

Updates were made to portions of the Health and Safety Element in 2026 to comply with State laws to address climate change adaptation and resilience to risks such as wildfire, flood, and extreme heat.



7

HEALTH AND SAFETY ELEMENT

Similar to many California cities, San Bruno faces a variety of health and safety hazards from both natural and human-caused sources. This chapter provides the policy framework for addressing emergency preparedness and evacuation, geologic hazards, potential seismic

hazards, flooding, wildfire, hazardous materials, noise, other hazardous conditions (especially those linked to climate change), and airport safety. The discussion of fire hazards can be found in the Public Facilities and Services Element of the General Plan ~~with information on~~ within the fire department,

public safety, and emergency response services ~~sections in the Public Facilities and Services Element of the General Plan.~~



Residential neighborhoods in the city's western hills (top) feature steep topography, some of which is susceptible to landsliding (bottom).

7-1 VISION

The Health and Safety Element addresses preservation of human life and property through the following key principles:

- prevention of potential geologic or seismic hazards through appropriate geotechnical analysis; and mitigation during project planning and development;
- reduction of flooding hazards through stormwater system improvements and appropriate project design in high-risk areas;
- -enhancing resilience to climate change and associated natural hazards through building and infrastructure improvements, educational efforts, and adaptation programs;- and
- -prevention of potential human contact with hazardous materials through safety in the use, transport, and disposal of hazardous materials.

The element also seeks to reduce potential noise and safety impacts along transportation corridors, including highways, railroads, and San Francisco International Airport (SFO). Additional details about these hazards and related issues are included in a background report prepared as part of this element and attached as Appendix A.

Plan Integration

The Health and Safety Element does not act independently but instead relies on other elements of the General Plan as well as other documents that support the discussions;

findings; and goals, policies, and implementation actions included.

A key document that supports the element is the 2021 Multi-Jurisdictional Local Hazard Mitigation Plan (Multi-Jurisdictional LHMP), prepared by San Mateo County in partnership with San Bruno, other incorporated communities, and special districts and agencies in San Mateo County. In compliance with California Government Code Section 8685.9 (also known as Assembly Bill 2140), the LHMP has been incorporated into the Safety Element, ensuring the City has access to additional funding opportunities under the California Disaster Assistance Act. The integration of the LHMP into the Safety Element allows San Bruno to use the LHMP to satisfy State requirements and creates a stronger mechanism for implementing the LHMP. The LHMP is available online at <https://www.smcgov.org/dem/multijurisdictional-local-hazard-mitigation-plan>.

To support the findings of the 2021 LHMP and address climate change requirements in accordance with Government Code Section 65302 (g) 3, the City prepared a Climate Adaptation Vulnerability Assessment that identified the relevant hazards that could be exacerbated by climate change. The Vulnerability Assessment is attached to this element as Appendix B. Much of the information within this assessment is based on data from Cal-Adapt, which is California's climate change data and visualization platform that provides localized data from global climate models.

In addition to the LHMP, the Health and Safety Element also works in concert with other elements of the General Plan. Key elements that support the City’s ability to address hazards and disasters include:

- Land Use - which promotes the proper use of land within the city, ensuring development does not occur in locations that may be hazard prone.
- Transportation - identifies the circulation network within the city and the improvements that can help facilitate evacuations and the movement of people to safe locations.
- Open Space and Recreation - recognizes that effectively managed and maintained open space areas can play a hazard risk reduction role regarding wildfires and flooding.
- Public Facilities and Services - identifies the vital roles and responsibilities that first responder personnel play in keeping residents safe as well as the critical infrastructure systems that support city functions and risk management.

7-2 EMERGENCY PREPAREDNESS AND EVACUATION

The City of San Bruno employs a multipronged approach for mitigating, responding to, and recovering from emergencies. Like most cities, San Bruno relies on their Emergency Operations Plan to support most emergency situations. As part of this plan, the City lays out

procedures and protocols for emergency response, including evacuations.

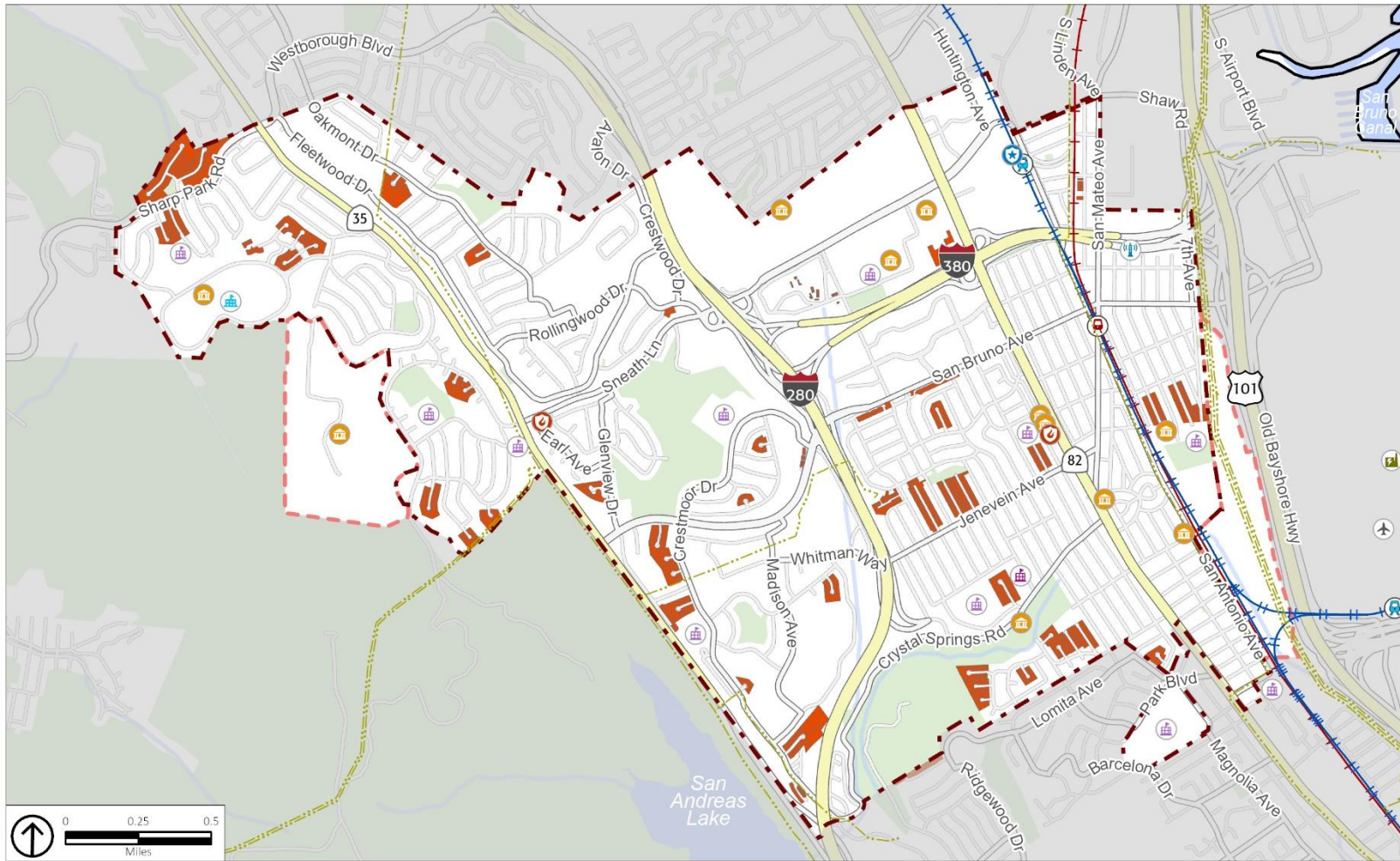
Evacuation Resources

During an evacuation, the City will determine the appropriate locations deemed safe and the appropriate routes for evacuees to take based on incident characteristics. Community members lacking easy access to these routes may face difficulties getting out of their homes. This is particularly true for homes that are evacuation constrained, meaning that they lack at least two points of ingress or egress. Figure 7-1 identifies these residential parcels, as required by Section 65302(g)(5) of the California Government Code. In these conditions, residents in these homes may be challenged to evacuate quickly and have increased vulnerability to fast-spreading incidents (i.e., flash floods and wildfire).

To help facilitate effective evacuations, cities and the County of San Mateo rely on evacuation zones within a communication platform that organizes the city into evacuation zones. To support evacuation notifications, the city through San Mateo County uses SMC Alert to notify the community about incidents (flood, fire, severe weather, or tsunami warnings), emergency shelter locations, evacuation route information, and activate disaster volunteers (Community Emergency Response Teams). Smaller incident alerts may also be shared (traffic accidents, fires, street closures, flooding, and related incidents) through SMC Alerts, when needed. As a voluntary alert system, residents and business owners in the city can opt

in to receiving these messages by signing up on the San Mateo County SMC Alert website: <https://www.smcgov.org/dem/smc-alert>.

Figure 7-1 Evacuation Constrained- Residential Parcels (2026)



Source: ESRI, 2023; County of San Mateo, 2025; PlaceWorks, 2025

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|---------------------------|-------------------|-------------------------|--------------------------------|
| City of San Bruno | BART Stations | Fire Stations | College or University |
| Sphere of Influence | BART Network | Government Facilities | Communication Facilities |
| San Mateo County Boundary | Caltrain Stations | California Power Plants | Transmission Lines |
| Airport | Caltrain Network | Public Schools (K-12) | Evacuation-Constrained Parcels |
| | Law Enforcement | Private Schools (K-12) | |



7-2-3 GEOLOGY AND SOILS

San Bruno is situated between the upland foothills of the Santa Cruz Mountains and the low-lying flatlands of the San Francisco Bay margin. Elevations range from 700 feet above mean sea level west of Skyline Boulevard to near sea level along Highway 101.

San Bruno lies within the physiographic region of California referred to as the Coast Ranges geomorphic province. Much of the Coast Range province is composed of marine sedimentary and volcanic rocks that form the Franciscan Assemblage. The Merced Formation is composed of sandstone, claystone, and siltstone. The younger Colma Formation is weakly consolidated, and consists of gravel, sand, silt, and clay. The eastern portion of the city is underlain by artificial fill material used to reclaim the Bay marginal tideland. Figure 7-24 illustrates the geologic and soils foundation of San Bruno.

Geologic Hazards

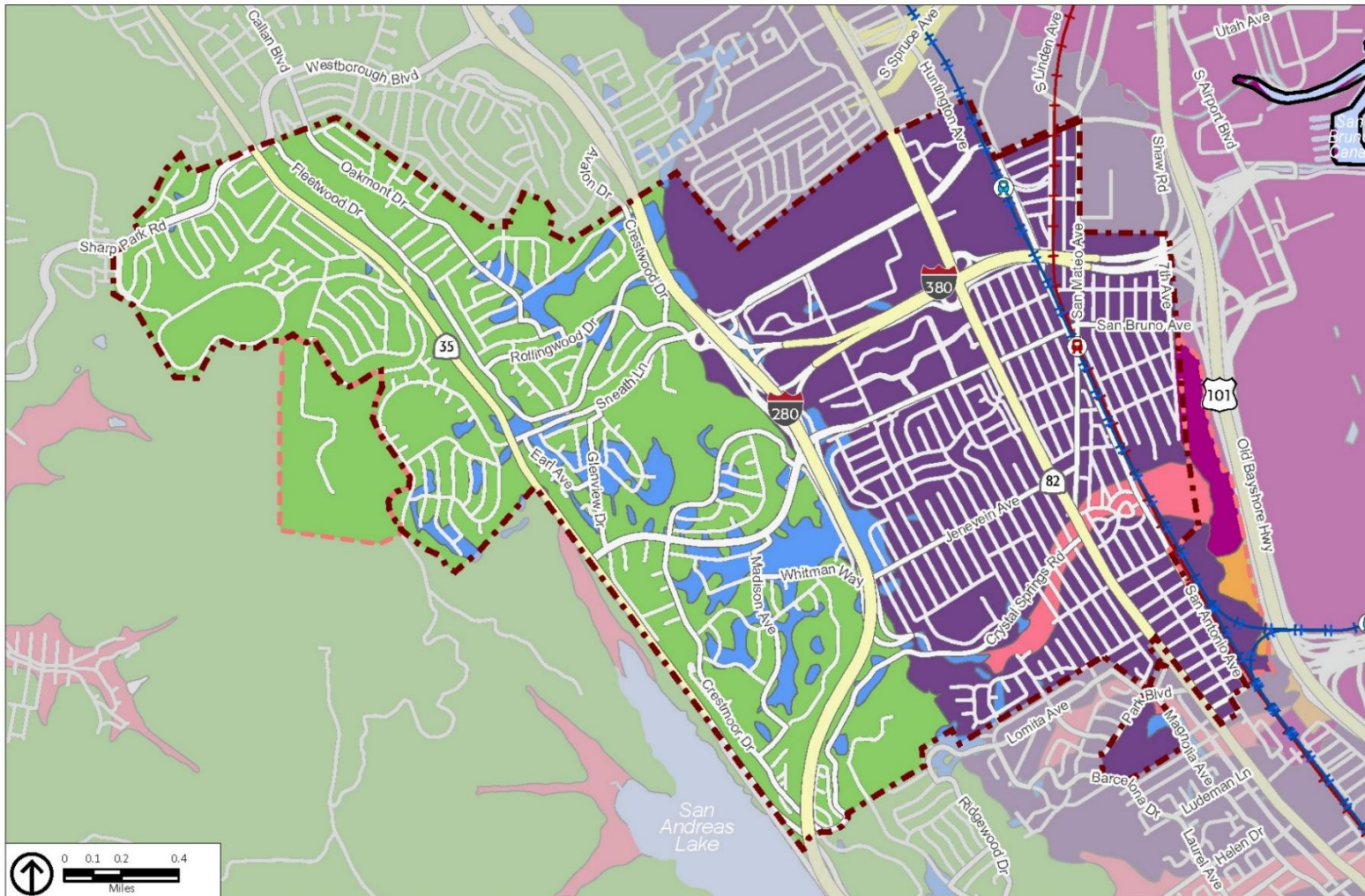
Geologic hazards that can affect San Bruno include expansive soils, ground failure (landslides), settlement, and erosion. Expansive soils possess a “shrink-swell” characteristic, which is expansion and contraction of fine-grained clay sediments from the process of wetting and drying. The Colma Formation, underlying eastern San Bruno, is described as moderately expansive. Sites identified in these areas proposing development activities will be required to assess the expansion potential of underlying soils and adherence to the provisions of the building code that address expansive soil

conditions. Settlement is the depression of soils when a load, such as a new building or fill material, has been placed on it. Settlement can be accelerated by earthquakes during groundshaking. Erosion generally occurs on steeper slopes, particularly where unnatural slope cuts and grading have occurred. Both settlement and soil erosion have occurred and caused damage in the hillside neighborhoods in western San Bruno.

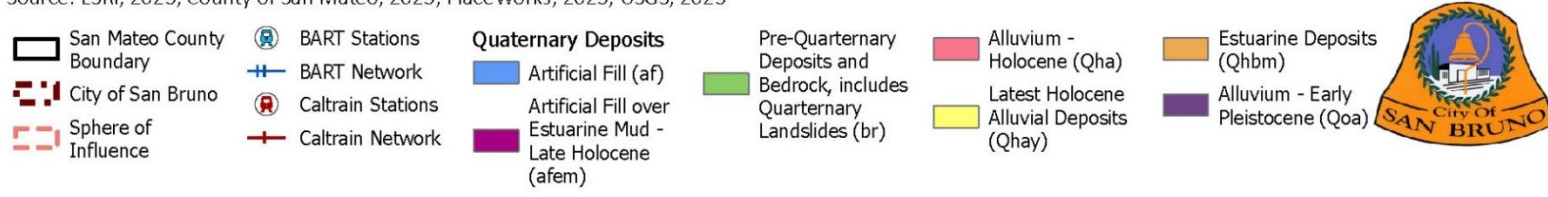
Ground stability is dependent on the slope and geology of a particular location. Other factors that can contribute to unstable conditions include—as well—as the amount of rainfall, excavation of earth materials, and/or seismic activities. The main form of ground instability is a A-landslide, which is a mass of rock, soil, and debris displaced down-slope by sliding, flowing, or falling. Steep slopes and downslope creep of surface materials characterize areas most susceptible to landsliding. The highest susceptibility to landsliding in San Bruno exists in the upland areas east of Skyline Boulevard and west of I-280, including Junipero Serra County Park. The potential for landslides in this area is considered low to moderate with areas of higher potential, especially in the hillside neighborhoods in western San Bruno. Susceptibility to landsliding could be greater in the Junipero Serra Park area due to the presence of undeveloped, natural slopes. Figure 7-32 illustrates areas of historic landslide activity and landslide potential. Landsliding activity occurs most frequently during El Niño seasons, when heavy rains saturate soils and cause sliding on steep slopes. During El Niño seasons, ~~such as the 1997-1998 winter season,~~ the **Public**

~~Works Department~~**City** monitors areas of concern.

Figure 7-2: Geology and Soils (2026)



Source: ESRI, 2023; County of San Mateo, 2023; PlaceWorks, 2023; USGS, 2023



Seismic Hazards

The San Francisco Bay Area contains both active and potentially active faults. Earthquakes pose especially high risks to San Bruno because of the city's close proximity to active faults with relatively frequent past movements. San Bruno straddles the San Andreas Fault and is approximately 18 miles southwest of the Hayward Fault. The San Andreas and Hayward faults are the two principally active, strike-slip faults in the Bay Area.¹ The San Andreas Fault is a major structural feature in the region and forms a boundary between the North American and Pacific tectonic plates.

Other principal faults capable of producing significant ground shaking in San Bruno include the San Gregorio-Hosgri, Rodger's Creek-Healdsburg, Calaveras, Concord-Green Valley, and Pilarcitos faults. The Serra Fault is a zone of reverse faulting that trends to the northwest, approximately 3,500 feet east of the San Andreas Fault in San Bruno. The Serra Fault represents the contact between the Merced and Colma Formations and marks the topographic boundary between the upland area west of I-280, and the flatland area to the east. Fault traces within the city are illustrated in Figure 7-32.

The four major hazards associated with earthquakes include fault surface rupture, groundshaking, ground failure (landslides), and settlement. These hazards are defined in the "Geology and Soils" section—~~above~~.

Groundshaking, which may affect areas hundreds of miles distant from an earthquake's epicenter, is magnified by loose unconsolidated soils. Liquefaction, the process by which water-saturated soils transform to liquid, is caused by groundshaking. Liquefaction potential is highest in the eastern areas of the city underlain by Bay margin artificial fills.

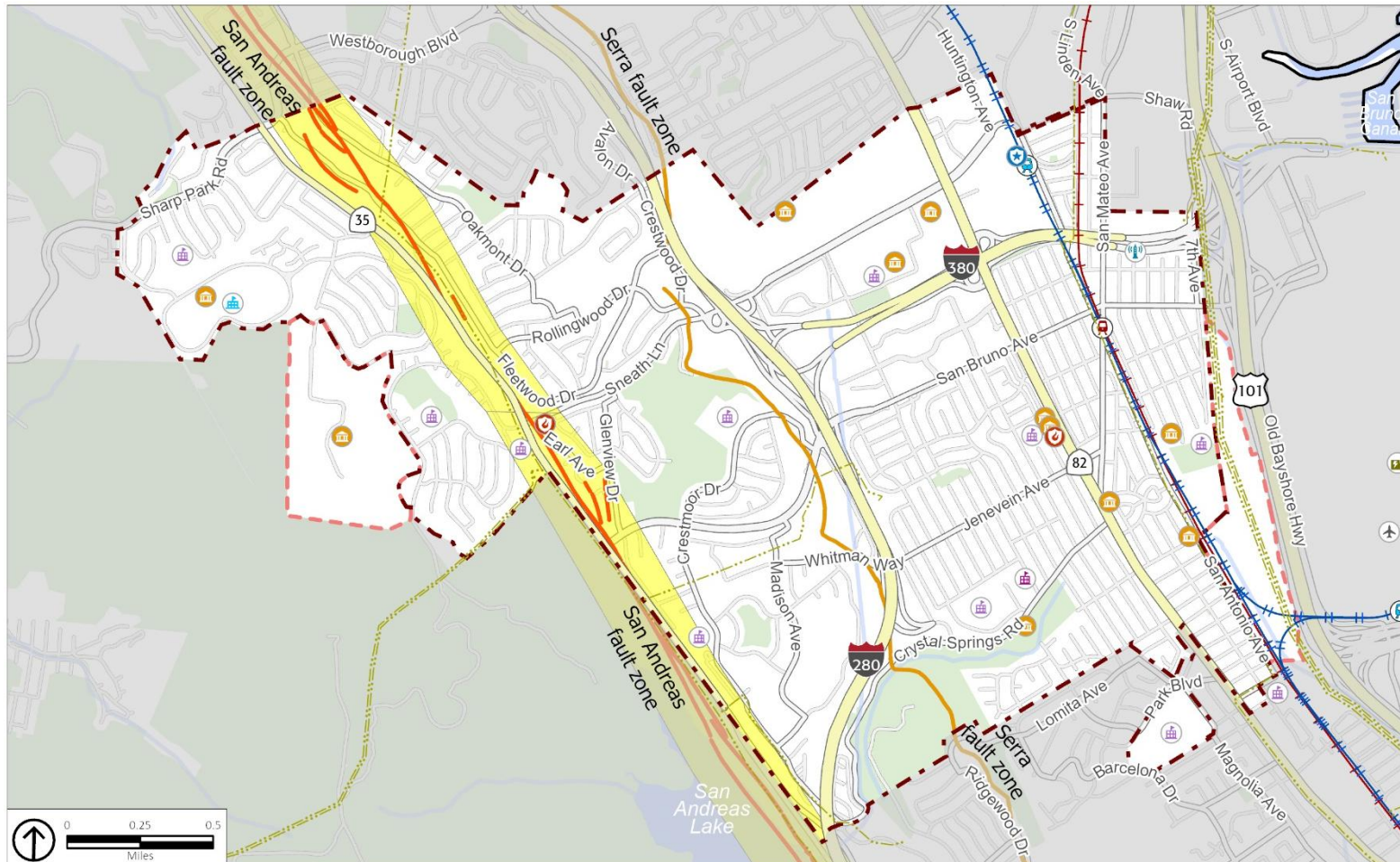
Climate Change Concerns

While most geologic and seismic hazards occur independently of climate change, landslides can be exacerbated by changing climatic conditions due to the increasing frequency of wildfires and severe storms. Wildfires remove stabilizing vegetation and alter soil properties, making slopes more vulnerable to erosion during and after subsequent storms. In addition, a drier climate that experiences more extreme precipitation events can also trigger landslides and mudslides. These incidents can displace residents, block emergency routes, and damage critical infrastructure, disrupting daily life and requiring costly repairs.

The San Mateo Peninsula Resilience Planning Project (PREP) includes a detailed GIS map viewer that provides more detailed and customizable mapping tools to allow users to see detailed conditions within San Bruno. Use of this viewer is for planning purposes only and not intended to provide regulatory information.

¹ Strike-slip faults exhibit displacement in a horizontal direction, but may also have a vertical component.

Figure 7-32: Local Fault Lines (2026)



Source: ESRI, 2023; County of San Mateo, 2025; PlaceWorks, 2025; USGS, 2020

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|---------------------------|-------------------|-------------------------|--------------------------|----------------------------|
| City of San Bruno | BART Stations | Fire Stations | College or University | Alquist Priolo Fault Zones |
| Sphere of Influence | BART Network | Government Facilities | Communication Facilities | |
| San Mateo County Boundary | Caltrain Stations | California Power Plants | Transmission Lines | |
| Airport | Law Enforcement | Public Schools (K-12) | Surface Faults | |
| | | Private Schools (K-12) | Historic | |
| | | | Quaternary | |



7-3-4 FLOODING

The San Mateo County Flood ~~and Sea Level Rise Resiliency-Control~~ District (~~One Shoreline~~) is a Countywide Special District that was ~~formed in 2020 to oversee countywide efforts to address flood protection, sea level rise, coastal erosion, and climate change adaptation. Replacing the San Mateo County's Flood Control District, the new special district works collaboratively across all jurisdictions focusing on multi-benefit solutions that help communities throughout the county. created by State legislation in order to provide a mechanism to finance flood control projects. The legislation requires that a flood control zone be formed over an entire watershed and a proposed funding source be determined before a flood control project is undertaken. Recent changes in the State Constitution require an election if a flood control zone is to be financed with property assessments or taxes. There are currently three active flood control zones in this District: Colma Creek, San Bruno Creek, and San Francisquito Creek. Both Colma and San Bruno Creek zones contain parts of the City of San Bruno.~~

The risk of flooding in urban areas is dependent on the following variables: preceding soil conditions, amount and intensity of rainfall, and capabilities of the storm drain system. It is the function of the storm drain system to move surface runoff into gutters, storm drain inlets, channels, creeks, collection basins, and eventually to the receiving body (San Francisco Bay).

~~Based on recent mapping prepared by Although San Bruno contains no areas designated by the Federal Emergency Management Agency (FEMA), areas of San Bruno along its eastern border (closest to the Bay) are within the ~~as~~ 100-year and 500-year floodplains, meaning that they have either a 1 in 100 (1 percent) chance or a 1 in 500 (0.2 percent) chance of flooding in any given year. In addition,~~ the City has identified several areas which occasionally flood due to combined high tides and heavy rain:

- Downtown's San Mateo and Mastick Avenues, north of Sylvan Avenue.
- Kains Avenue, east of Green Avenue.
- First Avenue through parts of Seventh Avenue (as far north as I-380s, and south of Pine Street).
- City Park Way, along with portions of Crystal Springs Road.
- Magnolia Avenue, adjacent to Capuchino High School.
- Santa Helena and San Juan Avenues at San Antonio Avenue, ~~as well as Millbrae neighborhoods to the south.~~

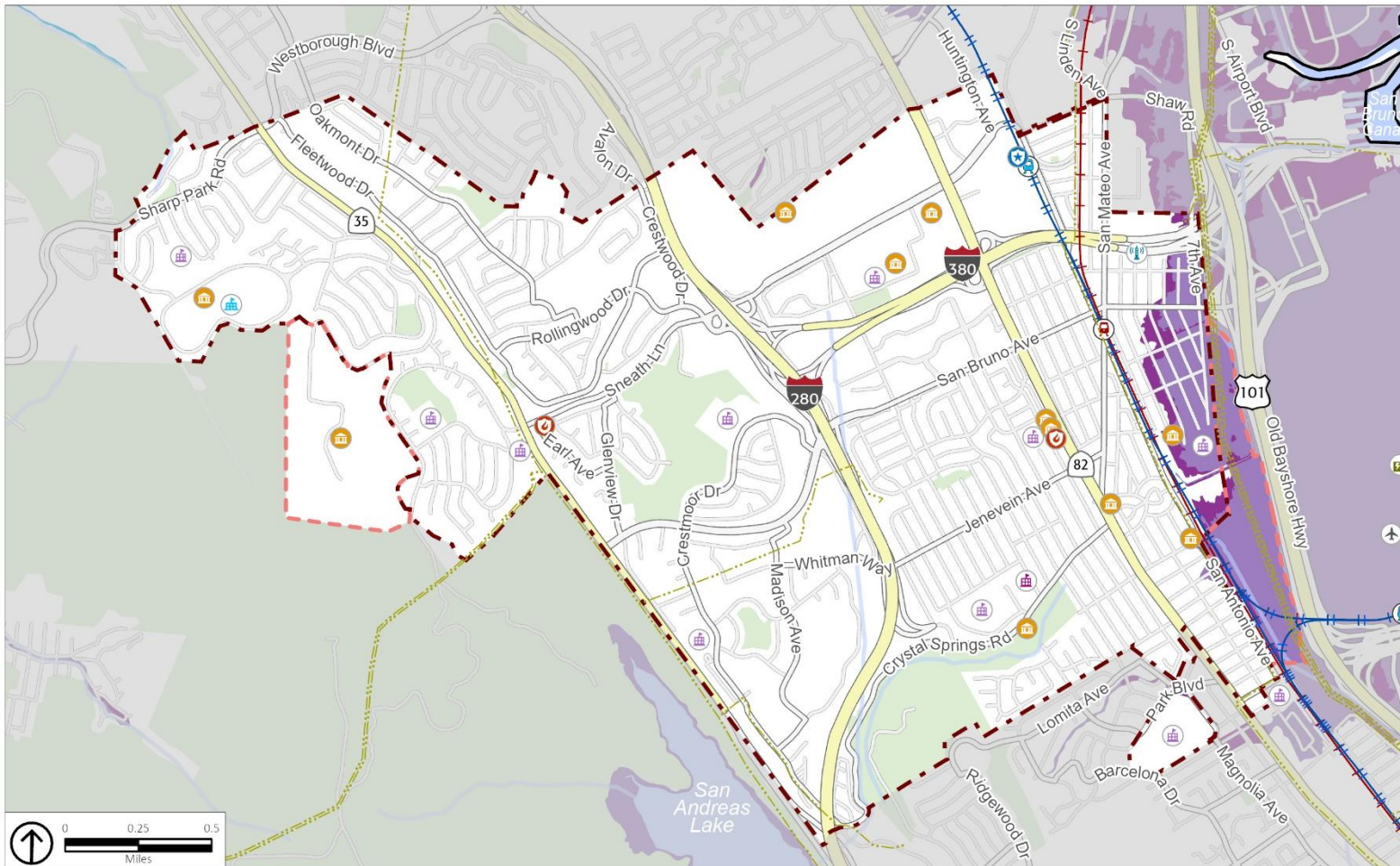
Flooding occurs in these areas because of inadequate storm drains and/or low elevation, which subjects the areas to tidal influences. The City's storm drain system does not operate effectively at times of high tide combined with heavy rain. Figure 7-43 shows the flood zones in the city.

Storm Drain System

San Bruno's system of storm drains collects and channels surface water (mostly from rainfall) into a series of pipes, trenches, culverts, detention basins, and open channels, managed by ~~the Flood Control District One Shoreline~~, which transport and empty it into San Francisco Bay. The system is based upon the natural drainage pattern determined by topography. Because of the high relief (steep slopes) in the western third of San Bruno and the more gradual eastward slope east of I-280, a gravity-flow system is used. Its main artery carries water along a course that was formerly San Bruno Creek.

Figure 7-3-54 illustrates the six watersheds that drain the city. The northern portion of San Bruno drains toward South San Francisco and into Colma Creek watershed. Despite ultimate drainage into the South San Francisco system, the City of San Bruno maintains all storm drainage facilities within the city limits. The city's primary drainage basins—Crystal Springs Creek, Huntington Creek, and San Bruno Creek—encompass 80 percent of San Bruno's land area. These highly modified, intermittent channels are part of the storm drain system maintained by the San Bruno Public Works Department. Several smaller watersheds that are delineated in the eastern portion of the city reflect the pattern of existing storm drain trunks.

Figure 7-4: Flood Hazard Zones (2026)

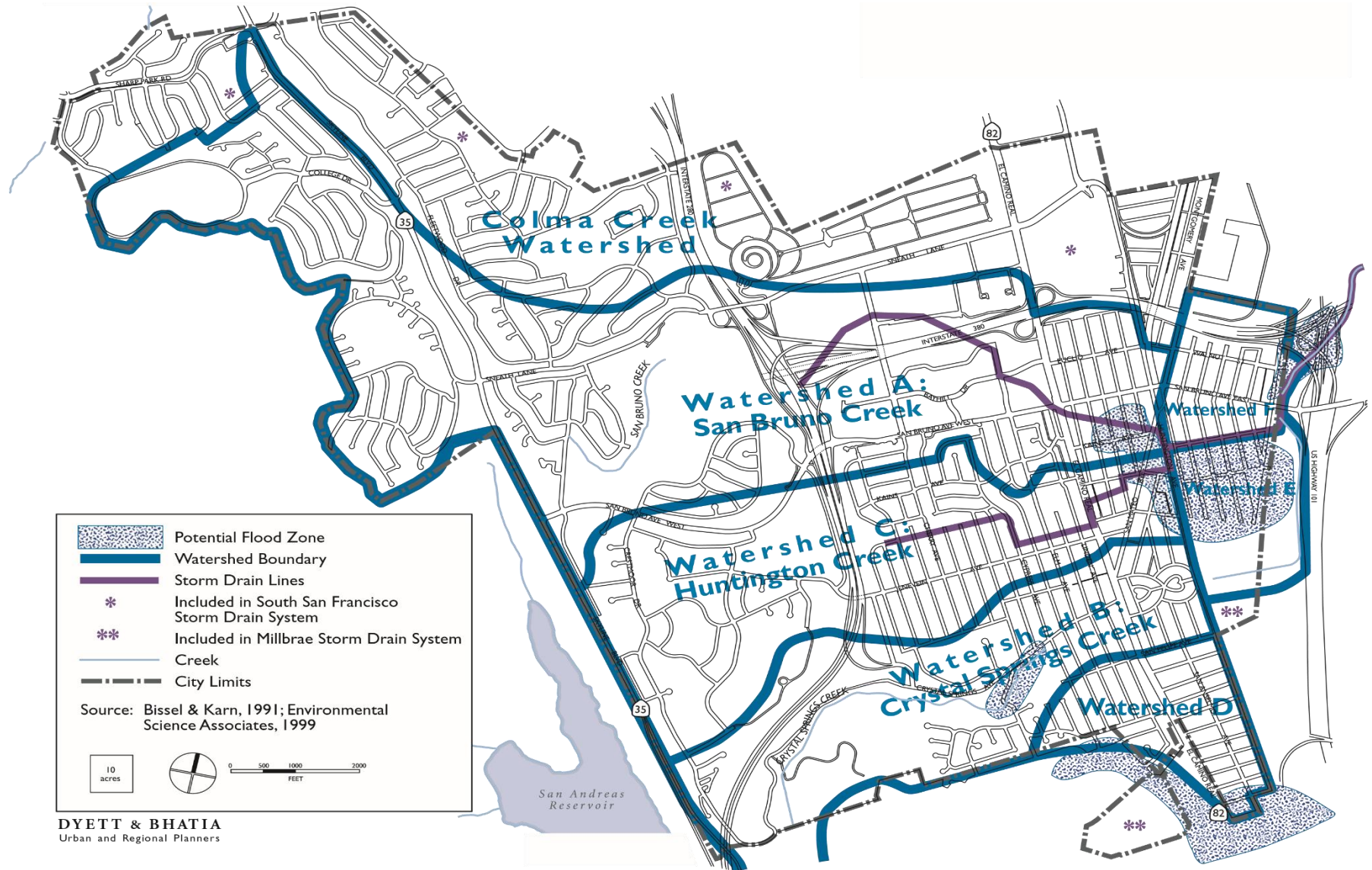


Source: ESRI, 2023; County of San Mateo, 2025; PlaceWorks, 2025; FEMA; DWR, 2021

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|---------------------------|-------------------|-------------------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| City of San Bruno | BART Stations | Fire Stations | College or University | Designated Flood Hazard Zones
100 Year Flood Plain (DWR)
100 Year Flood Zone (FEMA)
500 Year Flood Zone (FEMA) |
| Sphere of Influence | BART Network | Government Facilities | Communication Facilities | |
| San Mateo County Boundary | Caltrain Stations | California Power Plants | Transmission Lines | |
| Airport | Caltrain Network | Public Schools (K-12) | | |
| | Law Enforcement | Private Schools (K-12) | | |



Figure 7-5: Flooding and Storm Drainage (2009)



San Bruno Creek watershed (A) encompasses an area of two square miles of mostly urbanized land, sloping steeply toward the east. Headwaters of San Bruno Creek are located in the coastal range at the boundary with the City of Pacifica. San Bruno Creek is not a natural creek, but is composed of a series of channels, pipes, and detention basins.

Huntington Creek watershed (C) encompasses approximately one square mile. Huntington Creek begins east of Skyline Boulevard and flows through storm drain pipes and culverts to its juncture with San Bruno Creek.

Crystal Springs watershed (B) drains approximately one square mile of the southern part of the city. Crystal Springs Creek originates in Junipero Serra County Park, and maintains a natural stream channel through Junipero Serra County Park and San Bruno City Park.

The discharge point for these watersheds is the San Bruno Channel, maintained by ~~the Flood Control District~~ OneShoreline, located next to the South San Francisco-San Bruno Water Quality Control Plant just north of SFO. Two pump stations are critical to the movement of stormwater in this District; one at Angus Avenue and one at Walnut Street.

Silt and debris in the storm drain system can sometimes cause water to back up and flood surrounding areas. Leaves, branches, household trash, and other debris must be removed regularly in order for the storm drain system to function effectively. The City of San Bruno

Public Works Department, ~~Streets and Stormwater Division~~, maintains and repairs the municipal stormwater drainage system. Much of the City's storm drain infrastructure is aging and needs to be replaced. Although adequate under average conditions, there are problem spots where flooding occurs during heavy storms and high tides. Development in San Bruno's low-lying areas could be subject to flooding unless adequate measures are taken to improve the drainage system.

The City adopted Aa Storm Drainage Master Plan was developed for the City in 1991 by Bissell & Karn, Inc. and an update analysis of that plan was prepared by Brian Kangas Foulk in 1999/2000, in 2014. The master plan allows the City to study and review the existing storm drain collection system performance and develop strategies to improve its level of service. As of 2026, the City has begun an update to this plan. Improvements have been made to the three existing trunk lines, and points of constricted flow have been identified. Implementation of recommendations made in the more recent study would increase the diameter of mains in problem locations where they are constricted, add parallel box culverts in key locations to increase flow capacity, and add a storm drain bypass to redirect discharge overflows from the San Mateo Avenue area southward into San Felipe Creek. Although proposed improvements would significantly increase the flow through capacity ~~reduce~~ of the eCity's storm drain system flooding problem, inundation of some problem areas could still be expected

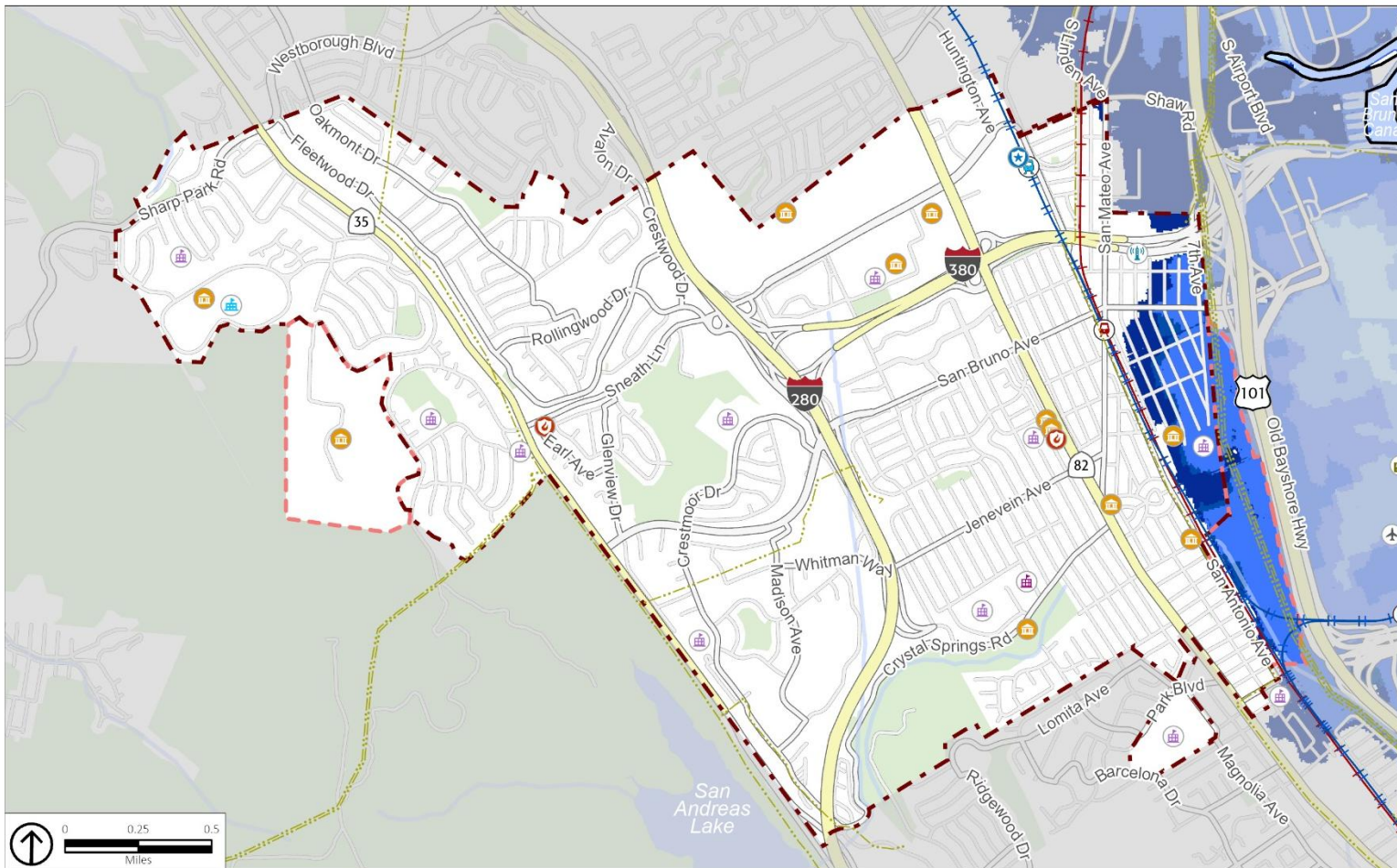
during higher tides events a 25 year storm events until downstream outfall improvements are made to infrastructure owned by OneShoreline.

Climate Change Concerns

Climate change is expected to make flood events worse by causing a number of more intense precipitation events, in the form of atmospheric rivers. As a result of these projected changes, the frequency of flooding in areas may increase and the locations of projected flooding may expand. Climate change is also likely to increase the frequency and severity of droughts, changing soil characteristics. When precipitation returns, drier and harder soils can experience more runoff because the soils cannot absorb the water, increasing downstream flooding. In addition, floodplain areas near the bay shoreline are likely to expand as sea level rises and the tide regularly moves farther inland.

Sea level rise is a result of melting ice caps/glaciers and expansion of sea water from warmer temperatures associated with climate change. Sea levels along the Bayside are projected to increase by as much as 0.4 feet (5 inches) by 2030, 1.3 feet (16 inches) by 2050, and 5 feet (78 inches) by 2100. Regardless of the rate, increased sea levels, coupled with storm surge, wave runup, and King Tide events could result in an additional 24 to 36 inches of temporary flooding affecting San Bruno and its buildings and infrastructure adjacent to Highway 101. Figure 7-6 identifies the areas of San Bruno most vulnerable to sea level rise inundation, which could total 128 acres of land by the end of the century.

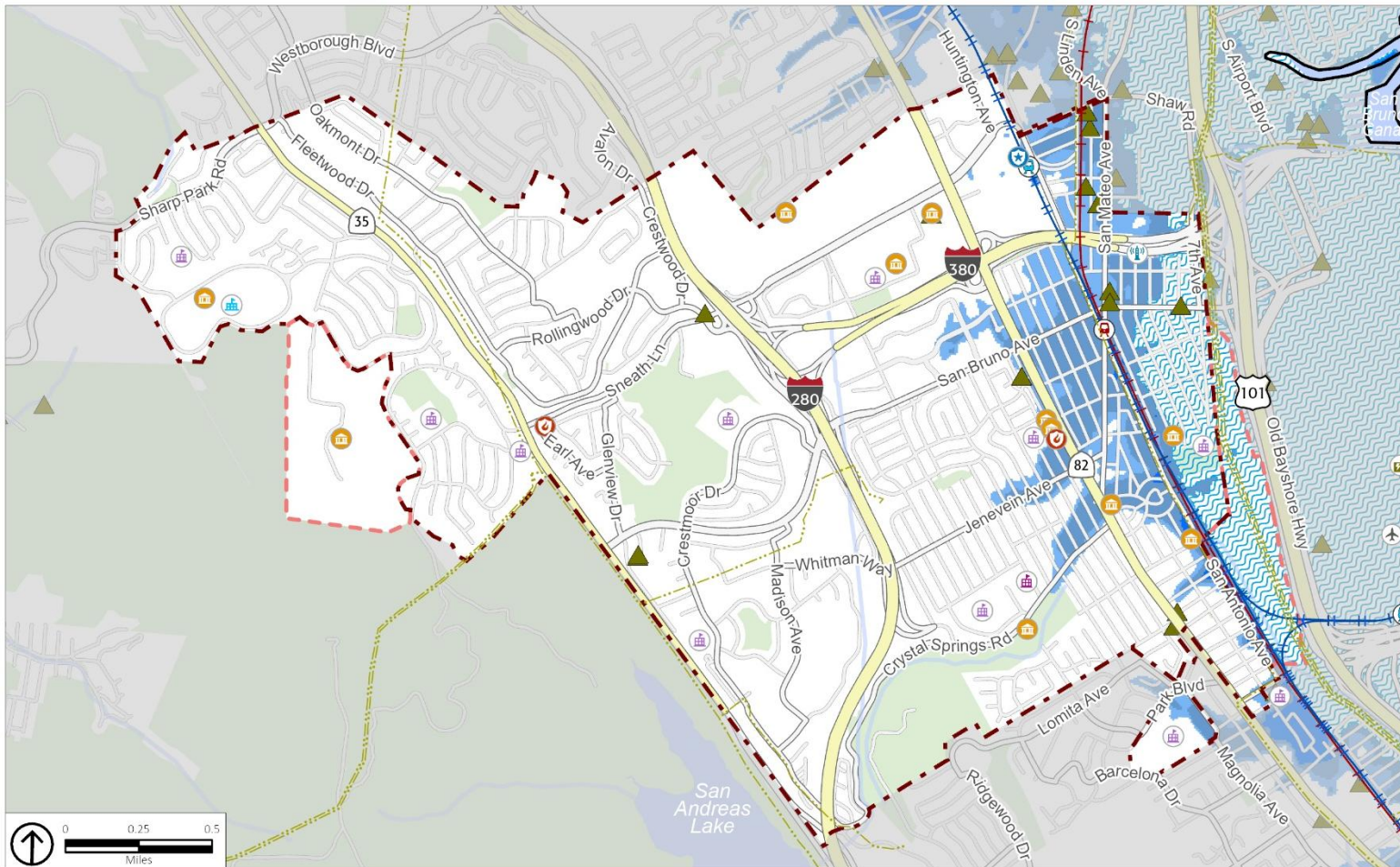
Figure 7-6: Sea Level Rise Projections (2026)



Source: ESRI, 2023; County of San Mateo, 2025; PlaceWorks, 2025; USGS CoSMoS



Figure 7-7: Emergent Groundwater Hazards at 6.6 Feet of Sea Level Rise (2026)



Source: ESRI, 2023; County of San Mateo, 2025; PlaceWorks, 2025; California Office of Environmental Health Hazard Assessment, 2021; USGS, 2020

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|---------------------------------------|-------------------|-------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| City of San Bruno Sphere of Influence | BART Stations | Fire Stations | College or University | Groundwater Flooding by Sea Level Rise Scenario (6.6 feet)
Emergent Groundwater
6.6ft Sea Level Rise
Groundwater depth below surface
0 - 3.3 feet (Very Shallow)
3.3 - 6.6 feet (Shallow) |
| San Mateo County Boundary | BART Network | Government Facilities | Communication Facilities | |
| Airport | Caltrain Stations | California Power Plants | Transmission Lines | |
| | Caltrain Network | Public Schools (K-12) | Hazardous Material Cleanup Sites | |
| | Law Enforcement | Private Schools (K-12) | | |



An added consequence to sea level rise is emergent groundwater, which occurs when freshwater is pushed upward by denser sea water that travels further inland, causing temporary or permanent inundation. Sea level rise is expected to increase the frequency, duration, and magnitude of flood events. As sea levels rise and emergent groundwater increases, the number of individuals and properties at risk will increase, which will in turn lead to a higher likelihood of flood damage and other adverse consequences for both coastal and inland areas. Sea level rise and emergent groundwater will interact directly with stormwater from inland sources, causing more severe flooding near creeks and at the outlets of drainage systems. To further complicate this issue, the presence of contaminated soils in areas of emergent groundwater could introduce these contaminants into stormwaters, potentially spreading contaminants into uncontaminated areas or waters of the Bay. Figure 7-7 shows areas at risk of emergent groundwater in San Bruno.

7-5 WILDFIRE

A wildfire is an unplanned, uncontrolled fire burning in undeveloped areas, such as forests, grasslands, brush, or scrub. Wildfires pose a significant and growing threat to San Bruno and the greater region. The city's Mediterranean climate, topography, and diverse plant communities create ideal conditions for wildfire.

The wildland-urban interface (WUI) is an area where buildings and infrastructure mix with areas of flammable wildland vegetation, allowing

wildland fires to easily spread to buildings and structures. Wildfires can occur naturally and are important to many ecosystem processes. However, human-caused fires are the leading cause of wildland fires, and with thousands of people living near and visiting wildland areas, the probability of human-caused fires is growing. While no major wildfire incidents have been reported in San Bruno in the past 75 years, the potential for an incident still exists.

Based on the 2025 fire hazard severity zone mapping prepared by the California Department of Forestry and Fire Protection (CAL FIRE), the western portions of the city (adjacent to the City of Pacifica and unincorporated San Mateo County) are within very high, high, and moderate fire hazard severity zones. Figure 7-8 identifies the mapping for these areas, which are generally near extensive natural vegetation, including Junipero Serra County Park, Crestmoor Canyon, and the San Francisco Water Department's Peninsula Watershed. Many homes in these areas are near open spaces, increasing vulnerability to wildfires.

Dense stands of large non-native eucalyptus trees within the Crestmoor and Rollingwood neighborhoods also pose a fire threat due to the highly flammable nature of these trees, mixed with steep topography and dry conditions associated with California summers.

San Bruno is also vulnerable to smoke from wildfires occurring throughout the region. These incidents can increase the potential for poor air

quality, impacting residents, workers, and visitors in the city.

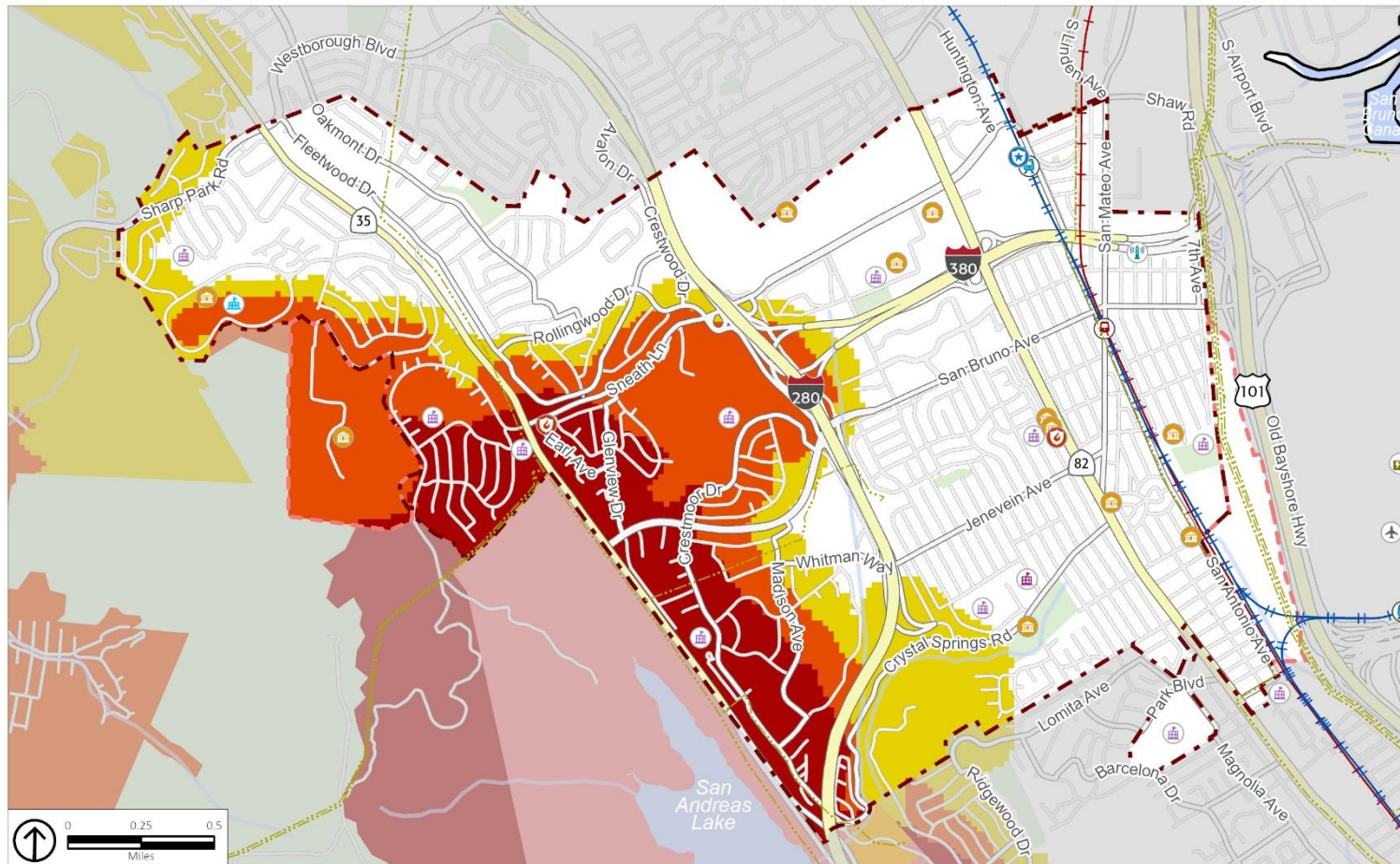
Climate Change Concerns

Wildfire season is becoming a year-round hazard, leaving communities vulnerable for much longer periods. Rising temperatures and prolonged droughts dry out vegetation, creating abundant fuel for fires. Pest outbreaks, such as bark beetle infestations, and prolonged droughts leave behind weakened and dead trees as additional fuel, and extreme heat and erratic wind conditions make wildfires more unpredictable and harder to control.

Cal-Adapt projections suggest that the average annual burned areas in San Mateo County could more than double by the end of the century. While San Mateo County has experienced many fires in the past, only a few have caused enough damage to trigger a state or federal disaster declaration. Most notable are the November 1929 fire near Montara and the August 2020 CZU Lightning Complex, which was caused by lightning strikes.

In addition to the increase in wildfires, San Bruno is also vulnerable to air quality and smoke impacts. Air quality directly affects the health, well-being, and everyday quality of life for all residents of San Bruno. Exposure to air pollutants such as ozone and particulate matter can lead to respiratory conditions, exacerbate asthma, and increase the risks of heart attacks, strokes, and certain types of cancer.

Figure 7-8: Fire Hazard Severity Zones (2026)



Source: ESRI, 2023; County of San Mateo, 2025; PlaceWorks, 2025; CalFIRE, 2025

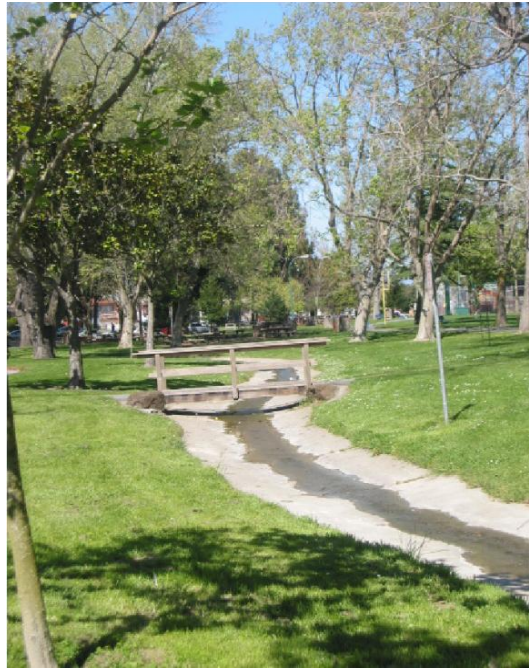


Wildfire smoke, which contains a mixture of gases and fine particulates, has become an increasingly significant concern for air quality in San Bruno and the broader region. The health risks associated with wildfire smoke are particularly severe for vulnerable populations, including children, older adults, individuals with pre-existing respiratory or cardiovascular conditions, and low-resourced residents, who may experience more severe acute and chronic health effects. Hotter and drier conditions have increased the frequency of wildfires resulting in more frequent exposure to hazardous air quality conditions for many residents and visitors.

7-4-6 HAZARDOUS MATERIALS

Releases, leaks, or disposal of chemical compounds, such as petroleum hydrocarbons,² on or below the ground surface can lead to contamination of underlying soil and groundwater. Disturbance of a previously contaminated area through grading or excavation operations could expose the public to health hazards from physical contact with contaminated materials or hazardous vapors. Improper handling or storage of contaminated soil and groundwater can further expose the public to these ~~hazards, or hazards~~ or potentially spread contamination through surface water runoff or air-borne dust. In addition, contaminated groundwater can spread

downgradient, potentially contaminating subsurface areas of surrounding properties.



Crystal Springs Creek flows in a meandering stream channel through City Park.

The use of hazardous materials in San Bruno occurs most often in its commercial and industrial areas. ~~Figure 7-4 indicates known areas of potential soil or groundwater contamination in Various state and Federal agencies monitor hazardous materials locations throughout the state, include San Bruno. The City regularly reviews these resources to determine the presence/status of –caused by~~

leaking underground storage tanks or other potential sources of hazardous materials.³ Uses that generate hazardous waste can include auto body shops due to the use of solvents and petroleum products, machine shops that utilize cutting oils and heavy metals, and auto dismantlers due to the solvents and petroleum fluids within automobiles. In cooperation with the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the California Department of Toxic Substance Control, the San Mateo County Health Services Agency’s Environmental Health Division coordinates investigation and remediation of sites that have been affected by leaking underground storage tanks or hazardous waste. ~~As shown on Figure 7-49, sites with potentially contaminated soil are largely clustered around industrial areas near El Camino Real.~~ Depending upon the potential extent of contamination in these areas, reuse may be complicated by petroleum hydrocarbon or hazardous materials impacts to soil or groundwater.

~~San Bruno has a long history of industrial, commercial, and residential development.~~ Based on the age and nature of existing buildings in San Bruno, lead-based paint or asbestos may be present. In general, structures constructed before December 31, 1978 are at risk for lead-based paint. In addition, asbestos-containing materials (ACMs) can be present in thermal systems insulation, as well as wall and floor materials. Asbestos is a naturally occurring

² Petroleum products range from gasoline (the lightest) to motor oil (the heaviest). A common term for the carbon-based compounds that petroleum products are composed of is petroleum hydrocarbons.

³ ~~The locations of potential soil contamination shown on Figure 7-24 are approximate, as facility addresses do not always precisely correspond to the geographic location of tanks or other hazardous materials.~~

fibrous material used as a fireproofing and insulating agent in building construction before such uses were banned by the Environmental Protection Agency (EPA) in the 1970s.

Figure 7-9: Potential Contamination Sites

Asbestos and lead-based paint can seep into the soil and/or be released into the air, providing a potential threat to the health of workers, as well as persons in the vicinity. Asbestos clean-up is regulated by federal and State laws that include the Clean Air Act and California Occupational Safety and Health Administration (Cal-OSHA). Both the federal OSHA and Cal-OSHA regulate worker exposure during construction activities that affect lead-based paint, including demolition, removal, surface preparation for repainting, renovation, cleanup, and routine maintenance. All sites with existing structures built prior to the 1980s could be at risk for asbestos and lead-based paint contamination and therefore require individual surveys.

7-5-7 NOISE

Noise is measured in decibels (dB), which are units of sound energy intensity. Sound waves, traveling outward from a source, exert a sound pressure level measured in dB. The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. To account for this variation, the A-weighted scale is used. A-weighting is a method of frequency weighting to account for the variation in sensitivity of the human ear to the range of frequencies of the audible spectrum. A 3-dBA increase is the smallest change in noise level

perceptible to the average person. Average noise exposure in the community is measured by a Community Noise Equivalent Level (CNEL). This is the computed average of noise over a 24-hour period, weighted for time of day.

Factors that can influence human response to noise include intensity, frequency, and time pattern of noise sources; the amount of background noise present prior to the intruding noise; and the nature of work or human activity that is exposed to the noise. The noise level experienced depends on the distance between the source and the receptor; presence or absence of noise barriers and other shielding features; and the amount of noise attenuation (lessening) provided by the intervening terrain.

Noise Sources

Aircraft Noise

Aircraft overflight noise is an important issue in San Bruno due to the city's proximity to SFO. SFO is located to the east of San Bruno, across U.S. 101. The airport has four runways, of which two are east-west (10R-28L and 10L-28R) and two are north-south (1L-19R and 1R-19L). Northeastern portions of San Bruno are situated beneath flight tracks for arrivals and departures on runways 10R-28L and 10L-28R.

Aircraft noise contour maps are the principal tool used in analyzing airport/land use compatibility in the vicinity of airports. Each contour reflects linear bands subject to similar average noise levels. Two types of noise contour maps have been generated for SFO, one of which is based on computer modeling, while the other is based on actual measured noise

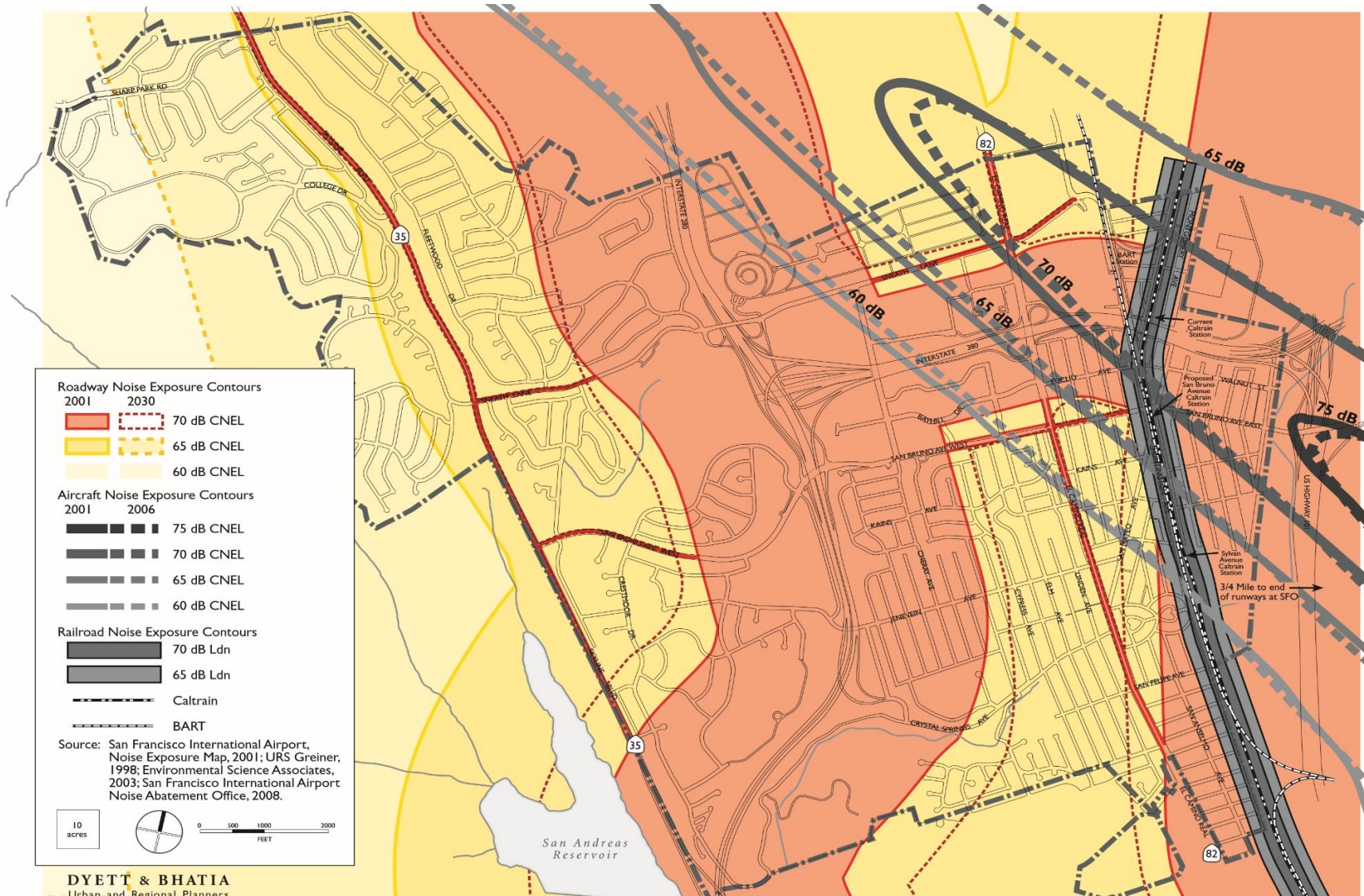
levels. The Federal Aviation Administration (FAA), the agency charged with ensuring air safety, generates noise contour maps based on its Integrated Noise Model (INM). SFO received FAA approval for its original Federal Aviation Regulation (FAR) Part 150 Noise Exposure Maps (NEM) and Noise Compatibility Program in 1983. Because of the federally mandated replacement of Stage 2 aircraft with Stage 3 aircraft by 2000, noise contours at SFO have continued to shrink in recent years.

As required by State law, airports that have been designated as noise problem airports (such as SFO) must install and maintain a noise monitoring system that identifies and defines the airport's noise impact boundary (generally the 65 CNEL noise contour), based upon the aircraft noise levels recorded by noise monitoring equipment. Four of the 27 off-airport noise meters are located within San Bruno. In accordance with Title 21 requirements, SFO staff compiles noise-monitoring data and generates 65 CNEL noise contour maps on a quarterly basis.

SAN BRUNO AIRCRAFT NOISE INSULATION PROGRAM

Since 1983, the FAA and the City and County of San Francisco Airports Commission, the owner and operator of SFO, have jointly funded local aircraft noise insulation projects in communities near the airport. The goal of these programs is to achieve an interior noise level of 45 dB during an aircraft noise event, consistent with Title 24 noise standards. The Aircraft Noise Insulation Program includes all noise-

Figure 7-499: Existing and Projected Noise Contours (2009)





New development under the General Plan must seek to reduce indoor ambient noise levels from the following sources—the Caltrain railroad tracks (top, center), highways, and arterial roadways (El Camino Real, bottom).

impacted dwelling units within the 65 CNEL noise contour, as shown on the FAR Part 150 Noise Exposure Maps (NEMs). To date, about 3,000 homes in San Bruno have benefited from this program.

Roadway Noise

Areas of San Bruno are exposed to noise generated by traffic on I-280, I-380, and U.S. 101. El Camino Real is another heavily traveled roadway in the city. Traffic noise depends primarily on traffic speed (high-frequency tire noise increases with speed) and the proportion of truck traffic, which generates engine, exhaust and wind noise. The proximity of freeways and major streets, and the large amount of truck traffic serving industrial, warehousing, and freight forwarding uses in the area make San Bruno susceptible to traffic noise.

Railway Noise

Trains operating on the Southern Pacific Railroad Line through San Bruno affect the noise environment of nearby residential areas. These tracks run adjacent to Huntington Avenue. Currently, 112 Caltrain trains and two freight trains pass through San Bruno each weekday. The freight trains operate six times a week between 7 to 10 p.m. from Sunday to Friday. The trains originate from South San Francisco and travel to San Jose and back each evening. Currently, there is also limited Caltrain activity on the weekends.

In June 2003, BART completed the SFO Airport Extension Project that included extension of the Bay Area Rapid Transit

(BART) tracks by 8.7 miles and four new stations, including a new station in San Bruno and a station inside the new International Terminal at SFO. The new BART station in San Bruno, the associated parking structure, and the BART/City of San Bruno Joint Police Station is located on Huntington Avenue adjacent to the existing shops at Tanforan. The BART tracks run along Huntington Avenue through San Bruno.

Industrial Noise

Industrial land uses in San Bruno are limited primarily to light industrial operations (manufacturing, distribution, storage) and semi-industrial uses (car repair). These types of uses are concentrated in the North Belle Air neighborhood in the northeastern part of the city. This area is largely located within the 65 dB CNEL contour for aircraft noise.

Figure 7-5-9 illustrates noise contours from the various noise sources in the city.

Noise Exposure Standards

State Regulations

Title 24 of the California Code of Regulations, the Building Standards Administrative Code, contains the State Noise Insulation Standards, which specify interior noise standards for new hotels, motels, apartment houses, and dwellings other than single-family homes. Such new structures must be designed to reduce outdoor noise to an interior level of (no more than) 45 dB in any habitable room. They require an acoustical analysis demonstrating how dwelling units have been designed to meet this interior

standard where such units are proposed in areas subject to noise levels greater than 60 dB. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

San Mateo County Comprehensive Airport Land Use Plan Standards

The San Mateo County Airport Land Use Commission (ALUC) develops and implements the San Mateo County Comprehensive Airport Land Use Plan (San Mateo County CLUP). The current San Mateo CLUP was adopted in December 1996. The CLUP establishes the procedures that C/CAG uses in reviewing proposed local agency actions that affect land use decisions in the vicinity of San Mateo County's airports. Airport planning boundaries define where height, noise and safety standards, policies, and criteria are applied to certain proposed land use policy actions. San Bruno is located within the jurisdiction of the SFO Land Use Plan, a subchapter of the San Mateo County CLUP. For the purposes of review under the SFO Land Use Plan, the '01 NEM, the most recent federally accepted NEM is the noise contour map that C/CAG uses in making its determination of the consistency of a proposed local agency land use policy action with the SFO Land Use Plan. The northeastern corner of San Bruno is within the 2001 65 and 70 CNEL noise contours; the noise/land use compatibility standards shown in Table 7-1 apply to the areas within these noise contours.

City of San Bruno Noise Standards

General Plan noise standards are shown in Table 7-2. These apply to areas outside of the airport noise impacted areas; for land within 60 db or greater airport noise contours (Figure 7-510), County airport land use compatibility noise standards as per Table 7-1 shall apply. For sites impacted by both airport and nonairport-related sources, the more stringent of the two restrictions shall apply.

San Bruno's Noise Ordinance is contained in Title 6 of the San Bruno Municipal Code. The ordinance places limits on noise levels in residential zones, limits construction activity noise levels and hours near residential zones, establishes machinery noise level limits, and addresses amplified sounds.

7-6-8 AIRPORT SAFETY

Approximately 90 percent of arrivals at SFO occur on the east-west runways, with approaches over San Francisco Bay and portions of San Bruno. Approximately 70 percent of departures occur on the north-south runways.

The Federal Aviation Administration (FAA) is the federal agency charged with regulating air commerce and achieving efficient use of navigable airspace. The FAA has established FAR Part 77 criteria which are imaginary surfaces that extend outward from the end of each runway and define the maximum heights of structures within the airport vicinity. Permissible building heights are equal to the

difference between the height of the horizontal plane (or imaginary surface of flight pattern) and the ground elevation above mean sea level. Figure 7-6 illustrates the FAR Part 77 criteria applicable to San Bruno.

Figure 7-10: SFO Imaginary Surfaces (2009)

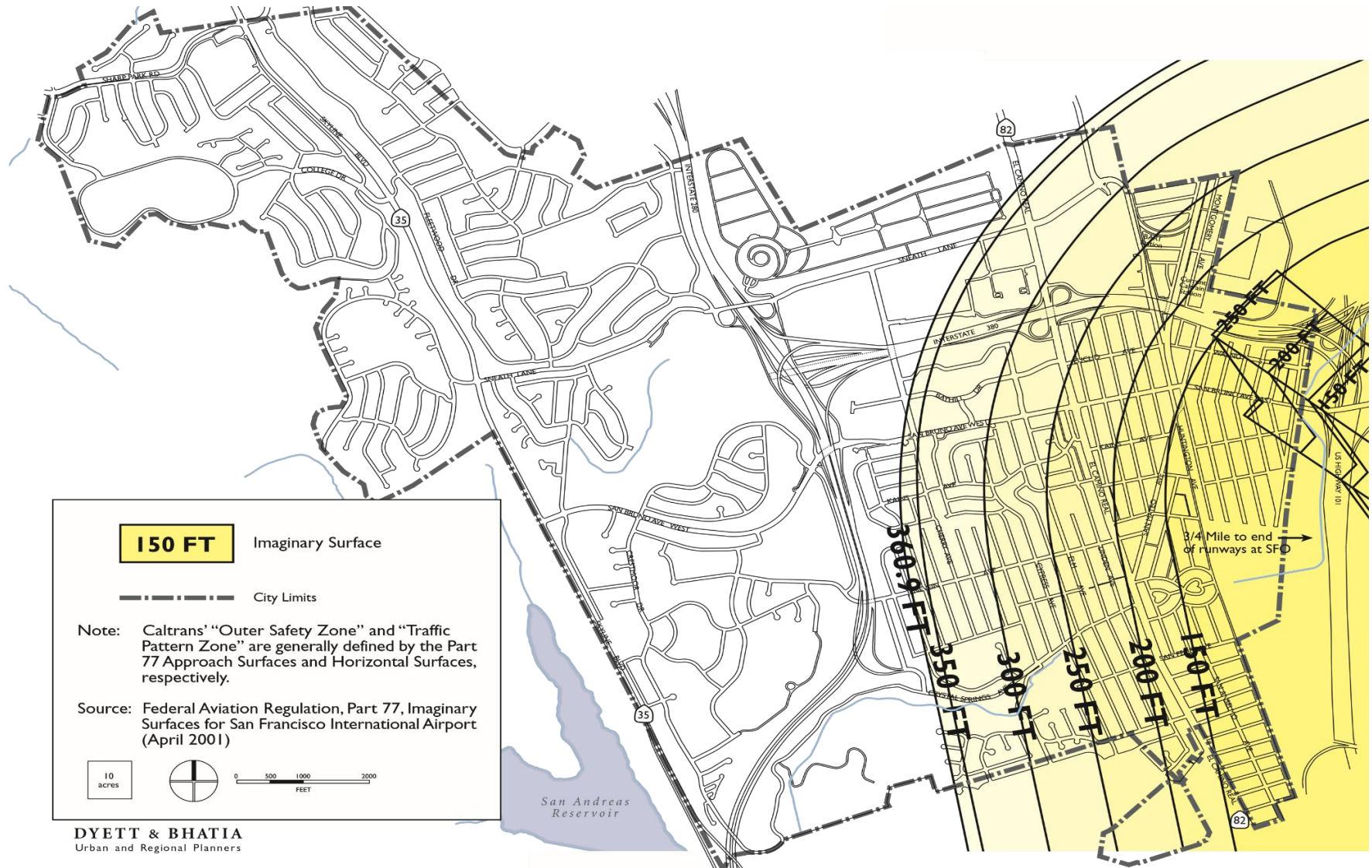


Table 7-1: San Mateo County Comprehensive Airport Land Use Plan Noise/Land Use Compatibility Standards

LAND USE	GENERAL LAND USE CRITERIA, CNELA		
	COMPATIBLE <i>No special noise insulation requirements for new construction</i>	CONDITIONALLY COMPATIBLE <i>New development should be undertaken only after analysis and including needed noise insulation features in design</i>	INCOMPATIBLE <i>New construction should not be undertaken unless related to airport activities or services. Special noise insulation features should be included in construction</i>
RESIDENTIAL: single- and multi-family, mobile homes, schools, libraries, churches, hospitals, nursing homes, and auditoriums	Less than 65	65 to 70	More than 70
COMMERCIAL: retail, restaurants, office buildings, hotels, motels, movie theaters, sports arenas, playgrounds, cemeteries, and golf courses	Less than 70	70 to 80	More than 80
INDUSTRIAL: manufacturing, transportation, communications, and utilities	Less than 75	75 to 85	More than 85
OPEN SPACE: agriculture, mining, fishing	Less than 75	NA	More than 75

Source: San Mateo County Airport Land Use Commission, San Mateo County Comprehensive Airport Land Use Plan, December 1996.

TABLE 7-2: Land Use Compatibility For Community Noise Environments

LAND USE CATEGORY	EXTERIOR DAY/NIGHT NOISE LEVELS DNL or Ldn, dB					
	55	60	65	70	75	80
Residential—Single Family	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Residential—Multiple Family	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Transient Lodging—Motels, Hotels	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Schools, Libraries, Churches, Hospitals, Nursing Homes	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Auditoriums, Concert Halls, Amphitheaters	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Sports Arena, Outdoor Spectator Sports	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Playgrounds, Parks	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Golf Courses, Riding Stables, Water Recreation, Cemeteries	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable
Office Buildings, Business, Commercial and Professional	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Industrial, Manufacturing, Utilities, Agriculture	Normally Acceptable	Normally Acceptable	Normally Acceptable	Normally Acceptable	Conditionally Acceptable	Clearly Unacceptable

INTERPRETATION

	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are 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.
	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 not be undertaken.

7-9 EXTREME HEAT

Extreme heat is defined as a prolonged period of excessively hot weather, which may be accompanied by high humidity, and significantly exceeds the average temperatures for a given location and time of year. As climate change starts to affect weather patterns through increased temperatures and changes in precipitation levels, communities need to anticipate changes at the local level. Higher temperatures will require mitigation of the health, economic, ecological, and social impacts or increased temperatures and heat waves.

At the state level, California has begun implementation of an Extreme Heat Action plan that provides strategies to address many of the concerns associated with extreme heat. In addition, the State developed the California Communities Extreme Heat Scoring System (CalHeatScore) to raise awareness of extreme heat impacts and share resources to increase resilience to these events. The CalHeatScore ranking system categorizes forecasted daily extreme heat events, relying on historic temperature and health data. As designed, this

CalHeatScore (CHS) Value and Impact Level
CHS 0 (Low)
CHS 1 (Mild)
CHS 2 (Moderate)
CHS 3 (High)
CHS 4 (Severe)

scoring system is intended to raise public awareness of extreme heat events where temperatures pose risks to health and safety. During an extreme heat event day one of these scores will be provided to help people in the affected areas how significant the event may be.

For San Bruno, an extreme heat day is any day where the temperature exceeds 85.9 degrees Fahrenheit (°F). On average, San Bruno has experienced three extreme heat days between 1961 and -1990. However, in the last 20 years, the city has experienced more than 10 events in a year 5 times, with the largest number of events (21 extreme heat days) occurring in 2020. Based on Cal-Adapt projections, San Bruno may experience up to eight extreme heat days annually by mid-century and up to 15 extreme heat days annually by the end of the century. This is a five-fold increase from historic events.

In addition to extreme heat days, concern regarding warm nights is also an issue. Warm night temperatures affect the ability of a community and its residents to effectively cool down from extreme heat days. If temperatures remain higher than normal at night, the compounding impacts from high daytime temperatures can be highly detrimental to public health. According to Cal-Adapt, a warm night event in San Bruno is a night when the evening temperature exceeds 57.6°F. Historically, San Bruno experienced four warm nights annually. Cal-Adapt projections suggest by mid-century the city could

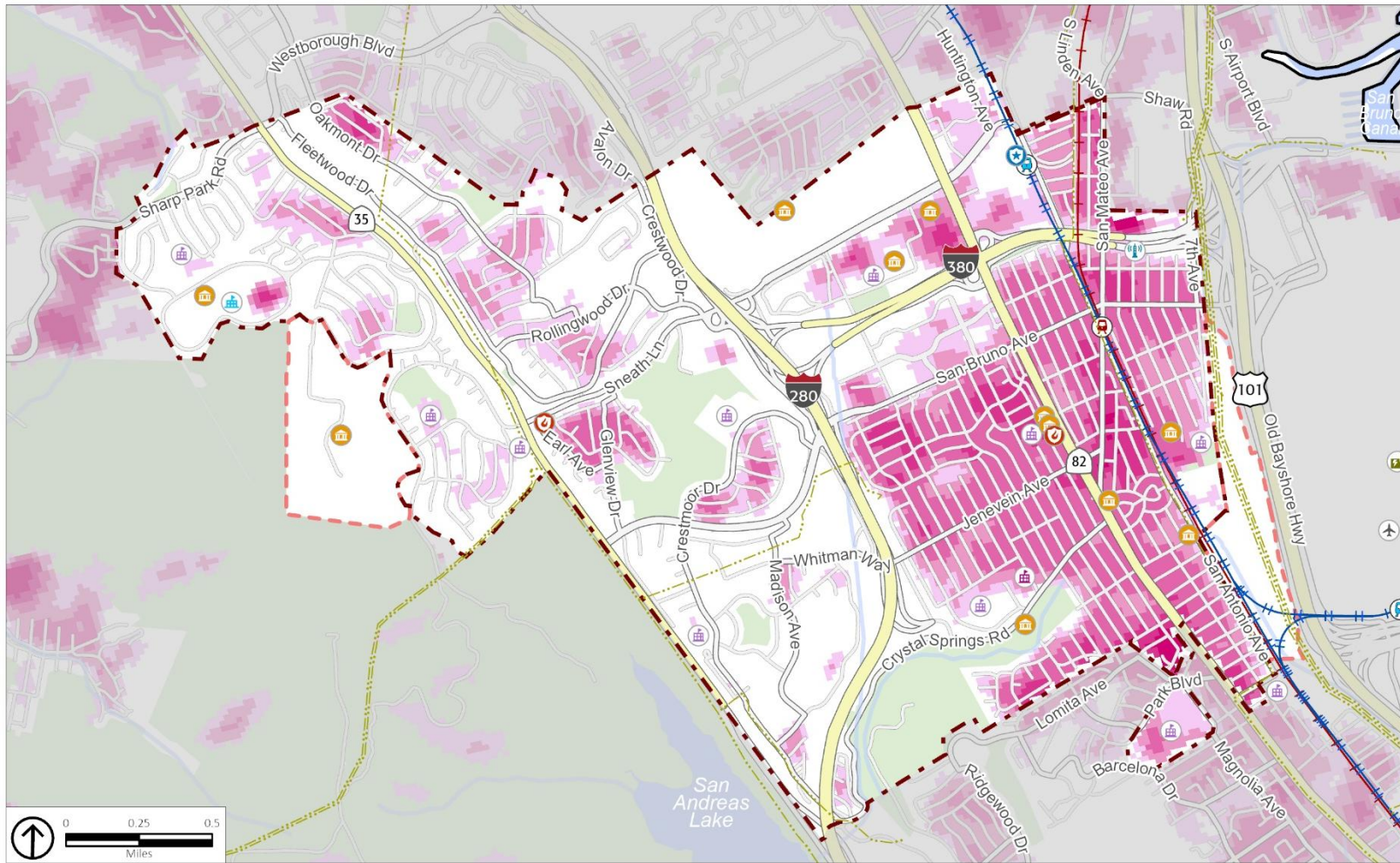
experience up to 46 nights and by the end of the century up to 101 nights.

Warmer temperatures and the urban heat island effect can exacerbate extreme heat impacts in densely populated areas, especially those that have limited tree canopy. Figure 7-11 shows the areas of San Bruno that may experience higher temperatures on extreme heat days due to limited shade cover and presence of heat-absorbing materials. Areas most at risk include the east San Bruno residential neighborhoods.

Extreme heat is an increasingly serious issue for San Bruno. More frequent and intense heat events are expected to threaten public health, infrastructure, and the environment. Single-day events are easier to manage in comparison to multi-day heat waves, which can threaten community safety, drive up energy costs, and exacerbate the risks of wildfires and water shortages. Extreme heat is one of the deadliest climate-related hazards nationwide, seeing a nearly eight-fold increase in deaths in the past 20 years.

The rising frequency and intensity of extreme heat events pose significant public health concerns, especially in areas like San Bruno that have historically experienced milder temperatures and are home to residents without access to climate-controlled environments. Warmer temperatures and the urban heat island effect can exacerbate extreme heat impacts in densely populated areas, especially those that have limited tree

FIGURE 7-121: Extreme Heat Index (2026)



Source: ESRI, 2023; County of San Mateo, 2025; PlaceWorks, 2025; The Trust for Public Land, 2019

- | | | | | |
|---------------------------|-------------------|-------------------------|--------------------------|-------------------------------------------------------|
| City of San Bruno | BART Stations | Fire Stations | College or University | Contiguous United States Cities
Heat Severity 2020 |
| Sphere of Influence | BART Network | Government Facilities | Communication Facilities | |
| San Mateo County Boundary | Caltrain Stations | California Power Plants | Transmission Lines | |
| Airport | Caltrain Network | Public Schools (K-12) | | |
| | Law Enforcement | Private Schools (K-12) | | |



canopy like the residential neighborhoods of east San Bruno. Higher demand for services and electricity (–for air conditioning) can overload these systems, causing delays and outages and can degrade utilities and infrastructure. Rising temperatures can lead to increased stress and failure in these systems as well as harm local ecosystems (lakes, streams, and habitats).

7-10 OTHER HAZARDS

In addition to the hazards identified in the previous discussions, there are other issues that may impact public safety and related issues in San Bruno. These hazards may affect the city in a variety of ways depending on the conditions experienced in the future.

Drought

San Bruno’s water supply primarily comes from surface water sources (about 95 percent) from the San Francisco Public Utilities Commission, as well as local groundwater resources (about 5 percent). While local groundwater can be more resilient to drought conditions, much of the water supplied to San Bruno from the San Francisco Public Utilities Commission comes from surface waters from the Hetch Hetchy watershed (85 percent) that feed into the Hetch Hetchy reservoir. The remaining 15 percent of the city’s surface water supply comes from the San Andreas and Crystal Springs reservoirs in the Alameda and Peninsula watersheds. Since most of the city’s water supplies come from surface waters, drought is a concern as this type of supply can be more vulnerable to drought conditions than

groundwater resources. San Bruno is an active participant in regional groundwater storage and recovery agreement to enhance groundwater resources. Under these agreements, the City currently limits its use of groundwater to support this effort.

A drought is where conditions are drier than normal for an extended period, making less water available for people and ecosystems. While droughts are part of a normal climate cycle, climate change is expected to cause more frequent and severe drought incidents across the state. While droughts do not typically cause direct loss of life or extensive structural damage, they can result in environmental and economic harm. Increases in water demands from population growth, coupled with increased reliance on groundwater reserves from increased pumping, can lead to restrictions and quality issues. Prolonged drought conditions also increase wildfire susceptibility due to dried vegetation and vulnerability to pests. Residents and businesses can also be impacted by prolonged droughts as they may be required to conserve water, which could impact their households and businesses. Depending on the duration, water customers may also see changes in the cost of their water as well.

While current projections show that future annual precipitation levels will not fluctuate significantly, an increase in the frequency of extreme precipitation events (high and low) are anticipated. This potentially reduces water absorption, which, coupled with a reduction in Sierra Nevada snowpack, stresses

infrastructure systems that capture freshwater. In addition, as drought events intensify, soils in the affected area harden, reducing infiltration, which can result in reduced groundwater recharge and a reduction in groundwater aquifer levels. This is further exacerbated by the inability of these soils to absorb water when rain events occur, resulting in more runoff, which can cause flooding as it heads towards the bay.

Ecosystem Pests

Ecosystem pests are plant and animal species that can harm San Bruno’s opens spaces, aquatic habitats, and urban forest. As a result of climate change, an increase in the abundance and range of both native and non-native pests and invasive plants is projected. Invasive plant species threaten local ecosystems by outcompeting native flora, disrupting habitats, and reducing biodiversity. Warmer temperatures and shifting precipitation patterns can weaken plants and trees, making them more susceptible to infestations and infections. While San Bruno consists of an urban and built-up environment, ecosystem pests could still cause lasting damage to habitats and vegetation within open space and parks in the city.

In addition, resources like the urban tree canopy that helps reduce the urban heat island effect, and the wetlands adjacent to San Bruno that help mitigate impacts from sea level rise and flooding may be susceptible to pests. Wetlands may become impacted due to vegetation/habitat loss, which can impact

hydrological processes, causing increased runoff and erosion. This can result in reduced water quality, increased water temperatures, and disruptions to water dynamics, reducing the function and efficacy of these systems.

Human Health Hazards

Human health hazards, including bacteria, viruses, parasites, and other pathogens, pose significant concerns in San Bruno. These conditions can result in physical injuries, fatalities, mental health issues, and exacerbate pre-existing conditions like asthma and allergies. Vectors for these hazards may include rats, mice, ticks, and mosquitoes, which can spread illness. Changing temperatures and precipitation in the future may result in increased populations of these vectors and expand the locations where these vectors travel.

Increases in heatwaves can directly impact human health by causing heat-related illnesses and deaths, while also worsening respiratory conditions due to increased air pollution. The implications of these health hazards extend beyond individual well-being, placing strain on healthcare systems, increasing economic burdens, and affecting mental health.

Severe Weather

Severe weather (usually caused by intense storm systems or wind events) poses a significant threat to San Bruno and the greater region. The types of dangers posed by severe weather include injuries or deaths, damage to buildings and structures, fallen trees, roads blocked by debris, and fires sparked by

lightning. In addition, these events can exacerbate other hazards and increase the risk of wildfire and flooding in some areas. To manage these risks, utility providers may shut off power or limit operations, which can produce service outages for an extended period of time. These reduced services could affect emergency notifications, impact resource management and coordination, and, depending on the duration, impact access to goods and services in the community.

During severe weather events, transportation services may be impacted by blocked roadways or reduced operations, which can impact the populations that rely on these resources. If this is the primary form of mobility for some populations, the need to evacuate may be limited or impacted, increasing their vulnerability to the effects of severe weather incidents.

7-7-110 HEALTH AND SAFETY POLICIES

Guiding Policies

HS-A — Reduce the risk of loss of life, injuries, loss of property, or resources due to natural hazards. Recognize the interrelationship between potential land use plans and land capacity constraints.

HS-B — Reduce the potential for damage from geologic hazards through appropriate site design and erosion control.

HS-C — Reduce the potential for damage from seismic hazards through geotechnical analysis, hazard abatement, emergency preparedness, and recovery planning.

HS-D — Protect sites subject to flooding hazards by implementing storm drainage improvements, and by requiring building design and engineering that meets or exceeds known flood risk requirements.

HS-E — Ensure the health, safety, and welfare of San Bruno residents by requiring appropriate use, disposal, and transport of hazardous materials.

HS-F — Protect the health and comfort of residents by reducing the impact of noise from automotive vehicles, San Francisco International Airport, railroad lines, and stationary sources.

HS-G — Ensure that all development heeds safety precautions from the San Francisco International Airport.

Goals, Policies, and Implementation

Actioning Policies

Natural Hazards Emergency Preparedness and Evacuation

Goal HS-1: A community prepared for emergency situations and incidents.

HS-1.1 Promote activities (such as safety fairs, educational campaigns, and development review procedures) that reduce the risk of loss of life, injuries, loss of property, or resources due to natural hazards.

HS-1.2 Incorporate the current San Mateo Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) and San Bruno Annex, as approved by the Federal Emergency Management Agency, into this Safety Element by reference, as permitted by California Government Code Section 65302.6.

HS-1.3 Ensure that land use plans/development projects recognize the interrelationship between land capacity constraints and natural hazard constraints.

HS-1.4 Ensure development in areas vulnerable to natural disasters, particularly in areas with recurring damage and/or the presence of

multiple natural hazards adhere to the latest standards and best practices to mitigate those hazards.

HS-1.51 Regulate development, including remodeling or structural rehabilitation, to assure adequate mitigation of safety hazards on sites having a history or threat of slope instability, erosion, subsidence, seismic dangers (including those resulting from liquefactions, ground failure, ground rupture), flooding, and/or fire hazards.

HS-1.62 Review and reviseContinue to update the City's Building Code and modify the state minimum requirement due to local climatic, geological and topographical conditions. Review and revise Zoning Ordinance, and Subdivision requirements to safeguard against seismic, geologic, wildfire, and other safety hazards. Mitigation should include:

- Minimal grading and removal of natural vegetation to prevent erosion and slope instability. Cleared slopes should be replanted with vegetation.
- Proper drainage control to prevent erosion of the site and affected properties.

- Careful siting and structural engineering in unstable areas.
- Consideration of flooding and fire hazards in siting and designing new development.

HS-1.7 Require new development to assist emergency responders by providing high-visibility street signage for streets, adequate access for fire and emergency vehicles and equipment, and fuel clearance around roadways.

HS-1.8 Require new development in hazard-prone areas (wildfire,- flood, landslide instability, etc.) to have access to at least two emergency evacuation routes, unless alternative means and methods are approved by the City.

HS-1.X9 Locate critical facilities outside of mapped hazard areas whenever possible, accounting for how climate change may increase the frequency and intensity of hazards. If critical facilities must be in hazard areas, ensure these facilities and their access routes are protected from the hazard risks characteristic to each location.

HS-1.X10 Coordinate with surrounding jurisdictions, school districts, recreation and park districts, and community-based organizations to ensure adequate and equitably located emergency shelters,

community resilience centers, and alternate care sites are available when natural disasters and other highly hazardous conditions occur.

HS-1.X11 Ensure the designs for new and significantly renovated community-oriented facilities allow flexible uses and support multiple community purposes, including use as community resilience centers.

A **resilience center**, sometimes called a resilience hub, is a community-serving facility that can remain operational during and immediately after an emergency to provide shelter, distribution of resources, key services, and other community needs. These facilities can also serve day-to-day community needs, such as a library, school, or community center, during normal conditions.

HS-1.X12 Renovate existing City-owned facilities and design new City facilities to incorporate renewable energy generation systems, battery energy storage systems, and energy-efficient design and features, as feasible.

HS-1.X13 Encourage the installation of emergency power supplies, including solar panels and battery energy storage systems, for existing

residential and nonresidential properties.

HS-1.X14 Maintain a current Emergency Operations Plan that meets current and anticipated community needs in the event of a major disaster or hazardous event.

HS-1.X15 Support and encourage the continued use and expansion of the Community Emergency Response Team (CERT) training to eligible residents and members of the business community, to increase disaster awareness and emergency response capability.

HS-1.X16 In coordination with regional, State, and federal agencies, develop a post-disaster recovery strategy that prioritizes community resilience and sustainability, and includes an evaluation for appropriate redevelopment potential following a major disaster. Publicize recovery measures along with emergency preparedness information.

HS-1.X17 Ensure that communication, education, and information materials on short-term recovery activities are available to all residents with a focus on accessibility for vulnerable populations.

HS-1.X18 Coordinate with transit agencies, school districts, community service organizations, and faith-based organizations to assist with evacuation efforts, ensuring evacuation services are available to vulnerable populations, including those with limited English proficiency, limited mobility, or limited access to transportation, communication, and other lifeline resources and services.

HS-1.X19 Collaborate with surrounding jurisdictions to ensure the ongoing maintenance and readiness of potential evacuation routes serving the city, including making improvements to existing roads to support safe evacuations, as needed.

HS-1.X20 Coordinate with emergency responders, Caltrans, San Mateo County Department of Emergency Management, and regional transit agencies to maintain potential evacuation routes to ensure adequate capacity, safety, and viability of those routes in the event of an emergency.

HS-1.X21 Ensure emergency alert systems provide community members with alerts about upcoming or current emergency events in languages and formats accessible to the entire community.

HS-1.X22:Coordinate with emergency service and medical service providers to ensure preparedness and provide emergency response.

HS-1.X23Ensure engagement— —campaigns increase awareness of and preparation for hazards in the community.

HS-1.X24 Collaborate with surrounding jurisdictions and local community-based organizations to evaluate opportunities to preserve and improve the cost and quality of property insurance for community members.

HS-1.X25Ensure City-owned roadways are maintained and retrofitted to meet local and State requirements regarding access and evacuation.

HS-1.X26 Require private property owners to maintain roadways and access points to meet local and state requirements regarding emergency access and evacuation.

HS-1.X27 Maintain functionality and make improvements, where feasible, of existing emergency evacuation routes within the city, taking into account current and future natural and human-caused hazards.

HS-1.X28 Ensure new development, redevelopment, and increases in occupancy, do not impede effective evacuations during emergencies by requiring project level evacuation studies and project design features as appropriate that support the City's evacuation network and facilities.

HS-1.X29 Support access to and provide information about affordable homeowners and renters insurance for all community members.

HS-1.X30 Encourage regional partnerships and mutual aid agreements between the City, neighboring communities, the County, and regional agencies, further strengthening emergency response capabilities.

Implementation Actions

Action 1.1: Update all emergency management plans to conform with the California Standardized Emergency Management System (SEMS)

Action 1.2: Clearly post information and directions for residents, workers, and visitors on evacuation routes and procedures during an evacuation incident.

Action 1.3: Work with neighboring jurisdictions, districts, and agencies to establish and maintain equitably located community resilience centers throughout the community and in the wider region, ensuring that resilience centers are situated outside of areas at risk from hazard impacts to the extent possible, offer refuge from extreme heat and poor air quality due to regional wildfire smoke, and are equipped with renewable energy generation and backup power supplies. Such facilities should be in easily accessible locations and available to all community members. Conduct outreach to educate and inform the community about the resilience hubs.

Action 1.4: Develop an Alternative Transit Support Plan in collaboration with transit, dial-a-ride, and paratransit services to provide transit services to and from resilience centers for older adults and people with disabilities in the community.

Action 1.5: Install emergency power supplies at City-owned and -operated critical facilities.

Action 1.6: Provide back-up power systems for all City-owned traffic signals on potential evacuation routes.

Action 1.7: Develop or update emergency evacuation traffic signal timing plans for all signals on potential evacuation routes, prioritizing outbound traffic flow while maintaining access for emergency vehicles through traffic signal pre-emption.

Action 1.8: Designate corridors where temporary evacuation capacity can be created through manual traffic direction to optimize traffic flow, including use of available parking lanes, shoulders, and bikeways for traffic while ensuring emergency responder access is maintained.

Action 1.9: Develop criteria for roadway maintenance projects that identifies enhancements/modifications that support improved evacuation capacity and functionality.

Action 1.10: Maintain inter-jurisdictional cooperation and coordination, including mutual and automatic aid agreements with fire protection and suppression agencies in San Mateo County.

Action 1.11: Conduct engagement campaigns in multiple languages and offer residents information on ways to protect their property and preserve personal health and safety from various hazards, and

on available incentives and other financial resources.

Action 1.12: Conduct regular emergency training exercises and participate in regional training exercises to ensure that City employees are adequately trained in emergency response and recovery operations.

Action 1.13: Publicize areas at risk of local hazards, emergency preparedness programs, evacuation planning resources, and other efforts to promote resident awareness and caution regarding hazards, including soil instability, earthquakes, flooding, and fire.

Action 1.14: Work with utility providers to identify residents whose health and safety may be most severely impacted by power outages and provide support and assistance in obtaining backup power supplies and other safety resources.

Geologic and Seismic Hazards

Goal HS-2: A community more resilient to the effects of geologic and seismic hazards.

HS-2.X1: Reduce the potential for damage from geologic hazards through appropriate site design and erosion control.

~~HS-2.X-2~~ Reduce the potential for damage from seismic hazards through geotechnical analysis, hazard abatement, seismic retrofitting, emergency preparedness, and recovery planning.

~~HS-2.3~~ Require geotechnical investigations ~~for development proposed of all sites, except single family dwellings, proposed for development~~ in areas where geologic conditions or soil types are subject to landslide risk, slippage, erosion, liquefaction, or expansive soils. (Require submission of geotechnical investigation and demonstration that the project conforms to all recommended mitigation measures prior to City approval).

~~HS-2.4~~ As part of the development review process, pPrevent soil erosion by retaining and replanting vegetation, and by siting development to minimize grading and ~~land form~~landform alteration.

~~HS-2.5~~ Require preparation of a drainage and erosion control plan for land alteration and vegetation removal on sites greater than 10,000 sq. ft. in size.

~~HS-6~~ Restrict development of critical facilities such as hospitals, fire stations, emergency management headquarters, and utility lifelines in

~~areas determined as high risk geologic hazard zones (Figure 7-2).~~

~~HS-2.76~~ Development in areas subject to seismic hazards, including ground shaking, liquefaction, and seismically-induced landslides (Figure 7-32) will comply with the latest guidance from the California Department of Conservation, guidelines set forth in the most recent version of the California Division of Mines and Geology Special Publication 117.

~~HS-2.X7~~ Promote retrofitting of existing structural hazards related to un-reinforced masonry, poor or outdated construction techniques, and lack of seismic retrofit.

~~Identify existing structural hazards related to un-reinforced masonry, poor or outdated construction techniques, and lack of seismic retrofit. Coordinate with the Redevelopment Agency to provide assistance to property owners to abate or remove structural hazards that create an unacceptable level of risk.~~

~~HS-2.98~~ In accordance with the Alquist-Priolo Special Studies Zones Act, do not permit structures across an active fault (Figure 7-32) or within 50 feet of an active fault, except single-family wood frame dwellings where

no other location on a lot is feasible. Require any new development to contract with geotechnical engineers to reduce potential damage from seismic activity.

~~HS-2.109~~ Recommend a geologic report by a qualified geologist for construction or remodeling of all structures, including single-family dwellings, proposed within a defined setback established by the City ~~400 feet~~ of a historically active or known active fault (Figure 7-32). Geologic reports should recommend minimum setbacks, siting and structural safety standards, to reduce potential seismic hazards. Geologic reports must be filed with the State Geologist by the City within 30 days of receipt.

~~HS-11~~ Coordinate with surrounding cities, agencies, and San Mateo County in planning for recovery after a major seismic event. Determine appropriate emergency management and rebuilding strategies.

~~HS-2.1210~~ Develop and provide incentives ~~Encourage for~~ property owners to conduct preventative maintenance of structures and to perform foundation and other seismic retrofit improvements.

HS-2.X-11 Projects involving building permits, land use permits, and environmental review subject to the California Environmental Quality Act will be reviewed for hazardous geologic and seismic conditions using the most current data.

Implementation Actions

Action 2.1: Establish and maintain informational material that outlines requirements for development.

Action 2.2: Develop a Utilities Resilience Program that examines all existing utility lines that cross active fault traces to determine their ability to survive fault movement and the necessary modifications to withstand anticipated movement.

Action 2.3: Update the existing inventory of seismically vulnerable structures and identify potential funding sources for owner retrofit.

Flooding

Please note that policies within Chapter 6: Environmental Resources and Conservation and Chapter 8: Public Facilities and Services address water supply and conservation. Additionally, policies in the Geology and Hazardous Materials sections of this element address water quality.

Goal HS-3A: A community where impacts associated with flooding are managed effectively.

HS-3.1 Increase public awareness about flooding and flood risks, and approaches to avoid and minimize flood risks on private property.

HS-3.32 With cooperation from the San Mateo County Flood and Resiliency Control District (OneShoreline), continue maintenance, early warning, and clean-up activities for storm drains throughout San Bruno. Upgrade or replace storm drains where needed to reduce potential flooding, particularly in the neighborhoods east of El Camino Real.

HS-3.43 Coordinate with the Federal Emergency Management Agency (FEMA) to ensure appropriate designation and mapping of floodplains.

HS-3.54 Actively engage the San Mateo County Flood and Resiliency District (OneShoreline) Control District to address long-term solutions to potential flood hazards, which may include, but not be limited to; solutions advocated will include but are not limited to: greater pumping capacity, deeper flow channels, or detention ponds.

HS-3.65 Discourage new development in areas designated within the 100-year floodplain and require flood-proofing in areas designated within the 500-year floodplain.

HS-163.6 Ensure building designs and site engineering requirements meet or exceed flood risk requirements and address community-level flood issues.

HS-203.7 Design and engineer new or redevelopment projects in potential flood hazard areas (e.g., Belle Air Park) to withstand known flood risk.

HS-173.8 Require upgrade of the City's storm drain infrastructure proportionate with new development's fair share of demand. Require that stormwater management capacity and infrastructure are in place prior to occupancy of new development.

HS-183.9 Require developers to implement erosion and sedimentation control measures to maintain an operational drainage system, preserve drainage capacity, and protect water quality.

HS-193.10 Maintain ongoing communication and coordination with surrounding cities, San Mateo County, and other agencies—primarily the (San Mateo County Flood Control District (OneShoreline), but also San Francisco International Airport and

California Department of Fish and ~~Wildlife) Game~~—to ensure proper maintenance of storm drain ~~infrastructure channels and pipes~~ that carries surface water runoff ~~away from San Bruno to the San Francisco Bay.~~

~~HS-203.11~~ Coordinate with OneShoreline to identify sites subject to flooding hazards and opportunities to protect these sites through storm drainage improvements or other options.

~~HS-X 3.12~~ Retain existing open space areas that ~~serve~~ assupport stormwater detention/retention ponds in order to retain stormwater, recharge aquifers, and prevent flooding.

~~HS-21~~ Revise San Bruno landscaping and development standards to prevent unnecessary pooling of water, as such pooling may increase residents' susceptibility to mosquito infestation and viruses.

~~HS-22 3.143~~ Require that construction-related grading and other activities comply with the Association of Bay Area Governments' (ABAG) Manual of Standards for Erosion and Sediment Control Measures and with the California Stormwater Quality Association (CASQA), Stormwater Best Management Practice Handbook for

~~Construction.~~ Require that construction activities comply with regulations and requirements, follow best practices, meet future community needs, and accommodate changes associated with climate change.

~~HS-X~~ Implementation Actions

Action 3.1: -Upgrade or replace storm drains where needed to reduce potential flooding, particularly in the neighborhoods east of El Camino Real.

Action 3.2: Analyze projects along creeks to help establish appropriate buffer zones from top of creek bank to provide space to accommodate and maintain built and natural infrastructure for flood protection, habitat restoration, and public access. A wider buffer zone to accommodate habitat migration shall be included where feasible.

Action 3.3: Revise San Bruno landscaping requirements to prevent unnecessary pooling of water, reducing residents' susceptibility to mosquito infestation and viruses.

Action 3.4~~165~~: Coordinate with OneShoreline to explore the feasibility of creating a parametric insurance model for flood-prone

areas, including both inland and shoreline flooding.

Emergent Groundwater

Goal HS-4: A community proactively addressing emergent groundwater conditions.

~~HS-X4.1~~ Ensure stormwater systems anticipate projected sea level rise to ensure safe conveyance, treatment, and management of stormwater as groundwaters rise and change over time.

~~HS-X 4.2~~ Coordinate with OneShoreline and adjacent jurisdictions as appropriate to establish a detailed understanding of the effects of rising shallow groundwater on people, ecological assets, and the built environment in San Bruno. This includes buoyancy, seepage, infiltration, liquefaction, corrosion, and contaminant mobilization hazards. This assessment should have an interactive map component or rely on OneShoreline's map of future conditions) that will be updated based on site-specific geotechnical and topographic data submitted by new developments.

Implementation Actions

HS-X

Action 4.1: Require new development in areas where emergent groundwater is a concern, to flood-proof underground and first floors to accommodate emergent groundwater.

Action 4.2 Evaluate risks to infrastructure associated with emergent groundwater conditions.

Action 4.3 Evaluate the areas of potential emergent groundwater with known hazardous materials locations to determine potential interaction risks.

Action 4.4 Work with OneShoreline and adjacent jurisdictions as appropriate to incorporate regionally coordinated adaptation strategies for shallow groundwater rise into San Bruno's Local Hazard Mitigation Plan, General Plan, Capital Improvement Plan, and Municipal Code. Adaptation strategies can include updated land use policies, building code revisions, infrastructure investments, better monitoring systems, and nature-based solutions.

Wildfire

Goal HS-5: A community proactively managing risks associated with wildfire hazards.

HS-X-5.1 Maintain and enhance water supply infrastructure to ensure adequate supplies for existing and future daily demands and firefighting suppression requirements.

HS-X-5.2 Ensure new development provides the necessary improvements to ensure water supply infrastructure and evacuation roadway capacity is not degraded for existing development.

HS-X-5.3 Coordinate with local and regional agencies to require vegetation management and long-term maintenance of fire hazard reduction projects (including community fire breaks) on all private and public roads and properties, especially in fire-prone areas.

HS-X-5.4 Educate residents (with special attention to at risk populations) and businesses on vegetation management practices, including fire safety, landscape installation and maintenance, defensible space, and other fire hazard reduction strategies.

HS-X-5.5 Regularly re-evaluate fire hazard areas and adopt reasonable safety standards covering such elements as vegetation management around homes, adequacy of existing and future water supplies, fire flow tests, fire hydrants, routes or throughways for fire equipment access, clarity of addresses and street signs, and long-term maintenance in compliance with Fire Safe Regulations, adopted California Fire Code, and local ordinances.

HS-X-5.6 Encourage development intensification outside of the high and very high fire hazard severity zones. If development is proposed within these zones, require fire safe design (including, but not limited to, defensible space and home hardening) and compliance with fire safe regulations, adopted codes, and local ordinances.

HS-X-5.7 Require all developments in the Very High Fire Hazard Severity Zone to meet or exceed statewide Fire Safe Regulations (Title 14, CCR, division 1.5, chapter 7, subchapter 2, articles 1-5 (commencing with section 1270) (SRA Fire Safe Regulations); title 14, CCR, division 1.5, chapter 7, subchapter 3, article 3 (commencing with section 1299.01) (Fire Hazard Reduction Around Buildings and

Structures Regulations)), and Title 24, part 7, the California Wildland Urban Interface Code.

~~HS-X-5.8~~ Require all new developments and redevelopments within fire hazard severity zones, provide a minimum of two points of access by means of public roads that can be used for emergency vehicle response and evacuation purposes, where practicable.

~~HS-X-5.9~~ Require new developments and major remodels or renovations in fire prone areas to comply with the California Building Code, California Fire Code, and local adopted ordinances for construction and adequacy of water flow and pressure, ingress/egress, and other measures to ensure adequate fire protection.

~~HS-X-5.10~~ If proposed, ensure any fire breaks and other fire defense improvements on public and private property are adequately funded and maintained in perpetuity in compliance with California Fire Code and local adopted ordinances.

~~HS-X-5.11~~ Design and ensure all private roads are maintained to permit unrestricted emergency equipment and personnel access in compliance with Title 19, the California Fire Code, and local ordinances.

~~HS-X-5.12~~ Require fire protection plans consistent with requirements of the California Fire Code, including a risk analysis, fire response capabilities, fire safety requirements (defensible space, infrastructure, and building ignition resistance), mitigation measures and design considerations for non-conforming fuel modifications, wildfire education maintenance and limitations, and evacuation plans for new development and **major remodels (substantial reconstruction)** in Very High Fire Hazard Severity Zones designated by the City and CAL FIRE.

Implementation Actions

Action 5.1: Continue existing interdepartmental development review meetings and annually agendaize an item focused on the need for additional fire safe design regulations for the built out, populated areas of the city.

Action 5.2: Develop retrofit guidelines for existing non-conforming properties to understand what improvements may be necessary to comply with the California Fire Code, local ordinances, and best management practices.

Action 5.3: Identify the locations throughout the City where existing developments do not meet minimum road standards for emergency equipment access and identify the feasibility of alternative improvements to support emergency response and evacuation, such as:

- Additional vehicle pullouts at key hillside locations.
- Limiting or restricting on-street parking at key hillside locations.
- Potential for construction of new or improved emergency access routes.
- Roadside clearance improvements.
- Leveraging existing alternative or secondary routes, including fire roads, trails, and easements.

Implement feasible improvements identified as part of this analysis.

Action 5.4: Explore grant opportunities to create a retrofit incentive program to assist property owners in meeting updated fire code requirements.

Action 5.5: Create an inventory of structures in the city that meet current fire safety standards.

Action 5.6: Develop criteria for standard conditions of approval for projects proposing fire breaks and fire mitigation improvements, including operations and maintenance funding in perpetuity.

Action 5.7: Define major remodels and renovation thresholds that trigger policy applicability.

Hazardous Materials

Goal HS-6: A community focused on preventing harm from the use, storage, and disposal of hazardous materials.

~~HS-X-6.1~~ Continue to require appropriate use, disposal, and transport of hazardous materials that meet or exceed safety measures for residents and businesses.

~~HS-23-6.2~~ Ensure In coordination with the State and CUPA partners, require appropriate clean-up of all former commercial and industrial sites according to relevant regulatory standards prior to reuse.

~~HS-24~~ Control the transport of hazardous substances to minimize potential hazards to the local population. Identify appropriate regional and local routes for transportation of hazardous materials, and require that fire and emergency personnel can easily access these routes for response to spill incidents.

~~HS-25~~ Review and revise City regulations regarding manufacturing, storage, and usage of hazardous materials as necessary to minimize potential hazards.

~~HS-26-6.3~~ Restrict siting of businesses that use, store, process, or dispose of large quantities of hazardous materials in areas subject to seismic fault rupture or strong ground shaking (Figure 7-32).

~~HS-27~~ Initiate a public awareness campaign through flyers, website, and mailings about household hazardous waste management, control, and recycling through San Mateo County programs and San Bruno Garbage.

~~HS-28~~ Require that lead-based paint and asbestos surveys be conducted by qualified personnel prior to structural demolition or renovation, in buildings constructed prior to 1980.

~~HS-29~~ Require abatement of lead-based paint and asbestos prior to structural renovation and demolition, and compliance with all State, federal, OSHA, Bay Area Air Quality Management District, and San Mateo County Health, Environmental Health Division rules and regulations.

~~HS-6.4~~ EnsureRegulate development on sites with known or suspected contamination of soil and/or groundwater to ensure thatprotects construction workers, the public, future occupants, and the environment areadequately protected from hazards associated with contamination, inthrough compliance with accordance with federal, State, and local rules, regulations, policies, and guidelines.

~~HS-6.5~~ Require that developers compact infill soil following the removal of underground storage tanks.

Implementation Actions

Action 6.1 Identify appropriate regional and local routes for transportation of hazardous materials, and require that fire and emergency personnel can easily access these routes for response to spill incidents.

Action 6.2 Require that lead-based paint and asbestos surveys and abatement be conducted by qualified personnel prior to structural demolition or renovation, in buildings constructed prior to 1980. Survey and abatement activities shall comply with all State, federal, OSHA, Bay Area Air District, and San Mateo County Health, Environmental Health Division rules and regulations (formerly HS 28 and 29).

Action 6.3 Regularly review and revise City regulations regarding manufacturing, storage, and usage of hazardous materials as necessary to minimize potential hazards.

Action 6.4 Initiate a public awareness campaign about household hazardous waste management, control, and recycling through San Mateo County programs and Recology San Bruno.

Noise

Goal HS-67: Protect the health and comfort of residents by reducing the impact of noise from vehicles, San Francisco International Airport, railroad lines, and stationary sources.

~~HS-327.1~~ Encourage developers to mitigate ambient noise levels adjacent to major noise sources by incorporating acoustical site planning into their projects, ~~including, but not limited to, u-~~ ~~Utilize the City's Building Code to implement mitigation measures, such as:~~

~~Incorporating buffers and/or landscaped berms along high noise roadways or railways;~~

~~Incorporating traffic calming measures and alternative intersection design within and/or adjacent to the project;~~

~~Using reduced-noise pavement (rubberized asphalt); and~~
~~incorporating state-of-the-art structural sound attenuation measures.~~

~~HS-337.2~~ Prevent the placement of new noise sensitive uses unless adequate mitigation is provided. Establish insulation requirements as mitigation measures for all development, per the standards in Table 7-1.

~~HS-347.3~~ Discourage noise sensitive uses such as hospitals, schools, and rest homes from locating in areas with high noise levels. Conversely, discourage new uses likely to produce high

levels of noise from locating in areas where noise sensitive uses would be impacted.

~~HS-357.4~~ Require developers to comply with relevant noise insulation standards contained in Title 24 of the California Code of Regulations (Part 2, Appendix Chapter 12A).

~~HS-367.5~~ Encourage developers of new residential projects to provide noise buffers other than sound walls, such as vegetation, storage areas, or parking, as well as site planning and locating bedrooms away from noise sources.

~~HS-377.6~~ Require that all sponsors of new housing (residential and senior housing units) record a notice of Fair Disclosure, regarding the proximity of the proposed development to San Francisco International Airport and of the potential impacts of aircraft operation, including noise impacts, per Ordinance 1646 and AB 2776.

~~HS-387.7~~ Require developers to mitigate noise exposure to sensitive receptors from construction activities. Mitigation may include a combination of techniques that reduce noise generated at the source, increase the noise insulation at the receptor, or increase the noise attenuation rate as noise travels from the source to the receptor.

~~HS-397.8~~ Pursue mitigation of noise impacts from San Francisco International Airport to the fullest extent possible via the SFO/Community Roundtable and other venues. Support and advocate for operational practices such as flight curfews, changes to aircraft, new technologies and physical improvements such as tree screens that would reduce the area in San Bruno impacted by aircraft noise.

~~HS-407.9~~ Prohibit ~~new residential development within the 70+ Airport CNEL areas, as dictated by Airport Land Use Commission infill criteria.~~

~~HS-41~~ Via the SFO/Community Roundtable and other avenues, encourage SFO authorities to undertake noise abatement and mitigation programs that are based not only on the airport's noise contour maps, but that consider other factors such as the frequency of over-flights, altitude of aircraft, and hours of operation.

~~HS-427.10~~ Require new residential development within the 65 dBA CNEL SFO noise contour to submit an avigation easement to the airport. Specific avigation easement requirements shall be consistent with the County of San Mateo Comprehensive Airport-Land Use Compatibility Plan for SFO.

~~HS-437.11~~ Allow reasonable latitude for noise generated by uses that are essential to community health, safety, and welfare, such as emergency vehicle operations and sirens.

~~HS-44~~ ~~Adopt traffic mitigations including reduced speed limits, improved paving texture, and traffic signal controls to reduce noise in areas where residential development may front on high traffic arterials, such as El Camino Real.~~

~~HS-45-7.12~~ Where feasible and appropriate, develop and implement noise reduction measures when undertaking improvements, extensions, or design changes to San Bruno streets.

~~HS-46-7.13~~ Encourage transit agencies to develop and apply noise reduction technologies for their vehicles to reduce the noise and vibration impacts of Caltrain, BART and bus traffic.

~~HS-47-7.14~~ Enforce Vehicle Code noise emission standards, as well as provisions which prohibit alteration of vehicular exhaust systems in ways that increases noise levels.

~~HS-48-7.15~~ When environmental reviews of SFO activity are conducted the City should participate in environmental analyses conducted

of SFO in order to better understand and address environmental issues affecting San Bruno, including but not limited to: frequency of over flight during nighttime hours, soil and groundwater contamination in and surrounding airport property from gasoline and jet fuel or similar sources, air pollution resulting from overflight jet exhaust and idling aircrafts, airport related traffic impacts on local roads, light and glare impacts from airport generated lighting and overall noise generation, and impact of airport alterations and/ or expansion.

~~HS-49-7.16~~ The City should work with the County of San Mateo and local planning directors in future Comprehensive Airport-Land Use Compatibility Plan planning efforts to raise shared concerns regarding airport impacts on the region. The SFO/Community Roundtable should help facilitate this process as well.

Airport Operations-Safety

Goal HS-78: -A community where airport operations and daily life experience little conflict.

~~HS-50-8.1~~ Work together with other affected cities, the ~~___~~ Airport Land Use Commission, and San Mateo County to achieve further reduction

of San Francisco International Airport (SFO) airport-generated noise and safety concerns.

HS-518.2 Require all new development to comply with FAR Part 77 height restriction standards, in accordance with Airport Land Use Commission guidelines.

HS-528.3 Actively and aggressively participate in forums and discussions regarding operations and expansion plans for San Francisco International Airport. Seek local representation on task forces, commissions, and advisory boards established to guide airport policies and programs.

Extreme Heat

Goal HS-89: A community that prepares for and adapts to rising temperatures.

HS-529.1 Encourage new developments and existing property owners to incorporate sustainable, energy-efficient, and environmentally regenerative features into their facilities, landscapes, and structures to reduce energy demand and improve on-site resilience.

HS-529.2 Encourage new and existing development to incorporate building and site design features that reduce the effects of extreme heat,

improve indoor air quality, increase resilience to severe weather, and reduce energy demand. These features could include building orientation, air conditioning, air filtration, energy-efficient duct work, energy-efficient windows and doors, improved awnings and shading, and shade trees and other green infrastructure.

HS-529.3 Use heat vulnerability mapping to identify and prioritize areas and populations most at risk. Collaborate with public health agencies, local governments, and community organizations to update these assessments periodically.

HS-529.4 Coordinate with SamTrans, and Caltrans (where necessary) to increase shading and use of heat mitigation strategies along transit routes and transit stops.

HS-529.5 Encourage local businesses to develop workplace heat safety protocols and provide training for employers and employees in heat-exposed occupations.

HS-529.6 Promote the use of drought-tolerant green infrastructure, including landscaped areas, as part of cooling strategies in public and private spaces.

Implementation Actions

Action 9.1 Develop a street tree program to increase shade and address urban heat island effects.

Action 9.2 Prioritize increasing shade, including, but not limited to, ~~planting street trees,~~ and installing shade structures in areas with high urban heat island index rankings.

Other Hazards

Goal HS-910: A community ready to face the challenges associated with climate change.

HS-5210.1 Ensure drought resistant landscaping is prioritized in the following ways:

- City-owned properties optimize drought-resistant and/or native plant landscaping.
- Require drought-tolerant landscaping in new private and municipal development, in accordance with applicable State and local laws (MWEL0).
- Promote the use of native and drought-tolerant plants in landscaping for both public spaces and private properties through educational materials, community outreach, and workshops.

HS-5210.2 Promote water conservation measures in all public and private development.

HS-5210.3 Encourage water-efficient practices in site and building design for private and public projects.

HS-5210.4 Work with regional water providers to prepare for a reduced long-term water supply resulting from more frequent and severe drought events to implement extensive water conservation measures and ensure sustainable water supplies, including fire suppression needs.

HS-5210.5 Work with Cal Water and Bay Area Water Supply and Conservation Agency to promote rebate offerings for high-efficiency toilets, washing machines, rain barrels, and other water-conserving appliances.

HS-5210.6 Ensure that new landscaping does not exacerbate wildfire or flood risks and aligns with vegetation and stormwater management standards.