6 CONSERVATION, SAFETY, AND NOISE

This chapter establishes goals and policies for the conservation of natural and cultural resources, and for the protection of the community from hazards and excessive noise. While there are many benefits to the compact, mixed use nature of the city, it presents challenges in addressing safety and noise concerns that are not as apparent in cities where potentially harmful activities and residents are separated.

Preserving environmental resources—by maintaining water and air quality, and protecting plant and wildlife habitat—is critical given Emeryville's urban setting and limited open space. Preserving the City's many cultural and historic resources can help further the City's identity. Encouraging developers to renovate existing structures preserves the City's heritage, while reducing environmental impacts of demolition and new construction.

Health and safety issues stem from Emeryville's location within an earthquake-prone region, noise and pollution from highway and rail systems, and hazardous materials from historic industrial activities. Reducing risks associated with these potential hazards—by ensuring emergency preparedness, enforcing building codes, and continuing the City's brownfield remediation program—will create a safer, more livable community. (Note that police, fire, and emergency services are described in Chapter 4: Parks, Open Space and Public Services.)

Noise has an important effect on human habitation, health, and safety. Transportation systems, such as Interstate 80 and the railroad provide great accessibility from Emeryville to other points in and outside the Bay Area, but they also create noise and pollution. This chapter identifies implementing policies, such as appropriate building siting and materials, to lower the risk to human health.

6.1 CONSERVATION

Air Quality

See also Chapter 7: Sustainability for policies related to greenhouse gas emissions and climate change.

While air quality is largely a regional issue, the land use, circulation, and growth decisions made by local communities, such as Emeryville, affect regional air quality. Air quality in Emeryville is generally good due to clean air blowing off the ocean and San Francisco Bay. However, areas of Emeryville along major thoroughfares, such as Interstate 80 and San Pablo Avenue, experience relatively higher pollutant concentrations due to heavy traffic volumes. A 2004 inventory of greenhouse gas emissions showed that the transportation sector in Emeryville was the greatest contributor, with 49% of the total, while the commercial/industrial sector was responsible for 43%. The residential sector and waste sectors represented the smallest share of greenhouse gas emissions, with 5% and 3% of the total, respectively.[1] (See Section 7.3 of Chapter 7: Sustainability for a more detailed description of greenhouse gas emissions.)

Bay Area Air Basin

Emeryville is located in the central portion of the Bay Area Air Basin, which includes most of the nine-county Bay Area. Air basin quality is monitored by the Bay Area Air Quality Management District (BAAQMD), which operates a regional network of air pollution monitoring stations to determine if the national and State standards for criteria air pollutants and emission limits of toxic air contaminants are being achieved. The Bay Area is considered in attainment status for

1 *City of Emeryville Greenhouse Gas Emissions Analysis, July 2008.*

all national standards, except for ozone. It is in nonattainment status for State standards for ozone and particulate matter. As of 2008, BAAQMD was beginning to prepare the 2009 Bay Area Clean Air Plan in accordance with the requirements of the California Clean Air Act. The Plan will address the impacts of ozone control measures on particulate matter, air toxics, and greenhouse gases in order to implement feasible measure to reduce ozone. The Clean Air Plan will also establish emission control measures.

Toxic Air Contaminants

Toxic air contaminants are airborne substances capable of adversely affecting human health effects. They are emitted from a variety of common sources, including gasoline stations, automobiles, dry cleaners, industrial operations, and truck, train, and automobile traffic. Future development under the General Plan could result in sensitive receptors (e.g., residents, open space users) being located near these sources. Working with the Bay Area Air Quality Management District, the City can help to manage air pollutants. Moreover, the City can reduce exposure to sensitive receptors through regulations in the Zoning Ordinance.

Water Supply and Quality

The East Bay Municipal Utility District (EBMUD) supplies water and wastewater treatment services to the City. The primary source of fresh water comes from the Sierra Nevada mountain range, via the Mokelumne Aqueduct. Although EBMUD adopted a long-term program to reliably provide water through 2020, various events—such as earthquakes, drought, contamination, fires, and levee failure—may disturb the availability and reliability of water from the Mokelumne River and watershed runoff. In response to such potential hazards, EBMUD prepared an Urban Water Management Plan (UWMP) which consists of supplemental water supply, banking, conservation, and watershed improvement to help accommodate existing and future demand within EBMUD's ultimate service boundary. EBMUD also participates in transfer and exchange programs with other Bay Area water districts to establish cooperation agreements for times when primary water sources prove unreliable.

EBMUD also supplies recycled water, which, as a result of treatment of wastewater, is suitable for direct beneficial use or controlled use that would not otherwise occur. Emeryville has a Recycled Water Ordinance, requiring residential developments that require subdivisions and buildings with over 100,000 square feet of non-residential development to install a parallel water supply system for elements such as parks, greenbelts, landscaped streets or medians, and any other use that does not require potable water. The goal of using recycled water is to save high-quality water to meet annual potable water needs. Recycled water reduces the demand for EBMUD's potable water supplies, and thus delays or eliminates the need for more potable water facilities, sustains the economy with increased water supply reliability, protects the San Francisco Bay by reducing treated wastewater discharge, and stretches the high-quality potable water supply during times of prolonged drought or disaster.

Water Conservation

Similar benefits to quality and supply of water can also be achieved through conservation efforts. EBMUD has adopted water conservation programs to address both water supply and demand. Demand-side water conservation programs are intended to reduce overall consumption of the water supply through free water audits, rebates and other incentives, regulations, education, and supporting activities to reduce consumption. EBMUD's supply-side conservation measures are directed toward increasing water use efficiency

Pollution from industrial, transportation and other sources can be mitigated to reduce harmful impacts at the local level.

In wet weather, stormwater flows off of impermeable surfaces (buildings, parking lots, streets) and into Temescal Creek and the Bay, picking up particulate and debris along the way.

before or after customer use. These strategies include improvements within EBMUD's distribution system (i.e. leak detection, pipe replacement, and corrosion control) and water recycling programs.

The City can build on these conservation efforts through the development and permitting process. Cisterns can be integrated into building design or rainwater barrels installed post-occupancy in order to capture rainwater and use it for non-potable water needs (e.g. toilet flushing and irrigation). Graywater — water that comes from sinks, showers, and washing machines — may be reused on-site to flush toilets and irrigate non-edible landscape plants. These efforts decrease potable water consumption, while also reducing stormwater runoff. Green roofs can be installed on rooftops, creating many advantages over traditional roofs, such as taking on stormwater, providing a public amenity, and reducing energy consumption and costs.

Surface Water Quality and Pollution

The City of Emeryville lies in the Central Basin within the San Francisco Bay hydrologic region. Although topography is generally flat, the city's elevation ranges from 0 to 60 feet above mean sea level and slopes slightly to the west toward the Bay—the major receiving water body. The other surface water feature in the city is Temescal Creek, which flows west from the East Bay Hills into San Francisco Bay. Historically, Derby Creek also flowed through the city but has been incorporated into the storm drain system. The portion of the Bay near the city is affected by several drainage outlets that include a storm sewer outfall south of the Emeryville Peninsula, a wastewater treatment outfall in the southern portion of Emeryville Crescent in Oakland, and Temescal Creek.

Urban stormwater runoff is a major source of nonpoint water pollution. As a largely urbanized city, Emeryville has a high proportion of impermeable surfaces. Pollutants such as suspended solids, heavy metals, and nutrients are often found in samples of urban stormwater runoff. The pollutants are deposited onto street surfaces and washed into receiving waters. Along the shoreline, nonpoint pollution is caused by overland stormwater flow and urban runoff from dredging activities, marine vessel waste, sediments, sand, industrial fuels, equipment and other operations, infiltration from sewer system, accidental spills of hazardous materials, and construction activities. A further discussion of flooding and drainage, including Emeryville's participation in the National Pollutant Discharge Elimination System permit process, is described in Section 6.4 of this chapter.

Future Demand

EBMUD's service area within Alameda County currently reaches approximately 489,000 customers—including the residents of Emeryville—and is projected to serve nearly an additional 100,000 people by the year 2030. Water consumption within the EBMUD service area has remained relatively level in recent years, despite continuing account growth.

A 2000 study, *Districtwide Update of Water Demand Projections*, projected EBMUD's current water demand for 2005 as 222 millions of gallons per day (mgd) with a total of 391,216 accounts. The study then foresaw development activities in places like Emeryville and throughout the East Bay, pushing demand to reach 281 mgd to 451,689 accounts by the year 2030. However, the total demand figure for 2030 is expected to be reduced to 232 mgd after conservation projects and recycled water programs are implemented.

Although EBMUD's current water supply is sufficient to meet demand during normal years, it is insufficient to meet customer demand in the case of a multi-year

drought, despite its aggressive conservation and water recycling efforts. EBMUD will inevitably face water supply shortages during extended periods of drought, but additional supplemental supply projects currently underway will significantly reduce the severity and frequency of customer rationing.

Habitat

The majority of Emeryville is developed with few open spaces and very little of the native habitat remains.

Sensitive Habitat Areas

The southwestern portion of Emeryville, along the shoreline west of Interstate 80, is known as the Emeryville Crescent and is one of the city's most valuable biological resources. This area is considered a sensitive habitat. Northern Coastal Salt Marshes occur along the shoreline of the Bay that is sheltered from excessive wave action. They support a high amount of vegetation such as cordgrass, pickleweed, eelgrass and saltgrass. The Emeryville Crescent region provides food, cover, nesting and roosting habitat for a variety of wildlife species.

Special Status Species

Searches of the California Natural Diversity Database (CNDDB), California Native Plant Society Electronic Inventory, U.S. Fish and Wildlife Service website species list, and California Department of Fish and Game were used to determine the known and potential presence of species of special concern within the Emeryville area. According to the CNDDB there are five special status wildlife species and seven special status plant species that have the *potential* to occur within Emeryville. These species, along with their scientific names, habitat needs and observed locations are described in Table 6-1. Additional species that have the potential to occur in the city include: Coopers Hawk, Sharp-shinned Hawk, and the Peregrine Falcon.

TABLE 6-1: Federal or State Listed Species and Other Species of Concern

Common Name	Scientific Name	Habitat Needs	Location Notes
California clapper rail	*Rallus longirostris obsoletus*	Nests and forages in emergent wetlands with pickleweed, cordgrass, and bulrush	Observed in Emeryville Crescent Marsh near Bay Bridge toll plaza in several recent surveys
California black rail	*Laterallus jamaicensis coturniculus*	Nests and forages in tidal emergent wetland with pickleweed and cordgrass	Recently observed in the Emeryville Crescent marsh
salt marsh harvest mouse	*Reithrodontomys raviventris*	Saline emergent marsh with dense pickleweed	Observed in Emeryville Crescent Marsh near Bay Bridge toll plaza in several recent surveys
tidewater goby	*Eucylogobius newberryi*	Shallow waters of bays and estuaries	Record in Berkeley's Aquatic Park; potential habitat in Emeryville Crescent
Santa Cruz tarplant	*Holocarpha macradenia*	Coastal scrub, coastal sand dunes, openings in oak woodlands with sandy or gravelly soil	Historical records in Emeryville area; likely extirpated
white tailed kite	*Elanus leucurus*	Nests near wet meadows and open grasslands, dense oak, willow or other large tree stands.	Recent record in Berkeley meadow (on Berkeley marina peninsula)
northern harrier	*Circus cyaneus*	Mostly nests in emergent vegetation, wet meadows or near rivers and lakes, but may nest in grasslands away from water	Recent record in Berkeley meadow (on Berkeley marina peninsula)
alkali milk vetch	*Astragalus tener var. tener*	Alkali flats and vernal pools in valley grasslands	Historical record in Oakland near Emeryville; habitat likely gone
round leaved filaree	*California macrophylla*	Clay soils in cismontane woodland and valley and foothill grassland	Historical records in Oakland
San Francisco spineflower	*Chorizanthe cuspidata*	Alkali flats and vernal pools in valley grasslands	Historical record West of Lake Merritt in Oakland
Kellogg's horkelia	*Horkelia cuneata ssp. sericea*	Closed-cone coniferous forests, coastal scrub	Historical records in East Bay
Point Reyes birds beak	*Cordylanthus maritimus ssp. palustris*	Upper zones of coastal salt marsh	Historical record on Emeryville/Berkeley shoreline

Source: California Department of Fish and Game, 2008; California Native Plant Society, 2005; United States Fish and Wildlife Service, 2005, Environmental Sciences Associates, 2008.

The city's historic resources include the Remar Bakery building (top), now residential units; PG&E North (center); and Old Town Hall (bottom).

Almost all the plant species' records are historical, meaning found around the turn of the century before the heaviest urbanization in the area. All of the species with historical records are likely gone and most of their habitat is marginalized or eliminated. However, there could still be some small habitat patches in Emeryville.

Cultural Resources

Emeryville's cultural resources provide a link to the people and the cultures of the past and enrich sense of community, heritage, and identity. Cultural resources include both prehistoric and historic-period archaeological resources, as well as historic and architectural resources.

Archeological Resources

The Ohlone Indians and their ancestors were the first inhabitants of the San Francisco Bay. Ohlone settlements tended to be situated where freshwater creeks entered the Bay along its original shoreline edges. Remnants from the pre-Ohline occupation include the numerous shellmounds or shell middens found along the Bay shorelines. One of the largest shellmounds in the Bay Area was the Emeryville Shellmound which was estimated to have been 1,000 feet long, 300 feet wide, and 22 feet high located east of Interstate 80 in the vicinity of Temescal Creek.[2] Three major excavations of the shellmound conducted since 1902 have indicated that the resource included artifacts, immense quantities of animal remains, grave goods, and burials, indicating that the site had been occupied for a 2,500 year period between circa 500 B.C. to circa AD 1700.[3] In addition to the Emeryville Shellmound discussed above, four other recorded sites are directly or indirectly associated with this site. There are also 18 recorded historic-era archaeological sites in the city, comprised primarily of the remains of historic-era industrial buildings. This includes the former Bruener's Warehouse.[4]

Historic Resources

Emeryville has a concentration of recorded and potential historic resources in the Park Avenue District, as shown in Figure 6-1 and Table 6-2.

Recorded Historic Resources

The Caltrans Environmental Impact Report for the Cypress Freeway project identified the Emeryville Historic Industrial District developed primarily between 1907 and 1930 with manufacturing and warehouse facilities. The district was constructed predominantly of brick with Classical architectural details. Of the 29 buildings included in the district, 23 are considered contributory resources. Nineteen district contributors still exist. The Emeryville Historic Industrial District is considered to be eligible for listing in the National Register of Historic Places (National Register) and was therefore automatically included in the California Register of Historic Resources (California Register) in 1990. Two historic resources in Emeryville have gone through the process to be listed in or determined eligible for listing in the National and California Registers as individual resources. These are: the former Remar Bakery (Bakery Lofts) located at 1010 46th Street ("D" on Figure 6-1), and a private residence at 3604 Adeline Street ("E" on Figure 6-1).

2 *Site designator for the identified cultural resource, as listed on file at the Northwest Information Center, Sonoma State University.*

3 *Background history adapted from* Images of America: Emeryville. *Emeryville Historical Society. San Francisco, CA: 2005.*

4 *Northwest Information Center (NWIC), Letter re: Record Search Results for the Proposed Emeryville General Plan and EIR. File No. 05-140. August 16, 2005.*

Recognizing the buildings along Park Avenue and immediate environs as the historic center of Emeryville, the City adopted an area plan for the Park Ave district in August 2006. The City's Park Avenue Overlay District designates 43 buildings as architecturally significant. (See Cultural and Architectural Resources below.) Many, but not all of the buildings designated in the Park Avenue Overlay District are also contributors to the National Register-eligible Emeryville Historic Industrial District. The Historic District also identifies contributors in the Park Avenue District that are not designated by the Park Avenue District Overlay.

Potential Historic Resources

The City also recognizes that there are several areas and structures with local historical and/or architectural merit which characterize the City's heritage. While most of these buildings have not been officially designated as federal, state, or local historic resources, many of these and other properties would likely be determined eligible for listing as official historic resources upon further review and analysis. For example, Emeryville contains numerous buildings and structures that are more than 45 years old (constructed before 1960). Upon further review and evaluation, and depending on their physical integrity, many of these older buildings may be eligible a federal, state, and/or local historic resources, either individually or as a historic district.[5]

Cultural and Architectural Resources

Park Avenue Overlay District

The Park Avenue District Plan establishes incentives and development guidelines for the preservation of a unique historic district and creation of a vibrant mixed-use neighborhood. The Plan encourages cultural arts, streetscape and pedestrian improvements, open spaces, and a variety of transportation options around Emeryville's civic center. Within the Plan, the Park Avenue Overlay District designates 43 architecturally significant buildings within the Park Avenue District as either Tier 1 (primary architectural significance) or Tier 2 (secondary architectural significance). The City's municipal code states that the Emeryville Building Official shall not issue a building permit to move, remove or demolish a Tier 1 or Tier 2 architecturally significant building or structure unless the Emeryville Planning Commission first approves such action.[6]

Emeryville Preservation Ordinance

The City developed a Preservation Ordinance in 2006, to ensure that the character of Emeryville's historic past and setting are maintained for future generations. The Ordinance seeks to protect significant structures from moving, removal, or demolition, and ensures that replacement structures are compatible with the surrounding community. Significant structures are more than 50 years old and contain particular design features on the street-facing façade.[7] The Ordinance does not regulate residential structures or the Park Avenue District, which are covered by other ordinances.

The Park Avenue District then and now.

5 *California Office of Historic Preservation,* Directory of Properties in the Historic District Property Data File for Alameda County. *August, 2005 and City of Emeryville.*

6 *City of Emeryville Municipal Code, Title 9, Planning and Zoning, Article 43 (Preservation of Architecturally Significant Buildings in the Park Avenue District). November, 2004.*

7 *City of Emeryville Municipal Code, Title 9, Planning and Zoning, Article 67 (Demolition of Significant Structures). October, 2006.*

The Park Avenue District contains many of the city's historic buildings.

TABLE 6-2: Rated Historic Resources

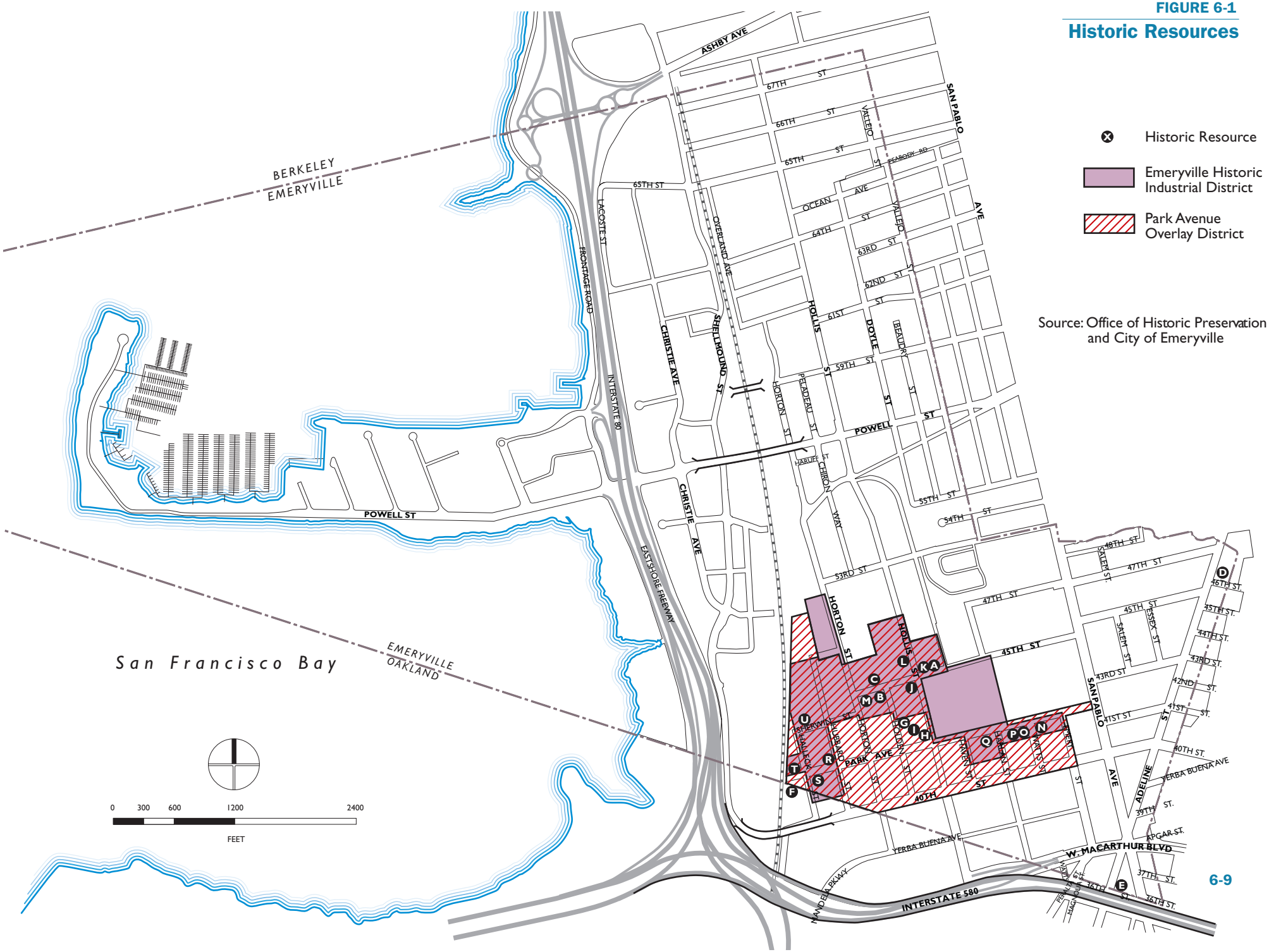
Key to Map	Address	Name/Year Built	National/Local Rating
A	1290 45th Street	Eagle / 1922	2D2 / T2
B	1401 45th Street	California Plywood Co. (45th St. Lofts E) / 1913	2D2 / T1
C	1420 45th Street	Artist's Co-op / 1927	2D2 / T1
D	1010 46th Street	Remar Bakery (Bakery Lofts) / 1919	1S
E	3604 Adeline Street	Private residence / 1895	2S2
F	4076 Halleck Street	Westinghouse Pacific Coast / 1930	2D2 / T3
G	4224 Holden Street	Bischoff / 1930	2D2 / T2
*	4202 Hollis Street	1925	2D2
H	4221 Hollis Street	Moreshouse Mustard / 1925	2D2 / T2
*	4224 Hollis Street	1929	2D2
I	4227 Hollis Street	PG&E South / 1930	2D2 / T3
J	4245 Hollis Street	PG&E South / 1924	2D2 / T2
K	4512 Hollis Street	Robinson / 1923	2D2 / T1
L	4525 Hollis Street	PG&E North / 1925	2D2 / T2
M	4250 Horton Street	45th Street Lofts W. / c. 1925	2D2 / T1
*	4525 Horton Street	1924	2D2
N	1175 Park Avenue	Condominiums / 1907	2D2 / T1
O	1201 Park Avenue	Silberman Office / 1913	2D2 / T1
P	1219 Park Avenue	Folkmanis / 1917	2D2 / T1
*	1250 Park Avenue	1919	2D2
Q	1255 Park Avenue	Emeryville Properties / 1925	2D2 / T1
R	1500 Park Avenue	Emeryville Warehouse Lofts / 1911, 1927	2D2 / T1
S	1545 Park Avenue	Trader Vic's/Westinghouse Pacific / 1912	2D2 / T1
T	1550 Park Avenue	Pelco Distributors / 1917	2D2 / T1
U	1500 Sherwin Street	Sherwin-Williams / 1924	2D2 / T1

Sources: California State Office of Historic Preservation, 2005 and City of Emeryville, 2005.

Notes:
1. 1S = individual property listing in the National Register
2. 2S2 = individual property determined eligible for listing in the National Register
3. 2D2 = contributor to a district determined eligible for listing in the National Register (Emeryville Historic Industrial District)
4. T1 = Tier 1 Architectural Significance (Park Avenue Overlay District)
5. T2 = Tier 2 Architectural Significance (Park Avenue Overlay District)
6. * = Demolished

FIGURE 6-1

Historic Resources



6.2 SAFETY

This section and its accompanying implementing policies and actions, describe potential hazards and the measures that can be taken to mitigate these risks and ensure the safety of Emeryville's population and property from seismic, flooding and chemical hazards. Chapter 4: Parks and Public Facilities describes the emergency response standards and policies of the Emeryville Fire and Emergency Services Department, which leads the city's emergency management.

Geologic, Soils, and Seismic Hazards

Geology and Soils

The City of Emeryville lies at the eastern edge of the San Francisco Bay in part of the flatlands which are also referred to as the East Bay Plain. The East Bay Plain consists of alluvial deposits that originated from the Berkeley Hills. The western side of the city contains former tidal sloughs and marshlands that were progressively filled in dating back to the 1900s. The city is essentially flat with many areas on the margin of the Bay located on artificial fill. Where not covered by fill, the city's surface soils consist predominantly of fine-grained alluvium, including silts and clays, as depicted in Figure 6-2. Toward the western portion of the city the alluvium is underlain by bay mud—a natural marine deposit that consists of soft saturated clays that can contain lenses of sand and shell fragments. Development on artificial fill placed over bay mud often presents unique geotechnical engineering challenges because, unless the fill is properly engineered, structures can be damaged by differential settlement and subsidence. Under the bearing load of a new structure, Bay Mud tends to go through a cycle of consolidation that can lead to settlement.

Artificial fill atop bay mud, along the shoreline of Emeryville may be susceptible to violent earthquake shaking.

Excessive soil erosion can eventually lead to damage of building foundations, roadways, and loss of topsoil. Throughout Emeryville, areas that are most susceptible to erosion are those that would be exposed during construction phase and along the shoreline where soil is subjected to wave action. Typically, the soil erosion potential is reduced once the soil is graded and covered with concrete, structures, asphalt, slope protection, or vegetation.

Seismicity

The San Francisco Bay Area is a seismically active region with numerous active faults. Although no active faults run through Emeryville, the city is approximately three miles from the Hayward Fault and 15 miles from the San Andreas Fault, the two most prominent and active faults in the Bay Area, as shown in Figure 6-3. Therefore, the entire city is subject to hazardous ground shaking in a major earthquake, as shown in Figure 6-2. Deep alluvium and bay mud deposits can intensify groundshaking through wave amplification and longer durations of shaking. U.S. Geological Survey and other scientists claim that there is a 62% probability of a magnitude 6.7 or greater earthquake, striking the San Francisco Bay region before 2032.[8] Recognizing this threat, earthquake safety and preparedness are essential components of the General Plan.

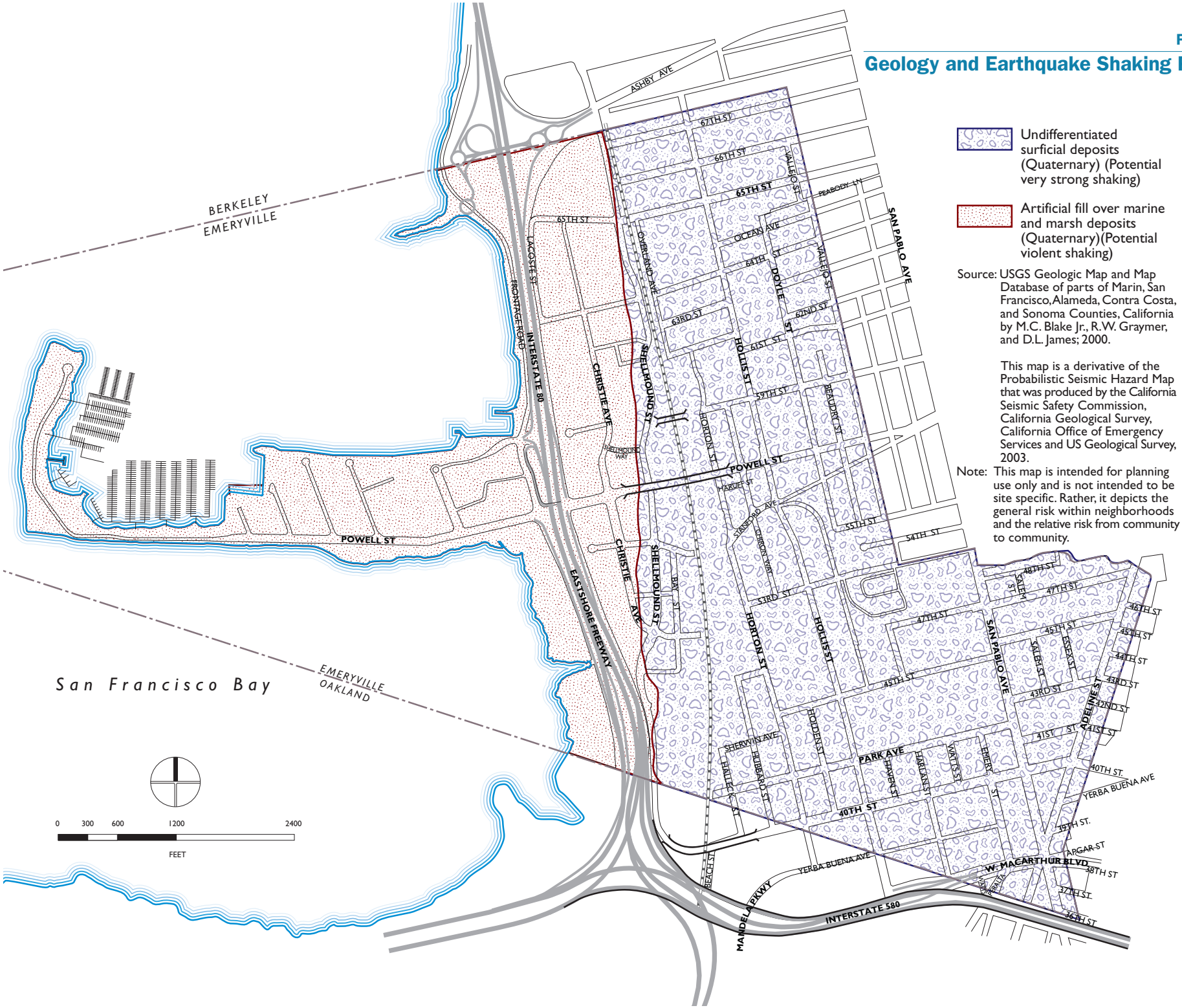
Seismic Risks to Development

Earthquake damage to structures can be caused by ground rupture, liquefaction, groundshaking, and possibly inundation from tsunami. The level of damage in the city resulting from an earthquake will depend upon the magnitude of the event, the epicenter distance from the city, the response of geologic materials, and the strength and construction quality of structures.

8 *United States Geological Survey. "Earthquake Probabilities in the San Francisco Bay Region: 2002-2031" 2003: ES1.*

FIGURE 6-2

Geology and Earthquake Shaking Potential



Undifferentiated surficial deposits (Quaternary) (Potential very strong shaking)

Artificial fill over marine and marsh deposits (Quaternary)(Potential violent shaking)

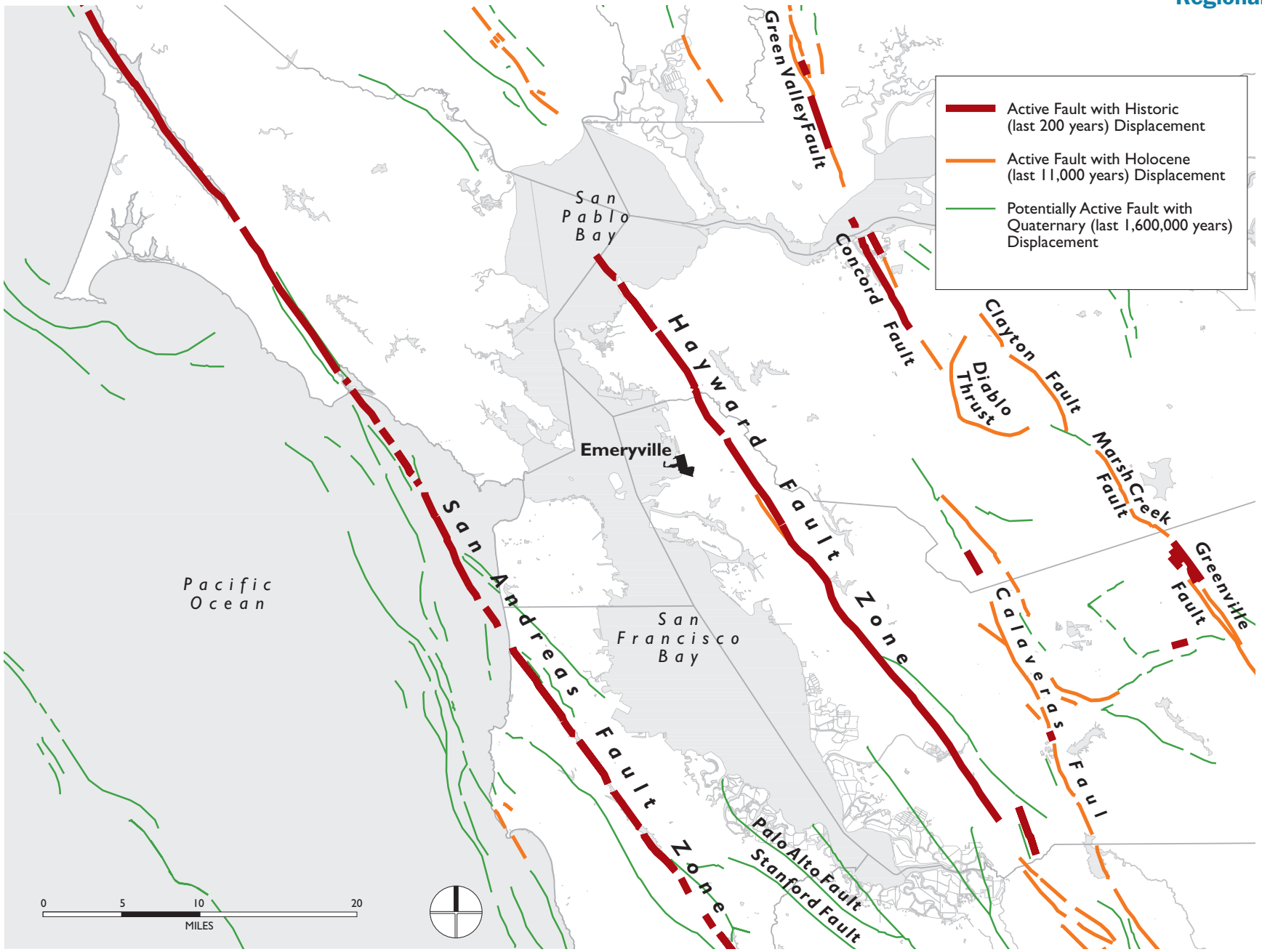
Source: USGS Geologic Map and Map Database of parts of Marin, San Francisco, Alameda, Contra Costa, and Sonoma Counties, California by M.C. Blake Jr., R.W. Graymer, and D.L. James; 2000.

This map is a derivative of the Probabilistic Seismic Hazard Map that was produced by the California Seismic Safety Commission, California Geological Survey, California Office of Emergency Services and US Geological Survey, 2003.

Note: This map is intended for planning use only and is not intended to be site specific. Rather, it depicts the general risk within neighborhoods and the relative risk from community to community.

FIGURE 6-3

Regional Faults



During an earthquake, shaking of granular loose soil saturated with water can lead to liquefaction. The entire city of Emeryville lies within a liquefaction hazard zone, as shown in Figure 6-4, which presents constraints on development. The Peninsula has a very high susceptibility to liquefaction, while the areas around the rail line and east have a moderate to low risk of liquefaction. Development in a liquefaction hazard zone requires adherence to the guidelines for evaluating and mitigating seismic hazards as required by Public Resources Code Section 2695(a). Before a development permit can be granted for a site within a Seismic Hazard Zone, (i.e. anywhere in Emeryville), a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. Mitigation of liquefaction hazards can include edge containment structures (e.g. berms, dikes, retaining walls, etc.), driving piles, removal or treatment of liquefiable soils, or modification of site geometry.

The City's Building Division implements and enforces the Emeryville Municipal Code and the California Building Code regulations relative to seismic risk to development. A City Ordinance specifies the need and establishes guidelines for the seismic upgrade of unreinforced masonry buildings. An increase in occupancy or intensification of use triggers the requirement for a seismic upgrade. Over the past ten years 75 percent of the City's unreinforced masonry buildings have been upgraded for seismic safety. The City also provides a program for voluntary upgrades of single family homes.

The Local Hazard Mitigation Plan (LHMP) identifies mitigation actions that the City is taking or considering taking, subject to funding availability and/or other agencies approvals, to reduce the risk of a disaster, whether natural or man-made, on Emeryville residents, businesses and essential government services. On September 1, 2009, the City Council adopted the City's initial LHMP. The 2019-2024 LHMP Update, adopted by the City Council on September 3, 2019 will serve as an "Implementation Appendix" to the Conservation, Safety and Noise Element and is included in the Emeryville General Plan as an appendix. Although earthquakes are the primary threat addressed by the LHMP, the plan also addresses hazardous materials releases, climate change, fire, floods, civil unrest, utility/infrastructure failure, terrorism, and biological threats.

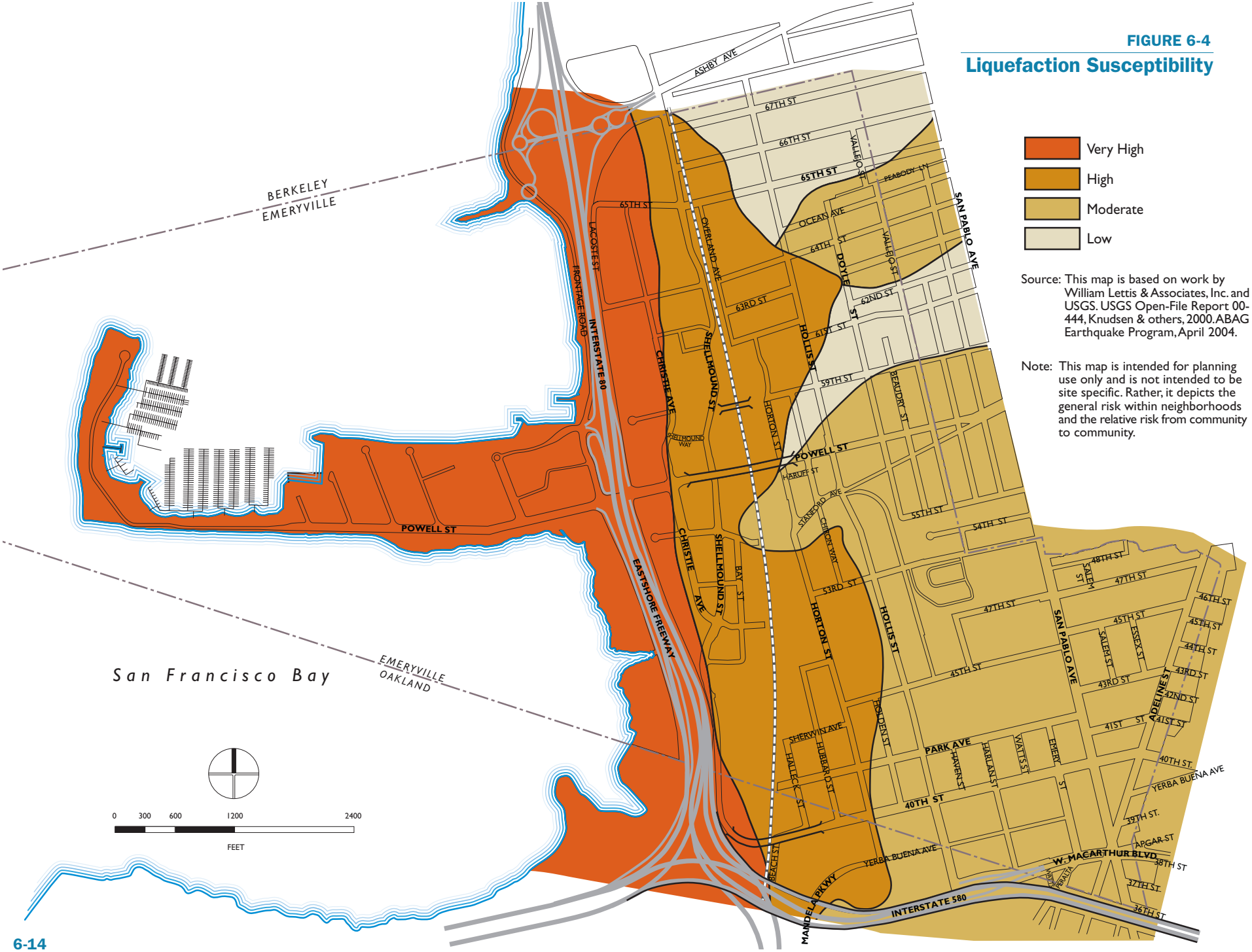
LIQUEFACTION

Liquefaction is a transformation of soil from a solid to a liquefied state, resulting from the buildup of excess pore water pressure, especially during earthquake-induced cyclic loading. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Liquefaction and associated failures could damage foundations, disrupt utility service, and cause damage to roadways.

Development must be properly engineered to ensure safety in the event of a major earthquake.

FIGURE 6-4

Liquefaction Susceptibility



Source: This map is based on work by William Lettis & Associates, Inc. and USGS. USGS Open-File Report 00-444, Knudsen & others, 2000. ABAG Earthquake Program, April 2004.

Note: This map is intended for planning use only and is not intended to be site specific. Rather, it depicts the general risk within neighborhoods and the relative risk from community to community.

Hazardous Materials

The City of Emeryville includes a mix of uses and many areas with a high concentration of historical industrial and manufacturing activities. Most of these areas have been largely converted or will be converted to other uses, such as office, commercial retail, and residential. Hazardous material use, storage, transport, and hazardous waste generation within the city can pose hazards to the environment and public health through improper handling or storage.

As a result of the historical industrial use, substantial groundwater and soil contamination is present in many locations throughout the city. The presence of contamination can potentially restrict future development of property and require specialized construction practices. Sites should be remediated to the level prescribed by the lead reviewing agency.

Remediation

Emeryville has been a leader in the financing and remediation of brownfields. In 1995, the US EPA initiated a program to help states, communities, and others to redevelop abandoned contaminated land. The program provides grants that support revitalization efforts by funding environmental assessment, cleanup, and job training activities. The City of Emeryville has benefited from the program, which has helped revitalize an area that industry abandoned during the 1970s. As of 2008, more than 40 sites totaling 240 acres had been targeted for cleanup and have been or are identified for redevelopment.

Flooding and Drainage

Surface Hydrology

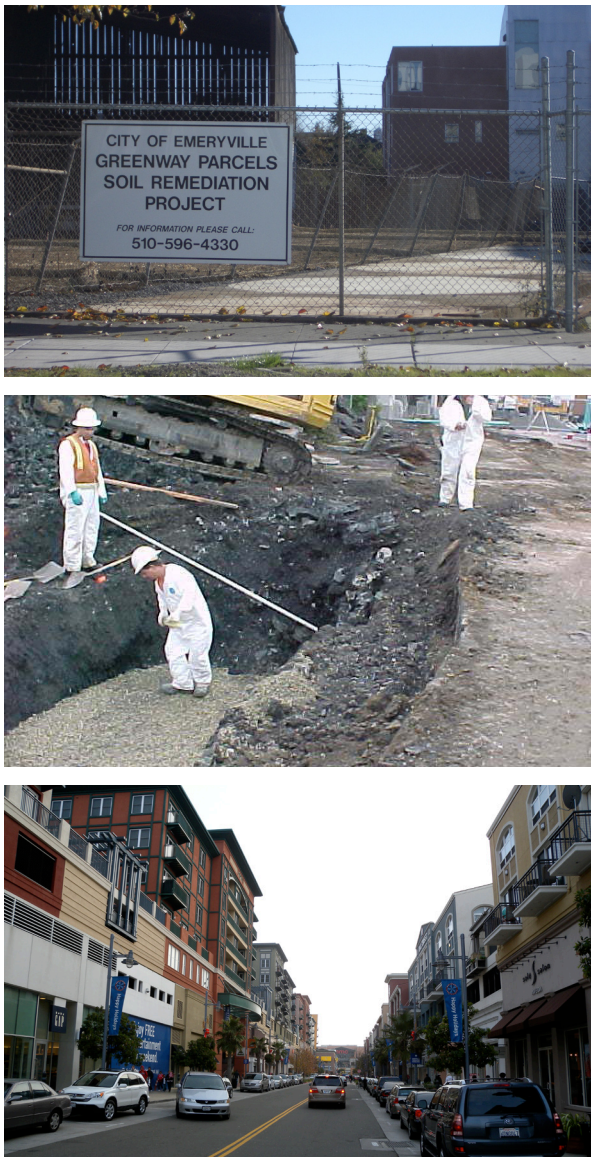
Emeryville lies in the Central Basin within the San Francisco Bay hydrologic region. Although the topography of the city is generally flat, its elevation ranges from 0 to 60 feet above mean sea level and slopes down slightly to San Francisco Bay, which is a major receiving water body. The other surface water feature in the city is Temescal Creek, which flows west from the East Bay Hills into San Francisco Bay.

San Francisco Bay

The city lies in the San Francisco Bay watershed. San Francisco Bay is the most prominent surface water body (see Figure 6-5) that receives surface water runoff from the city and groundwater discharge from the East Bay Plain. The southern portion of the Bay shoreline in the city includes a salt marsh. Rocks have been installed along the deeper waters adjacent to the Emeryville Peninsula for erosion control.

Temescal Creek

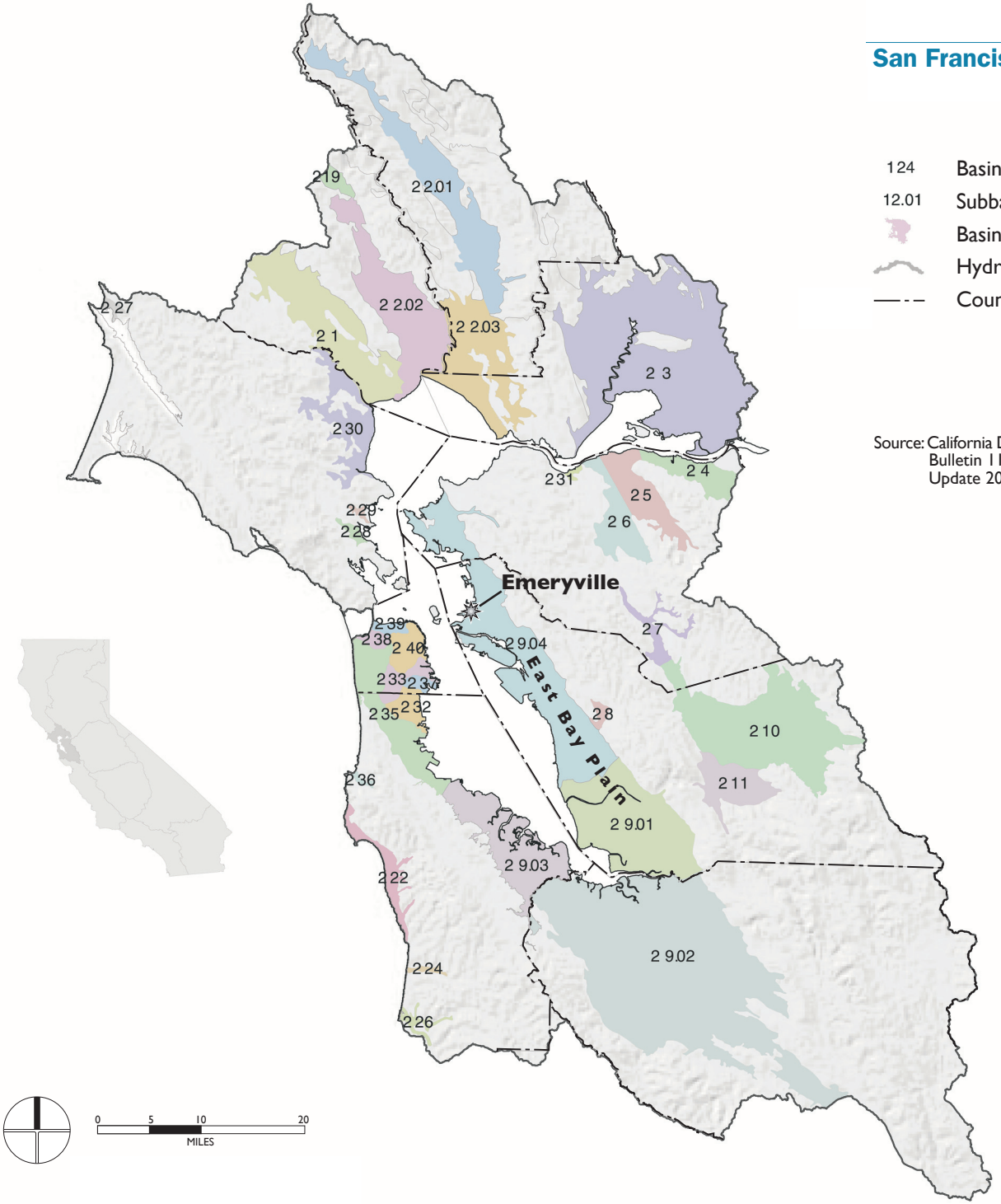
Temescal Creek, a main drainage outfall within the city (see Figure 6-6), is a channelized creek draining Lake Temescal. It flows through the city, passes under Interstate 80, and discharges into San Francisco Bay in the Emeryville Crescent. The creek is dry most of the year and runs underground through portions of the city. Currently, the creek flows are partially regulated by the Lake Temescal Reservoir. The General Plan proposes to celebrate the Creek by establishing a greenway along its course, which will include surface water features. For flood control purposes the main channel will remain primarily underground.



The City has been a leader in brownfields remediation. Emery Station (middle) and Bay Street (bottom) were constructed on remediated brownfield sites.

FIGURE 6-5

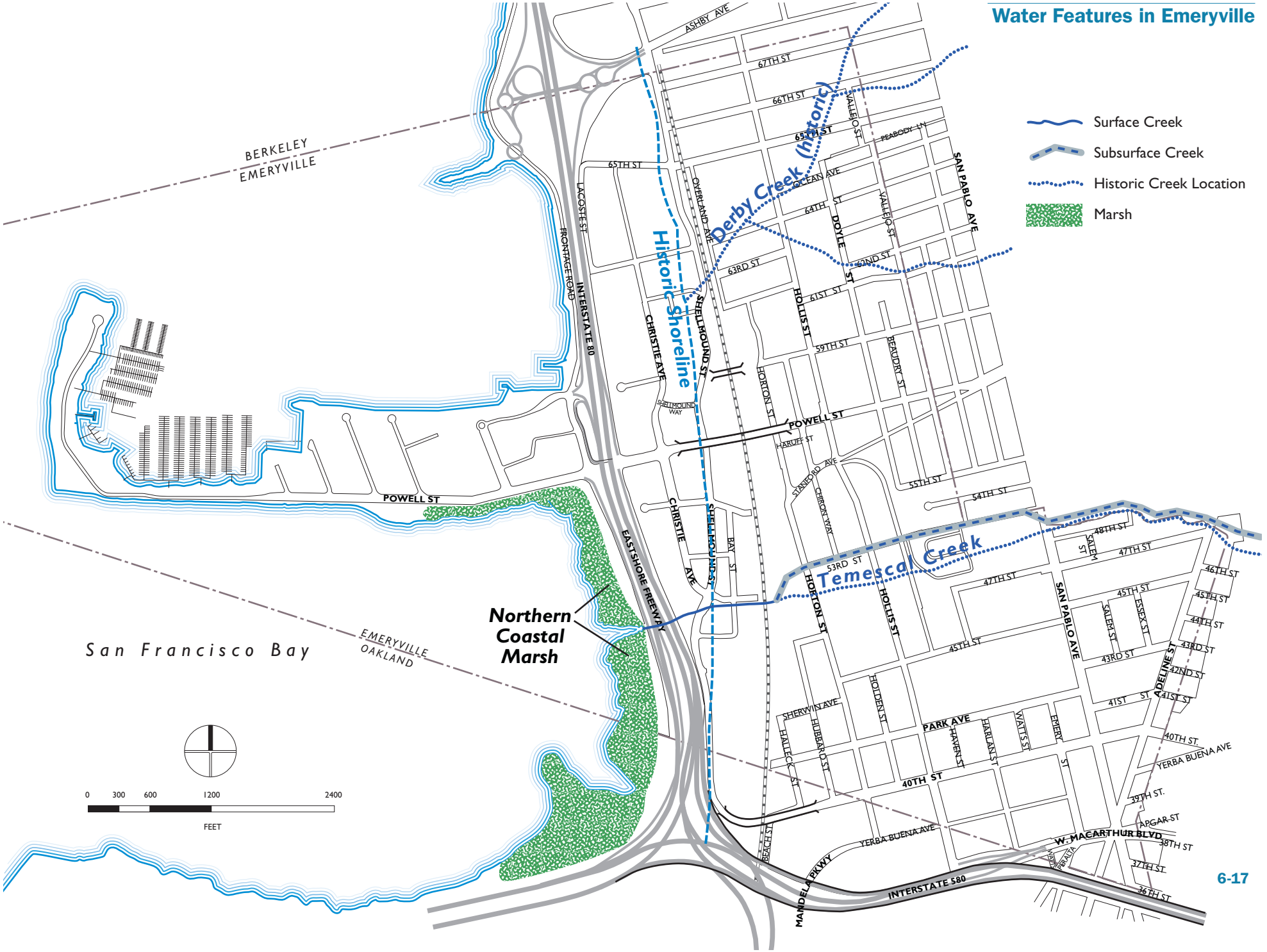
San Francisco Bay Hydrologic Region



Source: California Department of Water Resources, Bulletin 118, California Groundwater Update 2003.

FIGURE 6-6

Water Features in Emeryville



Groundwater Basins

The city is located within the East Bay Plain groundwater basin 4 in Alameda County (see Figure 6-5). The East Bay Plain extends up to 114 square miles. The water table (or the upper limit of the saturated groundwater zone) in the city is relatively high, occurring only several feet below the ground surface.

Stormwater Drainage

Surface runoff from the city flows through Temescal Creek or is collected in local storm drains and is discharged directly into the Bay. The city is highly urbanized and primarily covered with pavement, buildings, areas of surface-compacted soil, and other features that allow only minimal infiltration of rainfall into the soil. The existing sanitary sewer system in the area is generally old and in poor condition. Although separate sanitary and storm sewer lines exist throughout the city, the lines run parallel to each other. Stormwater from the storm sewer lines can leak into the sanitary sewer lines, causing excessive infiltration into the sanitary sewer collection system. As a result, excess flows of wastewater are released to San Francisco Bay without adequate treatment. The East Bay Municipal Utility District (EBMUD) initiated an East Bay Infiltration/Inflow Correction Program to eliminate wet weather overflows of raw sewage to community streets, creeks, and the Bay. Emeryville's leadership in stormwater management through the permit process and its stormwater guidelines are detailed in Section 7.2 of Chapter 7: Sustainability.

Flood Zones

The Federal Emergency Management Agency (FEMA) prepared new maps of Emeryville's flood risk potential in December 2007, which went into effect on August 3, 2009. As shown in Figure 6-7, the majority of Emeryville is designated as Zone X (i.e., areas outside the 500-year flood zone). The shoreline and marina areas are designated as Zone V and lie within the 100-year flood zone; however, these area do not contain urban uses or structures. Flooding in the city could also occur as a result of storm-induced flooding, inundations from dam failure, and tsunamis as discussed below.

Global Climate Change and Sea Level Rise

While climate change is a global concern, the local effects, in terms of flooding and sea level rise, could be severe in Emeryville. The San Francisco Bay Conservation and Development Commission (BCDC) projects a 16-inch sea level rise scenario at mid-century. This could, in turn, erode bay shores, marshes and wetlands, and increase the salinity of rivers. In addition, if average temperatures increase, this could shorten the snowfall season in the Sierra Nevada Mountains, increasing the amount of rain and the rate of snow melt, thereby threatening even coastal cities, such as Emeryville, with increased flooding.

The BCDC prediction suggests that there are vulnerable areas along the shoreline of the Emeryville Crescent and peninsula, as shown in Figure 6-8; however, there are no structures or urban areas within this zone. Moreover, the BCDC model compares a sea level rise scenario to land-surface elevation data and does not account for shoreline protection; therefore the area south of 64th Street and west of I-80 does not account for the at-grade freeway barrier. BCDC's 2100 scenario, projecting 55-inch sea level rise (not shown) would have implications for Emeryville's urban area, but lies far beyond the scope and planning horizon of the proposed General Plan. Sea level risk threats and mitigations are also discussed in Emeryville's Climate Action Plan and in Section 7.2 of Chapter 7: Sustainability.

Inundation from Dam Failure

The closest dam near the city is the dam at Lake Temescal, which is located approximately 3.5 miles east of the city limits. Lake Temescal Dam is managed by the East Bay Regional Parks Department and is overseen by the California Department of Water Resources, Division of Safety of Dams (DSOD). The DSOD supervises dam maintenance and inspections. Dams are required to adhere to rigorous DSOD standards, which include seismic analysis of existing dams to assure their integrity and conducting regular inspections. As of 2008, the dam was last inspected in September 2007, revealing no concerns for stability—particularly in light of fill from Highway 24 buttressing the dam and its wide cross section.[9] The likelihood of flood hazard is dependent upon the occurrence of a major earthquake and the ability of the dam to withstand seismic activity. If the dam were to fail, it is estimated to cause overflowing of Temescal Creek with inundation of nearly 1,000 feet of land area on either side of the creek within 15 minutes. The water could reach the rest of the city, west toward the Bay, and north approximately to Powell Street within 25 minutes as shown in Figure 6-7.

Tsunamis

Tsunamis are caused by submarine seismic or volcanic disturbances. The U.S. Geologic Survey estimates that a 20-foot wave at the Golden Gate Bridge (an event estimated to possibly occur once in 200 years) could potentially cause a run-up of a 10-foot wave in the Emeryville Peninsula and the shoreline area.

9 *Department of Water Resources. Division of Dam Safety, Correspondence with Regional Engineer, August 2008.*

Fire Hazards

The City of Emeryville does not have the terrain and vegetation conditions for large or devastating wildfires. However, urban fires are a constant threat. The worst case urban fire could be associated with an earthquake. A discussion of and policies concerning the Fire Department and related prevention and firefighting services may be found in Chapter 4: Parks, Open Space, and Public Facilities.

In the event of an emergency, the Fire Department is reliant on sufficient water flows to fight fires. The Department specifies minimum water pressure (e.g. 1,500 gallons per minute for a small building; 2,000 g.p.m. for a larger building). Actual peakload varies with districtwide demand.

Evacuation Routes and Safety Standards

Evacuation routes are designated along San Pablo Avenue, Hollis Street, and Interstate-80, although the actual routes will depend on the circumstances of the emergency. The City has an informal agreement with AC Transit to assist in evacuation in case of an emergency.

In addition, the City specifies minimum roadway widths of 20 feet (exclusive of parking lanes), in order to ensure access for emergency vehicles and other equipment.

Although Emeryville is not susceptible to wildfires like the Oakland hills (background), urban fires present a constant threat. The Fire Department maintains safety standards for road and building construction to ensure the safety of the community.

FIGURE 6-7

Coastal Flood Zone and Dam Failure Inundation Hazard Area

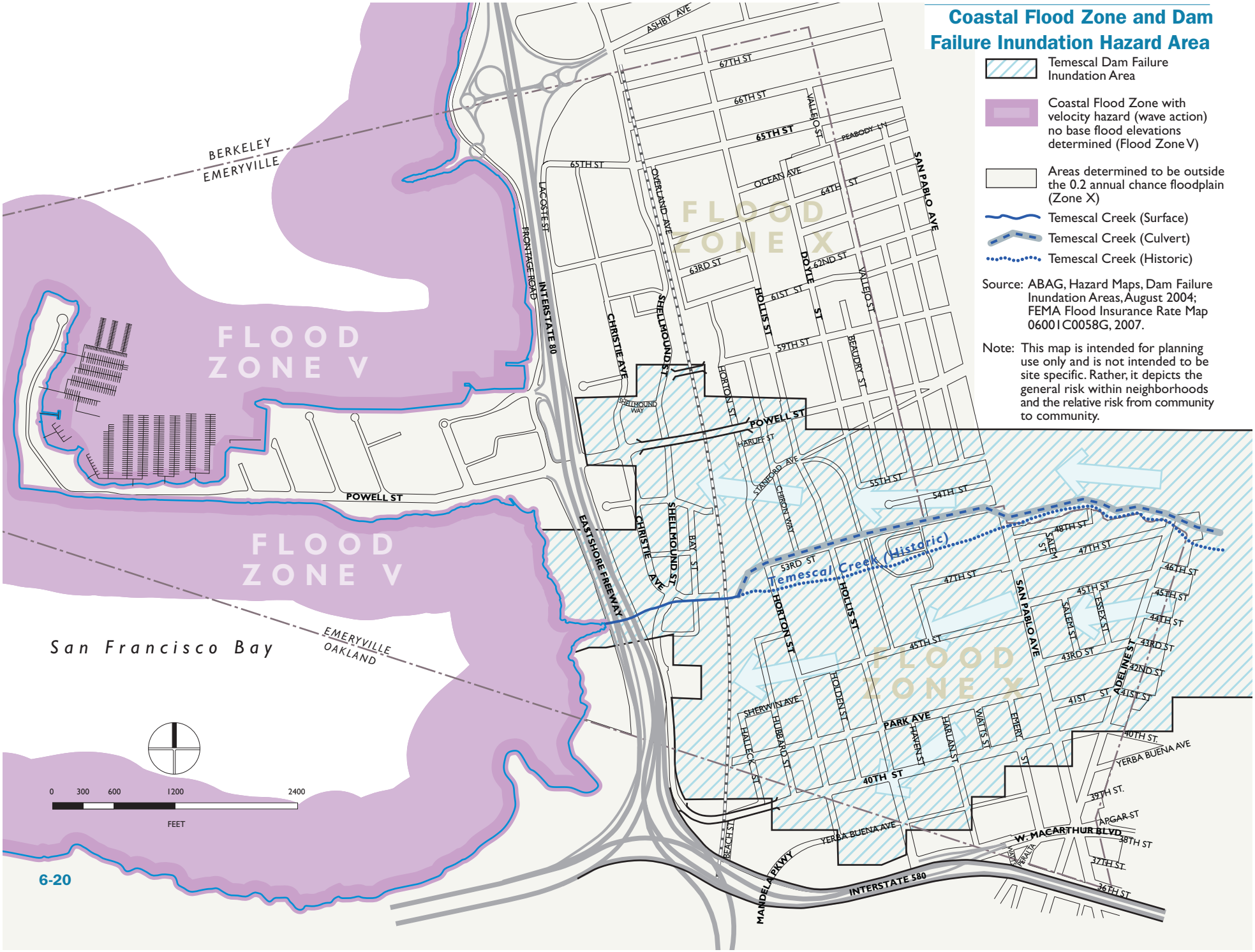
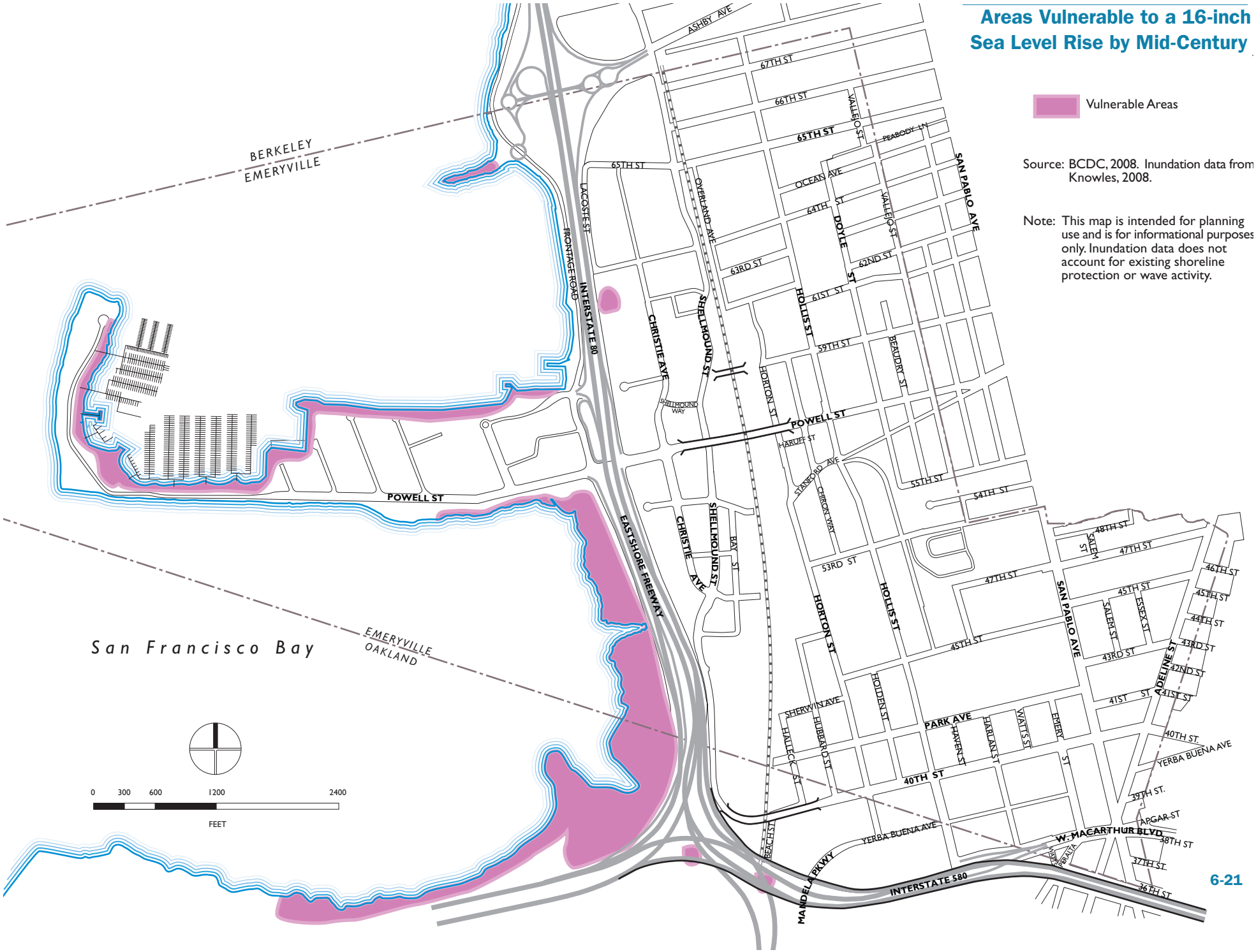


FIGURE 6-8

Areas Vulnerable to a 16-inch Sea Level Rise by Mid-Century



Source: BCDC, 2008. Inundation data from Knowles, 2008.

Note: This map is intended for planning use and is for informational purposes only. Inundation data does not account for existing shoreline protection or wave activity.

6.3 NOISE

Noise can be defined as a sound or series of sounds that are intrusive, irritating, objectionable and/or disruptive to daily life. Background noise is primarily the product of many distant noise sources, which constitute a relatively stable noise background exposure, with individual contributors unidentifiable. Noise levels are also affected by short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable to the individual. The known effects of noise on humans include hearing loss, communication interference, sleep interference, physiological responses, and annoyance.

People in residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks and outdoor recreation areas are generally more sensitive to noise than are people at commercial and industrial establishments. Consequently, noise standards for sensitive land uses are more stringent than for those at less sensitive uses. To protect various human activities in sensitive areas, lower noise levels are generally required.

Noise Measurement

When noise levels are reported, they are expressed as a measurement over time in order to account for variations in noise exposure. Levels also account for varying degrees of sensitivity to noise during daytime and nighttime hours. The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) both reflect noise exposure over an average day with weighting to reflect this sensitivity.

Elevated highways and passing trains create prominent levels of noise in Emeryville.

Existing Noise Sources and Levels

Existing Noise Levels

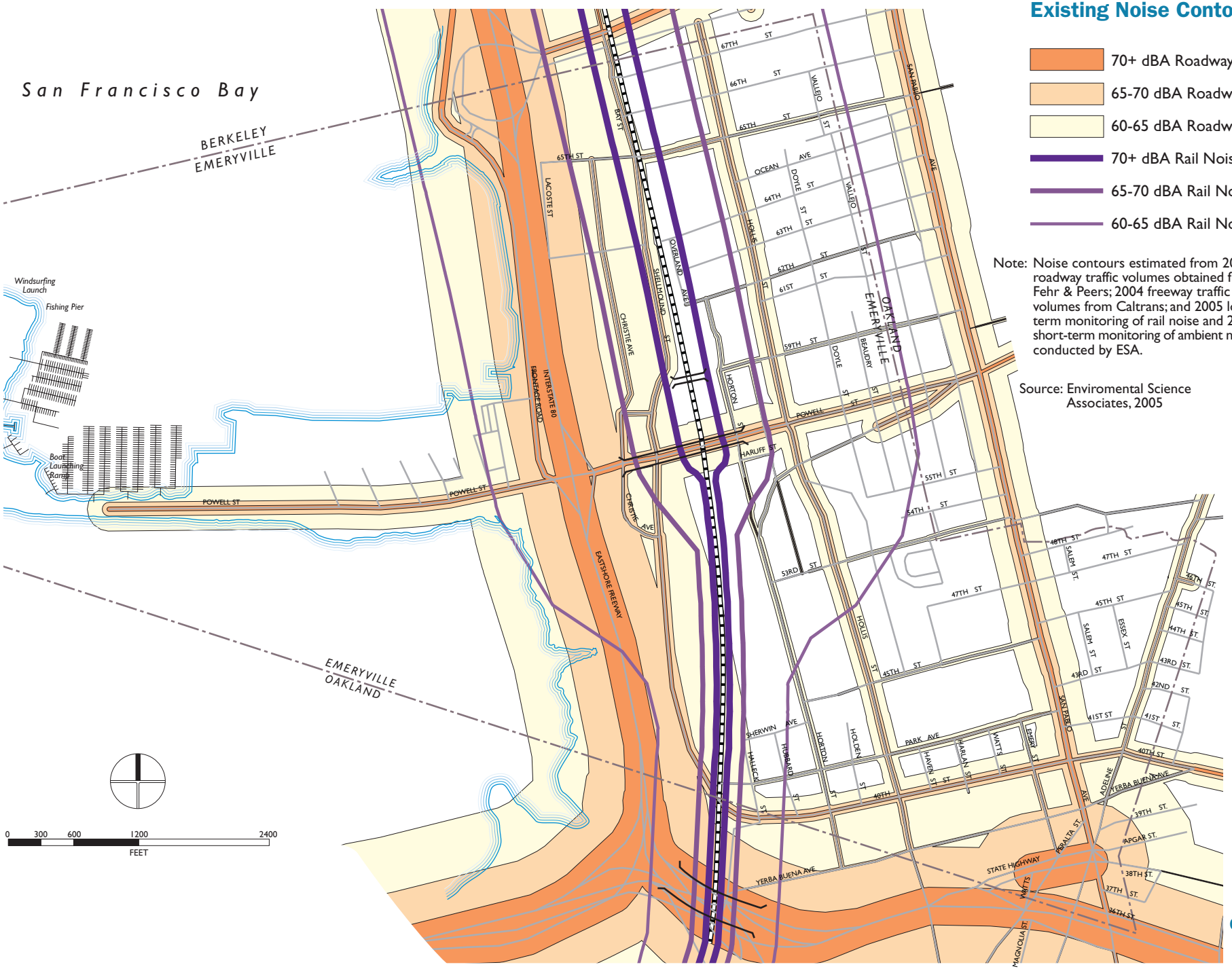
The primary major sources of persistent noise generated by transportation within Emeryville are from major roadway arterials throughout the city (Powell Street, San Pablo Avenue, 40th Street), highways 80 and 580, Union Pacific Railroad and Amtrak train activity, and aircraft overflights from the San Francisco and Oakland International airports.

Ambient noise monitoring was conducted to assess current noise levels in Emeryville at a variety of land uses proximate to major noise sources. Short-term noise measurements were taken during the peak hour traffic periods and adjacent to the major noise sources in the city. These measured noise levels included major noise sources (traffic and/or train passbys) in addition to non-traffic noise sources. Additional long-term (24-hour) noise measurements were taken near rail activity and where other major noise sources could be excluded to the extent possible.

Figure 6-9 reflects the existing noise level contours for 60, 65, and 70 dBA primarily generated by existing local roadway traffic levels (based on noise monitoring and levels calculated along roadway segments that extend from 47 traffic study intersections throughout the city, as presented in Chapter 3: Transportation) as well as freeway traffic levels.

FIGURE 6-9

Existing Noise Contours



Note: Noise contours estimated from 2005 roadway traffic volumes obtained from Fehr & Peers; 2004 freeway traffic volumes from Caltrans; and 2005 long-term monitoring of rail noise and 2005 short-term monitoring of ambient noise conducted by ESA.

Source: Enviromental Science Associates, 2005

Construction activity (top) is restricted to certain hours of the day, but still causes short-term temporary noise impacts. Mechanical equipment that is not appropriately shielded or integrated into building design may lead to unnecessary noise exposure (bottom).

Existing Noise Sources

Freeway and Internal Roadways

Freeways are a major noise source in Emeryville. Most of Emeryville is located between the I-80 and I-580 freeways. I-80 runs north-south towards the western boundary, while I-580 runs approximately east-west just below the southern boundary. The section of I-580 adjacent to Emeryville is elevated. Freeway noise is expected to remain an issue in the future for noise sensitive uses, such as residential development. The city also has busy internal roadways such as Powell Street, 40th Street, and San Pablo Avenue. Noise from these sources can be a significant environmental concern where buffers (e.g., buildings, landscaping, etc.) are inadequate or where there is minimal distance from the roadways to sensitive uses.

Railroad Noise

Train noise, however intermittent, is a major source of noise due to its magnitude. Residents have observed that freight trains often park with diesel engines running for extended periods, which can also be a significant source of railroad-related noise. Locomotive engines and the interaction of steel wheels and rails generate primary rail noise. Train air horns and crossing bell gates contribute to loud noise levels near grade crossings. The freight trains operate with lower speeds in the range of 15 to 20 miles per hour; therefore, the associated maximum noise level is also low. As depicted in Figure 6-9, noise levels vary along the railroad tracks, showing higher noise levels in areas where surface crossings occur, generally north of Powell Street.

Airport Noise

Though the city is not located within the 65-CNEL noise contours for the San Francisco and Oakland International airports, noise from aircraft over flights is audible throughout the city and contributes to the ambient noise environment.

Industrial Noise

Industrial uses are another source of noise that can have a varying degree of impact on adjacent uses. A variety of mechanical equipment, generators, and vehicles all contribute to noise levels at industrial sites. There are also many areas in Emeryville where residential uses are in close proximity to light industrial uses, which are expected to continue according to the General Plan land use diagram.

Construction Noise

Construction can be another significant, although typically short-term, source of noise. Construction is most significant when it takes place near sensitive land uses, occurs at night, or in early morning hours. The dominant construction equipment noise source is usually a diesel engine without sufficient muffling. In a few cases, however, such as impact pile driving or pavement breaking, process noise dominates. The City currently regulates construction activity through Municipal Code Chapter 13, Section 5-13.05.

Other Equipment Noise

Several other portable or small-scale pieces of equipment may also produce noise effects. Mechanical equipment, such as pumps and fans may produce low noise levels, but continuously and for substantial distances. Portable power equipment, such as leaf blowers and drills, is ubiquitous in the modern city, and can produce very high noise levels at the location of the work. Other amplified sounds, from automotive audio equipment or loudspeakers also create noise exposure.

FIGURE 6-10

Projected Noise Contours

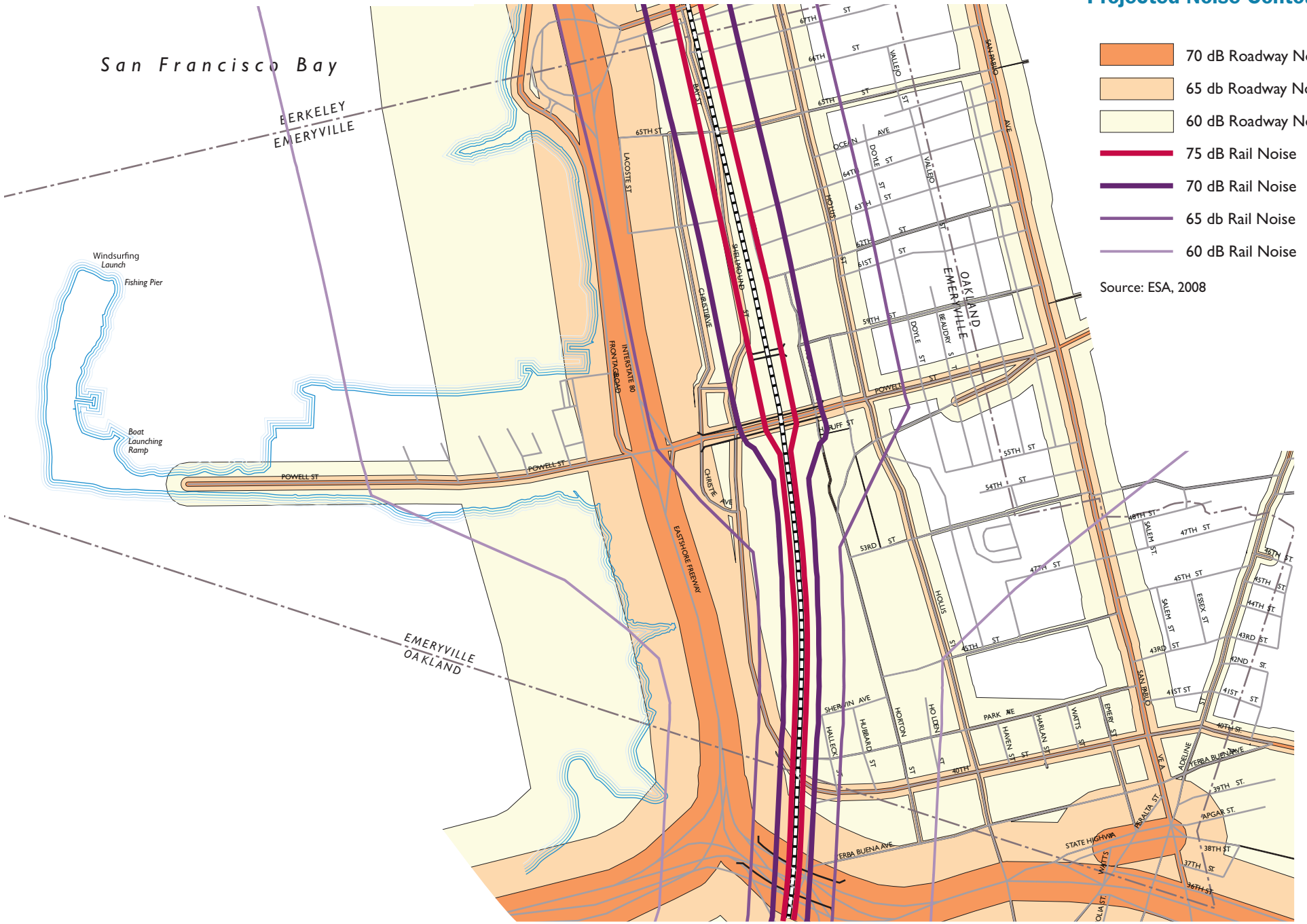
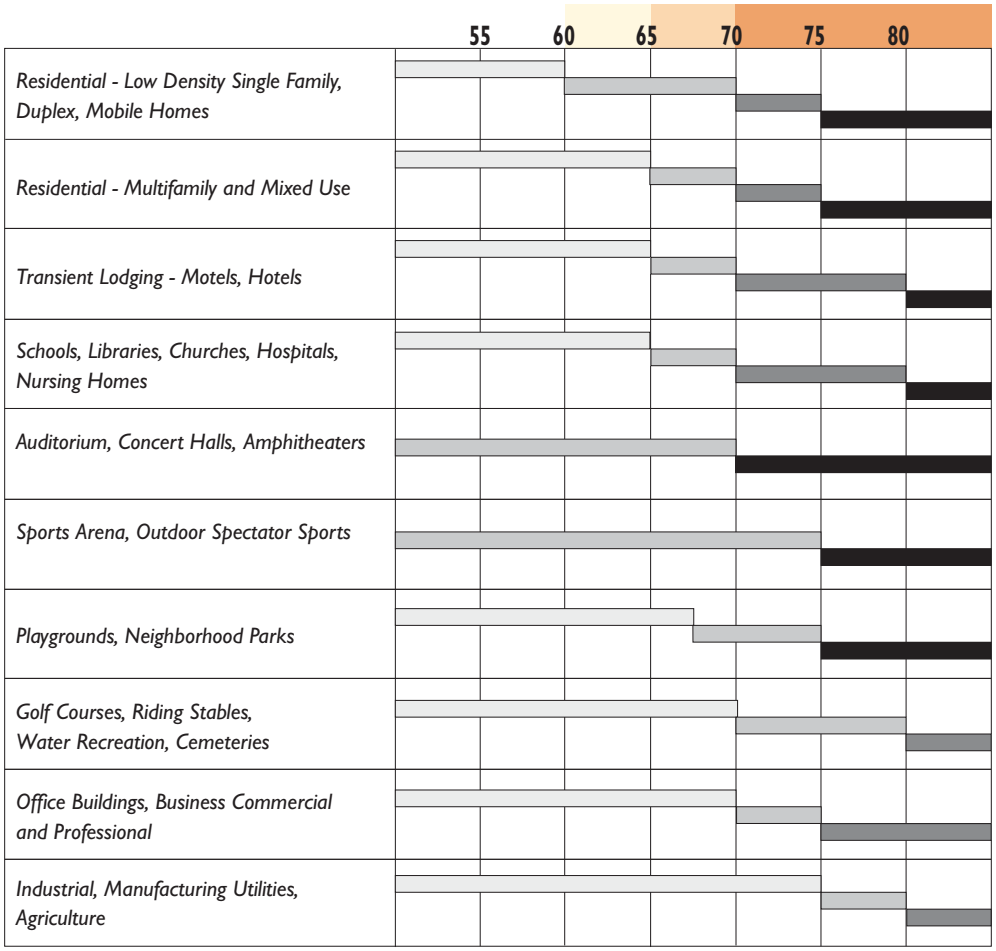


FIGURE 6-11

Community Noise Exposure (Ldn or CNEL, db)



NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any building involved is of normal conventional construction, without any special noise insulation requirements.

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

Source: *California Governor's Office of Planning and Research, 1990; Environmental Science Associates, 2008.*

Projected Noise Sources and Levels

Future development within the City's Planning Area along with pass-through traffic will result in increased noise levels. The primary noise sources in Emeryville will continue to be Interstate 80, the railroad, and traffic along other major thoroughfares. Future noise contours are illustrated in Figure 6-10. Compared with existing conditions, noise levels emanating from the freeway represent the greatest increase in potential noise impacts. (Noise levels from the railroad are not expected to increase substantially.) The 70 and 65 dbl contours (the more severe impacts) are only projected to increase slightly over the planning period, while the 60 dbl contour is projected to extend east to Hollis Street.

The noise exposure matrix defined in Figure 6-11 explains the compatibility of land uses, given their respective levels of community noise exposure. This matrix can be used to review land use decisions within a given contour.

Increases in traffic levels may be counteracted by the implementation of alternate forms of transportation and land use design that reduce vehicle miles traveled in the region. In addition, the Plan calls for locating noise-sensitive uses (e.g. residences, schools, other public facilities) away from high-noise areas, such as the freeway and railroad. Where such uses are already planned such as in the North Bayfront, South Bayfront and North Hollis districts, noise studies and additional mitigations are required under the General Plan. These measures including siting residences appropriately near noise sources (see LU-P-25) and requiring design features to reduce impacts, such as double-paned windows or soundproofing.

GOALS AND POLICIES

GOALS

CSN-G-1 **Public health—**A high level of public health and safety.

CONSERVATION

CSN-G-2 **Improved air quality—**Local ambient air quality levels that help meet regional attainment status and contain low levels of air pollutants.

CSN-G-3 **Water quality and conservation—**High-quality groundwater and surface water resources. Improved water conservation, increased use of recycled water, and reduced per capita water consumption.

CSN-G-4 **Reduced per capita water consumption—**By 2030, per capita water consumption will be reduced by 30 percent over 2008 levels.

CSN-G-5 **Preservation and protection of natural resources—**Preservation and enhancement of natural habitat, and protection of biological resources, particularly around the Emeryville Crescent.

CSN-G-6 **Respect for the past—**A community that respects and preserves the cultural resources of its past and integrates that history into future development.

CSN-G-7 **Protection of cultural resources—**Protection of historic, cultural, and archeological resources for the educational, aesthetic, environmental, and economic contribution that they make to Emeryville's identity and quality of life.

SAFETY

CSN-G-8 **Protection from natural and manmade hazards—**Protection of life, natural environment, and property from natural and manmade hazards due to seismic activity, hazardous material exposure or flood damage.

NOISE

CSN-G-9 **Protection from noise—**Protection of life, natural environment, and property from manmade hazards due to excessive noise exposure.

CSN-G-10 **Ambient noise reduction—**Strive to minimize increases in ambient noise levels.

POLICIES

Implementing actions supporting each policy are described in Chapter 8: Implementation Program.

CONSERVATION

Air Quality

(Note that policies within the Land Use, Transportation, and Sustainability chapters also reduce air pollutants, by encouraging walkability and alternative transportation measures, green buildings, and other energy efficiency improvements.)

CSN-P-1 Air quality will be maintained and improved by requiring project mitigation, such as Transportation Demand Management (TDM) techniques, where significant air quality impacts are identified.

CSN-P-2 The City will budget for clean fuels and vehicles in the City's long-range capital expenditure plans, to replace and improve the existing fleet of gasoline and diesel powered vehicles.

CSN-P-3 The City will coordinate air quality planning efforts with local, regional, and state agencies and support the Bay Area Air Quality Management District's efforts to monitor and control air pollutants from stationary sources.

CSN-P-4 Dust abatement actions are required for all new construction and redevelopment projects.

CSN-P-5 All large construction projects are required to reduce diesel exhaust emissions through use of alternate fuels and/or control devices.

CSN-P-6 Adequate buffer distances shall be provided between offensive odor sources and sensitive receptors, such as schools, hospitals, and community centers.

Water Quality and Conservation

CSN-P-7 New commercial and industrial activities, as well as construction and demolition practices, shall be regulated to minimize discharge of pollutant and sediment concentrations into San Francisco Bay.

CSN-P-8 The City will continue to support regional watershed conservation through local land use planning, open space policies, and water quality conservation efforts.

CSN-P-9 The City will continue programs to inform residents of the environmental effects of dumping household waste, such as motor oil, into storm drains that eventually discharge into San Francisco Bay.

CSN-P-10 New development is required to incorporate source control, site design, and storm water treatment to reduce pollutants in stormwater runoff.

CSN-P-11 Exterior uses of water for landscaping and other purposes shall be reduced to minimize or eliminate runoff and water waste.

CSN-P-12 The City promotes use of recycled water on landscaping and other non-food source plantings.

CSN-P-13 The City promotes construction and incorporation of cisterns, green roofs and other rainwater harvesting methods in existing, new and rehabilitation projects.

CSN-P-14 The City will allow homeowners to divert untreated rainwater for non-potable uses, such as outdoor irrigation and toilet flushing, through use of rainwater barrels or similar methods.

CSN-P-15 The City shall consider revising plumbing and building code requirements, as necessary, to allow for graywater and rainwater harvesting systems.

CSN-P-16 The City will continue to support the use of recycled water in new and rehabilitation projects, through the development process.

CSN-P-17 The City supports public education initiatives to encourage conservation of potable water.

Habitat

CSN-P-18 The City will encourage protection of essential habitat for special status species and support habitat protection and enhancement within Emeryville that are within the City's control.

CSN-P-19 The natural environment, including mature trees and landscaping, shall be protected from destruction during new construction and redevelopment. Adequate replacement shall be provided where protection is impossible.

CSN-P-20 The City encourages incorporation of native plants into landscape plans for new developments and City projects and parks and preservation of mature trees on new developments and City projects.

CSN-P-21 The City discourages use of non-native invasive species in any landscaped or natural areas.

CSN-P-22 Provide visual access to the Emeryville Crescent in a manner consistent with the protection of this fragile ecological system.

CSN-P-23 Where new trails or other improvements are proposed in the vicinity of the baylands and essential habitat for special-status species, require adequate avoidance and mitigation necessary to protect sensitive resources.

CSN-P-24 The City shall explore opportunities for habitat restoration and enhancement, particularly in larger parks and open space areas.

CSN-P-25 Appropriate avoidance measures will be implemented to minimize the loss of special status species nesting birds during new construction. This can be accomplished through timing of vegetation removal and building demolition during the non-nesting season or through preconstruction surveys where a potential for nesting remains on proposed development sites.

Cultural Resources

CSN-P-26 The City encourages developers to reuse existing historic or architecturally significant structures.

CSN-P-27 Development that proposes to demolish identified historic resources shall be reviewed on a case by case basis to determine if the benefit of preserving the resource is outweighed by benefit of the new development.

CSN-P-28 The City shall continue to implement ordinances pertaining to architecturally significant structures, and as necessary refine and update these to ensure adequate recognition and incentives for reuse.

CSN-P-29 New development adjacent to historic and architecturally significant structures shall be reviewed for compatibility with the character of the structure and the surrounding neighborhood.

CSN-P-30 Archaeological sites and resources shall be protected from damage. Areas found to contain significant indigenous artifacts shall be examined by a qualified archaeologist for recommendations concerning protection and preservation.

CSN-P-31 If demolition of a historical or architecturally significant building is necessary for safety reasons, attempt to preserve the building façade for adaptive reuse during reconstruction.

CSN-P-32 The City encourages municipal and community awareness and support for Emeryville's historic, cultural, and archeological resources.

CSN-P-33 In order to reduce light pollution and use less energy, lighting (including on streets, recreational facilities, and in parking areas) should be designed to prevent artificial lighting from illumi-

nating natural resources or adjacent residential neighborhoods.

SAFETY

The Fire Department manages an emergency operations plan for the city and a set of evacuation routes in the event of an emergency. Policies are described in Chapter 4: Parks, Open Space, and Public Facilities.

Geologic, Soils, and Seismic Hazards

CSN-P-34 The City will continue to regulate development, including remodeling or structural rehabilitation, to ensure adequate mitigation of safety hazards on sites having a history or threat of seismic dangers, erosion, subsidence, or flooding.

CSN-P-35 The City will require geotechnical investigation of all sites proposed for development in areas where geologic conditions or soil types are susceptible to liquefaction (see "very high" and high" level areas on Figure 6-4). The City also requires submission of geotechnical investigation and demonstration that project conforms to all recommended mitigation measures prior to city approval (as required by State law).

CSN-P-36 The City will continue to require soil erosion control measures during construction.

CSN-P-37 The City will enforce regulation of potentially hazardous structures to be retrofitted and made safe and encourage property owners to abate or remove structural hazards that create unaccepted levels of risk.

Hazardous Materials

CSN-P-38 Prior to reuse, development sites will be remediated, according to relevant State and federal regulations.

CSN-P-39 The City will enforce regulation of local and State laws regarding the production, use, storage, and transportation of hazardous materials and waste.

CSN-P-40 The City requires abatement of lead-based paint and asbestos prior to structural renovation or demolition, and compliance with all State, Federal, Occupational Safety and Health Administration, Bay Area Air Quality Management District, Alameda County, and local rules and regulations.

CSN-P-41 Development on sites with known contamination of soil and groundwater shall be regulated to ensure that construction workers, future occupants, and the environment as a whole, are adequately protected from hazards associated with contamination.

CSN-P-42 The City supports public awareness and participation in household waste management, control, and recycling.

CSN-P-43 Siting of businesses that use, store, process, or dispose of substantial quantities of hazardous materials shall be carefully restricted in areas subject to very strong levels of ground shaking (Figure 6-2)

Flooding and Drainage

CSN-P-44 The City will continue to require development projects to implement on-site stormwater management measures through the City's development permit process.

CSN-P-45 Storm drains shall be maintained, and replaced or upgraded as needed to reduce potential flooding.

CSN-P-46 The City will cooperate with State and federal agencies to address flooding risks due to dam inundation, tsunamis, sea level rise, or major flood events.

Fire Hazards

CSN-P-47 The City will continue to specify minimum water pressure flows to ensure adequate flow in the event of a fire.

Evacuation Routes and Safety Standards

CSN-P-48 San Pablo Avenue, Hollis Street, and Interstate-80 will continue to serve as evacuation routes in case of emergency.

CSN-P-49 The City will continue to require minimum roadway widths to ensure access for emergency vehicles.

NOISE

Chapter 2: Land Use also contains policies regarding how to avoid noise impacts through and use program and siting.

CSN-P-50 The community noise compatibility standards (Figure 6-11) shall be used as review criteria for new land uses.

CSN-P-51 Noise impacts should be controlled at the noise source where feasible, as opposed to at receptor end. This includes measures to buffer, dampen or actively cancel noise sources.

CSN-P-52 Occupants of existing and new buildings should be protected from exposure to excessive noise, particularly adjacent to Interstate-80 and the railroad.

CSN-P-53 A noise study and mitigation measures shall be required for all projects that have noise exposure levels greater than "normally acceptable" levels.

CSN-P-54 Developers shall reduce the noise impacts on new development through appropriate means (e.g. double-paned or soundproof windows, setbacks, berming, and screening). This noise attenuation method should avoid the use of visible sound walls.

CSN-P-55 Site design, building design, hours of operation, and other techniques, for new developments deemed to be noise generators shall be used to control noise sources.

CSN-P-56 The City will work with the California Public Utilities Commission, other pertinent agencies and stakeholders to determine the feasibility of developing a railroad quiet zone in Emeryville.

CSN-P-57 The City shall require noise buffering, dampening, or active cancellation, on roof-top or other outdoor mechanical equipment located near residences, parks, and other noise sensitive land uses.

CSN-P-58 The City shall limit the potential noise impacts of construction activities on surrounding land uses through Noise Ordinance regulations that address allowed days and hours of construction, types of work, construction equipment, notification of neighbors, and sound attenuation devices.

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