

3.9 HAZARDS AND WILDFIRE

This section evaluates the potential impacts related to hazards resulting from the implementation of the proposed Plan. It describes the existing conditions for hazardous materials, airports, emergency planning, and wildland fires in the Bay Area. Environmental impacts associated with implementation of the proposed Plan as they relate to these conditions are provided below. Impacts related to emission of toxic air contaminants along transportation routes are addressed in Section 3.4, “Air Quality.”

Comments received in response to the Notice of Preparation expressed concerns about development in proximity to known sites of contamination, including former landfills and plugged and abandoned oil and gas wells, as well as wildfire hazards, planned development in recognized fire hazard zones, and emergency evacuation plans. Potential for hazards related to development on or near sites that could result in a hazard are generally addressed in this section. The potential for exacerbation of wildfire risks and the consequences of development in recognized fire hazard zones are also evaluated in this section. Water supply, including fire flows, is addressed in Section 3.14, “Public Utilities and Facilities.” The potential for future land use growth to affect water quality and the release of potentially hazardous materials as a result of flooding are addressed in Section 3.10, “Hydrology and Water Quality.”

The CEQA Guidelines note that comments received during the NOP scoping process can be helpful in “identifying the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in depth in an EIR and in eliminating from detailed study issues found not to be important” (CEQA Guidelines Section 15083). Neither the CEQA Guidelines nor Statutes require a lead agency to respond directly to comments received in response to the NOP, but they do require they be considered. Consistent with these requirements, the comments received on the NOP have been carefully reviewed and considered by MTC and ABAG in the preparation of impacts in this section. Appendix B includes all NOP comments received.

3.9.1 Environmental Setting

PHYSICAL SETTING

Generation and Disposal of Hazardous Materials and Waste

Materials and waste may be considered hazardous if they are poisonous (toxic); can be ignited by open flame (ignitable); corrode other materials (corrosive); or react violently, explode, or generate vapors when mixed with water (reactive). The term “hazardous material” is defined in the State of California’s Health and Safety Code, Chapter 6.95, Section 25501(o) as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment. In some cases, past industrial or commercial uses on a site have resulted in spills or leaks of hazardous materials and petroleum that caused contamination of underlying soil and groundwater. Federal and State laws require that soils and groundwater having concentrations of contaminants that are higher than certain acceptable levels are handled and disposed of as hazardous waste during excavation, transportation, and disposal. CCR Title 22, Sections 66261.20–66261.24, contains technical descriptions of characteristics that would cause a soil to be classified as a hazardous waste. The use of hazardous materials and disposal of hazardous wastes are subject to numerous laws and regulations at all levels of government (see the “Regulatory Setting” section, below).

Various hazardous materials are commonly transported, stored, used, and disposed of in activities such as construction, industry (both light and heavy), dry cleaning, film processing, landscaping, automotive maintenance and repair, and common residential/commercial maintenance activities. The use, transport, storage, and disposal of hazardous materials is regulated by the U.S. Environmental Protection Agency (EPA) and California Environmental Protection Agency (CalEPA) plus six boards, departments, and offices: California Air Resources Board (CARB), California Department of Pesticide Regulation, California Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment (OEHHA), State Water Resources Control Board (SWRCB), and California Department of Public Health Center for Environmental Health. State and local regulatory agencies closely monitor businesses and industry in the control of hazardous materials. Hazardous materials require special methods of disposal, storage, and treatment, and any unintentional release of hazardous materials requires an immediate response to protect human health and safety, and the environment.

Transportation of Hazardous Materials and Waste

Hazardous materials, hazardous wastes, and petroleum products are a subset of the goods routinely shipped along the transportation corridors in the Plan area. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. DTSC maintains a list of active registered hazardous waste transporters throughout California, and the California Department of Public Health regulates the haulers of hazardous waste. Three agencies maintain searchable databases that track hazardous material releases in reportable quantities: EPA maintains the Hazardous Materials Incident Report System, which contains data on hazardous material spill incidents reported to the U.S. Department of Transportation (DOT); the California Office of Emergency Services (OES) maintains the California Hazardous Materials Incident Report System, which contains information on reported hazardous material accidental releases or spills; and SWRCB's Site Cleanup Program maintains information on reported hazardous material accidental releases or spills. DOT also provides grants to local agencies for preparing and training for hazardous materials incidents through its Hazardous Materials Emergency Preparedness Program, administered by OES.

Shipments of hazardous materials and wastes include a wide variety of chemicals, such as petroleum products, medical waste, and radioactive materials. Each movement of hazardous materials/wastes has a degree of risk, depending on the material being moved, the mode of transport, and numerous other factors. On a tonnage basis, petroleum products make up the majority—more than 80 percent—of hazardous material moved around the State.

Truck

The transport of hazardous materials by truck is regulated by DOT. **Figure 3.9-1** identifies the hazardous materials routes established by DOT in the Plan area. Hazardous materials transported by truck use many of the same freeways, arterials, and local streets as other traffic.

Railroads

The transport of hazardous materials by rail is also regulated by DOT. Freight railroads have employee safety training requirements and operating procedures that govern the handling and movement of hazardous goods, including crude oil. Federal regulations and self-imposed safety practices dictate train speeds, equipment and infrastructure inspections, and procedures for how to handle and secure trains carrying hazardous materials. The freight rail industry provides instruction to local public safety officials at the Transportation Technology Center's Security and Emergency Response Training Center, and individual railroads conduct additional local training for first responders (AAR 2020). Freight railroads also work with State emergency planning committees and local first responders to develop emergency response plans. In accordance with a February 2014 agreement between DOT and the Association of American Railroads, railroads have developed an inventory of emergency response resources and provided DOT with information on the deployment of those resources. This information is available upon request from appropriate emergency responders (AAR 2020).

Ship

The Plan area includes several marine oil terminals and shipping routes used for the transport of various hazardous materials. The California State Lands Commission regulates marine oil terminals throughout California.

Transmission Pipelines

Underground (and in isolated instances, aboveground) pipelines are used to transport a variety of potentially hazardous substances throughout the Plan area. The American Petroleum Institute recommends setbacks of 50 feet from petroleum and hazardous liquids lines for new homes, businesses, and places of public assembly. It also recommends 25 feet for garden sheds, septic tanks, and water wells and 10 feet for mailboxes and yard lights. The Transportation Research Board encourages the use of zoning regulations to minimize casualties in the event of a catastrophic rupture. Possible land use techniques include, for example, establishing setbacks; regulating or prohibiting certain types of structures and uses near transmission pipelines; and encouraging, through site and community planning, other types of activities and facilities (e.g., ministorage businesses, linear parks, recreational paths) within or in the vicinity of pipeline rights-of-way.

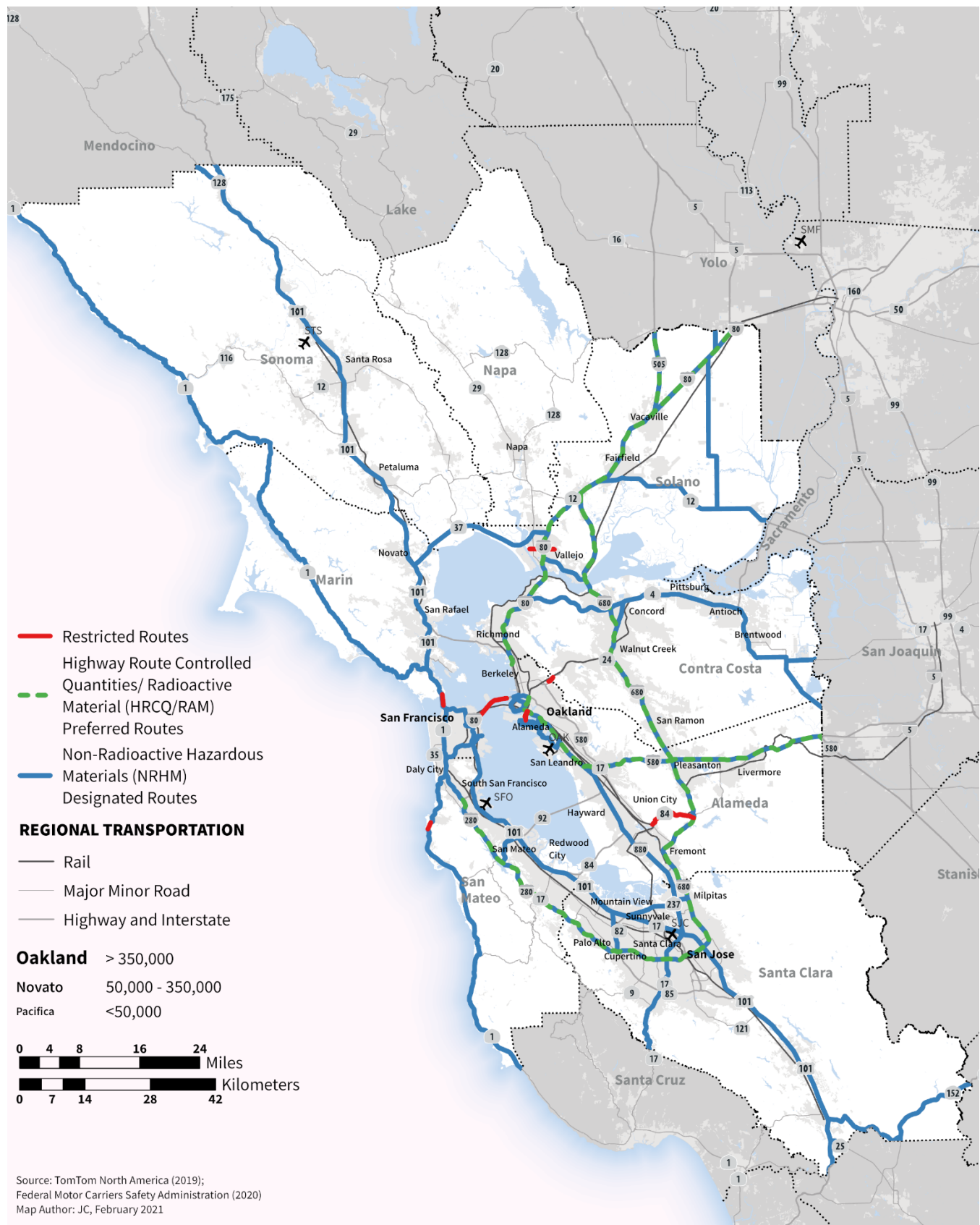


Figure 3.9-1: Hazardous Material Routes

Potential Presence of Hazardous Materials in Soil and Groundwater

Hazardous materials, including pesticides and herbicides, heavy metals, volatile organic compounds, and oil and gas, may be present in soil and groundwater in areas where land uses have resulted in leaking fuel or chemical storage tanks or where other releases of hazardous materials have occurred. Land uses that typically involve the handling of hazardous materials include commercial or industrial operations, as well as agricultural areas where soils may contain pesticides and herbicides.

Various federal, State, and local regulatory agencies maintain lists of hazardous materials sites where soil and/or groundwater contamination is known or suspected to have occurred. These facilities are readily identified through regulatory agency database searches, such as SWRCB's GeoTracker online database; DTSC's EnviroStor online database; and several other federal, State, and local regulatory agency databases. These databases include closed sites that have been fully remediated; sites where contamination is contained but land use restrictions are in place; and sites under evaluation, active remediation, and monitoring. Sites listed on these databases are generally located in more densely populated areas with a history of light and heavy industrial uses. A large number of Bay Area sites are listed in these databases. The quantity of sites listed on two key databases (GeoTracker and EnviroStor) are summarized by county in **Table 3.9-1**.

Table 3.9-1: Documented Hazardous Materials Cleanup Sites in the Bay Area

Sites	Alameda County	Contra Costa County	Marin County	Napa County	San Francisco County	San Mateo County	Santa Clara County	Solano County	Sonoma County
GeoTracker cleanup sites	3,652	1,204	443	424	2,270	1,734	3,528	696	1,611
EnviroStor cleanup sites	605	360	70	29	175	209	701	96	91

Note: Sites may be listed on both databases.

Sources: DTSC 2020; SWRCB 2020

To address the potential for documented and undocumented hazards on a site, the American Society for Testing and Materials has developed widely accepted practice standards for the preliminary evaluation of site hazards (E-1527-05). Phase I Environmental Site Assessments (ESAs) include an on-site visit to determine current conditions, an evaluation of possible risks posed by neighboring properties, interviews with persons knowledgeable about the site's history, an examination of local planning files to check prior land uses and permits granted, file searches with appropriate agencies having oversight authority relative to water quality and/or soil contamination, examination of historic aerial photography of the site and adjacent properties, a review of current topographic maps to determine drainage patterns, and an examination of chain-of-title for environmental lines and/or activity and land use limitations. If a Phase I ESA indicates the presence or potential presence of contamination, a site-specific Phase II ESA is generally conducted to test soil and/or groundwater. Based on the outcome of a Phase II ESA, remediation of contaminated sites under federal and State regulations may be required prior to development. Phase I ESAs can also be used to identify the potential for presence of hazardous building materials in situations where older structures intended for demolition could contain lead-based paint, asbestos containing materials, mercury, or polychlorinated biphenyls. The Preliminary Endangerment Assessment (PEA) process, which is typically conducted for sites with DTSC oversight, is similar, but includes screening evaluations and public participation.

Naturally Occurring Asbestos

Asbestos is not a formal mineralogical term, but rather a commercial and industrial term historically applied to a group of silica-containing minerals that form long, very thin mineral fibers (termed amphiboles), which generally form in bundles, that were once widely used in commercial products. Naturally occurring asbestos (NOA) includes minerals in their natural state, such as in bedrock or soils. NOA, which was identified as a toxic air contaminant by CARB in 1986, is of concern due to potential exposures to the tiny fibers that can become airborne if asbestos-bearing rocks are disturbed by natural erosion or human activities, such as road building, excavations, and other ground-disturbing activities. Once disturbed, microscopic fibers can become lodged in the lungs, which can potentially lead to serious health problems. All nine Bay Area counties contain reported NOA and/or ultramafic rocks, such as serpentinite, which can contain asbestos fibers (USGS 2011). As shown in **Figure 3.9-2**, most of the reported asbestos occurrences are located in San Francisco and Marin Counties, while ultramafic rock occurrences are most prominent in Napa County. In general, NOA fibers do not pose a threat unless disturbed and introduced into the air as fugitive dust.

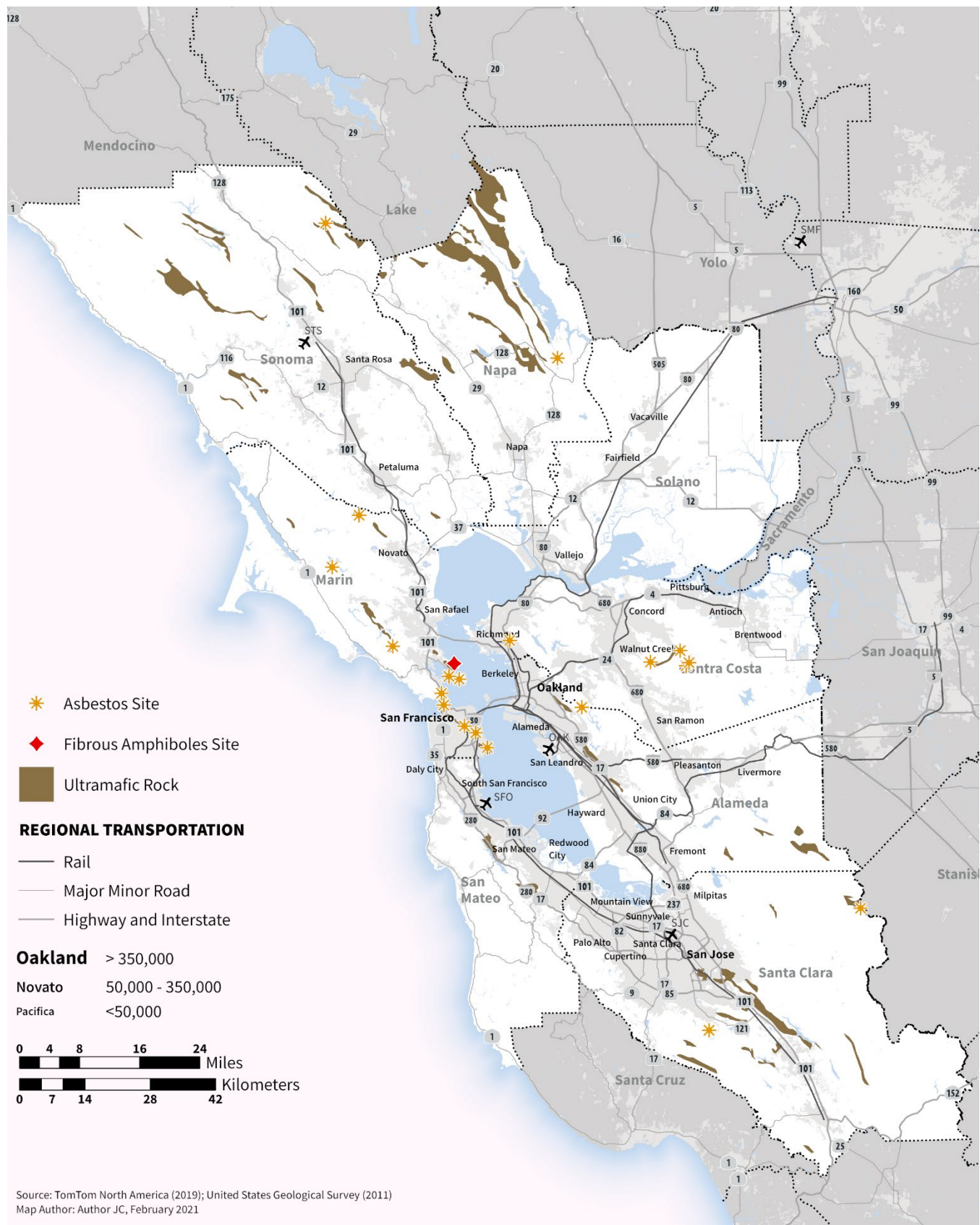


Figure 3.9-2: Naturally Occurring Asbestos and Ultramafic Rocks

Schools

Children are particularly susceptible to long-term effects from emissions of hazardous materials. Therefore, locations where children spend extended periods of time, such as schools, are particularly sensitive to hazardous air emissions and accidental release associated with the handling of extremely hazardous materials, substances, or wastes. There are nearly 2,000 public schools located throughout the Bay Area with over 1 million students, as described further in Section 3.13, “Public Services and Recreation.”

Airports

There are 26 public use airports in the Bay Area that serve commercial and general aviation users (see **Table 3.9-2** and **Figure 3.9-3**). This regional airport system forms an integral part of the Bay Area’s transportation network by providing links to communities throughout the United States and abroad. Bay Area communities must consider housing and economic development along with airport interests in making decisions concerning the amount and type of new development to allow in and near airport flight corridors. Potential hazards in relationship to airport operations are generally regulated by the Federal Aviation Administration (FAA), with local planning and evaluation of proposed projects (in terms of a proposed project’s compatibility in relationship to air and ground operations and the safety of the public) under the authority of the applicable airport land use commission (ALUC) through airport land use compatibility plans (ALUCPs).

Table 3.9-2: Public Use Airports and Military Airfields in the San Francisco Bay Area

County	Airport Name	Caltrans Classification
Alameda	Hayward Executive Airport	Metropolitan
Alameda	Livermore Municipal Airport	Metropolitan
Alameda	Oakland International Airport	Commercial/Primary
Contra Costa	Buchanan Field	Metropolitan
Contra Costa	Byron Airport	Community
Marin	Gnoss Field	Regional
Napa	Angwin Parrett Field Airport	Limited Use*
Napa	Napa County Airport	Regional
San Mateo	Half Moon Bay Airport	Regional
San Mateo	San Carlos Airport	Metropolitan
San Mateo	San Francisco International Airport**	Commercial/Primary
Santa Clara	Moffett Federal Airfield	Military/NASA
Santa Clara	Norman Y. Mineta San José International Airport	Commercial/Primary
Santa Clara	Palo Alto Airport of Santa Clara County	Metropolitan
Santa Clara	Reid-Hillview Airport	Metropolitan
Santa Clara	San Martin Airport	Regional
Solano	Nut Tree Airport	Regional
Solano	Rio Vista Municipal Airport	Regional
Solano	Travis Air Force Base	Military/NASA
Sonoma	Charles M. Schulz - Sonoma County Airport	Commercial/Primary
Sonoma	Cloverdale Municipal Airport	Community
Sonoma	Healdsburg Municipal Airport	Community
Sonoma	Petaluma Municipal Airport	Regional
Sonoma	Sonoma Skypark	Community
Sonoma	Sonoma Valley Airport	Community

Notes: Caltrans = California Department of Transportation. There are no public use airports within the City and County of San Francisco.

* Privately owned airport that is open to the general public. Owned by Pacific Union College.

** The City and County of San Francisco owns and operates San Francisco International Airport.

Source: FAA 2020

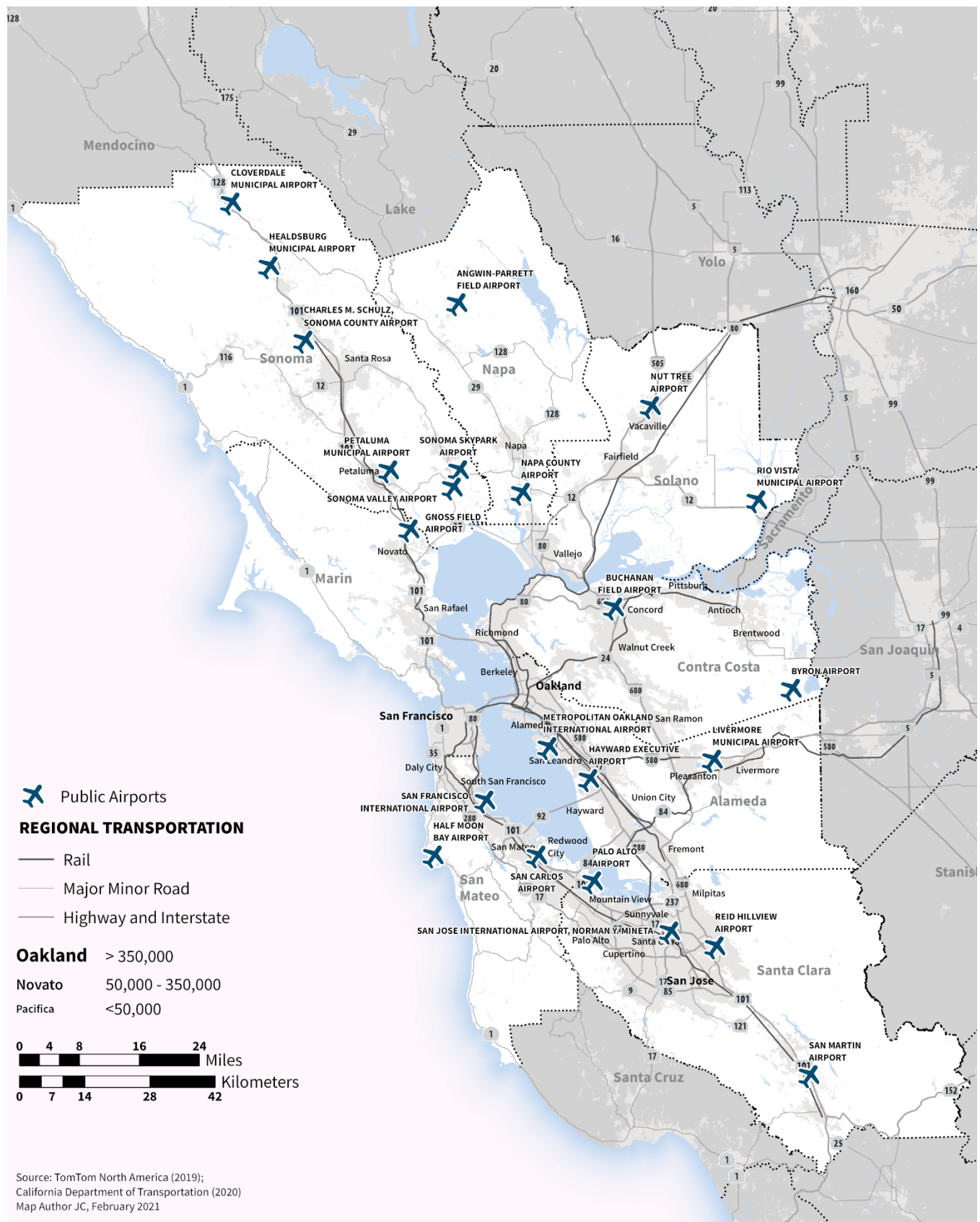


Figure 3.9-3: Public Use Airports

WILDLAND FIRE

In California, responsibility for wildfire prevention and suppression is shared by federal, State, and local agencies. Federal agencies are responsible for federal lands in Federal Responsibility Areas. The State of California has determined that some nonfederal lands in unincorporated areas with watershed value are of Statewide interest and have classified those lands as State Responsibility Areas (SRAs), which are managed by the California Department of Forestry and Fire Protection (CAL FIRE). All incorporated areas and other unincorporated lands are classified as Local Responsibility Areas (LRAs).

While all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (PRC Sections 4201–4204 and Government Code 51175–51189). Factors that increase an area’s susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions, as described further below.

Wildfire Behavior and Controlling Factors

Wildfire behavior is a product of several variables—primarily weather, vegetation, topography, and human influence—that combine to produce local and regional fire regimes that affect how, when, and where fires burn. The fire regime, meanwhile, is characterized by several factors, including fire frequency, intensity, severity, and area burned.

Human Influence on Wildfire

Human influence on wildfire includes direct influences, such as the ignition and suppression of fires, and indirect influence through climate change, the alteration of native vegetation, fire suppression, and development patterns. Human-induced wildfire ignitions can change fire regime characteristics in two ways: (1) changing the distribution and density of ignitions and (2) changing the seasonality of burning activity (Balch et al. 2017). Human-induced ignition sources include escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfires, smoking, fire play (e.g., fireworks), vehicles, and arson. Consequently, areas near human development more frequently experience fires than very remote or urban areas (Syphard et al. 2007; Mann et al. 2016; Balch et al. 2017).

Once a fire is started, the spread and behavior of a fire become a function of fuel characteristics, terrain, and weather conditions (Syphard et al. 2008). Development that has spread into less densely populated, often hilly areas has increased the number of people living in heavily vegetated areas that are prone to wildfire. This area where wildlands meet urban development is referred to as the wildland-urban interface (WUI) and is subject to urban wildfire. Nationwide, the number of houses in the WUI increased by 41 percent between 1990 and 2010 (Radeloff et al. 2018), and an estimated 95 percent of wildfires in California are caused by people (Syphard et al. 2007).

Fire Fuel Management

People have intervened deliberately and dramatically in the natural fire regime through fire suppression and, more recently, actions that affect fuel connectivity. Historically, fire suppression was used to prevent and limit wildfires. Although an important practice in limiting fire spread, over time, this land management practice (combined with forest regrowth after extensive logging in the late 19th century) has led to a buildup of forest fuels and an increase in the occurrence and threat of large, severe fires (Westerling et al. 2006). Contemporary fire management practices include fuel management activities that are intended to reduce the intensity and severity of wildfires. Reducing fuels through mechanical treatments and prescribed fire have been found to be effective at reducing fire frequency, fire severity, and annual area burned when applied at the landscape scale over an extended period of time (Kim et al. 2013; Martinson and Omi 2013; Prichard and Kennedy 2014; Tubbesing et al. 2019).

Climate Change and Wildfire

Wildfire activity is closely related to temperature and drought conditions, and in recent decades, increasing drought frequency and warming temperatures have led to an increase (Westerling et al. 2006; Schoennagel et al. 2017). In particular, the western United States, including California, has seen increases in wildfire activity in terms of area burned, number of large fires, and fire season length (Westerling et al. 2006; Abatzoglou and Williams 2016). These conditions have resulted in the largest, most destructive, and deadliest wildfires on record in California history.

Climate change is expected to continue to produce conditions that facilitate a longer fire season, which, when coupled with human-caused changes in the seasonality of ignition sources, will produce more, longer, and bigger fires during more times of the year. According to California’s Fourth Climate Change Assessment, Statewide Summary Report (OPR et al. 2018a), if greenhouse gas emissions continue to rise, the frequency of extreme wildfires burning over 25,000 acres could increase by

50 percent by 2100, and the average area burned Statewide could increase by 77 percent by the end of the century (OPR et al. 2018b). Refer to Section 3.6, “Climate Change, Greenhouse Gases, and Energy,” for additional discussion of climate change trends and the effects of climate change on the environment.

Wildfire Conditions in the Plan Area

Throughout the Bay Area, there is a full range of conditions and fire hazards as indicated in **Figure 3.9-4**, with all Bay Area counties except San Francisco having areas of High and Very High Fire Hazard in areas of CAL FIRE responsibility. The areas of greatest wildfire hazard are concentrated in the hillside areas of San Mateo, Santa Clara, Sonoma, and Napa Counties, with smaller hazard areas in Marin County, the East Bay Hills of Alameda and Contra Costa Counties, and on the slopes of Mount Diablo. CAL FIRE has also mapped Very High Fire Hazard Severity Zones in LRAs to provide guidance to local agencies (CAL FIRE 2016).

Wildfires tend to be larger under drier atmospheric conditions and when fed by drier fuel sources (Balch et al. 2017). In 2020, several large fires occurred in California as a result of lightning storms coupled with dry fuels. Currently the third largest fire in recent California history, the SNU Lightning Complex fires, burned 396,624 acres in Stanislaus, Santa Clara, Alameda, Contra Costa, and San Joaquin Counties in August 2020. At the same time, the LNU Lightning Complex fire burned an additional 363,200 acres in Sonoma, Lake, Napa, and Yolo Counties (CAL FIRE 2020a). In 2017, the Tubbs Fire caused substantial destruction in parts of Napa and Sonoma Counties. Believed to have been started by a private electrical system, the fire is the second most destructive in recent California history. The Tubbs fire damaged 5,636 structures and resulted in 22 deaths, with much of the destruction in Santa Rosa. The 1991 Tunnel fire in the Oakland Hills above Berkeley and Oakland, an urban wildfire, resulted in 25 deaths and the loss of 2,900 structures. It remains the third most destructive wildfire in California history (CAL FIRE 2020b). A fire along the WUI can result in major losses of property and structures.

3.9.2 Regulatory Setting

FEDERAL REGULATIONS

EPA is the lead agency responsible for enforcing federal regulations that affect public health or the environment. The primary federal laws and regulations include the Resource Conservation and Recovery Act of 1976 (RCRA) and the Hazardous and Solid Waste Amendments enacted in 1984; the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA); and the Superfund Act and Reauthorization Act of 1986 (SARA). Federal statutes pertaining to hazardous materials and wastes are contained in CFR Title 40, Protection of the Environment.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (15 U.S. Code Section 2601 et seq.) grants EPA the authority to develop reporting, record-keeping, and testing requirements for, as well as restrictions on, the manufacture, use, and sale of chemical substances.

Resource Conservation and Recovery Act

RCRA Subtitle C regulates the generation, transportation, treatment, storage, and disposal of hazardous waste by “large-quantity generators” (1,000 kilograms per month or more) through comprehensive life cycle or “cradle to grave” tracking requirements. The requirements include maintaining inspection logs of hazardous waste storage locations, records of quantities being generated and stored, and manifests of pickups and deliveries to licensed treatment/storage/disposal facilities. RCRA also identifies standards for treatment, storage, and disposal, which is codified in CFR Title 40 Part 260.

Comprehensive Environmental Response Compensation and Liability Act

Congress enacted CERCLA, setting up what has become known as the Superfund program, in 1980 to establish prohibitions and requirements concerning closed and abandoned hazardous waste sites, provide for liability of persons responsible for releases of hazardous waste at these sites, and establish a trust fund to provide for cleanup when no responsible party can be identified. Generally, CERCLA authorizes two kinds of response actions:

- ▲ short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response, and
- ▲ long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

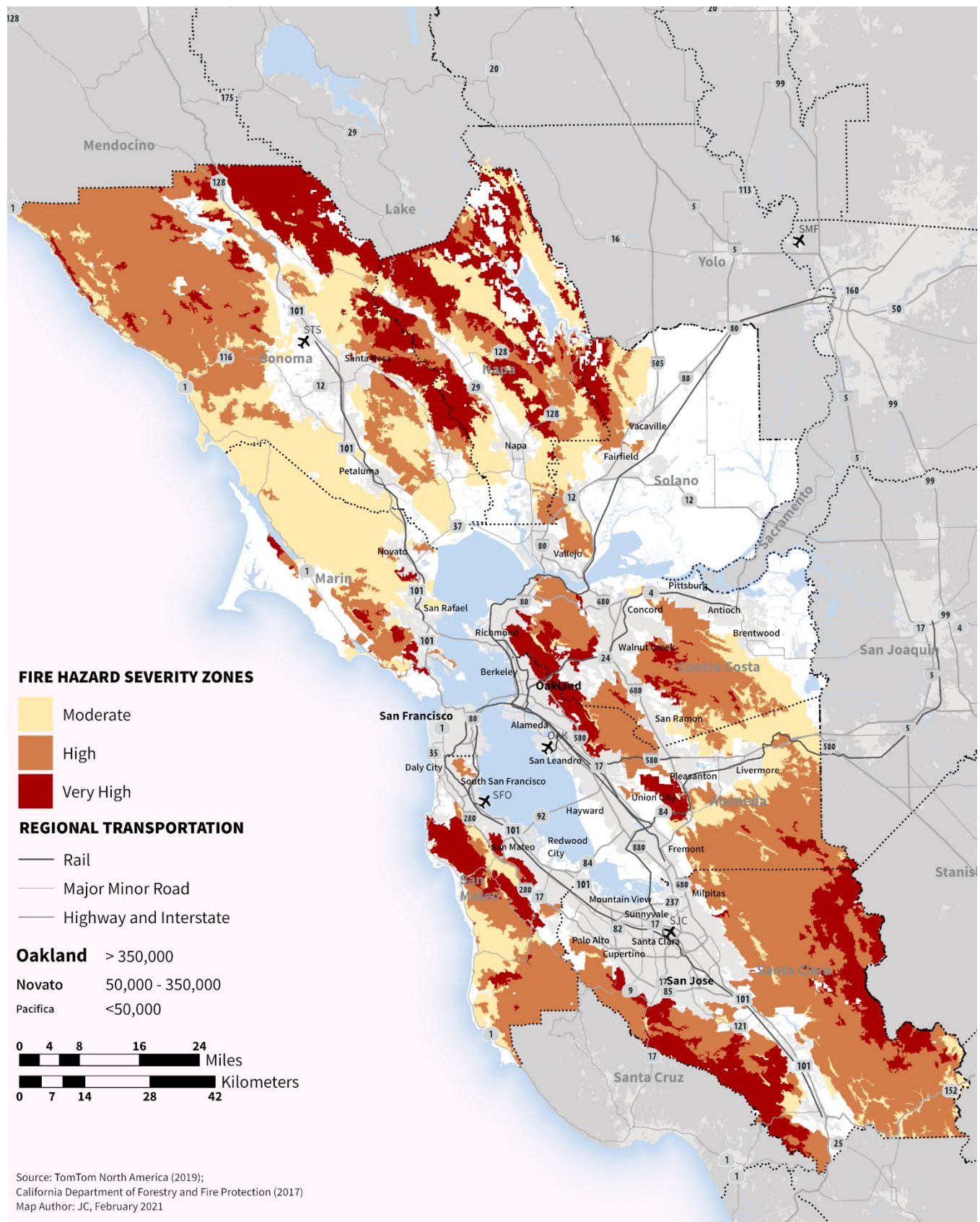


Figure 3.9-4: Fire Hazards

Superfund Amendments and Reauthorization Act

SARA amended CERCLA in 1986, emphasizing the importance of permanent remedies and innovative treatment technologies to clean up hazardous waste sites, requiring Superfund actions to consider the standards and requirements found in other State and federal environmental laws and regulations, providing new enforcement authorities and settlement tools, increasing involvement of the states in every phase of the Superfund program, increasing the focus on human health problems posed by hazardous waste sites, encouraging greater citizen participation in making decisions on how sites should be cleaned up, and increasing the size of the trust fund to \$8.5 billion.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA), or SARA Title III, was enacted in October 1986. SARA Title III requires any infrastructure at the State and local levels to plan for chemical emergencies, including identifying potential chemical threats. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301–312 are administered by EPA’s Office of Emergency Management. EPA’s Office of Information Analysis and Access implements EPCRA’s Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention Program (CalARP).

Code of Federal Regulations, Title 29

The Occupational Safety and Health Act (29 CFR Section 1910.120) establishes regulations for employers that provide employees with an environment free from recognized hazards, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. Pursuant to Occupational Safety and Health Administration regulations, standard accident training for cleaning up small spills would be provided to all individuals prior to their work with hazardous substances, and the appropriate types and amounts of spill cleanup materials and personal protective equipment would be immediately available.

National Emission Standards for Hazardous Air Pollutants

The National Emission Standards for Hazardous Air Pollutants is an Environmental Protection Agency (EPA) standard that is applicable within the United States to the emissions of hazardous air pollutants produced by corporations, institutions and at Agencies at all levels of government. The hazardous air pollutants are those pollutants that are known or suspected to cause cancer, serious health effects, or adverse environmental effects.

Code of Federal Regulations, Title 14, Part 77

FAA’s primary role is to promote aviation safety and control the use of airspace. Public use airports that are subject to FAA’s grant assurances must comply with specific FAA design criteria, standards, and regulations. Land use safety compatibility guidance from FAA is limited to the immediate vicinity of the runway, the runway protection zones at each end of the runway, and the protection of navigable airspace. FAA enforces safety standards and investigates and corrects violations, as appropriate.

Title 14, Part 77 of the CFR, *Safe Efficient Use and Preservation of the Navigable Airspace*, establishes the federal review process for determining whether proposed development activities in the vicinity of an airport have the potential to result in a hazard to air navigation. 14 CFR Part 77 identifies criteria that govern which projects require notice to be filed with FAA, as well as identifying standards for determining whether a proposed project would represent an obstruction “that may affect safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities.” Objects that are identified as obstructions based on these standards are presumed to be hazards until an aeronautical study conducted by FAA determines otherwise.

14 CFR Part 77.9, *Construction or Alteration Requiring Notice*, indicates that notice must be filed with FAA for any construction or alteration of objects within 20,000 feet of a public use airport runway when the height of the objects exceeds (i.e., is taller than) an imaginary surface with a 100:1 (1 foot upward per 100 feet horizontally) slope from the nearest point of the nearest runway. This requirement applies when the airport has at least one runway that exceeds 3,200 feet in length; for shorter runways, the notification surface has a 50:1 slope and extends 10,000 feet from the runway. For heliports, the notification surface has a 25:1 slope and extends 5,000 feet from the helicopter takeoff and landing area, commonly referred to as final approach and takeoff area. The notification requirements apply to all public-use airports, military airports, and heliports. When FAA notification is required, it must be provided using FAA Form 7460-1, Notice of Proposed Construction or Alteration.

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (HMTA), which is administered by the Research and Special Programs Administration of DOT. HMTA provides DOT with a broad mandate to regulate the transport of hazardous materials, with the purpose of adequately protecting the nation against risk to life and property, which is inherent in the commercial transportation of hazardous materials. The HMTA governs the safe transportation of hazardous materials by all modes. DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers. DOT regulations govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing. Additionally, DOT is responsible for developing curriculum to train for emergency response and administers grants to states and Indian tribes for ensuring the proper training of emergency responders.

Code of Federal Regulations, Title 49

Title 49, Transportation, of the CFR includes hazardous materials regulations in the volume containing Parts 100–185 and governs the transport of hazardous materials in all modes of transportation: air, highway, rail, and water. Hazardous materials regulations are subdivided by function into four basic areas: Procedures and/or Policies (49 CFR Parts 101, 106, and 107), Material Designations (49 CFR Part 172), Packaging Requirements (49 CFR Parts 173, 178, 179, and 180), and Operational Rules (49 CFR Parts 171, 173, 174, 175, 176, and 177).

Pipeline and Hazardous Materials Safety Administration Hazardous Materials Regulations

The Pipeline and Hazardous Materials Safety Administration is the federal regulator for the movement of hazardous materials by rail. Regulations cover product classification, operating rules, and tank car standards.

Federal Railroad Administration Office of Railroad Safety

The Federal Railroad Administration's Office of Railroad Safety promotes and regulates safety throughout the nation's railroad industry. The regional offices enforce compliance with regulations related to hazardous materials, motive power equipment, operating practices, signal and train control, and tracks. California is in Region 7, which is headquartered in Sacramento, California (FRA 2015).

International Fire Code

The International Fire Code (IFC), created by the International Code Council, is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code use a hazard classification system to determine what protective measures are required for fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every 3 years and is the basis for the California Fire Code (CFC) (also updated triennially). Local jurisdictions, including Bay Area cities and counties, then adopt the CFC, in some cases with local amendments.

National Fire Plan

The U.S. Department of the Interior's National Fire Plan is intended to ensure an appropriate federal response to severe wildland fires, reduce fire impacts on rural communities, and ensure sufficient firefighting capacity in the future. The Rural Fire Assistance program is funded to enhance the fire protection capabilities of rural fire districts and safe and effective fire suppression in the wildland/urban interface. The program promotes close coordination among local, state, tribal, and federal firefighting resources by conducting training, equipment purchase, and prevention activities on a cost-shared basis.

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a "Standard" or an "Enhanced" Natural Mitigation Plan. "Enhanced" plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program.

STATE REGULATIONS

California Fire Code

The CFC is Chapter 9 of CCR Title 24. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine what protective measures are required for fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every 3 years.

CFC Chapter 49 provides minimum standards to increase building resistance to the intrusion of flame or burning embers projected by a vegetation fire and identifies performance and prescriptive requirements. Section 4906 provides hazardous vegetation fuel management requirements for buildings and structures located on land in a Very High Fire Hazard Severity Zone in LRAs and land in a Moderate Fire Hazard Severity Zone, High Fire Hazard Severity Zone, or Very High Fire Hazard Severity Zone in SRAs.

2019 Strategic Plan for California

The 2019 Strategic Plan prepared by CAL FIRE and the California Natural Resources Agency lays out central goals for reducing and preventing the impacts of fire in the State. The goals are meant to establish, through local, State, federal, and private partnerships, a natural environment that is more resilient and human-made assets that are more resistant to the occurrence and effects of wildland fire.

In addition to the 2019 Strategic Plan for California, individual CAL FIRE units develop fire plans, which are major strategic documents that establish a set of tools for each CAL FIRE unit for its local area. Updated annually, unit fire plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, prefire management strategies, and accountability within their unit's geographical boundaries. The unit fire plan identifies strategic areas for prefire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area.

California Unified Program Administration

The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs, as listed below:

- ▲ Hazardous Materials Release Response Plans and Inventories (Business Plans),
- ▲ CalARP,
- ▲ Underground Storage Tank Program,
- ▲ Aboveground Petroleum Storage Act Program,
- ▲ Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs, and
- ▲ California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements.

The State agency partners involved in the Unified Program have the responsibility of setting program element standards, working with CalEPA on program consistency, and providing technical assistance to the Certified Uniform Program Agencies (CUPAs). The following State agencies are involved with the Unified Program:

- ▲ **California Environmental Protection Agency.** The Secretary of CalEPA is directly responsible for coordinating the administration of the Unified Program. The Secretary certifies Unified Program agencies.
- ▲ **California Department of Toxic Substances Control.** DTSC provides technical assistance and evaluation for the hazardous waste generator program, including on-site treatment (tiered permitting). Under CCR Title 22 and the California Hazardous Waste Control Law, Chapter 6.5, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste.
- ▲ **Governor's Office of Emergency Services.** OES is responsible for providing technical assistance and evaluation of the Hazardous Material Release Response Plan (Business Plan) Program and the CalARP programs.

- ▲ **Office of the State Fire Marshal.** The Office of the State Fire Marshal is responsible for ensuring the implementation of the Hazardous Material Management Plans and the Hazardous Material Inventory Statement Programs. These programs tie in closely with the Business Plan Program.
- ▲ **State Water Resources Control Board.** SWRCB provides technical assistance and evaluation for the underground storage tank program in addition to handling the oversight and enforcement for the aboveground storage tank program.

Both RCRA and the Hazardous Waste Control Law impose “cradle to grave” regulatory systems for handling hazardous waste in a manner that protects human health and the environment. CalEPA has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other CUPAs. Specific CUPAs in the Bay Area are identified in **Table 3.9-3**.

Table 3.9-3: Bay Area CUPAs

County	CUPA(s)
Alameda	Alameda County Department of Environmental Health Berkeley City Toxics Management Department Fremont City Fire Department Hayward City Fire Department Livermore-Pleasanton Fire Department City of San Leandro Union City Environmental Programs
Contra Costa	Contra Costa Health Services Department
Marin	Marin County Department of Public Works
Napa	Napa County Department of Environmental Management
San Francisco	San Francisco City & County Public Health Department
San Mateo	San Mateo County Environmental Health
Santa Clara	Gilroy City Fire Department Santa Clara City Fire Department Santa Clara County Environmental Health Sunnyvale Department of Public Safety
Solano	Solano County Environmental Health
Sonoma	Healdsburg/Sebastopol Joint Powers Authority Petaluma City Fire Department Santa Rosa City Fire Department Sonoma County Fire and Emergency Services Department

Source: CalEPA 2016

Title 26 of the California Code of Regulations

In California, transportation of hazardous materials and wastes is regulated by Caltrans (26 CCR). CHP and Caltrans enforce both federal and state regulations and respond with the county fire department to hazardous materials transportation emergencies. Emergency responses are coordinated as necessary between federal, state, and local governmental authorities and private persons through the state-mandated Emergency Response Plan.

Worker And Workplace Hazardous Materials Safety

Cal OSHA is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. California standards for workers dealing with hazardous materials are contained in Title 8 of the CCR and include practices for all industries (General Industrial Safety Orders), and specific practices for construction and other industries. Workers at hazardous waste sites (or working with hazardous wastes as might be encountered during excavation of contaminated soil) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations. Additional regulations have been developed for construction workers potentially exposed to lead and asbestos. Cal OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices. Among other requirements, Cal OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard

Communication Standard requires that workers be informed of the hazards associated with the materials they handle. For example, manufacturers are to appropriately label containers, material safety data sheets are to be available in the workplace, and employers are to properly train workers.

California Human Health Screening Levels

The California Human Health Screening Levels (CHHSLs) were developed as a tool to assist in the evaluation of contaminated sites for potential adverse threats to human health. Preparation of the CHHSLs was required by the California Land Environmental Restoration and Reuse Act of 2001. The CHHSLs were developed by OEHHA, an agency under the umbrella of CalEPA, and are contained in its report entitled *Human-Exposure-Based Screening Numbers Developed to Aid Estimation of Cleanup Costs for Contaminated Soil* (OEHHA and CalEPA 2005). The thresholds of concern used to develop the CHHSLs are an excess lifetime cancer risk of one in 1 million and a hazard quotient of 1.0 for noncancer health effects. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by EPA and CalEPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSLs can be assumed to not pose a significant health risk to people who may live (residential CHHSLs) or work (commercial/ industrial CHHSLs) at the site.

California Accidental Release Prevention Program

CalARP addresses facilities that contain specified hazardous materials, known as “regulated substances,” that, if involved in an accidental release, could result in adverse off-site consequences. CalARP defines regulated substances as chemicals that pose a threat to public health and safety or the environment because they are highly toxic, flammable, or explosive.

California Health and Safety Code

The Hazardous Waste Control Act of 1972 (Health & Safety Code Section 25100 et seq.) is the seminal hazardous waste control law in California. It establishes standards for regulating the generation, handling, processing, storage, transportation, and disposal of hazardous wastes. The hazardous waste control program is administered by DTSC and local CUPAs.

Asbestos Regulations

In 1990, CARB issued an Airborne Toxic Control Measure (ATCM), which prohibited the use of serpentine aggregate for surfacing if the asbestos content was 5 percent or more. In July 2000, CARB adopted amendments to the existing ATCM prohibiting the use or application of serpentine, serpentine-bearing materials, and asbestos-containing ultramafic rock for covering unpaved surfaces unless it has been tested using an approved asbestos bulk test method and determined to have an asbestos content that is less than 0.25 percent. In July 2001, CARB adopted a new ATCM for construction, grading, quarrying, and surface mining operations in areas with serpentine or ultramafic rocks. These regulations are codified in Title 17, Section 93105 of the CCR. The regulations require preparation and implementation of an Asbestos Dust Mitigation Plan for construction or grading activities on sites greater than 1 acre in size with known NOA soils. The air districts enforce this regulation.

In October 2000, the Governor’s Office of Planning and Research issued a memorandum providing guidance to lead agencies in analyzing the impacts of NOA on the environment through the CEQA review process. In November 2000, the California Department of Real Estate added a section to subdivision forms that includes questions related to NOA on property proposed for development. In 2004, as part of its school-site review program, DTSC’s School Property Evaluation and Cleanup Division released interim guidance on evaluating NOA at school sites.

In addition, California Health and Safety Code Section 19827.5 prohibits issuance of demolition permits by local and State agencies without assessment of the potential for the structure to contain asbestos.

California Environmental Quality Act

Pursuant to PRC Section 21098, lead agencies must provide notice to the military service for certain projects with specified proximity to a low-level flight path, military impact zone, or special use airspace. Similarly, Government Code Section 65352 requires that, prior to taking certain actions, the lead agency shall refer the proposed action to the appropriate branch of the U.S. Military if a project would be:

- ▲ located within 1,000 feet of a military installation,
- ▲ located beneath a low-level flight path, or
- ▲ within special use airspace as defined in CEQA Section 21098.

Pursuant to PRC Section 21151.4, projects that can be reasonably anticipated to produce hazardous air emissions or handle extremely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school must consult with the potentially affected school district and provide written notification not less than 30 days prior to the proposed certification or approval of an environmental document. Where a school district proposes property acquisition or the construction of a school, the environmental document must address existing environmental hazards, and written findings must be prepared regarding existing pollutant sources (see PRC Section 21151.8; Appendix G of the State CEQA Guidelines). PRC Section 21151.2 requires school districts to notify the applicable planning commission before acquiring property for a new school or expansion to identify potential land use conflicts.

California Education Code

Sections 17071.13, 17072.13, 17210, 17210.1, 17213.1-3, and 17268 of the California Education Code became effective January 1, 2000. Together, they establish requirements for assessments and approvals regarding toxic and hazardous materials that school districts must follow before receiving final site approval from the California Department of Education and funds under the School Facilities Program. These requirements are consistent with those described above for certification or approval of an environmental document under CEQA.

For example, the site approval package must include written determinations regarding the presence of hazardous wastes or pipelines carrying hazardous substances on the site (the adopted CEQA document is often used for these purposes). The code also requires that a Phase I ESA is conducted according to the American Society of Testing and Materials standards (ASTM E-1527-2000) and transmitted to DTSC. If the Phase I ESA concludes that further investigation is needed or DTSC requires it, a PEA must be completed under DTSC oversight and review. See the discussion above, under “Potential Presence of Hazardous Materials in Soil and Groundwater,” for additional information regarding Phase I ESAs and PEAs.

Hazardous Air Emissions and Facilities within a Quarter Mile of a School

When evaluating potential school sites, Education Code Section 17213(b) and PRC Section 21151.8(a)(2) require the local educational agency (LEA) to consult with the applicable air district to identify facilities within 0.25 mile of a proposed school site that might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials, substances, or wastes. The LEA must prepare written findings that either there are no such facilities, the facilities do not pose a health risk, or corrective measures will be taken. In the final instance, the LEA should make an additional finding that emissions will be mitigated before occupancy of the school. These written findings, as adopted by the LEA governing board, must be submitted to the California Department of Education as a part of the site approval package. Often this information is included in the Phase I ESA and in the adopted CEQA document.

Safety Hazards within 2 miles of an Airport

The Caltrans Division of Aeronautics is also required to review proposals for acquisition of a school site by school districts that are situated within 2 miles of an existing or planned airport runway (Education Code Sections 17215 and 81033).

California State Aeronautics Act of 1951

At the state level, the California Department of Transportation (Caltrans) Division of Aeronautics administers FAA regulations (Stats. 1951, Ch. 764; PUC Section 21001 et seq.). The division issues permits for hospital heliports and public-use airports, reviews potential and future school sites proposed within 2 miles of an airport, and authorizes helicopter landing sites at or near schools. In addition, the Division of Aeronautics administers noise regulation and land use planning laws, which regulate the operational activities and provides for the integration of aviation planning on a regional basis.

FAA regulations outline the statutory requirements for ALUCPs, including referencing the Division of Aeronautics ALUP Handbook. The California ALUP Handbook was most recently updated in 2011. Lead agencies utilize the ALUP Handbook as a technical resource with respect to airport noise and safety compatibility issues. The California ALUP Handbook provides examples of safety zones for five types of general aviation runways, an air carrier runway, and a military runway. The shapes and sizes of the zones are largely based on the spatial distribution of potential aircraft accidents. The handbook provides a qualitative description of the land use characteristics considered acceptable or unacceptable within each of the basic safety zones.

Title 14 Division 1.5 of the California Code of Regulations

CCR Title 14 Division 1.5 establishes the regulations for CAL FIRE and is applicable in all SRAs. These regulations constitute the basic wildland fire protection standards of CAL FIRE. They have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction, and development in state responsibility

areas. Among other things, Title 14 establishes minimum standards for emergency access, fuel modification, setback to property line, signage, and water supply.

Specifically, Article 2, “Emergency Access and Egress,” requires provision of safe access for emergency wildfire equipment and civilian evacuation concurrently and unobstructed traffic circulation during a wildfire emergency. To accomplish this, all roads must provide a minimum of two 10 foot traffic lanes that provide for two-way traffic flow to support emergency vehicle and civilian egress, unless other standards are provided in this article, or additional requirements are mandated by local jurisdictions or local subdivision requirements. All one-way roads must be constructed to provide a minimum of one 12-foot traffic lane. All one-way roads shall connect to a road with two traffic lanes at both ends, and shall provide access to an area currently zoned for no more than ten residential units. In addition, roads cannot have a horizontal inside radius of curvature of less than 50 feet. Turnarounds are required on driveways and dead-end roads.

Government Code Section 65962.5

Government Code Section 65962.5 is commonly referred to as the “Cortese List” (after the legislator who authored the legislation that enacted it). The list, or a site's presence on the list, has bearing on the local permitting process, as well as on compliance with CEQA. However, because this statute was enacted over 20 years ago, some of the provisions refer to agency activities that are no longer being implemented and, in some cases, the information to be included in the Cortese List does not exist. While Government Code Section 65962.5 makes reference to the preparation of a “list,” many changes have occurred related to web-based information access since 1992, and this information is now largely available on the Internet sites of the responsible organizations. A centralized list is no longer compiled, and those requesting a copy of the Cortese “list” are now referred directly to the appropriate information resources contained on the Internet sites of the boards or departments that are referenced in the statute.

California Emergency Services Act

The California Emergency Services Act of 2008 merged the duties, powers, purposes, and responsibilities of OES and the Governor’s Office of Homeland Security into a new cabinet-level agency, the California Emergency Management Agency (Cal EMA). In 2013, Governor Edmund G. Brown Jr. merged the California Emergency Management Agency with the Office of Public Safety Communications and renamed the organization the California Governor’s Office of Emergency Services (Cal OES). Cal OES is responsible for overseeing and coordinating emergency preparedness, response, recovery, and homeland security activities within the California. Section 8687.7 of the California Disaster Assistance Act required the development of a Standard Emergency Management System (SEMS) program, for managing multiagency and multijurisdictional responses to emergencies in California. The Cal OES Emergency Management Systems Unit is a multi-agency group charged with methodical review, evaluation, and approval of needed improvements to SEMS. State agencies are required to use SEMS and local government entities must use SEMS in order to be eligible for any reimbursement of response-related costs under the State’s disaster assistance programs.

Cal OES serves as the lead State agency for emergency management and coordinates the State response to major emergencies in support of local government. SEMS provides the mechanism by which local governments request assistance from Cal OES, and Cal OES maintains oversight of the State’s mutual aid system.

State of California Emergency Plan

The Cal OES Emergency Plan outlines a state-level strategy to support local government efforts during a large-scale emergency. In accordance with the California Emergency Services Act, the State Emergency Plan describes methods for carrying out emergency operations, mutual aid processes, emergency services of governmental agencies, resource mobilization, emergency public information, and continuity of government.

California Multi-Hazard Mitigation Plan

The State Hazard Mitigation Plan (SHMP) represents the state’s primary hazard mitigation guidance document - providing an updated analysis of the state’s historical and current hazards, hazard mitigation goals and objectives, and hazard mitigation strategies and actions. The plan represents the state’s overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. State Hazard Mitigation Plans are required to meet the Elements outlined in FEMA’s State Mitigation Plan Review Guide (revised March 2015, effective March 2016).

OES is responsible for the development and maintenance of the State's plan for hazard mitigation. The State's multi-hazard mitigation plan was last approved by the Federal Emergency Management Agency (FEMA) as an Enhanced State Mitigation Plan in 2018. The plan is designed to reduce the effects of disasters caused by natural, technological, accidental, and adversarial/human-caused hazards. The SHMP sets the mitigation priorities, strategies, and actions for the state. The plan also describes how risk assessment and mitigation strategy information is coordinated and linked from local mitigation plans into the SHMP, and provides a resource for local planners of risk information that may affect their planning area. The State of California is required to review and revise its mitigation plan and resubmit for FEMA approval at least every 5 years to ensure continued funding eligibility for certain federal grant programs.

Lempert-Keene-Seastrand Oil Spill Prevention and Response Act

The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990 granted the Office of Spill Prevention and Response (OSPR) the authority to direct prevention, removal, abatement, response, containment, and cleanup efforts with regard to all aspects of any oil spill in marine waters of California. OSPR implements the California Oil Spill Contingency Plan, consistent with the National Contingency Plan, which pays special attention to marine oil spills and impacts to environmentally and ecologically sensitive areas. In 2014, the OSPR program was expanded to cover all Statewide surface waters at risk of oil spills from any source, including pipelines and the increasing shipments of oil transported by railroads.

California Public Utilities Code Sections 309.7

The California Public Utilities Commission (CPUC) is the State regulatory agency with legal authority for rail safety within California. The Railroad Operations and Safety Branch is responsible for enforcing State and federal laws, regulations, general orders, and directives relating to the transportation of persons and commodities by rail. Several California Public Utilities Code sections prescribe CPUC responsibilities. In particular, under Section 309.7, CPUC is responsible for inspection, surveillance, and investigation of the rights-of-way, facilities, equipment, and operations of railroads. Public Utilities Code Sections 309.7 and 765.5(d) require CPUC to employ a sufficient number of federally certified inspectors to ensure that all main and branch line tracks are inspected at least every 12 months.

Local Community Rail Security Act

The Local Community Rail Security Act of 2006 (Public Utilities Code Sections 7665–7667) requires all rail operators to provide security risk assessments to CPUC, the director of Homeland Security, and the Catastrophic Event Memorandum Account that describe:

- ▲ location and function of each rail facility,
- ▲ types of cargo stored at or typically moved through the facility,
- ▲ hazardous cargo stored at or moved through the facility,
- ▲ frequency of hazardous movements or storage,
- ▲ a description of sabotage-terrorism countermeasures,
- ▲ employee training programs,
- ▲ emergency response procedures, and
- ▲ emergency response communication protocols.

California Department of Transportation Emergency Response

Caltrans is the owner and operator of the state highway system. Its emergency response priorities include damage assessment and route recovery on state highways. Caltrans' District 4 office is responsible for state roadways and bridges (with the exception of the Golden Gate Bridge) in its nine-county jurisdiction in the San Francisco Bay Area. During an emergency, Caltrans activates its Emergency Operations Center, which collects information and defines priorities for responding to the emergency. District 4 also operates the region's Transportation Management Center in its Oakland office, in partnership with the California Highway Patrol.

REGIONAL AND LOCAL REGULATIONS

Bay Area Air Quality Management District Asbestos Regulations

Asbestos is a naturally occurring mineral often used in building materials and construction. Because asbestos has been proven to cause serious and fatal diseases, it is strictly regulated in its use as a building material and where it occurs naturally.

Asbestos Demolition and Renovation Program

The Bay Area Air Quality Management District (BAAQMD) regulates the demolition and renovation of buildings and structures that may contain asbestos, and the manufacture of materials known to contain asbestos. The Air District must be notified at least 10 business days before a demolition project or any renovation involving the removal of 100 square feet or more, 100 linear feet or more, or 35 cubic feet or more of asbestos.

Naturally Occurring Asbestos Program

To reduce public exposure to naturally occurring asbestos, the BAAQMD regulates all construction and mining activities that produce dust potentially containing naturally occurring asbestos. The Airborne Toxic Control Measure places requirements on the following activities in areas where naturally occurring asbestos is likely to be found:

- ▲ road construction and maintenance,
- ▲ construction and grading, and
- ▲ Quarrying and surface mining.

San Francisco Bay Area Regional Emergency Coordination Plan

The Bay Area Regional Emergency Coordination Plan (RECP) was prepared by OES, the nine Bay Area counties (as well as Santa Cruz County), and the cities of Oakland and San Jose to provide a framework for collaboration and coordination during regional events. The RECP defines procedures for regional coordination, collaboration, decision making, and resource sharing among emergency response agencies in the Bay Area. The RECP provides critical linkages to ensure that existing Bay Area emergency response systems work together effectively during the response to an event. In addition, the RECP complies with the requirements of the National Incident Management System and is consistent with the National Preparedness Goal.

San Francisco Bay Area Regional Transportation Emergency Management Plan

MTC's 2018 *San Francisco Bay Area Regional Transportation Emergency Management* (RTEMP) establishes a baseline-operating plan adaptable to a range of emergency recovery scenarios. It reflects existing emergency operating procedures from the regional transportation agencies; and attempts to reconcile conflicts, inconsistencies and gaps among these existing plans. The purpose of the RTEMP is to improve the ability of Bay Area public transportation agencies to recover operations and deliver basic transportation services after a significant regional disaster. The RTEMP provides guidance to MTC, Caltrans, the California Highway Patrol, the San Francisco Bay Area Water Emergency Transportation Authority and the largest Bay Area transit operators for coordinating response and recovery efforts and allocating assets to restore basic regional mobility.

The RTEMP is intended to facilitate the response and recovery of Bay Area transportation agencies in the event of an emergency by enabling them to: assess the condition, safety and operability of Bay Area transportation systems in the immediate aftermath of an emergency; identify needs for emergency transportation services and coordinate responses with Cal OES, prioritize emergency response services above basic transportation services; provide basic transportation services as quickly and completely as possible; facilitate requests for mutual aid from transportation agencies affected by an emergency; and identify and secure assets from other transportation entities or from outside the Bay Area to enable the provision of relief transportation services during response and recovery.

The RTEMP is a counterpart to the RECP developed by OES to coordinate all-hazards emergency response.

Trans Response Plan

MTC developed and maintains the Trans Response Plan to coordinate basic transportation services in the event of major emergencies. During such incidents, the Trans Response Plan provides the means of informing responding agencies and the general public about the changing transportation situation and facilitates the coordination of a transportation response to an emergency. The Trans Response Plan defines MTC's functions during an emergency as the regional transportation information clearinghouse for collecting, summarizing and disseminating information about transportation assets, services and capabilities, and dissemination of information about the availability of regional transportation services to the media and public.

City and County General Plans

Local planning policies related to hazards and hazardous materials are established in each jurisdiction's general plan, generally in the safety element or equivalent chapter. Safety elements are required to address geologic hazards, fire hazards, dam failure, evacuation routes, flooding, and emergency response, among other issues. For emergency services, relevant policies may include coordinating with other agencies that are responsible for planning medical facilities to meet the health care needs of residents in the region, retaining hospitals, evaluating medical facility proposals, providing emergency response services, and participating in mutual-aid agreements.

As of January 1, 2014, Senate Bill 1241 requires that, upon the next revision of the housing element, jurisdictions review and update the safety element as necessary to address the risk of fire in SRAs and Very High Fire Hazard Severity Zones. These revisions must take into account specified considerations, including the provisions outlined in "Fire Hazard Planning" by the Governor's Office of Planning and Research.

Airport Land Use Commissions and Airport Land Use Compatibility Plans

An ALUC is an agency that is required by State law in counties where there is an airport operated for the benefit of the general public. The purpose of the ALUC is to protect public health, safety, and welfare by ensuring the orderly development of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses. The ALUC is responsible for developing and maintaining ALUCPs for areas around each airport. A list of the ALUCs in the Plan area is provided in **Table 3.9-4**.

ALUCs may request that all or selected land use actions (e.g., general plan, specific plan, zoning ordinance, building regulation, land acquisition, annexation, large development project) within an airport influence area (AIA) be submitted for review for consistency with the ALUCP. An AIA is the area in which current or future airport-related noise, overflight, safety, and/or airspace protection factors may affect land uses or necessitate restrictions on those uses. The ALUC establishes its jurisdictional authority by designating one or more AIAs. If the ALUC has not designated an AIA, then a boundary 2 miles from a public airport is used (Public Utilities Code Section 21675.1[b]). City and county zoning and planning are required to conform to the ALUCP unless the city or county governing body specifically overrides the ALUCP by supermajority vote.

Table 3.9-4: Airport Land Use Commissions and Adopted Airport Land Use Compatibility Plans in the Plan Area

County	Airport Land Use Commission	Airport Land Use Compatibility Plans (year adopted)
Alameda	Alameda County Planning Department	Oakland International Airport: Airport Land Use Compatibility Plan (2010) Hayward Executive Airport: Airport Land Use Compatibility Plan (2012) Livermore Executive Airport: Airport Land Use Compatibility Plan (2012)
Contra Costa	Contra Costa County Department of Conservation and Development, Community Development Division	Contra Costa County Airport Land Use Compatibility Plan (2000)
Marin	Marin County Community Development Agency, Planning Department	Marin County ALUP (1991)
Napa	Napa County Conservation, Development, and Planning Department	Napa County ALUCP (1999)
San Francisco	No airport	Not applicable
San Mateo	City/County Association of Governments of San Mateo County	Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport (2015) Airport Land Use Compatibility Plan for the Environs of Half Moon Bay (2014) Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport (2012)
Santa Clara	Santa Clara County Department of Planning and Development	Comprehensive Land Use Plan Santa Clara County: Norman Y. Mineta San Jose International Airport (2011, last amended 2016)

County	Airport Land Use Commission	Airport Land Use Compatibility Plans (year adopted)
		Comprehensive Land Use Plan Santa Clara County: Reid-Hillview Airport (2007, last amended 2016) Comprehensive Land Use Plan Santa Clara County: Moffett Federal Airfield (2012, last amended 2016) Comprehensive Land Use Plan Santa Clara County: Palo Alto Airport (2008, last amended 2016) Comprehensive Land Use Plan Santa Clara County: South County Airport (2008, last amended 2016) Comprehensive Land Use Plan Santa Clara County: Heliports (2015)
Solano	Solano County Department of Resource Management	Travis Air Force Base Land Use Compatibility Plan (2015) Rio Vista Airport: Airport Land Use Compatibility Plan (2018)
Sonoma	Sonoma County Permit and Resource Management Department	Comprehensive Airport Land Use Plan for Sonoma County (2002)

Sources: Alameda County 2019; Santa Clara County 2020; Solano County 2020; City/County Association of Governments of San Mateo County 2020; Contra Costa Airport Land Use Commission 2000; Marin County Airport Land Use Commission 1991; Napa County Airport Land Use Commission 1991

3.9.3 Impact Analysis

SIGNIFICANCE CRITERIA

Significance criteria are based on CEQA Guidelines Appendix G, thresholds used in the EIR for Plan Bay Area 2040 (2017), and professional judgment. Under these criteria, implementation of the proposed Plan would have a potentially significant adverse impact if it would:

- ▲ create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (Criterion HAZ-1);
- ▲ create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (Criterion HAZ-2);
- ▲ emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school (Criterion HAZ-3);
- ▲ be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment (Criterion HAZ-4);
- ▲ result in a safety hazard for people residing or working in the planning area for projects located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport (Criterion HAZ-5);
- ▲ impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan, including for projects located in or near State Responsibility Areas or lands classified as very high hazard severity zones (Criterion HAZ-6); or
- ▲ exacerbate the risk of wildland fires, associated pollutant release, and potential for flooding and landslides due to projected land use patterns and infrastructure in or near State Responsibility Areas or land classified as very high hazard severity zones (Criterion WF-7).

METHOD OF ANALYSIS

This program-level EIR evaluates potential impacts related to hazards, hazardous materials and wildfire, based on the location of the proposed Plan's footprint associated with the forecasted development pattern (i.e., the land use growth footprint), sea level rise adaptation infrastructure (i.e., sea level rise adaptation footprint), and transportation projects (i.e., transportation system footprint) relative to the known distribution of naturally occurring hazardous materials, airports, and fire hazards zones throughout the Bay Area.

Quantitative results are presented for the region (i.e., the entire footprint, often summarized by county) and for the portions of the land use growth footprint specifically within transit priority areas (TPAs). TPAs are presented as a subset of the regional and county totals. Information provided by county includes both incorporated and unincorporated areas in the county.

The following evaluation is based on a review of documents and publicly available information about hazardous and potentially hazardous conditions in the Plan area to determine the potential for project implementation to result in an increased health or safety hazard to people or the environment. This includes city and county planning documents, and SWRCB and DTSC hazardous materials database information. The baseline for the following analysis is the date of Notice of Preparation release in September of 2020. Due to the large area covered by the proposed Plan, known sites of current or former contamination were not evaluated in detail, and physical surveys were not conducted. Rather, this programmatic analysis is based on hazards typically associated with certain land uses and an overall understanding of the key safety concerns that could result from implementation of the proposed Plan.

For select hazards impact assessments (i.e., presence or potential for NOA and wildland fire hazards), a geographic information system (GIS) was used to digitally overlay the proposed Plan's footprints associated with forecasted land use development, sea level rise adaptation infrastructure, and transportation projects onto resource data related to NOA, airports, and fire hazards zones. The land use growth footprint is derived from the UrbanSim 2.0 land use model and simulates development or redevelopment at the parcel level. Precise building site(s) on the parcels are not known, therefore the land use growth footprint incorporates the entire parcel. Where parcels are large and only partially within hazard areas, potential for development to occur in hazard zones may be reported where growth would actually occur on another portion of the parcel. Because of this assumption, the area of potential effects could be overstated or appear to accommodate future growth in high or very high fire hazard zones. See Section 3.1, "Approach to the Analysis" for additional details on the calculations for the land use growth, sea level rise adaptation infrastructure, and transportation projects.

The evaluation of hazards and hazardous materials impacts assumes that the construction and development under the proposed Plan would adhere to the applicable federal, State, and local regulations, and conform to appropriate standards in the industry, as relevant for individual projects. As explained in Section 3.1, "Approach to the Analysis," of this Draft EIR, where existing regulatory requirements or permitting requirements exist that are law and binding on responsible agencies and project sponsors, it is reasonable to assume they would be implemented, thereby reducing impacts.

IMPACTS AND MITIGATION MEASURES

Impact HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (LTS)

Land Use and Sea Level Rise Adaptation Impacts

Construction and Operation

Implementation of the proposed Plan's forecasted development pattern ("land use growth footprint") would result in the development of a variety of land uses and the sea level rise adaptation infrastructure would address regularly inundated shoreline areas with a variety of levees, seawalls, elevated roadways, marsh restoration, and tidal gates. Development activities associated with implementation of the proposed Plan would temporarily increase the regional transport, use, storage, and disposal of hazardous materials and petroleum products commonly used in construction (e.g., diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals). In the longer term, development would be generally associated with sustained, expanded use of household hazardous materials (e.g., paints, cleaning supplies, solvents, and petroleum products). Many specific land uses (e.g., dry cleaners, gas stations, and certain industrial uses) could also involve routine transport, use, and disposal of certain hazardous materials and wastes unique to

the land use. As explained further below, these activities are subject to a suite of established regulations that address the potential for impacts from the routine transport, use, and disposal use of potentially hazardous materials.

Trucks transporting hazardous materials use many of the same freeways, arterials, and local streets as other traffic. This creates a risk of accidents and associated release of hazardous materials for other drivers and for people along these routes. **Figure 3.9-1** maps the hazardous materials routes established by DOT in the Plan area. Although the transportation of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion, the DOT Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR. These standard accident and hazardous materials recovery training and procedures are enforced by the State and followed by private State-licensed, -certified, and -bonded transportation companies and contractors. Caltrans and other State agencies impose regulation through the Hazardous Waste Control Act (HSC Section 25100 et seq.), which regulates the identification, generation, transportation, storage, and disposal of materials deemed hazardous by the State of California.

In California, any person who transports hazardous waste in a vehicle must have a valid registration issued by DTSC. The California Highway Patrol enforces hazardous material and hazardous waste labeling and packing regulations. These regulations prevent leakage and spills of material in transit and provide detailed information to cleanup crews in the event of an accident.

As noted above, FRA and PHMSA closely regulate the rail transport of crude oil and other hazardous materials. The transport of hazardous materials by rail is subject to requirements for handling, loading, and unloading, and the placement of placards to alert emergency response teams as to the contents of each car. FRA routinely inspects the facilities of shippers and railroads to ensure that all regulatory requirements are being met. These regulations minimize the potential for accidental releases during transport of hazardous materials and wastes.

Rupture of train cars carrying crude oil is a safety hazard because the spilled material could explode if exposed to an ignition source. Future development associated with the proposed Plan would include development in existing urban locations and near existing rail infrastructure and would most likely add people to the initial evacuation zone adjacent to operating rail lines. Standard safety procedures would result in evacuation of these individuals immediately following derailment of a railcar carrying flammable liquid or gas, while standard response to release of other potentially hazardous materials (e.g., organophosphates, fertilizers) is to shelter in place. Contemporary building standards require construction of residences that are sufficiently contained (e.g., with doors and windows that seal) to allow sheltering in place to occur without substantial potential for harm to residents. For a discussion of the impacts on emergency services response times and service ratios, see also Section 3.13, "Public Services and Recreation." Regulations are in place through which the railroads would address the potential hazards associated with unauthorized use or pedestrian crossing of the track, any changes to volume of train transport that may indirectly result from the Plan, and any necessary changes to the speed of travel on segments of track adjacent to areas where changes in land use occur.

Proposed Plan implementation could result in increased urbanization along other transportation corridors. Construction and operation of land use projects adjacent to new roadway segments, including in growth geographies that encourage development near this infrastructure, would not increase the hazard associated with operation of highways and railroads but could increase the number of people potentially exposed to hazardous conditions. To be declared a sustainable communities project under PRC Section 21155.1, projects in TPAs must demonstrate that there would not be an "unusually high" risk of fire or explosion from materials stored or used on or near the property and the project would not result in a risk of exposure to a potentially hazardous material at levels that exceed State and federal standards.

The Cal EMA administers the Emergency Response Plan to respond to hazardous materials incidents that may occur. CalARP, established by EPA, applies to a wide variety of facilities that contain regulated substances and aims to prevent accidental releases of hazardous materials into the environment through adoption of proper storing, containing, and handling procedures. Implementation of federal, State, and local requirements, such as CalARP, RECP, DOT, and DTSC regulations, would minimize potential exposure to the public and the environment from accidental releases.

During construction of land use and sea level rise adaptation infrastructure projects, all hazardous materials would be stored, handled, and disposed of according to the manufacturers' recommendations and in compliance with federal, State, and local regulations. Small fuel or oil spills would have a negligible impact on public health due to the properties of these materials and because they would be discrete, localized releases. Spills would be resolved in accordance with applicable regulations so that there would not be long-term exposure or potential for contaminant migration. Hazardous materials spills or releases, including petroleum products, such as gasoline, diesel, and hydraulic fluid, regardless of quantity spilled, must be immediately reported if the spill has entered or threatens to enter a water of the State, including a stream, lake, wetland, or storm drain, or has caused

injury to a person or threatens injury to public health. Immediate notification must be made to the local emergency response agency, or 911, and the Governor's Office of Emergency Services Warning Center. For nonpetroleum products, additional reporting may be required if the release exceeds federal reportable quantity thresholds over a release period of 24 hours as detailed in HSC Section 25359.4 and Title 40, Section 302.4 of the CFR.

Pursuant to Occupational Safety and Health Administration regulations (29 CFR Section 1910.120), standard accident training for cleaning small spills would be provided to all individuals prior to their work with hazardous substances, and the appropriate types and amounts of spill cleanup materials and personal protective equipment would be immediately available. Additional requirements regarding hazardous materials labeling, containment, and covering set forth by the SWRCB Construction General Permit (2009-009-DWQ) would also be implemented during construction.

During operation, businesses that store hazardous materials could potentially experience accidents or upset conditions that result from their routine use. These businesses are required to prepare spill prevention, containment, and countermeasures plans (pursuant to 40 CFR 112) or, for smaller quantities, spill prevention and response plans, that identify best management practices for spill and release prevention and provide procedures and responsibilities for rapidly, effectively, and safely cleaning and disposing of any spills or releases. Oversight is provided by the CUPA. As discussed above, the severity of potential effects varies with the activity conducted and the concentration and type of hazardous materials involved; however, most minor spills would be remediated immediately pursuant to the requirements and liabilities of applicable regulations and would not pose a substantial hazard to the public or the environment. The possible adverse effects on the public or environment from these and other activities would more likely be acute (immediate, or of short-term severity) as a result of short-term exposure. The operation of businesses that use, create, or dispose of hazardous materials is regulated and monitored by federal, State, and local regulations that provide a high level of protection to the public and the environment from the hazardous materials manufactured within, transported to, and disposed of within the region.

The proposed sea level rise adaptation infrastructure would not involve use of hazardous materials during operation. As a result, no increase in the routine transport, use, or disposal of hazardous materials and no associated hazards to the public or the environment is anticipated. Additionally, as a function of protecting critical transportation infrastructure from sea level rise, the adaptation infrastructure could reduce the inherent hazards of transporting hazardous materials that could occur in the future because of sea level rise.

RCRA, Title 22 of the CCR, and the Hazardous Waste Control Law regulate the generation, transport, treatment, storage, and disposal of hazardous waste. These laws impose regulatory systems for handling hazardous waste in a manner that protects human health and the environment, including requirements for the classification of materials, packaging, and hazard communication. CalEPA oversees the regulation and management of hazardous materials on a Statewide level through DTSC. Use of hazardous materials requires permits and monitoring to avoid hazardous waste release through the local CUPA. DTSC is responsible for the enforcement and implementation of hazardous waste laws and regulations, codified in Title 22 of the CCR. Additionally, businesses that generate hazardous waste are required to have an EPA identification number to monitor and track hazardous waste activities.

It is assumed that land use development within the growth footprint and sea level rise adaptation infrastructure would comply with RCRA; CCR Title 22; California Hazardous Waste Control Law; Cal/EPA requirements; hazardous materials training requirements; and any local regulations, such as city or county Hazardous Materials Management Plans regulating the generation, transportation, treatment, storage, and disposal of hazardous materials and waste. Because these regulations are law and binding on responsible agencies and project sponsors, it is reasonable to expect they would be implemented. Therefore, impacts related to implementation of the proposed Plan at the regional and local level would be less than significant (LTS).

Transportation System Impacts

Construction and Operation

Transportation projects in the proposed Plan include a variety of transportation modifications, such as new express lanes, roadway widening and interchange modification, increased transit service and expansion, and other maintenance and rehabilitation projects. A new Transbay rail crossing between Oakland and San Francisco is also proposed that could involve in-water construction activities associated with construction of a tunnel. Construction activities associated with implementation of the proposed Plan would involve the short-term transport, use and storage of hazardous materials (e.g., asphalt, fuel, lubricants, paint) typical of transportation projects and similar to those identified above for land use projects.

The proposed transportation projects involve the expansion or extension of the transportation system, which may increase the capacity of roadways to transport hazardous materials. Transportation projects that expand the transportation system and extend it to new areas may expose more adjoining land uses to risks associated with upset on the roadway, highway, or railroad. As discussed above, implementation of federal, State, and local requirements, such as CalARP, the RECP, DOT, and Caltrans regulations, would minimize potential exposure to the public and the environment from accidental releases.

The Plan also includes transportation investments that would result in improvements to rail crossing safety. Any new or improved rail crossings would be subject to review by the affected railroads. Roadway projects in the proposed Plan would also improve road safety, as well as pedestrian and bicycle safety, thereby potentially reducing transportation-related hazardous materials risks because fewer accidents would occur on safer roads. Based on the requirements of 49 CFR Parts 171–180, construction and operation of transportation projects would provide for the safe transport and disposal of hazardous waste. Because there are existing federal, State, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with these activities to an acceptable level, impacts related to accident or upset of hazardous materials from anticipated modifications to the transportation system would be less than significant (LTS).

Conclusion

Implementation of the proposed Plan's land use development pattern, sea level rise adaptation infrastructure, and transportation projects could increase the routine transport, use, storage, and disposal of hazardous wastes in the region. As discussed above, all projects would comply with federal, State, and local regulations that are designed to reduce the potential for the release of large quantities of hazardous materials and wastes into the environment to an acceptable level. Because of the existing federal, State, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with these activities, the impact would be a **less than significant (LTS)**.

Mitigation Measures

None required.

Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (LTS)

Land Use Impacts

Construction

There are several reasonably foreseeable situations that could result in the release of hazardous materials into the environment. Accidents during transport of potentially hazardous materials used in construction or operation of land uses assumed in the Plan, the routine use of hazardous substances, and generation of hazardous waste during construction and operation are discussed in Impact HAZ-1. As discussed above, this routine use is unlikely to result in a substantial hazard to the public or the environment with adherence to established regulations. Other reasonably foreseeable events that could result in exposure to potentially hazardous materials include disturbance of hazardous wastes in soil or groundwater, hazards associated with structure demolition, and grading and construction in areas with NOA. The following discussion focuses on potential hazards associated with grading and demolition activities. The potential for construction to encounter contaminated soil or groundwater associated with documented or undocumented sites of historical contamination is addressed below in the discussion of Impact HAZ-4.

The land use growth footprint consists of the areas forecasted for redevelopment or new development under the proposed Plan. In areas where redevelopment occurs, existing structures could be demolished. Demolition of existing structures could result in exposure of construction personnel and the public to hazardous substances. Construction workers and nearby employees and/or residents could potentially be exposed to airborne lead-based paint dust, asbestos fibers, and/or other contaminants because of demolition activities associated with redevelopment. Demolition of structures could result in inadvertent release or improper disposal of debris containing potentially hazardous materials; however, federal, State, and local regulations have been developed to address potential impacts related to the handling and disposal of hazardous materials during demolition. Potential impacts would be minimized through adherence to regulatory standards that prescribe specific methods of material characterization and handling.

Asbestos and lead abatement must be performed and monitored by contractors with appropriate certifications from the California Department of Public Health. Demolition that could result in the release of lead and/or asbestos must be conducted according to Division of Occupational Safety and Health (Cal/OSHA) standards. Prior to demolition, all structures would be

tested for the presence of lead and asbestos-containing materials, in accordance with 15 U.S. Code Section 2601 et seq. and 40 CFR Part 763, Subpart G. Any asbestos would be removed and disposed of by an accredited contractor in compliance with federal, State, and local regulations (including the Toxic Substances Control Act and the National Emission Standard for Hazardous Air Pollutants). For the purposes of compliance with Cal/OSHA regulations, all coated surfaces would be assumed to potentially contain lead. Spent fluorescent light bulbs and ballasts, thermostats, and other electrical equipment may contain heavy metals, such as mercury, or polychlorinated biphenyls. If concentrations of these materials exceed regulatory standards, they would be handled as hazardous waste in accordance with hazardous waste regulations.

In addition, Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, describing the hazards of chemicals, and documenting employee-training programs.

Construction related to planned development could also occur in areas where asbestos occurs naturally. As described above, NOA is a carcinogen that is associated with rock formations found throughout the Plan area. The California Geological Survey has prepared reports on the relative likelihood for the presence of NOA in California. As shown in **Figure 3.9-2**, NOA occurs throughout the Plan area, but is most prominent in Napa, Sonoma, and Santa Clara Counties. With the amount and general location of regional growth, implementation of the Plan could disturb the NOA in the Plan area and release asbestos into the environment.

The acreage of the land use growth footprint that could be located on ultramafic rocks is provided in **Table 3.9-5**. People exposed to low levels of asbestos may be at elevated risk of lung cancer and mesothelioma. Airborne exposure to soil dust containing asbestos can occur under a variety of scenarios, including grading and earth disturbance associated with construction activity, rock blasting, and quarrying. The Asbestos ATCM requires preparation and implementation of an asbestos dust mitigation plan for construction or grading activities on sites greater than 1 acre in size with known NOA soils, as determined through the geotechnical investigations discussed in Section 3.8, "Geology, Seismicity, and Mineral Resources." The asbestos dust mitigation plan would incorporate the recommendations of the geotechnical investigation to avoid effects on nearby populations. Typical aspects of the mitigation plan would include provisions for sampling soils exported to the project site during construction, prohibition of rock crushing where materials may contain asbestos, standard track-out control measures, and limits on fugitive dust. In addition, HSC Section 19827.5 requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The impact would be less than significant (LTS).

Table 3.9-5: Acreage of Land Use Growth Footprint within Ultramafic Rock

County		Total (acres)
Alameda	County Total	10
	Within TPAs	< 1
Contra Costa	County Total	< 1
	Within TPAs	0
Marin	County Total	3
	Within TPAs	3
Napa	County Total	0
	Within TPAs	0
San Francisco	County Total	570
	Within TPAs	170
San Mateo	County Total	20
	Within TPAs	0
Santa Clara	County Total	50
	Within TPAs	30
Solano	County Total	0
	Within TPAs	0
Sonoma	County Total	0

County		Total (acres)
	Within TPAs	0
Regional Total	County Total	660
	Within TPAs	200

Notes: TPA acreages are a subset of county acreages. Numbers less than 1 are shown as “<1”; Whole numbers have been rounded (between 0 and 10 to the nearest whole number and between 11 and 999 to the nearest 10). Figures may not sum due to independent rounding.

Sources: MTC/ABAG 2021; Ultramafic Rock, U.S. Geological Survey 2010

Operation

If not addressed during construction, operational effects could include prolonged exposure to soil dust containing asbestos from children playing in the dirt, dust raised from unpaved roads and driveways covered with crushed serpentine, gardening, and other activities. However, established regulations prohibit use of soil with asbestos for surfacing in California. Further, soils containing 1 percent or more asbestos are considered to be asbestos-containing material and, if disposed of offsite, must be managed as a hazardous waste with transport subject to Caltrans regulations. Compliance with ARB regulations and local policies for control of NOA would reduce the exposure of sensitive receptors during operation.

The proposed Plan identifies strategies to accommodate forecasted growth within existing communities. Such development would not create a hazard to the public or the environment due to structure demolition or grading in areas with NOA because these activities would be subject to binding regulations that address the hazards inherent with these activities. The impact would be less than significant (LTS).

Sea Level Rise Adaptation Impacts

Construction and Operation

Site preparation activities associated with the sea level rise adaptation infrastructure could require demolition of structures and roadways that contain asbestos, lead, or other hazardous materials. As explained above, these activities would be subject to regulations that are law and binding on responsible agencies and project sponsors. These regulations would address the potential for significant hazard to the public and the environment due to reasonably foreseeable upset and accident conditions. There is no ultramafic rock mapped within the sea level rise adaptation footprint. Implementation of sea level rise adaptation infrastructure would not be expected to result in the use of hazardous materials during operation, and exposure to hazardous materials would not be reasonably anticipated. Impacts related to implementation of the resiliency projects proposed in the Plan would be less than significant (LTS).

Transportation System Impacts

Construction and Operation

The potential for construction of transportation projects to create a hazard to the public and the environment due to reasonably foreseeable upset and accident conditions would be similar to the potential described above for land use impacts in the growth geographies. In addition, the same regulatory mechanisms would address the risk.

Approximately 110 acres associated with the transportation projects identified in the proposed Plan would be located in areas with ultramafic rock, primarily in Santa Clara County (**Table 3.9-6**). As discussed above, existing regulations address potential hazards associated with construction on ultramafic soils. During operation, improved road and rail systems would not create a significant hazard to the public because there would be limited soil disturbance and few opportunities for the public to inhale any airborne fibers.

Table 3.9-6: Acreage of Transportation Projects Footprint within Ultramafic Rock

County	Total (acres)
Alameda	0
Contra Costa	< 1
Marin	0
Napa	0
San Francisco	40
San Mateo	0
Santa Clara	70
Solano	0
Sonoma	0
Regional Total	110

Notes: Whole numbers have been rounded. Numbers less than 1 are shown as "<1"; Whole numbers have been rounded (between 11 and 999 to the nearest 10). Figures may not sum due to independent rounding.

Sources: MTC/ABAG 2021; Ultramafic Rock, U.S. Geological Survey 2010

Conclusion

Construction related to the land use development pattern, sea level rise adaptation infrastructure, and transportation projects anticipated in the proposed Plan would require grading and demolition in areas where existing structures and infrastructure could contain hazardous materials, as well as areas where asbestos is naturally occurring. As described above, existing regulations establish procedures for activities potentially involving these materials that would address the potential for upset and accident conditions and the associated potential for hazard to the public or the environment. The proposed Plan would have a **less-than-significant (LTS)** impact because there are existing federal, State, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with these activities to an acceptable level.

Mitigation Measures

None required.

Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school (LTS)

Land Use Impacts

Construction

Construction associated with implementation of the proposed Plan would temporarily increase the regional transport, use, storage, and disposal of hazardous materials and petroleum products commonly used in construction (e.g., diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals. This transport, use, and storage could occur within 0.25 mile of an existing or proposed school. As explained above, construction activities are subject to legally binding regulations that address the potential for impacts from the routine transport, use, storage and disposal of potentially hazardous materials.

For new schools that may be developed to accommodate the forecasted population growth identified in the proposed Plan, the California Education Code, including Education Code Section 17213(b), establishes requirements for assessments and approvals that address the potential for existing contamination on the site, and whether nearby land uses might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials. Assessment of existing contamination is conducted in coordination with DTSC's School Property Evaluation and Cleanup Division, which is responsible for assessing, investigating, and cleaning up proposed school sites. This division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy a new school. All proposed school sites that receive State funding for acquisition or construction are required to go through a rigorous environmental review and cleanup process under DTSC's oversight. The impact would be less than significant (LTS).

Operation

The land use growth footprint accommodates the forecasted growth in population, jobs, and housing throughout the region. This growth could result in an increase in hazardous materials use, which in turn increases the potential for accidental release of hazardous materials within 0.25 mile of an existing or proposed school. Further, population growth would result in a corresponding demand for public services, including schools. As noted in **Table 3.13-1** in Section 3.13, “Public Services and Recreation,” there were 1,764 public and charter schools in the Plan area during the 2018-2019 school year. Children are particularly susceptible to long-term impacts from emissions of hazardous materials, including those from high-volume motor vehicle travel on roadways near schools. The potential effects on sensitive land uses, including schools, associated with potentially hazardous emissions from stationary sources and exposure to air contamination related to roadways is addressed in Section 3.4, “Air Quality.”

Any new commercial or industrial operations in proximity to existing schools would be required to comply with regulations related to the routine use, storage, and transport of hazardous materials. As discussed in detail above, compliance with existing regulations would reduce the exposure to potential hazards associated with these land uses. Further, any future projects that would generate emissions or involve the handling of extremely hazardous materials, substances, or waste within 0.25 mile of an existing school would notify the affected school district (pursuant to PRC Section 21151.4).

Therefore, impacts related to use of hazardous materials near schools as a result of land use changes from the projected development would be less than significant (LTS).

Sea Level Rise Adaptation Impacts

Construction and Operation

Sea level rise adaptation infrastructure could require use of hazardous materials during construction. As explained above, the use and transport of potentially hazardous materials for construction is subject to regulations that are law and binding on responsible agencies and project sponsors. These regulations would address the potential for significant hazard to the public and the environment due to reasonably foreseeable upset and accident conditions. After construction, the sea level rise adaptation infrastructure would not be expected to result in hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. Impacts related to implementation of the proposed Plan’s sea level rise adaptation infrastructure would be less than significant (LTS).

Transportation System Impacts

Construction

Risks associated with construction of transportation projects within 0.25 mile of an existing or proposed school would be similar to those for land use impacts in the growth geographies. In addition, the same regulatory mechanisms would address the risk. This impact would be less than significant (LTS).

Operation

Implementation of the proposed Plan could include transportation system expansions or other improvements near schools. These transportation projects may increase the capacity to transport hazardous materials. However, all materials must be transported, used, stored, and disposed of in accordance with applicable federal, State, and local laws, which would effectively reduce the potential impacts associated with hazardous emissions or handling of hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school. Roadway projects in the proposed Plan may also improve road safety, thereby reducing the potential for accidents in proximity of schools related to hazardous materials. Therefore, the impacts on existing and proposed schools from implementation of the proposed transportation projects would be less than significant (LTS).

Conclusion

During construction, demolition, and excavation activities, the land use development pattern, sea level rise adaptation infrastructure, and transportation projects that may result from implementation of the proposed Plan could produce hazardous air emissions or involve the handling of extremely hazardous wastes within 0.25 mile of an existing or proposed school. During operation, land use development projects could use and produce hazardous materials that may be transported on roadways in the Plan area. As discussed above, all projects would comply with federal, State, and local regulations that are designed to reduce the potential for the release of large quantities of hazardous materials and wastes into the

environment to an acceptable level, and in particular to protect schools. Existing federal, State, and local regulations and oversight would be sufficient to ensure that hazardous materials stored, used, transported, and disposed of under the proposed Plan would not pose a substantial hazard to the public or the environment, including children at schools. Therefore, the proposed Plan would have a **less-than-significant (LTS)** impact.

Mitigation Measures

None required.

Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment (PS)

Land Use and Sea Level Rise Adaptation Impacts

Construction

Throughout the Plan area, there are many sites where historical releases of hazardous materials or wastes have occurred; these are listed in environmental databases pursuant to Government Code Section 65962.5. As indicated in **Table 3.9-1**, above, there are an estimated 17,898 documented sites of contamination in some stage of DTSC or SWRCB oversight in the Plan area. These sites range from small releases that have had localized effects on private property and have already been remediated to large-scale releases from long-term historical industrial practices that have had wider ranging effects on groundwater. Specific sites of documented contamination are not evaluated in this analysis because this is a program-level document. Further, because the precise locations of future land use and sea level rise adaptation infrastructure projects are unknown, an evaluation of the potential for specific sites of known contamination within the Plan area to be affected by project activities cannot be conducted at this time. However, the land use development pattern can be used to generally characterize the potential for release of hazardous materials (i.e., hazardous materials releases are more likely to have occurred in areas that currently or historically supported industrial uses).

Grading and excavation activities may expose construction workers and the public to hazardous substances present in the soil or groundwater that are not anticipated based on information about existing site conditions. These construction activities could inadvertently disperse contaminated material into the environment and expose construction personnel to potentially hazardous conditions. For example, dewatering activities during project construction could accelerate the migration of contaminated groundwater or could discharge contaminated groundwater to surface waters. Potential hazards to human health include ignition of flammable liquids or vapors; inhalation of toxic vapors in confined spaces, such as trenches; and skin contact with contaminated soil or water. These risks would be greatest for construction workers; however, it is possible that the nearby public could be affected if the contaminated materials are of a sufficient volume.

Unless construction activities are coordinated with site remediation activities, there could be a temporary increased risk of damaging or interfering with remediation site controls, such as soil containment areas. Temporary effects could include potential localized spread of contamination; exposure of construction workers or the public to chemical compounds in soils, soil gases, and groundwater; exposure of workers, the public, and the environment to airborne chemical compounds migrating from the demolition or construction areas; potential accidents during remediation as a result of operational failure of treatment systems; and potential interference with ongoing remediation activities. Similarly, development near active or abandoned oil and gas wells would be considered by the permitting agency, in conjunction with the property owner and/or developer, on a parcel-by-parcel or well-by-well basis.

A common practice that is typically required by lending institutions when properties change hands is for a Phase I ESA to be prepared to research and disclose the prior uses of the site and the likelihood that residual hazardous materials and/or waste might be present in underlying soil and/or groundwater. Also, in many instances implementing agencies require submittal of a Phase I ESA prior to approval or implementation of a project. These studies include research in a variety of government databases to determine whether the site has had prior underground tanks or other industrial uses that could result in hazardous materials on or below the ground surface. As described above, if a Phase I ESA indicates the presence or potential presence of contamination, a site-specific Phase II ESA is generally conducted to test soil and/or groundwater. Based on the outcome of a Phase II ESA, remediation of contaminated sites under federal and State regulations may be required prior to development. Any transport of hazardous wastes required during remediation would occur in accordance with the regulations described in Impact HAZ-1.

To be declared a sustainable communities project under PRC Section 21155.1(a)(3), projects in TPAs must demonstrate that they are not located on any list of facilities and sites compiled pursuant to Section 65962.5 of the Government Code, and the site must be subject to a PEA, which is a type of environmental document typically prepared for sites with DTSC oversight. Overall, PEA requirements are more comprehensive than the requirements for Phase I ESAs. Although they require similar background information, they also include site-specific human health and ecological screening evaluations, public participation requirements, data collection, and scoping activities. The PEA requirement is applicable only to potential exemptions under the sustainable communities strategy provisions of CEQA and does not apply to the other streamlining strategies under Senate Bill 375.

With the notable exceptions for streamlining projects in TPAs and siting public schools, as discussed above, there are no general regulatory requirements to conduct a Phase I ESA or PEA or a subsequent investigation of potential contamination. Therefore, because it cannot be assumed these practices would regularly occur, the impacts related to changes in land use from implementation of the proposed Plan would be potentially significant (PS).

Operation

Proposed Plan implementation would result in the placement and operation of land use development and sea level rise adaptation infrastructure. Once developed, it is not expected that additional grading and excavation activities would occur that could expose construction workers and the public to hazardous substances present in the soil or groundwater. Because this impact is primarily construction-related, this would be less than significant (LTS).

Transportation System Impacts

Construction

As discussed above, there are many known sites of contamination in the Plan area. Specific sites of documented contamination are not evaluated in this analysis because it is a program-level document. In addition to the hazards described above, land adjacent to roadways may also contain elevated concentrations of lead in exposed surface soils, which could pose a health hazard to construction workers and users of the properties. Lead is a State-recognized carcinogen and reproductive toxicant. Exposure to lead in soil could result in adverse health effects, depending on the duration and extent of exposure. Substantial quantities of aerially deposited lead are understood to be generally confined to within 30 feet of a roadway. Other potential contaminants, including herbicides associated with weed abatement and contaminated ballast rock, are generally confined to the immediate transportation right-of-way. As with land use projects and development, exposure to these hazardous materials and wastes from construction of transportation projects could cause adverse effects on construction workers, the public, or the environment.

The hazards associated with construction of transportation projects on known sites of contamination at the regional level would be potentially significant (PS) for the same reasons identified above for land use projects.

Operation

Once developed, it is not expected that additional grading and excavation activities would occur that could expose construction workers and the public to hazardous substances. Because this impact is primarily construction-related, operational impacts would be less than significant (LTS).

Conclusion

The land use development pattern, sea level rise adaptation infrastructure, and transportation projects that may result from implementation of the proposed Plan could result in hazards from construction on known sites of contamination. The potential for encountering hazardous materials or wastes would be dependent on site-specific conditions. The impact would be **potentially significant (PS)**. Mitigation Measure HAZ-4 addresses this impact and is discussed below.

Mitigation Measures

Mitigation Measure HAZ-4 Implementing agencies and/or project sponsors shall implement measures, where feasible and necessary based on project- and site-specific considerations, that include those identified below:

- ▲ The project proponent shall perform a records review to determine whether there is existing permitted use of hazardous materials or documented evidence of hazardous waste contamination on the project site and provide the results of this investigation to the implementing agency.

- ▲ For any project located on or near a hazardous materials and/or waste site pursuant to Government Code Section 65962.5 or sites that have the potential for residual hazardous materials as a result of historic land uses, project proponents shall prepare a Phase I ESA in accordance with the American Society for Testing and Materials' E-1527-05 standard.
- ▲ For any project located on or near sites that are not listed and do not have the potential for residual hazardous materials as a result of historic land uses, no action is required unless unknown hazards are discovered during development. In that case, the implementing agency shall discontinue development until DTSC, RWQCB, the local air district, and/or other responsible agency issues a determination, which would likely require a Phase I ESA as part of the assessment.
- ▲ Develop, train, and implement worker awareness and protective measures to minimize worker and public exposure to an acceptable level and to prevent environmental contamination as a result of construction.
- ▲ Projects preparing a Phase I ESA, where required, shall fully implement the recommendations contained in the report. If a Phase I ESA indicates the presence or likely presence of contamination, the project proponent shall prepare a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented.
- ▲ Consult with the appropriate local, state, and federal environmental regulatory agencies to ensure sufficient minimization of risk to human health and environmental resources, both during and after construction, posed by soil contamination, groundwater contamination, or other surface hazards including, but not limited to, underground storage tanks, fuel distribution lines, waste pits and sumps.

Significance after Mitigation

Site evaluation, sampling, and remediation through the Phase I/II ESA process is widely accepted as the appropriate standard for the preliminary evaluation of site hazards. Preparation of, and compliance with, a Phase I ESA for properties at risk of potential hazardous materials and/or waste contamination would avoid adverse impacts associated with buildout because the ASTM procedures establish prescriptive procedures that fully evaluate the potential for risks and appropriate next steps if potential for contamination is identified. Soil management plans or soil contingency plans required by Mitigation Measure HAZ-4 would include procedural measures to protect and isolate suspected contaminated materials to avoid adverse effects on the workers or public. Therefore, the Phase I/II ESA process would adequately mitigate the potential for future development to create a significant hazard to the public or the environment because it is located on a site that is included on a list of hazardous materials sites. To the extent that a local agency requires an individual project to implement all feasible mitigation measures described above, the impact would be less than significant with mitigation (LS-M).

Projects taking advantage of CEQA streamlining provisions of Senate Bill 375 (PRC Sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as applicable, to address site-specific conditions. However, MTC/ABAG cannot require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency to determine and adopt mitigation. Therefore, this impact would be **significant and unavoidable (SU)** for purposes of this program-level review.

Impact HAZ-5: Result in a safety hazard for people residing or working in the planning area for projects located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport (LTS)

Land Use Impacts

There are 25 public use airports in the Bay Area that serve commercial and general aviation users (shown in **Table 3.9-2** and **Figure 3.9-3**). As indicated in **Table 3.9-7**, most (20) of these public use airports are within 2 miles of the proposed Plan's growth footprint. The proposed Plan's land use development pattern would predominately occur in existing communities and may result in the development of residential and nonresidential land uses in and near airport flight corridors and within areas subject to policies contained in an ALUCP. Development that is not compatible with aviation activity (e.g., tall structures, land uses that produce light/glare, land uses that attract wildlife that can be hazardous to aircraft, noise-sensitive land uses) may lead to conflict between an airport operator and surrounding communities, as well as create long-term operational problems for the airport.

Table 3.9-7: Number of Public/Public Use Airports within 2 Miles of Project Footprint

County	Land Use Growth Footprint	Sea Level Rise Adaptation Footprint	Transportation Projects Footprint
Alameda	3	2	3
Contra Costa	1	0	2
Marin	1	1	1
Napa	1	0	1
San Francisco	0	0	0
San Mateo	4	3	3
Santa Clara	4	1	4
Solano	2	0	1
Sonoma	5	0	1
Regional Total	20	6	15

Sources: MTC/ABAG 2021; Public Use Airports, California Department of Transportation 2020

To prevent incompatible uses in areas of higher aircraft hazard potential, the ALUC has adopted ALUCPs with land use policies and criteria. The policies identify what types of land uses are allowed around airports and are intended to protect the safety of people, property, and aircraft on the ground and in the air in the vicinity of the airport. The policies also protect airports from encroachment by new incompatible land uses that could restrict their operations. Structure replacement and infill development are generally permitted under ALUCPs.

Public Utilities Code Section 21001 outlines the statutory requirements for ALUCPs, including referencing the Division of Aeronautics ALUP Handbook. The 1994 ALUP Handbook requires that when preparing an EIR for any project situated within an AIA as defined in an ALUC compatibility plan (or, if a compatibility plan has not been adopted, a boundary within 2 miles of a public use airport is used), lead agencies shall utilize the California ALUP Handbook as a technical resource with respect to airport noise and safety compatibility issues. The California ALUP Handbook was most recently updated in 2011.

There are also several military airfields in the Bay Area. The U.S. Department of Defense requires military airfields to adopt Air Installation Compatibility Use Zone studies, which assess compatible land uses in the vicinity of a military air station in a way equivalent to ALUCPs. PRC Section 21098 reduces hazards associated with development near military airports by requiring lead agencies to submit a notice to the military service that would be affected by a proposed general plan amendment or significant project located within specific boundaries of a low-level flight path, military impact zone, or special use airspace.

City and county zoning and planning are required to conform to the ALUCP unless the city or county governing body specifically overrides the ALUCP by supermajority vote. Additionally, California statutes (Business and Professions Code Section 11010; Civil Code Sections 1103 and 1353) now require disclosure for most residential real estate transactions, including new subdivisions, within 2 miles of an airport or within an ALUCP-defined AIA. The Caltrans Division of Aeronautics is also required to review proposals for acquisition of a school site by school districts that are situated within 2 miles of an existing or planned airport runway (Education Code Sections 17215 and 81033). Implementing agencies are responsible for analyzing compliance with ALUCPs as a part of their land use approval authority.

The FAA requires notice of proposed construction for projects located within 20,000 feet (less for runways under 3,200 feet in length) of a public use airport, and other projects that may pose a potential hazard for people residing or working in the project area, due to height, visual hazard, or the attraction of wildlife. Development projects associated with the Plan would be subject to FAA evaluation, and the FAA would be notified of proposed development pursuant to Section 77.11 of the FAA regulations. The notification provides the basis for the FAA to evaluate the proposed development projects for obstruction hazards and potential hazards to air safety.

Implementing agencies would require project sponsors to comply with any applicable ALUCP requirements, as well as any FAA requirements (14 CFR Part 77). Projects within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport would not be approved by local agencies until project design plans have been reviewed and approved by the appropriate ALUC. Because existing regulations and laws related to development near a public airport prohibit the approval of incompatible projects, these existing regulations and permitting requirements of the

independent regulatory agencies can be relied upon to address potential project effects. Aviation hazard impacts related to land use changes from implementation of the proposed Plan would be less than significant (LTS).

Sea Level Rise Adaptation Impacts

There are six public use airports located within 2 miles of sea level rise adaptation infrastructure (see **Table 3.9-7**). Generally, sea level rise adaptation infrastructure would not result in the construction of tall structures that directly impede upon the navigable air space. Sea level rise adaptation infrastructure would be anticipated to benefit the region's two largest airports (SFO and OAK) by protecting these areas from flooding inundation anticipated to occur because of sea level rise. Any project that creates wetland areas, however, could influence changes in the behavior of waterfowl in a manner that could increase the potential for bird strikes and associated hazards. As described above, implementing agencies would require project sponsors to comply with any applicable ALUCP requirements, as well as any FAA requirements (14 CFR Part 77). Projects within an airport land use plan or within 2 miles of a public airport or public use airport where such a plan has not been adopted would be reviewed by the appropriate ALUC. Because existing regulations and laws related to development near a public airport prohibit the approval of incompatible projects, these existing regulations and permitting requirements of the independent regulatory agencies can be relied upon to address potential project effects. This impact would be less than significant (LTS).

Transportation System Impacts

There are 15 public or public use airports within 2 miles of major transportation projects (see **Table 3.9-7**). The transportation projects would be subject to the regulations described above for land use projects. Implementing agencies would require project sponsors to comply with any applicable ALUCP requirements, as well as any FAA requirements (14 CFR Part 77). Projects within an airport land use plan or within 2 miles of a public airport or public use airport where such a plan has not been adopted would not be approved by local agencies until project design plans have been reviewed and approved by the appropriate ALUC. These existing regulations and permitting requirements of independent regulatory agencies would address potential project effects. Safety hazards due to development of the transportation projects anticipated in the proposed Plan near public use airports would be less than significant (LTS).

Conclusion

Implementation of the proposed Plan's land use development pattern, sea level rise adaptation infrastructure, and transportation projects would have a **less-than-significant (LTS)** impact because there are existing federal, State, and local regulations and oversight in place that would effectively reduce the inherent hazard associated with development near airports to an acceptable level.

Mitigation Measures

None required.

Impact HAZ-6: Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan (PS)

Land Use Impacts

Local government jurisdictions are required to adopt emergency plans (e.g., the 2008 City and County of San Francisco Emergency Response Plan and various emergency operations plans [Alameda County 2012, Solano County 2007, San Mateo County 2015, Santa Clara County 2017, Solano County 2007]), which are considered to be extensions of the California Emergency Plan, established in accordance with the Emergency Services Act. Implementation of these plans could be impaired if multiple projects are constructed at the same time and therefore could result in concurrent blockage of multiple roadways used for emergency routes. Failure to provide reasonable access for emergency equipment and evacuation of civilians can result in the loss of life, property, and natural resources.

Construction

Construction associated with implementation of the proposed Plan would not likely hinder emergency response activities or physically interfere with established evacuation routes. Although construction activities could temporarily impair roadways used for emergency response and evacuation, standard construction procedures for development of a construction management plan would address these conditions and would develop alternative routes. Projects requiring encroachment permits for temporary construction activities in public roadways that could be used for emergency response or evacuation

are generally required to prepare traffic mitigation plans that address traffic control during the period when project construction is occurring within public right-of-way. Standard construction procedures provided in traffic mitigation plans to address temporary road closures that would be required during construction, include notification of emergency responders. Although implementation of construction traffic management plans and associated coordination with service providers would typically address potential interference with emergency response or evacuation plans, there is a potential that temporary impairment could occur at the project level. This would be potentially significant (PS).

Operation

The proposed Plan includes housing and economic strategies to accommodate 2.7 million new persons, 1.4 million new households, 1.5 new forecasted housing units, and 1.4 million new jobs by 2050 (compared to the 2015 baseline). Implementation of the proposed Plan would focus growth in existing urbanized areas, which would result in more dense and intense development compared to existing conditions. Moreover, the development pattern encouraged by the proposed Plan could result in lower rates of automobile ownership. However, development that proposes large concentrations of people (such as a job center) or that would site individuals who require special assistance (such as a hospital or senior facility) in an area with identified hazards could cause adverse effects related to the implementation of countywide and jurisdictional emergency plans because there would be more individuals potentially subject to these hazards. High density development could, in the event of an emergency such as a wildfire, result in more people using the same evacuation routes. Implementation of emergency plans could be impaired if emergency plans are not properly updated to reflect changes in land use. While transportation projects may result in a more efficient transportation system, it cannot be assured that, during an emergency, they would be adequate for sufficiently quick evacuation. As shown in Table 2-9 (project description), roadway capacity would be increased, but the increase in population and employment will result in an increase in the average trip time of 10 percent (see Table 2-14), suggesting an overall increase in congestion.

Emergency response and emergency evacuation plans are designed by the Office of Emergency Services for each county in the region to respond to a possible emergency situation (e.g., fires, floods, earthquakes). These plans cover all of the land within the region, including both incorporated and unincorporated areas, and provide a process for evacuating people from danger and preventing or minimizing loss of life and property. In addition, the Bay Area RECP provides a framework for collaboration and coordination during regional events, as well as critical linkages to ensure that existing Bay Area emergency response systems work together.

The RTEMP, as a counterpart to the RECP, is designed to enable regional transportation response to the entire spectrum of regional contingencies, ranging from relatively modest incidents that affect one or two counties to large-scale disasters that affect the entire nine-county Bay Area. MTC developed the RTEMP in coordination with State agencies, the office of emergency services for each of the nine counties in the region (referred to as “operational areas”), and 14 transit operators. The plan, which is characterized as a “living document,” is reviewed annually, and updated as appropriate.

An assumption of the RTEMP is that decisions regarding planning for, responding to, and recovering from an emergency should be made at the most local level possible. The operational areas are responsible for emergency response within a county and all political subdivisions within the county area (e.g., cities, special districts). These are often coordinated with the agency’s general plan, as discussed above. Transportation agencies have also developed their own emergency operations plans that address internal procedures, operations, and response protocols to be implemented during an emergency. The management of emergency response and emergency evacuation plans includes regular updates to these plans that incorporate new or proposed developments. The RTEMP does not supersede or override any of these plans or any other locally created emergency management plans or procedures.

In the event of a major disaster, particularly an earthquake, it is assumed that bridges and tunnels serving transbay corridors could be damaged or closed for assessment. Ferries and other maritime assets may play vital roles in providing both emergency response and basic transportation services. Ferries may also be resources for providing both basic and emergency regional transportation, via expanded services on existing routes and via temporary services in relief of other damaged or otherwise closed transportation facilities. (MTC 2018). MTC would facilitate public transportation through the Trans Response Plan.

In summary, there are a variety of adopted emergency response and evacuation plans in the Plan area. In addition to the plans maintained at the county-level, coordinated plans have been adopted for the nine-county Plan area to facilitate emergency response and evacuation. These plans anticipate the necessity of regional transit and ferry service to facilitate response and evacuation. Using transit systems, including buses, train, and ferries, is an additional means of evacuating people during a less rapid but urgent evacuation in addition to highway evacuation via personal automobile. The proposed

Plan includes investments in transit systems along with the emphasis on growth near transit that could serve as vital resources. However, increased population and employment anticipated in the Plan could increase congestion on evacuation routes and slow evacuation. This could impair implementation of emergency response or evacuation plans, particularly if local plans rely on evacuation via personal vehicle. While changes in land use would be reflected in updated emergency and evacuation plans, it is not known if the changes would be sufficient to ensure adequate evacuation. The proposed Plan's impact on adopted emergency response or evacuation plans would be potentially significant (PS).

Sea Level Rise Adaptation Impacts

Construction

Construction associated with sea level rise adaptation infrastructure would not likely hinder emergency response activities or physically interfere with established evacuation routes. Projects requiring encroachment permits for temporary construction activities along public roadways that could be used for emergency response or evacuation are generally required to prepare traffic mitigation plans that address traffic control during the period when project construction is occurring within public right-of-way. To address any temporary road closures that would be required during construction, standard construction procedures include notification of emergency responders. Although implementation of traffic mitigation plans and associated coordination with service providers would typically address potential interference with emergency response or evacuation plans, there is potential that temporary impairment could occur at the project level. This would be potentially significant (PS).

Operation

Once implemented, the sea level rise adaptation infrastructure would not be expected to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Rather, the infrastructure would be anticipated to benefit these programs by protecting areas from potential hazards, including flooding, in a manner that facilitates implementation of established plans. Projects like elevating highways could improve future access and evacuation routes that may otherwise be inundated and unusable in the future. Following construction, the sea level rise adaptation infrastructure would facilitate implementation of emergency response and evacuation plans by modifying and protecting key roadways used for evacuations. The potential for development to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan would be less than significant (LTS).

Transportation System Impacts

Construction

As discussed above, temporary road closures required during construction would not likely hinder implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. However, standard construction mitigation includes notification of emergency responders where road closures are required. Road closures would be temporary and would be coordinated with emergency responders so that alternative evacuation routes could be developed and employed. Projects requiring encroachment permits for temporary construction activities in public roadways that could be used for emergency response or evacuation are generally required to prepare traffic mitigation plans that address traffic control during the period when project construction is occurring within public right-of-way. Although implementation of traffic mitigation plans and associated coordination with service providers would typically address potential interference with emergency response or evacuation plans, there is potential that temporary impairment could occur at the project level. This would be potentially significant (PS).

Operation

Although the proposed Plan, overall, is predicted to increase trip time, the proposed transportation projects would generally increase mobility and circulation capacity and thereby would have the potential to improve response times for police, fire, and emergency service providers, especially in heavily congested areas. Also, with implementation of the proposed transportation projects that include improved transit opportunities, more people would be able to move through the regional transportation system, and implementation of the proposed transportation projects would result in the construction of roadway projects that coincide with new housing and employment developments, thereby facilitating efficient access to these developments by public service providers. In addition, as described above, emergency plans and programs are in place on a State, regional, countywide, individual jurisdiction, and special district level that contain measures to reduce impacts associated with conflicts with emergency response and evacuation plans. These existing measures ensure that transportation

network improvement projects would not impair implementation of or physically interfere with an emergency response or evacuation plan. This would be less than significant (LS).

Conclusion

Temporary impairment of emergency response and evacuation plans could occur due to the land use development pattern, sea level rise adaptation infrastructure, and transportation projects. The land use development pattern, sea level rise adaptation infrastructure, and transportation projects that may result from implementation of the proposed Plan would be subject to implementation of applicable State and federal regulations, as well as local/regional requirements for adequate emergency response and emergency evacuation plans, such as those required by the California Emergency Services Act and Cal EMA. Emergency and evacuation plans are periodically updated to accommodate growth and would continue to be updated for growth and changes in projected development associated with the proposed Plan.

Using transit systems, including buses, train, and ferries, is an additional means of evacuating people during a less rapid but urgent evacuation in addition to highway evacuation via personal automobile. The proposed Plan includes investments in transit systems along with the emphasis on growth near transit that could serve as vital resources to facilitate evacuation. However, increased population and employment anticipated in the Plan could increase congestion on evacuation routes and slow evacuation. This could impair implementation of emergency response or evacuation plans. While changes in land use would be reflected in updated emergency and evacuation plans, it is not known if the changes would be sufficient to ensure adequate evacuation. Therefore, while the improved transportation system efficiency may facilitate emergency response and evacuation plans, due to the uncertainty with respect to the ability to accommodate forecasted growth, potential impacts related to interference with emergency response and evacuation plans would be **potentially significant (PS)**.

Mitigation Measures

Mitigation Measure HAZ-6 Implementing agencies and/or project sponsors shall implement measures, where feasible and necessary based on project- and site-specific considerations, that include those identified below:

- ▲ Continue to participate in the San Francisco Bay Area Regional Transportation Emergency Management (RTEMP), review the plan annually, and update as appropriate.
- ▲ Develop new methods of conveying projected and real time evacuation information to citizens using emerging electronic communication tools including social media and cellular networks.
- ▲ Adopt and/or revise, as appropriate, local emergency response and evacuation plans that address growth and potential for congestion on evacuation routes. Include contingencies for lower private automobile ownership and reliance on public transit for evacuation, consistent with the RTEMP.
- ▲ Require specific projects to demonstrate consistency with all applicable emergency response and evacuation plans. Where temporary road closures would be required during construction, prepare traffic mitigation plans that address traffic control and establish alternate emergency response and evacuation routes in coordination with emergency service providers.

Significance after Mitigation

The mitigation described above would address the need for adequate emergency access through continued participation in the RTEMP. It would also require that emergency plans account for shifting transportation modes. The mitigation would also require individual projects to ensure that future development would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. To the extent that a local agency requires an individual project to implement all feasible mitigation measures described above, the impact would be less than significant with mitigation (LS-M).

Projects taking advantage of the CEQA streamlining provisions of SB 375 (PRC Sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as applicable, to address site-specific conditions. However, MTC/ABAG cannot require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency to determine and adopt mitigation. Therefore, this impact would be **significant and unavoidable (SU)** for purposes of this program-level review.

Impact HAZ-7: Exacerbate the risk of wildland fires, associated pollutant release, and potential for flooding and landslides due to projected land use patterns and infrastructure in or near State Responsibility Areas or land classified as very high hazard severity zones (PS)

Land Use Impacts

Construction and Operation

As a result of climate change, wildfires are burning more landscape at higher intensities across the globe, on the West Coast, and in the San Francisco Bay Area. Damage to homes, infrastructure, and ecosystems can result, and associated air and water quality effects may extend far beyond the fire footprint. As described in Section 2, “Project Description,” the regional growth forecast for the Bay Area projects that by 2050 the region will support an additional 2.7 million residents and 1.4 million jobs, resulting in 1.4 million new households. As the population of the Plan area is forecasted to increase, there could be increased wildfire hazards if development expands into the wildland-urban interface (WUI). The proposed Plan’s growth geographies—designated areas prioritized to accommodate future household and job growth—exclude areas defined as “Very High” and “High” fire hazard severity areas identified by the California Department of Forestry and Fire Protection or locations within a county-adopted wildland-urban interface area (see Section 2.3.4). The proposed Plan also addresses wildfire with many land use (i.e., housing and economy) and environmental strategies, relying on core adaptation principles: land use, land management, and structural hardening. The proposed Plan would accommodate forecasted population growth in a manner that reduces potential contributions to climate change, encourages concentrated growth in urbanized areas and land management in open space, and includes structural hardening efforts where existing structures are vulnerable to fire.

Wildfire prevention is a shared responsibility among federal, State, and local agencies, including local city and county fire departments, as well as landowners and residents. Federal lands fall under Federal Responsibility Areas. The National Fire Plan provides the necessary coordination between agencies in areas of federal lands. Most of the unincorporated areas of the Bay Area are SRAs where fire prevention is the responsibility of CAL FIRE. Incorporated areas, and some unincorporated lands, are classified as LRAs. Fire prevention and response in these areas are typically addressed by city and county fire departments. CAL FIRE identifies Fire Hazard Severity Zones at the local, State, and federal level that cover all fire-prone areas in the State, regardless of land ownership or responsibility.

The land use growth footprint was used to quantify the acreage of the Plan area within fire hazard zones that could develop between 2015 and 2050. As previously noted, the proposed Plan prioritizes growth in the designated growth geographies which exclude areas defined as “Very High” and “High” fire hazard severity areas, but does not avoid areas defined as “Moderate”. The proposed Plan’s strategies focus 67 percent of the land use growth footprint into the designated growth geographies; however, the remainder (33%) of the land use growth footprint is outside designated growth geographies but consistent with existing local land use plans (see Table 2-4). In total, the land use growth footprint includes approximately 1,800 acres of land classified as having a moderate, high, or very high fire hazard. This is approximately 5 percent of the growth footprint (see Table 3.9-8).

Table 3.9-8: Acreage of Land Use Growth Footprint within Fire Hazard Zones

County		Moderate (acres)	High (acres)	Very High (acres)
Alameda	County Total	280	< 1	40
	Within TPAs	10	< 1	< 1
Contra Costa	County Total	240	720	60
	Within TPAs	-	< 1	10
Marin	County Total	3	3	10
	Within TPAs	-	3	4
Napa	County Total	130	-	< 1
	Within TPAs	-	-	-
San Francisco	County Total	-	-	-
	Within TPAs	-	-	-
San Mateo	County Total	-	20	70
	Within TPAs	-	-	-

County		Moderate (acres)	High (acres)	Very High (acres)
Santa Clara	County Total	-	< 1	5
	Within TPAs	-	-	-
Solano	County Total	40	80	-
	Within TPAs	-	-	-
Sonoma	County Total	140	< 1	< 1
	Within TPAs	-	-	-
Regional Total	County Total	830	830	190
	Within TPAs	10	3	20

Notes: TPA acreages are a subset of county acreages. Numbers less than 1 are shown as "<1"; Whole numbers have been rounded (between 0 and 10 to the nearest whole number and between 11 and 999 to the nearest 10). Figures may not sum due to independent rounding.

Sources: MTC/ABAG 2021; CAL FIRE 2007

In addition to potentially exposing people to loss, injury, or death and damage to property, fire can result in indirect hazards. These may include release of hazardous materials and air quality implications, as well as flooding and landslides following loss of vegetation. Excessive rainfall in fire-damaged areas can generate runoff that causes flooding because the top layer of soil can form a moisture barrier when exposed to high heat that repels water and generates higher runoff rates. In addition, the loss of vegetation to provide stability can increase susceptibility to erosion. In areas with steep slopes, debris flows can result from these conditions that may result in hazards to life and physical property, destroy or strip vegetation, block existing drainage patterns, and affect roadways and other infrastructure. If this were to occur within existing floodplains, existing flow conditions may be altered, or new sources of flooding may be created.

Development of areas susceptible to wildfire could exacerbate the fire risk by introducing anthropogenic influence into fire-prone open space. Human-caused wildfires tend to be generated by activities such as debris and brush-clearing fires, electrical equipment malfunctions, campfire escapes, smoking, fire play (e.g., fireworks), vehicles, and arson. Power lines also pose a risk of spark as a result of downed lines, direct contact with vegetation, and line faults and equipment failures. Power lines would continue to be constructed and operated by utility companies, subject to the oversight of the California Public Utilities Commission. These companies are obligated to manage and maintain the lines to reduce the potential for wildfire. This includes clearing vegetation near the power lines and may include operating provisions to temporarily stop power during high winds where the fire danger is high. Construction and operation of utilities to serve the growth areas is not anticipated to substantially exacerbate fire hazards outside of the immediate growth geographies.

Wildfire is also addressed through the Plan's core adaptation principles related to land use, land management, and structural hardening efforts focused on buildings constructed in very high fire hazard severity zones before 2009. Features of the Plan that would reduce the potential to exacerbate the risk of wildfire include maintaining the urban growth boundaries, directing growth away from areas with the highest fire hazard severity potential, and supporting vegetation management on conservation lands. Specifically, the proposed Plan includes Strategy EN04, Maintain Urban Growth Boundaries, which does not enable growth beyond current boundaries and locates growth geographies (Priority Development Areas, Priority Production Areas, TRAs, High-Resource Areas) outside of the worst fire hazard severity zones (as defined by CAL FIRE's Very High Fire Hazard Severity Zones in incorporated areas and by High or Very High Fire Hazard Severity Zones in unincorporated areas). These restrictions would be augmented by WUI zones, where they have been adopted at the county level. Together, these strategies limit further growth in the areas most at risk of wildfire. Open space and working lands management is included in the proposed Plan to reduce the intensity of future fires. Specifically, Strategy EN05, Protect and Manage High-Value Conservation Land, includes expanded new revenues beyond what already exist to support wildfire management. Structural hardening combats the risk in communities already built in the highest fire risk zones. Strategy EN02, Retrofit Existing Residential Buildings is designed to reduce risk in all existing residential buildings (roughly 75,000 units) in the very-high fire hazard zone built before the 2009 WUI building code. The strategy would require proven structural hardening strategies, such as roofing and vent replacements, and support homeowners with difficult defensible space work. Together, these strategies would focus future growth away from the highest fire risk zones, support increased wildland management programs, and support residential building upgrades that reduce the likelihood for damage when fires occur in the WUI. Another component of the proposed Plan's environmental strategy would provide means-based financial support to retrofit existing residential buildings. This could reduce the potential for these structures to cause fires due to damage caused by a seismic event.

Throughout the Plan area, new construction would be subject to Title 24 of the CCR, which includes safety measures to minimize the threat of fire. The provisions of the fire code would apply to all construction, alteration, replacement, removal, and demolition. The risk of accidental ignition of a wildland fire during construction in forested areas would be addressed through standard construction practices, which address the potential for sparks generated by construction equipment, the potential for spills of ignitable materials, and emergency procedures to immediately respond to these conditions. In addition, Title 14 of the CCR sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent damage to structures or people by reducing wildfire hazards within SRAs. Local jurisdictions' general plan policies and building codes enforce and expand on these requirements at the local level. All jurisdictions are required to review and update their safety element in conjunction with the next housing element revision to address the risk of fire in SRAs and Very High Fire Hazard Severity Zones, and the provisions outlined in "Fire Hazard Planning" by the Governor's Office of Planning and Research. Projects would not be approved by local agencies until project design plans demonstrate compliance with applicable fire safety requirements. The proposed Plan would not conflict with the ongoing efforts of CAL FIRE and others to create natural environments that are more resilient to fire through fire plans that include prefire planning and fuel treatment. Potential conflicts with existing emergency response and evacuation plans are addressed in Impact HAZ-6, above.

Of the acreage of fire hazard areas within the land use growth footprint, development specific to the TPAs could occur in three of the nine counties (**Table 3.9-8**). These include approximately 10 acres in Alameda County, 10 acres in Contra Costa County, and 7 acres in Marin County. As noted above, the estimated area of potential effects could be overstated. Projects located on land identified by CAL FIRE as subject to wildland fire hazard would not qualify as sustainable communities projects under PRC Section 21155.1 unless the applicable general plan or zoning code contains provisions to mitigate the risk of a wildland fire hazards (PRC Section 21155.1[a][6][A]). (Note, however, that this is applicable only to potential exemptions under the sustainable communities strategy provisions of CEQA and does not apply to the other streamlining strategies under the Sustainable Communities Act.)

As an example, the Alameda County General Plan includes a series of 13 policies and 22 associated implementation actions to address wildfire hazards and require adherence to the provisions of the Alameda County Fire Protection Master Plan and Fire Hazard Mitigation Plan (Alameda County 2018). The City of Oakland's Safety Element has policies and related actions addressing reduction and prevention of wildfire hazards, including implementation of the 2004 wildfire prevention assessment district for the Oakland Hills and participation in multi-jurisdictional programs and task forces that work to reduce the threat of wildfires. Similarly, other incorporated cities in Alameda County include safety elements, environmental hazards elements, Disaster Preparedness and Safety Element, or similar General Plan elements that include policies to address wildfire risk. Policies that address wildland fire risk are contained in the "Fire Services" section of the Public Facilities Element in the general plan for Contra Costa County. In addition, the Safety Element includes implementation measures designed to result in building practices that reduce the hazard to new construction within fire hazard areas (Contra Costa County 2005). The Marin Countywide Plan includes Policies EH 4.3 through EH4.5, which have provisions to adopt and implement a fire management plan, ensure adequate emergency response, and implement land use regulations as a means of protecting people and property from wildfire hazards (Marin County 2007).

As discussed above, California is trending toward an increase in the severity and frequency of wildfires over time as a result of climate change, modified vegetation regimes, and increasing human influence. Such trends are expected to continue and will pose an increasing threat to wildland areas and nearby urban environments. The proposed Plan, however, is designed to accommodate anticipated population growth in a manner that reduces potential contributions to climate change, encourages concentrated growth in developed areas and land management in open space, and includes structural hardening efforts where existing structures are vulnerable to fire. Nonetheless, because development could occur near land classified as very high hazard severity zones and could indirectly result in extension or expansion of infrastructure through these areas, there is potential for the proposed Plan to exacerbate the risk of wildland fires, associated pollutant release, and potential for flooding and landslides. This impact would be potentially significant (PS).

Sea Level Rise Adaptation Impacts

Construction and Operation

Sea level rise adaptation infrastructure would protect communities and infrastructure from the adverse effects of anticipated sea level rise. As shown in **Figure 2-3** of Chapter 2, "Project Description," key sea level rise adaptation infrastructure has been identified primarily along the shores of the San Francisco Bay. These areas are generally outside of areas mapped as prone to

wildfire by CAL FIRE (see **Figure 3.9-4**). As shown in **Table 3.9-9**, the resilience footprint includes 30 acres of lands located in each of the fire hazard zones, with nearly all of this within Marin County.

Table 3.9-9: Acreage of Sea Level Rise/Resiliency Footprint within Fire Hazard Zones

County	Moderate (acres)	High (acres)	Very High (acres)
Alameda	0	0	0
Contra Costa	0	0	0
Marin	10	30	30
Napa	0	0	0
San Francisco	0	0	0
San Mateo	0	0	0
Santa Clara	0	0	0
Solano	0	0	0
Sonoma	20	0	0
Regional Total	30	30	30

Notes: Whole numbers have been rounded. Figures may not sum due to independent rounding.

Sources: MTC/ABAG (2021); CAL FIRE (2007)

Sea level rise adaptation infrastructure includes elevating roadways, as well as installing and improving sea walls, levees, and tidal gates. These projects are not anticipated to result in an increased fire risk and would, therefore, not exacerbate the potential for associated pollutant releases or flooding and landslides. This impact would be less than significant (LTS).

Transportation System Impacts

Construction and Operation

There are 900 acres of transportation projects proposed in moderate fire hazard areas and 570 acres of projects proposed in high fire hazard areas. An additional 20 acres, primarily in Contra Costa County, are located within a very high fire hazard area (see **Table 3.9-10**). As discussed above for land use projects, implementing agencies would require project sponsors to comply with safety measures that minimize the threat of fire as stated in the Title 24 of the CCR, as well as comply with CCR Title 14, Division 1.5 to minimize exposing people and structures to loss, injury, or death and damage. Therefore, although there could be an elevated risk of accidental ignition of a wildland fire during construction in forested areas, the potential for standard construction practices to result in wildland fire would not be substantially increased because of the transportation investments identified in the Plan.

Table 3.9-10: Acreage of Transportation Projects Footprint within Fire Hazard Zones

County	Moderate (acres)	High (acres)	Very High (acres)
Alameda	350	240	< 1
Contra Costa	250	50	20
Marin	110	-	-
Napa	20	-	-
San Francisco	-	-	-
San Mateo	-	1	-
Santa Clara	160	210	-
Solano	3	80	-
Sonoma	10	-	-
Regional Total	900	570	20

Notes: Whole numbers have been rounded (between 0 and 10 to the nearest whole number and between 11 and 999 to the nearest 10). Numbers less than 1 are shown as "<1." Figures may not sum due to independent rounding.

Sources: MTC/ABAG (2021); CAL FIRE (2007)

As described above, projects that involve the expansion or extension of the transportation system may also expose more land uses to risks associated with wildland fires, particularly at the urban edge. Providing increased access into wildfire-prone open space increases the potential for human-caused wildfires both as a result of direct access and due to introduction of potential ignition sources (e.g., vehicles, cigarettes) along the transportation corridor. However, transportation improvements, especially capacity improvements, also generally improve the transportation network to move people more efficiently. This is beneficial for emergency access and evacuation due to a wildfire. The potential for wildfire hazard impacts related to transportation projects in the proposed Plan would be potentially significant (PS) due to the potential for the infrastructure to exacerbate fire risk.

Conclusion

Implementation of the proposed Plan's land use development pattern and transportation projects could exacerbate the risks of wildfire in or near State Responsibility Areas or land classified as very high hazard severity zones. Extension of development along the WUI can result in loss of property and structures, as has been observed in several fires within the Plan area including the 2017 Tubbs fire and 1991 Tunnel fire. In 2020, large fires burned over 700,000 acres within and adjacent to the Plan area during the SNU Lightning Complex fires and LNU Lightning Complex fires. This would be a **potentially significant (PS)** impact. Mitigation Measure HAZ-7 addresses this impact and is described below.

Mitigation Measures

Mitigation Measure HAZ-7 Implementing agencies and/or project sponsors shall implement measures, where feasible and necessary based on project- and site-specific considerations, that include those identified below:

- ▲ Restrict development of areas mapped by CAL FIRE as high and very high fire hazard zones.
- ▲ Improve and educate residents and businesses regarding local emergency communications and notifications.
- ▲ Enforce defensible space regulations to keep overgrown and unmanaged vegetation, accumulations of trash and other flammable material away from structures.
- ▲ Provide public education about wildfire risk and fire prevention measures, and safety procedures and practices to allow for safe evacuation and/or options to shelter-in-place.
- ▲ Plan for and promote rapid revegetation of burned areas to help prevent erosion and protect bare soils.
- ▲ Develop a regulatory mechanism for permitting an aggressive hazardous fuels management program.
- ▲ Establish standards for fuel breaks that can slow or stop a wildfire advancing into a community or into the wildlands. Fuel breaks shall be strategically located to protect a community, structures, or routes of access and egress. Strategic locations may include ridgelines, greenbelts, or other locations to manage embers or support community-level fire suppression tactics.
- ▲ MTC shall facilitate minimizing future impacts to fire protection services through information sharing regarding fire-wise land management (vegetation data, fire-resistant building materials, locations where development is vulnerable to wildfire, and best practices for safe land management) with county and city planning departments.
- ▲ MTC, in partnership with technical experts and stakeholders, shall launch or continue existing initiatives to help local cities and counties to protect Bay Area communities and economies from the disruption of wildfire occurrences. Initiatives could include but not be limited to seminars that review the risk of wildfire and approaches for preparation, including strengthening of infrastructure, emergency services, emergency evacuation plans and reviewing building safety codes.

Significance after Mitigation

Curtailing development in areas mapped by CalFire as high and very high fire hazard zones, in conjunction with the mitigation measures and elements of the Plan that would promote land management in open space to reduce fire hazards, would substantially reduce the potential for the Plan to exacerbate wildland fire risks. However, because development could occur in and near SRAs and lands classified as very high hazard severity zones, and because the potential for people or structure to be exposed to significant risk of loss, injury, or death involving wildfire cannot be avoided, this impact would be **significant and unavoidable (SU)**.

Projects taking advantage of CEQA streamlining provisions of Senate Bill 375 (PRC Sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as applicable, to address site-specific conditions. However, MTC/ABAG cannot require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency to determine and adopt mitigation. Therefore, this impact would be **significant and unavoidable (SU)** for purposes of this program-level review.

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