CHAPTER 8
Safety Element

STRIVE SAN MATEO
GENERAL PLAN 2040

SAFETY ELEMENT

INTRODUCTION

General Plans in California must identify and address potential natural and human-caused hazards that could affect the City of San Mateo's residents, businesses, visitors, environment, and services. The framework established by the Safety Element anticipates these hazards and prepares the community to reduce exposure to these risks. San Mateo is at risk from a number of natural and human-caused hazards. Climate change is likely to make many of these hazards more damaging for people, buildings and structures, ecosystems, and other important community assets.

The Safety Element does not exist in a vacuum but is instead one of several plans that address public health, safety, and related topics, including the Local Hazard Mitigation Plan, the Emergency Operations Plan, and the Climate Action Plan. The Safety Element must be consistent with these other plans to minimize conflicts between documents and ensure the City has a unified strategy to address safety and hazard issues.

The City of San Mateo is committed to the preservation of life, property, and the environment during emergencies. The City implements the most recent version of the San Mateo County Multi-Jurisdictional Hazard Mitigation Plan (MJHMP), which assesses risks from natural and human-caused hazards, including risks to people and facilities, and identifies mitigation actions to reduce or eliminate hazard risks in the county. The MJHMP for the County of San Mateo planning area, which includes the City of San Mateo, was developed in accordance with the Disaster Mitigation Act of 2000 and followed the Federal Emergency Management Agency's (FEMA's) 2011 Local Hazard Mitigation Plan guidance. The MJHMP incorporates a process where hazards are identified and profiled, the people and facilities at risk are identified, and mitigation actions are developed to reduce or eliminate hazard risk. The implementation of these mitigation actions, which include both short-term and long-term strategies, involve planning, policy changes, programs, projects, and other activities. The MJHMP can be found on the City of San Mateo's website and at https://www.smcgov.org/ceo/2021-multijurisdictional-lhmp. The current MJHMP, certified by FEMA, is incorporated into this Safety Element by reference, as permitted by the California Government Code.

The focus of this element is on increasing resilience throughout the city and reducing the risk of hazards. This element is organized around six key topics that are important to the San Mateo community.

- Emergency Readiness and Emergency Operations
- Geologic and Seismic Hazards
- Flood Hazards
- Sea Level Rise
- Wildfire Hazards
- Hazardous Materials

RELEVANCE TO GENERAL PLAN THEMES

Sustainability in this Element:

- Ensures the maintenance of City-owned trees that will provide relief from extreme heat, reduce energy use, and sequester greenhouse gas emissions.
- Encourages the use of natural systems to protect the community against sea level rise, which will provide shoreline habitat and capture greenhouse gas emissions.
- Ensures the cleanup of hazardous materials contaminated sites.

Environmental Justice in this Element:

- Focuses emergency readiness activities in equity priority communities and most vulnerable areas of the city.
- Prioritizes locating critical facilities and resilient infrastructure outside of hazard-prone areas.
- Expands and increases resiliency of existing community facilities to better serve neighborhoods that are currently underserved.
- Provides emergency preparedness and public safety education for equity priority communities in formats and languages consistent with the demographics of the city.

Community Engagement in this Element:

- Informs the community about safe and effective evacuation through notifications.
- Ensures inclusive outreach about potential hazards affecting neighborhoods, fire-safe education, and overall public safety.
- Supports Community Emergency Response Team (CERT) training in collaboration with San Mateo Consolidated Fire Department (SMC Fire).

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EMERGENCY READINESS AND EMERGENCY OPERATIONS

Emergency preparedness activities in the city are conducted through SMC Fire. The SMC Fire Chief coordinates with the City Manager to prepare for and respond to acute events like heat emergencies, wildfires, and flooding. This department, along with the City Manager, is responsible for the operation of the City's Emergency Operations Center, which coordinates the City's emergency planning, training, response, and recovery efforts for emergencies such as fires, floods, earthquakes, acts of terrorism, public safety power shutoff (PSPS) events, extreme weather events, and pandemics. SMC Fire also provides the public with access to a CERT training program to help residents be prepared for disasters.

San Mateo uses the San Mateo County Alert Notification System (SMC Alert) and, other notification systems, to reach the community and distribute emergency information and instructions before, during, and after a disaster. Notifications are provided through telephone calls, text messages, email notifications, and various social media platforms. Other emergency alert systems include the national Emergency Alert Systems (EAS), the California Governor's Office of Emergency Services (CalOES)-operated Emergency Digital Information System (EDIS). These systems are available in multiple languages.

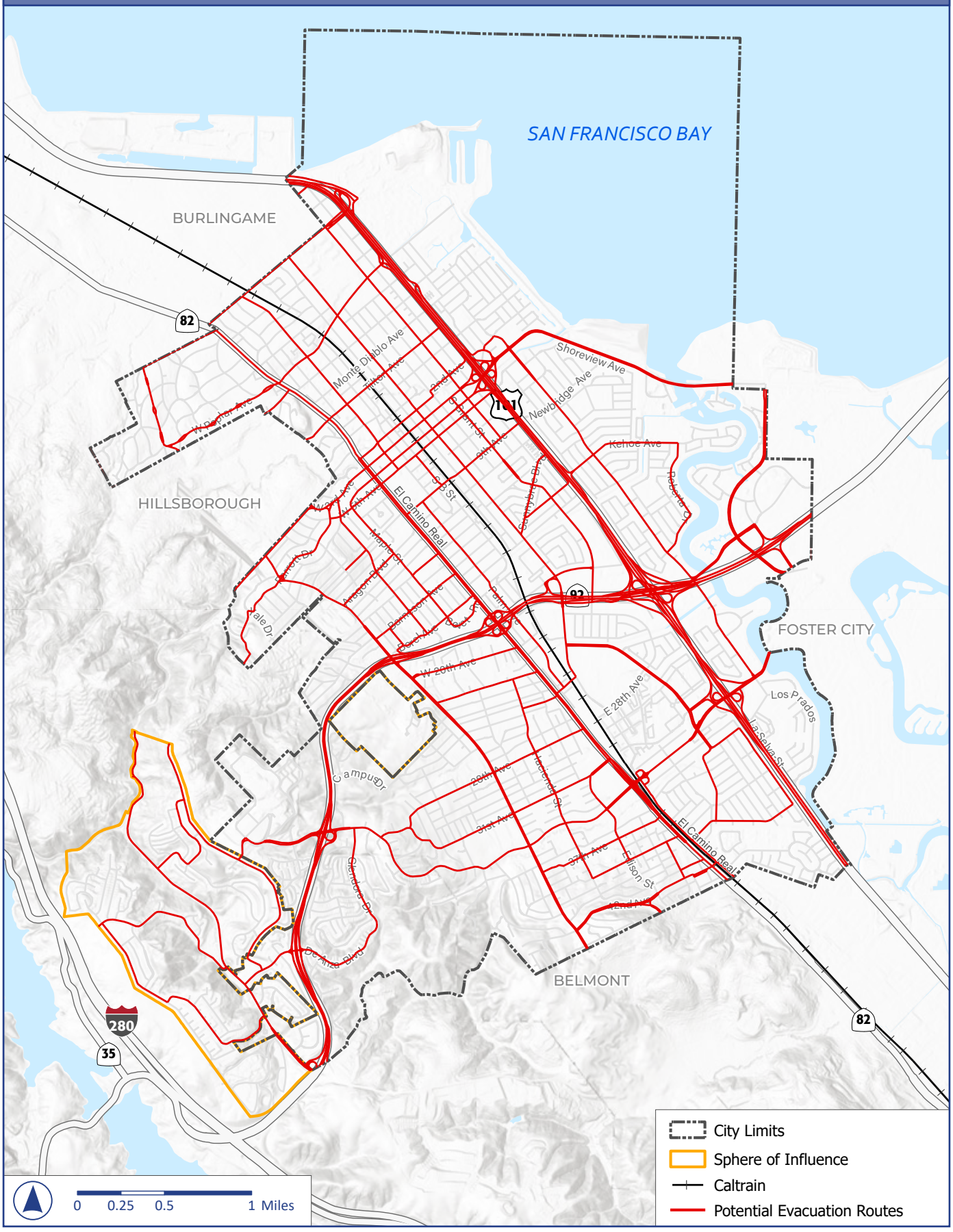
The City participates in the California Master Mutual-Aid Agreement, which is designed to ensure that adequate resources, facilities, and other support are provided to jurisdictions whenever their own resources are insufficient to cope with the needs of a given emergency. The State Office of Emergency Services Coastal Administrative Region (Mutual Aid Region II) serves the mutual-aid region that encompasses San Mateo County. Automatic-aid pacts with San Mateo County and surrounding cities provide additional emergency management and response services to the City of San Mateo during and after a disaster.

With advanced warning, evacuation can be effective in reducing injury and loss of life during a catastrophic event. The City of San Mateo uses a comprehensive evacuation support system implemented by San Mateo County. The system provides the community with critical evacuation updates, resources, and latest updates on active incidents. In the event of a wildfire or an emergency situation, the San Mateo Police Department and SMC Fire can issue evacuation warnings or evacuation orders for impacted areas.

Figure S-1 shows the evacuation routes throughout the city. All evacuation routes in San Mateo may be disrupted by a landslide, wildfire, or flooding event, which may block and damage the roadways or collapse bridges. In the event of widespread disruption to local evacuation routes, the remaining evacuation routes may become congested, slowing down evacuation of the community or specific neighborhoods.

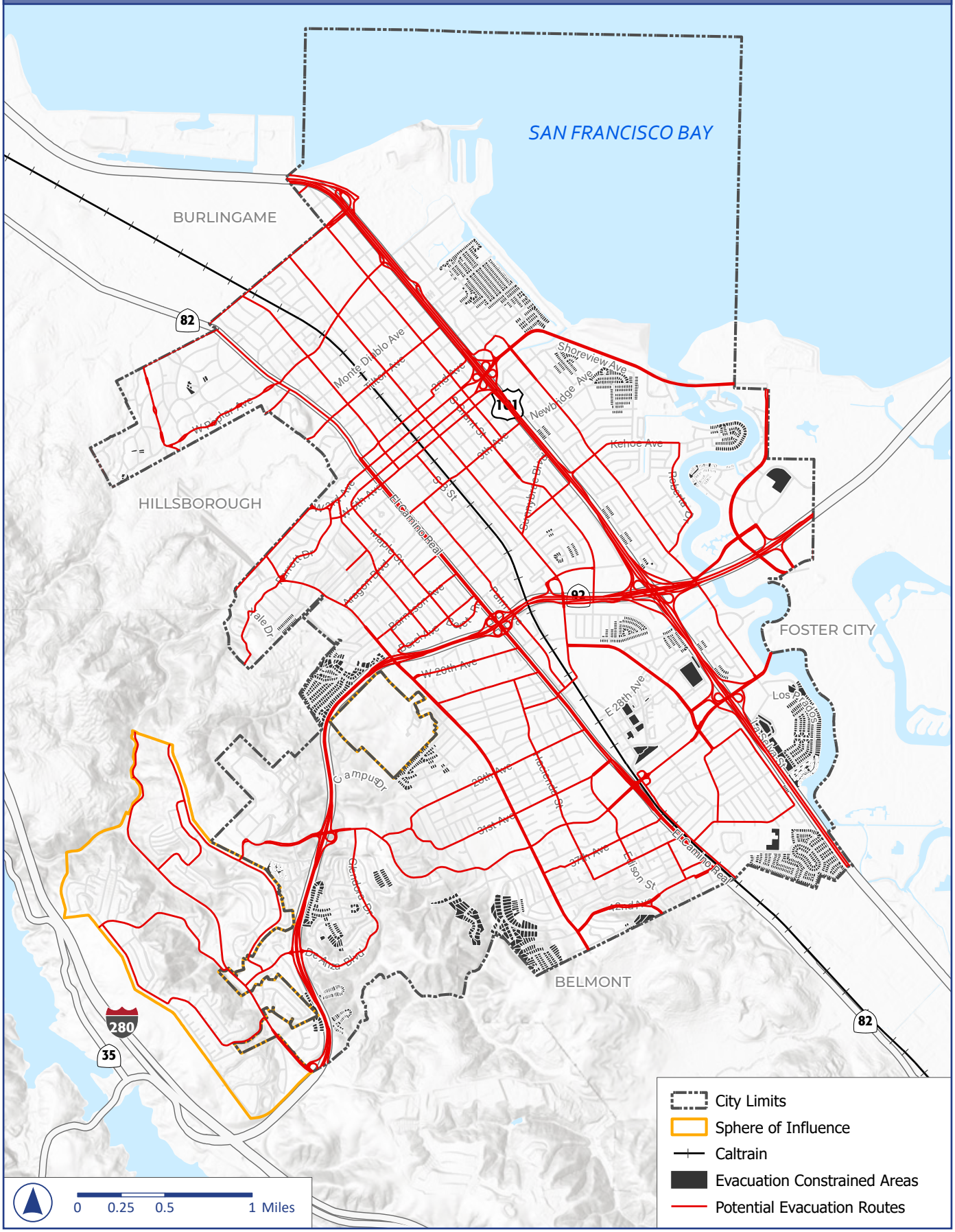
An analysis of San Mateo's roadway network and parcels, as shown in Figure S-2, was conducted as part of Strive San Mateo General Plan 2040. It identifies several evacuation-constrained residential parcels, or parcels with less than two ingress/egress routes, spread throughout the city. The majority are these parcels are in the western hillsides and east of US Highway 101, at the edge of the City Limits. Many of the evacuation-constrained parcels in these areas could be subject to damage from wildfires, flooding, or sea level rise. All evacuation-constrained parcels are in a least one hazard-prone area. The lack of multiple emergency access points limits roadway access for these properties, creating difficulties if there is a need to evacuate.

Figure S-1 Potential Evacuation Routes



Source: ESRI, 2022; PlaceWorks, 2023.
Note: This map is included for informational purposes and is not adopted as part of this General Plan.

Figure S-2 Evacuation-Constrained Areas



Source: ESRI, 2022; PlaceWorks, 2023.

GOALS, POLICIES, AND ACTIONS

GOAL S-1 Minimize potential damage to life, environment, and property through timely, well-prepared, and well-coordinated emergency preparedness, response plans, and programs.

POLICIES

Policy S 1.1 **Emergency Readiness.** Maintain the City's emergency readiness and response capabilities, especially regarding hazardous materials spills, natural gas pipeline ruptures, fire hazards, wildland fire risk, earthquakes, pandemics, and flooding. Focus primarily on areas identified by the City as underserved and most vulnerable to loss of life and property due to proximity to hazardous incidences, and work to ensure funding is available to these communities as a key component of emergency readiness.

Policy S 1.2 **Local Hazard Mitigation Plan.** Incorporate by reference the San Mateo County Multi-jurisdictional Local Hazard Mitigation Plan, approved by the Federal Emergency Management Agency (FEMA) in 2021, along with any future updates or amendments, into this Safety Element in accordance with Government Code Section 65302.6.

Policy S 1.3 **Location of Critical Facilities.** Avoid locating critical facilities, such as hospitals, schools, fire, police, emergency service facilities, and other utility infrastructure, in areas subject to slope failure, wildland fire, flooding, sea level rise, and other hazards, to the extent feasible.

Policy S 1.4 **Multiple Egress Points.** Require new development to provide at least two points of emergency access (ingress and egress).

Policy S 1.5 **Emergency Planning Document Coordination.** Pursue integration of the City's existing safety and emergency management documents with one another, including this Safety Element, the Local Hazard Mitigation Plan, and other related documents.

Policy S 1.6 **Emergency Infrastructure and Equipment.** Maintain and fund the City's emergency operations center in a full functional state of readiness. Designate a back-up Emergency Operations Center with communications redundancies.

Policy S 1.7 **Defensible Design.** Require that new development support effective law enforcement and fire protection by promoting a safe and accessible public realm, including investing in social gathering spaces, enhancing lighting and safety in public spaces through community-led planning, and ensuring adequate property maintenance.

Policy S 1.8 **Response Times.** When reviewing and analyzing roadway improvements, consider how emergency response times can be maintained and improved without reducing roadway user safety.

Policy S 1.9 **Local Utility Cooperation.** Work with local utility operators to coordinate any disruption in services, such as a public safety power shutoff (PSPS) event or other disruption that may be necessary to reduce hazard risks in San Mateo and/or the surrounding area, and support publication of advanced notification and resources to residents in the city, particularly equity priority communities, to help them prepare.

Policy S 1.10 **Disaster Recovery.** Ensure that the City government continues to operate during and after hazard events and is able to provide resources and guidance to people and institutions in San Mateo for recovery and reconstruction following the end of the hazard event.

Policy S 1.11 **Evacuation Education.** Include information about safe and effective evacuation as part of natural disaster awareness, prevention, and community education and training efforts. Share information about how to prepare for evacuations, potential evacuation routes and shelter locations, how to receive notifications, and other relevant topics.

Policy S 1.12 **Inclusive Outreach.** Notify the community of potential hazards affecting their neighborhood. Use outreach and engagement methods that encourage broad representation and are culturally sensitive, particularly for equity priority communities.

Policy S 1.13 **Emergency Training.** Conduct training for all City employees to ensure basic understanding of Disaster Service Worker responsibilities, the State Emergency Management System, National Incident Management System, and the Incident Command System.

Policy S 1.14 **Multijurisdictional Cooperation.** Continue the development of local preparedness plans and multijurisdictional cooperation and communication for emergency situations.

Policy S 1.15 **Emergency Preparedness.** Coordinate with San Mateo County, neighboring cities, and nongovernmental partners to effectively prepare for and respond to hazards and natural disasters.

ACTIONS

Action S 1.16 **Evacuation Routes.** Maintain adequate evacuation routes as identified by arterial streets shown in the Circulation Element, Figure C-3. Evaluate each evacuation route's feasibility using a range of hazard criteria. Update this map on a regular basis to reflect changing conditions and State requirements for evacuation routes.

Action S 1.17 **Regular Updates.** Update the Safety Element with each Housing Element update, or every eight years, as necessary, to meet State and local requirements.

Action S 1.18 **Automatic and Mutual-Aid Agreements.** Participate in mutual-aid agreements with other local jurisdictions to provide coordinated regional responses, as necessary, to fire, flood, earthquake, critical incidents, and other hazard events in San Mateo and the surrounding area. Work with local jurisdictions to share resources and develop regional plans to implement disaster mitigation and resilience strategies, such as government continuity, emergency operations centers, and communications redundancies.

Action S 1.19 **Community Centers and Recreation Spaces.** Create an inventory of existing community center facilities and recreation spaces and assess their readiness to serve as a community shelter during a disaster. Following the inventory, create a facilities improvement plan that addresses deficiencies found in each facility or recreation space to improve resilience and disaster preparedness in the city.

Action S 1.20 **Rebuilding Priorities.** Establish rebuilding priorities and procedures in the event of a major disaster to expedite reconstruction and enhance access to funding opportunities with special emphasis on equity priority communities that are more vulnerable to climate hazards.

Action S 1.21 **Resilient Power Systems.** Explore the feasibility of on-site power generation and storage at City facilities to reduce reliance on regional power infrastructure in case of a hazard-caused power outage.

Action S 1.22 **Public Safety Outreach.** Develop a public safety education program to increase public awareness of potential hazards, City's emergency readiness and response program, and evacuation routes. Target public education programs to segments of the community that are most vulnerable to hazards and safety risks.

Action S 1.23 **Community Training.** Collaborate with SMC Fire to provide emergency preparedness trainings to maintain and expand existing Community Emergency Response Teams (CERTs).

Action S 1.24 **Emergency Infrastructure and Equipment.** Establish systems to ensure that traffic lights at major intersections, communications and radio infrastructure, and other critical infrastructure continues to function in the event of a localized power outage. Repair any damaged sets of infrastructure or equipment as needed to continue City operations.

Action S 1.25 **Continuity of Operations.** Regularly review, update, and implement the San Mateo Continuity of Operations/Continuity of Government Plan.

Action S 1.26 **Response Time Study.** Conduct a Response Time Study to provide a data-driven understanding of how future roadway safety improvements could impact emergency response times and use this information to adjust proposed roadway improvements as needed.

Action S 1.27 **Emergency Notification System.** Develop an emergency notification system (e.g., SMC Alert and Nixle) for flood-prone neighborhoods and businesses before, during, and after a climate hazard event, to assist with evacuation and other support activities. This includes coordination with the San Mateo County Flood and Sea Level Rise Resiliency District (One-Shoreline) on its early flood warning notification system.

GEOLOGIC AND SEISMIC HAZARDS

San Mateo is in a region of high seismicity with numerous local faults. The California Geological Survey classifies faults as "active" when they have ruptured the ground surface within the last 10,000 years, while "potentially active" faults are those formed during approximately the last 2 to 3 million years. There are two major active faults that run within six miles of the city:

- San Andreas Fault
- San Gregorio Fault

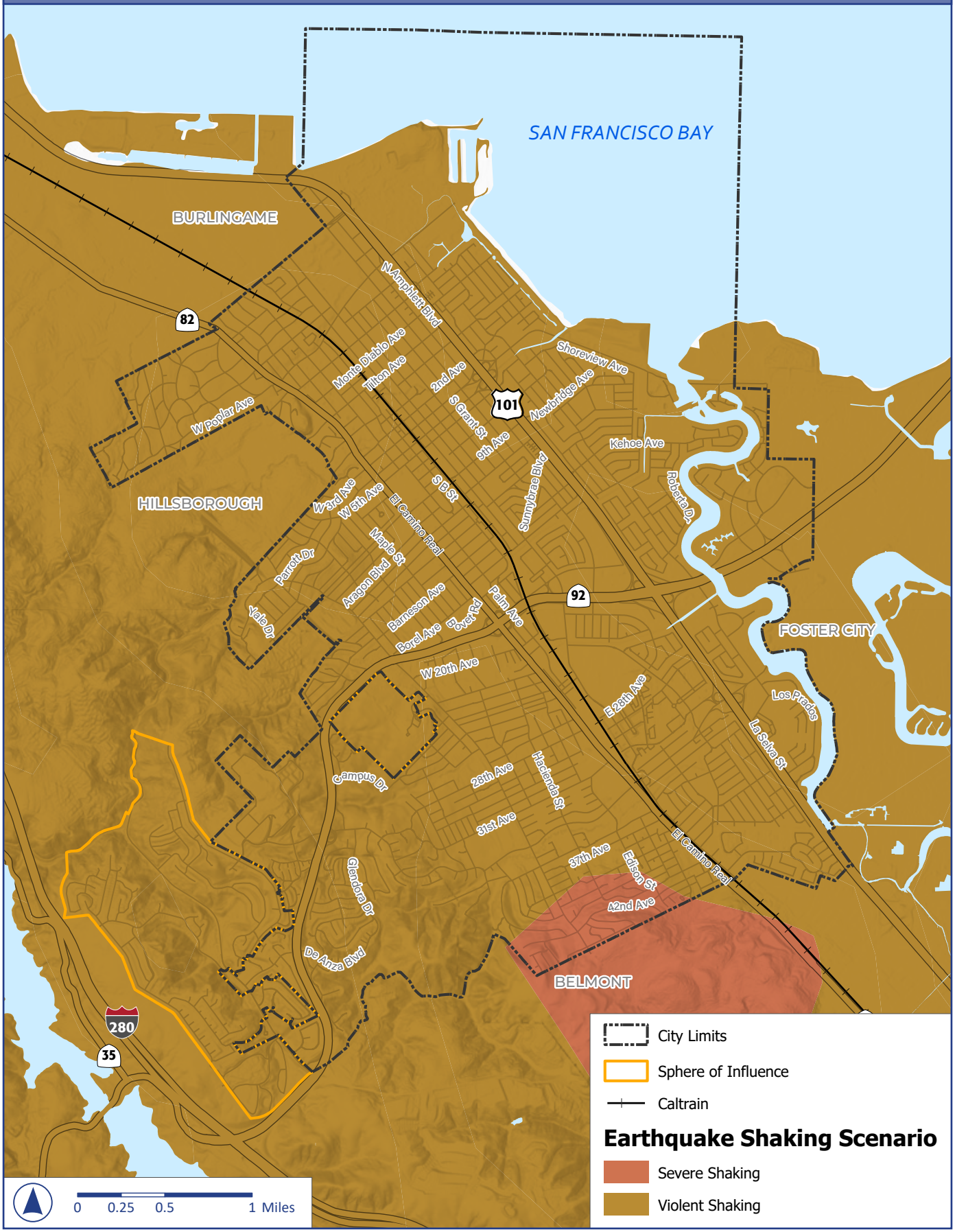
Movement on any of these two faults or other fault lines in the region could cause earthquakes, fault rupture, and liquefaction. A number of earthquakes of magnitude 5.0 or more have occurred in and near San Mateo over the last 35 years. Earthquakes are caused by a sudden dislocation of the Earth's crust or a fault rupture, which is when the Earth's crust slides in opposite directions along the fault line. Figure S-3 shows where the most severe ground shaking would occur from an earthquake.

The Alquist-Priolo Earthquake Fault Zoning Act is a State law that limits development along active faults in areas known as Alquist-Priolo Fault Zones. The city may also be subject to tsunami hazards from earthquakes, which is discussed in more detail in the Flood Hazards section.

A secondary effect of seismic activity is liquefaction, which occurs when sandy or silty soil materials become saturated during ground shaking and liquefy. This can damage pipelines, cause roadways and airport runways to buckle, and damage or destroy building foundations. Figure S-4 shows the potential liquefaction areas in the city. Areas along the shoreline and east of US Highway 101 are most susceptible to liquefaction.

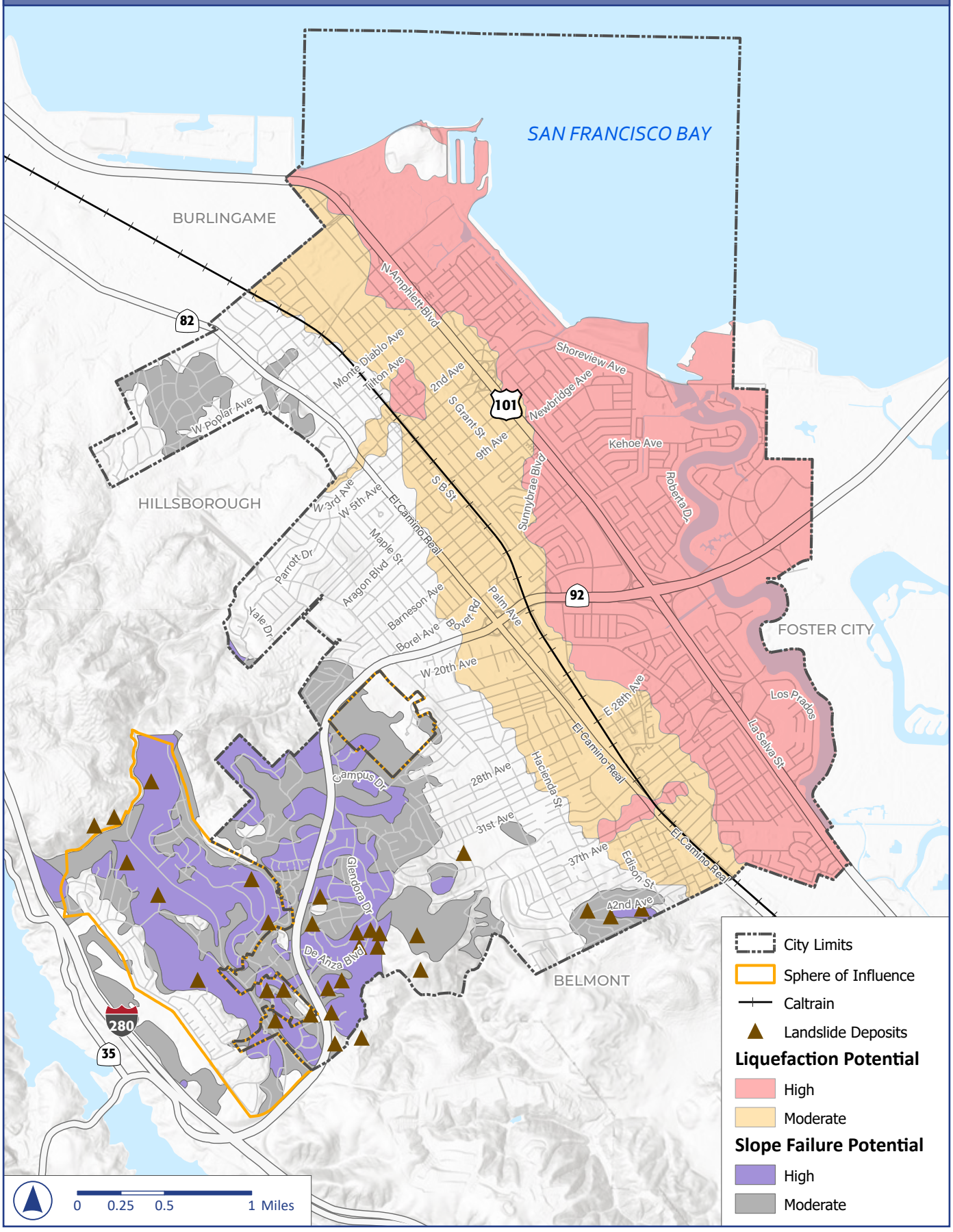
Other non-seismic geologic hazards are landslides and erosion, which can occur gradually, continuously, or suddenly, often with disastrous results. In San Mateo, landslides are often triggered by heavy rain, so the potential for landslides largely coincides with severe storms that saturate steep, loose soils. Earthquakes can also trigger landslides, and western areas of the city are highly susceptible to landslides, as shown in Figure S-4.

Figure S-3 Shaking Amplification During Earthquakes



Source: California Integrated Seismic Network (CISN), 2021; ESRI, 2022; PlaceWorks, 2023.

Figure S-4 Slope Stability and Liquefaction



Source: City of San Mateo, 2022; ESRI, 2022; PlaceWorks, 2023.

GOALS, POLICIES, AND ACTIONS

GOAL S-2 Take steps to protect the community from unreasonable risk to life and property caused by seismic and geologic hazards.

POLICIES

Policy S 2.1 **Geologic Hazards.** Require site-specific geotechnical and engineering studies, subject to the review and approval of the delegated City Engineer and Building Official, for development proposed on sites identified in Figure S-4 as having moderate or high potential for ground failure. Permit development in areas of potential geologic hazards only where it can be demonstrated that the project will not be endangered by, nor contribute to, the hazardous condition on the site or on adjacent properties.

Policy S 2.2 **Landslides and Erosion Control.** Reduce landslides and erosion in existing and new development through continuing education of design professionals on mitigation strategies. Control measures shall retain natural topographic and physical features of the site, if feasible.

Policy S 2.3 **Vulnerable Buildings.** Encourage modifications to existing unreinforced masonry and soft story buildings, and similar unsafe building conditions to reduce the associated life safety hazards from ground shaking during earthquakes, as shown on Figure S-3. Require voluntary structural modifications to be designed in character with the existing architectural style.

Policy S 2.4 **Liquefaction.** Use the best-available liquefaction mapping data to avoid siting and locating new public facilities and infrastructure in areas susceptible to liquefaction, as shown in Figure S-4.

ACTIONS

Action S 2.5 **Seismic Shaking Mapping.** Consult with a geology specialist to update the City's geologic hazard mapping, documenting the areas within the city with moderate or high potential for liquefaction or ground failure, as shown in Figure S-4.

Action S 2.6 **Incentives for Seismic Upgrades.** Develop and implement a program to provide financial incentives and education to building owners to support seismic upgrades.

Action S 2.7 **Seismic Stability.** Review the seismic stability of the City's assets and infrastructure, such as City Hall, recreational facilities, roadways, and bridges and identify improvements necessary to enhance each facility's ability to withstand geologic hazards, up to and including a full replacement of the facility.

Action S 2.8 **Unreinforced Masonry Buildings.** Establish and maintain an inventory of unreinforced masonry building in the city and work with the property owners to upgrade the buildings to meet minimum safety and building code requirements.

Action S 2.9 **Soft Story Buildings.** Establish and maintain an inventory of soft story multifamily residential buildings in the city. Educate residents about the vulnerability of soft story construction to severe damage and potential collapse during a significant seismic event, and work with property owners to substantially improve the seismic performance of these residential buildings to meet current structural building design standards.

FLOOD HAZARDS

Flooding occurs when there is too much water in inland areas to be held in local water detention areas, be carried away by drains or creeks, or soak into the soil. When this happens, water can build up and wash into normally dry areas, causing significant harm to buildings, people, and habitats. Floods can be caused by heavy rainfall or long periods of moderate rainfall, or clogged drains during periods of little rainfall. In rare instances, a break in a dam, levee, water pipe, or water tank can also cause flooding.

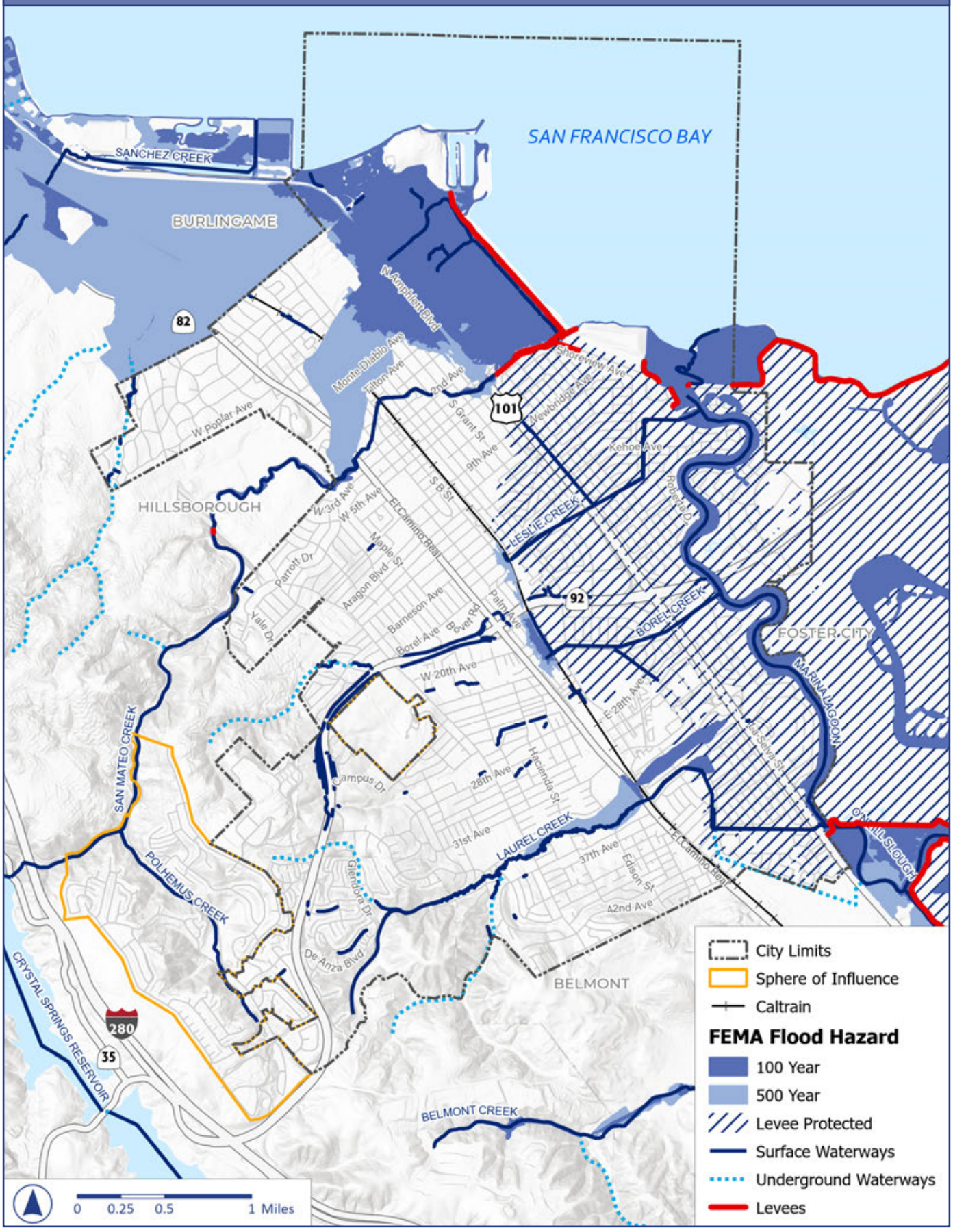
FEMA maps areas at risk of inundation from a 100-year flood, which has a 1 percent chance of occurring in any year, and a 500-year flood, where the risk of flooding is 0.2 percent annually, as shown in Figure S-5. These areas are primarily located along creeks, including Laurel Creek and San Mateo Creek, and east of El Camino Real. Climate change may increase the frequency and severity of storms and expand the parts of the city that are considered prone to flooding.

Flooding can also be induced by dam failure, which is caused by structural failure or deficiency associated with intense rainfall, prolonged flooding, earthquakes, landslides, or equipment malfunction. There are two dams of significant concern to San Mateo, as shown in Figure S-6. Failure of Crystal Springs Dam and Laurel Creek Dam would inundate areas along San Mateo Creek and Laurel Creek, and the eastern sections of the city towards the San Francisco Bay. Although dam failures are very rare, they aren't unprecedented. Each dam is required to have a comprehensive emergency action plan approved by the California Department of Water Resources, Division of Safety of Dams.

Tsunamis, caused by offshore earthquakes, can severely damage property, result in loss of lives, disrupt emergency services, and obstruct roads through intense flooding. Figure S-7 illustrates the areas that may be subject to tsunami inundation in San Mateo, which include shoreline areas along the San Francisco Bay. As shown in Figure S-7, although much of the tsunami flooding would occur in the northeast portion of the city, the area of tsunami inundation along the southeast corner of the city originates from the Belmont Slough and would stop at the levee, where the Bay Trail is located and the lagoon starts. Earthquakes with magnitudes below 6.5 are very unlikely to trigger a tsunami. See also the Geologic and Seismic Hazards section of this element for more information on earthquake hazards.

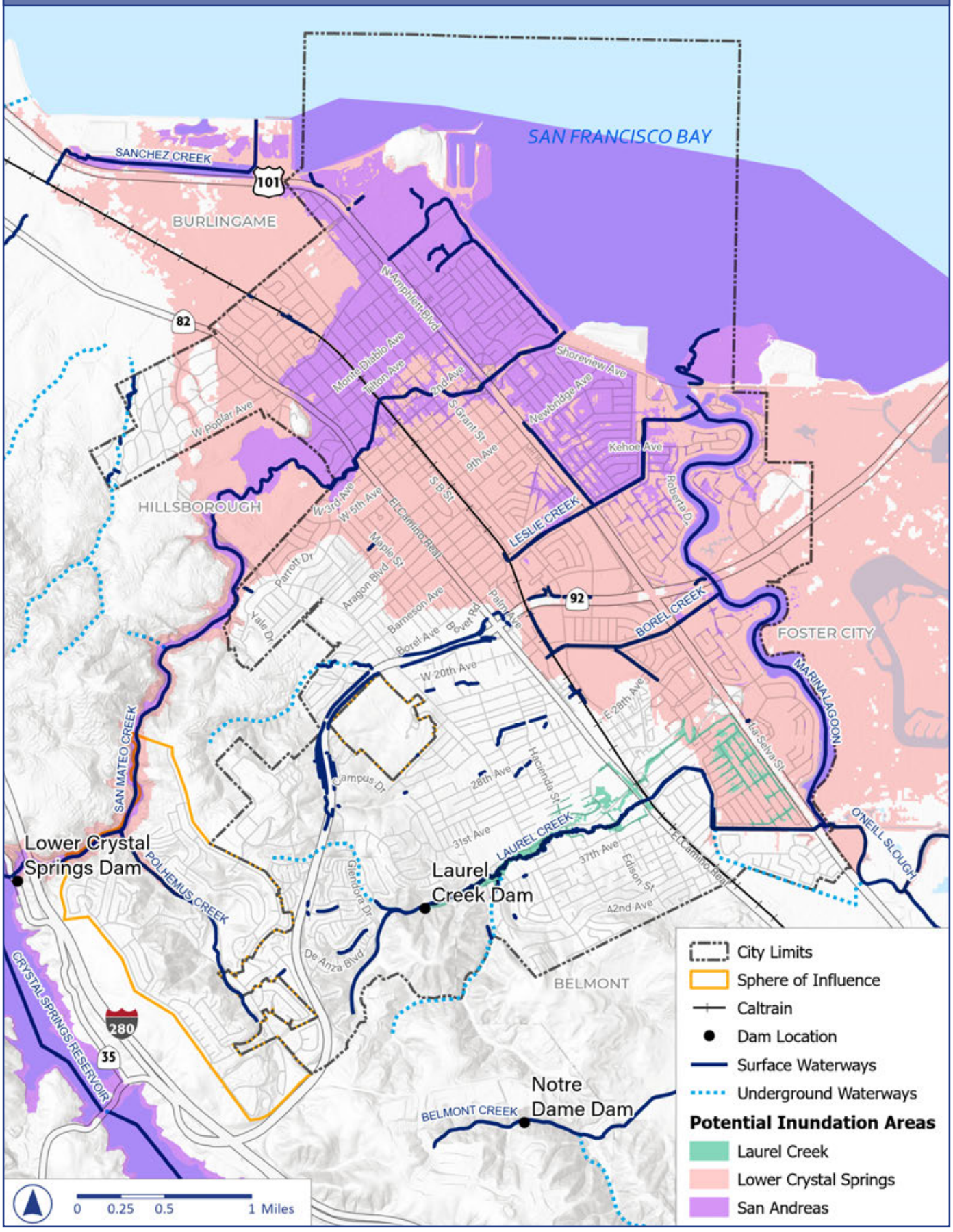
As discussed in the Public Services and Facilities Element, San Mateo has levees that protect the city from flooding from creeks and the San Francisco Bay. Non-federal levees are along the shoreline of Seal Point Park, and over 1,300 feet of levees have been upgraded along the San Mateo and Burlingame border. The San Mateo County Flood and Sea Level Rise Resiliency District, or OneShoreline, was created in 2020 to facilitate multijurisdictional flood and sea level rise resiliency projects in San Mateo County. Earthquakes or overtopping due to major storms can cause levees to fail, flooding the shoreline areas of the city.

Figure S-5 Potential Flood Hazards



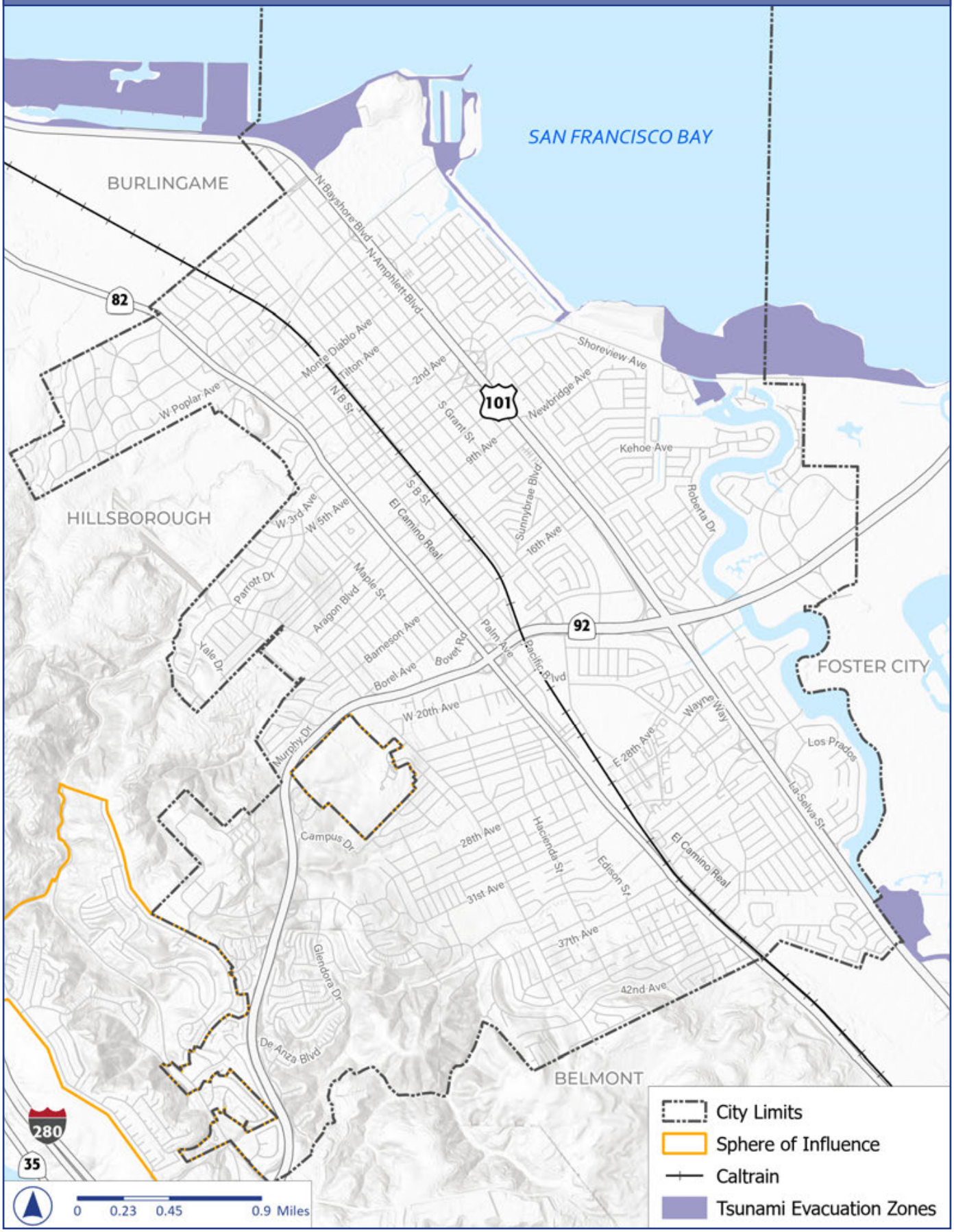
Source: CalDWR, 2022; FEMA, 2022; ESRI, 2022; PlaceWorks, 2023.

Figure S-6 Potential Flood Hazards – Dam and Levee Failure



Source: CalDWR, 2022; ESRI, 2022; PlaceWorks, 2023.

Figure S-7 Tsunami Hazard Zones



Source: CGS, 2022; ESRI, 2022; PlaceWorks, 2023.
Note: This map is included for informational purposes and is not adopted as part of this General Plan.

GOALS, POLICIES, AND ACTIONS

GOAL S-3 Protect the community from unreasonable risk to life and property caused by flood hazards.

POLICY

Policy S 3.1 **Development within Floodplains.** Protect new development and substantial retrofits within a floodplain by requiring the lowest finish floor elevation to be above the applicable floodwater elevation or by incorporating other flood-proofing measures consistent with Federal Emergency Management Agency (FEMA) regulations, OneShoreline guidance, the City's Floodplain Management Ordinance, and other City policy documents.

ACTIONS

Action S 3.2 **Floodplain Ordinance Update.** Update the Floodplain Management Ordinance, including to align with FEMA and OneShoreline recommendations and to update construction cost value information.

Action S 3.3 **Flood Risk Mapping Data.** Regularly update mapping data pertaining to the 100-year and 500-year floodplains, dams, and levee failure as information becomes available.

Action S 3.4 **Community Rating System.** Undertake efforts that increase the City's rating under FEMA's Community Rating System, such as expanding and improving Geographic Information System (GIS) mapping capacity, developing a flood early warning system, and creating a Flood Emergency Action Plan.

Action S 3.5 **Early Flood Warning.** Collaborate with OneShoreline to provide early flood warning for flood-prone areas of the city through OneShoreline's stream monitoring station and notification system.

SEA LEVEL RISE

As global temperatures increase, glaciers and other land ice near the north and south poles melt and sea levels rise. Higher temperatures also cause water to expand in oceans, further contributing to sea level rise. Rising seas increase the risk of flooding, storm surge inundation, erosion and shoreline retreat, and wetland loss. According to OneShoreline, San Mateo County as a whole is the most vulnerable county in California to sea level rise because of its extensive coastline and Bay shoreline and the number of people, value of properties, and critical assets in sea level rise-prone areas. Along the shoreline of the city, different scenarios project that sea levels will rise between 1.1 and 2.7 feet by 2050, with levels above 2 feet likely, and by 3.4 to 10.2 feet by 2100. However, it is possible that sea levels could rise faster than these projections. Figures S-8 and S-9 display the expected sea level rise in San Mateo in 2050 (2 feet) and 2100 (7 feet) based on the Ocean Protection Council's 2018 Updated California Sea Level Rise Guidance, featuring models from the Adapting to Rising Tides program of the San Francisco Bay Conservation and Development Commission (BCDC). These figures do not reflect the improvements currently underway for the Foster City levee system.

Rising sea levels can also cause the shoreline to flood more frequently and severely during storms or king tide events. King tides are abnormally high, predictable astronomical tides that occur about twice per year, with the highest tides occurring when the earth, moon, and sun are aligned. Because sea level rise will cause ocean levels to be higher during normal conditions, shoreline floods can reach further onto land. For example, a storm that has a one in five chance of occurring in a given year (known as a five-year storm) can create a temporary increase in sea levels of approximately two feet. The goals, policies, and actions in this section call for planning for a medium- to high-risk aversion scenario in 2100. This scenario uses a 1 in 200 chance for sea level rise projections, providing a precautionary projection that can be used for less adaptive (less able to make changes that reduce harm in response to hazards), more vulnerable developments or populations that will experience moderate to high consequences if actions are not taken to address sea level rise in these areas. Figure S-10 shows shoreline flooding on top of sea level rise in the event of a five-year storm for 2050.

Rising sea levels also threaten a significant portion of San Mateo's housing, commercial buildings, essential infrastructure, and economic drivers, as low-lying land near the shoreline could be subject to more frequent flooding. Affected essential infrastructure includes US Highway 101, State Route (SR-) 92, and the Caltrain station and associated railroad infrastructure. Meanwhile, rising tides may increase groundwater levels, inundating contaminated soils. Given that some contaminated sites in San Mateo sit near the shoreline, rising groundwater may cause contaminated soils to leach into new, different areas.

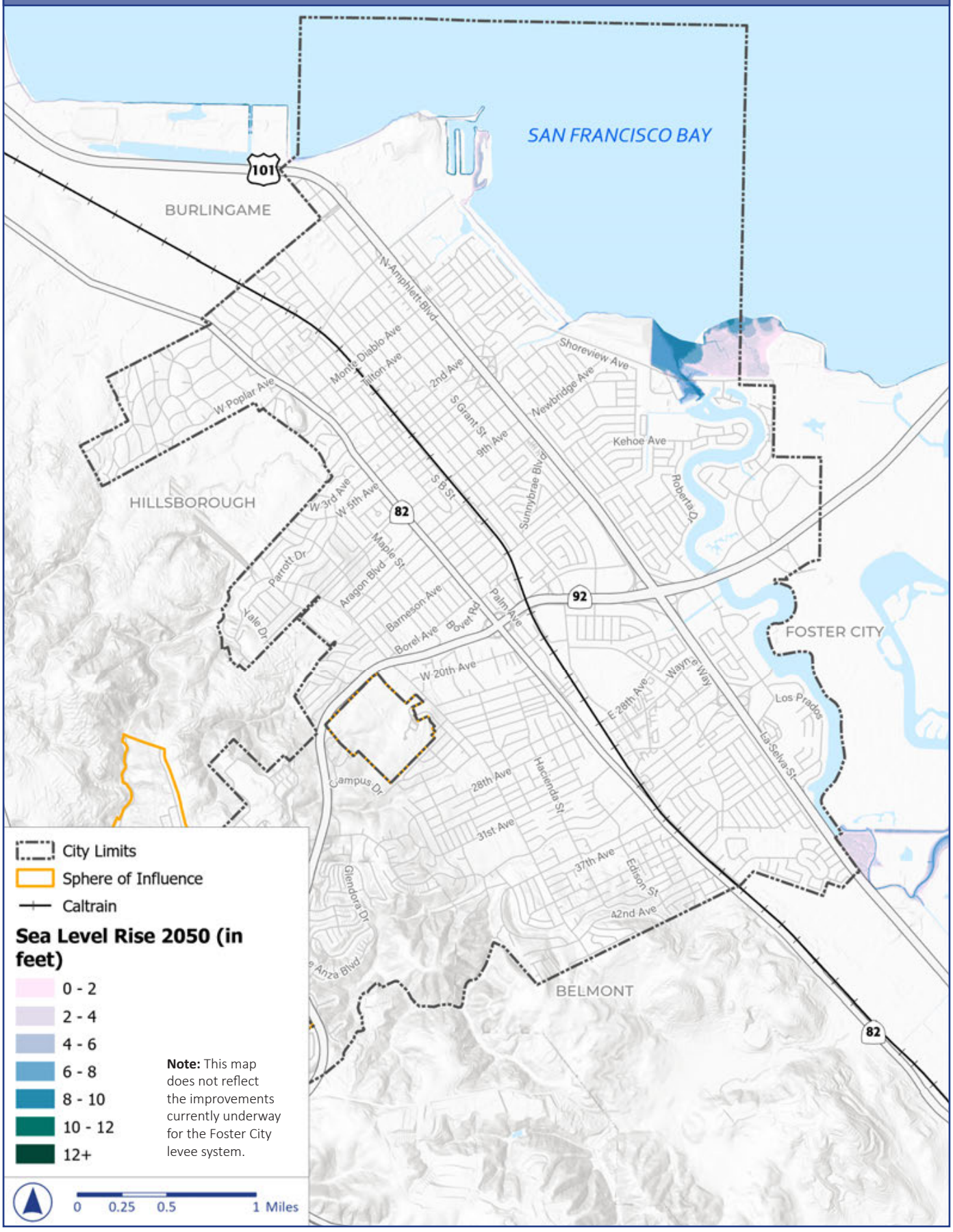
Natural ecosystems in the bay will be disrupted by the higher tide levels and intrusion of saltwater into freshwater creek systems and the Marina Lagoon. Historically, marshlands along the shoreline have adapted to changes in sea level by building up sediment, increasing the height of the marsh to keep pace with the tide levels of the San Francisco Bay, and moving inland. However, eastern San Mateo is lined with a three-mile levee system that has very little marsh habitat, and any habitat migration is expected to be outpaced by sea level rise. Creative integration of nature-based solutions to combine natural buffers with San Mateo's extensive existing levee system to mitigate flooding risks could be an opportunity to re-establish ecological communities and enhance natural areas, such as the creeks throughout the city and the Marina Lagoon.

In 2023, the City completed improvements in the North Shoreview neighborhood, which is south of Coyote Point, roughly bound by San Mateo Creek to the south, U.S. Highway 101 to the west, the Poplar Creek Golf Course to the north, and San Francisco Bay to the east. Ground elevations in the neighborhood range from below sea level to about 10 feet above sea level, so the area is susceptible to flooding from San Francisco Bay and stormwater runoff that collects behind the levees protecting the neighborhood from bay water intrusion. Figure S-11 shows a map of the neighborhood and the various structures and facilities that provide protection against these flood risks. The City upgraded the Coyote Point and Poplar Avenue pump stations and made improvements to a section of the Bayfront Levee. With the added protection, approximately 1,600 properties in North Shoreview will be removed from the 100-year flood zone once approved by FEMA. The levee improvements will add 3.9 feet above the predicted base flood elevation to account for sea level rise.

Neighboring Foster City is also in the process of constructing improvements to their levee system, which interconnects with the City of San Mateo's system. Their improvements will provide protection from the 100-year flood and an additional 3 feet above the predicted base flood elevation to account for sea level rise.

The City of San Mateo will continue working with regional, State, and federal partners to proactively address the potential impacts of sea level rise. The City regularly participates in data gathering and mapping, collaborates with OneShoreline, manages a new assessment district in North Shoreview to fund necessary flood protection improvements, and completes infrastructure projects to provide flood protection. The City is also engaged through the BayCAN collaborative, a Bay Area-wide collaborative network of local governments and organizations focused on responding effectively and equitably to the impacts of climate change.

Figure S-8 2050 Sea Level Rise



Source: ESRI, 2022; PlaceWorks, 2023.
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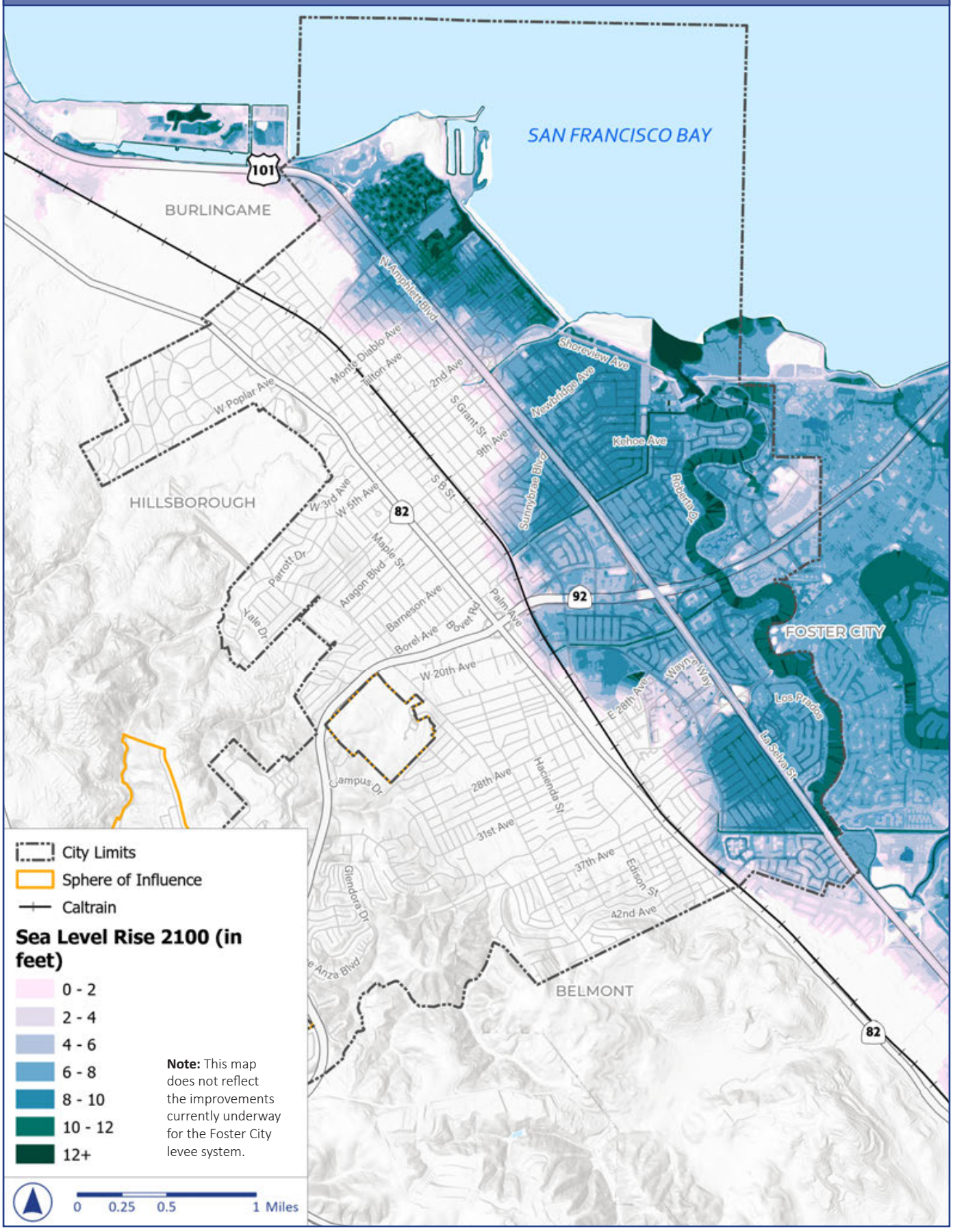
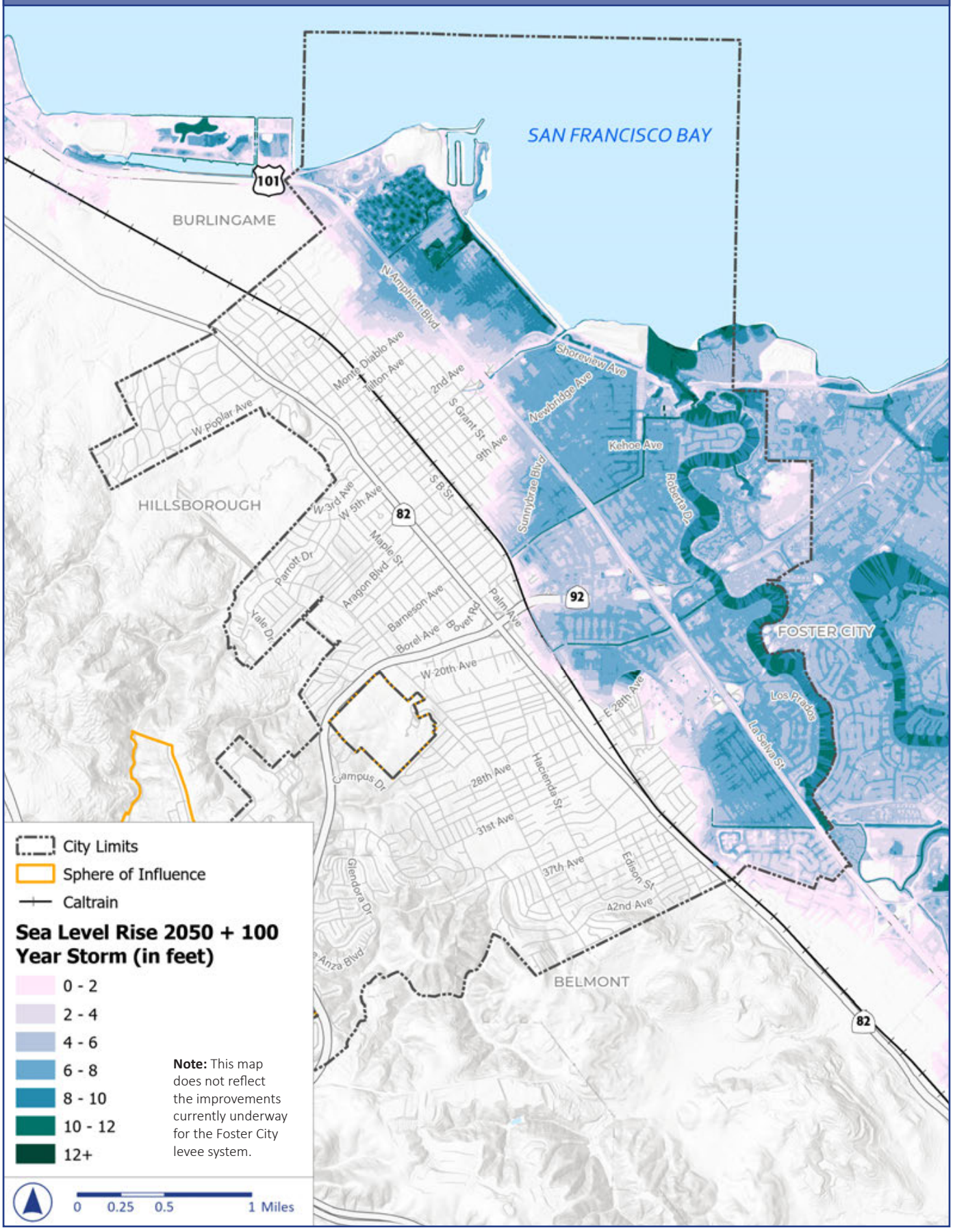
Figure S-9 2100 Sea Level Rise



Source: ESRI, 2022; PlaceWorks, 2023.
Note: This map is included for informational purposes and is not adopted as part of this General Plan.

Figure S-10 2050 Sea Level Rise Plus 100-Year Storm



Source: ESRI, 2022; PlaceWorks, 2023.
Note: This map is included for informational purposes and is not adopted as part of this General Plan.

Figure S-11 North Shoreview Flood Protection Improvements

Note: This map is included for informational purposes and is not adopted as part of this General Plan.

GOALS, POLICIES, AND ACTIONS

GOAL S-4 Develop regionally coordinated sea level rise adaptation measures and programs.

POLICIES

Policy S 4.1 **Sea Level Rise Planning.** Integrate sea level rise planning into all relevant City processes, including General Plan amendments, Specific Plans, zoning ordinance updates, capital projects, and review and approval of new development and substantial retrofits.

Policy S 4.2 **Sea Level Rise and Groundwater Rise Protection.** Ensure that new development, substantial retrofits, critical facilities, City-owned buildings, and existing and future flood control infrastructure are planned and designed to accommodate climate change hazards, including increases in flooding, sea level rise, and rising groundwater, based on the best available science.

Policy S 4.3 **Natural Infrastructure.** Consider the use of nature-based solutions and natural infrastructure in sea level rise adaptation strategies.

Policy S 4.4 **OneShoreline Coordination.** Coordinate with OneShoreline to develop and implement coordinated approaches to sea level rise with other San Mateo County jurisdictions.

ACTIONS

Action S 4.5 **Climate Change Adaptation Plan.** Assess sea level rise projections, consistent with OneShoreline recommendations, identify the extent of areas vulnerable to sea level rise in the city, and develop a Climate Change Adaptation Plan that sets a comprehensive strategy and includes planning and design standards for climate risk protection. Use this plan to evaluate development applications to ensure projects are protected from sea level rise hazards over the life of the project and to assess public infrastructure needs for adequate protection.

Action S 4.6 **Sea Level Rise Monitoring.** Review and use the best-available sea level rise science and projections and regularly identify natural resources, development, infrastructure, and communities that are vulnerable to sea level rise impacts, including impacts from rising groundwater. Use this information to continue to develop or adjust planning and adaptation strategies.

Action S 4.7 **Rising Groundwater Coordination.** Coordinate with OneShoreline, local jurisdictions, and regional and State agencies to study and enforce requirements related to rising groundwater levels caused by sea level rise.

Action S 4.8 **Natural Infrastructure.** Use or restore natural features and ecosystem processes where feasible and appropriate as a preferred approach to the placement of hard shoreline protection when implementing sea level rise adaptation strategies.

Action S 4.9 **Sea Level Overlay Zone.** Study the feasibility of establishing a sea level rise overlay zone that would allow for the creation of adaptation policies, rules, or construction codes unique to this area, and consistent with OneShoreline guidance, to require properties be made resilient to sea level rise.

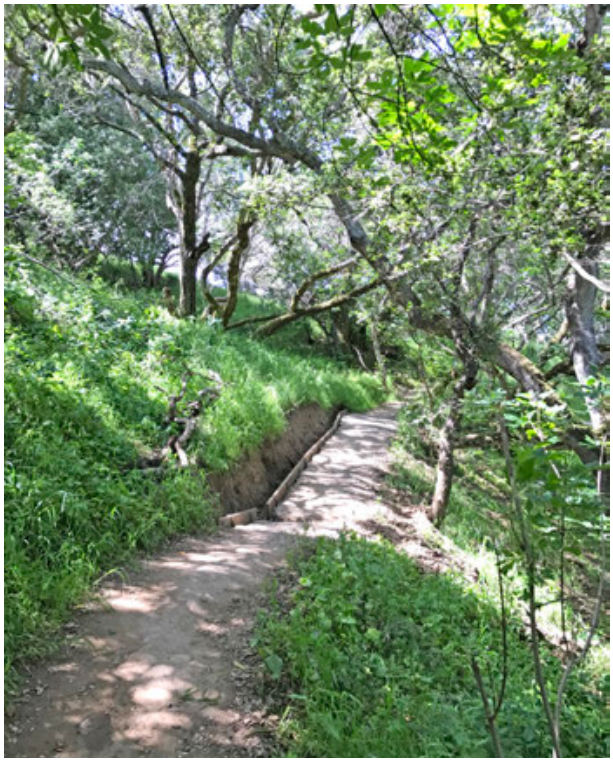
Action S 4.10 **Sea Level Rise Funding.** Study options for establishing dedicated General Fund dollars to support efforts to address sea level rise, including sufficiently supporting OneShoreline.

Action S 4.11 **New Development.** Explore creation of a new fee for new development along the bay shoreline to fund sea level rise protection measures and adaptation strategies.

WILDFIRE HAZARDS

Wildfires are a regular feature of the landscape in much of California and can be sparked by lightning, malfunctioning equipment, vehicle crashes, or other causes. High winds, such as the Diablo Winds, can cause fires to spread rapidly and erratically, increasing the difficulty of containment and possibility of burning into developed areas. In addition to direct fire impacts on people and property, wildfires remove stabilizing vegetation from hillsides, increasing the likelihood of future landslides. When wildfires burn at very high temperatures, soils can become hydrophobic, preventing the ground from absorbing stormwater and causing flooding downslope. Residents can also be harmed by smoke from wildfires in the region or across northern California. Particulate matter from smoke can cause respiratory illnesses, especially for those who spend a lot of time outdoors during smoky conditions.

The California Department of Forestry and Fire Protection (CAL FIRE) designates lands into responsibility areas based on who is financially responsible for fire-protection services. Local Responsibility Areas (LRAs) include areas where City fire departments or local fire protection districts are charged with fire protection. State Responsibility Areas (SRAs) include unincorporated areas and State lands where the State has financial responsibility for wildfire protection. San Mateo is within an LRA, and the San Mateo Consolidated Fire Department provides fire prevention and protection services for the area. There are no locations in San Mateo that currently lack access to fire-protection services.



Within the responsibility areas, CAL FIRE designates (with City approval) lands as Moderate, High, or Very High Fire Hazard Severity Zones. As shown in Figure S-12, Very High Fire Hazard Severity Zones are in western San Mateo between the City Limits and SR-92, as well as near Yale Drive and St. Johns Cemetery. Current mapping does not yet designate Moderate or High Fire Hazard Severity Zones in the City Limits. Users should consult the most recent available mapping from CAL FIRE's Fire and Resource Assessment Program (FRAP).[1] Future updates to this Safety Element will include new fire mapping data as it becomes available.

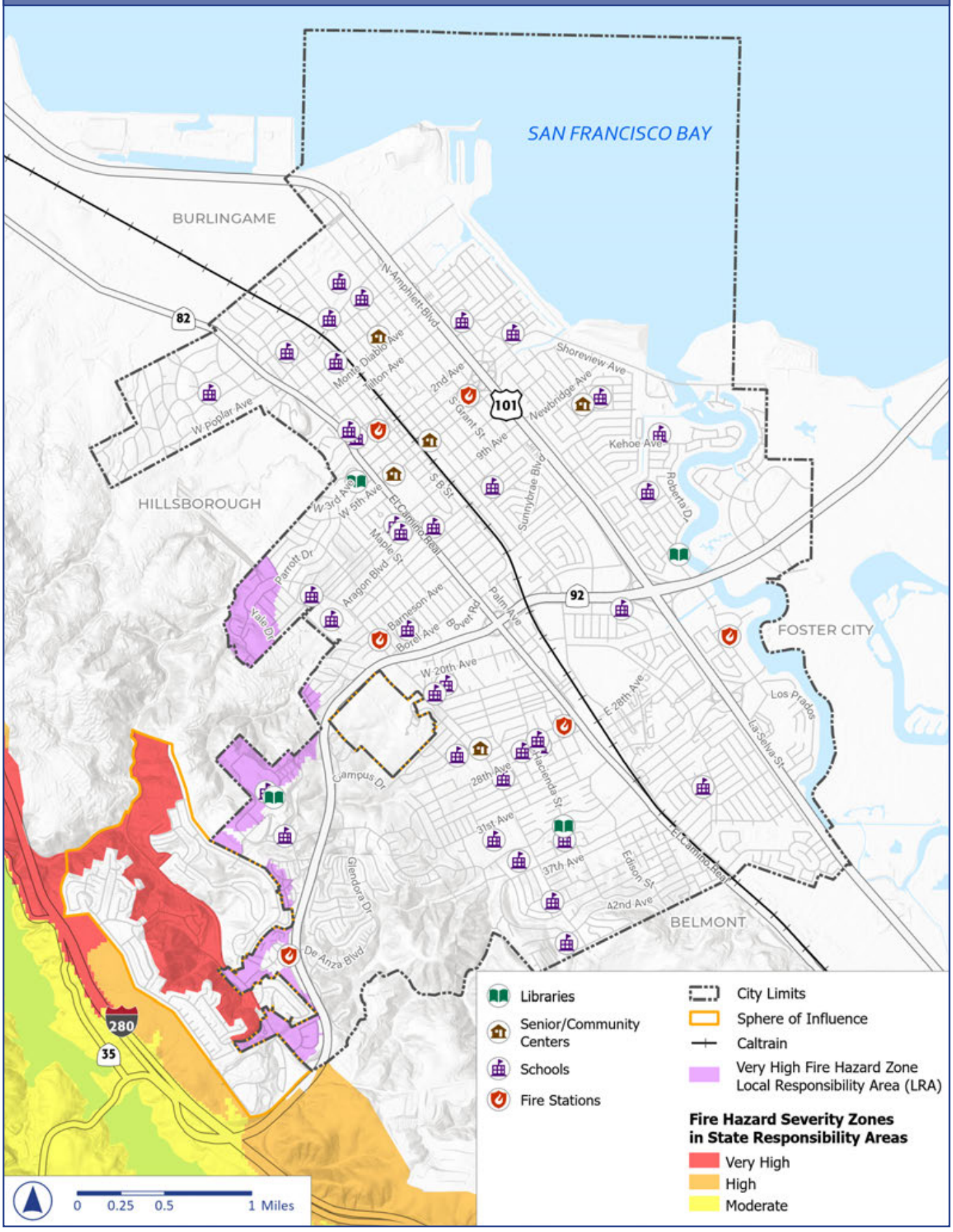
Wildfires may start in wildland areas, natural areas in the unincorporated county, but they can easily spread to developed areas in the city between urban development and wildlands. This area is called the Wildland-Urban Interface (WUI), as shown in Figure S-13. The WUI is made up of two distinct zones. The interface zone contains dense housing or other structures next to vegetation but has little wildland vegetation that can burn in a wildfire. The wildland zones have higher concentrations of wildland vegetation with fewer structures and may have limited access and/or steeper terrain that makes controlling wildfires more difficult. As shown in Figure S-13, the wildland zones are in and near Laurelwood Park and in open space areas near the Peninsula Golf & Country Club. The interface zones border the park and open space areas and include residential neighborhoods, roadways, and other infrastructure throughout west and southwestern parts of San Mateo.

Within the Very High Fire Hazard Severity Zones and WUI zones, there are existing homes, businesses, and public land uses, as well as associated infrastructure like major roadways (e.g., SR-92 and Interstate 280), electrical transmission infrastructure, water and wastewater distribution systems, and communication facilities. Much of this development occurred prior to wildfire hazard mapping; the policies and actions in this element limit future residential development in Very High Fire Hazard Severity Zones and aim to protect existing buildings and infrastructure. Meanwhile, State law requires that homeowners in the WUI zones create and maintain defensible space around homes and other structures, keep roofs clear of flammable material, and use spark arresters on chimneys. Figure S-14 shows the land use designations within Very High Fire Hazard Severity Zones for the Strive San Mateo General Plan 2040.

Although no fires have burned in close proximity to San Mateo since CAL FIRE has kept records (1878), several fires have burned in the unincorporated areas of San Mateo County. Recently, the 2020 CZU Lightning Complex Fire burned over 86,000 acres in southern San Mateo County. In 2022, a wildfire burned in the Emerald Hills area of Redwood City, to the south of San Mateo, which could have burned into the city under different conditions. Areas that have previously burned, regardless of their location within or outside of a Fire Hazard Severity Zone, are likely to burn again. Due to climate change, fire activity is projected to increase where development expands in the WUI zones and in areas of high winds.

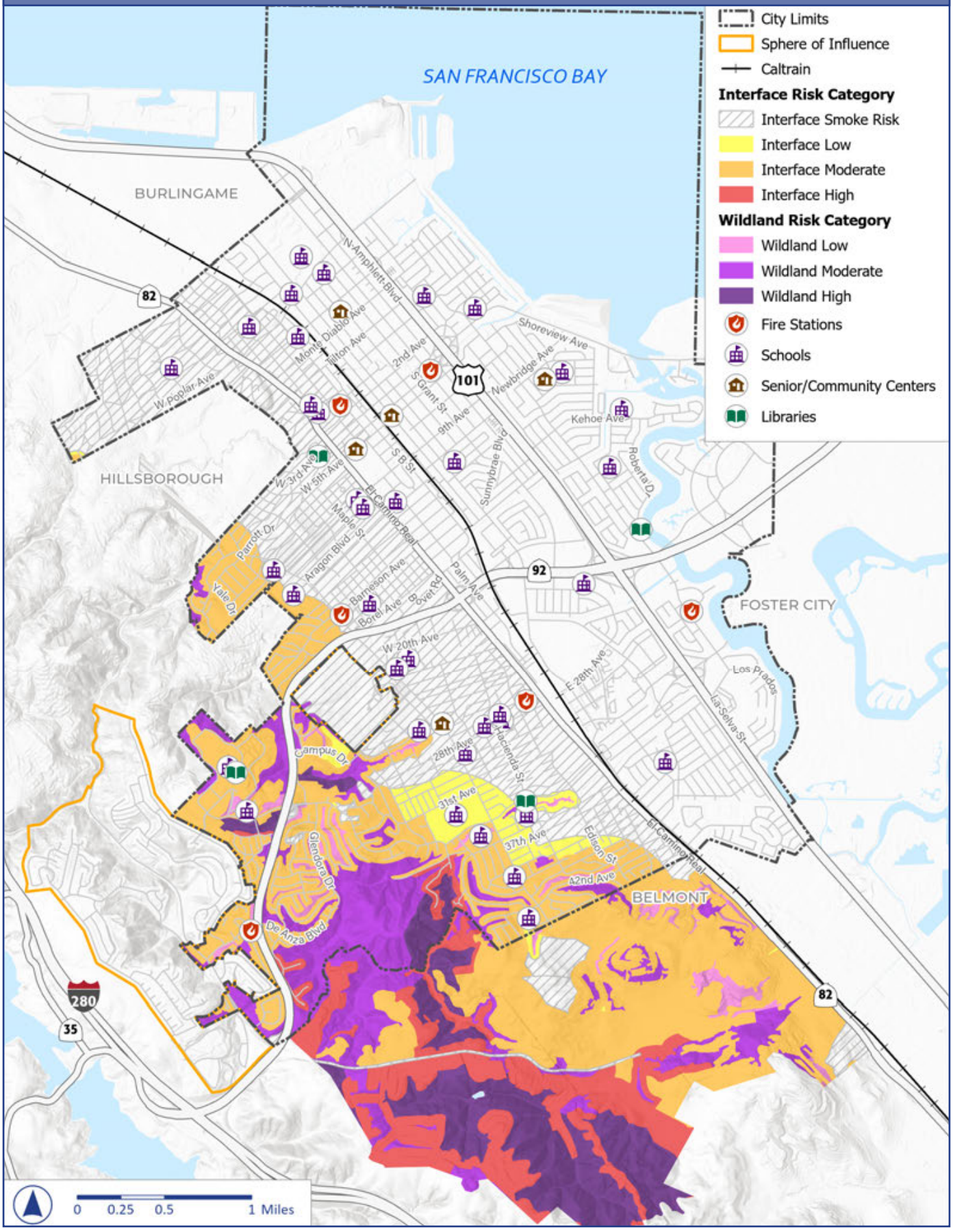
1 Available at https://frap.fire.ca.gov.

Figure S-12 Wildfire Hazard Zones



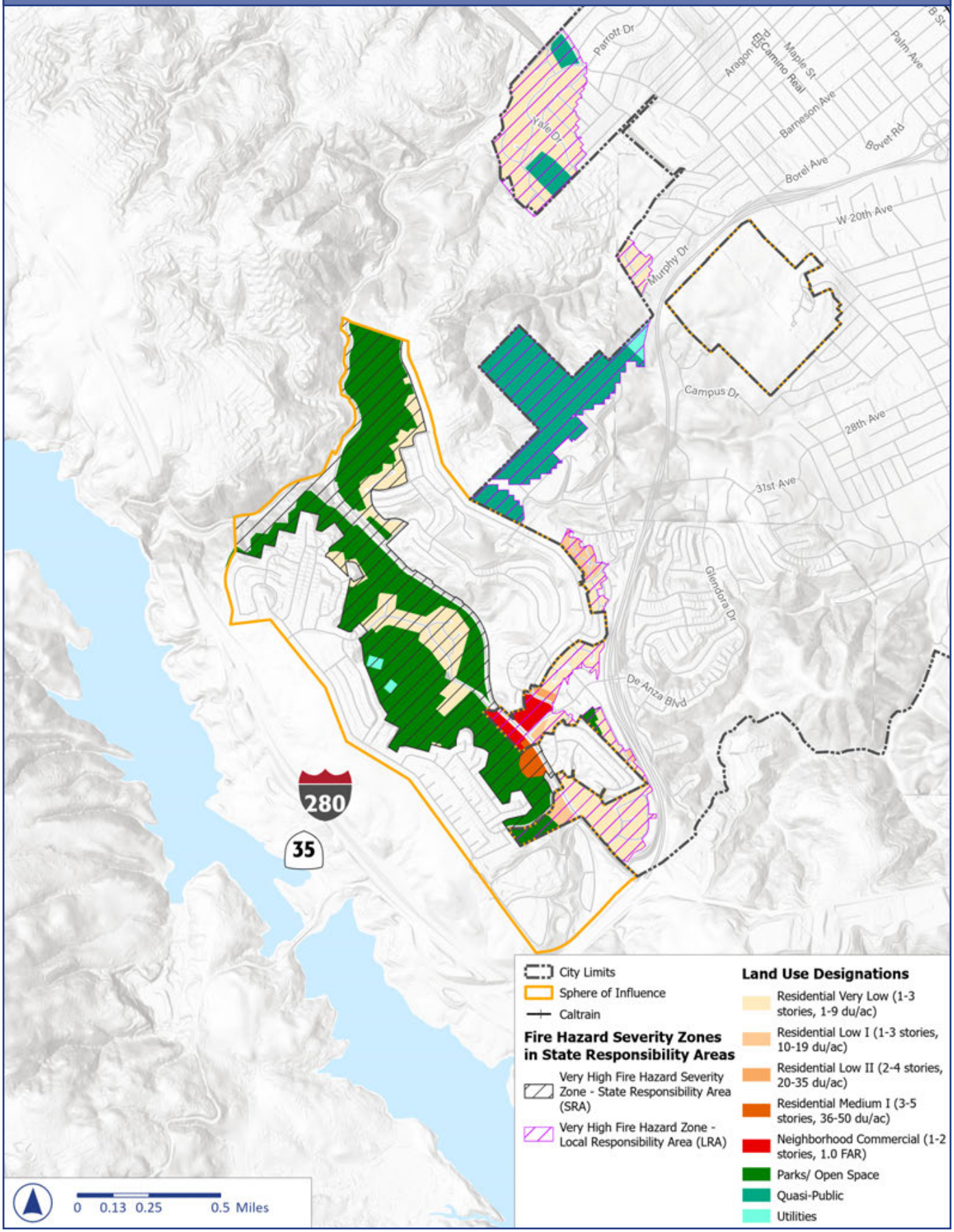
Source: CalFire, 2022; ESRI, 2022; PlaceWorks, 2023.
Note: This map is a draft and will be updated once CalFire publishes the new Wild Hazard Zones.

Figure S-13 Wildland-Urban Interface



Source: City of San Mateo, 2022; ESRI, 2022; PlaceWorks, 2023.

Figure S-14 Land Uses in Very High Fire Hazard Severity Zones



Source: City of San Mateo, 2022; ESRI, 2022; PlaceWorks, 2023.
Note: This map is a draft and will be updated once CalFire publishes the new Wild Hazard Zones.

GOALS, POLICIES, AND ACTIONS

GOAL S-5 Maintain adequate fire and life safety protection from wildland fires.

POLICIES

Policy S 5.1 **Very High Fire Hazard Severity Zones.** Avoid new residential development in Very High Fire Hazard Severity Zones, as shown on Figure S-14, or the most current data available from CAL FIRE. Redevelopment or reconstruction of existing structures is allowed. Coordinate with San Mateo Consolidated Fire Department (SMC Fire) to ensure new construction of buildings or infrastructure within a Fire Hazard Severity Zone or Wildland-Urban Interface (WUI), as shown on Figures S-12 and S-13 or the most current data available from CAL FIRE, are in full compliance with applicable State and local regulations and meet the Very High Fire Hazard Severity Zone Fire Safe Regulations for road ingress and egress, fire equipment access, and adequate water supply.

Policy S 5.2 **Reconstruction of Development.** Require reconstruction projects or significant retrofits in a Fire Hazard Severity Zone and the Wildland-Urban Interface, as shown on Figures S-12 and S-13 or the most current data available from CAL FIRE, to be consistent with the California Building Standards Code, California Fire Code, and Very High Fire Hazard Severity Zone Fire Safe Regulations.

Policy S 5.3 **Wildland Fire Protection.** Require all development in and adjacent to designated Fire Hazard Severity Zone and Wildland-Urban Interface to prepare a fire protection plan for review and approval by SMC Fire prior to issuance of building permits and to provide access and defensible space in accordance with California codes and local ordinances.

Policy S 5.4 **Hillside Vegetation Stability.** Stabilize, and as feasible re-vegetate, burned slopes following a wildfire event to reduce landslide and debris flow risk.

Policy S 5.5 **Fire Risk Mapping.** Coordinate with SMC Fire to consistently update any mapping data showing fire extent in San Mateo using CAL FIRE data and local wildland fire risk maps indicating the locations and extents of Fire Hazard Severity Zones, Local Responsibility Areas, and the Wildland-Urban Interface. Use this mapping data to inform decisions about existing risk and future land uses throughout the city and share these maps widely on the City's website, published handouts and flyers, and at in-person and virtual education events.

Policy S 5.6 **Firefighting Infrastructure.** Coordinate with SMC Fire to ensure adequate firefighting infrastructure, including road and building clearance for firefighting vehicles, and clear and legible street signage throughout the community.

Policy S 5.7 **Peakload Water Supply.** Ensure that the California Water Service Company and the Estero Municipal Improvement District provide and maintain a water supply and distribution system that provides an adequate static pressure to deliver the minimum fire hydrant flow to all areas of the city, except where a lesser flow is acceptable, as determined by SMC Fire.

Policy S 5.8 **Facilities Planning.** Place all new public facilities or relocate existing public facilities outside of identified fire hazard risk areas as feasible. Appropriately retrofit public facilities to mitigate fire risk.

Policy S 5.9 **Land Use Management for Fire Risks.** Maintain all City-owned public lands and work with private landowners to reduce fuel loads, establish appropriately placed fire breaks/defensible space, require long-term maintenance of fire hazard reduction projects, and educate all property owners in the city on proper landscape maintenance and firescaping standards to reduce the risk of fire hazards.

Policy S 5.10 **Wildland Fire Vulnerability.** Consider all improvements at Sugarloaf Mountain and Laurelwood Park in the context of the area's high fire risk and include wildfire mitigation components in projects when feasible.

Policy S 5.11 **Fire-Safe Roads.** Coordinate with SMC Fire to evaluate new development or significant retrofits that have access on roadways that do not meet fire-safe road and vegetation standards within the Wildfire-Urban Interface and/or Very High Fire Hazard Severity Zone and ensure that road standards and vegetation management occurs and is maintained.

Policy S 5.12 **Secondary Access.** Explore secondary means of ingress and egress in areas with evacuation constraints, as shown in Figure S-2, Evacuation-Constrained Areas, for existing subdivisions or developments of 30 units or more within a Very High Fire Hazard Severity Zone.

Policy S 5.13 **Emergency Access.** Require that roads, driveways, and other clearances around structures are located and designed to ensure emergency access.

Policy S 5.14 **Emergency Services.** Work with SMC Fire to provide fire prevention, protection, and emergency preparedness services that adequately protect residents, employees, visitors, and structures from fire and fire-related emergencies.

ACTIONS

Action S 5.15 **Tree Maintenance.** Collaborate with SMC Fire to maintain City-owned trees in a manner that does not contribute to fire danger, in accordance with current best management practices (BMPs).

Action S 5.16 **Fire-Safe Education.** Work with SMC Fire and seek funding to develop a fire-safe education program that provides information and awareness to community members about defensive space, fire-resistant landscaping and construction, evacuation preparation, and other wildfire education topics.

Action S 5.17 **Fire Hazard History.** Include a historical record of any significant fire events that have occurred in San Mateo or the surrounding area in all updates to the City's Safety Element.

Action S 5.18 **Vegetation Management on City-Owned Land.** Coordinate with SMC Fire to continue conducting and providing long-term maintenance of vegetation management projects in City-owned parks and open spaces to prevent wildfire ignition and spread.

Action S 5.19 **Reevaluation of Development Standards.** Reevaluate development standards for wildfire risk areas following major wildfire events and apply updated standards as needed to maintain high levels of wildfire protection.

Action S 5.20 **Vegetation Management.** Coordinate with the SMC Fire and the FIRE SAFE San Mateo County to obtain funding for and conduct vegetation and fuel modification or management.

HAZARDOUS MATERIALS

Much of the economic success of the Bay Area is based on research and manufacturing, the byproducts of which include substances that may be harmful to people and the surrounding environment. Hazardous waste ranges from familiar substances, such as waste oil and cleaning solvents, to highly toxic industrial compounds, and include toxic metals, gases, flammable and explosive liquids and solids, corrosive materials, radioactive materials, and infectious biological waste. They can be released through human error, malfunctioning or broken equipment, or as an indirect consequence of other emergencies (e.g., if an earthquake damages a hazardous material storage tank). Hazardous materials can also be released accidentally during transportation, as a consequence of vehicle accidents.

Most of the waste generators in San Mateo are small-quantity generators – small businesses and households that generate less than 12 tons per year. Numerous industrial and commercial operations, both past and present, have manufactured, handled, stored, and disposed of hazardous materials. Hazardous material sites include manufacturing operations, facilities with leaking underground storage tanks (LUSTs), and generators of hazardous waste. In the twenty-first century, life science buildings are replacing industrial businesses as users of hazardous materials and producers of hazardous waste.

The San Mateo County Hazardous Waste Management Plan, implemented by San Mateo County Environmental Health Service, the designated Certified Unified Program Agency for the county, has designated 15 areas in San Mateo that are zoned for either commercial or industrial uses as suitable for waste treatment, recycling, storage, and transfer facilities. The sites designated for these facilities are in manufacturing districts adjacent to the Union Pacific rail corridor. Sites designated for storage and transfer facilities are in service commercial and transit-oriented development zoning districts adjacent to the rail corridor, west of US Highway 101 on Amphlett Boulevard, and in Coyote Point Park.

Hazardous materials are primarily transported within San Mateo via trucks carrying a variety of materials, including gasoline, other petroleum products, and other chemicals known to cause fire and life safety problems. There is a significant potential for accidental release of wastes in transit due to the presence of US Highway 101 running through the eastern portion of the city. The transport of hazardous materials is regulated by the California Department of Transportation and California Highway Patrol on State and Interstate highways in California. Local agencies have the authority to restrict the use of local roads for waste transport, as well as the time of transit, if not unduly restrictive to commerce.

Generally, selection of transportation routes should minimize the time and distance that hazardous waste is in transit, avoid residential neighborhoods and sensitive receptors, avoid periods and areas of traffic congestion, minimize use of local roads, and provide for adequate emergency response services.

GOALS, POLICIES, AND ACTIONS

GOAL S-6 Protect the community's health, safety, and welfare relating to the use, storage, transport, and disposal of hazardous materials.

POLICIES

Policy S 6.1 **County Cooperation.** Cooperate with the County of San Mateo and San Mateo Consolidated Fire Department in the regulation and transportation of hazardous materials in San Mateo. Share hazardous materials management enforcement with San Mateo County and San Mateo Consolidated Fire Department.

Policy S 6.2 **County Hazardous Waste Management Plan.** Adopt the San Mateo County Hazardous Waste Management Plan by reference into the Safety Element. Make amendments, as necessary, to suit local needs and issues.

Policy S 6.3 **Transportation Routes.** Restrict the transportation of hazardous materials and waste to designated truck routes and limit such transportation to non-commute hours.

Policy S 6.4 **Hazardous Waste Management Facilities Location.** Regulate the location and operation of new hazardous waste management facilities.

Policy S 6.5 **Design of Hazardous Waste Management Facilities.** Require the following features and mitigation measures in the design of proposed hazardous waste management facilities, including life sciences buildings, to minimize potential health, safety, and aesthetic impacts on surrounding properties and occupants:

- For sites in areas subject to flooding or inundation as shown on Figures S-5 and S-6, require facilities to have a surface elevation at least 1.5 feet above the maximum flood water level for areas containing hazardous substances or to be flood-proofed in some other manner suitable to the City.
- Require facilities to provide for full on-site containment of maximum permitted quantities of hazardous substances, including protection of storm drain or sanitary sewer inlets from accidental entry of hazardous materials.
- Require facilities to provide separate storage and/or treatment of potentially reactive substances, including separate spill containment vessels. Require that storage of hazardous gases provides adequate filtration and neutralization devices to prohibit accidental release of toxic substances.
- Require that all storage and treatment occur within an enclosed structure.
- Require new facilities be sited as far away as possible within the project site from sensitive communities, such as homes, schools, playgrounds, sports fields, childcare centers, senior centers, and long-term healthcare facilities.

Policy S 6.6 **Risk Assessment.** Require applications for hazardous waste management facilities to prepare a risk assessment to determine site suitability. Establish risk criteria such as distance from public facilities, residential, or immobile population and recreation areas; impacts from natural hazards (seismic, geologic, flood, and fire hazards); impacts on wetlands, endangered species, air quality, and emergency response capabilities; and proximity to major transport routes.

Policy S 6.7 **Contaminated Sites.** Require the cleanup of contaminated sites, including those indicated on the Hazardous Waste and Substances Sites List (Cortese List) published by the Department of Toxic Substances Control and/or other agencies, such as the San Mateo County Health Department and the Regional Water Quality Control Board, in conjunction with substantial site development or redevelopment, where feasible.

Policy S 6.8 **Cost Recovery.** Require San Mateo County businesses that generate hazardous waste or applicants for hazardous waste management facilities to pay necessary costs for implementation of Hazardous Waste Management Plans and for application costs, and to pay for costs associated with emergency response services in the event of a hazardous material release, to the extent permitted by law.

ACTION

Action S 6.9 **Shared Data.** Regularly coordinate with San Mateo County to collect data on businesses that store hazardous substances to share with local emergency service providers, including the Police Department and San Mateo Consolidated Fire Department, as well as the Public Works Department for the wastewater source-control program.