9. Hazards and Safety Element

The Hazards and Safety Element evaluates natural and urban safety hazards in Pleasant Hill and outlines goals, policies, and implementation programs to minimize risk to life and property. The primary natural hazard threats for Pleasant Hill are earthquakes, drought, localized flooding, wildland fires, and an increased number of high heat days. Many of the goals and policies in this element correspond to local and regional safety priorities such as those established in the Contra Costa County Hazard Mitigation Plan (CCCHMP), a multi-jurisdictional document that helps coordinate more than three dozen participating jurisdictions to reduce risk from the most prevalent natural disasters in the county. Likewise, many of the goals and policies will correspond with City's Comprehensive Emergency Management Plan (CEMP).

Noise issues in Pleasant Hill are described in section 9.7, with descriptions of common sources of noise and goals and policies to mitigate noise for sensitive land uses such as residential, schools, and medical facilities. Hazardous materials sources are covered in section 9.8, with goals and policies to reduce the use and dangers associated with such substances.

The Hazards and Safety Element is divided into the following sections:

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Key Terms

100-Year Flood Event. A flood event that would occur on average every 100 years, or that has a one percent chance of occurring in any given year.

500-Year Flood Event. A flood event that would occur on average every 500 years, or that has a 0.2 percent chance of occurring in any given year.

Ambient Noise Level. The composite of noise from all sources; the normal or existing level of environmental noise at a given location.

Decibel (dB). A physical unit commonly used to describe noise. It is a unit for describing the amplitude of sound as heard by the human ear.

Defensible Space. An area around a building in which vegetation, debris, and other types of combustible fuels have been treated, cleared, or reduced to slow the spread of fire to and from the building.

Earthquake Fault Zone. Areas around active faults where there is a complex system of primary and secondary faults. Because most faults are not a single, clean fracture in the crust, fault zones describe the area at risk of seismic activity beyond the fault itself.

Equivalent Noise Level (Leq). The average A-weighted noise level during the measurement period.

Fault. A fracture in the earth's crust along which rocks on one side have moved relative to those on the other side. Most faults are the result of repeated displacements over a long period of time. A fault trace is the line of the earth's surface defining the fault. An active fault is one that has ruptured in the past 11,000 years.

Fire Hazard Severity Zones. Areas identified by California Department of Forestry and Fire Prevention (CAL FIRE) that describe fire hazard severity. based on three factors: fuel, slope, and weather.

Hazardous Substances. Any biological agent and other disease-causing agent which, after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any person, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions, or physiological deformations in such persons or their offspring.

Hazardous Waste. Hazardous wastes, although included in the definition of hazardous materials and hazardous substances, are regulated separately under the Resource Conservation and Recovery Act (RCRA). A waste is legally considered hazardous if it is classified as ignitable, corrosive, reactive, or toxic. Title 22, Section 66261.24 of the California Code of Regulations (CCR) (i.e., 22 CCR 66261.24) defines characteristics of toxicity.

Intrusive Noise. Noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, and tonal or informational content.

Liquefaction. Liquefaction occurs when soil grains consolidate during groundshaking, pushing water towards the surface and causing a loss of strength in the soil. The soil surface may sink or spread laterally. The three conditions necessary for liquefaction to occur include: a high-water table; layers of loose sand; and moderate or greater earthquake groundshaking.

Runoff. Precipitation (rain or snowmelt) that is not used by plants, evaporated or infiltrated to soils, and flows across land surfaces to streams or other surface water bodies.

Seismic. Geologic movement or vibrations of the earth and its crust.

Soil Erosion. The removal of soil by water or wind.

Stormwater. Large surface water quantity resulting from heavy rain or snow falls.

Subsidence. The sinking of ground when subsurface pressure is reduced by the withdrawal of fluids (e.g. groundwater, natural gas, or oil).

Surface Rupture. Fault movement that breaks through to the surface.

Wastewater. Water (either treated or untreated) that has been affected by human use, including household, commercial, industrial, and agricultural activities.

Wildland. Land in an uncultivated natural state that is covered by vegetation.

Wildland Urban Interface. The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels.

9.1 Emergency Preparedness

All municipal governments are required to prepare for natural and human-caused disasters. The Contra Costa County Hazard Mitigation Plan (CCCHMP) for the county assesses Countywide risk for natural hazards and establishes mitigation measures, funding, and plan implementation actions for Pleasant Hill.

The City of Pleasant Hill adopted a Comprehensive Emergency Management Plan (CEMP) in March 2020, in cooperation with the Pleasant Hill Disaster Council and Contra Costa County Office of Emergency Services (OES), special districts and other partners in the City to ensure the most effective response to emergencies. The CEMP establishes emergency support by assigning tasks and establishing policies and procedures. It develops systems for coordinating the planning and response efforts of various emergency personnel and using the Incident Command System (ICS), Standardized Emergency Management System (SEMS), and National Incident Management System (NIMS). The CEMP provides preparedness guidance, as well as specific guidance to those personnel activated in the event of an emergency, in order to save lives, enhance the health of citizens, and protect property and the environment.

HS-1	Ensure the city is prepared for health, natural and human-caused hazards and can respond quickly and effectively.

HS-1.1 **Emergency Preparedness Planning**
Coordinate with regional agencies and incorporate emergency preparedness into all City emergency planning efforts, including preparation, communications, response, emergency equipment access, and evacuations.

HS-1.2 **Hazards Education and Information**
Provide hazard awareness information and education about potential health, natural, and human-caused hazards in Pleasant Hill and how to responsibly prepare for or mitigate them.

HS-1.3 **Essential Facility Location**
Prohibit siting of essential, public safety, or emergency service facilities, special occupancy structures, or hazardous materials storage facilities in areas subject to the following hazard areas, unless the structure is designed to adequately mitigate the hazard or if no other viable option for siting is available to serve the need identified:

- 500-year flood zones;
- seismic hazard areas and fault zones;
- areas subject to liquefaction, landslide, or seiche hazards; and
- very high fire severity zone.

HS-1.4 **Neighborhood Planning Efforts**
Encourage neighborhoods to create localized emergency action plans to further inform residents on how to prepare and respond to hazards.

HS-1.5 **Social Unrest Planning**
Institute planning efforts related to social unrest and civil disobedience.

9.2 Seismic Hazards

Seismic hazards are caused by the movement of the earth's surface and include earthquakes, landslides, liquefaction, seiche, and erosion. The San Francisco Bay Area is one of the most active seismic regions in the United States, and Pleasant Hill is in an area of high seismic risk, as the city is near several high-risk faults. The Concord, Franklin, and Southhampton faults run directly through the city, and the Hayward, Calaveras, San Andreas, and Greenville faults are within 50 miles. Seismic activity on these faults can trigger other types of hazards, including:

- Surface rupture: The ground cracks due to an earthquake.

- Ground shaking: The passage of seismic waves causes the ground to shake, damaging structures.
- Liquefaction: Loose soil loses strength and acts like a liquid during an earthquake, damaging structures built on it.
- Landslides: Earthquake shaking causes loose material to slide down a slope.
- Subsidence: The ground surface drops rapidly due to an earthquake.
- Seiche: A temporary disturbance or oscillation in the water level of a lake or partially enclosed body of water

Earthquake severity is measured by the Modified Mercalli Intensity (MMI) scale. The MMI measures ground shaking severity at a given site according to damage done to structures, changes in the earth surface, and personal accounts. Pleasant Hill is located entirely in an area expected to experience an intensity of VIII on the MMI scale if a serious earthquake occurs (Figure HS-1). This would likely result in considerable damage to typical buildings and slight damage to buildings designed to withstand severe ground shaking. Actual damage caused depends on the severity of the earthquake, the specific buildings and infrastructure involved, and other factors.

During an earthquake, Pleasant Hill is also susceptible to liquefaction, particularly on the eastern side of the city and along Grayson Creek (Figure HS-2). Liquefaction is the act of soil behaving like a liquid due to ground shaking from an earthquake. Pleasant Hill's susceptibility to liquefaction is moderate to high throughout the city, particularly along creeks and streams. The highest probability of infrastructure damage is along the orange and red areas shown in Figure HS-2, which include the downtown area and Pleasant Hill Plaza.

Landslides may also occur during earthquakes, heavy rains events, or other ground disturbing activities such as hillside grading and development. The western side of Pleasant Hill has hillside areas at risk of landslides as shown in the CCC HMP.

Figure HS-1 MMI Scale in the Pleasant Hill Area

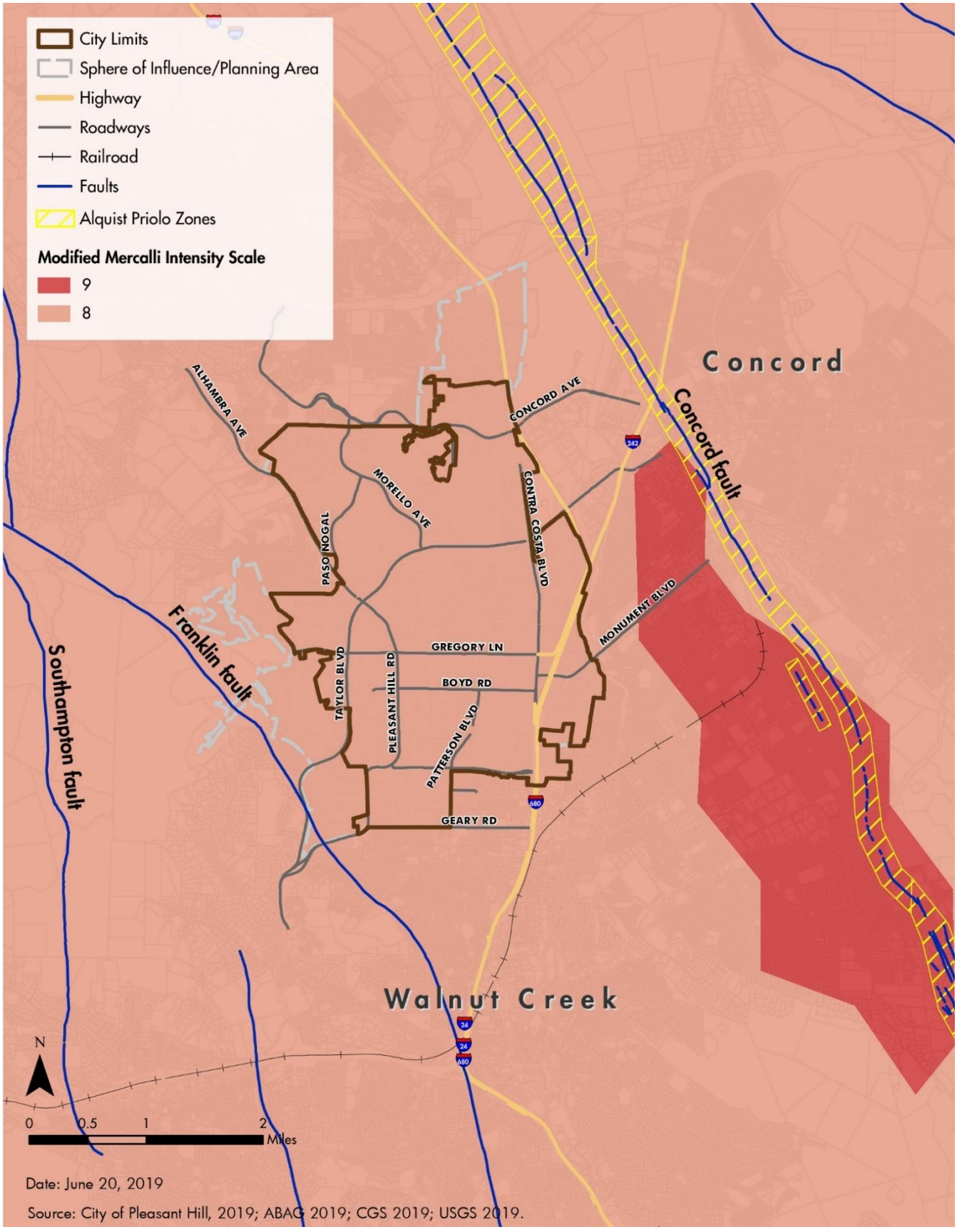
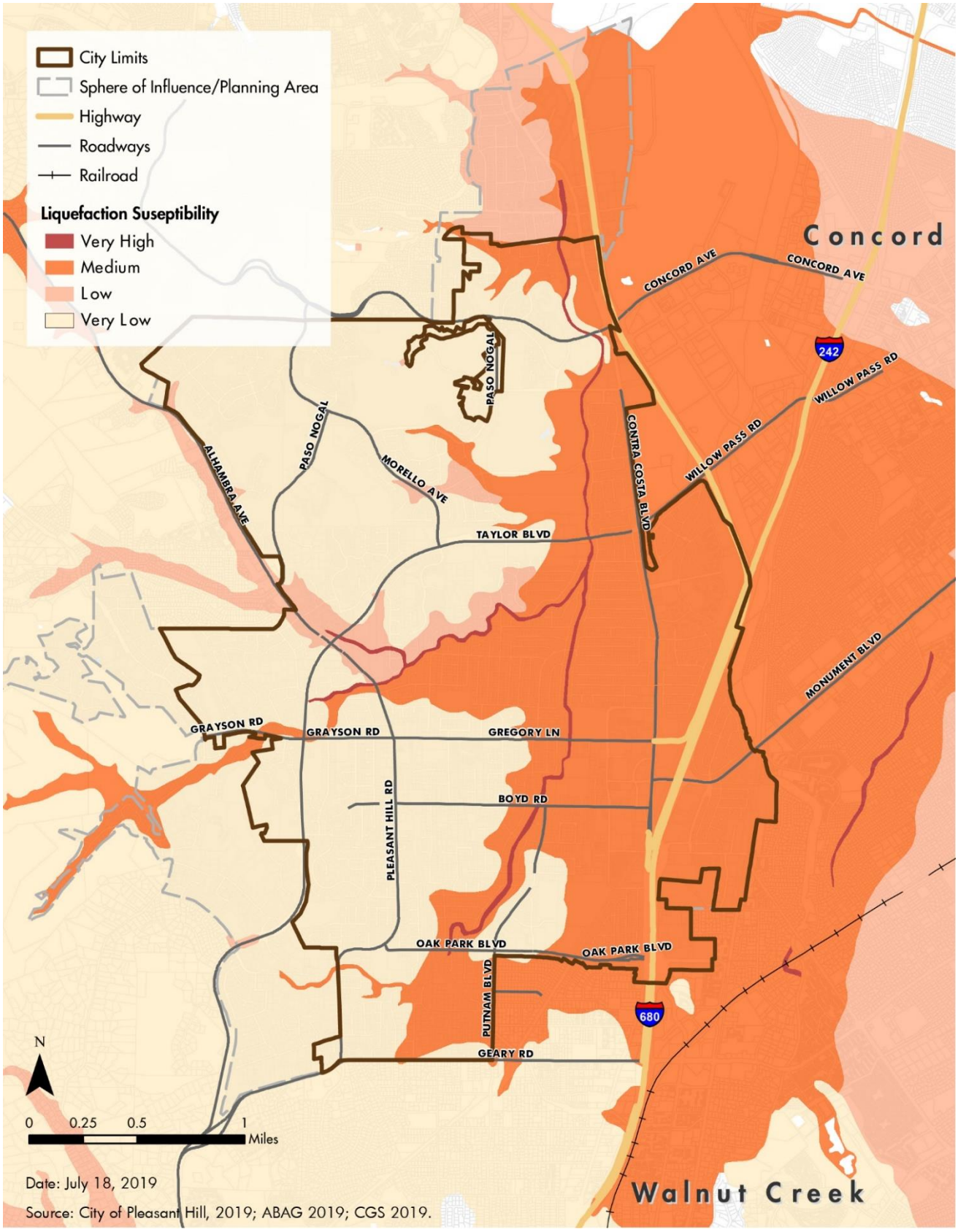


Figure HS-2 Liquefaction Susceptibility



Future earthquakes are inevitable in the Bay Area. The Safety Element, through the following goals and policies, guides the location, type, and resiliency of development to help mitigate the risk of damage and death if a severe earthquake occurs.

HS-2 Reduce the potential harm to people and property from geologic and seismic hazards.

HS-2.1 Earthquake Hazard
Require new development to be sited away from high-risk earthquake hazard or liquefaction-susceptibility zones, or if located in a high-risk zone, to incorporate building technologies to reduce risk to an acceptable level.

HS-2.2 Geotechnical Study Requirement
Require geotechnical studies for new development in areas with moderate to high liquefaction potential that include analysis of seismic settlement potential and specify appropriate mitigation.

HS-2.3 Seismic Retrofit Incentives
Work with regional, State, and Federal agencies and organizations to incentivize seismic retrofits of structures.

HS-2.4 Slope Failure
Prohibit new development in areas at risk for slope failure and ensure that hillside developments employ appropriate design and construction techniques consistent with City hillside development standards.

HS-2.5 Emergency Service Building Construction
Ensure that buildings and structures required for emergency services are constructed to withstand a major earthquake.

HS-2.6 Unbuildable Spaces
Preserve property that is unbuildable due to geologic conditions as open space.

HS-2.7 Community Readiness
Improve community readiness regarding earthquake and other natural disaster response through community outreach.

HS-2.8 Resilient Infrastructure
Require the location, design, and construction of new public utilities, communication infrastructure, and transportation facilities to minimize risk and maximize functionality during and after an earthquake.

HS-2.9 Slope Stability Assessment
Continue to require slope stability assessments by appropriately registered professionals upon the initiation of new development proposals in areas of known slope instability and/or on slopes steeper than 15 percent.

9.3 Wildfire

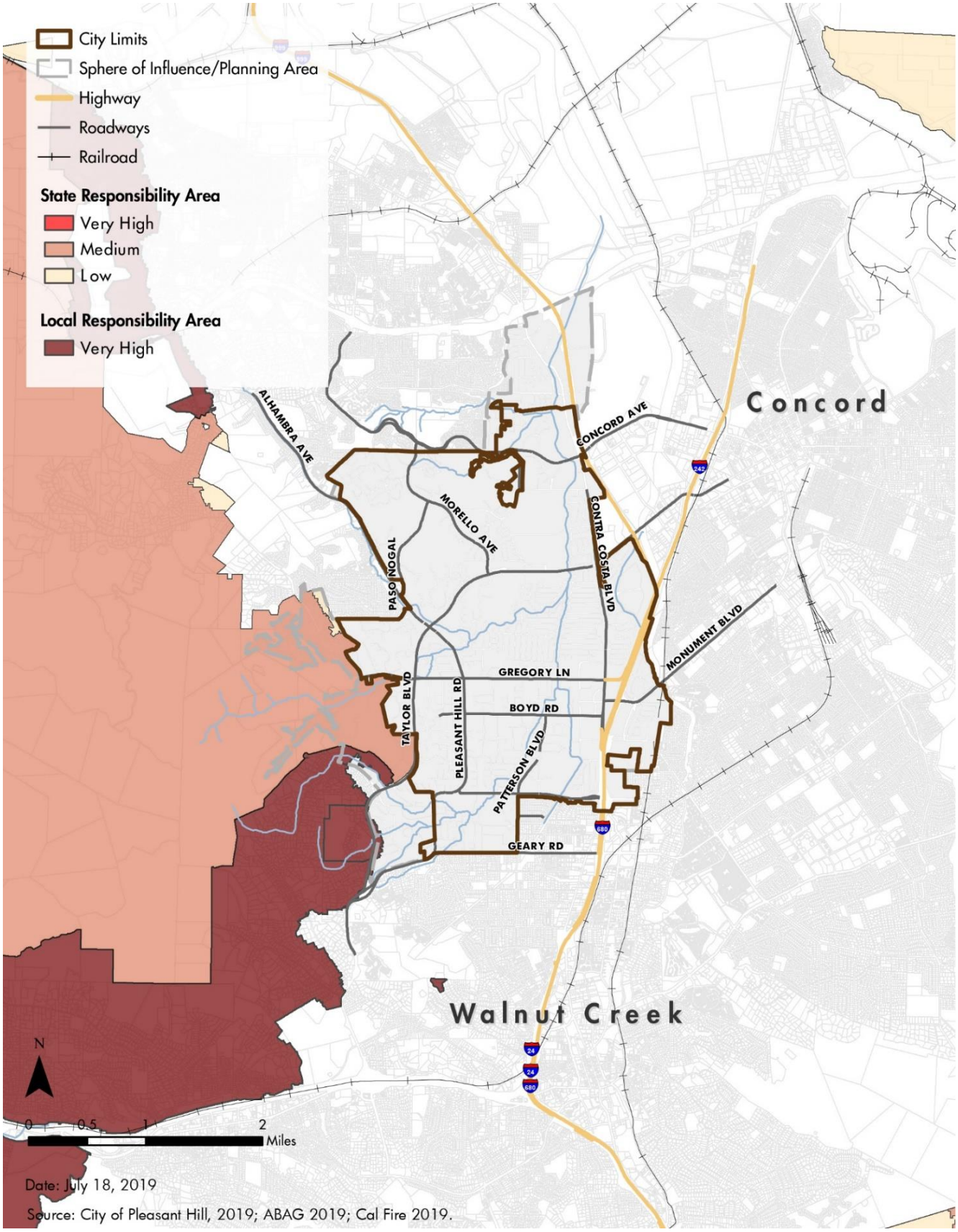
While Pleasant Hill is not located directly in a high fire hazard severity zone, as identified by the California Department of Forestry and Fire Protection (CAL FIRE), high- or very-high fire hazard severity zones are located to the north, east, and south of the city. Pleasant Hill's proximity to Briones Regional Park and other open, undeveloped land poses a threat of wildland fires spreading near and into the city limits where the park and open space abuts urban development to the southwest (Figure HS-3). Minor brush fires in the area are common during the fire season but historically have been extinguished before developed areas sustain much damage.

Fires that sweep through residential communities are often started by flying embers from larger fires burning nearby, rather than directly from the fire itself. Larger fires can still pose immediate and severe health concerns to Pleasant Hill residents through harmful air quality and smoke in addition to potential spread of fires into developed areas. Goals and policies related to maintaining high air quality and ensuring the health of residents during hazardous air quality events are in Section 8.3 of the Environment Element. Wildfire hazard for an area can be increased by several factors:

- **Fuel:** Fuel includes living or dead vegetation on the ground and above the ground in tree canopies. This can include grasses, leaves, and needles that burn rapidly, and tree branches, logs, and trunks that take longer to ignite. Dead or diseased trees are more likely to burn in a wildfire.
- **Weather:** Temperature, humidity, wind speed and direction, cloud cover, and precipitation affect the ignition and spread of wildfire. Hot, dry conditions with strong, dry winds increase the chance of a fire igniting and spreading, and lightning can directly ignite a fire.
- **Terrain:** Slope and elevation influence the amount of fuel present, potential barriers to wildfire spread such as highways and lakes, and the speed at which the fire can spread, since fire spreads more rapidly uphill.

Damage from wildfires can devastate communities, causing loss of homes, businesses, and critical facilities that serve and protect the community. In 2018, California reached a wildfire record of 1.9 million acres burned in one year. In 2020, more than 4 million acres had burned by September. Wildfire is a devastating disaster for communities across California and is predicted to worsen as climate change gradually increases the conditions conducive to more intense and frequent fires.

Figure HS-3 Wildfire Hazard Severity Zones



HS-3	Minimize the threat to people, property, and the environment from fire hazards.

HS-3.1 **Fire Protection District Enhancement**
Enhance the ability of the Contra Costa County Fire Protection District to respond to and suppress fires.

HS-3.2 **Weed abatement and Fire-Resistant Landscaping**
Require annual weed and other fuel abatement and promote the installation of fire-resistant landscaping in new and existing development.

HS-3.3 **Homeowner Education**
Educate homeowners of defensible space requirements and recommendations per Cal Fire, including programs to aid in removal of excess vegetation and improve home wildfire resiliency.

HS-3.4 **Fire Safety Improvements**
Develop guidelines for fire safety improvements for existing and new commercial buildings and encourage upgrades where possible.

HS-3.5 **Defensible Space Inspections**
Coordinate with the Contra Costa County Fire Protection District to require annual home and business inspections to ensure proper defensible space is maintained at properties near grasslands and very high wildfire hazard severity zones.

HS-3.6 **Inter-jurisdictional Coordination**
Coordinate with the Contra Costa County Fire Protection District, East Bay Regional Park Fire Department, and other neighboring fire departments to reduce fire hazards and promote fire safety in and around Pleasant Hill.

HS-3.7 **Contra Costa County Hazard Mitigation Plan**
Ensure the Contra Costa County Hazard Mitigation Plan as it applies to Pleasant Hill is up to date with changes in State hazard legislation and lessons learned from recent wildfire related disasters.

HS-3.8 **Adequate Water Pressure**
Coordinate with local water districts to seek funding and implement the necessary infrastructure upgrades to provide adequate water pressure to supply required fire suppression systems in existing and future development projects.

HS-3.9 **Weed and Fuel Abatement**
Coordinate with landowners to ensure that weed and other fuel abatement occurs in an effective and timely manner.

HS-3.10 **Municipal Code Maintenance**
Ensure the Pleasant Hill Municipal Code is kept up to date on State and Federal requirements, best practices, and City processes regarding wildfire prevention design standards and requirements.

HS-3.11 **Evacuation Routes**
The City shall collaborate with Contra Costa County and neighboring cities as a part of the next Multijurisdictional Hazard Mitigation Plan update to identify evacuation routes in the event of wildfires or other natural disasters in compliance with AB 747 and SB 99.

HS-3.12 **Conduct Project Design Review for Wildfire Risk Reduction**
EIR Project landscape plans shall include fire-resistant vegetation native to Contra Costa County and/or the local microclimate of the site and prohibit the use of fire-prone species especially non-native, invasive species. If the project site is within a known landslide area, the site shall be subject to geotechnical review regarding potential post-fire slope instability. Structural engineering features incorporated into the design of the structure to reduce the risk of damage to the structure from post-fire slope instability shall be recommended by a qualified engineer and approved by the City prior to the building permit approval.

HS-3.13 **Construction Wildfire Risk Reduction.**
EIR The City shall require the following measures during project construction:

- Construction activities with potential to ignite wildfires shall be prohibited during red-flag warnings issued by the National Weather Service for the site. Example activities include welding and grinding outside of enclosed buildings.
- Fire extinguishers shall be available onsite during project construction. Fire extinguishers shall be maintained to function according to manufacturer specifications. Construction personnel shall receive training on the proper methods of using a fire extinguisher.
- Construction equipment powered by internal combustion engines shall be equipped with spark arresters. The spark arresters shall be maintained pursuant to manufacturer recommendations to ensure adequate performance.

At the City's discretion, additional wildfire risk reduction requirements may be required during construction. The City shall review and approve the project-specific methods to be employed prior to building permit approval.

HS-3.14 **Project Design Wildfire Risk Reduction.**
EIR Project landscape plans (as made available when project applications are submitted) shall include fire-resistant vegetation native to Contra Costa County and/or the local microclimate of the site and prohibit the use of fire-prone species especially non-native, invasive species. If the project site is within a known landslide area (see Figure

3.5-5 in Section 3.5, Geology, Soils, and Mineral Resources), the site shall be subject to geotechnical review regarding potential post-fire slope instability. Structural engineering features incorporated into the design of a structure to reduce the risk of damage to the structure from post-fire slope instability shall be recommended by a qualified engineer and approved by the City prior to the building permit approval.

9.4 Drought

Drought occurs when precipitation is low or nonexistent due to unusual weather patterns, usually over the course of several years. Droughts can be short-term, lasting a few months, or long-term, lasting years. Because droughts are considered regional and long-term, localized weather patterns might bring short-term periods of rain that are insufficient to end the drought.

Much of California experiences drought periodically as part of its normal climate cycle. Contra Costa County historically has been impacted by four significant droughts between 1976 and 2016, most recently from 2012 to 2016, which included the three driest years statewide on record. The likelihood of drought occurring in the future is increasing as average temperatures for the region rise and average precipitation levels drop, both for Contra Costa County and for snowpack in the Sierra Mountains, from which the county receives most of its dry-season water supply as snowmelt.

Because of the nature of droughts, they cannot reasonably be avoided or mitigated. Strategies for adapting to drought, therefore, revolve around water conservation measures and mitigating the secondary effects of drought such as soil erosion, marine and riparian habitat impacts, and the increased risk of wildfire and flooding when heavy rain events do occur.

HS-4	Minimize the effects of drought by creating an emphasis of routine water conservation.

HS-4.1 **Municipal Water Conservation**
Continue to identify opportunities to upgrade City facilities with water-conserving appliances and using reclaimed water for irrigation, landscaping, and other allowable uses.

HS-4.2 **Residential Water Conservation**
SUS
Implement and maintain cost-effective, citywide water conservation and efficiency programs for all customers through education, rebates, assistance programs, and building requirements.

HS-4.3 **Water Conservation Measures**
SUS
Reduce the amount of water used by development by requiring compliance with adopted water conservation measures.

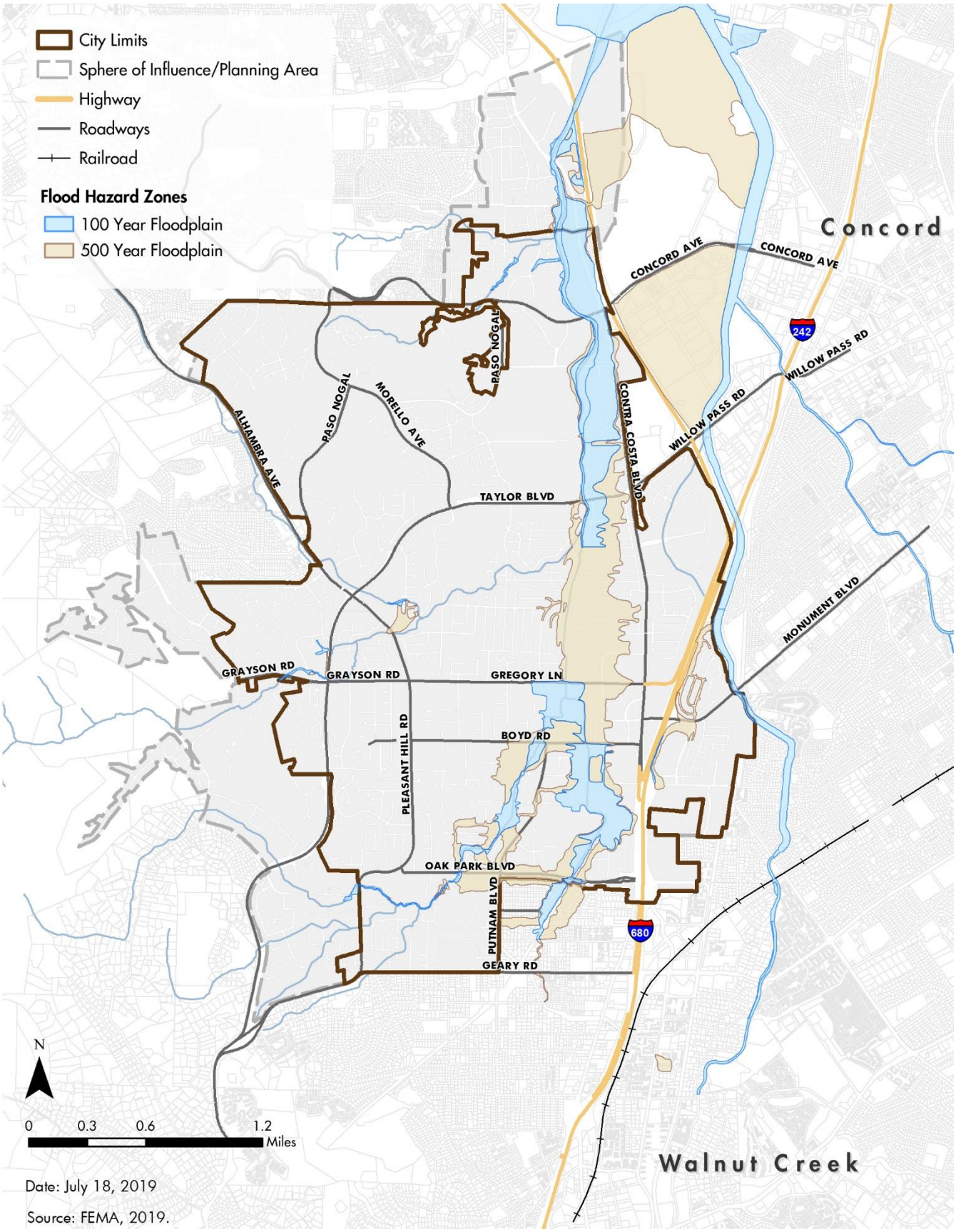
9.5 Flooding

Flooding occurs when the water level in a body of water such as a lake or creek rises higher than the banks, causing it to overflow into nearby areas. Localized flooding can also occur in storm events, when the amount of precipitation overburdens and backs up stormwater systems or debris clogs drains, causing water to pool and flood streets or properties.

The frequency and severity of flooding from bodies of water are measured using the probability of a flood occurring in a given year. A 100-year flood plain therefore has a one percent chance of occurring in any given year, while a 500-year flood plain has a 0.2 percent chance of flooding in any given year. FEMA maps and defines 100-year and 500-year flood plains.

Precipitation in the Pleasant Hill area is expected to increase in the future due to climate change, with an estimated increase of 6.7 to 8.2 inches of rain annually by 2045. This increase in rain will inevitably result in additional stress on the stormwater system and flooding. Pleasant Hill is primarily susceptible to flooding on the eastern border of the city, as shown on Figure HS-4, although localized flooding may occur in other areas due to geography or inadequate stormwater infrastructure. The 500-year floodplain extends the length of Grayson Creek from the northeastern edge of the city to the southeastern city limits. The northeastern city limits are also designated as a 100-year floodplain, with a small area in the 500-year floodplain just outside of the city limits. As of 2018, approximately six percent of Pleasant Hill's population lived in the 100-year flood plain and 16 percent live in the 500-year flood plain. These areas are at greater risk from extreme floods in severe storms where Grayson Creek or Walnut Creek overflow. Figure HS-4 shows flood hazard zones in Pleasant Hill.

Figure HS-4 Flood Hazard Zones



HS-5	Minimize the potential for serious flooding and drainage problems including damage to property, loss of life, and economic displacement.

HS-5.1 **Flood Damage Potential Reduction**
Reduce flood damage potential in areas known to be prone to flooding.

HS-5.2 **Flood Emergency Response**
Maintain and improve the ability of the Police Department, and the Maintenance and Engineering Divisions to respond to flood emergencies.

HS-5.3 **City Staff Training**
Ensure City staff have ongoing, adequate training to support the Floodplain Management Program.

HS-5.4 **Development Stormwater Impacts**
Require new development to manage stormwater runoff in a safe, responsible manner. Where possible, implement a zero-discharge policy.

HS-5.5 **Development in Floodplains**
Minimize development in the 100-year floodplain and require projects in the 100- and 500-year floodplains to incorporate required stormwater management and flood-prevention design measures.

HS-5.6 **Low-Impact Development**
SUS
Require low-impact development (LID) measures in new development, major remodeling projects, and public projects to limit the amount of impervious surface in new development and to increase retention, treatment, and infiltration of urban stormwater runoff.

HS-5.7 **Creek Clean-Up**
SUS
Coordinate with regional agencies, underlying property owners of the creek, and local volunteer groups to clear debris from creeks within the City to allow water to flow uninterrupted minimizing the impact of flooding.

9.6 Airport-Related Hazards

Airport-related hazards are the risks to physical safety of people and property near an airport from aircraft accidents. While extremely rare, addressing these risks in land use planning ensures that nearby communities are developed in a way that is safe and compatible with local airports.

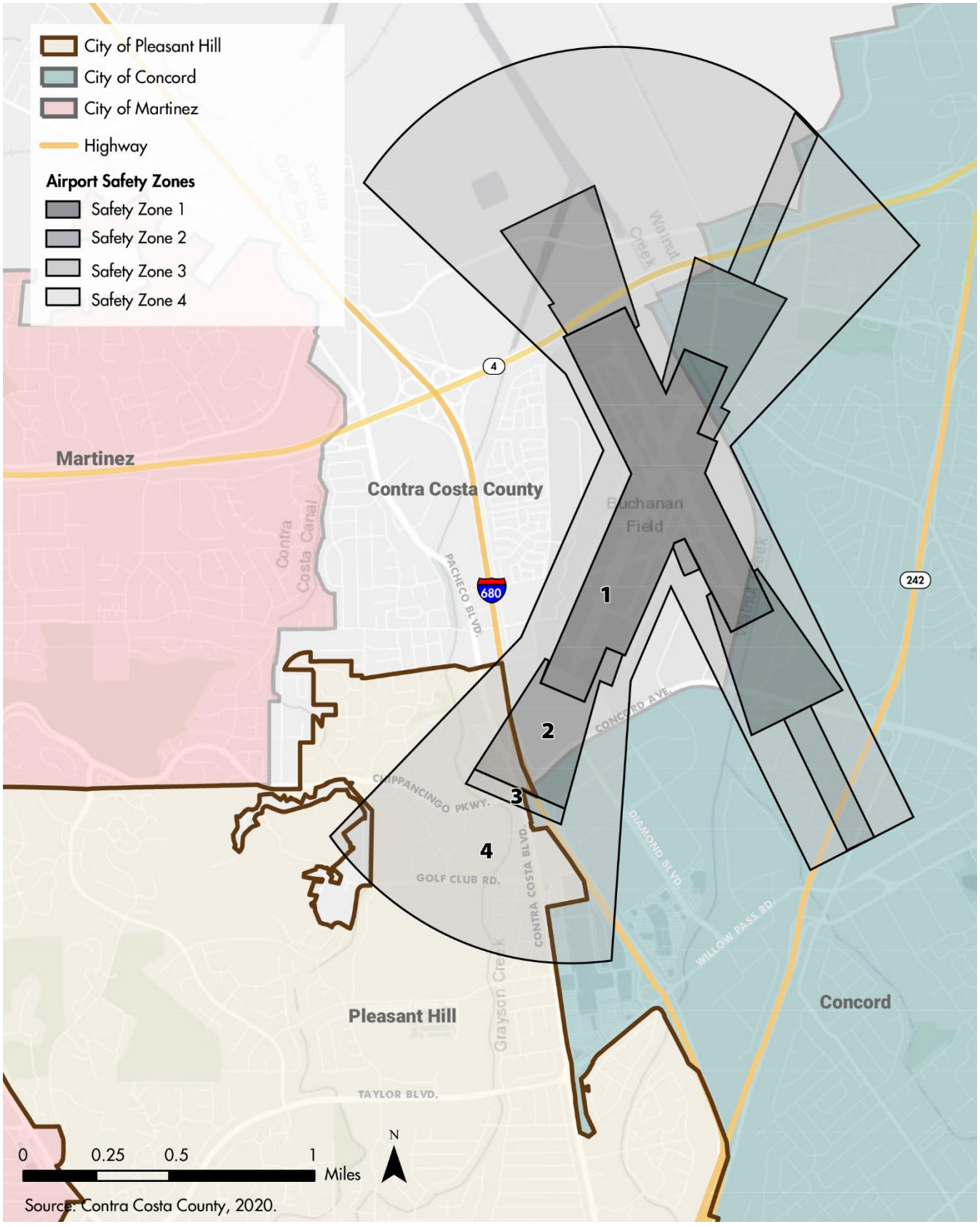
Buchanan Field Airport is just outside the northeast corner of the Pleasant Hill city limits (see Figure HS-5) and has a recently renovated runway, aviation services and facilities, emergency response services, access to Bay Area transportation and business centers, and related transportation amenities. Annual airport operations in 2018 consisted of just over 112,000 flights, compared to a high of 353,926 in 1978. The 327 aircraft based at Buchanan Field in June 2020 included 14 jets, 6 helicopters, 32 multi-engine, and 275 single-engine airplanes. The Buchanan Field Airport Master Plan was first adopted in 1990, last amended in 2008, and guides the operations, development, and safety planning of the airport influence area, which extends approximately 2.5 miles from the runways and includes most of Pleasant Hill north of Boyd Road.

HS-6	Ensure that airport operations do not adversely affect quality of life and safety for residents.

HS-6.1 **Airport Land Use Compatibility Plan Adherence**
Ensure consistency with the County Airport Land Use Compatibility Plan development restrictions.

HS-6.2 **Airport Coordination**
Coordinate with Buchanan Field Airport on land use considerations where compatibility issues may occur on the border of the airfield.

Figure HS-5 Airport Safety Zones



9.7 Noise

While a certain amount of noise is a part of daily urban life, exposure to excessive noise is considered detrimental to well-being and contributes to undue stress, sleep and concentration disturbance, and even health issues. State law requires a general plan to identify and address noise generation in the community and establish current and projected noise levels for roadways, railroads, airports, industrial uses, and other significant sources. Noise contour maps are used as guides to establish land use patterns that minimize exposure of residents to excessive noise.

Major noise sources for Pleasant Hill include vehicular traffic on freeways and major streets, such as Interstate 680 and Contra Costa Boulevard, operations at some commercial centers, and noise generated by construction projects. Noise levels are not expected to change significantly during the 20-year timeframe of this general plan. Noise contours projected for Pleasant Hill at General Plan buildout are shown in Figure HS-5 and are depicted in terms of the Day-Night Average Level. Figure HS-6 shows the land use noise compatibility criteria representing the maximum acceptable noise, in decibels, that may be received by for each of the listed land use categories (2040 Noise Contours).

Figure HS-6 2040 Noise Contours

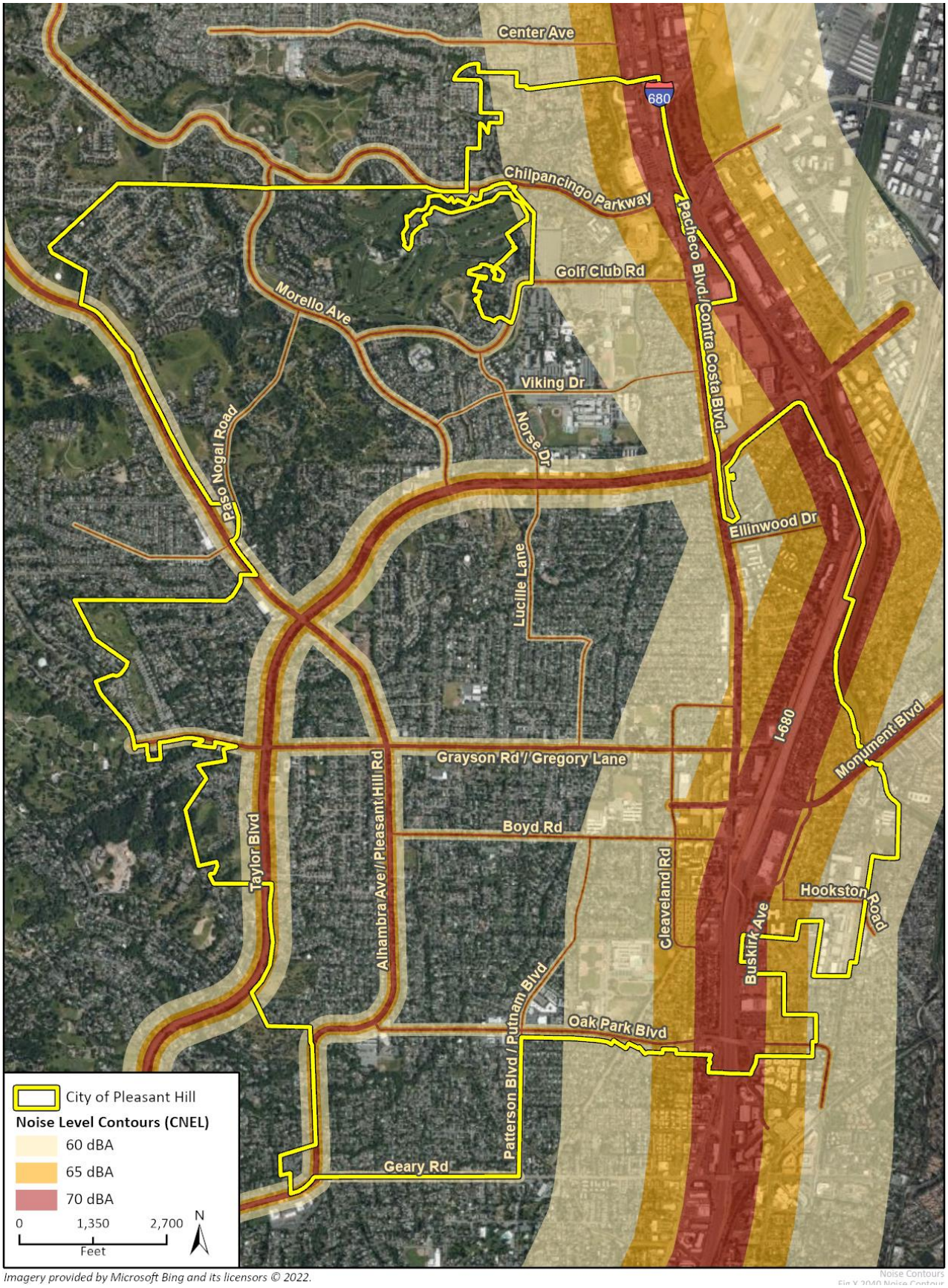


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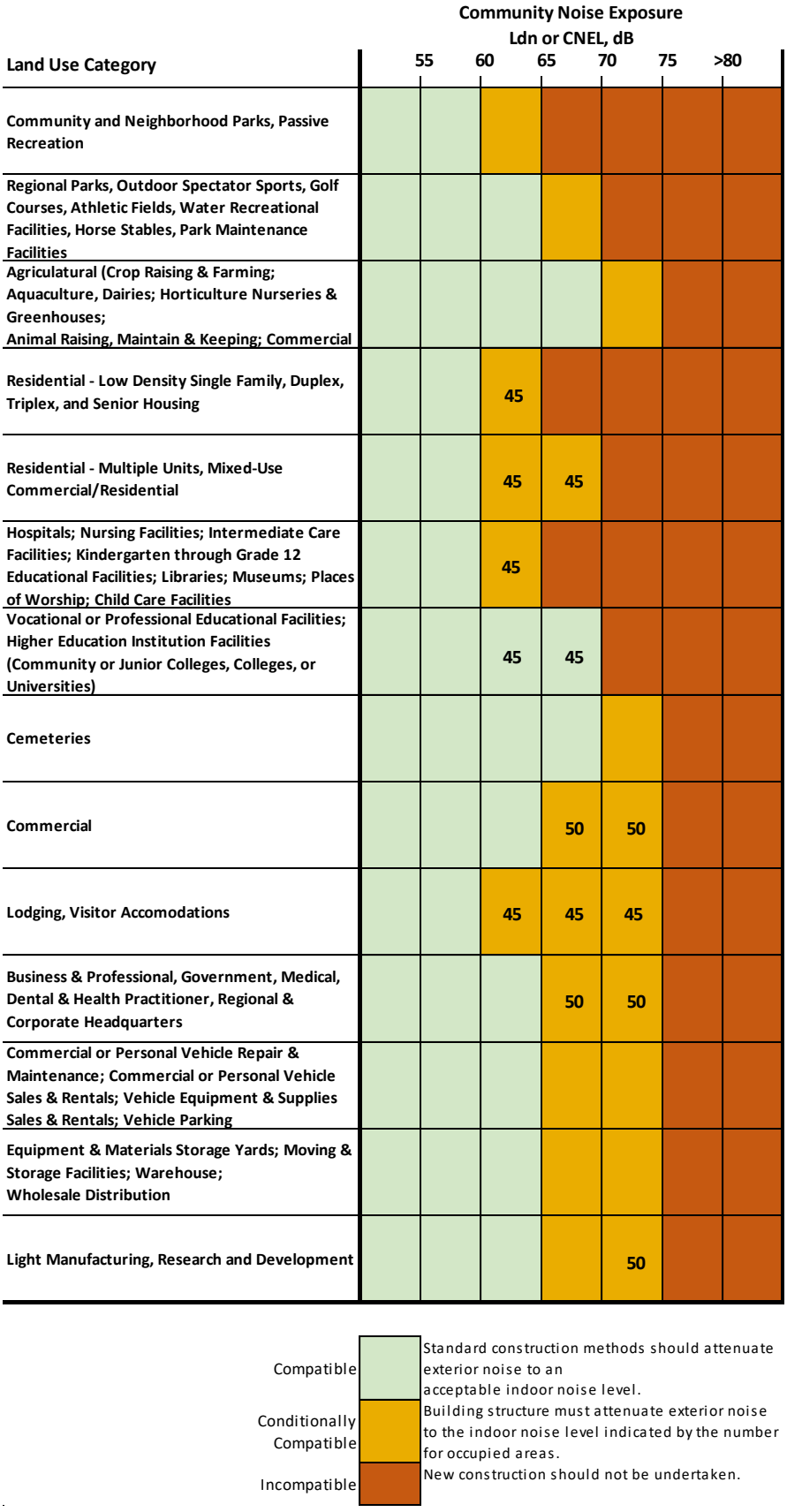
Figure HS-7 Land Use Noise Compatability



HS-7	Ensure the community is protected from noise that interferes with human activity or causes health problems.

HS-7.1 **Noise Level Standards**
Require new development to be designed and constructed to meet acceptable noise level standards adopted by the City.

HS-7.2 **Noise Impact Mitigation**
Evaluate the noise impacts of new development based on the potential for significant increases in noise levels, in addition to compliance with acceptability standards and require mitigation, if necessary, to comply with City noise standards.

HS-7.3 **Transportation Agency Cooperation**
Proactively cooperate with transportation agencies, including Caltrans and CCTA, to reduce noise from existing and future transportation facilities, including the development of noise reduction strategies related to the design and location of all facilities.

HS-7.4 **Residential Site Design Noise Consideration**
Protect residential areas from noise and vibration by requiring appropriate site and building design, sound walls, and landscaping and by the use of noise attenuating construction techniques and materials.

HS-7.5 **Noise Restrictions in Commercial and Industrial Developments**
Require new commercial and industrial developments adjacent to residential uses to reduce potential noise impacts to comply with City noise standards.

HS-7.6 **Zoning Ordinance to Implement Construction Noise Reduction Measures**
EIR
Construction contractors shall implement the following measures for construction activities conducted within the City. Construction plans submitted to the City shall include construction noise analysis and identify these measures on demolition, grading, and construction plans submitted to the City. The City of Pleasant Hill Building Division shall verify that grading, demolition, and/or construction plans submitted to the City include these notations prior to issuance of demolition, grading and/or building permits.

- Mufflers. During excavation and grading construction phases, all construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards.
- Stationary Equipment. All stationary construction equipment shall be placed so that emitted noise is directed away from the nearest sensitive receivers.
- Equipment Staging Areas. Equipment staging shall be located in areas that will create the greatest distance feasible between construction-related noise sources

and noise-s Smart Back-up Alarms. Mobile construction equipment shall have smart back-up alarms that automatically adjust the sound level of the alarm in response to ambient noise levels. Alternatively, back-up alarms shall be disabled and replaced with human spotters to ensure safety when mobile construction equipment is moving in the reverse direction in compliance with applicable safety laws and regulations.

- Electrically-Powered Tools and Facilities. Electrical power shall be used to run air compressors and similar power tools and to power any temporary structures, such as construction trailers or caretaker facilities, where feasible.

- Noise Disturbance Coordinator. The project applicant shall designate a "noise disturbance coordinator" responsible for responding to any local complaints about construction noise. The disturbance coordinator shall determine the cause of any noise complaint and shall require that reasonable measures be implemented to correct the problem. A telephone number for the disturbance coordinator and the City shall be posted at the construction site.

- Temporary Noise Barriers. Erect temporary noise barriers, where feasible, when construction noise is predicted to exceed the acceptable standards (e.g., 80 dBA Leq at residential receivers, schools or other sensitive receptors during the daytime) and when the anticipated construction duration is greater than is typical (e.g., two years or greater). Temporary noise barriers shall be constructed with solid materials (e.g., wood) with a density of at least 1.5 pounds per square foot with no gaps from the ground to the top of the barrier. If a sound blanket is used, barriers shall be constructed with solid material with a density of at least 1 pound per square foot with no gaps from the ground to the top of the barrier and be lined on the construction side with acoustical blanket, curtain or equivalent absorptive material rated sound transmission class (STC) 32 or higher.

HS-7.7 **Construction Vibration Control Measures**

EIR Prior to issuance of a building permit for a project requiring pile driving during construction within 135 feet of fragile structures such as historical resources, 100 feet of non-engineered timber and masonry buildings (e.g., most residential buildings), or within 75 feet of engineered concrete and masonry (no plaster); a vibratory roller within 40 feet of fragile historical resources or 25 feet of any other structure; or a dozer or other large earthmoving equipment within 20 feet for a fragile historical structure or 15 feet of any other structure, the project applicant shall prepare a groundborne noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these construction activities. This noise and vibration analysis shall be conducted by a qualified and experienced acoustical consultant or engineer. The vibration levels shall not exceed FTA architectural damage thresholds (e.g., 0.12 in/sec PPV for fragile or historical resources, 0.2 in/sec PPV for non-engineered timber and masonry buildings, and 0.3 in/sec PPV for engineered concrete

and masonry). If vibration levels would exceed this threshold, alternative uses such as drilling piles as opposed to pile driving, static rollers as opposed to vibratory rollers, and lower horsepower earthmoving equipment shall be used. If necessary, construction vibration monitoring shall be conducted to ensure FTA vibration thresholds are not exceeded.

9.8 Hazardous Materials

A hazardous material is any material that, due to its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment. Hazardous materials include industrial wastes, pesticides, herbicides, infectious waste, radioactive materials, and combustible fuels. Transport and storage of hazardous materials pose potential public safety hazards in Pleasant Hill. Vehicle accidents involving hazardous materials have historically occurred on Interstate 680, and no regulations are in place to prevent trucks from carrying hazardous materials through the city.

Stationary sources of hazardous materials in Pleasant Hill include air emissions from industrial land uses, soil and groundwater contamination from industrial and commercial activities, and fuel pipelines and storage in various parts of the city. Industrial and commercial sources of wastes can include activities from dry cleaners and service stations to manufacturing and repair services. Two fuel pipelines also traverse the city: one beneath Taylor Boulevard and another beneath the Iron Horse Trail at the eastern edge of the city. Both pipelines are equipped with pressure-sensitive valves that automatically shut off flow in the event of a break in the line, although gas pipeline failures are considered unlikely and low risk to the community.

Hazardous materials storage in Pleasant Hill is limited to fuels in underground tanks at service stations and chemicals at light industrial sites. Each business storing hazardous materials must obtain permits from the City and the Fire District and must file a Hazardous Materials Business Plan that establishes incident prevention measures, handling protocols, and evacuation procedures with the County Environmental Health Department. The Plans are also reviewed by the Central Contra Costa Sanitary District, the Regional Water Quality Control Board, and the Bay Area Air Quality Management District. The Fire District enforces the stipulations contained in the plans once they are approved.

HS-8	Reduce the exposure to hazardous substances and the resulting potential for injuries, economic and social displacement, and loss of life.

HS-8.1 **Hazardous Materials Business Plans**
Monitor and regulate hazardous materials by requiring the preparation and periodic updating Hazardous Materials Business Plans for and periodic inspections of all businesses in the city that handle, store, use, or transport hazardous materials.

HS-8.2 **Water and Air Supply Protection**
Work with public agencies and private organizations to identify and eliminate hazardous material releases into the water and air supply.

HS-8.3 **Site Assessment Requirement**
Require Phase I Site Assessments for projects on all properties where toxins could occur.

HS-8.4 **Alternative Practices**
SUS
Minimize the use of toxic and hazardous materials in Pleasant Hill, promoting sustainable materials and practices where possible.

HS-8.5 **Household Hazardous Waste**
Expand and promote household hazardous waste programs to safely dispose of items such as paint, gasoline, engine oil, batteries, and cleaners.

HS-8.6 **Hazardous Material Transportation Routes**
Work with appropriate agencies to identify and require all transport of hazardous materials to follow approved routes.

9.9 Public Health Emergencies

During health emergencies, local jurisdictions provide initial leadership, resources, and information to their citizens while establishing public-private and regional response efforts. Pandemics have the potential to be the most-deadly threat to public health. A pandemic can occur when a new strain of influenza or other pathogen emerges to which most or all of the world's human population has had no previous exposure and thus has no immunity. In the last century, multiple influenza pandemics have swept the globe.

- In 1918, a flu pandemic (sometimes referred to as the "Spanish Flu") killed over 500,000 Americans and more than 20 million people worldwide. One-third of the U.S. population was infected, and average life expectancy was reduced by 13 years. (Source: National Strategy for Pandemic Influenza)
- Pandemics in 1957 and 1968 killed tens of thousands of Americans and millions across the world. (Source: National Strategy for Pandemic Influenza)
- In the spring of 2009, a novel influenza A (H1N1) virus emerged. It was detected first in the United States and spread quickly across the United States and the world. From April 12, 2009 to April 10, 2010, CDC estimated there were 60.8 million cases (range: 43.3-89.3 million), 274,304 hospitalizations (range: 195,086-402,719), and 12,469 deaths (range: 8868-18,306) in the United States.
- The 2020 COVID-19 Pandemic has spread rapidly since its discovery in December 2019. COVID-19 is an illness caused by a new coronavirus that can spread from person to person. As of August 5, 2020, there have been more than 4.8 million confirmed cases and 158,000 deaths in

the United States. Globally, 18.6 million cases have been confirmed and 701,000 people have died from the effects of the novel corona virus.

Although the timing, nature, and severity of a pandemic cannot be predicted, a planned and coordinated response is critical to minimizing the public health impact, as well as the social and economic disruption to our everyday lives.

HS-9	Reduce the potential and severity of short- and long-term health emergencies, control the rate and extent of the spread of an illness, reduce economic and social displacement, and minimize loss of life.

HS-9.1 **Implement Public Health Guidance**
Implement all guidance from appropriate State and Contra Costa County agencies relative to declared public health emergencies.

HS-9.2 **Agency Coordination During Public Health Emergencies**
Work closely with the State and Contra Costa County health officials during a public health emergency to assure that City needs are considered and addressed and appropriate programs and resources are made available.

HS-9.3 **Essential Health Services Delivery**
Partner with organizations responsible for essential health care and human services to ensure those services are provided as early as possible during the response, recovery, and return of the public health system after a public health emergency.

HS-9.4 **Community Education and Communication**
Continue to maintain and enhance the City's communications and education resources to provide timely and up-to-date information concerning public health emergencies.

HS-9.5 **Preparedness**
Work with the State and Contra Costa County to maintain a supply of resources necessary to respond to early stages of a public health emergency.

HS-9.6 **Continuity of Service**
Work with the State and Contra Costa County to develop a series of procedures that would support and assist the health care system at the level necessary to maintain continuity of services and operations in the case of a medical surge during a natural disaster and/or public health emergency.

9.10 Implementation Programs

Programs		Implements Which Policy(ies)	Responsible / Supporting Department(s)	2021 – 2025	2026 – 2030	2031 – 2040	Annual	Ongoing
A	**Review of the Comprehensive Emergency Management Plan** Update and review the Pleasant Hill Comprehensive Emergency Management Plan (CEMP) every five years to ensure it reflects current needs and changing conditions.	HS-1.1	City Manager Police Department	■				■
B	**Emergency Facilities Evaluation** Conduct an evaluation of public buildings and structures that provide emergency services and response, such as fire and police facilities, as well as community facilities that serve as evacuation centers or refuge sites to identify retrofitting necessary to ensure the stability and safety of such facilities in the event of a disaster.	HS-2.4 HS-2.6	Building Division Police Department	■				
C	**Response Drills** Conduct emergency hazard drills with key stakeholder organizations and school districts across the community to improve preparedness for known threats and hazards.	HS-2.7	City Manager Police Department				■	

Programs		Implements Which Policy(ies)	Responsible / Supporting Department(s)	2021 – 2025	2026 – 2030	2031 – 2040	Annual	Ongoing
D	**Household Preparedness** Expand educational and informational programs that help and encourage each household in the city to be prepared to be self-sufficient for at least two weeks after a major earthquake, flood, terrorism event, pandemic, or other major disaster.	HS-2.7	City Manager Police Department	■				
E	**Update Preparedness Materials** Review and update the City's earthquake preparedness information website and materials annually to keep them current. Develop and implement an effective means to disseminate these materials to city residents and businesses.	HS-2.7	City Manager Police Department				■	
F	**Assist the Fire District** Coordinate with Contra Costa County Fire Protection District to assist with training efforts when appropriate and feasible and review of new development to assure adequacy of access for equipment, water supplies, construction standards, and vegetation clearance.	HS-3.4 HS-3.5 HS-3.7	City Manager Police Department					■

Programs		Implements Which Policy(ies)	Responsible / Supporting Department(s)	2021 – 2025	2026 – 2030	2031 – 2040	Annual	Ongoing
G	**Wildfire Design Standards** Review and update the Pleasant Hill Municipal Code every five years to ensure it incorporates the most up-to-date standards and requirements for wildfire mitigation and risk reduction. If needed, amend the Code to include recently passed legislation or significant changes in building standards or best practices.	HS-3.2 HS-3.4 HS-3.8 HS-3.10	Planning Division Building Division Engineering Division	■				
H	**Contra Costa County Multijurisdictional Hazard Mitigation Plan** The City shall actively participate in the next update of the Contra Costa Multijurisdictional Hazard Mitigation Plan that, among other outcomes, will identify evacuation routes in the city in compliance with AB 747 and SB 99.	HS-3.8	City Manager Engineering Division Planning Division Police Department	■				
I	**Updates to the Municipal Code** Update the Pleasant Hill Municipal Code to comply with State, Federal, and Regional (Contra Costa Flood Control District Standards) requirements, best practices, and City stormwater management and flood control measures.	HS-5	Planning Division Building Division Engineering Division		■			
J	**Watershed Analysis Study** Conduct a Watershed Analysis Study of runoff and drainage systems to predict areas of insufficient capacity in the storm drain and natural creek system.	HS-5.1	Engineering Division			■		

Programs		Implements Which Policy(ies)	Responsible / Supporting Department(s)	2021 – 2025	2026 – 2030	2031 – 2040	Annual	Ongoing
K	**Identify Capital Improvement Projects for Flood Prone Areas** Develop a prioritized list of proposed capital improvement projects for low-lying, flood-prone areas, and seek funding for those projects.	HS-5.1 HS-5.5	Engineering Division		■			
L	**Data on Low-lying Areas** Augment existing Geographic Information System (GIS)and other data with information about low-lying areas obtained during storms.	HS-5.2	Engineering Division				■	
M	**Public Safety Personnel Training** Train Police and personnel in the Maintenance and Engineering Divisions to a level appropriate to their positions and responsibilities to respond to flood emergencies.	HS-5.2 HS-5.3	City Manager Police Department Engineering Division Maintenance Division					■
N	**Porous Pavement Municipal Code Standards** Update the Municipal Code to encourage that parking and low-impact drive areas with 20 or more parking spaces to install porous pavement to reduce runoff and include. vegetative buffers and islands.	HS-5.5 HS-5.7	Planning Division Engineering Division					■

Programs		Implements Which Policy(ies)	Responsible / Supporting Department(s)	2021 – 2025	2026 – 2030	2031 – 2040	Annual	Ongoing
O	**Establish Acoustical Study Requirement Areas** Prepare acoustical study requirements based on the City noise contour map that will determine when acoustic studies shall be required sensitive land uses.	HS-6.1, HS-6.2, HS-7.3, HS-7.4 HS-7.5 HS-7.6	Engineering Division Planning Division	■				
P	**Noise Level Standards** Amend Municipal Code Chapter 9.15 to establish clear, measurable, and acceptable exterior noise level standards for all new developments and additions, including capital improvement projects. The amended Chapter shall include procedures to measure and monitor noise, and enforcement procedures.	HS-7.1 HS-7.4 HS-7.5 HS-7.6	Engineering Division Planning Division	■				
Q	**Dialogue with Caltrans** Encourage Caltrans to resurface all designated concrete roads within the City to reduce vehicle noise.	HS-7.3	Engineering Division City Manager					■
R	**Noise in Residential Areas** Amend the city noise ordinance to prohibit commercial property sourced activities such as garbage and recycling pickup, parking lot vacuuming and the use of all landscape equipment, when adjacent to existing residential areas, during late night and early morning hours.	HS-7.4	Planning Division		■			

Programs		Implements Which Policy(ies)	Responsible / Supporting Department(s)	2021 – 2025	2026 – 2030	2031 – 2040	Annual	Ongoing
S	**Personal Protective Equipment Supply** The City should maintain a supply of Personal Protective Equipment (PPE) for City essential workers (i.e., City staff, contractors, vendors, and volunteers) that protects these workers during initial stages of a public health emergency.	HS-9.3 HS-9.5	City Manager Police Department Human Resources Maintenance Division					■
T	**Continuity of Operations Plan** The City shall develop a Continuity of Operations Plan (COOP) as a standalone plan or as part of a larger emergency management plan for both short-term and long-term emergencies. The COOP should outline a set of procedures to implement as needed in preparation of and during a natural disaster and/or public health emergency.	HS-9.6	City Manager		■			

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