

## 8 Safety and Noise

Ensuring the safety of community members through protection from hazards is an essential function of the City of San Pablo. This section discusses seismic and geologic hazards, soil properties and associated risks, flooding hazards, hazardous materials, fire hazards, and noise.

### Hazard Risk Ranking

A coalition of Contra Costa County cities and special districts began an update to the Contra Costa County Local Hazard Mitigation Plan (LHMP) in November 2016. As part of the LHMP, a risk assessment was conducted for all hazards of concern. The LHMP, adopted by the City of San Pablo in April 2018, provides a local hazards risk ranking that summarizes how hazards vary for each jurisdiction, summarized in Table 8-1. The ranking process involves an assessment of the likelihood of occurrence for each hazard, along with its potential impacts on people, property, and the economy. In San Pablo, the hazards of greatest concern are earthquakes and dam failure. Dam failure is also likely a secondary impact of earthquakes.

**Table 8-1: Local Hazards Risk Ranking**

| Rank | Hazard Type                 | Risk Rating Score<br>(Probability x Impact) | Category |
|------|-----------------------------|---|----------|
| 1    | Earthquake                  | 54  | High     |
| 2    | Dam failure <sup>1</sup>    | 36  | High     |
| 3    | Severe weather              | 30  | Medium   |
| 3    | Landslide <sup>2</sup>      | 30  | Medium   |
| 4    | Flood <sup>3</sup>          | 18  | Medium   |
| 5    | Drought                     | 9   | Low      |
| 6    | Wildfire <sup>2,4</sup>     | 6   | Low      |
| 7    | Sea level rise <sup>5</sup> | 0   | None     |
| 7    | Tsunami                     | 0   | None     |

Notes:

1. Failure is assigned a medium probability of occurrence as a secondary impact from earthquake.
2. Very High and High severity zones were used to assign probability and impacts.
3. One percent annual chance event (100-year flood event) was used to assign probability and impacts.
4. There is no mapped risk within the city, but a score was given due to potential smoke impacts on people and economy.
5. 2100 upper range estimates and extreme tide were used to assign probability and impacts.

Source: Contra Costa County Local Hazard Mitigation Plan, 2018; Dyett & Bhatia, 2021.

## Seismic and Geologic Hazards

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The term “seismicity” describes the effects of seismic waves that are radiated from an earthquake as it ruptures. The San Francisco Bay Area is one of the most seismically active regions of the United States. The entire Bay Area, including the Planning Area, are seismically dominated by the presence of the active San Andreas Fault System (SAFS). The SAFS is the general boundary between the northward moving Pacific Tectonic Plate and the southward moving North American Tectonic Plate. Movement of the plates relative to one another results in the accumulation of strain along the faults, which is released during earthquakes. The SAFS is the predominant fault system in California and has generated some of the largest and most destructive earthquakes in history. The nearest location of the San Andreas Fault to San Pablo is about fifteen miles to the west.

In addition to the SAFS, there are 30 known faults in the Bay Area that are considered capable of generating earthquakes. The principal faults near San Pablo are the San Andreas and North Hayward faults. The North Hayward Fault Zone passes directly underneath the Planning Area from northwest to southeast and is considered a high earthquake hazard as large movements would cause ground shaking and surface rupture in the area. Other principally active faults in the region include the Wildcat Fault, the Rodgers Creek Fault, and the Concord Fault.

### **SURFACE FAULT RUPTURE**

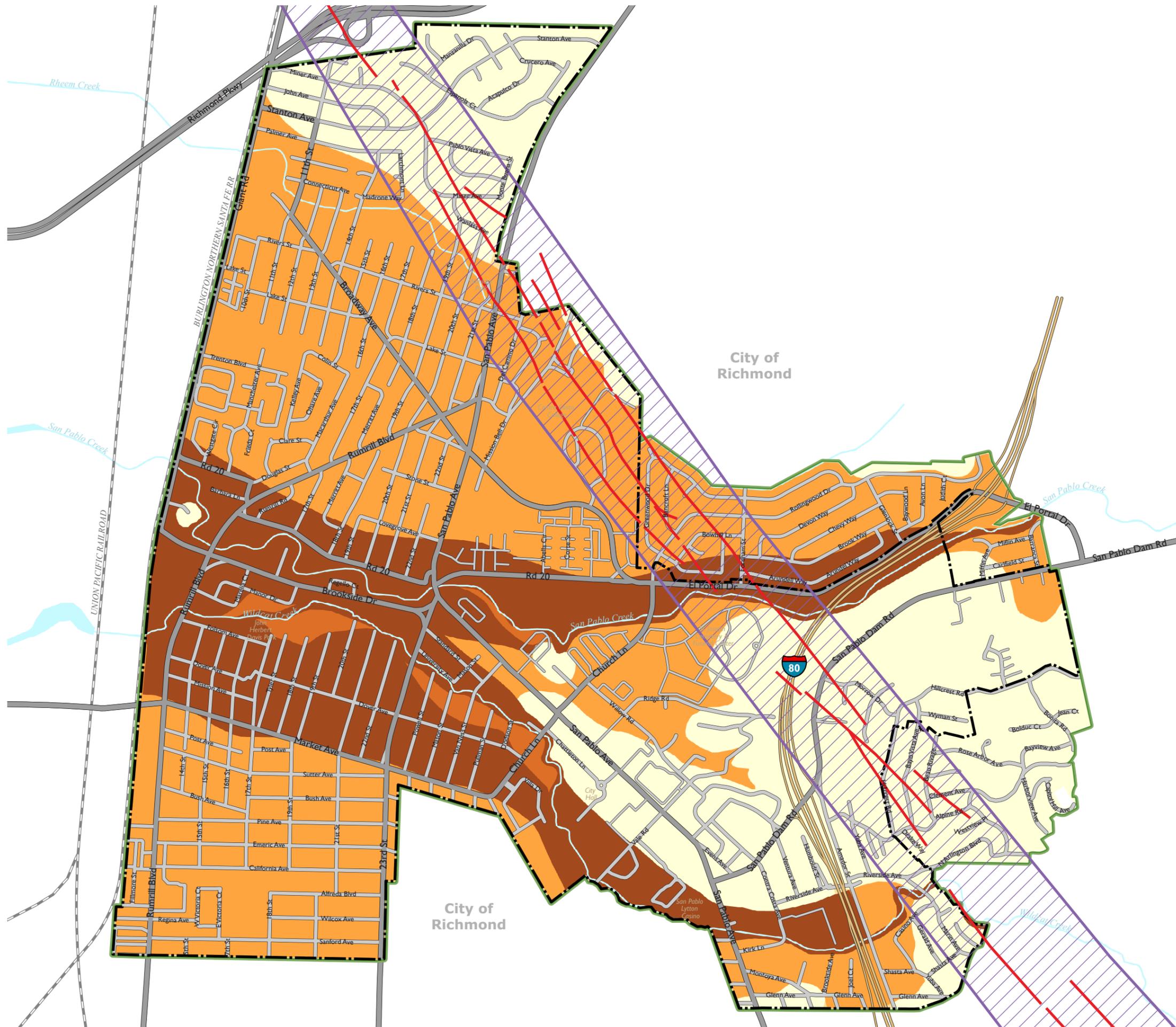
Surface fault rupture can occur during significant seismic events. The process generally involves the displacement of the Earth’s surface along a fault trace or fault zone. The magnitude and geometry of such ground displacement is highly variable. Buildings or other human-made structures that lie atop the fault can experience serious damage or catastrophic failure during a strong earthquake.

If an earthquake were to occur along the Hayward Fault, fault rupture could occur along that fault line. To address the hazards of surface fault rupture and to prevent the construction of buildings used for human occupancy on the surface trace of active faults, the Alquist-Priolo Earthquake Fault Zoning Act of 1972 was passed. Areas within San Pablo that are most likely to experience fault rupture are incorporated into the Alquist-Priolo Earthquake Zone depicted in Figure 8-1. Developments in San Pablo that fall within this zone are strictly regulated. Residential structures intended for human occupancy cannot be placed in the Alquist-Priolo Zone. Thus, future development potential is limited in areas covered by this zone.

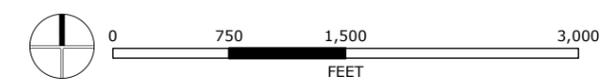
### **GROUND SHAKING**

Ground shaking is a general term referring to all aspects of motion of the Earth’s surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the rupture, and local geologic conditions. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. The strongest ground shaking anticipated to occur in San Pablo will be triggered by the North Hayward Fault, due to its immediate proximity. Damage in areas near the fault and those underlain by estuarine deposits near creeks and the shoreline to the west could be extensive. Earthquakes on other faults will produce lower intensity ground shaking in the city.

Figure 8-1: Seismic Hazards



- Hayward Fault
- Alquist Priolo Zones
- Liquefaction Susceptibility**
  - Very high
  - High
  - Moderate
  - Low
  - Very low
- City Limits
- Sphere of Influence
- Major Highway
- Major Roads
- Railroads



SOURCE: Official Maps for New Seismic Hazard Zones in Contra Costa County, California Geological Survey, California Department of Conservation, February, 2024; City of San Pablo, 2021; Contra Costa County GIS, 2021; Dyett & Bhatia, 2021

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## **LIQUEFACTION**

Liquefaction occurs when loosely packed sandy or silty materials saturated with water experience ground shaking extreme enough to lose strength and stiffness. Liquefied soils behave like a liquid and are responsible for tremendous damage in an earthquake. For example, liquefaction can cause buildings to collapse, pipes to leak, and roads to buckle. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths.

As shown in Figure 8-1, due to the presence of the San Pablo and Wildcat creeks and their impact on the surrounding water table, areas of the City adjacent to these creeks tend to have “High” to “Very High” liquefaction susceptibility. Because these soils often swell when wetted and shrink when dried, special measures are needed for the construction of tall buildings or basements, which can add to development cost and pose challenges for project feasibility.

## **LANDSLIDES**

Earthquake-induced landslides are a secondary earthquake hazard that occurs from ground shaking. These landslides can destroy roads, buildings, utilities, and other critical facilities necessary to respond to and recover from an earthquake. Many communities in the Bay Area have a high likelihood of encountering such risks, especially in areas with steep slopes. In San Pablo, areas on both sides of San Pablo Dam Road east of I-80 with a slope gradient greater than 30 degrees are especially prone to land sliding. In 2011, the San Pablo Wyman Landslide Event impacted six properties off of Hillcrest Road and Wyman Street, south of San Pablo Dam Road. The City of San Pablo proclaimed a local State of Emergency following the landslide. The landslide has since been repaired.

The 2030 General Plan applies the Hillside Area Overlay District to parcels in the hilly area of the City east of I-80. Within this district, all development of more than one story in height requires zoning administrator review. All development within the district requires preparation of a geotechnical report discussing hazards and mitigation measures. In addition, off-site alternative compliance for stormwater requirements may be necessary to avoid water infiltration.

## **Soil Properties**

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The topography of the Bay Area consists of north to northwest-trending mountain ranges and intervening valleys that are characteristic of the Coast Range geomorphic province. The underlying geology is composed primarily of the Franciscan complex rock bounded on the east by the Hayward fault and on the west by the San Andreas fault. The Franciscan rocks are formed by pieces of former oceanic crust that have been accreted to North America by subduction and collision of the North American and Pacific Plates. These rocks are primarily deep marine sandstone and shale; however, chert and limestone are also found.

Soil properties have a significant bearing on land planning and development. The type of soil found at a location affects ground shaking, liquefaction, as well as land sliding. Table 8-2 lists the different soil types found within the Planning Area and Figure 8-2 shows their extent. Table 8-2 indicates the building site development restriction rating as determined by the US Department of Agriculture (USDA) Natural Resource Conservation Service’s soil survey. Soils are given a rank of either “Not limited,” “Somewhat limited,” or “Very limited”, based on soil features that affect the capacity of the soil to support a load without movement and on features that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, shrink-swell potential

(shrinking when dried and swelling when wetted), and compressibility. The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

A rating of “not limited” indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. “Somewhat limited” indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. “Very limited” indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected. All soils within the Planning Area are either classified as “somewhat limited” or “very limited.” Approximately 38 percent of soils are “somewhat limited,” while 62 percent are “very limited”.

The most prominent soil type in the Planning Area, Clear Lake clay of 0 to 15 percent slopes (shown in purple on Figure 8-2), has a rating of “very limited.” The reasons for this rating are high potential for shrink-swell, ponding, and flooding.

**Table 8-2: Soils Within the Planning Area**

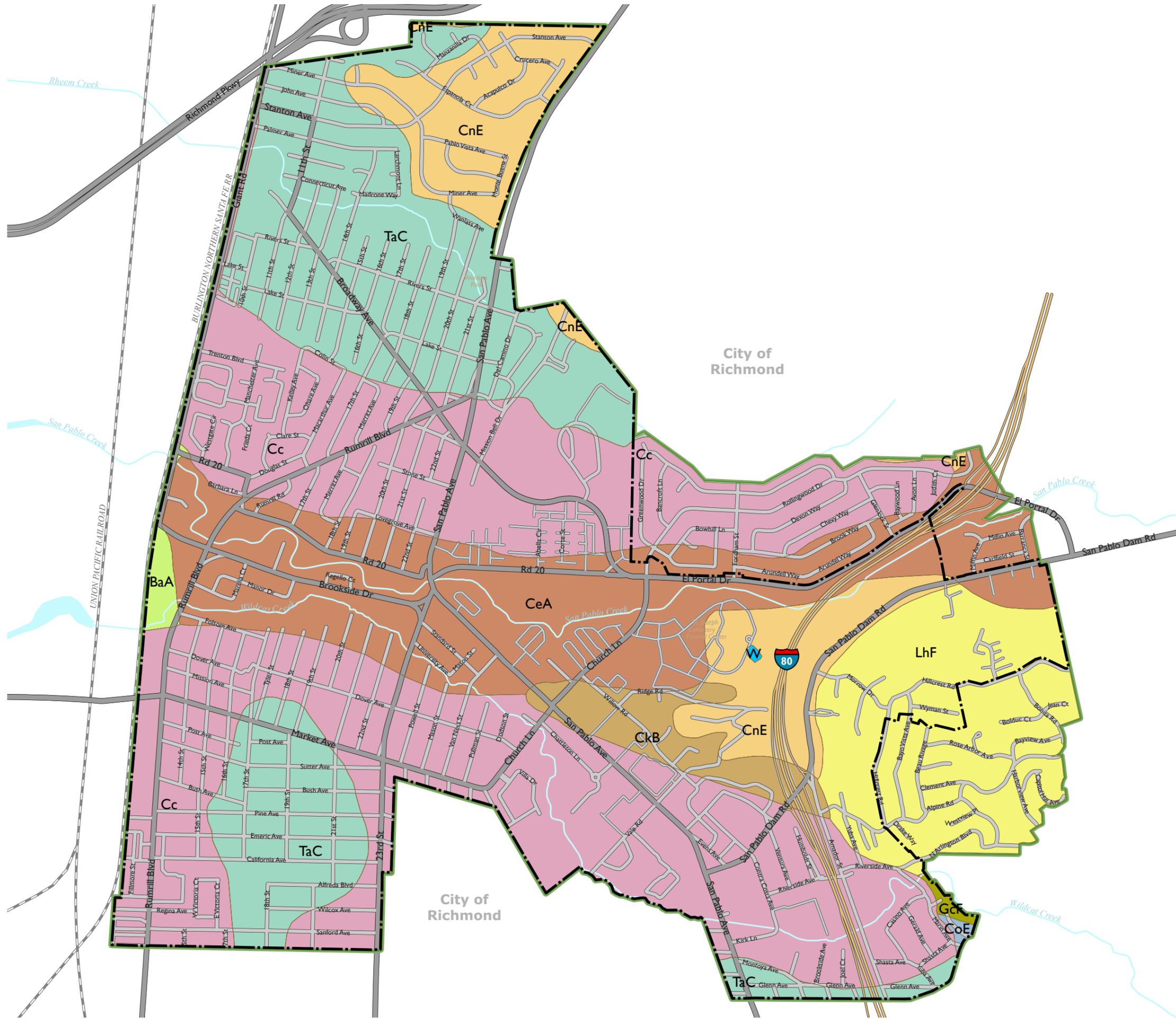
| <i>Map Symbol</i> | <i>Soil Name</i>  | <i>Building Site Development Restriction<sup>1</sup></i> | <i>Acres</i> | <i>Percent of Planning Area</i> |
|-------------------|---|--|--------------|---------------------------------|
| BaA               | Botella clay loam, 0 to 2 percent slopes                    | Somewhat limited   | 12.7         | 0.6%                            |
| Cc                | Clear Lake clay, 0 to 15 percent slopes                     | Very limited   | 781.3        | 37.9%                           |
| CeA               | Conejo clay loam, 0 to 2 percent slopes                     | Somewhat limited   | 349.6        | 16.9%                           |
| CkB               | Cropley clay, 2 to 5 percent slopes                         | Very limited   | 49.8         | 2.4%                            |
| CnE               | Cut and fill land-Los Osos complex, 9 to 30 percent slopes  | Very limited   | 205.0        | 9.9%                            |
| CoE               | Cut and fill land-Millsholm complex, 9 to 30 percent slopes | Very limited   | 4.1          | 0.2%                            |
| GcF               | Gilroy clay loam, 30 to 50 percent slopes                   | Very limited   | 5.7          | 0.3%                            |
| LhF               | Los Osos clay loam, 30 to 50 percent slopes                 | Very limited   | 234.0        | 11.3%                           |
| TaC               | Tierra loam, 2 to 9 percent slopes                          | Somewhat limited   | 420.3        | 20.4%                           |
| W                 | Water   | N/A  | 0.5          | 0.0%                            |

Notes:

1. For structures that are less than three stories high and do not have basements.

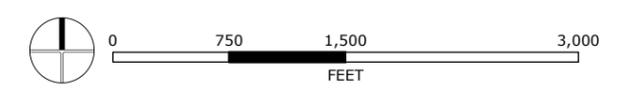
Source: US Department of Agriculture, Natural Resources Conservation Service; City of San Pablo, 2021; Dyett & Bhatia, 2021.

Figure 8-2: Soils



- BaA Botella clay loam, 0 to 2 percent slopes
- Cc Clear Lake clay, 0 to 15 percent
- CeA Conejo clay loam, 0 to 2 percent slopes
- CkB Cropley clay, 2 to 5 percent
- CnE Cut and fill land-Los Osos complex, 9 to 30 percent slopes
- CnE Cut and fill land-Millsholm complex, 9 to 30 percent slopes
- GcF Gilroy clay loam, 30 to 50 percent slopes
- LhF Los Osos clay loam, 30 to 50 percent slopes
- TaC Tierra loam, 2 to 9 percent
- W

- City Limits
- Sphere of Influence
- Major Highway
- Major Roads
- Railroads



SOURCE: U.S. Department of Agriculture, Natural Resources Conservation Service, 2023; City of San Pablo, 2021; Contra Costa County GIS, 2021; Dyett & Bhatia, 2021  
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## Flood Hazards

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Flood-prone areas in San Pablo are generally located in topographically low areas and in areas that are close to creeks. The City's Storm Drain Master Plan identifies how the creeks and the lack of storm drain infrastructure impact flooding in San Pablo. Flood zone mapping done by the Federal Emergency Management Authority (FEMA) indicates that the area most prone to flooding is where the San Pablo and Wildcat creeks leave the City boundary on the west, as shown on Figure 8-3. There are also areas adjacent to Rheem Creek that are subject to flooding. Two designations, the 100-year flood zone and the 500-year flood zone, are depicted in Figure 8-3. The 100-year flood zone refers to areas that will be inundated by the flood event having a one percent chance of being equaled or exceeded in any given year. The 500-year flood zone refers to areas that will be inundated by the flood event having a 0.2-percent annual chance of occurring.

San Pablo Creek is a year-round watercourse and is regulated in its upper stream by two dams: Briones Dam and Reservoir, and San Pablo Dam and Reservoir. The East Bay Municipal Utility District (EBMUD) is the agency that oversees these dams and reservoirs. The San Pablo Dam underwent a seismic upgrade that began in 2008 and was completed in September 2010. Through this project, EBMUD constructed a larger buttress and improved the foundation to seismically strengthen the dam and significantly lower the likelihood of a catastrophic failure of the dam, which could lead to flooding of the majority of San Pablo.

### FLOOD HAZARD MITIGATION

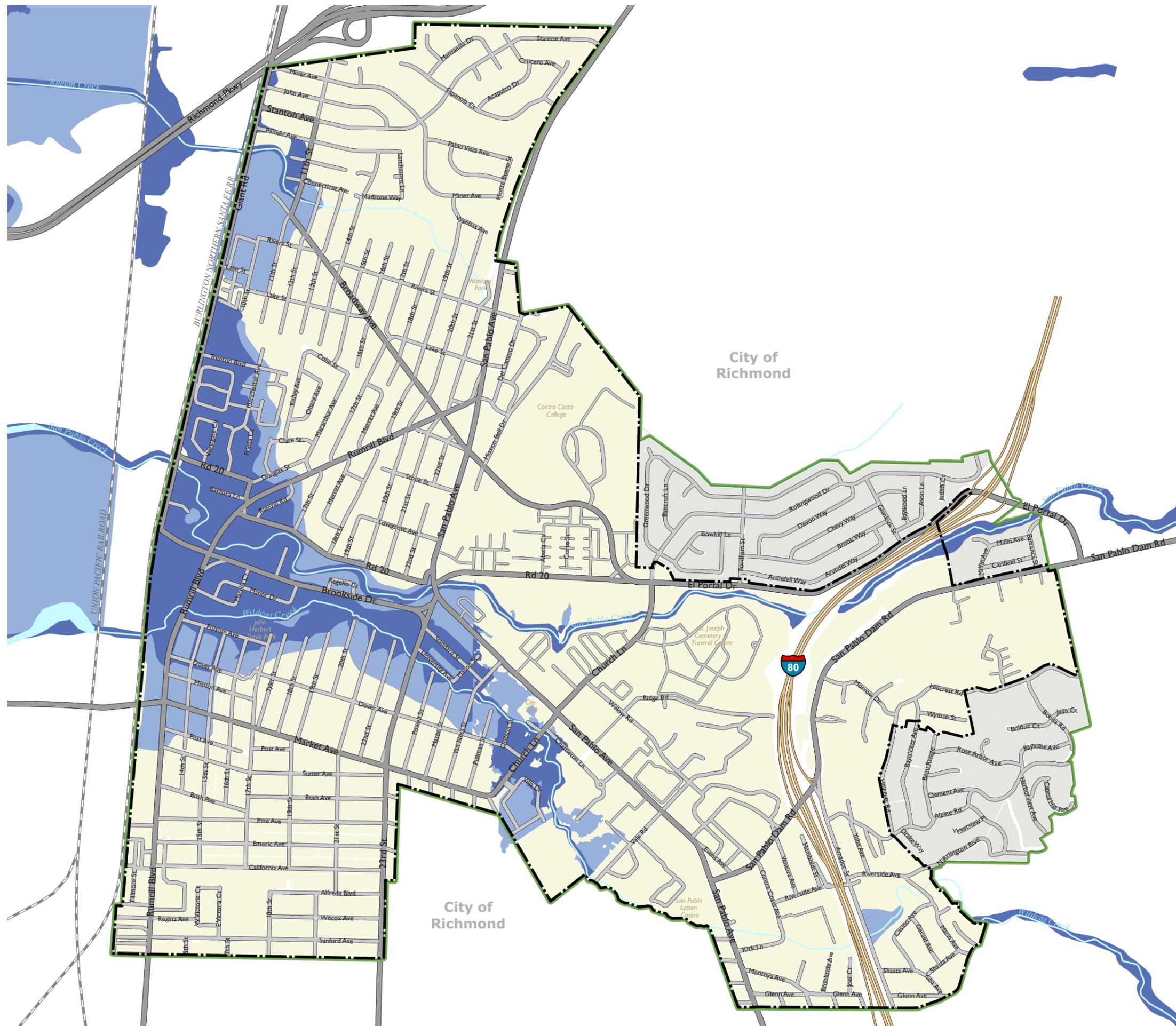
#### Local Hazard Mitigation Plan

The LHMP provides planning and direction for flood hazards in the City. Actions in San Pablo's portion of the LHMP that address flooding concerns include, among others:

- SP-4: Continue to maintain good standing and compliance under the NFIP (National Flood Insurance Program) through implementation of floodplain management program that, at a minimum, meet the NFIP requirements:
  - Enforce the Flood Damage Prevention Ordinance.
  - Participate in floodplain identification and mapping updates.
  - Provide public assistance/information on floodplain requirements and impacts.
- SP-16: Continue the City's participation in the Community Rating System (CRS) program.
- SP-17: Where appropriate, install green infrastructures (bioswales) within the public right-of-way and City-owned parcels that are adjacent to vulnerable water courses to filter and reduce storm drain runoff to prevent creek bank erosion and flooding.
- SP-18: Develop or expand open space uses (such as pedestrian trails) adjacent to vulnerable water courses where feasible and cost-effective.

The Flood Damage Prevention Ordinance, CRS program, and green infrastructure are discussed below.

Figure 8-3: Flood Zones



**FEMA Flood Hazard Zones**

100 year flood zone

500 year flood zone

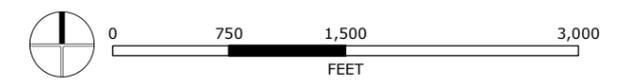
City Limits

Sphere of Influence

Major Highway

Major Roads

Railroads



SOURCE: FEMA, 2020; City of San Pablo, 2021; Contra Costa County GIS, 2021; Dyett & Bhatia, 2021

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## **Flood Damage Prevention Ordinance**

In 1987, the City adopted a Floodplain Management and Flood Damage Prevention Ordinance in compliance with the requirements of the National Flood Insurance Program (NFIP) and FEMA for development in floodplain areas. The stated purpose of the Ordinance is to promote public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas. The ordinance was most recently updated in 2013. The Municipal Code establishes controls on development in flood hazard areas through the Creek Protection Overlay District. This includes creek setback requirements and minimum flood elevations above the base flood elevation. The intent of the regulations is to avoid exposing new development to flood hazards and to reduce the need for future flood control protective work.

## **National Flood Insurance Program Community Rating System**

As a participant in the NFIP's CRS program, the City of San Pablo is required to annually evaluate the implementation of the City's LHMP Flood Management section. The CRS program was implemented as a voluntary program for recognizing and encouraging community floodplain management activities exceeding the minimum NFIP standards. CRS rewards communities that promote flood awareness and actively implement flood-protection measures with reduced flood insurance premiums for those with property interests.

An annual evaluation report is required for the CRS program. The most recent progress report was issued in 2021 and covers the period from August 1, 2020, to August 1, 2021. The report summarizes flood mitigation actions in the City, including prevention efforts, property protection, public education and awareness, natural resource protection, emergency services, structural projects, climate resilience, and community capacity building efforts.

## **Green Infrastructure Plan**

On May 20, 2019, San Pablo City Council approved the City of San Pablo Green Infrastructure Plan. Green infrastructure refers to the construction and retrofit of storm drainage systems to reduce runoff volumes, disperse runoff to vegetated areas, harvest and use runoff where feasible, promote infiltration and evapotranspiration, and use bioretention and other natural systems to detain and treat runoff before it reaches nearby bodies of water. Green infrastructure facilities include, but are not limited to: bioretention facilities, raingardens, pervious pavers, infiltration basins, green roofs, and rainwater harvesting systems. Green infrastructure serves to both reduce flooding risks and improve water quality in surrounding water bodies by reducing and treating stormwater flows. The plan includes targets for the amount of impervious surface to be retrofitted by 2020, 2030, and 2040. It prioritizes projects and areas for potential project implementation as recommended in the City's Storm Drain Master Plan, provides a process for tracking and mapping completed projects, and provides design guidelines and standard specifications and details. It also provides an evaluation of funding options and the policies and ordinances needed to fully implement the plan. Storm water management is further discussed in Chapter 5: Schools, Parks, and Public Facilities.

## **Hazardous Materials**

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Certain chemical compounds located on, or below, the ground surface have the potential to contaminate the soil and groundwater. Excavation and grading work also have the potential to expose the general public to contaminated materials, either through physical contact or by means of hazardous vapors. Mismanagement or mishandling of contaminated groundwater and soil can propagate the spread of

contamination through surface water runoff or airborne dust, consequently increasing the public's exposure to these hazards.

The San Francisco Bay Regional Water Quality Control Board (RWQCB) and the California Department of Toxic Substances Control (DTSC) oversee the cleanup and remediation requirements of sites that have been classified as hazardous waste sites or leaking underground storage tanks (LUSTs) in the Planning Area.

## **UNDERGROUND STORAGE TANKS**

The California State Water Resource Control Board (SWRCB) maintains GeoTracker, a data management system that can be accessed by State Boards, regional boards (e.g., the San Francisco Bay RWQCB), and local agencies to acquire information regarding the location of underground storage tanks (USTs), leaking underground storage tanks (LUSTs), and land disposal sites, as well as other areas that may require ground water cleanup. LUSTs include all UST sites that have had an unauthorized release (i.e., leak or spill) of a hazardous substance (e.g., fuel hydrocarbons from a gas station) and are being (or have been) cleaned up. In GeoTracker, LUST sites consist almost entirely of fuel-contaminated sites. GeoTracker lists 27 LUST cleanup sites within the Planning Area. All 27 sites have been remediated and are considered closed. Figure 8-4 shows the location of these sites within the Planning Area, based on a database search conducted in July 2021.

## **HAZARDOUS WASTE FACILITIES AND CLEANUP SITES**

The DTSC oversees the cleanup of over 90,000 properties throughout California that are believed to be contaminated or are contaminated to some degree with toxic substances. There are 12 locations within San Pablo identified in EnviroStor, DTSC's data management system for tracking cleanup, permitting, enforcement and investigation efforts at hazardous waste facilities and sites with known contamination or sites where there may be reasons to investigate further.<sup>1</sup> One facility is a drycleaner where there is an active investigation by DTSC, and four facilities (three of which share an address) are certified for operation and maintenance with land use restrictions. The remaining seven sites are referred to another agency or do not require further action. Table 8-1 summarizes the location, program type, and status of these facilities and sites, which are shown on Figure 8-4.

## **CORTESE LIST**

Government Code Section 65962.5 requires the CalEPA to maintain an annually updated list of Hazardous Waste and Substances Sites, known as the Cortese List. The Cortese List provides information regarding the location of hazardous materials release sites. The list is compiled using information from the California DTSC, as well as State agencies, local agencies, and developers, that are required to report hazardous materials releases. Within the Planning Area, no hazardous material release sites have been identified on the most recent Cortese List.

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<sup>1</sup> It is noted that EnviroStor provides information on permitted hazardous waste facilities and on sites where DTSC oversaw or conducted investigation/remediation work. Sites and facility types such as those where federal, City-, County-, or other State-level agencies (e.g., Certified Unified Program Agency [CUPA]) hold jurisdiction and DTSC was not involved are not included in the database.

**Table 8-1: EnviroStor Hazardous Waste Facilities and Cleanup Sites**

| <i>Site/Facility Name</i>               | <i>Address/Location</i>             | <i>Program Type</i>  | <i>Status<sup>1</sup></i>                  |
|---|-------------------------------------|----------------------|--|
| Gordons Cleaners                        | 2071 23rd Street                    | Evaluation           | Active                                     |
| American Standard Products: OU-I/FWDA   | 3002 Giant Road                     | State Response       | Certified O&M – Land Use Restrictions Only |
| American Standard Products: OU-II/FMF   | 3002 Giant Road                     | State Response       | Certified O&M – Land Use Restrictions Only |
| American Standard Products: OU-III/LJR  | 3002 Giant Road                     | State Response       | Certified O&M – Land Use Restrictions Only |
| Former BNSF Property, Rumrill Boulevard | Rumrill Boulevard at Chesley Avenue | Voluntary Cleanup    | Certified O&M – Land Use Restrictions Only |
| Acme Transportation Company             | 2832 Giant Road                     | Historical           | Refer: RWQCB                               |
| Chevron Hilltop West Project            | Atlas Road and San Pablo Avenue     | Historical           | Refer: RWQCB                               |
| Hildreth Holdings                       | 2812 Giant Road                     | State Response       | Refer: Other Agency                        |
| Caliber: Beta Academy                   | 2465 Dolan Way                      | School Investigation | No Further Action                          |
| Dover Elementary School                 | 1871 21st Street                    | School Investigation | No Further Action                          |
| Helms Middle School Reconstruction      | 2500 Road 20                        | School Investigation | No Further Action                          |
| Montalvin Manor                         | Christine Drive                     | Historical           | No Further Action                          |

I. O&M = Operation and Maintenance

Source: California Department of Toxic Substances Control EnviroStor [March 27, 2023]; Dyett & Bhatia, 2023

Figure 8-4: Hazardous Materials

**State Water Resources Control Board (SWRCB)**

Cleanup Sites

- LUST Cleanup Site
- Cleanup Program Site
- Closed Sites (Case Closed)

**Department of Toxic Substances Control (DTSC)**

EnviroStor Status (March 2023)

- Active
- Certified O&M - Land Use Restrictions
- Refer to Another Agency
- No Further Action

- City Limits
- Sphere of Influence
- Major Highway
- Major Roads
- Railroads



SOURCE: Geotracker, State Water Resources Control Board, 2021; Envirostor, Department of Toxic Substances Control, 2023; City of San Pablo, 2021; Contra Costa County GIS, 2021; Dyett & Bhatia, 2023

## Fire Hazards

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Wildland fires (wildfires) are fires that start in a wooded or undeveloped area. Their potential for damage is dependent on the extent and type of vegetation, known as surface fuels, as well as weather and wind conditions. Wildland fires typically affect a wide swath of land and cause more damage than urban fires, which typically affect a limited number of properties. In its assessment of risk hazards across Contra Costa County, the Contra Costa County LHMP found risk from wildfire to be low in San Pablo. San Pablo is largely urban and built out, which minimizes its risk of wildfires. The LHMP found that the main risk of wildfires in San Pablo will be from smoke impacts on people and economy. Wildfire hazard data for the Planning Area is provided by the California Department of Forestry and Fire Protection (CAL FIRE). As shown in Figure 8-5, nearly all of the Planning Area is a Local Responsibility Area (LRA), meaning that fire protection is provided by local agencies, and fire hazard severity zones are not determined by CAL FIRE, except where Very High Fire Severity Zones (FHSZ) are recommended. The City has not adopted any formally designated local FHSZs at this time, and the Planning Area is generally considered to have either moderate or little or no threat of wildfire. However, just to the east of the Planning Area, the Wildcat Canyon Regional Park (part of a State Responsibility Area) is in a Very High FHSZ. In light of the proximity of this Very High FHSZ and the compounding effect of climate change felt throughout the Bay Area, updates to the General Plan as well as the LHMP (anticipated for 2023) should consider the increasing impacts of wildfire hazards on the City.

San Pablo is served by Battalion 7 of the Contra Costa County Fire Protection District (CCCFPD), with whom the City of San Pablo contracts for fire protection services. There is one fire station (Fire Station 70) within the City of San Pablo located at 1800 23rd Street that was newly constructed and opened in April 2021. The CCCFD has a countywide Wildfire Mitigation Program that uses funds from Measure X to implement projects—such as community chipping, evacuation route cleanups, removal of dead trees, shaded fuel breaks, and vegetation management—that reduce wildfire risk countywide. In 2021, the Fire Prevention Bureau launched implementation of a new Firewise USA program in 2021 to provide a framework to help the community get organized, find direction, and take action to reduce wildfire risks at the local level. The bureau also works to ensure that structures are designed and built to code. The bureau's Public Education Unit also supplies district residents with brochures and other presentation material in addition to scheduling station visits and ride-along opportunities to help increase public awareness and preparedness as well as reduce fire and other life safety casualties. <sup>2</sup>

### **SENATE BILL 99 (SB99) AND ASSEMBLY BILL 747 (AB747)**

In 2019, California adopted two bills that require local governments to add new information to the safety element of their General Plan. SB99 requires the City to review and update the safety element of their General Plan to identify residential developments in hazard areas (e.g., high fire area, floodplain, etc.) that do not have at least two emergency evacuation routes. Assembly Bill 747 requires the safety element to identify evacuation routes and evaluate their capacity, safety, and viability under a range of emergency scenarios.

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<sup>2</sup> Contra Costa County Fire Protection District, Annual Report 2021, <https://heyzine.com/flip-book/7684bfcd8e.html>, accessed March 27, 2023.

Figure 8-5: Fire Hazards



**Responsibility Area**

- LRA Local Responsibility Area
- FRA Federal Responsibility Area

**Fire Hazard Severity Zone in LRA**

- Very High Fire Hazard Zone

- P Police Station
- F Fire Station

- City Limits
- Sphere of Influence
- Major Highway
- Major Roads
- Railroads



SOURCE: Fire Hazard Severity Zones in LRA - Recommended 2007-2011, CAL FIRE, Published 2018 (<https://legis.fire.ca.gov/FHSZ/>); City of San Pablo, 2021; Contra Costa County GIS, 2021; Dyett & Bhatia, 2021

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## Evacuation Routes

The area of San Pablo southeast of I-80 is adjacent to the Wildcat Canyon area identified as a Very High FHSZ and is the most at risk in the City. This is a residential area of the City that uses access primarily from San Pablo Dam Road. The possible evacuation routes from this area are described below:

- Hillcrest Road is a two-lane local roadway that connects this area to San Pablo Dam Road at a traffic signal northeast of the area and outside of the City limits. Following this route, vehicles would likely use San Pablo Dam Road to head west to El Portal Drive, which provides access to I-80 about one-quarter mile to the north. Alternatively, vehicles could head east on San Pablo Dam Road one-quarter mile to Appian Way, a three-lane roadway that leads north to I-80 after two miles.
- Morrow Drive is a two-lane local roadway that connects near the northern end of this area to San Pablo Dam Road at a traffic signal. Following this route, vehicles likely would use San Pablo Dam Road to head west approximately one-quarter mile to the I-80 interchange at San Pablo Dam Road.
- Alpine Road is a two-lane local roadway that connects at the western end of this area to Amador Street at a stop sign controlled intersection. Following this route, vehicles would likely use Amador Street to head north 400 feet to the I-80 interchange at San Pablo Dam Road.
- Arlington Boulevard to Riverside Avenue includes narrow and windy two-lane roadways that connect at the western end of this area to Amador Street at a stop sign-controlled intersection. Following this route, vehicles would likely use Amador Street to head south to McBryde Avenue or Solano Avenue, which provide options for heading west to I-80 or San Pablo Avenue.

These evacuation route options utilize different interchanges on I-80 or lead to four-lane roadways either in San Pablo or Richmond. Regardless of the route(s) used, manual traffic control at the intersections and temporary roadway signage may be helpful during an evacuation to help improve outbound evacuation traffic flow.

Most other residential areas in San Pablo are less at risk to wildfire hazards or other emergencies and have at least two emergency evacuation routes available. The roadway connectivity allows for residential areas to access main roadways such as San Pablo Avenue, Giant Road, Rumrill Boulevard, 23rd Street, Broadway Avenue, El Portal Drive, or other connections that will lead to I-80 north and south or I-580 east and west.

## Noise

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Noise is commonly defined as undesirable and unwanted sound. Noises vary widely in their scope, source, and volume, ranging from individual occurrences such as leaf blowers, to the intermittent disturbances of overhead aircraft, to the fairly constant noise generated by traffic on freeways. Noise is primarily a concern with regard to noise-sensitive uses such as residences, schools, churches, and hospitals.

Sound levels are measured and expressed in decibels (dB), with 0 dB roughly equal to the threshold of hearing and 100 dBA equal to the sound of an ambulance. According to common practice, maximum noise levels of 60 dB are considered “normally acceptable” for unshielded residential development. Noise levels from 60 to 70 dB fall within the “conditionally unacceptable” range, and those in the 70 to 75 dB range are considered “normally unacceptable.” The Noise Element of the existing San Pablo General Plan establishes an exterior maximum sound level of 60 dB and an interior maximum sound level of 45 dB for residential uses.

The major sources of noise in San Pablo are related to vehicular traffic, including automobile and truck traffic, particularly in areas along I-80. Arterial roadways such as San Pablo Avenue, Rumrill Boulevard, and 23rd Street are other notable sources of traffic noise, especially near intersections. Vehicular activity and sirens from the new Fire Station 70 located at the intersection of Market and 23rd further contribute to the existing noise environment. Rail operations also contribute to the noise environment in the city. The Burlington-Northern Santa Fe (BNSF) railroad corridor along Giant Road at the western edge of the Planning Area carries primarily freight trains. The Union Pacific rail corridor that borders the City of Richmond and unincorporated Contra Costa County is also less than one-quarter mile from the city. Trains on both of these railways generate high noise levels as they pass, and their drivers are required to sound train whistles when crossing roadways at-grade.

## Key Findings and Policy Implications

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- **The Hayward Fault, a major fault line in the San Andreas Fault System, runs directly through the Planning Area; it represents a potential threat to safety and places restrictions on future development.** In the LHMP’s analysis of risk potential in San Pablo, earthquakes and dam failure—which is often a secondary hazard following an earthquake—were the only hazards rated as “High” risk probability. Due to the potential for surface fault rupture along the Hayward Fault, Alquist-Priolo Zones apply to the area surrounding the fault line and restrict the development of residential buildings. Thus, future development potential is limited within the fault zone.
- **Hilly portions of the Planning Area, particularly in the hills to the east of Interstate 80, are susceptible to natural hazards.** In addition to the Hayward Fault running through this portion of the Planning Area, this area is adjacent to Wildcat Canyon Regional Park, which is identified as a Very High Fire Hazard Zone that poses a wildfire risk to the area. However, current roadways in the area allow for sufficient evacuation routes in the case of a wildfire. Lastly, the hillsides are susceptible to landslides and have a soil rating of “very limited” due to their slope and shrink-swell susceptibility. Currently, the Hillside Overlay District regulates the development of any structures over one story tall in this portion of the Planning Area, as well as requiring geotechnical studies for development.
- **Certain areas of the city fall under the 100- and 500-year flood zones, which restricts future residential development.** According to the City’s LHMP, approximately nine percent of the population currently resides in special flood hazard areas. In particular, residential neighborhoods along San Pablo’s western boundary will likely be affected by increased flooding in the future. This restricts the extent of new housing that may be developed in these areas. The City has a number of flood hazard response measures in place, including the Flood Damage Prevention Ordinance, the City’s participation in the NFIP Community Rating System, the Green Infrastructure Plan, and other measures included in the LHMP. These programs place development restrictions in floodplain areas, while the Green Infrastructure Plan also proactively plans for floodplain management and improved water quality by setting targets for the amount of impervious surface in San Pablo to be retrofitted by 2030 and 2040.
- **Major sources of noise in San Pablo are related to vehicular traffic, particularly in areas along Interstate 80.** The railroad corridors to the west of Giant Road, as well as the Union Pacific railway less than one-quarter mile from the city, also contribute to noise in the Planning Area. The General Plan must ensure that measures are in place to protect the community from noise impacts from these sources. Noise reduction measures should coordinate with neighboring jurisdictions to address noise sources beyond City boundaries that impact San Pablo’s communities.

- **Overall, risk levels for various hazards in San Pablo are about on par with other jurisdictions in Contra Costa County.** In comparing the risk rankings for the hazards assessed in the Contra Costa County LHMP, San Pablo's risk rankings are approximately equivalent to other cities and the county. Across all cities in the county, earthquake hazards are the greatest risk. The only hazard that poses a greater threat in San Pablo than other cities or unincorporated areas is dam failure, due to the potential for a large earthquake to critically damage the nearby San Pablo Dam. While hazards exist within San Pablo, there are still many options for safely increasing housing, promoting economic development, and addressing environmental justice.