Mitigation measures such as vapor barriers may be needed, and residential uses on the first floor are not appropriate.
- Coastal Trail.** The land use controls developed for OUA are applicable to the coastal bluff areas in both the Northern and Southern Districts. The LUC prohibits residences, hospitals, schools, and day care and recreation areas for children. The LUC also prohibits any disturbance of soil without a Soil Management Plan (SMP) approved by DTSC in advance of disturbance.
- Other Areas.** Other areas of the site could be subject to use restrictions and a LUC/O&M (Land Use Controls Operation and Maintenance) agreement if remedial actions cannot feasibly remediate the areas to unrestricted use levels (considering technology limitations and cost-effectiveness). Restrictions will be identified as institutional controls in the remedial planning and certification documents for each OU, as appropriate. Further, land use controls will be included for each area in the Coastal Land Use and Development Code to ensure that they are implemented as required.

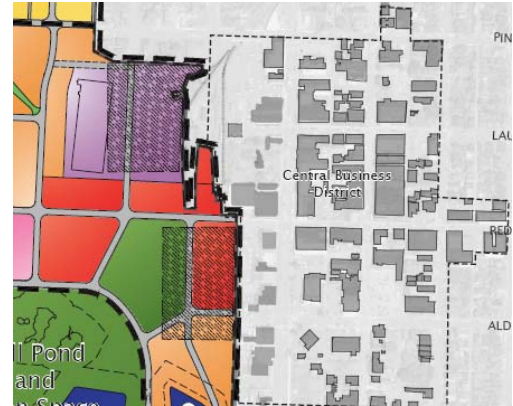


Figure 6-4: Areas subject to land use covenants

An Soil Management Plan (SMP) will likely be necessary for several areas of the site, particularly where some level of contamination remains in place following implementation of the remedial action and in areas where foundations are currently present. The SMP will describe measures to be taken in the event of soil disturbance. These measures could include soil sampling, comparison of soil data to applicable action levels, and subsequent management of soils if samples are found to be above the action levels. The SMP will also provide information regarding appropriate worker protection during construction activities (i.e., personal protective equipment requirements).

The SMP will be provided to all developers, and it will identify those areas where construction and/or landscaping installation and maintenance restrictions are applicable. The SMP will provide the basis for preparation of site-specific construction worker health and health and safety plans. It is anticipated that the SMP will be finalized following completion of the remedial actions for OU-C, OU-D, and OU-E in 2015.

The potential exists for development to begin in the Plan Area before 2015. Figure 6-5 (to be added) provides a current depiction of those areas of the site that are subject to LUCs, may still require remedial action, or contain existing foundations. Until the SMP is finalized, Figure 6-5 will provide the basis for communicating potential hazards that could lead to land use restrictions or require the implementation of a worker health and safety program.

To ensure the health and safety of residents, workers, and visitors within the Plan Area, the following policies have been developed.

Remediation Hazards Policies:

Policy HAZ-1. Deed Restriction. *Georgia-Pacific shall establish a deed restriction prohibiting the domestic use of groundwater for the entire Plan Area.*

Policy HAZ-2. Soil Management Plan. *A Soil Management Plan (SMP) shall be prepared for the site to document environmental conditions in areas that are not remediated to an unrestricted use level and/or where foundations remain. The SMP shall be updated as additional information is discovered and shall provide the basis for the following:*

- *Identifying potential hazards related to geologic and soils conditions during review of development applications;*
- *Identifying areas with potential soil vapor issues and formulating specific restrictions, measures, and procedures to follow within these areas;*
- *Identifying potential hazards related to soil disturbance, including excavation, construction, and landscaping;*
- *Mapping all land use covenants (LUCs) within the Plan Area and identifying development restrictions*

Policy HAZ-3. Worker Health and Safety: *The Soil Management Plan (SMP) shall be provided to all project developers within the Plan Area. Where applicable, the developer's general contractor shall prepare a construction worker and landscape worker health and safety plan containing worker health and safety requirements based on the level of remediation already performed in each project area and any unknown conditions identified in the SMP (e.g., remaining foundations). The SMP shall be reviewed and approved by the Department of Toxic Substances Control (DTSC).*

Policy HAZ-4. Timing of Development. *Development shall be consistent with relevant existing, ongoing, and future remedial actions and associated land use covenants (LUCs). Development may proceed at locations subject to LUCs and Soil Management Plan (SMP) controls only after all required remedial actions specified by the Department of Toxic Substances Control (DTSC) and/or the Regional Water Quality Control Board (RWQCB) have been completed and approved by DTSC.*

Policy HAZ -5. Land Use Covenants. *Land use covenants shall be included for each restricted development area in the related Coastal Land Use and Development Code sections.*

Policy HAZ-6. Groundwater. *The City's Coastal Land Use and Development Code shall identify and map shallow groundwater table conditions and prohibit groundwater use for residential, commercial, and industrial uses and landscape irrigation.*

6.2 Coastal Hazards

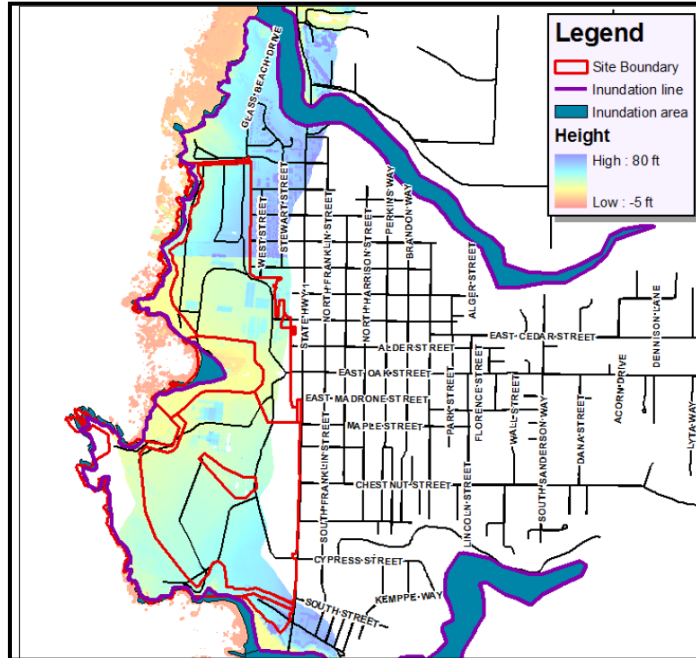
As a coastal site, the Plan Area could be affected by tsunamis, bluff erosion, and storm surges more than other areas of Fort Bragg. However the 92-acre Coastal Trail property provides more than a 100-year buffer of protection from coastal bluff erosion between the Plan Area and coastal bluffs, which will help protect development from bluff erosion). The Coastal Trail property would likewise protect development in the Plan Area from storm surge. Thus, tsunamis are the only remaining coastal hazard for the Plan Area.

A tsunami study was prepared for the Plan Area. The study's conclusions were as follows:

Most parts of the coastline in front of Fort Bragg are protected by sea cliffs and will not flood from a tsunami. Soldier Bay is the most at-risk area for flooding and could see waters reaching 500 feet inland. Parts of Soldier Point could also flood, but the steep cliffs would keep waters from flowing very far onshore. The northern beach of Noyo Bay would also see inundation, with potential risk similar or increased to damages that have been observed historically. Future sea level rise may increase this risk as well. Figure 6-6 illustrates some of the areas that would be most affected by flooding.

Tsunami inundation would most likely not reach the Mill Site. Within the site, the coastal trail and parkland area would be the most at-risk lands. Some of the ponds inland of Soldier Bay could also flood as well. Erosion should be expected in the event of a tsunami, although further modeling is necessary for specific locations and distances.

The City of Fort Bragg existing Local Coastal Program includes policies which require development to: 1) either not be sited in tsunami inundation areas ;or 2) be designed to withstand tsunamis (see Policy SF-2.5). As shown in Figure 6-6 the Tsunami run up area is relatively small and impacts the mill pond complex open space, which permits very limited development.



Tsunami Policy

Figure 6-6 Tsunami Inundation Area

Policy HAZ-7. Limit Development in Tsunami Inundation Areas. Limit uses and development in the Tsunami Inundation Area to those that support passive recreation and open space only.

6.3 Emergency Preparedness

Emergency Preparedness Policies:

Policy HAZ-8. Emergency Operations Plan. The Plan Area shall be incorporated into the City's Emergency Operations Plan.