Redwood City Downtown Fire Station

Public Safety

- Introduction
- Vision
- Atmosphere and Climate Change Resilience
- Hazards Management (Geologic and Seismic, Flooding, Wildfire, Hazardous Materials, Aviation, Terrorism, Emergency Preparedness
- Noise

When people are asked to describe why they choose to live in their community, they often cite safety as a key factor. In cities that provide high levels of public safety services, residents and the business community can focus on productive activities: commerce, recreation, volunteerism, and education, among others. All communities face public safety concerns, from natural disasters such as flooding and earthquakes to human-caused conditions such as hazardous materials spills or air pollution. At the new millennium, public concern and awareness is increasing with regard to human-caused actions that have the potential to create increased risk of natural hazards: global warming. The Public Safety Element addresses those public safety issues that affect Redwood City, and promotes prevention, public education, and emergency preparedness as the approaches that will allow the community to minimize risks to life and property in the event of a disaster.

Sensitive Receptors

CARB recommends that "sensitive land uses" such as residences, residential care facilities, schools, day-care centers, playgrounds, or medical facilities not be located within 500 feet of a freeway or urban road that carries more than 100,000 vehicles per day. The two freeways that are located in or near Redwood City, U.S. 101 and I-280, have volumes that exceed 100,000 vehicles per day. About three percent of residentially zoned properties lie within 500 feet of a freeway, most within the Friendly Acres neighborhood adjacent to U.S. 101.

Traffic in Redwood City: Motorized vehicles are the most significant contributor to greenhouse gas emissions in the city.

CARB also recommends that sensitive land uses not be located within 1,000 feet of ports. Ports contribute to air pollution both through docking and idling ships, and truck traffic associated with a port. While the Port of Redwood City is the smallest active commercial port in the Bay Area, much of its activity consists of bulk materials movement, meaning that dust and particulates represent additional sources of local air pollution.

Environmental Justice communities are neighborhoods identified by the State as being disproportionately affected by economic, health, and environmental burdens. Analysis of data from the California Office of Environmental Health Hazard Assessment and the Center for Disease Control and Prevention shows that some neighborhoods in Redwood City are disproportionately affected by pollution, place, population, and health inequities. The City recognizes the neighborhoods that experience these unique and compounded risks as disadvantaged communities defined in Gov't Code 65302(h)(3)(A) (referred to as "Environmental Justice communities"). In Redwood City these communities are primarily located west of Highway 101 and east of El Camino Real and Middlefield Road. Additionally, the Safety Element focuses on protecting other types of vulnerable populations such as the elderly, disabled, populations facing language barriers, the houseless, and any other population that would face challenges preparing for and responding to increasing climate hazards.

One aspect of environmental justice is reducing Environmental Justice communities' exposure to air pollution. The General Plan incorporates goals, policies, and programs to ensure new hazardous materials and waste facilities, including those that have the potential to affect local air quality, are located safe distances from Environmental Justice communities, are appropriate considering the site's zoning, and properly registered with San Mateo County. The General Plan also includes policies to require periodic assessment of hazardous and solid waste facilities that are in or near Environmental Justice communities and to minimize the possibility of environmental contamination and adverse off-site impacts such as air pollution and odor.

The City's Climate Action Plan includes GHG reduction measures as part of its comprehensive climate change mitigation strategy. GHG education measures, including reducing traffic density, transitioning from fossil fuel-powered vehicles and equipment to electric increasing the use of renewable energy and energy efficient appliances, and eliminating natural gas in the built environment, not only work to mitigate

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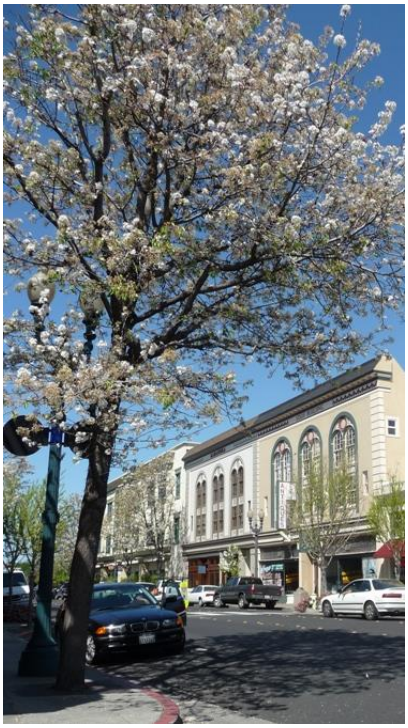
climate change but also reduce the air pollution burden on Environmental Justice communities and the City's population overall.

State Ambient Air Quality Standards

The State of California has set standards for air quality; exceeding these limits can create a threat to public health. High ozone levels cause smog and can trigger asthma and long-term lung damage, while high levels of particulate matter cause haze and can contribute to cancer and other respiratory ailments. The Bay Area Air Quality Management District (BAAQMD) and California Air Resources Board (CARB) monitors air quality in five sub-areas throughout the Bay Area; Redwood City is located in the South Central Bay Sub-Area.



Street trees in Downtown Redwood City

Air Quality Conditions in Redwood City

The BAAQMD monitoring of Particulate Matter (PM) 10 levels in Redwood City was discontinued on June 30, 2008, but CARB continues to monitor 1-hour and 8-hour ozone, PM2.5 and nitrogen dioxide. Measurements at the Redwood City testing station from 2009 to 2019 showed occasional exceedances of the ozone standards and PM2.5 concentrations due to wildfires over the last several years, affecting air quality throughout the bay area. CARB will continue to monitor, track progress and suggest actions to improve air quality throughout California. .

Greenhouse Gas Emissions in Redwood City

Transportation sources account for the highest percentage of GHG emissions in most urban areas. In 2020, the City completed its 2020 update of the Climate Action Plan (CAP). The 2020 CAP included an updated inventory of the City's GHG emissions inventories using data from 2017 (Table PS-1). The updated GHG emissions inventories show the City has reduced total community emissions by 22.7% compared to the base year, 2005. As in 2005, the highest categories of emissions are transportation activities and building energy use. As such, increasing renewable energy use and energy efficiency in buildings, moving toward building electrification, and reducing vehicle emissions will continue to have significant impacts on reducing GHGs. To achieve a more substantial reduction in emissions, both technological advances (improved vehicle emissions and energy systems) and slowing any increase–or actually reducing–vehicle miles traveled will be necessary. In 2020, Redwood City adopted REACH codes, which are amendments to the Energy and Green Building Standards Codes to reduce GHG emissions by mandating electrification and energy efficiency for all new construction projects. While the City has no ability to address vehicle emissions systems, it can make it easier for people to get around without driving cars. The Built Environment Element sets forth focused strategies to increase bicycle, pedestrian, and transit use; create additional housing opportunities so more people can live closer to the many jobs available in the community; and facilitate the location of commercial goods and services within easy walking distance to neighborhoods. The City's 2018 Redwood City Moves transportation plan adopts Vehicle Miles Traveled

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metrics that further emphasize reducing vehicular trips and facilitating other types of transportation.

Table PS-1: Citywide Greenhouse Gas Emissions and Energy Use – Year 2017

	CO_2 Equivalent (Total Metric Tons)	Percent of Total
Residential	68,032	13.8%
Commercial/Industrial	132,944	26.9%
Transportation (Local Roads)	80,191	16.2%
Transportation (State Highways)	142,810	28.9%
Transportation (Off-Road Equipment)	54,332	11%
Caltrain and Freight Trains	1,754	< 1%
Waste	11,924	2.4%
Wastewater and Water	2,908	< 1%
Total	**494,944**	**100%**

Source: City of Redwood City 2020 Climate Action Plan.

Following the adoption of the first CAP in 2013, the City has achieved the following accomplishments:

- Implementation of over 25 City energy efficiency projects with utility incentives and grants between 2013 and 2018.
- Upgrade of public EV charging stations in 2014 to support transportation electrification in the community.
- Installation of a solar system at Red Morton Community Center in 2015 with no capital outlay.
- Provide education, outreach, and incentive programs to businesses and residents.
- Installation of 363 solar systems between 2013 and 2017.
- Adoption of Peninsula Clean Energy (PCE) in 2016 and moving all municipal accounts to 100% renewable and carbon-free energy.
- Saving businesses and residents in utility cost through PCE while providing cleaner energy with fewer emissions.

The 2020 CAP establishes the goal of reducing carbon emissions by 50 percent below 2005 levels by 2030 and achieving carbon neutrality before 2045. To achieve these goals, the City will need to reduce total emissions by approximately 350,562 metric tons of carbon dioxide equivalent (mtCO2e) by 2030. The CAP identifies key GHG reduction strategies in the food and consumption, energy and water, solid waste, and

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transportation and land use sectors needed to achieve the City's emissions reductions goals.

Climate Change Resilience

Climate change presents one of the most significant challenges of our time. As levels of GHG emissions increase in the atmosphere, the Earth's climate system is being destabilized. As more GHGs are trapped inside the Earth's atmosphere, more of the sun's energy is trapped as heat, which means temperatures keep getting hotter.

Even if we stopped emitting GHGs tomorrow, the climate would continue to change due to the length of the carbon cycle — the ability of the Earth to absorb excess carbon in the ocean and plants. Therefore, climate change is inevitable, and communities must plan to adapt to it.

Adaptation planning is most effective at the local level. To develop its adaptation strategy, Redwood City will refer to the following integrated set of policies and tools:

- California Adaptation Planning Guide from the California Office of Emergency Services (2020 Update)
- Safeguarding California Plan: California's Climate Adaptation Strategy (2018 Update)
- Cal-Adapt 2.0 (released October 2017 and updated regularly, most recently in January 2020)
- California's Climate Change Assessment (most recently updated in 2018)
- State of California General Plan Guidelines (updated periodically, most recently updated in 2017)
- Adaptation Clearinghouse
- State Hazard Mitigation (2018 Update)

In addition, the County of San Mateo has embarked on a multi-sector adaptation strategy, Climate Ready San Mateo County, to plan, assess, and implement strategies to address sea level rise and flooding, changes in precipitation, extreme heat, and wildfires in San Mateo County. Redwood City plans to coordinate closely with the County on adaptation planning efforts.

San Mateo County Multi-Jurisdictional Local Hazard Mitigation Plan

The San Mateo County Multi-Jurisdictional Local Hazard Mitigation Plan (SMC LHMP) (smcgov.org) complies with all requirements set forth under Disaster Mitigation Act (DMA) 2000 and includes information on local hazards that is to the Public Safety Element. Sections of the Safety Element are supplemented by the most recently adopted SMC LHMP, which is incorporated by reference, as allowed by California Government Code Section 65302(g). The SMC LHMP presents environmental hazard analysis, describes important transportation and utility infrastructure at risk from environmental hazards, describes emergency evacuation systems, and includes mitigation actions to protect Redwood City populations and infrastructure from environmental hazards. As an SMC LHMP planning partner, Redwood City developed an annex to the LHMP containing hazard information specific to Redwood City and committed to implementing a Hazard Mitigation Action Plan. Redwood City's Hazard Mitigation Action Plan contains measures to build the City's resilience against climate change, flooding, seismic events, dam

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failure, wildfire, severe weather, tsunami, and sea level rise.

San Mateo County OneShoreline Program

The San Mateo County Flood and Sea Level Rise Resiliency District, also known as OneShoreline, is an independent government agency that works across jurisdictional boundaries to secure and leverage public and private resources for the long-term resilience of the County. OneShoreline plans and builds solutions to the climate change impacts of sea level rise, flooding, and coastal erosion, and enhances the environment, recreational opportunities, and quality of life within communities throughout the county. Redwood City is collaborating with OneShoreline on the Redwood Shores Sea Level Rise Protection Project to establish long-term resilience against sea level rise in the Redwood Shores community, which is at significant risk of damage from flooding from high tides and storm events, and sea level rise. The key objective of the project is to modify the Redwood Shores levee system to be eligible for accreditation by FEMA. OneShoreline is also managing the Bayfront Canal Flood Protection and Ecosystem Restoration Project on behalf of and with funding from Redwood City, adjacent cities, and San Mateo County. Safety Element policies establish coordination efforts with the Oneshoreline program to plan for and mitigate the effects of sea level rise.

The Role of Equity

Commonly, climate change disproportionately threatens those who are the most vulnerable to its impacts and the least able to adapt to increasing environmental hazards. Many climate change impacts, including secondary health impacts, will disproportionately affect socially vulnerable populations (see sidebar for the definition of "social vulnerability"). That's why the San Mateo County Board of Supervisors emphasized the need to take health, socio-economic, and racial equity into account in policymaking and climate solutions at all levels in their 2019 climate emergency declaration.

Social Vulnerability

This term refers to populations with greater vulnerability to climate impacts because of their social inequities, physical characteristics, or baseline conditions.

Source: City of Redwood City Climate Action Plan (2020)

According to Local Governments for Sustainability (ICLEI), an international organization of local and regional governments, climate equity ensures that all people have the opportunity to benefit equally from climate solutions, while not taking on an unequal burden of climate impacts.

The General Plan incorporates goals, policies, and programs to lessen pollution burdens while continuing to sustain, if not improve residents healthy living opportunities. Policies and programs in the Built Environment, Building Community, and Natural Resources Elements that work to reduce the pollution burden on Environmental Justice communities also ensure Environmental Justice communities and other vulnerable populations are not taking on an unfair burden of climate change impacts. Similarly, the goals, policies, and programs included in this Element to mitigate and adapt to climate change will reduce health risks to all vulnerable communities.

Environmental Justice Communities

This term refers to populations disproportionately affected by pollution, place, population, and health inequities. Environmental Justice communities encompass disadvantaged communities designated by the State and other vulnerable populations with increased sensitivity to and less adaptive capacity against environmental hazards.

Effects of Climate Change

Direct changes to the local climate include increases in average temperature, annual precipitation, and sea level rise, which can be categorized as primary impacts. Secondary impacts are those associated with these direct changes such as heatwaves, intense rainstorms, landslides, droughts, and wildfires.

Waterfront development in Redwood City

Sea Level Rise

As sea levels rise, more areas of Redwood City will be vulnerable to 100-year flood events. According to the State's Cal-Adapt tool (cal-adapt.org, accessed 2021), along the Redwood City shoreline, Bayshore sea levels are projected to rise approximately 24 inches by 2050 and 84 inches by 2100. Figure PS-1 shows possible significant flooding, erosion, and water damage impacts to the built environment along both sides of Highway 101. Under all sea level rise scenarios, San Carlos Airport and Redwood Shores will be inundated by rising Bay waters. Eventually, sea level may increase enough to permanently flood low-lying areas in the eastern part of Redwood City along the Bayshore.

Rising sea levels can cause the bay shoreline to flood more frequently and severely. Due to ocean levels being higher during normal conditions due to sea level rise, shoreline floods, such as king tides and storm surge, can be exacerbated and reach even further onto land. During strong storms and king tides, shoreline flooding may damage or destroy homes and commercial buildings in low-lying areas in eastern Redwood City. These events can also disrupt transportation routes such as Highway 101, Veteran's Boulevard, Bay Road, Broadway, Main Street, and Woodside Road (State Route 84). Essential facilities and infrastructure, such as the Caltrain transit station, Kaiser Permanente Medical Center, fire stations, police stations, bridges, electric vehicle charging stations, solid waste facilities, and water and wastewater infrastructure, may be frequently inundated, causing them and the community services they support to be negatively impacted. Figures PS-2 and PS-3 show buildings and infrastructure at risk of damage from

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the Patrol Division. Detectives are divided to one of three units within the Division and are assigned to investigate property crimes, crimes against persons, or to serve as a part of the Street Crime Suppression Team. The Investigations Division also manages the Juvenile Unit, which focuses exclusively on juvenile-related issues and crimes. This Division also coordinates its efforts with the San Mateo County Sheriff's Department to prevent street-level gang and drug activity. The Patrol Division is the largest division within the Police Department. The Patrol Division manages the Department's canine units, special weapons and tactics, community service officers, marine unit, reserve unit, community policing, and youth services unit.

Local response times for the Police Department are currently exceeding internal standards. The Police Department sets a standard of responding to emergency calls and arriving on scene within 5 minutes.

Community Involvement and Public Education

Community involvement and public education are integral to the Police Department's goal of protecting life and property and improving Redwood City's quality of life. The Redwood City Police Department embraces a broad community involvement and public education approach and currently maintains a wide variety of programs, such as:

Community Coordinating Activities Team (CCAT) Community Action

The Community Coordinating Activities Team (CCAT) works closely with the community to address the problems of crime and quality of life issues. CCAT officers coordinate Neighborhood Watch meetings and neighborhood association meetings, and speak at schools and service organizations.

The Citizen's Police Academy

The Citizen's Police Academy serves to help the public better understand the field of law enforcement. The Academy allows residents to learn a variety of police-related topics taught through a classroom lecture and hands-on experience. Police officers teach all of the classes, and the topics range from police tactics and patrol procedures to pursuit driving and firearms training.

Police Activities League (PAL)

The Redwood City Police Activities League (PAL) is a nonprofit community-based organization that provides intervention, prevention, and alternative programs to all youth, including at-risk and economically challenged youth, in Redwood City. PAL provides programs that strive to help youth by teaching honest values, assets, and skills, which is critical for preventing youth delinquency.

Drug Abuse Resistance Education (DARE)

The DARE (Drug Abuse Resistance Education) program's main focus is to provide a curriculum to elementary school youth that educates them on the dangers of drug use and importance of drug resistance. The curriculum is presented by a uniformed police officer and is shown to 5th grade students in Redwood City, in both public and private schools.

Gang Resistance Education and Training (GREAT)

The GREAT (Gang Resistance Education and Training) program serves to address the rising gang problem in middle schools. The 13-week GREAT program is taught to 6th grade students at schools across

Redwood City.

Fire Preparedness and Response

The mission of the Redwood City Fire Department is to protect life, property, and the environment from fire, medical, disaster, and hazardous materials-related incidents through emergency mitigation, public education, and code enforcement.

Fire Department Resources

The Redwood City Fire Department, headquartered at 755 Marshall Street, provides fire protection and response services in the city. In addition to the Marshall Street station, there are four other stations in the city. All Fire Department staff are full-time employees.

Redwood Shores fire station

The Fire Department is responsible for the safety of all people within the City's borders. This area totals 34.6 square miles, including 19.5 square miles on land and 15.1 square miles in the water. Automatic mutual aid is provided by the California Department of Forestry and Fire Protection and adjacent cities such as Menlo Park, Woodside, Belmont, and San Carlos.

The Fire Department is responsible for fire prevention and suppression, medical response, and property protection. The Fire Department's Fire Prevention Bureau works to educate the public and businesses about fire prevention by conducting fire inspections, processing fire permits, conducting fire investigations, and conducting community outreach regarding fire safety education.

Local response times to emergency situations for the Fire Department are currently exceeding internal standards. The Department places a high priority on quick response, with the goal of responding to emergency calls within five to seven minutes.

Key Hazards Management Considerations

Key considerations relative to Hazards Management are:

- Although no active faults have been identified traversing Redwood City, significant ground shaking can be expected to occur as a result of a major earthquake, resulting in potentially substantial damage.
- Development or redevelopment of properties in lowland areas have a moderate to high potential for liquefaction, and a potential for settlement due to expansive soils. Areas in the former tidal flats have a very high potential for liquefaction, and a potential for settlement due to unconsolidated fill and low strength native soils.
- Properties in the southwest hills of Redwood City may be at risk of slope failure, and all hillside areas lie within high fire hazard zones.
- Large areas of the city lie within 100- or 500-year floodplains.

throughout the city.

Noise Conditions - 2008

A comprehensive community noise monitoring survey was undertaken during July of 2008. Noise measurement locations were selected to provide information on the distribution of noise levels along streets and highways, and to determine the level of baseline ambient noise levels in quiet residential neighborhoods. Noise measurement locations were also selected to measure noise levels generated by railroad trains and to measure noise generated by stationary sources. Both long-term (48 hours or more) and short-term (10 minutes duration) measurements were made.

The results of the noise survey are as follows:

Freeway and Highway Noise

In 2008, noise levels adjacent to U.S. 101 were approximately 67 to 76 dBA CNEL, and along the I-280 corridor, levels were recorded at approximately 62 to 64 dBA CNEL. Noise measurements taken on the southwest side of El Camino Real were calculated to be between 67 and 70 dBA CNEL. Southeast of Woodside Road, noise levels approximated 70 to 73 dBA CNEL.

Local Arterial Roadways

Whipple Avenue, Alameda de las Pulgas, Jefferson Avenue, Redwood Shore Parkway, Marine Parkway, and Seaport Boulevard are the city's major arterial roadways. Measurements taken in residential neighborhoods near these facilities indicated that noise levels typically range from 60 to 70 dBA CNEL.

Railroads

Trains produce both noise and vibrations (see vibration discussion below), and train horns represent a frequent noise occurrence in Redwood City. Based on 2008 train activity levels, average daily noise levels along the railroad lines can be calculated to range from 61 to 70 dBA CNEL. Maximum noise levels from train passbys are more significant, from 85 to 95 dBA. Near at-grade crossings, where train- warning whistles are sounded to warn pedestrians and motorists of oncoming trains, maximum noise levels can be as high as 90 to 100 dBA at 40 feet from the tracks.

Aircraft

Aircraft operations at San Carlos Airport primarily impact properties along U.S. 101 and in Redwood Shores. The 1996 *San Mateo County Comprehensive Airport Land Use Plan* provides projected noise contour information for airport operations, shown in Figure PS-14. Where aircraft noise exceeds or is projected to exceed 55 dBA CNEL, the Airport Land Use Commission requests that the City require affected property owners to grant an aviation easement to the County of San Mateo when noise-sensitive developments are proposed within the airport's 55 dBA CNEL noise contour and higher noise levels.

Other Noise Sources

Other noise sources of concern include industrial and commercial businesses, outdoor activities, and construction. Residents often cite car washes, fire stations, air conditioning units, swimming pool pumps, school playgrounds, amplified music and/or voices, and public parks as sources of sometimes irksome

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