



Element 12 | Public Safety and Noise

The Public Safety and Noise Element seeks to minimize risks posed by environmental and human-caused hazards that may impact Richmond residents' health and welfare. These include crime, geologic and seismic hazards, flooding, fires, hazardous materials and noise.



Community Vision

Richmond, California in 2030

Richmond is a safe place to live and work. The City maintains efficient and well-equipped police and fire departments that encourage community partnerships to improve neighborhood conditions. Crime rates are down because local job and entrepreneurial opportunities have increased, schools have improved and attractive housing is readily available. Additionally, anti-violence campaigns, community education programs and improved services for ex-offenders are effectively addressing the underlying causes of conflict.

The City is prepared to respond to disasters and emergencies and has taken steps to provide assistance and shelter, limit risks and minimize losses. Health and safety hazards are carefully considered in all land use decisions. Richmond works with Federal and State authorities to regulate the safe production, transportation, treatment and disposal of substances that may pose contamination risks. Throughout the City, clear noise standards protect the quality of life and insulate residents from excessive noise levels.

The Richmond Fire Department provides emergency services throughout the City.



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Public Safety and Noise

A SAFE AND SECURE ENVIRONMENT IS VITAL to all community members. Richmond fosters a safe and secure environment by anticipating and planning for potential hazards and promoting practices to preserve residents' health and welfare.

The Public Safety and Noise Element will:

- Describe potential hazards and police, fire and emergency preparedness as well as noise conditions and standards;
- Highlight key findings and recommendations based on an existing conditions analysis;
- Define goals for public safety and noise;
- Identify policies and implementing actions to address public safety and noise issues; and
- Review the regulatory framework of governing bodies and other mechanisms that currently guide planning efforts.

Purpose of the Element

The Public Safety and Noise Element identifies and evaluates public health and safety hazards, and outlines means of limiting unreasonable risks and minimizing losses that can occur as a result of natural or human-caused disasters. The Element addresses emergency preparedness and coordinated response, police and fire protection, and emergency services. Principles of crime prevention through environmental design (CPTED) are considered in the evaluation of land use applications. In addition, the Element aims to reduce noise levels to acceptable standards, and reduce, eliminate or mitigate objectionable noise sources.

Crime Prevention through Design

Clear visibility into and out of public areas (such as parks or downtown streets) provides "eyes on the street," making undesirable activity less likely.⁸ "Eyes on the street" refers to the degree to which physical design or active uses allow for informal surveillance of public areas from surrounding areas. Mixed-uses can facilitate natural surveillance by providing activity 24 hours a day, seven days a week. Design features that maximize visibility include:

- Doors and windows that look onto streets and other common areas;
- Front porches;
- Low landscaping;
- Adequate lighting;
- Transparent fencing; and
- Windowed stairwells.



Authority for the Element

The Richmond General Plan integrates two state-mandated general plan topics: public safety and noise. The State of California requires that general plans include a safety element for the protection of the community from any unreasonable risks associated with wildland and urban fires, flooding and known geologic hazards (Code Section 65302f).¹ Geologic risks are defined as those associated with the effects of geologic hazards such as seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche and dam failure, and slope instability leading to mudslides, landslides and subsidence. Specifically, law mandates that general plans address emergency response and prevention measures, such as evacuation routes, peak load water supply requirements, minimum road widths and clearances around structures.

In addition, California requires a noise element prepared in accordance with guidelines established by the State Department of Health Services' Office of Noise Control (Code Section 65302f).² This requirement draws on California Noise Control Act findings that: excessive noise is a serious hazard to public health and welfare, and exposure to certain levels of noise can result in physiological, psychological and economic damage.³ The noise portion of the Public Safety and Noise Element seeks to ensure that noise levels are consistent with acceptable standards, and that steps are taken to provide for control, abatement and prevention of unwanted and hazardous noise.

Relationship to Other General Plan Elements

The Public Safety and Noise Element requires that risks to life and property, as well as exposure to noise be considered in all land use decisions. With respect to the clean-up of contaminated sites, transportation of hazardous materials, emergency access and evacuation routes, the Public Safety and Noise Element shares connections with Elements: Community Health and Wellness; Conservation, Natural Resources and Open Space; and Circulation. The Element includes precautionary planning for potential sea level rise due to global warming, along with the Climate Change Element. Public safety as it relates to crime prevention is also discussed in the Community Health and Wellness Element. Where appropriate, cross-references are provided to direct the reader to relevant information in other elements.



Richmond Today

As part of the San Francisco Bay Area, Richmond is surrounded by hill and bay waters. In an urban context, these features of the natural environment can also pose flood, fire, geologic and seismic hazards. In addition, some human activity may threaten community health, safety and welfare. These risks include the transport and manufacturing of hazardous materials, undesirable social behavior and unhealthy noise levels.

In Richmond, public safety and noise risks include geologic and seismic hazards, fires, crime, soil contamination, and transport of hazardous materials. Noise concerns focus on transportation-related sources generated by automobile traffic and railroads. The following discussion describes these topics in more detail.

Natural Hazards

Natural hazards have the potential to cause loss of life and damage to buildings and infrastructure. Natural hazards that threaten Richmond include earthquakes, floods and rising sea level. By preparing for incidents that may occur as a result of these hazards, Richmond can avoid or mitigate potential impacts.

Landslides

A landslide is the downslope movement of soil and rock debris. Landslide susceptibility is related to several factors including earthquake-induced ground shaking, rainfall conditions, rock and soil types, steepness and orientation of slopes, lack of vegetation and levels of human disturbance. There are three areas within the City that have been subject to major landslide activity in recent years: El Sobrante Valley where landslides have occurred on both the San Pablo and Sobrante Ridges; the Point Richmond area along the San Pablo/Potrero Hill Range; and the El Cerrito Hills. Slides have occurred within the Hilltop Area and along the more northern reaches of the San Pablo/Potrero Hills Ridge; however, the geology within

Effective measures to prevent landslides are essential when developing on steep slopes.



these areas is generally more stable than in the aforementioned areas (see Map 12.1: Landslide Potential).

Liquefaction

Liquefaction is the transformation of saturated, loose, fine-grained sediment to a fluid-like state because of earthquake shaking or other rapid loading. As with landslides and mud flows, liquefaction is a form of ground failure where soil strength and stiffness is decreased so that the ability of a soil deposit to support foundations for buildings, bridges or other structures is reduced (see Map 12.2: Liquefaction Potential).



Liquefaction during an earthquake can cause damage of life and property in urban areas as was the case in the Marina District of San Francisco during the Loma Prieta quake of 1989.

Subsurface Water

In the Bay Plain area of Richmond, sand layers between clay layers build up artesian pressure that has the potential to burst through the soil layer upon activities such as excavation. These sand layers may be prone to liquefaction under a strong earthquake unless the build up of pressure is somehow relieved.

Faults

The Hayward Fault runs through Richmond following the west ridge of Wildcat Canyon, running west through Parchester Village and into San Pablo Bay. The San Andreas Fault is located nearby, 15 miles to the west, and could potentially produce serious ground shaking and other earthquake-related hazards (see Map 12.3: Active Faults).

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Earthquake Fault Zone. The State Geologist establishes Earthquake Fault Zones around surface traces of active faults and distributes maps of these areas for planning purposes.

Ground Shaking

Ground shaking is the phenomenon most often associated with seismic activity. Intensity of shaking and relative earthquake damage is heightened with earthquake magnitude, proximity to faults and the presence of deeper soft soils below the ground surface. Most development in Richmond is located on the Bay Plain and along the shoreline where, because of the greater depth of soft alluvial soils and Bay Mud, there is a heightened risk for ground shaking (see Map 12.4: Seismic Shaking Potential).

Tsunami

A tsunami is a series of several long waves generated by a sudden displacement of a large volume of water. Tsunamis are typically triggered by an underwater earthquake, volcanic eruption or landslide. Tsunami risk is elevated along low-lying areas near the shoreline. Because limited data is available, it is difficult to provide a detailed assessment of this hazard (see Map 12.5: Tsunami Inundation Area).



Dam Failure

The East Bay Municipal Utility District (EBMUD) sponsored a survey to determine the seismic safety of the San Pablo Dam. EBMUD has lowered the water level behind the dam by 20 feet as part of a retrofit to protect downstream communities from potential flooding. EBMUD has explored alternatives for a permanent retrofit of the dam and at this General Plan writing, has proposed to improve the foundation and construct a downstream buttress for the dam. During construction, the reservoir remains in service at its currently reduced water level.

Seiches

A seiche is an earthquake-generated wave within enclosed or restricted bodies of water such as a lake, reservoir or above-ground tank. A seiche at San Pablo Dam could lead to dam failure and potential flooding in Richmond.

Rise in Sea Level

Another important consideration is the possibility of a rise in sea level over the next 100 years as a result of global warming. Effects of sea level rise could result in increased flooding in low-lying areas along the shoreline, infiltration into sanitary sewer and storm drain systems near the Bay and an increase in storm drain back-ups resulting in more frequent and extensive flooding.

Flooding

A Federal Emergency Management Agency (FEMA) Flood Insurance Study was prepared for the City in April 1975 and updated in November 1993.⁴ The Study identified notable flooding problems including: undersized culverts at the Union Pacific Railroad (UPRR); topography that slopes away from stream banks; and inundation by tidal flooding. It also identified areas subject to inundation from a 100-year flood event including the coastal area south of Point Pinole and west of Castro Street and sections of the coastal area from Marina Bay to Point Isabel. The City's Storm Drain Master Plan identifies the amount of runoff remaining in the streets following a storm as a primary deficiency of the storm drain system (see Map 7.2: Floodplains and Watersheds).

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Bay Plain. The Bay Plain area of Richmond includes the low-lying flat areas of the City.

Artesian Pressure. Artesian pressure refers to groundwater pressure in a confined aquifer. The aquifer is often situated at an incline which increases groundwater pressure.



Police, fire and other emergency services are essential to maintaining a safe community.

Police, Fire and Emergency Preparedness

Richmond maintains a Police Department of about 170 sworn officers. The Department is moving toward a precinct-based, more decentralized community policing program. While Police Headquarters will remain in the Civic Center area, the Department anticipates three substations in the Iron Triangle, Hilltop and Annex neighborhoods. This move to precinct-based policing is expected to improve response times and service by assigning officers to specific beats. The Police Department is overseen by a Police Commission, which advises the Chief of Police, City Council and City Manager on matters related to the police force (see Map 12.6: Police and Fire Services).

Richmond's Fire Department operates seven fire stations and consists of 85 professional and civilian members (see Map 12.6: Police and Fire Services). The current emergency planning and preparation strategy involves a number of regulatory tools and City Departments and participation in the Contra Costa County emergency warning system. As Richmond continues to grow and infill development occurs, the City must expand or increase the efficiency of its fire, police and emergency services.

Hazardous Materials

Many materials that are used in manufacturing and research facilities located in Richmond are classified as hazardous. Such materials are transported on streets and highways, by barge and on railroads. Hazardous materials are present in small quantities in homes and small businesses in the form of solvents, cleaning fluids and other substances. Hazardous materials may also be present in Richmond due to historic industrial uses. Hazardous materials must be used and transported safely to avoid contamination and injury to environmental and human health (see Appendix for Hazardous Materials Locations).



Noise Conditions and Compatibility Standards

Noise is defined as a sound or series of sounds that are intrusive, objectionable or disruptive to daily life. Excessive noise has been tied to physiological and psychological damage.

Noise levels are measured in order to regulate ambient noise and protect residents from exposure to excessive noise. Different land uses have different acceptability levels in terms of noise disturbance. For example, industrial uses have a higher noise threshold than residential uses. Noise standards provide a means of assessing exposure and compatibility based on specific uses. The State of California's General Plan Guidelines define land use compatibility standards for a range of noise exposure levels (see Table 12.1: Noise Exposure Land Use Compatibility Standards).

Richmond's diversity and mix of land uses presents a challenge to the City in ascertaining and maintaining thresholds for land use compatibility. In addition to land use planning applications, noise policy establishes the basis for the regulations prescribed in City ordinances and implemented through the City's Code Enforcement program. Specific noise concerns include: establishing land use compatibility standards; enforcing noise standards to protect quality of life; minimizing traffic noise; insulating residences exposed to excessive levels of noise; and regulating new development to limit noise impacts on noise-sensitive uses (see Map 12.7: Future Noise Contours).

Richmond's significant noise generators, both transportation-related and stationary, are described in more detail below.

Motor Vehicles

Motor vehicles, particularly motorcycles, commonly generate high noise levels in the vicinity of busy freeways or roadways. The City is served by two major freeways, Interstate 80 and Interstate 580. The City also has many local roads that experience high traffic volumes and generate traffic noise in adjacent areas (see Table 12.2: Existing Noise Levels at Key Roadway Locations).

Airports

While there are no airports in the City, Richmond is served by two airports, the Oakland International Airport approximately 20 miles south of the City and the San Francisco International Airport approximately 30 miles southwest of the City. Aircraft using both airports fly over the City, but the City is outside their 65 dBA Community Noise Equivalent Level (CNEL) noise impact areas.

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Decibel (dB). Sound is created when vibrating objects produce pressure variations which move through air. Air pressure is characterized by amplitude which is experienced as "loudness" and frequency which is experienced as "pitch". The standard unit for measuring amplitude of noise is a decibel (dB).



Railroads

Railroads can create significant noise, not only by the trains themselves, but also by train horns and warning bells at rail crossings. Several rail lines traverse the City including Union Pacific, BNSF and Richmond Pacific.

In addition to freight trains, Amtrak passenger trains also arrive and depart from the Downtown Amtrak station located at 16th Street and Macdonald Avenue. Amtrak operates two routes through Richmond: the Capitol Corridor route, which runs from San Jose to Auburn, and the San Joaquin route, which runs from Bakersfield to Oakland. These trains use the same route that Union Pacific freight trains use through the City.

BART

BART also runs through the City to the Downtown Amtrak/BART station at 16th Street and Macdonald Avenue. The BART station in Richmond is the terminating point for the Richmond-Fremont BART line. The BART route runs at-grade and parallel to the Amtrak line for about half a mile and then along an elevated structure that is parallel to Ohio Avenue.



Noise generated from railroads can be mitigated through physical separation and noise barriers.



Table 12.1 Noise Exposure Land Use Compatibility Standards

Land Use Category	Community Noise Exposure - L_{dn} or CNEL, dB						
	55	60	65	70	75	80	85
Residential - Low-Density Single Family, Duplexes and Mobile Homes	Green	Green	Yellow	Yellow	Orange	Red	Red
Residential - Multifamily	Green	Green	Yellow	Yellow	Orange		
Transient Lodging - Motels, Hotels	Green	Green	Yellow	Yellow	Orange	Orange	
Schools, Libraries, Churches, Hospitals, Nursing Homes	Green	Green	Yellow	Yellow	Orange	Orange	
Auditoriums, Concert Halls, Amphitheaters	Yellow	Yellow	Yellow	Yellow	Orange	Orange	Orange
Sports Arena, Outdoor Spectator Sports	Yellow	Yellow	Yellow	Yellow	Orange	Orange	Orange
Playgrounds, Neighborhood Parks	Green	Green	Green	Green	Yellow	Orange	Orange
Golf Course, Riding Stables, Water Recreation, Cemeteries	Green	Green	Green	Green	Orange	Orange	Red
Office Buildings, Business Commercial and Professional	Green	Green	Green	Green	Yellow	Yellow	Yellow
Industrial, Manufacturing, Utilities, Agriculture	Green	Green	Green	Green	Yellow	Yellow	Orange

Source: Governor's Office of Planning and Research, State of California General Plan Guidelines. 2003.

- Normally Acceptable**
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
- Conditionally Acceptable**
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional constructions, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
- Normally Unacceptable**
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
- Clearly Unacceptable**
New construction or development should generally not be undertaken.



Stationary Sources

A variety of stationary sources of noise in Richmond are common to all urban areas, such as noise generated by machinery, heating, ventilation and air conditioning (HVAC) equipment, and landscape maintenance activities. In Richmond's industrial areas, noise is generated by heavy equipment associated with shipping and loading activities, metal scrapping facilities and recycling centers. Occasional outdoor sporting events, such as those held at Richmond, Kennedy and De Anza high schools, can attract large numbers of spectators and produce noise which can affect nearby residential areas.

Table 12.2 Existing Noise Levels at Key Roadway Locations

Roadway	Segment	Noise Levels (CNEL) 100 Feet From Centerline (dBA) ^a	Distance to Contour (feet) ^b		
			70 CNEL	65 CNEL	60 CNEL
22nd Street	23rd Street to Barrett Avenue	58.5	n/a	n/a	80
	Barrett Avenue to Macdonald Avenue	58.1	n/a	n/a	75
23rd Street	South of San Pablo Avenue	59.7	n/a	44	95
	North of Barrett Avenue	61	n/a	54	116
	Barrett Avenue to Nevin Avenue	60.9	n/a	53	115
	Nevin Avenue to Macdonald Avenue	60.8	n/a	53	113
	Macdonald Avenue to Cutting Boulevard	62.1	n/a	63	138
Barrett Avenue	Harbour Way to 22nd Street	60.6	n/a	51	109
	22nd Street to 23rd Street	60.5	n/a	50	109
	23rd Street to Interstate 80	60.2	n/a	n/a	103
Blume Drive	Hilltop Drive to Richmond Parkway	62.5	n/a	68	146
Canal Boulevard	North of West Cutting Boulevard	57.1	n/a	n/a	64



Table 12.2 Existing Noise Levels at Key Roadway Locations (continued)

Roadway	Segment	Noise Levels (CNEL) 100 Feet From Centerline (dBA) ^a	Distance to Contour (feet) ^b		
			70 CNEL	65 CNEL	60 CNEL
Carlson Boulevard	22nd Street to Cutting Boulevard	60.3	n/a	49	105
	Cutting Boulevard to Potrero Avenue	59.9	n/a	n/a	99
	Potrero Avenue to Bayview Avenue	60.4	n/a	49	106
	Bayview Avenue to Interstate 80	61.3	n/a	57	123
Castro Street	North of Interstate 580	62.3	n/a	66	142
Cutting Boulevard	Garrard Boulevard to Canal Boulevard	55.9	n/a	n/a	53
	Canal Boulevard to Harbour Way	55	n/a	n/a	n/a
	Harbour Way to 23rd Street	58.1	n/a	n/a	75
	23rd Street to Carlson Boulevard	60.2	n/a	n/a	103
	Carlson Boulevard to Interstate 80	59.8	n/a	n/a	97
Harbour Way	North of Cutting Boulevard	59.4	n/a	n/a	91
Hilltop Drive	West of Blume Drive	64.6	n/a	94	203
	Blume Drive to Interstate 80	66.3	57	123	264
Macdonald Avenue	Harbour Way to 22nd Street	60.3	n/a	48	104
	22nd Street to 23rd Street	60.2	n/a	48	103
	23rd Street to Interstate 80	59.9	n/a	46	99
Marina Bay Parkway	South of Cutting Boulevard	62.4	n/a	67	144
	South of Meeker Avenue	58	n/a	n/a	73
Richmond Parkway	Hilltop Drive to San Pablo Avenue	66.5	n/a	125	270
	San Pablo Avenue to Blume Drive	66.2	n/a	120	259
	Blume Drive to Interstate 80	68.1	75	161	348
San Pablo Avenue	South of Richmond Parkway	60.6	n/a	51	110
	North of 23rd Street	62.2	n/a	65	139
	23rd Street to San Pablo Dam Road	59.7	n/a	45	96
	San Pablo Dam Road to Interstate 80	62.1	n/a	64	138

Source: PBS&J, 2006

Notes: a - Distances are in feet from roadway centerline. The identified noise level at 100 feet from the roadway centerline is for reference purposes only as a point from which to calculate the noise contour distances. It does not reflect an actual building location or potential impact location.
b - Noise levels are not applicable where contour is located within the roadway lanes.



Training and coordination between emergency response agencies are critical.

"My top priorities are to reduce crime and improve public safety in Richmond."

— *Chris Magus, Richmond Chief of Police*

Key Findings and Recommendations

Richmond, along with other Bay Area cities, is subject to risks from natural hazards ranging from earthquakes, landslides, floods and wildfires. The City's emergency planning and preparation strategy includes participation in the County emergency warning system and communication between police, fire and other emergency services at local and county levels.

Potential for human-caused environmental hazards such as air, soil or water pollution can be minimized and managed through a range of measures such as: applying best practices to storage, handling, transport and disposal of potentially harmful materials; increasing public awareness about safe handling of chemicals; clean-up of contaminated sites; on-site stormwater management; and others.

The City's Fire and Police departments serve a diverse community and a large geographic area that includes 36 neighborhoods, an active port, significant industrial uses, major retail and business centers and several thousand acres of regional parklands. At this General Plan writing, these departments are increasing staff, training personnel and upgrading equipment to meet current and future challenges. While crime and public safety are a concern in a few neighborhoods, residents and businesses in every neighborhood share a desire for improved safety.

While Richmond's mix of land uses contributes to the vibrancy and character of the City, it can heighten noise exposure, especially in instances where residential development is located near industrial, formerly industrial or mixed-use areas. Traffic, public transit, railroads and business activities are typical noise generators. In addition to land use planning applications, Richmond's noise policy establishes the basis for the regulations prescribed in City ordinances and implemented through the City's Code Enforcement program.



The following key findings and recommendations are derived from the existing conditions [in Richmond](#) and the community's future vision.

Finding 1: Richmond is subject to risks from natural hazards.

The Hayward Fault runs through Richmond and a number of other faults are located nearby. Earthquakes can lead to loss of life and property, particularly in the City's low-lying areas.

Positioned at the intersection of San Francisco and San Pablo bays, Richmond hosts an extensive system of creeks and tributaries that have high flood potential during seasonal rains as well as during a 100-year flood event. Heavy seasonal rains have historically caused landslides along City hillsides affecting homes and businesses located in these areas. The region's wildland areas are prone to fires during the summer dry season. Strategies for improving emergency preparedness and planning for natural hazards include:

- Participating in ongoing emergency preparedness and recovery planning in coordination with local emergency services, neighboring municipalities and regional, state and federal agencies;
- Regulating development and construction practices to reduce the risk to life and property in the event of a natural disaster; and
- Implementing effective stormwater management, creek restoration and flood control measures to address flood hazards and potential flooding due to rising sea level.

Finding 2: Police and fire services are provided throughout the City, but may not adequately meet emergency service demands potentially generated by future growth.

Public safety and emergency response are top priorities in Richmond. These can be improved by:

- Expanding police and fire services and upgrading equipment and technology in order to keep pace with demand and changing conditions; and
- Increasing coordination among local and regional emergency services, as well as communication in the community.

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While the unit of noise is a decibel (dB), measures of noise level include:

Equivalent Energy Noise Level (Leq).

Leq is a time-averaged sound level; a single-number value that expresses the time-varying sound level for the specified period as though it were a constant sound level with the same total sound energy as the time-varying level.

Day-Night Average Noise Level (Ldn).

Ldn is a 24-hour average Leq with a 10 dBA "penalty" added to noise levels during the hours of 10 p.m. to 7 a.m. to account for increased sensitivity that people tend to have to night-time noise.

Community Noise Equivalent Level (CNEL).

CNEL is an Ldn with an additional 5 dBA "penalty" for the evening hours between 7 p.m. and 10 p.m. when most people are home.



Finding 3: Some environmental hazards in Richmond are caused by human activity.

Given Richmond's historically industrial economy, soil contamination along San Pablo Bay and in active and inactive industrial areas. Improper use, storage, transport or disposal of potentially harmful substances and polluted stormwater runoff can adversely affect the quality of the City's surface and groundwater and impact environmental safety. Preventative measures to reduce risk of human-caused hazards include:

- Regulating the safe production, transportation, handling, treatment and disposal of substances that may pose contamination risks;
- Requiring that future development and industries apply best practices to toxic material disposal and on-site stormwater management;
- Increasing public awareness about safe chemical disposal;
- Requiring buffer zones between hazardous materials facilities and residential uses, shoreline areas, parklands, trails, public and open space facilities, senior and youth facilities; and
- Remediating contaminated sites.



Finding 4: Industries, roadways, railroads and businesses can generate unwanted noise.

Noise from freeway traffic, railroads and some businesses can adversely impact residential and other sensitive areas in the community. Residential development located near industrial, formerly industrial or mixed-use areas may heighten noise sensitivity. Ways to mitigate unwanted noise include:

- Establishing noise compatible land use standards;
- Encouraging noise-generating areas to reduce their noise impacts;
- Developing guidelines to manage noise impacts and potential conflicts in the community;
- Enforcing noise standards to protect quality of life;
- Mitigating traffic noise impacts and insulating residences exposed to excessive levels of noise; and
- Promoting innovative solutions to create buffers that mitigate impacts where conflicts are unavoidable.



Well-trained and well-equipped personnel are key to effective emergency response.

Goals

GOAL SN1 Manage Risk from Natural and Human-Caused Disasters

Richmond seeks to minimize the risk of injury, loss of life, property damage and environmental degradation from seismic activity, geologic hazards, flooding and fire and the storage, use and transport of hazardous materials and operations.

GOAL SN2 Maintain High Levels of Police and Fire Service

The City aims to provide a high level of security in the community to prevent and reduce crime, and minimize risks to people, property and the environment from fire.

GOAL SN3 Prepare for Emergencies

Richmond will develop effective mechanisms for a coordinated response to emergencies and natural disasters to best protect residents, businesses and the environment.

GOAL SN4 Maintain Acceptable Noise Levels

The City will achieve noise levels consistent with acceptable standards and reduce or eliminate objectionable noise sources.



GOAL SN1

Manage Risk from Natural and Human Caused Disasters

POLICIES

Policy SN1.1

Geologic and Seismic Safety

Minimize risk of injury, loss of life and property damage from seismically induced and other known geologic hazards. Regulate land use and apply development standards and construction practices to reduce the risk to humans and property in the event of an earthquake or other geological activity.

Policy SN1.2

Flood Management

Minimize the risk to people, property and the environment due to flooding hazards. Require new development to comply with all requirements of the Richmond Municipal Code relating to flood management including but not limited to Chapter 12.56 of the Richmond Municipal Code. The City should address potential damage from a 100-year flood, tsunami, sea level rise and seiche, and implement and maintain flood management measures in all creeks and in all watersheds (see also Conservation, Natural Resources and Open Space Element, Policy CN3.3).

Policy SN1.3

Hazardous Materials Operations

Require safe production, transportation, handling, use and disposal of hazardous materials that may cause air, water or soil contamination. Encourage best practices in hazardous waste management and ensure consistency with City, West Contra Costa County and OSHA guidelines, standards and requirements.⁵ Protect Richmond's shoreline and other natural resources from accidental occurrences by controlling the location of new hazardous waste facilities and by limiting the expansion of existing hazardous waste facilities adjacent to the shoreline and along streams or creeks. Coordinate with federal, state and local agencies and law enforcement to prevent the illegal transportation and disposal of hazardous waste.

Policy SN1.4

Electromagnetic Fields

Minimize the potential risk from electromagnetic fields (EMF) generated by electrical distribution lines and monitor ongoing research to evaluate and reduce risks.



GOAL SN1

Manage Risk from Natural and Human Caused Disasters

IMPLEMENTING ACTIONS

Action SN1.A

Earthquake Fault Zone

Utilize the existing Alquist-Priolo earthquake zone to guide the location of development and utilities to safe areas, and enforce use restrictions where necessary. Where development is proposed within the zone, require study of potential impacts related to fault movement in the design of all structures, roadways, utility lines and other facilities. Restrict land uses to low occupancy or prohibit projects depending on risk findings. Prohibit the location of new residential development and public facilities or high-occupancy structures within the zone including hospitals, schools, utility structures, transportation hubs, communication centers or critical emergency facilities such as fire and police stations or emergency relief storage facilities and water storage tanks.

Action SN1.B

New Utility Installations

Work with appropriate regulatory agencies to ensure that new utility installations to avoid the earthquake fault studies zone and areas subject to landslides or liquefaction. Where it is not possible to avoid these areas, require precautions to reduce the potential of damage or loss of use. Require utility companies to evaluate the hazards and potential damage associated with liquefaction in new utility installations.

Action SN1.C

Building Structure Safety Standards

Regularly review and update building standards and guidelines to ensure that all structures in private, public or quasi-public ownership including municipal buildings are designed to protect people and property from hazards. Review all development proposals for seismic safety and compliance with the Uniform Building Code.

Action SN1.D

Geotechnical Review Guidelines

Regularly review and update geotechnical review guidelines for major redevelopments or new developments to determine the degree of seismic and geologic hazards that might be expected for a particular structure or location. Guidelines should require site-specific geotechnical studies on a case-by-case basis for projects proposed to be built on, or adjacent to, inactive bedrock faults or other potential geologic hazards including geologic anomalies, slope instability or other potentially hazardous conditions. Ensure that the investigation is performed by technically qualified staff.



GOAL SN1

Manage Risk from Natural and Human Caused Disasters

IMPLEMENTING ACTIONS

Action SN1.E

Flood Hazard Zone Designation

Regularly review and update areas designated as flood hazard zones in the City based on Federal Flood Insurance Rate Maps. Require special design features to prevent damage from flooding for all new development located within the areas subject to flood hazard. Include a special designation for areas that will be impacted by rising sea levels.

Action SN1.F

Dam Failure and Seiche Monitoring

Monitor the San Pablo Dam in coordination with the East Bay Municipal Utility District to ensure safety from any potential dam failure or seiches.

Action SN1.G

Water Quality Regulation

Strengthen regulations that prohibit the dumping of litter, fill and waste materials into the creeks. Whenever possible, prohibit major sewer trunk lines and water pressure lines being routed together in areas subject to failure in order to avoid contamination and flooding when pipelines break. Educate the public about flooding and health hazards associated with these activities.

Action SN1.H

Hazardous Waste Management Plan

Update the City's Hazardous Waste Management Plan every five years. Include best practices in hazardous waste management. Develop the plan in accordance with City, West Contra Costa County and OSHA guidelines, standards and requirements.⁶ As part of a comprehensive hazardous waste management plan, the update should include development and/or refinement of: regulations, reduction targets, a hazardous spill response plan and public awareness program.

Action SN1.I

Hazardous Material Regulation

Review and update regulations for the production, use, storage, disposal, transport and treatment of hazardous materials to reduce risk to human and environmental health.

Require buffers for operations which handle substantial amounts of hazardous materials. When siting new facilities or expanding existing ones, require buffer zones between hazardous materials facilities and residential uses, parkland, trails and open space facilities. Fully enclosed structures may be considered in instances where it is no longer to rely on physical distance as a buffer. These regulations should be developed as part of a comprehensive Hazardous Waste Management Plan (Action SN1.H).



GOAL SN1

Manage Risk from Natural and Human Caused Disasters

IMPLEMENTING ACTIONS

Action SN1.J

Hazardous Waste Reduction Targets

Adopt targets to reduce the volume and toxicity of hazardous waste committed to land disposal. Eliminate hazardous waste generation to the maximum extent feasible through the use of effective waste strategies including: reductions in the use of hazardous substances; the use of safe substitutes; recycling; resource recovery and reuse; and on-site treatment. Recognize that even with the most advanced alternative technologies, there will be some waste residues for which secure landfill disposal will be required. Targets should be developed as part of a comprehensive Hazardous Waste Management Plan.

Action SN1.K

Hazardous Materials Response Plan

Regularly review and update guidelines, protocols and strategies to respond to a local hazardous materials spill. Create a response plan as part of a comprehensive Hazardous Waste Management Plan.

Action SN1.L

Hazardous Waste Public Awareness Program

Develop an awareness program to expand public engagement in the planning and handling of hazardous waste in the community, especially at home. Educate the community about roles and responsibilities in the event of an emergency. Distribute information to the public in multiple ways and in multiple languages. Create a response plan as part of a comprehensive Hazardous Waste Management Plan.

Action SN1.M

Electromagnetic Field Monitoring

Monitor ongoing research related to exposure from electromagnetic fields (EMF). Identify mitigation measures and criteria for the location of electrical lines within the City limits consistent with current research and with Federal and State law.



GOAL SN2

Maintain High Levels of Police and Fire Service

POLICIES

Policy SN2.1

Crime Prevention and Response

Promote crime prevention strategies and provide a high level of response to incidents. The City should emphasize and prioritize crime prevention strategies such as pedestrian-scale lighting in targeted areas. Timely response to incidents and monitoring areas with high crime rates should be part of a comprehensive strategy to reduce crime in the community.

Policy SN2.2

Level of Service

Provide a high level of police and fire service in the community. The City should secure adequate facilities, equipment and personnel for police and fire and collaborate with neighboring jurisdiction and partner agencies to adequately respond to emergencies and incidents in all parts of the City.

Policy SN2.3

Fire Safety

Regularly update policies that will protect the community and its urban and natural areas from fire hazards. Emphasize prevention and awareness of fire safety guidelines to minimize risk and potential damage to life, property and the environment. In areas designated by the Richmond Fire Department as having a high fire hazard, ensure adequate fire equipment, personnel, firebreaks, facilities, water and access for a quick and efficient response in any area.



GOAL SN2

Maintain High Levels of Police and Fire Service

IMPLEMENTING ACTIONS

Action SN2.A

Public Safety Design Guidelines

Consider developing and adopting design guidelines that deter criminal activity in neighborhoods, streets and public areas. Include guidelines for the design of play areas, parks, sports facilities, streets and sidewalks, plazas and urban pocket parks, and housing and commercial areas, among others. Include guidelines that prevent vandalism and graffiti. Require the early integration of crime prevention strategies in new development and redevelopment projects including the involvement of the Police Department in the review of major projects in high-crime areas of the City (see also elements: Economic Development, Action ED1.A; Land Use and Urban Design, Action LU2.C; Parks and Recreation, Action PR2.C; Community Health and Wellness, Action HW1.H).

Action SN2.B

Level of Service Monitoring

Regularly review response times for police, fire and emergency medical calls. Use the results of the evaluation to gauge the need for additional facilities, equipment and personnel, and identify specific geographic areas of the City that may not be adequately served.

Action SN2.C

Regional Emergency Coordination Plan

Collaborate with regional agencies and neighboring jurisdictions to develop and implement a regional emergency coordination plan and agreement for police, fire and emergency medical services.

Action SN2.D

Liquor Store Ordinance

Strengthen City Council Resolution 59-06 by developing an ordinance that restricts the location and concentration of liquor stores in low-income neighborhoods, and within 500 feet of schools and parks. Include an incentive program to facilitate the transition of liquor stores to food markets and local grocery stores (see also Community Health and Wellness Element, Action HW8.C).

Action SN2.E

Fire Prone Area Designation

Designate areas in Richmond that are particularly prone to fire hazards and make this information available to the community. Consider adopting wildfire development guidelines for development adjacent to fire prone areas.



GOAL SN2

Maintain High Levels of Police and Fire Service

IMPLEMENTING ACTIONS

Action SN2.F

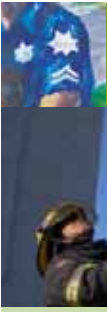
Fire Safety Public Awareness Program

Develop programs that inform and educate the community about potential risks, resources and roles and responsibilities for addressing fire safety. Include staffing needs in the Fire Prevention Bureau to effectively implement the program. Inform residents of homes adjacent to public lands of their responsibility to provide fire breaks behind their homes.

Action SN2.G

Fire Station and Fire Services Strategic Plan

Regularly review and update the Fire Station and Fire Services Strategic Plan. The plan should outline steps needed to obtain an Insurance Services Office (ISO) Rating of “two” for the City of Richmond.⁹



GOAL SN3 Prepare for Emergencies

POLICIES

Policy SN3.1

Emergency and Disaster Preparedness

Provide a coordinated and effective response to emergencies and natural disasters. Coordinate with neighboring jurisdictions, local employers and industries to make sure that emergency preparedness and disaster response programs serve all parts of the City. Provide an adequate level of police and fire staffing, facilities, equipment and maintenance in order to protect the community (see also Community Health and Wellness Element, Policy HW3.3).



GOAL SN3

Prepare for Emergencies

IMPLEMENTING ACTIONS

Action SN3.A

Disaster Preparedness and Recovery Plan

Regularly Update the disaster preparedness and recovery plan as required by state and federal law (see also elements: Community Health and Wellness, Action HW3.D; Community Facilities and Infrastructure, Action CF2.E; Energy and Climate Change, Action EC6.G).

Action SN3.B

Multi Jurisdictional Coordination

Maintain a multi jurisdictional disaster preparedness program with other West Contra Costa County cities, utility companies and the East Bay Regional Park District. Continue to participate in the Operation Area Disaster Council to pool resources and better coordinate a comprehensive program of disaster preparedness. Coordinate emergency police and fire services and facilities with other jurisdictions. Continue to maintain aid agreements with other fire protection agencies in West Contra Costa County. Continue to participate in the joint Contra Costa and Alameda County radio communications program.

Action SN3.C

Emergency Preparedness Exercises

Continue to hold joint fire, hazardous materials incidents, disaster drills and earthquake response exercises with adjacent communities, utility companies, larger businesses and industry, the East Bay Regional Park District and the State Office of Emergency Services (OES) in order to test and improve preparedness capabilities.

Action SN3.D

Emergency Operations Center

Establish and maintain the permanent City of Richmond emergency operations center at 2600 Barrett Avenue and an alternate center at 330 25th Street to coordinate emergency and disaster operations.

Action SN3.E

Corporation, Industry and Utility Emergency Plans

Work with appropriate regulatory agencies to encourage all large employers, industries, utility companies and districts (including utility operations directly controlled by the City of Richmond and petroleum refineries) to develop and maintain up-to-date emergency plans for use in the event of an earthquake, fire, sea level rise or landslide, especially for those located within the high-risk areas of El Sobrante and Point Richmond.



GOAL SN4

Maintain Acceptable Noise Levels

POLICIES

Policy SN4.1

Noise Levels

Maintain acceptable noise levels in the community. Work with businesses to develop strategies and programs to reduce or mitigate objectionable noise sources and require new noise sources to comply with noise standards (see also Community Health and Wellness Element, Policy HW9.8).

Policy SN4.2

Land Use Compatibility

Minimize conflicts between land uses to protect human and environmental health and safety, and preserve community character. Industrial uses and residential living can more successfully co-exist through well-conceived land use, circulation and urban design strategies including buffers, complete enclosure of activities that generate noise, dust or emissions and transition uses (such as office). Regularly review opportunities to reroute truck traffic and install components that signal residential neighborhood character such as sidewalks, lampposts and street trees. Building technologies (such as soundproofing) and landscaping should also be used to provide additional buffers (see also elements: Economic Development, policies ED7.2; ED8.2; Land Use and Urban Design, Policy LU5.3).

Policy SN4.3

Transportation-Related Noise

Work with stakeholders to mitigate noise impacts from roadways and railroads on residential areas and sensitive uses in the community. Work with transportation agencies to develop strategies that will mitigate transportation noise impacts through use of technology, location and design of transportation facilities as well as the location and design of noise-sensitive uses. Support traffic and highway improvements that will reduce noise impacts of vehicles. However, alternatives to sound walls should be considered where possible (see also Community Health and Wellness Element, Policy HW9.9).



GOAL SN4

Maintain Acceptable Noise Levels

IMPLEMENTING ACTIONS

Action SN4.A

Noise Study Report Requirement

Require proposed commercial and industrial uses with potential noise and vibration-producing activities or new noise-sensitive uses that locate in an area with day-night average sound level (Ldn) of 55 or greater to provide noise study reports. The report should identify noise mitigation measures that limit noise to an acceptable level compared to existing conditions.

Action SN4.B

Noise Study Guidelines

Regularly review and update guidelines for the analysis of noise impacts and conflicts in the community. Use the noise analysis to review development proposals to assure consistency with noise standards. Consider the following measures for mitigating noise impacts on adjacent properties:

- Screen and control noise sources such as parking, outdoor activities and mechanical equipment.
- Use technology to reduce noise impacts in instances where setbacks cannot be increased.
- Use state of the art noise-abating materials technology and construction standards and double or triple glazed windows to meet noise standards.
- Control hours of operation, including deliveries and trash pickup to minimize noise impacts.
- Use the Future Noise Contours data and Municipal Codes on noise to determine if additional noise studies are needed.

Action SN4.C

Noise Ordinance

Update the noise ordinance to regulate noise-generating activities. Limit the impact of noise sources on noise-sensitive uses and consider noise and vibration impacts in land use planning decisions. Require mitigation of potential noise impacts on adjacent properties. Enforce the Land Use Compatibility Standards presented in the State of California's General Plan Guidelines when siting new uses in existing noise environments. Encourage projects to use site planning and building orientation principles as well as state-of-the-art noise-abating materials, technology and construction standards to minimize noise (see also Community Health and Wellness Element, Action HW9.R).



GOAL SN4

Maintain Acceptable Noise Levels

IMPLEMENTING ACTIONS

Action SN4.D

Truck Traffic Noise Regulation

Consider developing and adopting regulations to mitigate noise impacts from truck traffic on adjacent communities and sensitive uses. Select truck routes in the City to provide effective separation from residential or other noise-sensitive land uses.

Action SN4.E

Quiet Zone Feasibility Study

Study the feasibility of obtaining Federal Rail Administration (FRA) Quiet Zone status limiting use of train horns which are a major source of noise pollution in Richmond (see also Community Health and Wellness Element, Action HW9.S).

Action SN4.F

Construction Traffic Plan Guidelines

Maintain guidelines for preparing traffic plans to mitigate noise, traffic and dust during major construction activity. Require construction traffic plans for all developments of more than five homes or commercial projects larger than one acre in size to regulate vehicle speeds, dust and noise mitigation, hours of operation, phased fencing plans and safety standards. The plan should ensure the safety of the public and employees during construction of major projects.



Regulatory Framework

A number of regulatory tools and City Departments contribute to planning for public safety and noise.

Departments and Agencies

Police Department

The Richmond Police Department reduces crime and improves public safety. There are 221 sworn officers and civilian members of the Police Department. The Department utilizes the Neighborhood Beat Policing model, instituted in June 2006, to increase police presence in neighborhoods and establish strong relationships between officers and the public. The Code Enforcement Unit within the Police Department works to aggressively deal with environmental factors that can perpetuate crime including timely graffiti abatement, prompt attention to abandoned vehicles and illegal dumping, and also rigorous pursuit of noise violations (<http://www.ci.richmond.ca.us/police>).

Fire Department

The Richmond Fire Department protects people, property and the environment from the harmful effects of fire, hazardous materials and natural acts and provides emergency medical care and information on programs and services that affect personal and public safety (<http://www.ci.richmond.ca.us/fire>).

Office of Emergency Services

The Office of Emergency Services (OES) provides emergency planning and training to residents and businesses in Richmond. It also coordinates the City's response to emergencies and operates a community warning system. This system is designed to alert, notify and educate the public in the event of an earthquake, natural disaster or other large-scale emergency event. OES coordinates the alert system with the community warning system for Contra Costa County which provides sirens and emergency radio broadcasts for the entire County. The OES also publishes informational materials and community guides on emergency preparedness (<http://www.ci.richmond.ca.us/oes>).

Related Plans and Ordinances

Hazardous Materials Contingency Plan

The City's Fire Department oversees the Hazardous Materials Contingency Plan which outlines roles, responsibilities and procedures in case of a hazardous materials incident.



California Noise Control Act and Guidelines

The State of California's Noise Control Act addresses unwanted and hazardous noise as a public health and welfare issue. The Act establishes criteria and guidelines for use in setting standards for exposure to noise.

Title 24 of the California Code of Regulations

Title 24 codifies the minimum noise insulation performance standards that are required for new hotels, motels, dormitories, apartment houses and dwellings other than detached single-family homes. Title 24 calls for interior noise levels from external sources not to exceed 45 dBA CNEL in any room of the new dwelling.

City of Richmond Municipal Code

Chapter 9.52 of the Municipal Code provides regulations for noise within City limits. Section 9.52.090 relates to prohibited noises, 9.52.100 relates to exterior noise standards and 9.52.110 related to temporary noise-generating equipment.



Notes

1. Official California Legislative Information Website. <http://www.leginfo.ca.gov/>.
2. Official California Legislative Information Website. <http://www.leginfo.ca.gov/>.
3. California Noise Control Act, 1973.
4. Flood Insurance Study Update, Richmond (Community No. 060035). Flood Emergency Management Agency. November, 1993.
5. West Contra Costa County Hazardous Waste Management Plan, Chapter 11.
6. West Contra Costa County Hazardous Waste Management Plan, Chapter 11.
7. Although the County Health Services Department is not responsible for inspecting these facilities (it is primarily the State Department of Toxic Substances Control responsibility), the County Health Services Department is responsible for coordinating with other agencies concerned with the status of these facilities with regard to any violations.
8. Jacobs, Jane. *The Death and Life of Great American Cities*. 1961.
9. ISO's Public Protection Classification (PPCTM) Service gauges the capacity of a local fire department to respond if flames engulf a property in which a company has a financial stake. ISO collects information on a community's public fire protection and analyzes the data using our Fire Suppression Rating Schedule (FSRS). They then assign a Public Protection Classification from 1 to 10. Class 1 represents the best public protection, and Class 10 indicates no recognized protection. The Fire Suppression Rating Schedule (FSRS) is the manual ISO (Insurance Services Office) uses in reviewing the fire-fighting capabilities of individual communities. Ten percent of the overall grading is based on how well the fire department receives fire alarms and dispatches its fire-fighting resources. Fifty percent of the overall grading is based on the number of engine companies and the amount of water a community needs to fight a fire. Forty percent of the grading is based on the community's water supply.



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