11.

SAFETY + RESILIENCE

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CONTENTS

11.1 PURPOSE OF THE CHAPTER

Tiburon is vulnerable to a range of public safety threats including both natural and human-made hazards. Earthquakes, landslides, fire, flooding, sea level rise, and extreme heat events pose serious and real threats to the Town. Planning is critical to identify potential hazards and provide policies and regulatory actions to reduce the community's risk of death, illness, injury, property damage, and economic and social disruption.

This chapter presents a framework for governing future decisions about how the Town will provide a safe community and protect the community from natural and man-made hazards. The chapter addresses the requirements of the State-mandated safety element and partially addresses the requirements of the land use element of the general plan.

The Safety + Resilience chapter includes the following sections.

11.2 Hazard Mitigation and Emergency Preparedness. Provides an overview to the Town's approach to reducing safety risks and responding to disasters when they occur.

11.3 Seismic and Geologic Hazards. Describes environmental and man-made hazards including earthquakes, liquefaction, tsunami, and landslide.

11.4 Flood Hazards. Describes flood hazards and flood control and mitigation measures to protect the community from flooding and reduce damage.

11.5 Sea Level Rise. Presents the context of and projections for sea level rise, potentially vulnerable assets in Tiburon, and a framework for decision-making.

11.6 Fire Hazards. Discusses fire risks, fire hazard zones, and fire protection measures and service.

11.7 Public Safety. Provides an overview of crime in Tiburon and police protection services.

11.8 Goals, Policies, and Programs. Identifies goals, policies, and programs minimize hazards and risks to life and property.

11.2 HAZARD MITIGATION AND EMERGENCY PREPAREDNESS

HAZARD MITIGATION

Hazard mitigation is the use of long-term and short-term policies, programs, projects, and other activities to alleviate the death, injury, and property damage that can result from a disaster. Marin County and its partners, including the Town of Tiburon, developed the 2018 Multi-Jurisdictional Local Hazard Mitigation Plan (2018 LHMP) to assess risks posed by natural hazards and to develop a mitigation strategy for reducing the County's risks. The LHMP lays out a process to prepare for and lessen the impacts of specified natural hazards that are most likely to impact Marin, such as earthquakes, wildfires, floods, debris flows, wind damage, and tsunamis.

The County and its partners prepared the 2018 LHMP in accordance with the requirements of the Disaster Mitigation Act of 2000 (DMA 2000). Additionally, the plan complies with federal and state hazard mitigation planning requirements to establish eligibility for funding under the FEMA grant programs. The 2018 LHMP serves as the current Local Hazard Mitigation Plan for all participating jurisdictions.

The 2018 LHMP is currently being updated and is expected to be adopted in 2023. In January 2022 a Vulnerability Assessment was prepared for the Marin Countywide Plan Safety Element Update that will be incorporated into the updated LHMP. The Vulnerability Assessment addresses the adaptation and resilience requirements of Gov't. Code §65302(g)(4)(A) for Marin County, including the Town of Tiburon, by:

- Identifying exposures to climate change hazards, including drought, extreme heat, flooding, and landslides, debris flows, and post-fire debris flows,
- Identifying population groups and community assets that are sensitive to localized climate change effects,
- Evaluating the adapting capacity of identified populations and assets, &
- Conducting vulnerability scoring to describe the degree to which natural, built, and human systems are at risk of exposure to climate change impacts.

Adaptation and resilience goals, policies, and programs in compliance with Gov't. Code §65302(g)(4)(B) and (C) are contained in Section 11.8.

EMERGENCY PREPAREDNESS

The Tiburon police station, in addition to day-to-day police activities, houses the Tiburon Peninsula Emergency Operations Center (EOC), which provides disaster response for Tiburon and Belvedere. The EOC is activated during extraordinary emergencies or events and during disasters. The Tiburon Peninsula Emergency Operations Plan guides the Town on how to operate during an emergency. Tiburon also utilizes standard operating procedures established by Police, Fire, and Public Works for conducting routine monitoring of events to determine appropriate actions prior to activating the EOC.

At the local level, the Tiburon Peninsula EOC is used as the central location for gathering and disseminating information, coordinating all jurisdictional emergency operations, and coordinating with the Marin County Office of Emergency Services and the Marin County Operational Area EOC level during events outside the scope of the Town of Tiburon. When a disaster occurs and two or more of the county's local jurisdictions' EOCs (or at the request of one local jurisdiction) within the Marin County Operational Area are activated, the Marin County EOC serves as the focal point for information transfer and supports requests by cities and towns.

If the scope of an emergency is larger than the Marin Operational Area, regional- and state-level EOCs may need to be activated. The California Governor's Office of Emergency Services is a California cabinet-level agency that is responsible for emergency preparedness, response, recovery, and homeland security activities within the state.

EVACUATION ROUTES

Tiburon's location on a peninsula and topography of steep hillsides poses challenging constraints for emergency response and evacuation. One of the major problems Tiburon faces during any emergency is the possibility of becoming isolated from surrounding cities or counties and any subsequent resources or help. The Tiburon Peninsula has one major road (Tiburon Boulevard) and one minor road (Paradise Drive) which provide primary access to the entire planning area. Additionally, there is a second minor road (Trestle Glen Boulevard) connecting Tiburon Boulevard and Paradise Drive in the northern portion of the planning area; however, the remaining transportation network consists of narrow local streets within the hillsides. Therefore, the susceptibility to road blockages is high and delays during evacuations will be inevitable. During an emergency, some areas could be inaccessible to emergency service personnel and vehicles due to the limited access to the area.

In the event of an area-wide emergency, evacuation of the Tiburon planning area would be difficult. Evacuation traffic on Tiburon Boulevard (Highway 131) would cause severe congestion since that is the only major access route for most of the planning area. As residents use the Highway 101 Tiburon Boulevard/East Blithedale Avenue interchange to evacuate out of Marin County, key choke points would occur causing massive delays for Tiburon residents, especially those located in residential areas in the southern portion of the peninsula. During an evacuation of the Tiburon Peninsula area, it is anticipated that over 17,000 residents from Tiburon, Belvedere, and Strawberry would potentially utilize this interchange as the main evacuation route since it is the closest interchange to all three communities.

The fire departments serving Tiburon, the Tiburon Fire Protection District and the Southern Marin Fire Protection District, use a cloud-based platform called Zonehaven that provides public safety workers with tools to pre-plan evacuation zones and routes, run scenario models, and collaborate with other agencies. The platform communicates live updates to fire department personnel and the public about evacuation routes, traffic flow, and roadway conditions during an emergency. Using satellite images and other information, the platform delivers real-time evacuation instructions to residents through mobile alerts and social media that can be adapted to the type of emergency, such as wildfire, earthquake, and tsunami. As conditions change, evacuation routes can be quickly modified. For example, roadways may be closed or turned into one-way evacuation routes as needed.

The Town approved an Evacuation Decal program in August 2018 to demarcate potential evaluation routes to assist residents, businesses, and visitors in evacuating in the event of the disaster. The Evacuation Decal program was developed by the Tiburon Fire Protection District with input from the Belvedere Tiburon Joint Disaster Advisory Council.

The Tiburon Fire Protection District (TFPD) provides fire and emergency medical response services to Tiburon from two stations, including Station 11 downtown (top). Tiburon Boulevard is the town's primary evacuation route (bottom).

11.3 SEISMIC AND GEOLOGIC HAZARDS

Tiburon is located in the seismically active San Francisco Bay region, an area with a long history of tectonic movements. The region sits on the boundary between two of the Earth's major tectonic plates—the Pacific and North American Plates—which move inexorably past each other at a rate of about two inches per year. Much of this motion is accommodated from time to time by sudden slips on faults, producing an earthquake. Although the San Andreas fault is the main origin of slip, other faults splay out from the plate boundary throughout most of California.

The San Andreas fault, located about 9 miles east of Tiburon, was the source of the magnitude 7.9 earthquake in 1906. The most recent large earthquake on the San Andreas fault was the magnitude 6.9 Loma Prieta earthquake in 1989. The Loma Prieta earthquake caused intense seismic activity throughout the Bay Area, collapsing a double-decked freeway in West Oakland and destroying buildings in San Francisco's fill-based Marina District. In 2014, the United State Geological Survey's earthquake forecast for California concluded there is a 72% probability of at least one earthquake of magnitude 6.7 or greater striking somewhere in the San Francisco Bay region before 2043.

Other faults near Tiburon include the Hayward fault, which is located approximately 7 miles to the east. Figure SR-1 provides a map of earthquake faults in the region and indicates 69 significant earthquakes with a magnitude of 4.0 or greater since 1906. An earthquake with a magnitude of 4.0 can be felt by most people indoors, while an earthquake with a magnitude over 6.0 can cause damage over a large area. No significant earthquakes occurred Tiburon during this time.

Damage resulting from earthquakes is mainly from shaking. The intensity of shaking that a structure will experience during an earthquake depends upon the magnitude of the earthquake, the proximity to the epicenter, and the type of ground materials beneath the structure. Soft soils amplify the shaking, while hard bedrock does not.

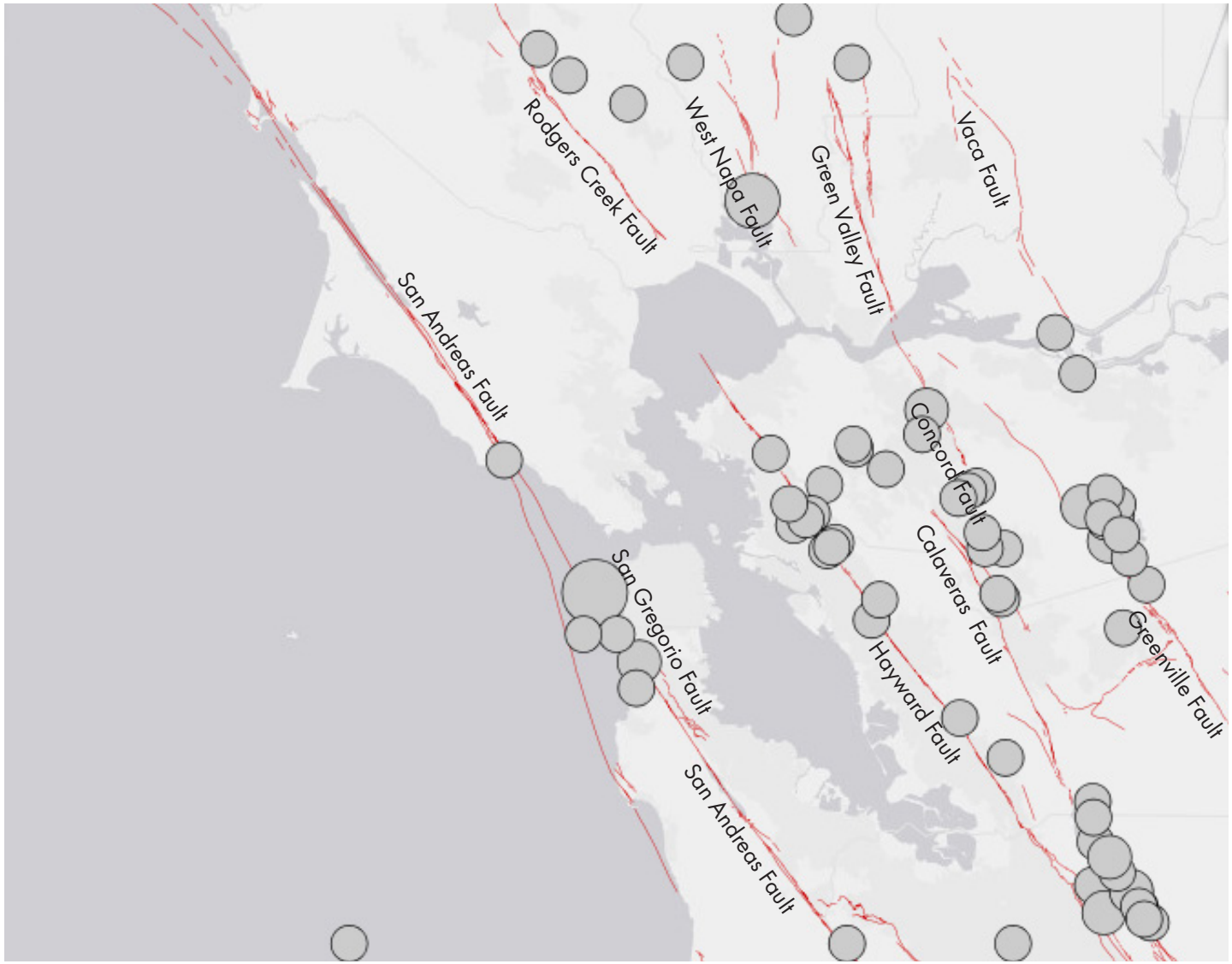
All buildings located in Tiburon are vulnerable to earthquake damage, but depending upon construction, some buildings are expected to perform better than others. One and two-story wood-frame buildings generally perform well, but they may shift if not bolted to the foundation or partially collapse if cripple walls (short walls between the foundation and first floor that create a crawl space) are not braced. Homes with rooms built over garages are also vulnerable to collapse if walls are not reinforced or braced. While current building codes address seismic safety, they are designed to protect occupant lives during an earthquake. Newly constructed buildings can still be significantly damaged during a major earthquake.

Unreinforced masonry buildings (including materials such as brick, concrete, and stone), pre-1940 wood-frame houses, and pre-1973 concrete buildings are very likely to be damaged during earthquakes. In most cases, these older buildings require retrofit, or they risk significant structural damage during an earthquake.

Structures built in areas of water-saturated granular sediment or fill material are susceptible to liquefaction. The ground shaking from an earthquake transforms the material from a solid state to a temporarily liquid state. Liquefaction is a serious hazard because buildings in areas that experience liquefaction may sink or suffer major structural damage. Most single and multifamily homes under ten stories are unlikely to have foundations stable enough to withstand liquefaction even if they can withstand ground shaking.

Figure SR-1

EARTHQUAKE FAULTS AND SIGNIFICANT EARTHQUAKES WITH A MAGNITUDE OF 4.0 OR GREATER SINCE 1906



Source: U.S. Geological Survey, 2022

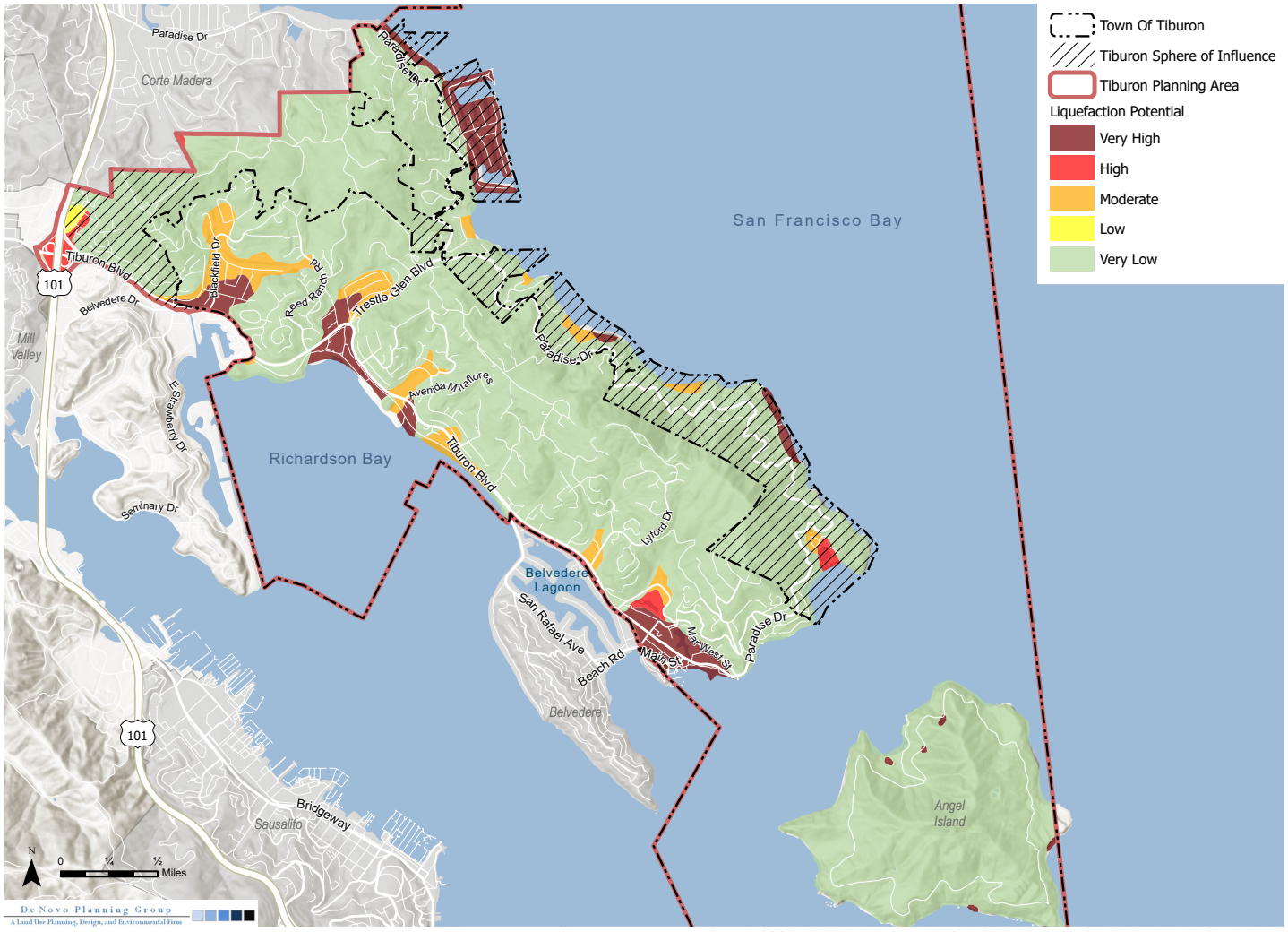
Liquefaction potential in the planning area includes designation of "Very Low" to "Very High" as shown in Figure SR-2. Areas in Tiburon designated with very high potential for liquefaction are generally located in the Downtown from the bay to Mar West Street, including Town Hall and the Tiburon Fire Station #11; the Blackie's Pasture area and Tiburon Ridge and Belveron neighborhoods; and the Cove Shopping Center and Bel Aire neighborhood.

TSUNAMI

A tsunami is a series of traveling ocean waves caused by underwater earthquakes, volcanic eruptions, or landslides. Out in the ocean, tsunami waves do not dramatically increase in height. But as the waves travel inland, they build up to higher and higher heights as the depth of the ocean decreases. As the tsunami enters the shallow water of coastlines, waves can reach heights of over 100 feet and strike with devastating force. Depending on the location of an incident, a tsunami can reach the California coast in as little as ten minutes for a local source earthquake or take from 5 to 14 hours for a distant source earthquake. Areas

Figure SR-2

LIQUEFACTION POTENTIAL



Sources: ArcGIS Online World Hillshade Map Service; Marin County GIS; Marin GeoHub "Liquefaction" 1/10/2020. Map date: December 20, 2022

at greater risk if they are less than 25 feet above sea level and within a mile of the shoreline.

While over 80 tsunamis have been observed or recorded along the coast of California in the past 150 years, there is no history of any significant damage caused by a tsunami in Marin County.

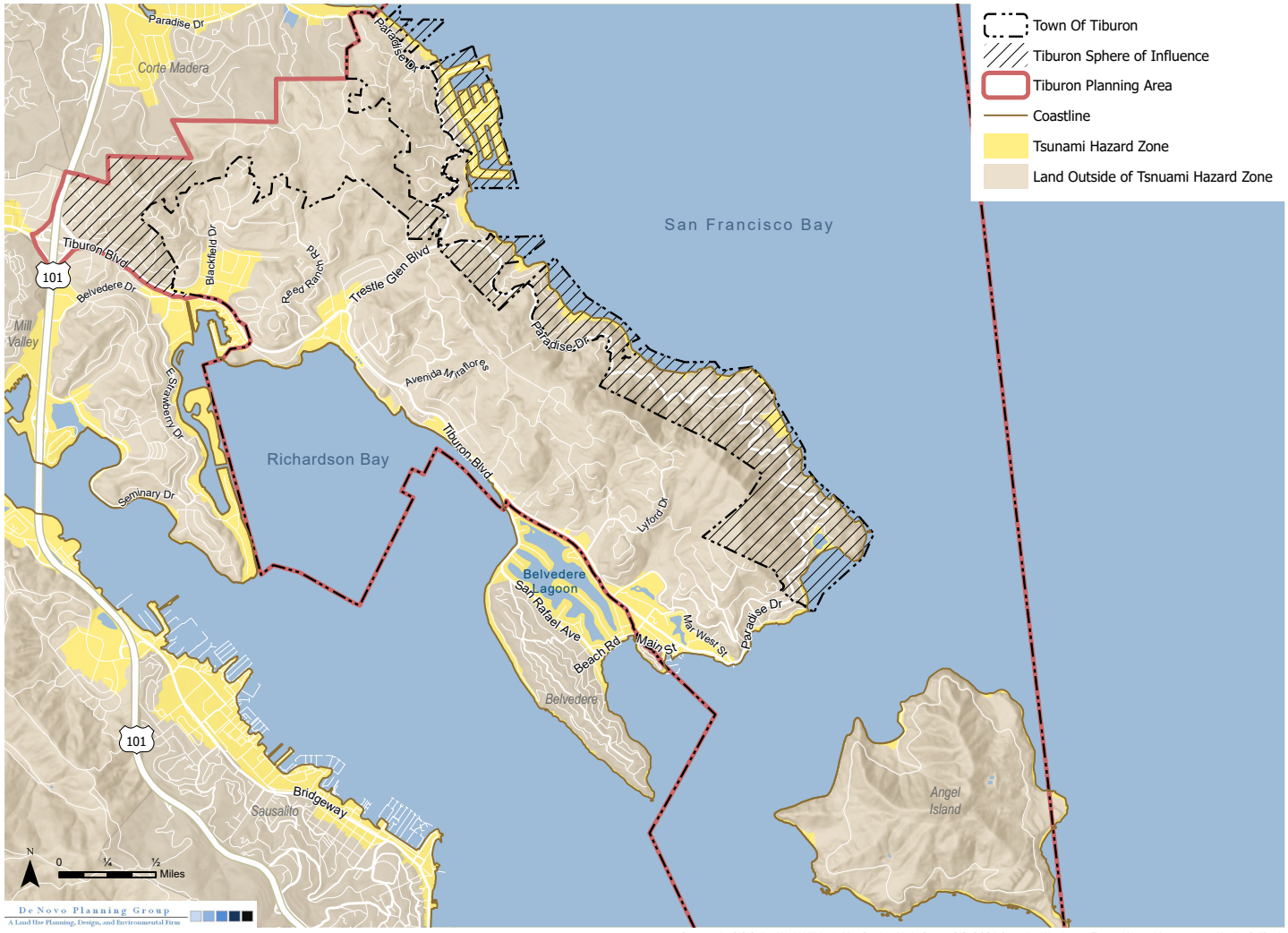
The Town is recognized by the National Oceanic and Atmospheric Administration as a TsunamiReady community. To be earn this designation, a community must:

- Establish a 24-hour warning point and emergency operations center
- Have more than one way to receive tsunami warnings and to alert the public
- Promote public readiness through community education and the distribution of information
- Develop a formal tsunami plan, which includes holding emergency exercises
- Comply with TsunamiReady guidelines

Figure SR-3 shows the tsunami inundation areas within the Tiburon Peninsula. Vulnerable areas are

Figure SR-3

TSUNAMI INUNDATION ZONES



Sources: ArcGIS Online World Hillshade Map Service; Marin County GIS; CGS Information Warehouse: Tsunami Hazard Area, produced by the California Geological Survey and the California Governor's Office of Emergency Services, State of California, 2022. Map date: December 20, 2022.

Downtown, including Town Hall and the Tiburon Fire Station #11; Blackie's Pasture; the Cove Shopping Center; and waterfront properties along Paradise Drive. Additionally, many recreational areas such as beaches, the shoreline park, Paradise Park, and the Old Rail Trail are at risk from tsunamis. A tidal surge from a tsunami could lead to flooding of low-lying areas, similar to a winter storm-related slow rise flood, but more rapidly. Inundation could continue for up to 24 hours from the time of initial impact.

LANDSLIDE

Landslides are a potential hazard to structures, roads, and utilities on hillsides in Tiburon. Landslides can move slowly, as in hillside creep, or can move quickly and disastrously, as is the case with debris flows.

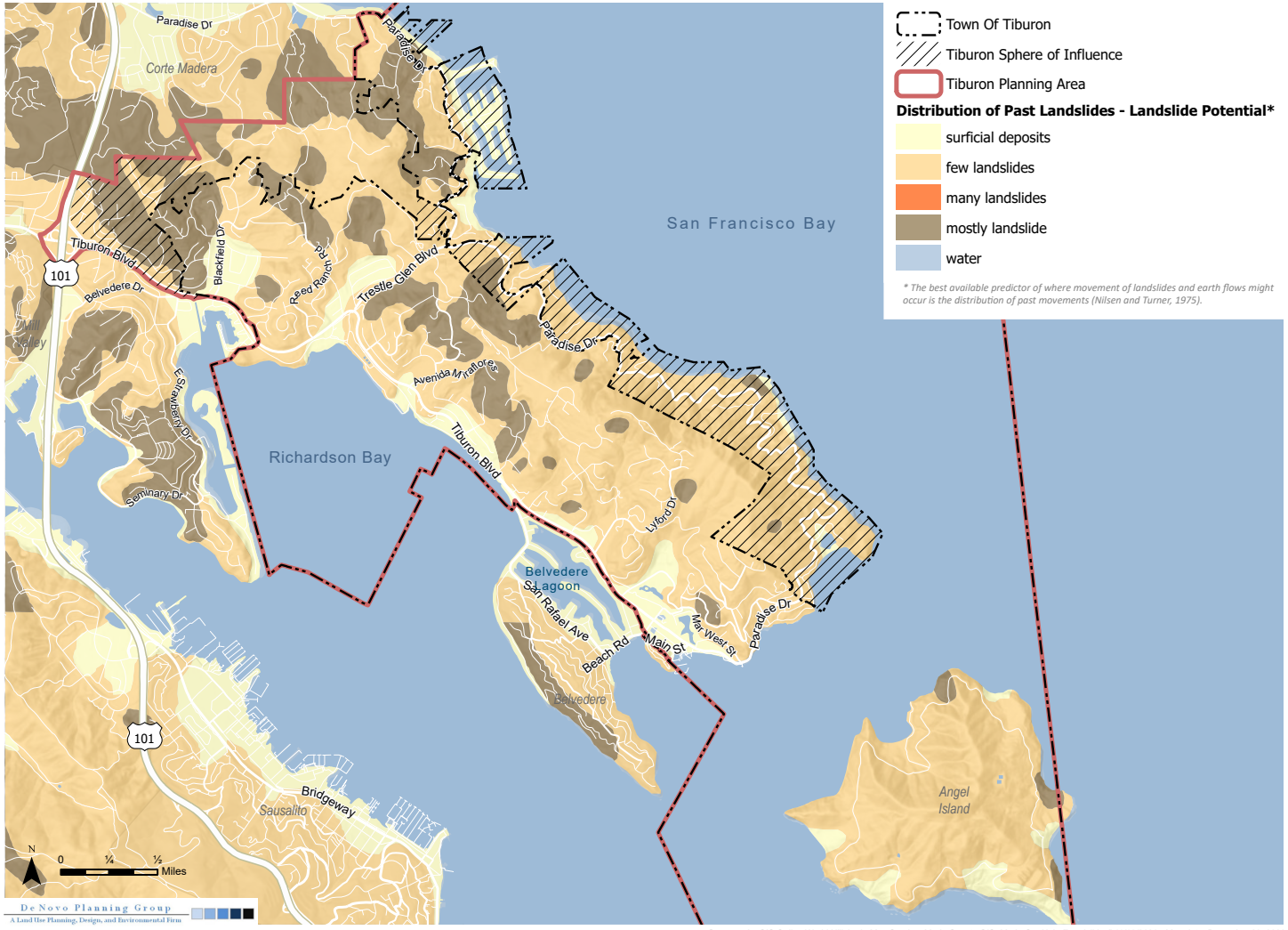
Almost every landslide has multiple causes. Landslides can be initiated in slopes already on the verge of movement by rainfall, erosion, earthquake, and disturbance by human activities. Factors that indicate the probable formation and relative risk of landslide and slope instability include:

- Slope Steepness: Most landslides occur on moderate to steep slopes.
- Slope Material: Loose, unconsolidated soils and soft, weak rocks are more hazardous than are firm, consolidated soils, or hard bedrock.
- Water Content: Increased water content increases landslide hazard by decreasing resistance to sliding and adding weight to the materials on a slope.
- Vegetation Coverage: Abundant vegetation with deep roots increases slope stability.
- Proximity to Areas of Erosion or Man-Made Cuts: Undercutting slopes may greatly increase landslide potential.
- Earthquake Ground Motions: Strong ground shaking may trigger landslides in marginally stable slopes or loosen slope materials and thus increase the risk of future landslides.

Hillsides in Tiburon have a low to high potential for landslide as shown in Figure SR-4.

Figure SR-4

LANDSLIDE POTENTIAL



11.4 FLOODING HAZARDS

Tiburon is subject to flooding problems due to periodic heavy winter rainfalls, tidal fluctuations, and the potential for tsunamis and sea level rise. Impacted areas are the low-lying areas adjacent to the San Francisco Bay, Belvedere Cove, Belvedere Lagoon, and Richardson Bay. During heavy rainfall conditions, and especially when combined with high tides, certain areas are known to flood, including Beach Road at Tiburon Boulevard, Tiburon Boulevard at Ned's Way, and Tiburon Boulevard near Greenwood Beach Road by the 76 gas station. Actions, such as clearing storm drains, are taken by the Department of Public Works in Tiburon to mitigate flooding on the Peninsula regularly and prior to expected storms. Sea level rise is expected to exacerbate flooding issues, as described in section 11.5.

Congress passed the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 to address the increasing cost of flood-related disaster relief. The intent of the National Flood Insurance Program, which was established by the 1968 Act, is to reduce the need for large, publicly funded flood control structures and disaster relief by restricting development on floodplains.

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations and limit development on floodplains. FEMA issues Flood Insurance Rate Maps (FIRM) for communities participating in the flood insurance program. The FIRM maps delineate flood hazard zones in the community.

The FIRM maps play several critical roles. First, the maps are used by local and county agencies to identify and plan for local or area flood protection. Second, the maps are used by the banking and insurance industries to determine if flood insurance is mandated for a specific property or area. Lands located within the Special Flood Hazard Areas (areas subject to 1 percent chance of flooding in any given year) require that flood protection insurance be secured for federally regulated or insured loans. Lastly, the maps are used at the federal and State level to plan for waterway projects that are administered by the US Army Corps of Engineers.

Improvements, construction, and developments within Special Flood Hazard Areas are generally subject to the following standards:

- All new construction and substantial improvements of residential building must have the lowest floor (including basement) elevated to or above the base flood elevation (BFE).
- All new construction and substantial improvements of non-residential buildings must either have the lowest floor (including basement) elevated to or above the BFE or dry-floodproofed to the BFE.
- Buildings can be elevated to or above the BFE using fill, or they can be elevated on extended foundation walls or other enclosure walls, on piles, or on columns.
- Extended foundation or other enclosure walls must be designed and constructed to withstand hydrostatic pressure and be constructed with flood-resistant materials and contain openings that will permit the automatic entry and exit of floodwaters. Any enclosed area below the BFE can only be used for the parking of vehicles, building access, or storage.

The Town participates in the National Flood Insurance Program, which makes federally backed flood insurance available to homeowners, renters, and business owners in communities that adopt and enforce floodplain management ordinances to reduce flood damage. Approximately 140 flood insurance policies are in force in Tiburon.

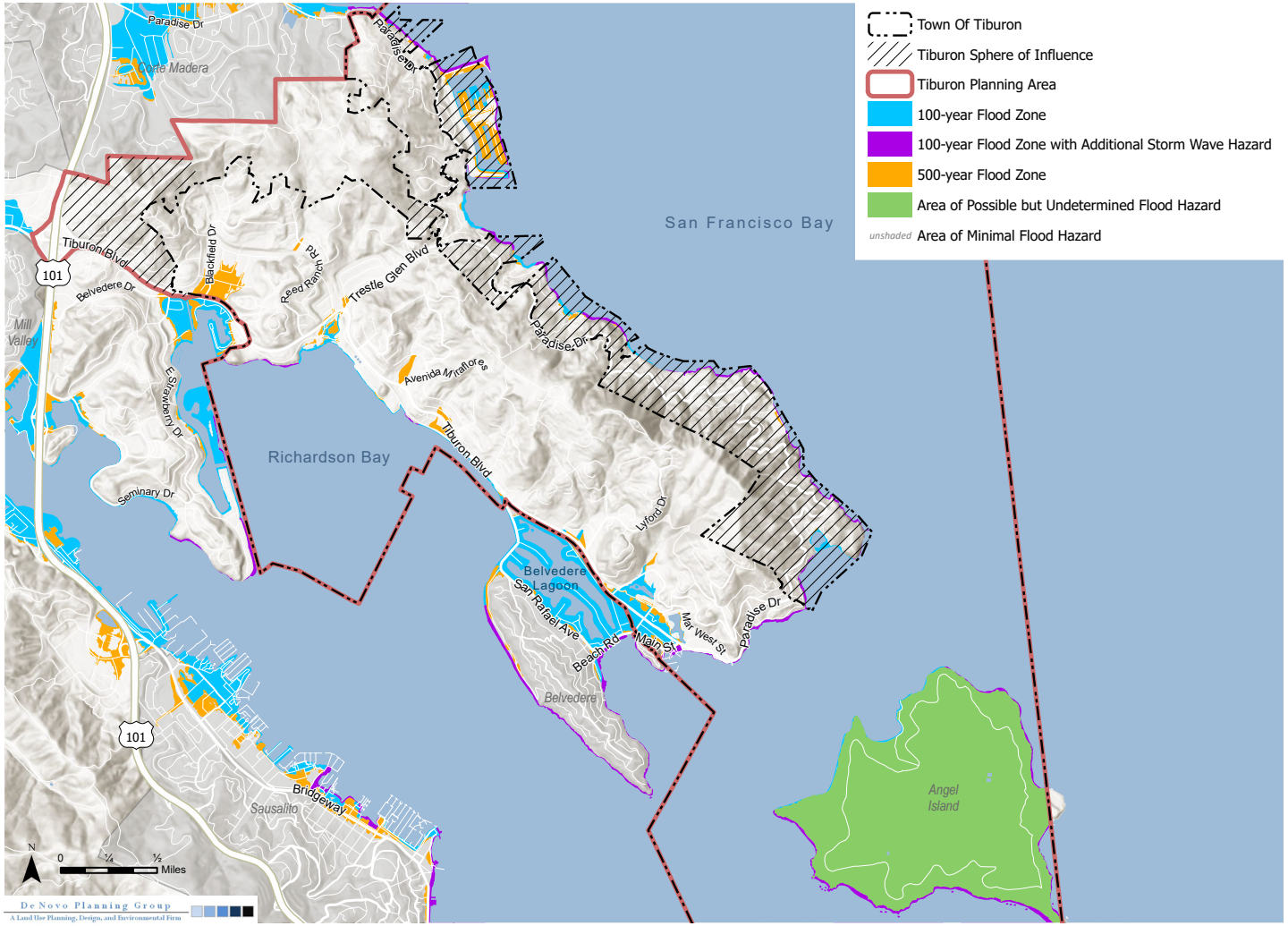
Figure SR-5

FEMA FLOOD HAZARD ZONES

The Town's Floodplain Management Regulations are contained in Title IV, Chapter 13D of the Tiburon Municipal Code. These regulations implement the FEMA standards for construction and development within Special Hazard Zones in Tiburon. The Town requires new construction and substantial improvement of any structure to have the lowest floor, including the basement, elevated at least two feet above the base flood elevation.

Figure SR-5 shows the areas of Tiburon that are prone to flooding, as identified by FEMA. Areas in the 100-year flood zone have a 1 percent chance of flooding in any given year, while areas in the 500-year flood zone have a 0.2 percent chance of flooding. Buildings with habitable living space or critical building equipment below grade are likely to be significantly damaged by flooding.

The 100-year floodplain is largely confined to the Boardwalk Shopping Center and Downtown Tiburon Area



adjacent to the Belvedere Lagoon, as well as areas along the coast, including Blackie's Pasture. The Town Hall and Tiburon Fire Station #11 are also located in the 100-year floodplain. Areas in the 500-year floodplain include the expanded areas of the 100-year flood plain, as well as the Cove Shopping Center and portions of the Bel Aire neighborhood. While property damage to structure is a major concern, damage to roads, utilities, and other infrastructure located in these zones could potentially impact other areas of the community as well.

The Town has robust maintenance and capital improvement programs to help manage and mitigate flood risk. Despite flood control efforts, Tiburon will experience local flooding in future years. During the winter months, Marin County experiences "atmospheric river" storms that can deliver over one inch of rain per hour over extended time frames, causing localized flooding. Scientists warn that climate change could increase the frequency and intensity of atmospheric river storms in California, mostly in the form of occasional years with more extreme storms. These tendencies could produce more frequent and severe flooding.

In addition, the most severe winter storms come with strong winds and many of these cause damage. This can lead to power outages, road closures, clogged creeks and culverts, and damage to structures and personal property from fallen trees.

11.5 SEA LEVEL RISE

EFFECTS OF GLOBAL CLIMATE CHANGE

According to California's latest Climate Change Assessment, annual average temperatures in the Bay Area will likely increase by approximately 4.4°F by the middle of this century and 7.2°F by the end of the century—unless there are significant efforts throughout the world to limit or reduce greenhouse gas emissions. Even with significant reduction efforts, the temperature increase is projected to be approximately 3.3°F by mid-century and 4.2°F by century's end .

The effects of increasing global temperature are far-reaching and extremely difficult to quantify. The scientific community continues to study the effects of global climate change. According to the most recent California Climate Change Assessment (California's Fourth Climate Change Assessment) (2018), the impacts of global warming in California are anticipated to include, but are not limited to, the following:

- losses to the Sierra snowpack and water supply;
- more and more intense wildfires;
- saltwater contamination, flooding and pests that will affect agriculture;
- more and more extreme heat events that will impact vulnerable populations;
- threats to biological diversity; and
- rising sea levels, which could threaten coastal areas through accelerated coastal erosion, threats to levees and inland water systems and disruption to coastal wetlands and habitat.

This section discusses the role of local governments in adapting to sea level rise, sea level rise projections as they pertain to Tiburon, vulnerable areas and assets, and a framework for making adaptation decisions. The General Plan's goals, policies, and programs for adapting to sea level rise are in section 11.8.

ADAPTATION PLANNING IN MARIN COUNTY

Because local governments largely determine the shape of development through land use plans, regulations, and implementing decisions, local governments play an important role in developing climate change strategies including resiliency planning and adaptation. These strategies will need to be coordinated as part of a larger regional or statewide strategy.

Marin County established the Bay Waterfront Adaptation & Vulnerability Evaluation (BayWAVE) program in 2015 to study and address sea level rise. In June 2017, the BayWAVE program delivered the Marin Shoreline Sea Level Rise Vulnerability Assessment. This Vulnerability Assessment seeks to provide context and estimates of the physical and fiscal impacts across the County's bayside shoreline over the coming decades. The Vulnerability Assessment is also presented by jurisdiction in community profiles to enable local professionals, officials, and residents to engage in local discussions. Each community profile details key issues and geographic locations and includes economic, environmental, equity, and management considerations related to sea level rise vulnerability. A community profile for the Town of Tiburon is included in the Vulnerability Assessment.

As a next step in the BayWAVE program, Marin County released Adaptation Land Use Planning: Guidance for Marin County Local Governments, a guidebook to help local governments plan effectively to adapt to sea level rise. The County describes an "adaptation pathways" process that accommodates stakeholder engagement as well as cross-jurisdictional approaches to shared impacts. It encourages integration of capital improvement

tools with land use planning tools. The guide has been a resource in the development of policies and programs in this General Plan.

Notable adaptation efforts are currently underway in and around Tiburon, including both infrastructural strategies (the proposed Belvedere seawall) and nature-based strategies such as the gravel beach or replenished mixed sand-gravel beach under consideration for the Greenwood Beach area.

SEA LEVEL RISE PROJECTIONS AND STATE GUIDANCE

Global models indicate that California will see substantial sea level rise during this century, with the exact magnitude depending on such factors as global emissions, the rate at which oceans absorb heat, melting rates and movement of land-based ice sheets, and local coastal land subsidence or uplift.

The Marin Shoreline Sea Level Rise Vulnerability Assessment was prepared in June 2017 as part of the BayWAVE program to understand and identify the effects of sea level rise on the seaside communities within Marin County. Sea level rise estimates used in this analysis are from the USGS Coastal Storm Modeling Systems (CoSMoS) and are viewable online through the Our Coast Our Future (OCOF) Flood Map tool. The six OCOF scenarios selected for the Vulnerability Assessment analysis are identified in Table SR-1. Figure SR-6 illustrates how these scenarios may be considered in terms of time, based on the State of California's guidance from 2018.

SEA LEVEL RISE IN TIBURON

Tiburon is located along an extensive peninsula projecting into Richardson and San Pablo Bays. The peninsula is generally steep with several areas of reinforced shoreline. As shown

WATERFRONT HOUSING, GREENWOOD COVE AREA

Sea level rise and shallow groundwater is expected to cause tidal inundation in the Greenwood Cove area

in Figures SR-7 through SR-9, very limited areas of Tiburon (about 50 acres) are likely to be vulnerable in the near- and medium-term. However, this includes highly valued shoreline shops and restaurants on Main Street as well as portions of Bay Road and the Boardwalk shopping center and low-lying natural areas in the Greenwood Beach area. Access to Tiburon from Highway 101 and Corte Madera could also flood in the medium-term, potentially cutting off residents from critical services and destinations.

In the long-term, much of Downtown Tiburon as well as the Cove and Boardwalk shopping center areas and portions of Paradise Cay and Bel Aire neighborhoods (some 135 acres in total, on 450 properties) may be vulnerable to inundation. Vulnerable downtown assets include Tiburon Boulevard and other streets; the Bay Trail; the Ferry Terminal; the Tiburon Fire Department, library, and post office; historic buildings along Main Street; hotels, shops, businesses, and housing. The long-term projection (Scenario 6) could result in over $400 million in assessed value damage and nearly $600 million in the single-family market in Tiburon, as well as approximately 2.5 miles of flooded roadways exposed to saltwater and erosion (Marin County Department of Public Works, June 2017).

SEA LEVEL RISE AND OTHER FACTORS

While these projections are critical to our ability to prepare and adapt, these projections may not present a complete picture of rising water levels in specific locations. Sea level rise will be accompanied by rising groundwater levels, fluvial flooding, and shoreline erosion. The interaction of these factors – as well as the potential for liquefaction associated with seismic events—will create localized conditions that are as yet not fully understood.

Figure SR-6

BAYWAVE SEA LEVEL RISE PROJECTIONS AND STATE GUIDANCE

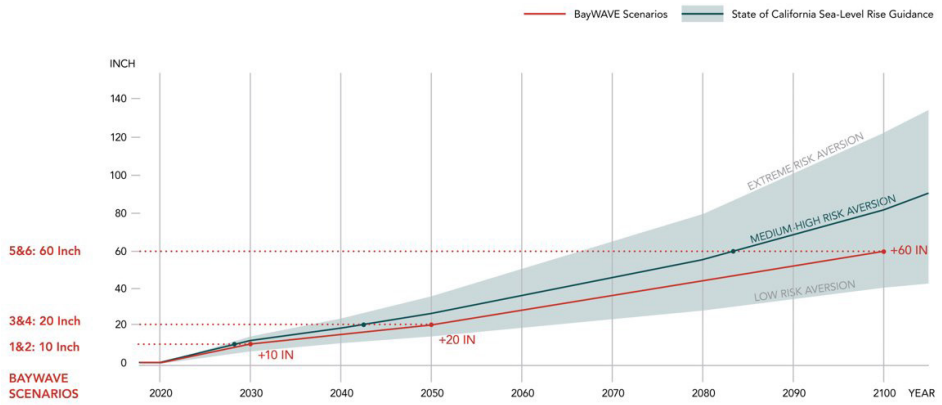


Table SR-1

BAYWAVE SEA LEVEL RISE & STORM SCENARIOS

Source: Marin County Department of Public Works, June 2017.

SCENARIO	SEA LEVEL RISE AND STORM	TERM PROJECTION
1	10 inches	Near-Term
2	10 inches + 100-year storm surge	
3	20 inches	Medium-Term
4	20 inches + 100-year storm surge	
5	60 inches	Long-Term
6	60 inches + 100-year storm surge	

Figure SR-7

BAYWAVE SCENARIOS 1 AND 2 IN TIBURON

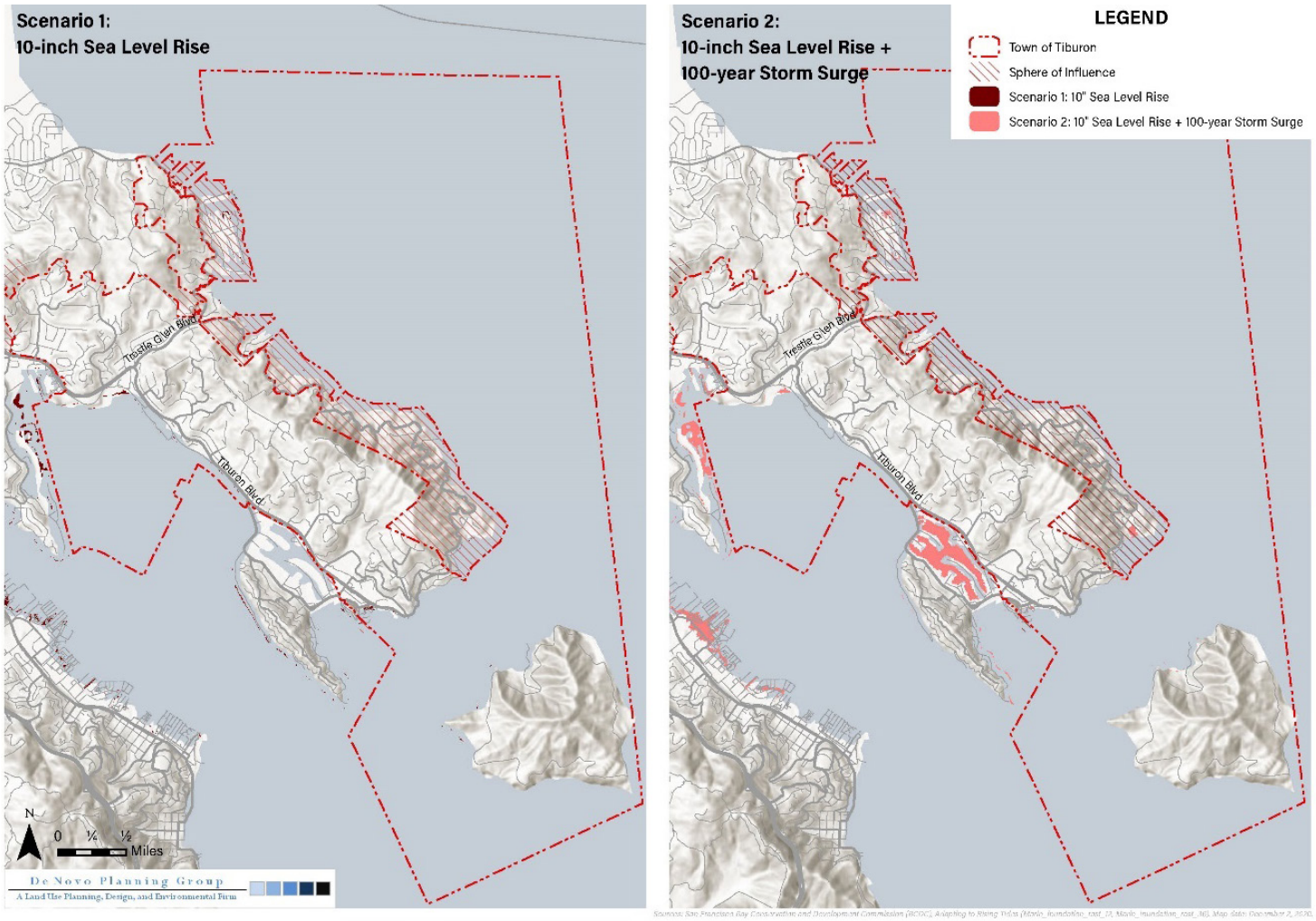


Figure SR-8

BAYWAVE SCENARIOS 3 AND 4 IN TIBURON

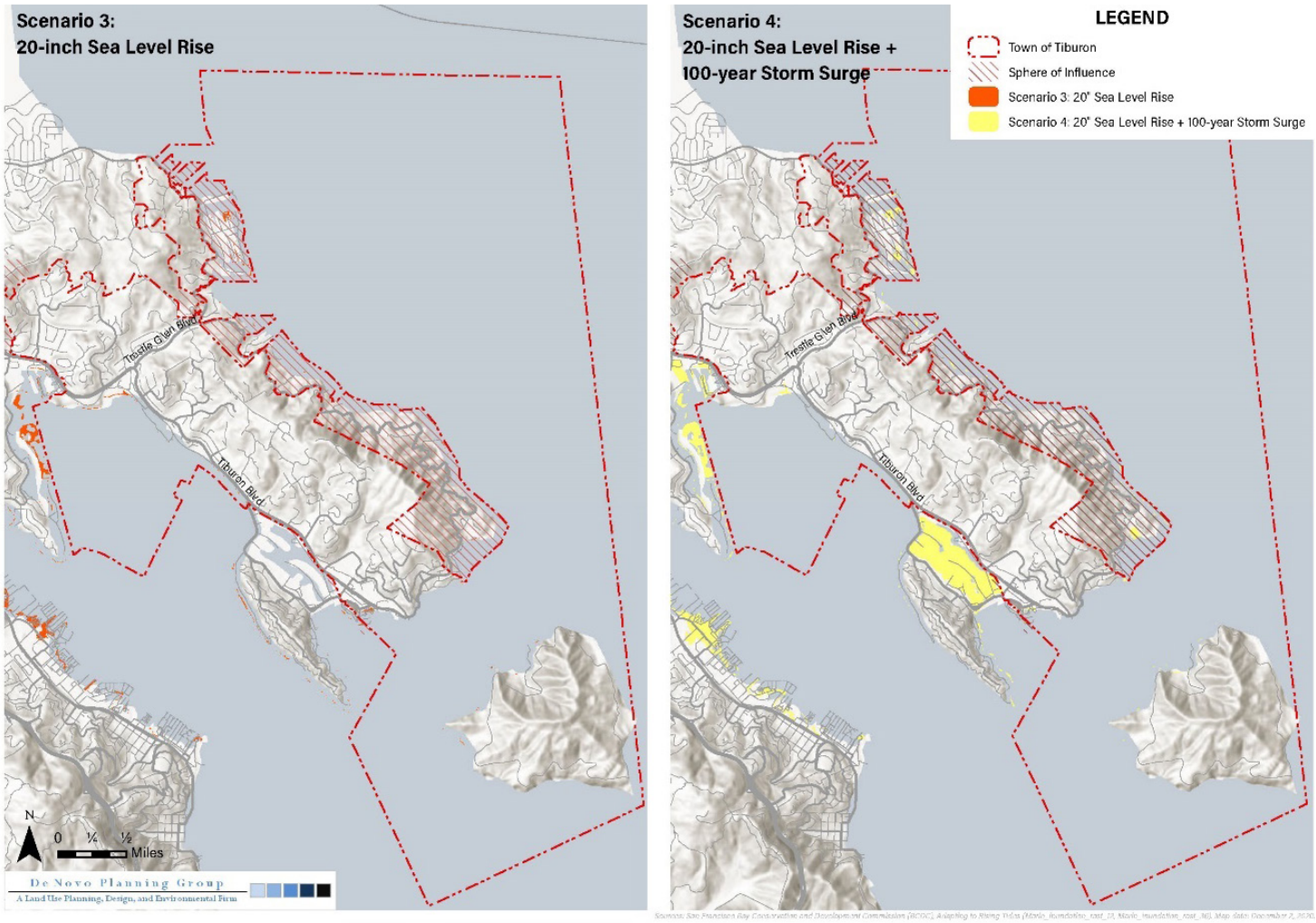
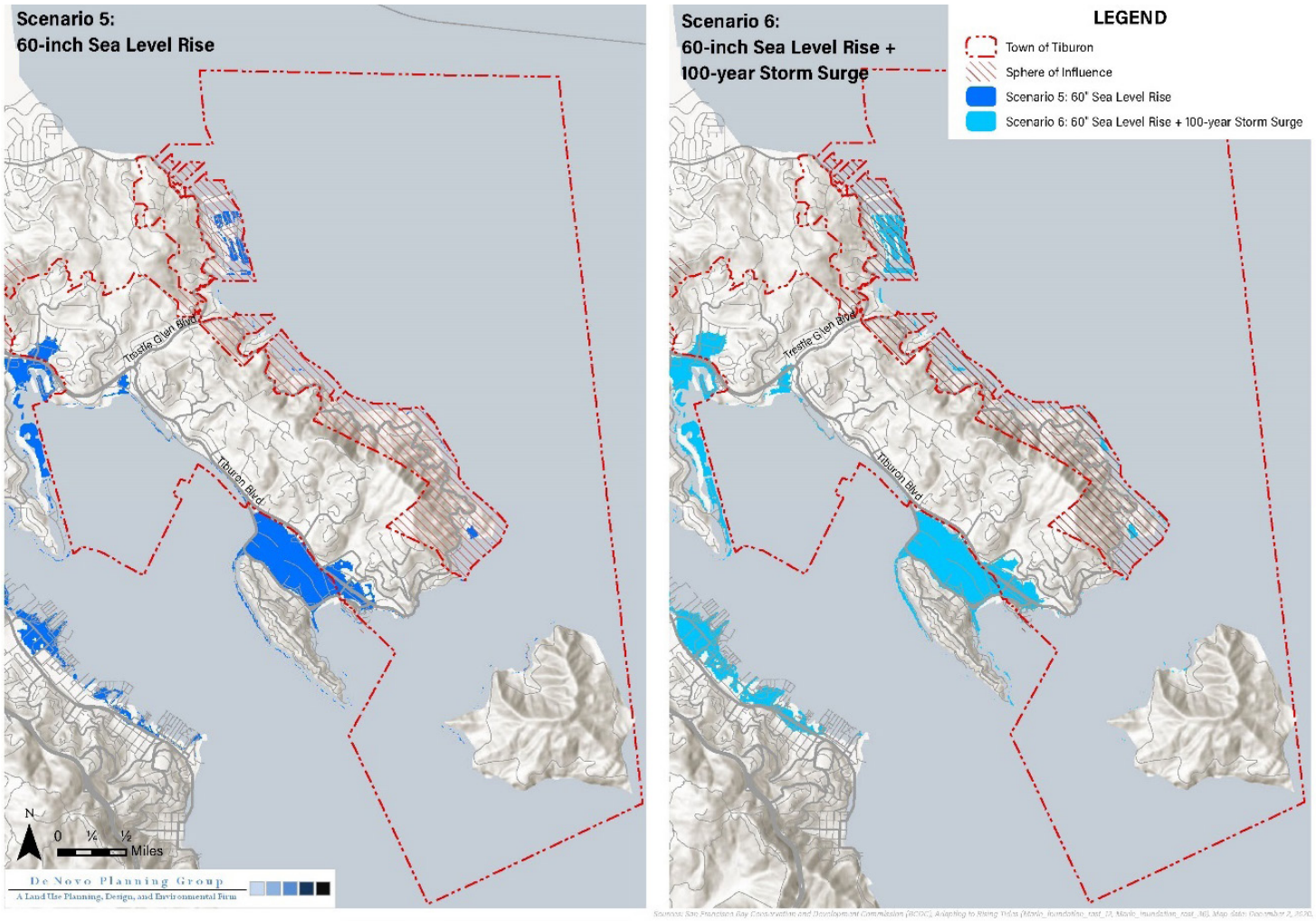


Figure SR-9

BAYWAVE SCENARIOS 5 AND 6 IN TIBURON



ADAPTATION PATHWAYS

Over its history, Tiburon's shoreline has changed to suit changing needs. Indeed, much of downtown is the result of the filling of what was previously a lagoon. Today, as a result of climate change, Tiburon must recognize that the shoreline may not be able to be maintained in place without new investments in both traditional and nature-based infrastructure. These investments should be considered in tandem with adjusted expectations for land use and buildings as the community continues to change and develop. The General Plan's policies and programs (see Section 11.8) provide a roadmap for the Town to pursue adaptation in the years ahead.

In addition to providing specific guidance for regulating new development, the General Plan calls for a more detailed adaptation strategy to be developed. Such a strategy should follow an approach that reflects the community's vision for the future; considers the right match between potential adaptation tools and their environment; evaluates costs as well as additional benefits that could be gained; charts a sequence of adaptation over time; and considers a mix of public and private actions and partnerships.

Tiburon's adaptation strategy may include shoreline hardening tools like sea wall and coastal armoring; nature-based tools including the restoration of tidal marshes and creation of coarse-sand beach; green infrastructure as part of complete streets; and strategies to shift development out of harm's way over time.

ADAPTATION TOOLS

Adaptation tools could consist four key types including the shoreline hardening tools, nature-based tools, daptation tools for roads and infrastructure and tools to shift developmentout of harm's way over time.

11.6 FIRE HAZARDS

Wildland fire hazards exist in varying degrees throughout the Tiburon Peninsula and pose one of the greatest threats to public safety and property. The wildland fire hazard is caused by a combination of factors including weather, topography, highly flammable vegetation/fuel loading and human activity.

Marin County has experienced many wildland fires throughout its history. The most recent Marin County fire that resulted in significant structure loss was the Vision Fire in 1995 which destroyed 48 structures in the community of Inverness. In 1929, the Great Mill Valley Fire burned an area that is now developed with more than 1,100 homes. Other large fires in the area include the Kent Woodlands Wildfire in 1972 and the Sausalito wildfire in 1919.

In the time before Marin County was settled, fire was a natural part of the ecosystem. Since then, fire suppression policies and practices have contributed to the continuous growth of vegetation, resulting in dangerous fuel loads. Combined with this fuel accumulation, people have been building homes in the wildlands, creating wildland urban interface (WUI) issues that increase the fire hazard.

In the WUI where natural fuels and structure fuels are intermixed, fire behavior is complex and difficult to predict. Research based on modeling, observations, and case studies in the WUI indicates that structure ignitability during wildland fires depends largely on the characteristics and building materials of the home and its immediate surroundings.

The dispersion of burning embers from wildfires is the most likely cause of home ignitions. When embers land near or on a structure, they can ignite near-by vegetation or accumulated debris on the roof or in the gutter. Embers can also enter the structure through openings such as an open window or vent and could ignite the interior of the structure or debris in the attic. Wildfire can further ignite structures through direct flame contact and/or radiant heat. For this reason, it is important that structures and property in the WUI are less prone to ignition by ember dispersion, direct flame contact, and radiant heat.

Tiburon's approach to mitigating structure ignitibility is based on findings from the National Institute of Standards and Technology that defensive actions by homeowners can significantly affect fire behavior and structure loss, and that effective fire prevention practices are essential in increasing structure survivability.

The California Building Code addresses the wildland fire threat to structures by requiring that structures located in state or locally designated WUI areas be built of fire-resistant materials. However, the requirements promulgated by the State only apply to new construction, and do not address existing structures and additions and remodels to existing structures.

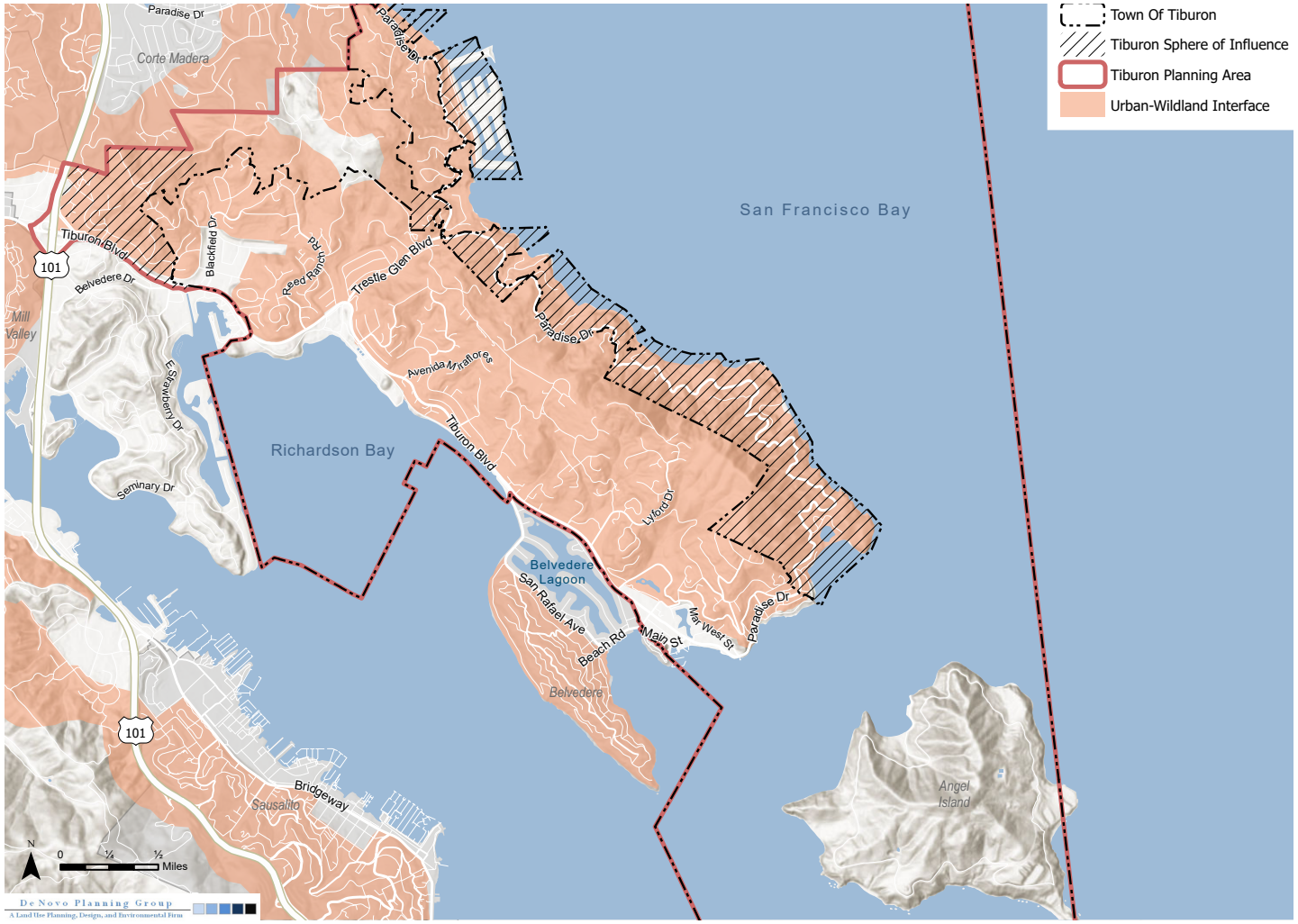
Both the Tiburon Fire Protection District and the Southern Marin Fire District have adopted amendments to the Building Code to address home ignitibility for both new and existing construction. The Fire Districts apply more stringent building standards for new construction and require projects involving a substantial remodel or large addition to install an automatic sprinkler system. The Fire Districts also require new construction and substantial remodels to prepare a vegetation management plan. All existing buildings and lands in the WUI must maintain defensible space. Areas in the WUI are shown in Figure SR-10.

The Fire Districts have also adopted Building Code amendments to require fire apparatus access roads and fire hydrants and fire hydrant upgrades under certain conditions.

The Marin County Community Wildfire Protection Plan (CWPP), updated in 2020, is an advisory document prepared by Fire Safe Marin in

Figure SR-10

WILDLAND URBAN INTERFACE AREAS



Source: Tiburon Fire Protection District

collaboration with stakeholder agencies, including the Tiburon Fire Protection District and the Southern Marin Fire Protection District. The CWPP is a countywide strategic plan with action items to reduce fire hazard in the County, especially in areas of concern, which mostly fall within Marin's WUI boundary. The CWPP assists in protecting human life and reducing property loss from wildfire throughout Marin County. The CWPP describes wildfire risk, hazard, and recommendations for improving wildfire preparedness at the County level.

FIRE HAZARD SEVERITY ZONES

The California Department of Forestry and Fire Protection (CalFire) identifies fire hazard severity zones based on the severity of the fire hazard expected to prevail there. These areas are based on factors such as fuel type (vegetation that is fire prone), slope, aspect, and

Figure SR-11

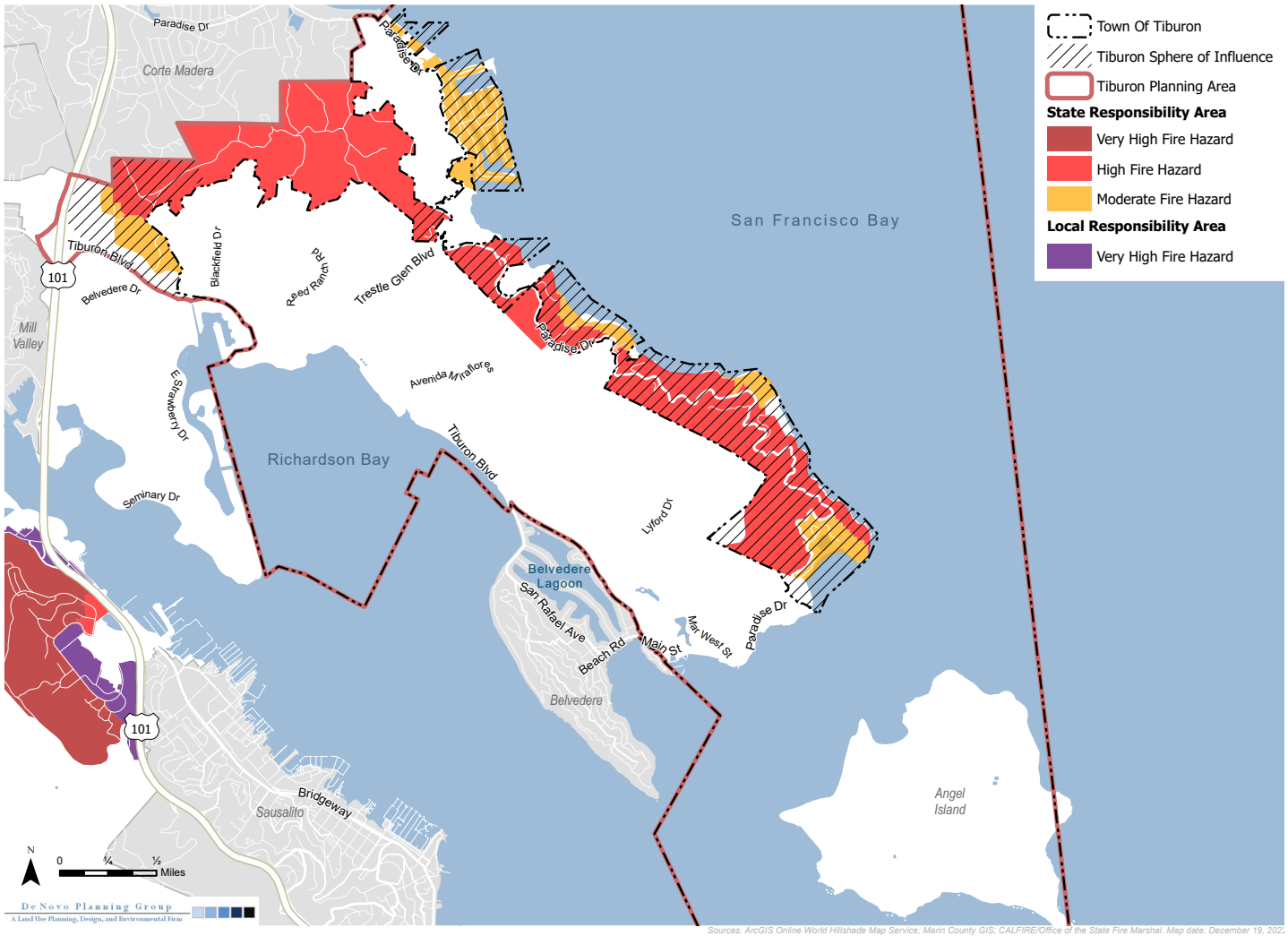
FIRE HAZARD SEVERITY ZONES

fire weather. There are three zones, based on increasing fire hazard: moderate, high, and very high.

Areas under State jurisdiction are referred to as State Responsibility Areas (SRAs). Within the vicinity of the Town, these SRAs are primarily found to the north and east of the Town limits within the unincorporated area. As shown in Figure SR-11, areas adjacent to the Town along Paradise Drive and in the Ring Mountain Preserve are categorized as a very high fire hazard severity zone.

Areas under the jurisdiction of local entities are referred to as Local Responsibility Areas. CalFire identifies very high fire zones within Local Responsibility Areas. There are no areas within the Town that are categorized as a very high fire hazard severity zone.

CalFire also produces a Fire Threat Model which is used to identify areas in California where large, catastrophic fires are most likely to happen. The ranking system is based on four wildfire factors: fuel model, slope, ladder index,



Source: CalFire

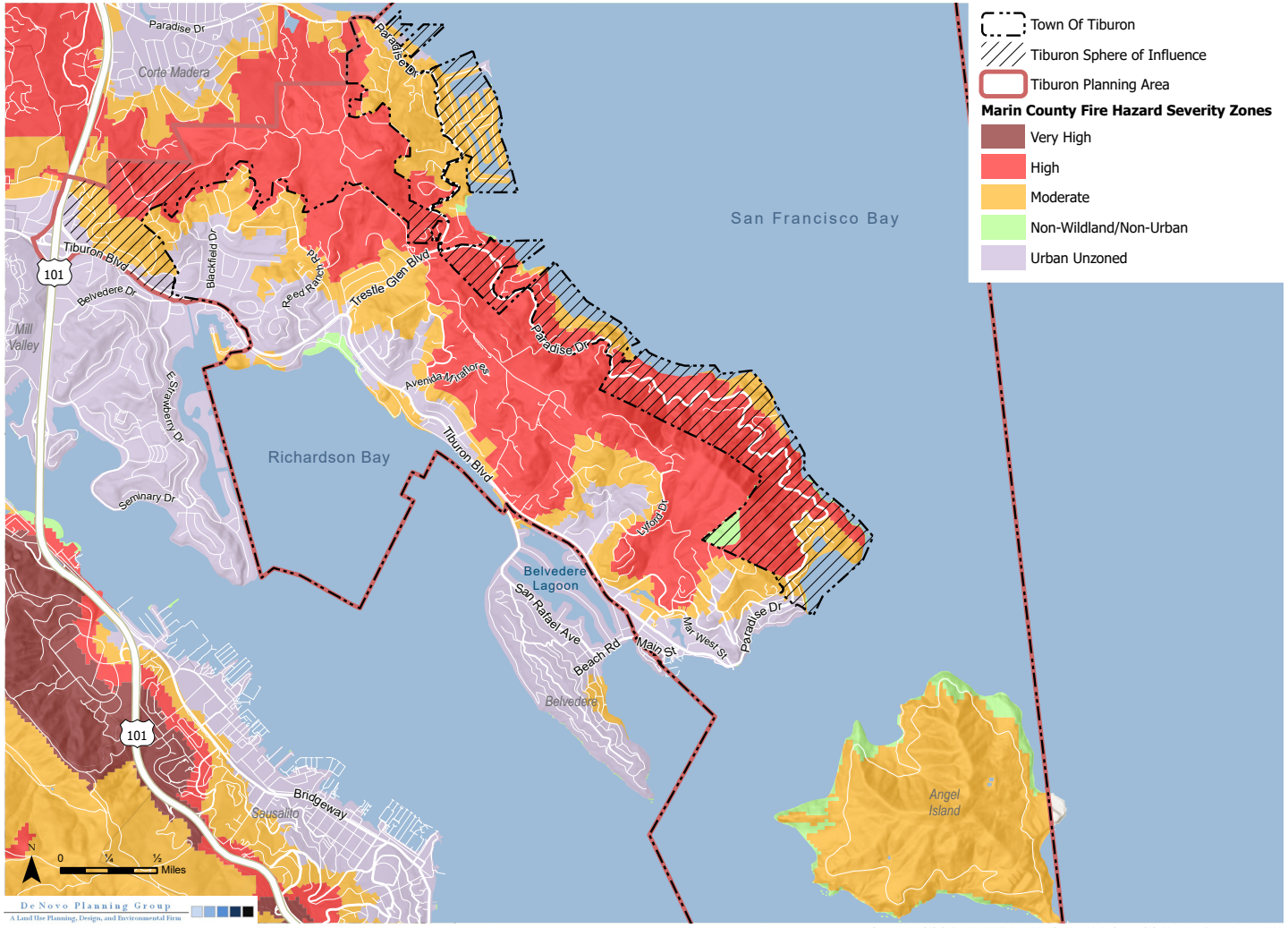
and crown index. The model combines expected fire frequency with potential fire behavior to create five threat classes ranging from low to extreme. As shown in Figure SR-12, areas in Tiburon categorized as moderate and high fire threat are primarily located in the hillsides where there is both open space and single-family homes.

FIRE PROTECTION SERVICES

Fire protection and emergency medical services in Tiburon are provided by the Tiburon Fire Protection District (TFPD) and the Southern Marin Fire Protection District (SMFPD). As shown on Figure SR-13, the TFPD serves approximately 75 percent of the Tiburon planning area while the SMFPD provides fire-related services to approximately 25 percent of residents located in the northwest corner of the planning area.

Figure SR-12

FIRE THREAT



Source: CalFire

Tiburon Fire Protection District

The TFPD provides structural fire and emergency medical response services to the Town of Tiburon, the City of Belvedere, and unincorporated residential and wildland areas on the peninsula, as well as parts of the San Francisco Bay to Angel Island State Park. Within the boundaries of TFPD are large single-family homes, multi-family residential complexes, numerous small businesses, public facilities, open space, and trails.

The TFPD provides a full range of services to the Tiburon peninsula, including:

- Community Risk Reduction Bureau – Code enforcement, plan reviews, annual business inspections, and summer defensible space program for homeowners;
- Public Education – Fire and burn prevention programs in schools, CPR, First Aid, and Community Disaster Preparedness classes;
- Emergency Medical Services;
- Fire Protection;
- Hazardous Materials Response;
- Fire Investigation; and
- Participation in Marin County and California Mutual Aid System.

The TFPD owns, operates, and maintains two fire stations with one concurrently used as its administrative building within the Tiburon planning area (Fire Station 10 and 11). TFPD fire station locations within Tiburon are shown in Figure SR-13. Each fire station has personnel covering three shifts over a 24-hour period.

The TFPD is a member of the Southern Marin Emergency Medical Paramedic System Joint Powers Authority, which provides emergency medical care and paramedic services to southern Marin County through a joint effort with five other member agencies. Additionally, the TFPD is a member of the Marin Emergency Radio Authority, a countywide public safety and emergency radio system that allows emergency response agencies to communicate effectively with each other.

The TFPD's current response time goal is to maintain an overall response time of 8 minutes or less, 90 percent of the time. In Fiscal Year 2019-2020, the TPFD responded to 1,787 calls; two-thirds of the calls were for rescue and emergency medical services. TFPD's average response time excluding mutual aid was below 8 minutes for all incident types; however, the average response time when mutual aid was included exceeded 8 minutes for fire, hazardous materials, and severe weather/natural disaster incidents.

Southern Marin Fire Protection District

The SMFPD is an independent fire district that provides fire protection and emergency medical services to the City of Sausalito, Tamalpais Valley, Homestead Valley, Almonte, Alto Bowl, Strawberry, the western area of the Town of Tiburon (Bel Aire/Blackfield/Reed Heights), and the National Park areas of Fort Baker and the Marin Headlands.

The SMFPD operates out of three stations with a minimum staffing of 15 personnel on duty at all times, as well as an administrative office where administrative and prevention staff are organized. The Tiburon area is served by Southern Marin Fire Station 9 as shown in Figure SR-13.

The SMFPD's response time standards are as follows:

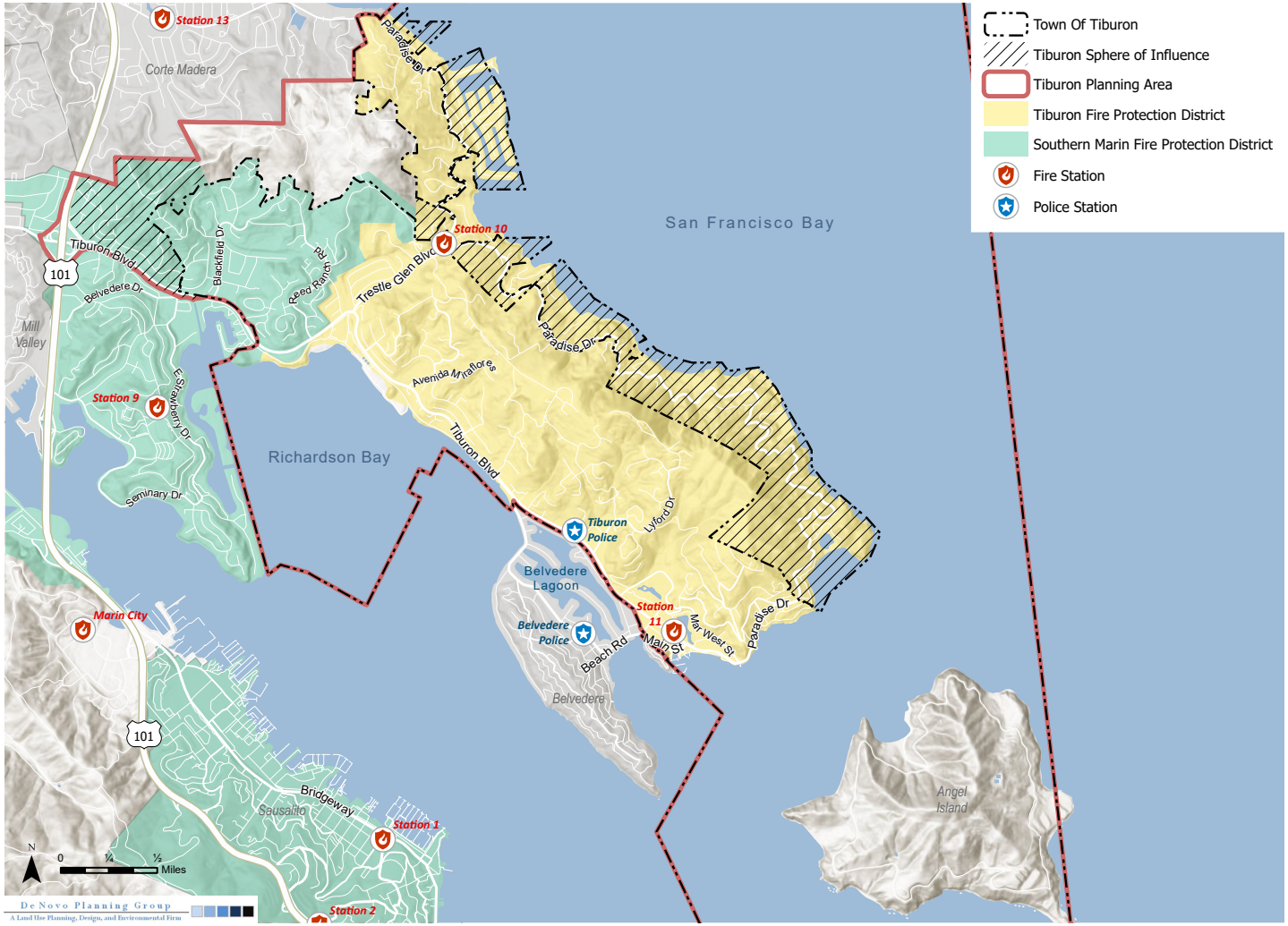
- Distribution of Fire Stations – First-due unit arrives within 9 minutes and 30 seconds of receipt of call 90 percent of the time.
- Effective Response Force – Minimum response of one ladder truck, four engines, one medic unit, and one Battalion Chief arrive within 11 minutes and 30 seconds from receipt of 9-1-1 call 90 percent of the time.

- Hazardous Materials Response – First unit's travel time is 6 minutes or less 90 percent of the time.
- Technical Rescue – First unit arrives in 8 minutes or less 90 percent of the time and initiates rescue within a total response time of 11 minutes and 30 seconds, 90 percent of the time.

In 2017, 2018, and 2019, the SMFPD met these standards 100 percent of the time.

Figure SR-13

FIRE PROTECTION DISTRICTS AND FIRE AND POLICE STATIONS



11.7 PUBLIC SAFETY

The Tiburon Police Department (TPD) is responsible for providing law enforcement services in the Town, including patrol, administration, support personnel, investigations, training, parking enforcement, and crime prevention program. The TPD's location is shown on Figure SR-13. The TPD promotes community-oriented policing and understands that it is the community itself that can best say what it needs from its police department and that the police and the community must work together to accomplish jointly set goals.

Similar to other cities and towns, the TPD relies on the Marin Sheriff's Office for search and rescue services and long-term holding facilities and County Animal Control for animal service. Additionally, the TPD is a member and partner of the Marin County Major Crimes Task Force whose objective is to investigate and prevent the illegal activity of highly mobile mid to upper-level drug dealers and suppliers and to disrupt and dismantle their criminal narcotic enterprises operating in Marin County. The TPD also contracts with the Sheriff's Office for dispatch services.

As shown in Table SR-2, the majority of crimes committed in Tiburon consist of non-violent property crimes, primarily theft of personal property without the use of force. The table shows crime statistics through 2020. The TPD also utilizes an online crime mapping tool that provides the community with up-to-date and accurate crime information.

Table SR-2

CRIME STATISTICS

Source: Tiburon Police Department Criminal/Incident Statistics

CATEGORY/CRIME	2018	2019	2020
Homicide	0	0	0
Rape	0	0	0
Robbery	2	0	1
Assault/Battery	10	3	10
Domestic Violence	7	6	7
Assaulting Police	1	0	0
SUBTOTAL VIOLENT CRIMES	**20**	**9**	**18**
Burglary	15	12	12
Motor Vehicle Theft	0	3	2
Larceny	63	66	60
Arson	0	0	0
SUBTOTAL PROPERTY CRIMES	**78**	**81**	**84**
TOTAL	**98**	**90**	**92**

11.8 GOALS, POLICIES, AND PROGRAMS

GOAL SR-A

Encourage disaster preparedness planning for effective emergency response and to protect public safety.

GOAL SR-B

Maintain a safe and healthy community.

GOAL SR-C

Identify hazardous areas & discourage to the maximum extent feasible development of areas subject to hazards including, but not limited to, geotechnical hazards, unstable slopes, and flood-prone areas.

GOAL SR-D

Ensure safe subdivision and building design.

GOAL SR-E

Reduce the impact of hazardous materials exposure and strive to reduce threats to health, safety, and the environment from hazardous materials.

HAZARD MITIGATION AND EMERGENCY PREPAREDNESS

POLICY SR-1 EMERGENCY PREPAREDNESS.

Ensure that the Town is prepared to effectively respond to any emergency or disaster, including hazardous material releases, in cooperation with other public agencies and appropriate organizations.

Program SR-a Local Hazard Mitigation Plan.

Implement the adopted Local Hazard Mitigation Plan to comply with the federal Disaster Mitigation Act of 2000 and maintain eligibility for hazard mitigation funding from FEMA.

Program SR-b Emergency Operations Plan.

Continue to review, update, & provide continued training to ensure that the Emergency Operations Plan remains effective in preparing for disasters.

Program SR-c Cooperation in Training and Educational Programs.

Support and participate in educational and training programs provided by the Fire Districts and other governmental or community-based agencies. Engage Neighborhood Watch Groups or similar neighborhood organizations to disseminate information and train to supplement Town resources during emergencies and disaster recovery.

Program SR-d Identify Evacuation Routes.

Work with the Tiburon Fire Protection District, the Southern Marin Fire Protection District, the Marin Wildfire

Prevention Authority, and the Tiburon Police Department to identify and map residential developments in hazard areas that do not have at least two emergency evacuation routes and identify mitigation measures as feasible.

Program SR-e Evaluate Evacuation Routes.

Work with the Tiburon Fire Protection District, the Southern Marin Fire Protection District, , the Marin Wildfire Prevention Authority, and the Tiburon Police Department to evaluate evacuation routes for their capacity, safety, and viability under a range of emergency scenarios.

Program SR-f Improve Evacuation Routes.

Improve local evacuation capacity by identifying evacuation routes through signage and promotion of public safety route identification applications. Assess the feasibility of adding additional evacuation routes.

POLICY SR-2 POST-DISASTER SERVICES

Make provisions to continue essential public services during and after natural disasters and other catastrophes.

Program SR-g Essential Facilities.

Ensure essential public facilities are accessible and operational during flooding, seismic events, fires, extreme heat events, and other emergencies. Essential public facilities include, but are not limited to, hospitals and health care facilities, emergency shelters, emergency command centers, and emergency communications facilities.

Program SR-h Post-Earthquake Assessments.

Conduct an immediate post-earthquake assessment of critical facilities and buildings in the Planning Area to determine the extent of damages, if any, to essential Town infrastructure. This should be performed by trained professional(s) utilizing the current state-of-knowledge regarding post-earthquake assessment.

POLICY SR-3 PUBLIC OUTREACH.

Encourage educational outreach and neighborhood organization to promote awareness and readiness among residents regarding disaster preparedness. Community involvement will be an essential part of the Town's resilience and recovery.

Program SR-i Public Safety Notifications.

Promote public safety emergency notification systems to warn residents of active threats such as flood or wildfire.

POLICY SR-4 NEW PUBLIC FACILITIES.

Locate new essential public facilities outside of high hazard areas, including high fire risk areas, Special Flood Hazard Areas, and areas at high risk for geologic or soil instability, to the extent feasible. Where it is not feasible to locate essential public facilities outside of high hazard areas, require site design, construction, and other methods to minimize damage.

SEISMIC AND GEOLOGIC HAZARDS

POLICY SR-5 SEISMIC AND GEOLOGIC HAZARDS.

Reduce the risk of loss of life, personal injury, and property damage resulting from seismic and geologic hazards including ground shaking, land sliding, liquefaction, and slope failure.

POLICY SR-6 DEVELOPMENT IN AREAS WITH GEOLOGIC HAZARDS.

Assure that development allowed within areas of potential geologic hazard is neither endangered by, nor contributes to, the hazardous conditions on the site or on surrounding properties.

POLICY SR-7 HAZARD REDUCTION.

Actively encourage owners of developed property to repair or improve unstable slopes, install drainage facilities, and take other measures that may reduce potential safety hazards.

POLICY SR-8 DEVELOPMENT ON SLOPES.

Discourage development on slopes exceeding 40% wherever possible.

POLICY SR-9 DEVELOPMENT IN GULLIES.

Strongly discourage development located below or in the path of gullies which are highly susceptible to debris flow mudslides.

Program SR-j Building Code Compliance.

Require that new development and infrastructure projects conform to seismic requirements of the California Building Code and, when applicable, mitigation required by the California Environmental Quality Act.

Program SR-k Geotechnical Analysis

Require preparation of a report by an engineering geologist or geotechnical engineer for new development proposals including new subdivisions, additions, remodels, and infrastructure projects, as applicable, to determine the extent of geotechnical hazards, specify adequate repair/improvement techniques, describe optimum design for structures and improvements, and set forth any special requirements for the sites.

Program SR-l Landslide Mitigation Policy.

Require that new development in areas subject to land sliding comply with the Town's Landslide Mitigation Policy. Require physical improvements to landslides and to potential landslide areas in instances where avoidance is not feasible or appropriate, as determined through the development review process.

Program SR-m Water Infrastructure Safety.

Coordinate with the Marin Municipal Water District to replace the piping and fittings in those water tanks in the Planning Area that are not currently fitted with flexible, earthquake-resistant joints. In addition, the water tanks should be evaluated to ascertain their ability to withstand strong seismic ground shaking.

Program SR-n Seismic Improvement Program.

Create and implement a Seismic Improvement Program for public buildings and infrastructure. The Program shall include conducting a seismic risk assessment of existing Town infrastructure, which would help to create a list which would prioritize the buildings and equipment that should be retrofitted. Following risk assessment, the Town should adopt a Program that would upgrade vulnerable facilities based on the priority list.

Program SR-o Building Owner Education.

Increase education regarding upgrading of privately-owned buildings using structural and non-structural mitigation measures.

FLOODING AND SEA LEVEL RISE HAZARDS

POLICY SR-10 FLOOD RISK REDUCTION.

Reduce the risk of loss of life, personal injury, and property damage resulting from flooding by properly maintaining storm drainage systems, natural flood control channels, and waterways and regulating runoff from new construction and development projects. Encourage flood control measures that retain the natural features and conditions of watercourses to the maximum extent feasible.

POLICY SR-11 SEA LEVEL RISE PROJECTIONS.

Integrate flooding and sea level rise projections into policies and regulations to inform the public of the future hazard areas, assess and address potential impacts to future development, inform future planning and building requirements, plan for opportunity areas for adaptation, and inform funding and financing decisions about short- and long-term adaptation projects.

Program SR-p Flooding and Sea Level Rise Protection Map.

Prepare and update a Flooding and Sea Level Rise Projection Map as a reference for town policies and regulations and as a publicly accessible tool for tracking flooding and sea level rise hazards. Update the Flooding and Sea Level Rise Map at least every five years, based on the most recent Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps and local projections from the County of Marin.

Program SR-q Coordinate with County of Marin.

Ensure information and data related to increased flooding and sea level rise is current and consistent with the information and data utilized by the County of Marin.

Program SR-r Sea Level Rise Adaptation Plan.

Prepare and adopt an adaptation plan addressing increased flooding and sea level rise. The adaptation plan shall include the following components:

a. Flooding and Sea Level Rise Projection Map, to be used as the basis for adaptation planning.

b. Coordination with local, county, state, regional and federal agencies with bay and shoreline oversight, major property owners, and owners of critical infrastructure and facilities in the preparation of the adaptation plan.

c. An outreach plan to major stakeholders and all property owners within the vulnerable areas.

d. An inventory of potential areas and sites suitable for mid- to large-scale adaptation projects

e. A menu of adaptation measures and approaches that could include but not be limited to:

- Managed retreat, especially on low-lying, undeveloped, and underdeveloped sites, in areas that are permanent open space, and in areas that are environmentally constrained. Transfer of development rights from such areas should be encouraged.
- Innovative green shoreline protection and nature-based adaptation measures such as wetlands and habitat restoration, and horizontal levees where most practical and feasible.
- Hard line armoring measures (sea walls, levees, breakwater, locks, etc.) to minimize the potential for displacement of permanent residents and businesses.
- Elevating areas, structures, and infrastructure to reduce risks.

f. The appropriate timing and "phasing" of adaptation planning and implementation.

g. Potential financing tools and opportunities.

h. Coordination with or incorporation into the Local Hazard Mitigation Plan.

POLICY SR-12 COMMUNITY AWARENESS.

Increase community awareness related to flooding and sea level rise hazards.

SHORELINE CONDITIONS

Blackie's Pasture (above) and Greenwood Cove (below)

Program SR-s Residential Building Resale Inspections.

Include disclosure of potential property risk due to increased tidal flooding and sea level rise in preparing residential building resale inspections. Utilize the Sea Level Rise Prediction Map for confirming property vulnerability. Work with realtors and property owners to implement this disclosure.

Program SR-t National Flood Insurance Program (NFIP).

Continue to comply with the federal National Flood Insurance Program by maintaining a flood management program and flood plain management regulations. In addition, develop and periodically update a Community Rating System (CRS) to notify residents of the hazards of living in a flood-prone area, thereby reducing local flood insurance rates.

POLICY SR-13 PUBLIC FACILITIES.

Ensure that the Town's streets, public spaces, public buildings, and infrastructure are resilient to flooding and sea level rise.

Program SR-u Capital Improvement Planning.

Ensure flooding and sea level rise considerations are included in the Town's capital improvement planning.

Program SR-v Asset Management Plan.

Maintain an asset management plan that includes life cycle costs and considers sea level rise impacts.

Program SR-w Coordination with Caltrans and Other Roadway Partners.

Coordinate with Caltrans and other partners to ensure roadway improvements in vulnerable areas are consistent with the Town's goals, and that infrastructure projects address and plan for increased flooding and sea level rise. This includes Tiburon Boulevard, Paradise Drive, and Main Street.

Program SR-x Coordinate with Utilities and Services.

Coordinate with the utilities and services that have infrastructure and facilities in vulnerable areas to ensure that sea level rise information and goals are consistent with the Town's goals, and that infrastructure/utility projects address and plan for increased flooding and sea level rise.

POLICY SR-14 FLOOD-RESISTANT NEW DEVELOPMENT.

Ensure new development is resilient to flooding and sea level rise.

Program SR-y Special Flood Hazard Areas.

Require new development and/or construction, where feasible, to be outside Special Flood Hazard Areas, which are defined by FEMA as areas that would be inundated by a flood having a 1% chance of occurring in any given year. Construction proposed within Special Flood Hazard Areas shall comply with the Town's Flood Damage Prevention Ordinance (Municipal Code Chapter 13D).

Program SR-z Protection from Wave Action.

Require structures constructed adjacent to areas subject to the 100-year tidal flood to be protected from destructive wave action.

Program SR-aa Development Projects.

Require new development, including substantial alterations, to consider and address increased flooding and

sea level rise impacts and to integrate resilience and adaptation measures into project design as warranted.

Program SR-bb Code Amendments for Minimum Floor Elevation.

Study amendment of the Town's Flood Damage Prevention Ordinance to establish a minimum finished floor elevation requirement of +3 feet above the FEMA 100-year flood elevation to protect new development against future sea level rise.

POLICY SR-15 MITIGATION OF STORM DRAINAGE IMPACTS

Ensure new development mitigates storm drainage impacts and potential increases in runoff through a combination of measures, including improvement of local storm drainage facilities.

Program SR-cc Design of New Drainage Facilities.

Design drainage facilities within new subdivisions to accommodate a 100-year storm.

Program SR-dd Stormwater Detention.

Utilize on-site detention of stormwater runoff to ensure that post-development peak flow rates from a site resulting from both the two-year and 100-year design rainstorms are not increased by new subdivisions or other permitted development projects.

Program SR-ee Expansion of Stormwater Drainage System.

To the extent that new subdivisions are responsible for exceeding the capacity of any existing stormwater drainage system, the applicant shall be responsible for the cost of improvements to the system such that the capacity is not exceeded upon project completion.

Program SR-ff Use of Stormwater Runoff Impact Fees.

Utilize Stormwater Runoff Impact Fees to upgrade, enhance, and/or rehabilitate the Town's public storm drain system to offset the increased demand on the capacity, operation, and sustainability of the Town storm drain system.

Program SR-gg Analysis of Impacts on Drainageways.

Require project applicants for new development to prepare a hydraulic and geomorphic assessment of on-site and downstream drainageways that are affected by project area runoff. Characteristics pertinent to channel stability would include bank erosion, excessive bed scour or sediment deposition, bed slope adjustments, lateral channel migration or bifurcation, and the condition of riparian vegetation. In the event existing channel instabilities are noted, the applicant may either propose their own channel stabilization program or defer to the mitigations generated during the Town's environmental review. Any proposed stabilization measures shall anticipate any project-related changes to the drainageway flow regime.

Program SR-hh Green Infrastructure Improvements.

Evaluate potential measures to more sustainably manage stormwater and erosion and improve water quality associated with urban runoff. This includes improvements such as rain gardens and permeable pavement, which attenuate flooding downstream and provide ecological benefits.

POLICY SR-16 FUNDING PARTNERSHIPS.

Foster partnerships for funding and project implementation to address flooding and sea level rise hazards.

Program SR-ii Partners in Planning and Adaptation.

Work with the County of Marin, the City

of Belvedere, other adjacent agencies, property owners, and neighborhood groups/organizations to plan for and implement adaptation projects.

Program SR-jj County Flood Control Districts.

Work collaboratively with the County of Marin Flood Control and Water Conservation Districts to upgrade existing and/or plan for new facilities that would improve flood protection. Consider expanding the County flood control districts to include areas impacted by sea level rise.

Program SR-kk Countywide Agency/Joint Powers Authority.

Work with the County of Marin to facilitate the formation of a centralized countywide agency or joint powers authority to oversee adaptation planning, financing, and implementation.

FIRE HAZARDS

POLICY SR-17 FIRE RISK REDUCTION.

Reduce the risk of loss of life, personal injury, and property damage resulting from wildfire and urban fire hazards through code enforcement and coordination the local Fire Districts and other agencies to ensure the safe delivery of emergency services and the effective evacuation of the community in the event of a disaster.

POLICY SR-18 IMPACTS OF NEW DEVELOPMENT.

Require new development to provide sufficient water supply and equipment for fire suppression to ensure that the requirements for minimum fire flow and the size, type, and location of water mains and hydrants set forth in the California Fire Code and by local ordinance are met.

POLICY SR-19 MITIGATION OF INADEQUATE WATER SUPPLY.

Require new development within areas of insufficient peak load water supply to contribute to improvements to the water delivery system to meet requirements for minimum fire-flow.

POLICY SR-20 COOPERATION WITH FIRE DISTRICTS.

Work with the Fire Districts and other agencies to provide, enhance, and maintain adequate access, including secondary access, to all areas within the Planning Area.

Program SR-ll Defensible Space Around Structures.

Consider adoption of an ordinance requiring the maintenance of defensible space on properties where fire hazard is significant. On-going maintenance of defensible space buffers and fire protection infrastructure (e.g., safe access for emergency response vehicles, visible street signs, fuel breaks, and emergency water sources and supplies, etc.) in new development projects shall be assured in a form satisfactory to the Town and the Fire Districts prior to construction of improvements.

Program SR-mm Review New Developments for Fire Risk.

Review all development proposals for fire risk and require mitigation measures, including on-going maintenance of defensible space and infrastructure related to fire protection and fire hardening of structures and areas proximate to structures, for development located in state responsibility areas, high fire hazard severity zones, or other areas with significant wildfire potential, to reduce the probability of fire-related hazards to a less than significant level. Require all new development to meet

the adopted state and local fire codes. Refer all applications to the appropriate Fire Districts for review.

Program SR-nn Open Space Management Plan.

Implement the adopted Open Space Management Program to reduce fuel loads and maintain fire roads and evacuation routes.

POLICING

POLICY SR-21 POLICE SERVICES.

Maintain an adequate and cost-effective Police Department to serve and protect the community.

POLICY SR-22 COMMUNITY POLICING AND CRIME PREVENTION.

Continue to implement community policing and crime prevention programs to strengthen relationships between the Police Department and provide outreach to all neighborhoods within the community.

STRUCTURAL HAZARDS

POLICY SR-23 STRUCTURAL RISK REDUCTION.

Reduce the risk of loss of life, personal injury, and property damage resulting from structural, electrical, or fire damage to structures through code enforcement and public education.

Program SR-oo Implement the Building Code.

Review and inspect new development, building additions, and remodels, while enforcing the California Building Standards Code and local amendments.

Program SR-pp Update Building and Fire Codes.

Continue to update the Town's building and fire codes and provide information to the public on new code provisions.

HAZARDOUS MATERIALS

POLICY SR-24 HAZARDOUS MATERIALS RISK REDUCTION.

Actively address the need to reduce exposure to hazardous materials.

POLICY SR-25 REDUCE USE OF HAZARDOUS MATERIALS.

Encourage residents and businesses to reduce or eliminate the use of hazardous materials, including encouraging residents to purchase toxic substances in only the amount needed to do the job, or use non-toxic alternatives that do not pose a threat.

POLICY SR-26 DISPOSAL OF HAZARDOUS MATERIALS.

Reduce the presence of hazardous materials in the community and support the operation of recycling centers that take hazardous substances, such as oil, paint, pesticides, cleaners, chlorine products, etc.

Program SR-qq Evaluation of Hazardous Material Impacts.

Evaluate the potential impacts related to hazardous materials during the environmental review process for new developments or businesses that involve use, transport, production, storage, and/or disposal of hazardous materials or that are proposed on a site affected by a hazardous materials release. Coordinate hazardous materials management with other public agencies regarding the use, storage, transport, or disposal of hazardous materials. The potential significant impacts associated with exposure to hazardous emissions or hazardous materials shall be fully mitigated.

Program SR-rr Coordination with other Agencies.

Coordinate with other local agencies to implement proper management measures as identified by the County's Hazardous Materials Area Plan.

DOWNTOWN TIBURON SHORELINE